



DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III INDUSTRIAL LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

2021 CCR ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

January 2022



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Project Hydrogeologist

*TRC Environmental Corporation | Dominion Energy South Carolina
Cope Station Class III Industrial Landfill
2021 Annual Groundwater Monitoring and Corrective Action Report*

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Executive Summary

Dominion Energy South Carolina (DESC) operates a Class III Industrial Landfill (Unit) for the disposal of coal combustion residuals (CCR) at the Cope Generating Station (Station) located near Cope, in Orangeburg County, South Carolina. The Unit receives CCR generated from the combustion of coal at the Station. Management of the CCR at the Unit is performed pursuant to national criteria established in Title 40 of the Code of Federal Regulations (40 CFR), Part 257 (CCR Rule), effective April 19, 2015, and subsequent revisions to the CCR Rule.

The Station conducted two semiannual detection monitoring program (DMP) events in 2021 for the CCR Unit monitoring well network per 40 CFR §257.94. The first semiannual 2021 DMP compliance sampling event was completed on March 15-16, 2021, with sample analyses completed on March 30, 2021. The second semiannual 2021 DMP compliance sampling event was completed on September 28-29, 2021, with sample analyses completed on October 22, 2021. These groundwater sampling and analysis activities were conducted in general accordance with the requirements of the Unit's Groundwater Monitoring Plan (GWMP) for the CCR network.

Evaluation of the monitoring results from the first semiannual 2021 event identified an exceedance above the background value for chloride in MW-LF-02. DESC completed a successful Alternate Source Demonstration (ASD) for the potential Statically Significant Increase (SSI) identified during the first semiannual 2021 detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer and is presented in this Report. Monitoring results from the second semiannual 2021 event identified exceedances above the background value for chloride and fluoride in MW-LF-02. An ASD evaluation is being conducted in accordance with the applicable CCR Rule timeframe.

In accordance with 40 CFR Part 257.90(e)(6), the following information is being provided as an overview of the current status of groundwater monitoring and corrective action for the Unit:

- i. At the start of the current annual reporting period, indicate whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.*
 - At the start of 2021, the Unit was operating under the detection monitoring program in §257.94.

- ii. *At the end of the current annual reporting period, indicate whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.*
- At the end of 2021, the Unit was operating under the detection monitoring program in §257.94.
- iii. *If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e).*
- a. *Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase.*
 - In 2021, there were SSIs over background for the following Appendix III constituents at the following wells:
 - Chloride – well MW-LF-02
 - Fluoride – well MW-LF-02
 - b. *Provide the date when the assessment program was initiated for the CCR unit.*
 - The Unit is in the detection monitoring program and has not initiated assessment monitoring to date.
- iv. *If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g).*
- a. *Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase.*
 - The Unit is in the detection monitoring program and Appendix IV constituents were not evaluated in 2021
 - b. *Provide the date when the assessment of corrective measures was initiated for the CCR unit.*
 - The Unit has not entered the assessment monitoring program and therefore not applicable.
 - c. *Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.*
 - The Unit has not entered the assessment monitoring program and therefore not applicable.

- d. Provide the date when the assessment of corrective measures was completed for the CCR unit.

The Unit has not entered the assessment monitoring program and therefore not applicable.

- v. *Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of the remedy selection.*

- The Unit has not entered the assessment monitoring program and therefore not applicable.

- vi. *Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.*

- Remedial activities were not initiated or are not ongoing during this current annual reporting period.

Section 1

Introduction

This *2021 CCR Annual Groundwater Monitoring and Corrective Action Report* (Report) was prepared on behalf of Dominion Energy South Carolina (DESC) for the Class III Industrial Landfill (Unit) at the Cope Generating Station (Station) located near Cope, in Orangeburg County, South Carolina. Coal combustion residuals (CCR) are produced as part of the electrical generation operations and is disposed of in the Unit. The CCR Unit is managed in accordance with the national criteria established by the CCR Rule. DESC installed a groundwater monitoring system at the Unit that is subject to the groundwater monitoring and corrective action requirements provided under 40 CFR §257.90 through §257.98. In accordance with 40 CFR §257.90(e), DESC must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the Unit. This Report provides the monitoring and corrective action data and data evaluations for the semiannual CCR monitoring compliance events performed in March and September 2021.

1.1 Site Location

The Station is operated by DESC and is located at 405 Teamwork Road in Orangeburg County, South Carolina (**Figure 1**). The Station is located approximately 2 miles southwest of Cope, South Carolina. The Unit is located on the northwest portion of the Station property approximately 3,000 feet from the generating plant.

1.2 Site History

The Station is an active coal-fired power station located in Orangeburg County, SC. The facility began operations in 1996 and operates a single 417-megawatt coal-fired unit. The Station consists of Class II and III landfills and a landfill leachate pond. The Class III Landfill is currently regulated under the CCR rule, the Class II Landfill is closed, and the Landfill Leachate Pond is monitored and permitted under a National Pollutant Discharge System (NPDES) permit issued by South Carolina Department of Health and Environmental Control (SCDHEC).

1.3 Key Actions

Key actions for the Unit are as follows:

- In accordance with 40 CFR §257.94(b), semiannual detection monitoring was performed during March and September of 2021 for analysis of Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)).

- The first semiannual 2021 detection monitoring was performed during March 2021. Based on statistical evaluation of the data, there was a Statistically Significant Increase (SSI) over background for the following Appendix III constituent at the following well:
 - Chloride – well MW-LF-02
- DESC completed a successful Alternate Source Demonstration (ASD) per 40 CFR §257.94(e)(2) for the potential SSI identified during the first semiannual 2021 detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer. As required by 40 CFR §257.94(e)(2), a copy of the ASD is included in this Report. DESC continued with detection monitoring in accordance with 40 CFR §257.94.
- The second semiannual 2021 detection monitoring was performed during September 2021. Based on statistical evaluation of the data, there were SSIs over background for the following Appendix III constituents at the following wells:
 - Chloride – well MW-LF-02
 - Fluoride – well MW-LF-02

An ASD evaluation of the data will be performed during the first quarter of 2022 per 40 CFR §257.94(e)(2).

- The Unit remained in detection monitoring for the duration of 2021.

1.4 Monitoring Program Concerns

No problems were encountered during 2021 regarding the detection monitoring and corrective action system. Therefore, no actions were required to modify the system.

Section 2

Site Information

2.1 Monitoring Well Network

Groundwater monitoring wells (MW-LF-01, MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06) were installed and developed at the Unit in March 2016 to serve as the EPA CCR Compliance Monitoring Well Network. Existing monitoring wells MW-BG-06 and MW-BG-16, utilized for other monitoring programs for the Unit, were incorporated into the CCR Compliance Monitoring Well Network in November 2016. Two additional groundwater monitoring wells, AS-LF-01 and AS-LF-02, that were installed in November 2017, and one existing monitoring well, MW-40, served as ASD monitoring wells for SSIs observed during Detection Monitoring in September and October 2017. The results of the ASD, performed by others, were presented in the August 2018 *Alternate Source Demonstration Report, Cope Station Class 3 Landfill* and demonstrated the SSIs were not due to a release from the Unit at the Station and no further actions were warranted. Both AS-LF-01 and AS-LF-02 were incorporated into the CCR Compliance Monitoring Well Network in December 2017. Groundwater monitoring well MW-40 is used to support potential ASD activities.

The Compliance Monitoring Well Network currently consists of five upgradient wells (MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, and AS-LF-02) to monitor background groundwater quality entering the surficial aquifer of the Unit and five downgradient monitoring wells (MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06) that serve to monitor groundwater quality downgradient of the Unit. One monitoring well (MW-40) is used to support ASD evaluations. The location of the EPA CCR Rule Compliance Monitoring Well Network is presented on **Figure 2**.

2.2 Monitoring Well Installation and Decommissioning Activities

DESC did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2021.

2.3 Groundwater Potentiometric Surface Evaluation

Current and historic static water level data for the Station are summarized in **Table 1**. Per requirements of 40 CFR §257.93(c), the rate and direction of groundwater flow within the uppermost aquifer beneath the Unit must be determined after each sampling event. Groundwater potentiometric surface maps were prepared using water level data obtained from both semiannual sampling events conducted in

March and September 2021. Using the groundwater contours from March (**Figure 3**) and September (**Figure 4**), the average horizontal hydraulic gradient was calculated using the following equation:

$$i = (h^1 - h^2)/S$$

Where:

- i = horizontal hydraulic gradient (unitless)
- h^1 = water elevation in well 1 (feet)
- h^2 = water elevation in well 2 (feet)
- S = horizontal distance between well 1 and well 2 (feet)

The groundwater seepage velocity was calculated using the following formula:

$$Vs = ki/n_e$$

Where:

- Vs = Groundwater seepage velocity (feet/day)
- k = hydraulic conductivity (feet/day)
- i = horizontal hydraulic gradient (unitless)
- n_e = effective porosity (percent)

The result for each semiannual event is presented separately in Sections 2.3.1 and 2.3.2. As presented, the estimated groundwater seepage velocity in the uppermost aquifer beneath the Unit is between 36 to 38 ft/year. Furthermore, the overall interpreted data indicates that the groundwater flow direction and velocity remain consistent with previous calculations for the Unit. The groundwater monitoring network continues to monitor the uppermost aquifer in accordance with the CCR Rule.

2.3.1 First Semiannual 2021 Detection Monitoring Program

The groundwater potentiometric surface map for March 2021 is presented in **Figure 3**. Using an estimated effective porosity value of 20% and an estimated average hydraulic conductivity value of 5.40 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 38.13 ft/year.

Well 1	Well 2	h ¹ (ft)	h ² (ft)	S (ft)	i	K (ft/day) ⁽¹⁾	n_e	Vs (ft/day)	Vs (ft/yr.)
MW-BG-06	MW-40	176.36	169.33	3,230	0.0022	5.40	0.20	0.0588	21.45
MW-BG-16	MW-LF-06	174.19	161.04	2,590	0.0051			0.1371	50.03
MW-LF-01	MW-LF-05	171.10	159.21	1,880	0.0063			0.1707	62.32
MW-AS-01	MW-LF-04	169.70	163.19	1,730	0.0038			0.1016	37.08
MW-AS-02	MW-LF-02	170.17	167.96	1,100	0.0020			0.0542	19.80
1) Hydraulic conductivity and effective porosity values from February 2021: Analysis of Groundwater Flow Rate and Direction – Class III Landfill Wells (Nautilus 2021).						Average		0.1045	38.13

2.3.2 Second Semiannual 2021 Detection Monitoring Program

The groundwater potentiometric surface map for September 2021 is presented in **Figure 4**. Using an estimated effective porosity value of 20% and estimated average hydraulic conductivity value of 5.40 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 36.89 ft/year.

Well 1	Well 2	h ¹ (ft)	h ² (ft)	S (ft)	i	K (ft/day) ⁽¹⁾	n _e	Vs (ft/day)	Vs (ft/yr.)
MW-BG-06	MW-40	171.65	166.07	3,230	0.0017	5.40	0.20	0.0466	17.02
MW-BG-16	MW-LF-06	170.51	158.08	2,590	0.0048			0.1296	47.29
MW-LF-01	MW-LF-05	166.49	156.75	1,880	0.0052			0.1399	51.05
MW-AS-01	MW-LF-04	166.54	159.55	1,730	0.0040			0.1091	39.81
MW-AS-02	MW-LF-02	167.29	164.02	1,100	0.0030			0.0803	29.29
1) Hydraulic conductivity and effective porosity values from February 2021: Analysis of Groundwater Flow Rate and Direction – Class III Landfill Wells (Nautilus 2021).						Average		0.1011	36.89

Section 3

Field Activities

CCR-related groundwater sampling activities that occurred during 2021 are summarized in the following sections.

3.1 Compliance Monitoring Program Sampling Activities

As per 40 CFR §257.94(c), two semiannual DMP events were completed for the constituents and parameters listed in Appendix III of the CCR Rule. Summaries of the 2021 DMP sampling events are presented below.

2021 Monitoring Event	Sample Dates	Final Laboratory Package Receipt Date
First Semiannual Detection Monitoring Program Event	March 15-16, 2021	March 30, 2021
Second Semiannual Detection Monitoring Program Event	September 28-29, 2021	October 14, 2021 (revised October 22, 2021)

During each of the DMP sampling events, the compliance monitoring wells were sampled in accordance with the Station's Groundwater Monitoring Program (GWMP).

Samples collected during the semiannual sampling events were submitted to GEL Laboratories (GEL) in Charleston, South Carolina under proper chain-of-custody procedures. GEL is an accredited laboratory for analysis of CCR Rule constituents (GEL certification #10120001).

Section 4

Laboratory Analytical Results

Laboratory analytical results from the DMP sampling events conducted in 2021 are summarized in the following sections.

4.1 First Semiannual 2021 Detection Monitoring Program Event

The groundwater samples collected during the first semiannual DMP event were analyzed by GEL for the constituents and parameters listed in Appendix III of the CCR Rule. The laboratory certificates of analysis, chain-of-custody forms, and field notes for the sampling event are presented in **Appendix A**. A summary of the CCR sampling data for the Unit is included in **Table 2**.

4.2 Second Semiannual 2021 Detection Monitoring Program Event

The groundwater sampling collected during the second semiannual DMP event were analyzed by GEL for the constituents and parameters listed in Appendix III of the CCR Rule. The laboratory certificates of analysis, chain-of-custody forms, and field notes for the sampling event are presented in **Appendix B**. A summary of the CCR sampling data for the Unit is included in **Table 3**.

Section 5

Data Quality Validation

Third-party data validation services were provided by Environmental Standards, Inc. for the DMP sampling events. The reviews were performed with guidance from the USEPA data validation guidelines and in accordance with the Station's GWMP. A discussion of the findings is presented below.

5.1 First Semiannual 2021 Compliance Event Findings

The following field QA/QC samples for this event included:

- One blind duplicate sample was collected from the MW-LF-06 location on March 15, 2021.
- Additional sample volume was collected at MW-LF-03 on March 16, 2021, to allow for the laboratory to conduct a matrix spike (MS) and matrix spike duplicate (MSD) quality control check.
- A field blank was collected in the area of AS-LF-01 on March 15, 2021, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.
- A field blank was collected in the area of MW-LF-03 on March 16, 2021, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.

These QA/QC samples were analyzed for the same constituents as the groundwater samples. Based on review of the laboratory-provided QC data and Environmental Standards recommendations, the data for this sampling event were determined to meet the data quality objectives for the project. A copy of the data validation report is included in **Appendix A**.

5.2 Second Semiannual 2021 Compliance Event Findings

The following field QA/QC samples for this event included:

- One blind duplicate sample was collected from the MW-LF-06 location on September 28, 2021.
- Additional sample volume was collected at MW-LF-05 on September 29, 2021, to allow for the laboratory to conduct a MS/MSD quality control check.
- A field blank was collected in the area of AS-LF-02 on September 28, 2021, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.

- A field blank was collected in the area of MW-LF-02 on September 29, 2021, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.

These QA/QC samples were analyzed for the same constituents as the groundwater samples. Based on review of the laboratory-provided QC data and Environmental Standards recommendations, the data for this sampling event were determined to meet the data quality objectives for the project. A copy of the data validation report is included in **Appendix B**.

Section 6

Statistical Evaluation of Groundwater Data

Statistical evaluation of the semiannual DMP data was performed in accordance with the statistical method certified by a qualified South Carolina-registered professional engineer. The certified statistical method has been posted to the Unit's operating record. Statistical evaluations completed in 2021 are summarized in the following sections.

6.1 Site-Specific Background Evaluations

Compliance data from each semiannual event was evaluated against site-specific background values as follows.

6.1.1 First Semiannual 2021 Compliance Event

Pursuant to 40 CFR §257.95, TRC evaluated Appendix III constituent detections against site-specific background values that were established for the DMP (**Appendix C**). Based on that evaluation, the following Appendix III SSIs were identified for the first semiannual 2021 event (**Table 2**):

- Chloride (MW-LF-02)

An ASD and certification was prepared for this SSI and is attached as **Appendix D**.

6.1.2 Second Semiannual 2021 Compliance Event

Pursuant to 40 CFR §257.95, TRC evaluated Appendix III constituent detections against site-specific background values that were established for the DMP (**Appendix E**). Based on that evaluation, the following Appendix III SSIs were identified for the second semiannual 2021 event (**Table 3**):

- Chloride (MW-LF-02)
- Fluoride (MW-LF-02)

An ASD evaluation of the data from the second semiannual 2021 compliance event will be performed during the first quarter of 2022 per 40 CFR §257.94(e)(2).

Section 7

Conclusions

7.1 Findings

The first semiannual 2021 DMP compliance sampling event was completed on March 15-16, 2021, with sample analyses completed on March 30, 2021. The second semiannual 2021 DMP compliance sampling event was completed on September 28-29, 2021, with sample analyses complete on October 22, 2021. These groundwater sampling and analysis activities were conducted in general accordance with the requirements of the Unit's GWMP for the CCR Rule network.

Evaluation of the monitoring results from the first semiannual 2021 event identified an exceedance above the background value for chloride in MW-LF-02. DESC completed a successful ASD for the potential SSI identified during the first semiannual 2021 detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer and presented in this Report. Monitoring results from the second semiannual 2021 event identified exceedances above the background value for chloride and fluoride in MW-LF-02. An ASD evaluation is being conducted in accordance with the applicable CCR Rule timeframe.

7.2 Planned Activities

Planned activities for the program during 2022 are listed below:

- An ASD evaluation of the data from the second semiannual 2021 compliance event will be performed during the first quarter of 2022.
- Semiannual detection monitoring is planned for March and September 2022.

Section 8

References

- Environmental Protection Agency (EPA). 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. *40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*. [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]. RIN-2050-AE81.
- EPA. 2016. Federal Register. Volume 81. No. 151. Friday August 5, 2016. Part II. Environmental Protection Agency. *40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*. [EPA-HQ-OLEM-2016-0274; FRL-9949-44-OLEM].
- Garrett and Moore 2017. Groundwater Monitoring System Certification, Cope Station Class III Landfill, Orangeburg County, South Carolina: Garrett & Moore, Inc.
- Nautilus 2016. Groundwater Sampling and Analysis Plan, Cope Generating Station Class Three Landfill. Cope, South Carolina: Nautilus Geologic Consulting, PLLC.
- Nautilus 2018. Alternate Source Demonstration Report, Cope Station Class Three Landfill. Cope, South Carolina: Nautilus Geologic Consulting, PLLC.
- Nautilus 2021. Analysis of Groundwater Flow Rate and Direction: September 2020 Monitoring Data, Cope Station: Class III Landfill, Wateree Station: Class III Landfill, FGD Pond, Ash Pond, Williams Station: FGD Pond, Highway 52 Class III Landfill: Nautilus Geologic Consulting, PLLC. February 2021.

Section 9 Signature Page

This 2021 CCR Annual Groundwater Monitoring and Corrective Action Report (Report) has been prepared by a qualified groundwater scientist on behalf of Dominion Energy South Carolina (DESC) for the Class III Industrial Landfill at Cope Generating Station. This Report satisfied the reporting requirements specified in Title 40 CFR §257.90(e) *et seq.* [Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule; Federal Register Vol. 80, No. 74, 21302-21501 on April 17, 2015, as amended)].

Name: Richard A. Mayer Jr., P.G.

Expiration Date: June 30, 2023

Company: TRC Environmental Corporation

Date: January 28, 2022



(SEAL)

Tables

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-01	176.41	5/12/2016	7.56	168.85
		7/14/2016	8.82	167.59
		9/14/2016	8.13	168.28
		11/8/2016	8.48	167.93
		1/25/2017	5.95	170.46
		3/29/2017	7.08	169.33
		5/15/2017	6.84	169.57
		7/27/2017	9.40	167.01
		9/25/2017	9.68	166.73
		10/12/2017	10.51	165.90
		10/30/2017	10.19	166.22
		12/11/2017	9.01	167.40
		12/19/2017	8.81	167.60
		12/28/2017	8.24	168.17
		2/21/2018	8.29	168.12
		3/21/2018	8.49	167.92
		9/17/2018	8.21	168.20
		3/20/2019	5.89	170.52
		9/20/2019	9.88	166.53
3/16/2020	4.86	171.55		
9/21/2020	7.97	168.44		
3/15/2021	5.31	171.10		
9/28/2021	9.92	166.49		
MW-LF-02	190.08	5/12/2016	25.38	164.70
		7/14/2016	26.30	163.78
		9/14/2016	25.40	164.68
		11/8/2016	26.68	163.40
		1/25/2017	23.82	166.26
		3/29/2017	25.61	164.47
		5/15/2017	24.88	165.20
		7/27/2017	26.86	163.22
		9/25/2017	27.00	163.08
		10/12/2017	27.81	162.27
		10/30/2017	27.35	162.73
		12/11/2017	26.00	164.08
		12/19/2017	26.62	163.46
		12/28/2017	26.65	163.43
		2/21/2018	26.82	163.26
		3/21/2018	27.22	162.86
		9/18/2018	25.54	164.54
		3/20/2019	23.53	166.55
		9/19/2019	26.30	163.78
3/16/2020	21.67	168.41		
9/21/2020	23.74	166.34		
3/16/2021	22.12	167.96		
9/28/2021	26.06	164.02		

Notes:

1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-03	187.19	5/12/2016	23.34	163.85
		7/14/2016	24.53	162.66
		9/14/2016	23.60	163.59
		11/8/2016	24.61	162.58
		1/25/2017	22.78	164.41
		3/30/2017	23.99	163.20
		5/15/2017	23.25	163.94
		7/27/2017	25.33	161.86
		9/25/2017	25.68	161.51
		10/12/2017	26.31	160.88
		10/30/2017	26.14	161.05
		3/21/2018	25.86	161.33
		9/18/2018	23.96	163.23
		3/20/2019	22.30	164.89
		9/19/2019	25.35	161.84
		3/16/2020	19.75	167.44
		9/21/2020	23.44	163.75
		3/15/2021	20.45	166.74
9/28/2021	24.95	162.24		
MW-LF-04	184.20	5/12/2016	23.29	160.91
		7/14/2016	24.31	159.89
		9/14/2016	24.03	160.17
		11/8/2016	24.03	160.17
		1/25/2017	22.78	161.42
		3/30/2017	23.49	160.71
		5/15/2017	23.18	161.02
		7/27/2017	24.86	159.34
		9/25/2017	25.44	158.76
		10/12/2017	25.86	158.34
		10/30/2017	25.87	158.33
		3/21/2018	25.12	159.08
		9/18/2018	23.90	160.30
		3/20/2019	22.53	161.67
		9/19/2019	25.22	158.98
		3/16/2020	20.77	163.43
		9/21/2020	24.23	159.97
		3/16/2021	21.01	163.19
9/28/2021	24.65	159.55		

Notes:

1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-05	177.95	5/12/2016	20.36	157.59
		7/14/2016	21.25	156.70
		9/14/2016	20.83	157.12
		11/8/2016	20.75	157.20
		1/25/2017	19.41	158.54
		3/30/2017	20.18	157.77
		5/15/2017	20.08	157.87
		7/27/2017	21.28	156.67
		9/25/2017	21.84	156.11
		10/12/2017	22.10	155.85
		10/30/2017	21.94	156.01
		3/21/2018	21.00	156.95
		9/18/2018	21.67	156.28
		3/20/2019	19.61	158.34
		9/19/2019	21.85	156.10
		3/16/2020	18.64	159.31
		9/18/2020	20.87	157.08
		3/15/2021	18.74	159.21
9/28/2021	21.20	156.75		
MW-LF-06	178.57	5/12/2016	19.12	159.45
		7/14/2016	20.07	158.50
		9/15/2016	20.41	158.16
		11/8/2016	19.88	158.69
		1/25/2017	18.76	159.81
		3/30/2017	19.18	159.39
		5/15/2017	19.01	159.56
		7/27/2017	20.40	158.17
		9/26/2017	21.19	157.38
		10/12/2017	21.39	157.18
		10/30/2017	21.41	157.16
		3/21/2018	20.59	157.98
		9/18/2018	19.85	158.72
		3/20/2019	18.59	159.98
		9/19/2019	21.00	157.57
		3/16/2020	17.22	161.35
		9/18/2020	20.39	158.18
		3/16/2021	17.53	161.04
9/28/2021	20.49	158.08		

Notes:

1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-BG-06	187.95	11/8/2016	12.82	175.13
		1/26/2017	10.76	177.19
		3/29/2017	12.55	175.40
		5/16/2017	12.93	175.02
		7/28/2017	15.88	172.07
		9/26/2017	16.28	171.67
		10/10/2017	16.72	171.23
		10/30/2017	16.15	171.80
		2/22/2018	13.48	174.47
		3/21/2018	13.48	174.47
		9/17/2018	14.49	173.46
		3/21/2019	12.44	175.51
		9/19/2019	16.75	171.20
		3/16/2020	11.45	176.50
		9/18/2020	13.79	174.16
		3/15/2021	11.59	176.36
9/28/2021	16.30	171.65		
MW-BG-16	182.52	11/8/2016	9.06	173.46
		1/26/2017	7.63	174.89
		3/29/2017	8.22	174.30
		5/16/2017	8.63	173.89
		7/28/2017	10.60	171.92
		9/26/2017	11.24	171.28
		10/10/2017	11.72	170.80
		10/30/2017	11.36	171.16
		2/22/2018	10.27	172.25
		3/21/2018	10.25	172.27
		9/17/2018	10.45	172.07
		3/21/2019	8.49	174.03
		9/19/2019	12.25	170.27
		3/16/2020	8.28	174.24
		9/18/2020	9.92	172.60
		3/16/2021	8.33	174.19
9/28/2021	12.01	170.51		

Notes:

1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
AS-LF-01	177.35	12/11/2017	14.10	163.25
		12/19/2017	14.15	163.20
		12/28/2017	13.78	163.57
		2/21/2018	13.77	163.58
		3/22/2018	14.08	163.27
		9/18/2018	12.73	164.62
		3/21/2019	10.71	166.64
		9/20/2019	13.29	164.06
		3/17/2020	9.83	167.52
		9/18/2020	11.71	165.64
		3/15/2021	7.65	169.70
9/28/2021	10.81	166.54		
AS-LF-02	177.83	12/11/2017	13.36	164.47
		12/19/2017	13.59	164.24
		12/28/2017	13.12	164.71
		2/21/2018	13.25	164.58
		3/22/2018	13.43	164.40
		9/18/2018	12.39	165.44
		3/21/2019	10.34	167.49
		9/20/2019	12.86	164.97
		3/17/2020	9.81	168.02
		9/18/2020	11.22	166.61
		3/16/2021	7.66	170.17
9/28/2021	10.54	167.29		
MW-40	177.28	12/11/2017	12.03	165.25
		12/19/2017	12.11	165.17
		12/28/2017	11.82	165.46
		2/21/2018	11.82	165.46
		3/21/2018	12.13	165.15
		9/17/2018	10.75	166.53
		3/21/2019	11.57	165.71
		9/20/2019	11.13	166.15
		9/20/2019	11.13	166.15
		3/17/2020	7.46	169.82
		9/18/2020	9.7	167.58
		3/16/2021	7.95	169.33
9/28/2021	11.21	166.07		

Notes:

1) ft AMSL = feet above mean sea level.

Table 2
Summary of First Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	Background Wells																			
			MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
			03/15/2021				03/16/2021				03/16/2021				03/15/2021				03/15/2021			
Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL			
CCR Appendix III																						
Boron	µg/L	1000	11.3	J	4.00	15.0	8.73	J	4.00	15.0	9.39	J	4.00	15.0	12.9	J	4.00	15.0	16.1		4.00	15.0
Calcium	mg/L	15.8	2.99		30.0	100	10.5		30.0	100	1.77		30.0	100	3.08		30.0	100	3.59		30.0	100
Chloride	mg/L	21.9	11.9		0.134	0.400	18.7		0.134	0.400	<3.47	U	3.47	0.400	2.04	J+	2.04	0.400	7.74		0.0670	0.400
Fluoride	mg/L	0.165	<0.0330	U	0.0330	0.100	0.0622	J	0.0330	0.100	<0.0330	U	0.0330	0.100	0.042	J	0.0330	0.100	0.0846	J	0.0330	0.100
pH	SU	3.4 - 6.2	4.67		0.01	0.01	4.41		0.01	0.01	4.77		0.01	0.01	4.77		0.01	0.01	4.72		0.01	0.01
Sulfate	mg/L	21.6	0.603		0.133	0.400	0.296	J	0.133	0.400	1.83		0.133	0.400	15.6		0.133	0.400	13.4		0.133	0.400
Total Dissolved Solids	mg/L	295.3	50.0		3.40	14.3	113		3.40	14.3	22.9		3.40	14.3	40.0		3.40	14.3	38.6		3.40	14.3
Field Parameters																						
Conductivity	µS/cm	--	61.5		0.1	0.1	187.2		0.1	0.1	39.9		0.1	0.1	54.6		0.1	0.1	65.8		0.1	0.1
Dissolved Oxygen	mg/L	--	3.71		0.01	0.01	8.18		0.01	0.01	7.3		0.01	0.01	5.01		0.01	0.01	3.34		0.01	0.01
Temperature	C	--	18.03		0.01	0.01	14.25		0.01	0.01	14.08		0.01	0.01	19.1		0.01	0.01	18.64		0.01	0.01
Turbidity	NTU	--	1.70		0.1	0.1	0.71		0.1	0.1	0.81		0.1	0.1	0.70		0.1	0.1	3.99		0.1	0.1
Depth to Water	ft btoc	--	5.31		0.01	0.01	11.59		0.01	0.01	8.33		0.01	0.01	7.65		0.01	0.01	7.66		0.01	0.01
Groundwater Elevation	ft msl	--	171.10		0.01	0.01	176.36		0.01	0.01	174.19		0.01	0.01	169.7		0.01	0.01	170.17		0.01	0.01
Oxidation Reduction Potential	millivolts	--	163.8		0.1	0.1	185.4		0.1	0.1	159.3		0.1	0.1	168.2		0.1	0.1	173.6		0.1	0.1

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
ft btoc = feet below top of casing
ft msl = feet above mean sea level

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on March 15 and 16, 2021

Table 2
Summary of First 2021 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	Downgradient Wells																								
			MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06 DUP				MW-LF-06				
			03/16/2021				03/16/2021				03/15/2021				03/15/2021				03/15/2021				03/15/2021				
Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
CCR Appendix III																											
Boron	µg/L	1000	17.3		4.00	15.0	10.2	J	4.00	15.0	11.2	J	4.00	15.0	11.2	J	4.00	15.0	8.47	J	4.00	15.0	8.53	J	4.00	15.0	
Calcium	mg/L	15.8	5.29		30.0	100	1.37		30.0	100	2.59		30.0	100	3.05		30.0	100	2.14		30.0	100	2.14		30.0	100	
Chloride	mg/L	21.9	31.9		0.335	0.400	<3.15	U	3.15	0.400	4.46		0.0670	0.400	9.13		0.0670	0.400	7.42		0.0670	0.400	7.53		0.0670	0.400	
Fluoride	mg/L	0.165	0.156		0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	
pH	SU	3.4 - 6.2	4.24		0.01	0.01	4.75		0.01	0.01	4.86		0.01	0.01	4.57		0.01	0.01	4.62		0.01	0.01	4.62		0.01	0.01	
Sulfate	mg/L	21.6	7.19		0.133	0.400	1.10		0.133	0.400	3.70		0.133	0.400	1.06		0.133	0.400	0.668		0.133	0.400	0.821		0.133	0.400	
Total Dissolved Solids	mg/L	295.3	111		3.40	14.3	22.9		3.40	14.3	45.7		3.40	14.3	50.0		3.40	14.3	37.1		3.40	14.3	45.7		3.40	14.3	
Field Parameters																											
Conductivity	µS/cm	--	168.6		0.1	0.1	37.8		0.1	0.1	61.5		0.1	0.1	71.5		0.1	0.1	55.1		0.1	0.1	55.1		0.1	0.1	
Dissolved Oxygen	mg/L	--	2.23		0.01	0.01	3.72		0.01	0.01	4.68		0.01	0.01	4.54		0.01	0.01	4.00		0.01	0.01	4.00		0.01	0.01	
Temperature	C	--	16.01		0.01	0.01	16.41		0.01	0.01	20.29		0.01	0.01	21.19		0.01	0.01	21.63		0.01	0.01	21.63		0.01	0.01	
Turbidity	NTU	--	1.50		0.1	0.1	0.67		0.1	0.1	4.49		0.1	0.1	0.95		0.1	0.1	2.46		0.1	0.1	2.46		0.1	0.1	
Depth to Water	ft btoc	--	22.12		0.01	0.01	20.45		0.01	0.01	21.01		0.01	0.01	18.74		0.01	0.01	17.53		0.01	0.01	17.53		0.01	0.01	
Groundwater Elevation	ft msl	--	167.96		0.01	0.01	166.74		0.01	0.01	163.19		0.01	0.01	159.21		0.01	0.01	161.04		0.01	0.01	161.04		0.01	0.01	
Oxidation Reduction Potential	millivolts	--	390.2		0.1	0.1	144.6		0.1	0.1	143.6		0.1	0.1	169.1		0.1	0.1	170.5		0.1	0.1	170.5		0.1	0.1	

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
ft btoc = feet below top of casing
ft msl = feet above mean sea level

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on March 15 and 16, 2021

Table 3
Summary of Second Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Sample ID: Sample	Background Wells																			
			MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
			09/28/2021				09/29/2021				09/29/2021				09/28/2021				09/28/2021			
Background Threshold Values	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL		
CCR Appendix III																						
Boron	µg/L	1000	10.6	J	4.00	4.00	8.58	J	4.00	4.00	10.6	J	4.00	4.00	18.6		4.00	4.00	19.1		4.00	4.00
Calcium	µg/L	15800	3130		30.0	30.0	9420		30.0	30.0	1620		30.0	30.0	1680		30.0	30.0	5630		30.0	30.0
Chloride	mg/L	21.9	17.0		0.335	0.335	17.4		0.335	0.335	2.34		0.0670	0.0670	3.31		0.0670	0.0670	15.1		0.134	0.134
Fluoride	mg/L	0.165	0.0913	J	0.0330	0.0330	0.0793	J	0.0330	0.0330	0.0661	J	0.0330	0.0330	<0.0330	U	0.0330	0.0330	0.105		0.0330	0.0330
pH	SU	3.4 - 6.2	4.27				4.19				4.64				4.56				4.35			
Sulfate	mg/L	21.6	0.418		0.133	0.133	0.273	J	0.133	0.133	1.95		0.133	0.133	8.71		0.133	0.133	9.07		0.133	0.133
Total Dissolved Solids	mg/L	295.3	32.9	J	3.40	3.40	88.6	J	3.40	3.40	12.9	J	3.40	3.40	25.7	J	3.40	3.40	41.4	J	3.40	3.40
Field Parameters																						
Conductivity	µS/cm	--	86.57		0.1	0.1	192.65		0.1	0.1	40.15		0.1	0.1	49.78		0.1	0.1	110.17		0.1	0.1
Dissolved Oxygen	mg/L	--	2.17		0.01	0.01	6.09		0.01	0.01	6.76		0.01	0.01	2.98		0.01	0.01	2.84		0.01	0.01
Temperature	C	--	27.29		0.01	0.01	21.35		0.01	0.01	21.01		0.01	0.01	26.97		0.01	0.01	24.82		0.01	0.01
Turbidity	NTU	--	1.18		0.1	0.1	0.79		0.1	0.1	0.79		0.1	0.1	0.83		0.1	0.1	1.42		0.1	0.1
Depth to Water	ft btoc	--	9.92		0.01	0.01	16.3		0.01	0.01	12.01		0.01	0.01	10.81		0.01	0.01	10.54		0.01	0.01
Groundwater Elevation	ft msl	--	166.49		0.01	0.01	171.65		0.01	0.01	170.51		0.01	0.01	166.54		0.01	0.01	167.29		0.01	0.01
Oxidation Reduction Potential	millivolts	--	269.2		0.1	0.1	191.8		0.1	0.1	186.1		0.1	0.1	200.8		0.1	0.1	191.3		0.1	0.1

Notes:

MDL = Method Detection Limit
 RL = Reporting Limit
 mg/L = Milligram per liter
 µg/L = Microgram per liter
 µS/cm = MicroSiemen per centimeter
 SU = Standard Units
 C = Degrees Celsius
 NTU = Nephelometric Turbidity Unit
 ft btoc = feet below top of casing
 ft msl = feet above mean sea level

Qualifiers (Qual)

J = Estimated Results
 J+ = Potentially high value
 U = Samples reported below their respective MDL
 = Concentration greater than Background Threshold Values
Bold font = Detected constituent
 * - Groundwater Elevation data collected on September 28, 2021

Table 3
Summary of Second 2021 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	Downgradient Wells																							
			MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06 DUP				MW-LF-06			
			Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
CCR Appendix III																										
Boron	µg/L	1000	17.0		4.00	4.00	9.29	J	4.00	4.00	9.97	J	4.00	4.00	10.4	J	4.00	4.00	11.9	J	4.00	4.00	11.3	J	4.00	4.00
Calcium	µg/L	15800	4390		30.0	30.0	1090		30.0	30.0	1780		30.0	30.0	2710		30.0	30.0	2060		30.0	30.0	2000		30.0	30.0
Chloride	mg/L	21.9	31.0		0.335	0.335	3.15		0.0670	0.0670	4.52		0.0670	0.0670	9.68		0.0670	0.0670	7.96		0.0670	0.0670	7.90		0.0670	0.0670
Fluoride	mg/L	0.165	0.203		0.0330	0.0330	0.0740	J	0.0330	0.0330	0.0773	J	0.0330	0.0330	0.0859	J	0.0330	0.0330	0.0868	J	0.0330	0.0330	0.0885	J	0.0330	0.0330
pH	SU	3.4 - 6.2	4.05				4.46				4.41				4.3				4.38				4.38			
Sulfate	mg/L	21.6	5.70		0.133	0.133	0.698		0.133	0.133	0.558		0.133	0.133	0.541		0.133	0.133	0.615		0.133	0.133	0.457		0.133	0.133
Total Dissolved Solids	mg/L	295.3	97.1	J	3.40	3.40	5.71	J	3.40	3.40	18.6	J	3.40	3.40	18.6		3.40	3.40	25.7	J	3.40	3.40	35.7	J	3.40	3.40
Field Parameters																										
Conductivity	µS/cm	--	164.08		0.1	0.1	37.78		0.1	0.1	49.81		0.1	0.1	79.23		0.1	0.1	60.51		0.1	0.1	60.51		0.1	0.1
Dissolved Oxygen	mg/L	--	0.22		0.01	0.01	2.01		0.01	0.01	4.38		0.01	0.01	4.43		0.01	0.01	4.37		0.01	0.01	4.37		0.01	0.01
Temperature	C	--	25.55		0.01	0.01	25.96		0.01	0.01	24.86		0.01	0.01	23.92		0.01	0.01	26.56		0.01	0.01	26.56		0.01	0.01
Turbidity	NTU	--	0.88		0.1	0.1	0.63		0.1	0.1	2.49		0.1	0.1	0.89		0.1	0.1	0.96		0.1	0.1	0.96		0.1	0.1
Depth to Water	ft btoc	--	26.06		0.01	0.01	24.95		0.01	0.01	24.65		0.01	0.01	21.2		0.01	0.01	20.49		0.01	0.01	20.49		0.01	0.01
Groundwater Elevation	ft msl	--	164.02		0.01	0.01	162.24		0.01	0.01	159.55		0.01	0.01	156.75		0.01	0.01	158.08		0.01	0.01	158.08		0.01	0.01
Oxidation Reduction Potential	millivolts	--	332.6		0.1	0.1	203.4		0.1	0.1	215.7		0.1	0.1	238		0.1	0.1	194.9		0.1	0.1	194.9		0.1	0.1

Notes:

MDL = Method Detection Limit
 RL = Reporting Limit
 mg/L = Milligram per liter
 µg/L = Microgram per liter
 µS/cm = MicroSiemen per centimeter
 SU = Standard Units
 C = Degrees Celsius
 NTU = Nephelometric Turbidity Unit
 ft btoc = feet below top of casing
 ft msl = feet above mean sea level




Qualifiers (Qual)

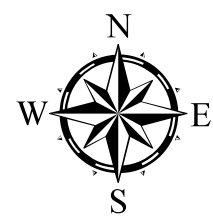
J = Estimated Results
 J+ = Potentially high value
 U = Samples reported below their respective MDL
 = Concentration greater than Background Threshold Values
Bold font = Detected constituent
 * - Groundwater Elevation data collected on September 28, 2021

Figures



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- LEGEND**
-  Monitoring Well
 -  Class II Landfill
 -  Class III Landfill



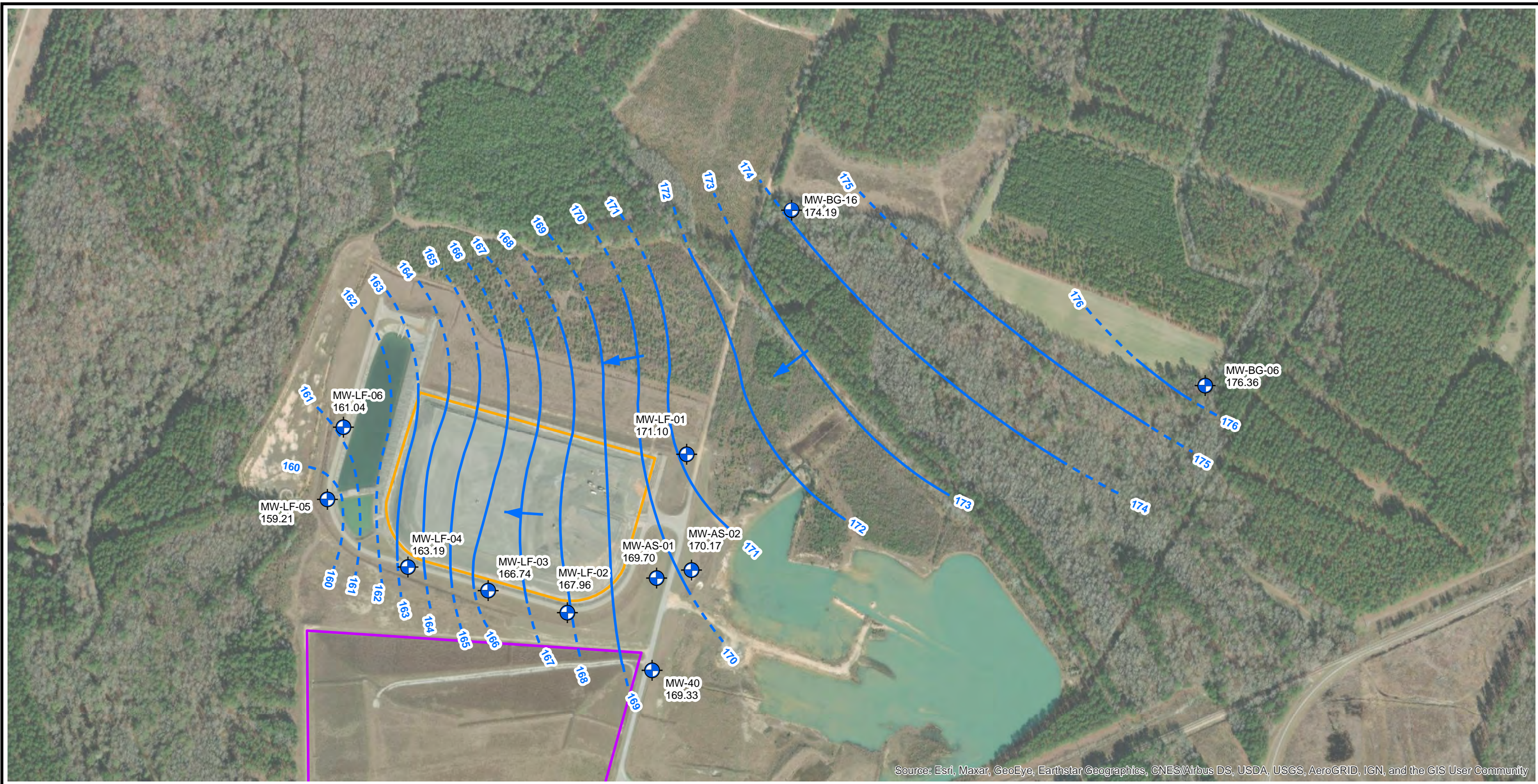
1" = 500'
1:6,000

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:		DESC COPE STATION CLASS III LANDFILL COPE, SOUTH CAROLINA	
TITLE:		CCR RULE COMPLIANCE MONITORING WELL NETWORK	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 2	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
FILE NO.:		Figure2_Cope_Class_III_CCR.mxd	



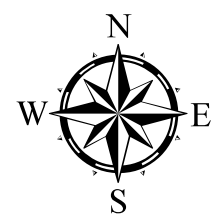
50 International Drive, S
 Palmetto Plaza Three
 Greenville, SC 29615
 Phone: 864.281.0030
 www.TRCCompanies.ca



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

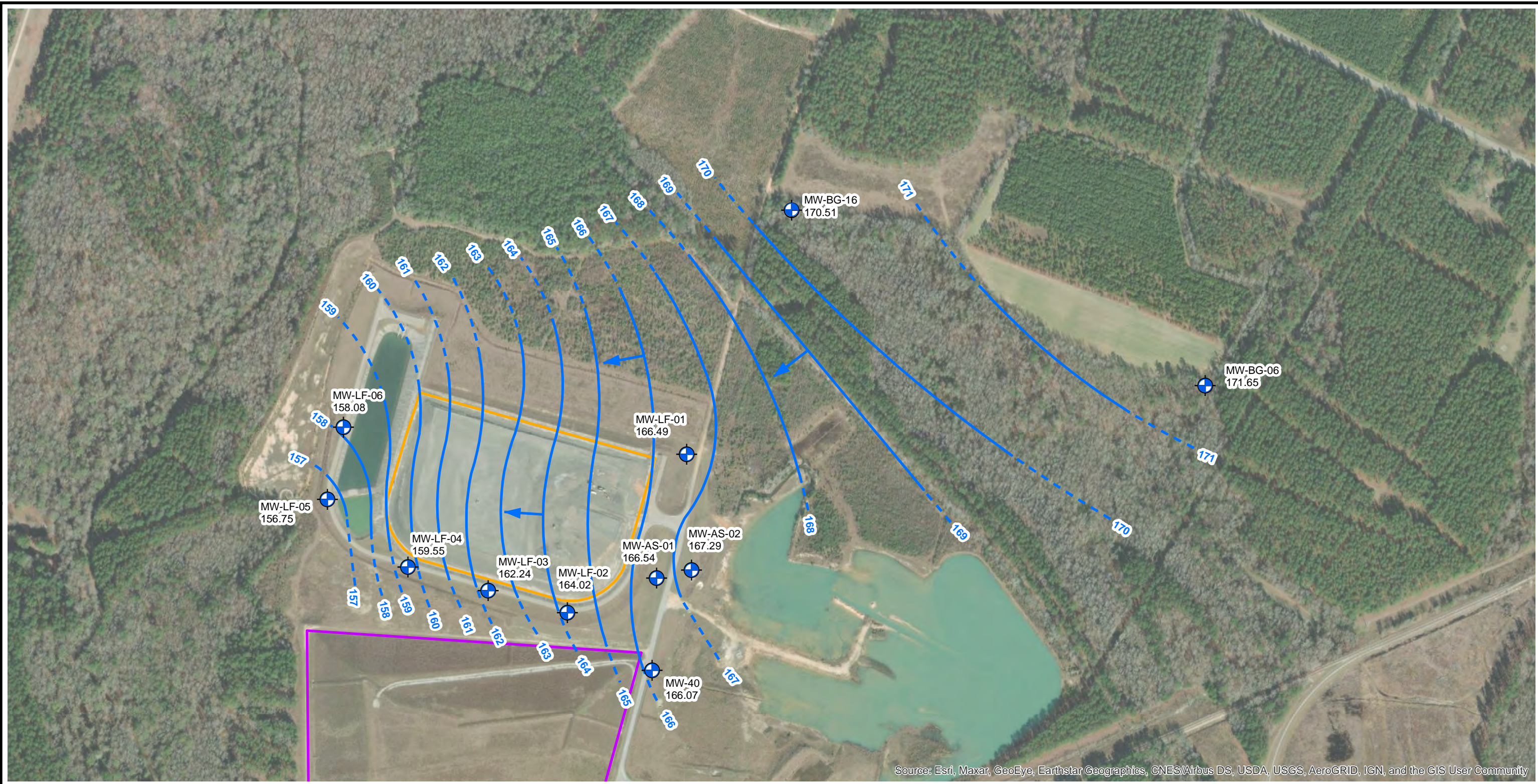
LEGEND

- Monitoring Well
- 159.21** Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill



NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:		DESC COPE STATION CLASS III LANDFILL COPE, SOUTH CAROLINA	
TITLE:		GROUNDWATER POTENTIOMETRIC SURFACE MAP MARCH 15 & 16, 2021	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 3	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
		50 International Drive, S Palmetto Plaza Three Greenville, SC 29615 Phone: 864.291.0030 www.TRCCompanies.ca	
FILE NO.:	Figure3_Cope_Class_III_CCR_202101.mxd		



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- Monitoring Well
- 156.75 Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill



NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:		DESC COPE STATION CLASS III LANDFILL COPE, SOUTH CAROLINA	
TITLE:		GROUNDWATER POTENTIOMETRIC SURFACE MAP SEPTEMBER 28, 2021	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 4	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
		50 International Drive, Suite 150 Patwood Plaza Three Greenville, SC 29615 Phone: 864.281.0030 www.TRCCompanies.com	
FILE NO.:		Figure4_Cope_Class_III_CCR_202103.mxd	

Appendix A

First Semiannual Detection Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms

COPE STATION - Class 2 & 3 Landfills - CCR

Date(s) Measured: 3-15/16-2021

Well ID	Well Diameter (inches)	Well Total Depth (ft BTOC)	Well Completion	Screen Length (ft)	Depth to Water (ft below TOC)	Pump Type
MW-LF-01	2	17.87 17.96	Stickup	10	5.31	Peri
MW-LF-02	2	31.89 32.40	Stickup	10	22.12	Peri
MW-LF-03	2	30.98 31.40	Stickup	10	20.45	Peri
MW-LF-04	2	30.83 31.25	Stickup	10	21.01	Peri
MW-LF-05	2	28.57 29.15	Stickup	10	18.74	Peri
MW-LF-06	2	27.82 28.20	Stickup	10	17.53	Peri
MW-BG-06	2	20.76 20.30	Stickup	10	11.59	Peri
MW-BG-16	2	28.82 29.25	Stickup	10	8.33	Peri
AS-LF-01	2	22.44	Stickup	10-20' (10)	7.65	Peri
AS-LF-02	2	22.65	Stickup	10-20' (10)	7.66	Peri
MW-40	2	28.14 ✓	Stickup	15-25' (10)	7.95	Peristaltic



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: MW-LF-01	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1351</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1410</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER			PH: <u>4.67</u> SU CONDUCTIVITY: <u>61.5</u> umhos/cm		
DEPTH TO WATER: <u>5.31</u> T/ PVC			ORP: <u>163.8</u> mV DO: <u>3.71</u> mg/L		
DEPTH TO BOTTOM: 17.67 T/ PVC <u>17.96</u>			TURBIDITY: <u>1.70</u> NTU		
WELL VOLUME: <u>1.98</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		
VOLUME REMOVED: <u>0.50</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			TEMPERATURE: <u>18.03</u> °C OTHER: <u>NA</u>		
COLOR: <u>clear</u> ODOR: <u>none</u>			COLOR: <u>clear</u> ODOR: <u>none</u>		
TURBIDITY: <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
			QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP- _____		
COMMENTS:					

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY % (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1355	125	4.67	59.9	189.1	3.82	2.71	19.41	5.36	INITIAL
1400	125	4.67	60.5	168.5	3.78	2.25	18.25	5.40	↓
1405	125	4.67	60.8	164.9	3.73	1.72	18.12	5.40	↓
1410	125	4.67	61.5	163.8	3.71	1.70	18.03	5.40	0.50

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____									
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED		NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE:	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>3-16-21</u> DATE: <u>055</u>	BY: <u>RAM</u> DATE: <u>3-16-21</u>

SAMPLE ID: MW-LF-02	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1051</u>	DATE: <u>3-16-21</u>	SAMPLE	TIME: <u>1120</u>	DATE: <u>3-16-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: <u>4.24</u> SU	CONDUCTIVITY: <u>168.6</u> umhos/cm	ORP: <u>390.2</u> mV	DO: <u>2.26</u> mg/L	
DEPTH TO WATER: <u>22.12</u> T/ PVC	TURBIDITY: <u>1.50</u> NTU		<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		
DEPTH TO BOTTOM: 31.93 T/ PVC <u>32.40</u>	TEMPERATURE: <u>16.01</u> °C	OTHER: <u>NA</u>	COLOR: <u>Clear</u> ODOR: <u>none</u>		
WELL VOLUME: <u>1.64</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS	FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	FILTRATE COLOR: <u>NA</u>	FILTRATE ODOR: <u>NA</u>	QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP-	
VOLUME REMOVED: <u>1.0</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS	TURBIDITY <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER		
COLOR: <u>Clear</u> ODOR: <u>none</u>	COMMENTS:				

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1056	120	4.21	187.5	295.2	3.30	4.83	13.99	22.19	INITIAL
1105	120	4.22	180.0	395.7	2.43	2.11	15.69	22.20	↓
1110	120	4.22	177.5	392.8	2.34	2.10	16.04	22.21	
1115	120	4.23	172.6	389.5	2.28	1.89	16.20	22.22	
1120	120	4.24	168.6	390.2	2.26	1.50	16.01	22.23	
[Handwritten Signature]									

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F -												
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
				<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
				<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134672711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: OJS	DATE: 3-16-21
	BY: RAM	DATE: 3-16-21

SAMPLE ID: MW-LF-03	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: 0958	DATE: 3-16-21	SAMPLE	TIME: 1020	DATE: 3-16-21
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: 4.75	SU	CONDUCTIVITY: 37.8	umhos/cm	
	ORP: 144.6	mV	DO: 3.72	mg/L	
DEPTH TO WATER: 20.45	T PVC		TURBIDITY: 0.67	NTU	
DEPTH TO BOTTOM: 30.98	T PVC		<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> SLIGHT	<input type="checkbox"/> MODERATE <input type="checkbox"/> VERY
WELL VOLUME: 1.75	<input type="checkbox"/> LITERS	<input checked="" type="checkbox"/> GALLONS	TEMPERATURE: 16.41	°C OTHER: NA	
VOLUME REMOVED: 0.65	<input type="checkbox"/> LITERS	<input checked="" type="checkbox"/> GALLONS	COLOR: Clear	ODOR: none	
COLOR: Clear	ODOR: none		FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
TURBIDITY <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			FILTRATE COLOR: NA	FILTRATE ODOR: NA	
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			COMMENTS: FBLK-21103 collected		

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1000	100	4.76	39.3	183.8	4.80	0.91	13.26	20.60	INITIAL
1005	100	4.75	38.5	152.6	4.07	0.92	15.21	20.63	↓ 0.65
1010	100	4.75	38.3	149.2	3.89	0.76	15.79	20.68	
1015	115	4.75	37.9	145.6	3.72	0.78	16.38	20.72	
1020	115	4.75	37.8	144.6	3.72	0.67	16.41	20.74	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F -												
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
2	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
2	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
2	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
				<input type="checkbox"/> Y <input type="checkbox"/> N										
				<input type="checkbox"/> Y <input type="checkbox"/> N										

SHIPPING METHOD: FedEx Overnight	DATE SHIPPED: 3-16-2021	AIRBILL NUMBER: 816134072711
COC NUMBER: 2021109	SIGNATURE:	DATE SIGNED: 3-16-2021



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-15-21</u>	BY: <u>KAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: MW-LF-04	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1621</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1725</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: <u>4.86</u> SU	CONDUCTIVITY: <u>61.5</u> umhos/cm	ORP: <u>143.6</u> mV	DO: <u>4.68</u> mg/L	
DEPTH TO WATER: <u>21.01</u> T/ PVC	TURBIDITY: <u>4.49</u> NTU	<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			
DEPTH TO BOTTOM: <u>30.83</u> T/ PVC <u>31.25</u>	TEMPERATURE: <u>20.29</u> °C	OTHER: <u>NA</u>			
WELL VOLUME: <u>1.64</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS	COLOR: <u>clear</u>	ODOR: <u>none</u>			
VOLUME REMOVED: <u>1.85</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS	FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
COLOR: <u>slightly cloudy</u>	FILTRATE COLOR: <u>NA</u>	FILTRATE ODOR: <u>NA</u>			
TURBIDITY: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY	QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP-				
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER	COMMENTS:				

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1625	100	4.86	65.3	174.9	4.39	25.6	21.02	21.02	INITIAL
1635	120	4.87	65.1	148.2	4.52	16.3	21.13	21.03	↓
1640	120	4.86	65.2	147.3	4.55	13.1	20.86	21.03	
1645	110	4.86	64.6	146.5	4.55	11.8	20.92	21.03	
1650	110	4.86	64.1	145.8	4.57	11.7	20.79	21.03	
1655	110	4.86	63.6	145.0	4.58	10.14	20.57	21.03	
1700	110	4.86	63.2	144.9	4.58	11.29	20.58	21.03	
1705	110	4.87	63.2	144.6	4.64	9.52	20.48	21.03	
1710	110	4.86	62.7	146.2	4.66	7.99	20.47	21.03	
1715	110	4.86	62.2	144.5	4.63	5.69	20.48	21.03	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES							
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

(CONTINUED FROM PREVIOUS PAGE)

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: RM/DS DATE: 3-15-21	BY: RAM DATE: 3-15-21

SAMPLE ID: MW-LF-04

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1720	110	4.85	61.2	143.5	4.63	4.85	20.30	21.03	↓
1725	110	4.86	61.5	143.6	4.68	4.49	20.29	21.03	1.85
<i>[Handwritten signature]</i>									

SIGNATURE: *[Handwritten Signature]*

DATE SIGNED: 3-15-2021



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>OJS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: MW-LF-05	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1540</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1600</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER			PH: <u>4.57</u> SU	CONDUCTIVITY: <u>71.5</u> umhos/cm	
DEPTH TO WATER: <u>18.74</u> T/ PVC			ORP: <u>169.1</u> mV	DO: <u>4.54</u> mg/L	
DEPTH TO BOTTOM: 28.57 T/ PVC <u>29.15</u>			TURBIDITY: <u>0.95</u> NTU		
WELL VOLUME: <u>1.67</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			TEMPERATURE: <u>21.19</u> °C OTHER: <u>NA</u>		
VOLUME REMOVED: <u>0.61</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			COLOR: <u>Clear</u> ODOR: <u>none</u>		
COLOR: <u>Clear</u> ODOR: <u>none</u>			FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
TURBIDITY: <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			COMMENTS:		

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1543	100	4.60	69.3	206.4	4.85	1.64	21.98	18.74	INITIAL
1550	115	4.58	71.1	166.6	4.58	0.93	21.10	18.74	↓
1555	115	4.58	71.4	165.5	4.50	0.85	21.15	18.74	
1600	115	4.57	71.5	169.1	4.54	0.95	21.19	18.74	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES							
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: MW-LF-06	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1442</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1504</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER			PH: <u>4.62</u> SU	CONDUCTIVITY: <u>55.1</u> umhos/cm	
			ORP: <u>170.5</u> mV	DO: <u>4.00</u> mg/L	
DEPTH TO WATER: <u>16.53</u> T/PVC <u>17.53</u>		TURBIDITY: <u>2.46</u> NTU			
DEPTH TO BOTTOM: <u>28.20</u> T/PVC		<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			
WELL VOLUME: <u>1.71</u> LITERS <input checked="" type="checkbox"/> GALLONS		TEMPERATURE: <u>21.63</u> °C		OTHER: <u>NA</u>	
VOLUME REMOVED: <u>0.75</u> LITERS <input checked="" type="checkbox"/> GALLONS		COLOR: <u>clear</u>		ODOR: <u>none</u>	
COLOR: <u>slightly cloudy</u> ODOR: <u>none</u>		FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
TURBIDITY: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		FILTRATE COLOR: <u>NA</u>		FILTRATE ODOR: <u>NA</u>	
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER		QC SAMPLE: <input type="checkbox"/> MS/MSD <input checked="" type="checkbox"/> DUP- <u>21102</u>			
COMMENTS: <u>collected duplicate sample</u>					

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1445	115	4.67	55.1	196.3	4.34	45.1	20.88	17.53	INITIAL
1450	115	4.62	54.9	167.8	3.97	8.20	21.28	17.53	↓
1455	120	4.62	54.9	168.3	3.94	5.14	21.37	17.53	
1458	120	4.62	55.0	168.9	3.90	4.24	21.37	17.53	
1501	120	4.62	55.1	170.3	3.98	3.28	21.59	17.53	
1504	120	4.62	55.1	170.5	4.00	2.46	21.63	17.53	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____									
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED		NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE:	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-16-21</u>	BY: <u>RAM</u> DATE: <u>3-16-21</u>

SAMPLE ID: MW-BG-06	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>0800</u>	DATE: <u>3-16-21</u>	SAMPLE	TIME: <u>0835</u>	DATE: <u>3-16-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: <u>4.41</u> SU	CONDUCTIVITY: <u>187.2</u> umhos/cm	ORP: <u>185.4</u> mV	DO: <u>8.18</u> mg/L	
DEPTH TO WATER: <u>11.59</u> T/ PVC	TURBIDITY: <u>0.71</u> NTU		<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		
DEPTH TO BOTTOM: 28.75 T/ PVC <u>30.30</u>	TEMPERATURE: <u>14.25</u> °C		OTHER: <u>NA</u>		
WELL VOLUME: <u>3.00</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	COLOR: <u>Clear</u>		ODOR: <u>none</u>		
VOLUME REMOVED: <u>1.0</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
COLOR: <u>Clear</u> ODOR: <u>none</u>	TURBIDITY		QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP-		
<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			
COMMENTS:					

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
0805	100	6.17	197.7	148.1	8.81	1.51	13.80	11.60	INITIAL
0825	100	4.43	186.9	199.3	8.14	1.31	14.37	11.60	↓
0830	100	4.41	186.7	190.3	8.05	1.10	14.30	11.60	
0835	100	4.41	187.2	185.4	8.18	0.71	14.25	11.60	1.0
<i>[Handwritten Signature]</i>									

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____								
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N	
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N	
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N	
<i>[Handwritten Signature]</i>										

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-16-21</u>	BY: <u>RAM</u> DATE: <u>3-16-21</u>

SAMPLE ID: MW-BG-16	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>0900</u>	DATE: <u>3-16-21</u>	SAMPLE	TIME: <u>0920</u>	DATE: <u>3-16-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: <u>4.77</u> SU	CONDUCTIVITY: <u>39.9</u> umhos/cm	ORP: <u>159.3</u> mV	DO: <u>7.30</u> mg/L	
DEPTH TO WATER: <u>8.33</u> T/ PVC	TURBIDITY: <u>0.81</u> NTU	<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			
DEPTH TO BOTTOM: 28.87 T/ PVC <u>29.25</u>	TEMPERATURE: <u>14.08</u> °C	OTHER: <u>NA</u>			
WELL VOLUME: <u>3.35</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	COLOR: <u>clear</u>	ODOR: <u>none</u>			
VOLUME REMOVED: <u>0.50</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>			
COLOR: <u>clear</u> ODOR: <u>none</u>	TURBIDITY <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY	QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP-			
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER	COMMENTS:				

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
0903	100	4.80	41.8	162.9	7.77	1.29	12.44	8.35	INITIAL
0910	100	4.79	39.9	160.1	7.33	0.58	13.78	8.35	↓
0915	100	4.79	40.1	159.5	7.31	0.94	14.03	8.35	
0920	100	4.77	39.9	159.3	7.30	0.81	14.08	8.35	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____									
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED		NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE:	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DSS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: AS-LF-01	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1308</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1326</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER			PH: <u>4.77</u> SU CONDUCTIVITY: <u>54.6</u> umhos/cm		
DEPTH TO WATER: <u>7.65</u> T/ PVC			ORP: <u>168.2</u> mV DO: <u>5.01</u> mg/L		
DEPTH TO BOTTOM: <u>22.44</u> T/ PVC			TURBIDITY: <u>0.70</u> NTU		
WELL VOLUME: <u>2.37</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		
VOLUME REMOVED: <u>0.50</u> LITERS <input type="checkbox"/> <input checked="" type="checkbox"/> GALLONS			TEMPERATURE: <u>19.10</u> °C OTHER: <u>NA</u>		
COLOR: <u>Clear</u> ODOR: <u>none</u>			FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
COMMENTS: <u>FBLE-21102 collected</u>					

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1312	100	4.78	53.2	204.1	5.21	0.86	21.06	7.73	INITIAL
1320	100	4.77	54.2	172.4	5.01	0.90	19.12	7.73	↓
1323	100	4.78	54.7	168.9	5.00	0.44	19.05	7.73	
1326	100	4.77	54.6	168.2	5.01	0.70	19.10	7.73	
<i>[Handwritten signature]</i>									

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____							
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
<i>[Handwritten signature]</i>									

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>DJS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: AS-LF-02	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1225</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1246</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER	PH: <u>4.72</u> SU		CONDUCTIVITY: <u>65.8</u> umhos/cm		
DEPTH TO WATER: <u>7.66</u> T/ PVC	ORP: <u>173.6</u> mV		DO: <u>3.34</u> mg/L		
DEPTH TO BOTTOM: <u>22.65</u> T/ PVC	TURBIDITY: <u>3.99</u> NTU		<input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY		
WELL VOLUME: <u>2.40</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	TEMPERATURE: <u>18.64</u> °C		OTHER: <u>NA</u>		
VOLUME REMOVED: <u>0.55</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS	COLOR: <u>Clear</u>		ODOR: <u>none</u>		
COLOR: <u>Clear</u> ODOR: <u>none</u>	FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
TURBIDITY: <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY	QC SAMPLE: <input type="checkbox"/> MS/MSD <input type="checkbox"/> DUP-		COMMENTS:		
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER					

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1230	100	4.73	65.9	272.5	3.47	3.49	18.67	7.68	INITIAL
1235	100	4.72	65.3	188.5	3.39	4.21	18.33	7.70	↓
1240	100	4.72	65.8	180.1	3.39	3.81	18.25	7.72	
1243	100	4.71	66.3	178.4	3.39	3.56	18.66	7.74	
1246	100	4.72	65.8	173.6	3.34	3.99	18.64	7.75	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____							
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	250 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
1	125 mL	PLASTIC	A	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED	CHECKED
PROJECT NUMBER: 416559.0002.0000.2.2	BY: <u>OJS</u> DATE: <u>3-15-21</u>	BY: <u>RAM</u> DATE: <u>3-15-21</u>

SAMPLE ID: MW-40	WELL DIAMETER: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> OTHER
WELL MATERIAL: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> SS <input type="checkbox"/> IRON <input type="checkbox"/> GALVANIZED STEEL <input type="checkbox"/> OTHER	
SAMPLE TYPE: <input checked="" type="checkbox"/> GW <input type="checkbox"/> WW <input type="checkbox"/> SW <input type="checkbox"/> DI <input type="checkbox"/> LEACHATE <input type="checkbox"/> OTHER	

PURGING	TIME: <u>1111</u>	DATE: <u>3-15-21</u>	SAMPLE	TIME: <u>1156</u>	DATE: <u>3-15-21</u>
PURGE METHOD: <input checked="" type="checkbox"/> PUMP PERISTALTIC PUMP <input type="checkbox"/> BAILER			PH: <u>4.37</u> SU	CONDUCTIVITY: <u>381.2</u> umhos/cm	
DEPTH TO WATER: <u>7.95</u> T/ PVC			ORP: <u>235.9</u> mV	DO: <u>0.21</u> mg/L	
DEPTH TO BOTTOM: <u>28.14</u> ✓ T/ PVC			TURBIDITY: <u>1.82</u> NTU		
WELL VOLUME: <u>3.23</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS			TEMPERATURE: <u>18.99</u> °C OTHER: <u>NA</u>		
VOLUME REMOVED: <u>1.25</u> <input type="checkbox"/> LITERS <input checked="" type="checkbox"/> GALLONS			COLOR: <u>clear</u> ODOR: <u>none</u>		
COLOR: <u>clear</u> ODOR: <u>none</u>			FILTRATE (0.45 um) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
TURBIDITY: <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> VERY			FILTRATE COLOR: <u>NA</u> FILTRATE ODOR: <u>NA</u>		
DISPOSAL METHOD: <input type="checkbox"/> GROUND <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> OTHER			COMMENTS:		

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
<u>1115</u>	<u>100</u>	<u>4.48</u>	<u>342.8</u>	<u>234.6</u>	<u>2.93</u>	<u>5.98</u>	<u>18.57</u>	<u>7.95</u>	INITIAL
<u>1145</u>	<u>100</u>	<u>4.38</u>	<u>381.8</u>	<u>237.1</u>	<u>0.32</u>	<u>2.81</u>	<u>18.56</u>	<u>7.95</u>	↓
<u>1150</u>	<u>100</u>	<u>4.38</u>	<u>379.2</u>	<u>234.0</u>	<u>0.23</u>	<u>2.55</u>	<u>18.65</u>	<u>7.95</u>	
<u>1153</u>	<u>100</u>	<u>4.38</u>	<u>379.4</u>	<u>235.2</u>	<u>0.22</u>	<u>1.91</u>	<u>18.81</u>	<u>7.95</u>	
<u>1156</u>	<u>100</u>	<u>4.37</u>	<u>381.2</u>	<u>235.9</u>	<u>0.21</u>	<u>1.82</u>	<u>18.99</u>	<u>7.95</u>	

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- 0.1 COND.: +/- 3% ORP: +/- 10 D.O.: +/- 10% TURB: +/- 10% or <= 5 TEMP.: +/- 3%

BOTTLES FILLED		PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____									
NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED		NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	
<u>1</u>	<u>250 mL</u>	<u>PLASTIC</u>	<u>B</u>	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
<u>1</u>	<u>250 mL</u>	<u>PLASTIC</u>	<u>A</u>	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
<u>1</u>	<u>125 mL</u>	<u>PLASTIC</u>	<u>A</u>	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N
				<input type="checkbox"/> Y	<input type="checkbox"/> N					<input type="checkbox"/> Y	<input type="checkbox"/> N

SHIPPING METHOD: <u>FedEx Overnight</u>	DATE SHIPPED: <u>3-16-2021</u>	AIRBILL NUMBER: <u>816134072711</u>
COC NUMBER: <u>2021109</u>	SIGNATURE: <u>[Signature]</u>	DATE SIGNED: <u>3-16-2021</u>



WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: IN-SITU SmarTroll	SAMPLER: RM/DS
PROJECT NO.: 416559.0002.0000.2.2	SERIAL #: 405016	DATE: 3-15-2021

PH CALIBRATION CHECK

pH 7 (LOT #): 19340057 (EXP. DATE): 8/21	pH 4 / 10 (LOT #): 19320102 (EXP. DATE): 8/21	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD	PRE-CAL. READING / STANDARD		
6.92 / 7.00	9.90 / 10.0	<input type="checkbox"/> WITHIN RANGE	1120
7.04 / 7.00	9.98 / 10.0	<input checked="" type="checkbox"/> WITHIN RANGE	1121
/	/	<input type="checkbox"/> WITHIN RANGE	
/	/	<input type="checkbox"/> WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): (EXP. DATE):	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
4489 / 4490	15.6	<input checked="" type="checkbox"/> WITHIN RANGE	1123
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 19460167 (EXP. DATE): 8/21	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
216.4 / 228	19.99	<input type="checkbox"/> WITHIN RANGE	1115
232.2 / 228	19.87	<input checked="" type="checkbox"/> WITHIN RANGE	1116
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
8.14 mg/L Cal 8.91 mg/L Baro = 1019.3 764.5 mm/Hg	<input checked="" type="checkbox"/> WITHIN RANGE	1125
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU)		CAL. RANGE	TIME
(LOT #):	(LOT #):		
(EXP. DATE):	(EXP. DATE):		
PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD		
0.2 / 0	0.1 / 0	<input checked="" type="checkbox"/> WITHIN RANGE	1121
0.4 / 1	0.9 / 1	<input checked="" type="checkbox"/> WITHIN RANGE	1122
9.96 / 10	9.91 / 10	<input checked="" type="checkbox"/> WITHIN RANGE	1122
/	/	<input type="checkbox"/> WITHIN RANGE	

COMMENTS

<input checked="" type="checkbox"/> AUTOCAL SOLUTION (LOT #): 20010025 (EXP. DATE): 8/21	<input type="checkbox"/> STANDARD SOLUTION (S) LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
CALIBRATED PARAMETERS	CALIBRATION RANGES ⁽¹⁾
<input checked="" type="checkbox"/> pH	pH: +/- 0.2 S.U.
<input checked="" type="checkbox"/> COND	COND: +/- 1% OF CAL. STANDARD
<input checked="" type="checkbox"/> ORP	ORP: +/- 25 mV
<input type="checkbox"/> D.O.	D.O.: VARIES
<input type="checkbox"/> TURB	TURB: +/- 5% OF CAL. STANDARD
<input type="checkbox"/>	
<input type="checkbox"/>	
<small>(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER</small>	

NOTES

Turbidity Meter - Camotte 2020wE
5573

PROBLEMS ENCOUNTERED

CORRECTIVE ACTIONS

<p style="font-size: 2em; text-align: center;">NONE</p>	
---	--

SIGNED: *[Signature]* DATE: 3-15-2021

CHECKED BY: *[Signature]* DATE: 3-15-2021



WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: IN-SITU SmarTroll	SAMPLER: <u>RM</u> DS
PROJECT NO.: 416559.0002.0000.2.2	SERIAL #: 405016	DATE: 3-16-2021

PH CALIBRATION CHECK

pH 7 (LOT #): 19340057 (EXP. DATE): 8/21	pH 4/10 (LOT #): 193230102 (EXP. DATE): 8/21	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD	PRE-CAL. READING / STANDARD		
2.40 / 1	1	<input type="checkbox"/> WITHIN RANGE	
7.06 / 7.00	9.82 / 10.0	<input type="checkbox"/> WITHIN RANGE	0803
7.01 / 7.00	10.00 / 10.00	<input checked="" type="checkbox"/> WITHIN RANGE	0805
1	1	<input type="checkbox"/> WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): (EXP. DATE):	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
4371 / 4490	15.2	<input type="checkbox"/> WITHIN RANGE	0756
4490.5 / 4490	15.5	<input checked="" type="checkbox"/> WITHIN RANGE	0757
1		<input type="checkbox"/> WITHIN RANGE	
1		<input type="checkbox"/> WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): (EXP. DATE):	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
240.2 / 228	14.8	<input checked="" type="checkbox"/> WITHIN RANGE	0753
228.2 / 228	15.0	<input checked="" type="checkbox"/> WITHIN RANGE	0754
1		<input type="checkbox"/> WITHIN RANGE	
1		<input type="checkbox"/> WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
	<input checked="" type="checkbox"/> WITHIN RANGE	0810
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	

Barro = 760.7 mg/Hg
10.0 mg/L calc
8.95 mg/L ACT

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU)		CAL. RANGE	TIME
(LOT #): (EXP. DATE):	(LOT #): (EXP. DATE):		
PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD		
0.11 / 0	-0.01 / 0.0	<input checked="" type="checkbox"/> WITHIN RANGE	0808
0.91 / 1	0.99 / 1.0	<input checked="" type="checkbox"/> WITHIN RANGE	0808
11.85 / 10.0	10.04 / 10.0	<input checked="" type="checkbox"/> WITHIN RANGE	0810
1	1	<input type="checkbox"/> WITHIN RANGE	

COMMENTS

<input checked="" type="checkbox"/> AUTOCAL SOLUTION (LOT #): 20010025 (EXP. DATE): 8/21	<input type="checkbox"/> STANDARD SOLUTION (S) LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
CALIBRATED PARAMETERS	CALIBRATION RANGES ⁽¹⁾
<input checked="" type="checkbox"/> pH	pH: +/- 0.2 S.U.
<input checked="" type="checkbox"/> COND	COND: +/- 1% OF CAL. STANDARD
<input checked="" type="checkbox"/> ORP	ORP: +/- 25 mV
<input checked="" type="checkbox"/> D.O.	D.O.: VARIES
<input type="checkbox"/> TURB	TURB: +/- 5% OF CAL. STANDARD
<input type="checkbox"/> _____	
<input type="checkbox"/> _____	

(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER

NOTES

Turbidity meter - LaMotte 2020WS
5573

PROBLEMS ENCOUNTERED

CORRECTIVE ACTIONS

NONE

[Signature]

3-16-2021

SIGNED

DATE

[Signature]

3-16-2021

CHECKED BY

DATE

Calibration Report:

pH Calibration Report
2021-03-01 14:26:51

Probe: 465016

4.00 to 7.00 pH

Slope: -58.56 mV/pH

Offset: 7.04 pH

7.00 to 10.00 pH

Slope: -54.35 mV/pH

Offset: 7.04 pH

Stability: Full

Calibration Report: Conductivity Calibration Report
2021-03-01 14:17:21

Probe: 465016

Cell Constant: 0.9931

Stability: Full

Calibration Report: ORP Calibration Report
2021-03-01 14:32:01
Probe: 465016
User Defined: 228.0 mV
Offset: -10.6 mV
Stability: Full

Calibration Report: RDO Calibration Report
2021-03-01 14:15:36

Probe: 465016
Slope: 1.0398
Offset: -0.0000
Stability: Full



March 30, 2021

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219

Re: CCR Groundwater Monitoring - Level 1 Package
Work Order: 538048

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 17, 2021. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4708.

Sincerely,

Kerry OBarr for
Taylor Cannon
Project Manager

Purchase Order: 50149867
Chain of Custody: 2021109
Enclosures

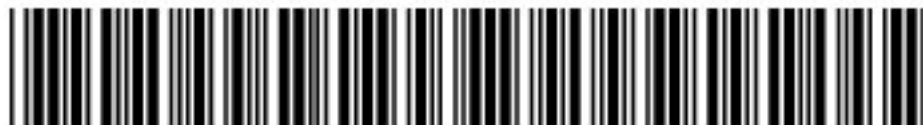


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Case Narrative

**Receipt Narrative
for
Dominion Energy (50149867)
SDG: 538048**

March 30, 2021

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 17, 2021 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

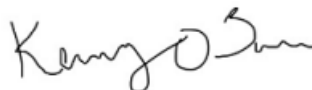
Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
538048001	MW-LF-01-2021Q1
538048002	MW-LF-02-2021Q1
538048003	MW-LF-03-2021Q1
538048004	MW-LF-04-2021Q1
538048005	MW-LF-05-2021Q1
538048006	FBLK-21102
538048007	MW-LF-06-2021Q1
538048008	MW-BG-06-2021Q1
538048009	MW-BG-16-2021Q1
538048010	DU-21102
538048011	AS-LF-01-2021Q1
538048012	AS-LF-02-2021Q1
538048013	MW-40-2021Q1
538048014	FBLK-21103

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: General Chemistry and Metals.

A handwritten signature in black ink, appearing to read "Kerry O'Barr". The signature is fluid and cursive, with a large initial "K" and a stylized "O".

Kerry O'Barr for
Taylor Cannon
Project Manager

Chain of Custody and Supporting Documentation

Client Name: Dominion Energy
 Project/Site Name: Cope Station Landfill CCR 2021Q1
 Address: Cope, South Carolina
 Collected By: R. Mayer / D. Szydal
 Send Results To: AReed@envsvid.com
 Phone # 803-258-1528
 Fax # _____

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code	Field Filtered	Sample Matrix	Radioactive (If yes, please supply isotopic info)	Should this sample be considered:	Total number of containers	Sample Analysis Requested (5) (Fill in the number of containers for each test)	Comments
MW-LF-01-2021Q1	3-15-21	1410	N	N	GW	N	OT	3	1 1 1	
MW-LF-02-2021Q1	3-16-21	1120	N	N	GW	N	OT	3	1 1 1	
MW-LF-03-2021Q1	3-16-21	1020	N	N	GW	N	OT	6	2 2 2	MS/MSD
MW-LF-04-2021Q1	3-15-21	1725	N	N	GW	N	OT	3	1 1 1	
MW-LF-05-2021Q1	3-15-21	1600	N	N	GW	N	OT	3	1 1 1	
FOLK-21102	3-15-21	1340	FB	N	AQ	N	OT	3	1 1 1	see attached work order for details
MW-LF-06-2021Q1	3-15-21	1504	N	N	GW	N	OT	3	1 1 1	
MW-BG-06-2021Q1	3-16-21	0835	N	N	GW	N	OT	3	1 1 1	
MW-BG-16-2021Q1	3-16-21	0920	N	N	GW	N	OT	3	1 1 1	
DU-21102	3-15-21	—	N	N	GW	N	OT	3	1 1 1	

Relinquished By (Signed) _____ Date _____ Time _____
 Received by (signed) _____ Date 3-17-21 Time 1020
 1. _____
 2. _____
 3. _____

Chain of Custody Signatures
 Chain of Custody Number = Client Determined

For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

- Chain of Custody Number = Client Determined
- QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
- Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
- Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
- Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
- Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank
- KNOWN OR POSSIBLE HAZARDS

RCRA Metals	As = Arsenic	Hg = Mercury	Se = Selenium
Ba = Barium	Cd = Cadmium	Ag = Silver	MR = Misc. RCRA metals
Pb = Lead	Cr = Chromium	PCB = Polychlorinated biphenyls	

Other: _____
 Description: _____

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code	Field Filtered	Sample Matrix	Total number of containers	Should this sample be considered:	Sample Analysis Requested (6)	Preservative Type (6)	Comments
AS-LF-01-2021Q1	3-15-21	1326	N	N	GW	3	OT	1	1	
AS-LF-02-2021Q1	3-15-21	1346	N	N	GW	3	OT	1	1	
MW-40-2021Q1	3-15-21	1156	N	N	GW	6	OT	2	2	
FBLK-21102			FB	N	AQ	3	OT	1	1	(21102)
FBLK-21103	3-16-21	1030	FB	N	AQ	3	OT	1	1	

Chain of Custody Signatures

Relinquished By (Signed)	Date	Received by (signed)	Date	Time
<i>[Signature]</i>	3-16-21	<i>[Signature]</i>	3/17/21	1030

Fax Results: Yes No
 Select Deliverable: C of A QC Summary Level 1 Level 2 Level 3 Level 4
 Additional Remarks:
 For Lab Receiving Use Only: Custody Seal Intact? Yes No Cooler Temp: 4 °C
 Sample Collection Time Zone: Eastern Pacific Mountain Other

For sample shipping and delivery details, see Sample Receipt & Review form (SRR)

1.) Chain of Custody Number = Client Determined
 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
 4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, ML = MISC Liquid, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal
 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank
 7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals	Characteristic Hazards	Listed Waste	Other
As = Arsenic Ba = Barium Cd = Cadmium Cr = Chromium Pb = Lead	FL = Flammable/ignitable CO = Corrosive RE = Reactive	LW = Listed Waste (F, K, P and U-listed wastes)	OT = Other / Unknown (i.e., High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Hg = Mercury Se = Selenium Ag = Silver MR = Misc. RCRA metals	TSCA Regulated PCB = Polychlorinated biphenyls		

Please provide any additional details below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)

Work Order for COPE LANDFILL - CCR 2021Q1

Project: Dominion Energy (PO 50149867)
 Project Number: 416559.0002.0000 2.2
 Sample Date: March 2021
 Type of Turnaround: Standard
 QC Package: Level 1
 TRC Format EDD needed - yes
 Detection Limits: S.C. R.61-68 (Water Classifications and Standards System)
 Report J Values

TRC Project Manager: Rick Mayer
 TRC Project Contact: Rick Mayer
 TRC Alternate Contact: David Szynal
 Work Order Prepared By/Date: RAM/030521
 Work Order QCed By/Date: DJJ /030821

Deliver Samples to:
GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Ph: (843) 556-8171
 Contact: Taylor Cannon
 Email: Taylor.Cannon@gel.com

SAMPLE STATION	Laboratory Analyzed Parameters			Field Measured Parameters			Notes	
	Alkalinity via SM2320B	Total Dissolved Solids via SM2540C	Chloride, Fluoride, Sulfate via EPA 300.0	Total Metals (See Notes)	pH, Sp. Cond, ORP, DO, Water Temperature	Turbidity		Depth to Groundwater
LAB ID	GEL Laboratories LLC							
MW-LF-01-2021Q1	X	X	X	X	X	X	Field	Collect water levels from each well (see attached) EPA Method 200.7 Potassium Calcium Lithium Sodium Magnesium Boron
MW-LF-02-2021Q1	X	X	X	X	X	X	Field	
MW-LF-03-2021Q1	X	X	X	X	X	X	Field	
MW-LF-04-2021Q1	X	X	X	X	X	X	Field	
MW-LF-05-2021Q1	X	X	X	X	X	X	Field	
MW-LF-06-2021Q1	X	X	X	X	X	X	Field	
MW-BG-06-2021Q1	X	X	X	X	X	X	Field	
MW-BG-16-2021Q1	X	X	X	X	X	X	Field	
AS-LF-01-2021Q1	X	X	X	X	X	X	Field	
AS-LF-02-2021Q1	X	X	X	X	X	X	Field	
MW-40-2021Q1	X	X	X	X	X	X	Field	
DU-21102	X	X	X	X				
FBLK-21102	X	X	X	X				
FBLK-21103	X	X	X	X				
FBLK-21101	X	X	X	X				

Please include 1 gallon of DI water with bottles for blank samples

SAMPLE RECEIPT & REVIEW FORM

Client: DMNN		SDG/AR/COC/Work Order:	
Received By: CNO		Date Received: 3/17/21	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		8161 3407 2711	
Suspected Hazard Information		<input type="checkbox"/> Yes	<input type="checkbox"/> No
*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.			
A) Shipped as a DOT Hazardous?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___			
B) Did the client designate the samples are to be received as radioactive?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
COC notation or radioactive stickers on containers equal client designation.			
C) Did the RSO classify the samples as radioactive?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3			
D) Did the client designate samples are hazardous?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
COC notation or hazard labels on containers equal client designation.			
E) Did the RSO identify possible hazards?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If D or E is yes, select Hazards below: PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:			
Sample Receipt Criteria		<input type="checkbox"/> Yes	<input type="checkbox"/> NA
		<input type="checkbox"/> No	
		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: Seals broken Damaged container Leaking container Other (describe)			
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: Client contacted and provided COC COC created upon receipt			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>4°C</u>			
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Temperature Device Serial #: <u>IR3-18</u> Secondary Temperature Device Serial # (If Applicable):			
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: Seals broken Damaged container Leaking container Other (describe)			
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Sample ID's and Containers Affected: <u>JW0319</u> If Preservation added, Lot#: <u>MW-LF-03 and ASLF-02-3021Q1</u>			
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected:			
8	Samples received within holding time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
ID's and tests affected:			
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
ID's and containers affected:			
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)			
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: No container count on COC Other (describe)			
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Circle Applicable: Not relinquished Other (describe)			
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials WJ Date 3/18 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 30 March 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122020-34
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 538048

Product: Determination of Metals by ICP-MS
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 34
Analytical Batch: 2104296

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2104295

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
538048001	MW-LF-01-2021Q1
538048002	MW-LF-02-2021Q1
538048003	MW-LF-03-2021Q1
538048004	MW-LF-04-2021Q1
538048005	MW-LF-05-2021Q1
538048006	FBLK-21102
538048007	MW-LF-06-2021Q1
538048008	MW-BG-06-2021Q1
538048009	MW-BG-16-2021Q1
538048010	DU-21102
538048011	AS-LF-01-2021Q1
538048012	AS-LF-02-2021Q1
538048013	MW-40-2021Q1
538048014	FBLK-21103
1204776178	Method Blank (MB)ICP-MS
1204776179	Laboratory Control Sample (LCS)
1204776182	538048003(MW-LF-03-2021Q1L) Serial Dilution (SD)
1204776185	538048011(AS-LF-01-2021Q1L) Serial Dilution (SD)
1204776180	538048003(MW-LF-03-2021Q1D) Sample Duplicate (DUP)
1204776183	538048011(AS-LF-01-2021Q1D) Sample Duplicate (DUP)
1204776181	538048003(MW-LF-03-2021Q1S) Matrix Spike (MS)
1204776184	538048011(AS-LF-01-2021Q1S) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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

Qualifier Definition Report for

DMNN001 Dominion Energy (50149867)

Client SDG: 538048 GEL Work Order: 538048

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Edmund Frampton

Date: 30 MAR 2021

Title: Team Leader

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048001

CLIENT ID: MW-LF-01-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	11.3	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	2990	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	1410	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	527	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	4310	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048002

CLIENT ID: MW-LF-02-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	17.3	ug/L			MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	5290	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	3720	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	5200	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	8580	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048003

CLIENT ID: MW-LF-03-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	10.2	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	1370	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.02	ug/L	B		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	742	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1590	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	1890	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048004

CLIENT ID: MW-LF-04-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	11.2	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	2590	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	1940	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	426	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	5180	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048005

CLIENT ID: MW-LF-05-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	11.2	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	3050	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	2270	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1070	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	3810	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048006

CLIENT ID: FBLK-21102

CONTRACT: DMNN00101

MATRIX:AQ

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	4.00	ug/L	U		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	30.0	ug/L	U		MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	10.0	ug/L	U		MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	80.0	ug/L	U		MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	80.0	ug/L	U		MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048007

CLIENT ID: MW-LF-06-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	8.53	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	2140	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	1800	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	316	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	3170	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048008

CLIENT ID: MW-BG-06-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	8.73	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	10500	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	8710	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1780	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	3200	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048009

CLIENT ID: MW-BG-16-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	9.39	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	1770	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	1140	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1400	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	1230	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048010

CLIENT ID: DU-21102

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	8.47	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	2140	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	1820	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	326	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	3210	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048011

CLIENT ID: AS-LF-01-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	12.9	ug/L	B		MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	3080	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	841	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1230	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	3840	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048012

CLIENT ID: AS-LF-02-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	16.1	ug/L			MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	3590	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	2910	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	1630	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	2870	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048013

CLIENT ID: MW-40-2021Q1

CONTRACT: DMNN00101

MATRIX:GW

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	58.1	ug/L			MS	4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	33500	ug/L			MS	30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U		MS	2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	9970	ug/L			MS	10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	6440	ug/L			MS	80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	25000	ug/L			MS	80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 538048

METHOD TYPE: EPA

SAMPLE ID: 538048014

CLIENT ID: FBLK-21103

CONTRACT: DMNN00101

MATRIX:AQ

DATE RECEIVED 17-MAR-21

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-42-8	Boron	4.00	ug/L	U	MS		4.00	1	ICPMS14	210325-1
7440-70-2	Calcium	30.0	ug/L	U	MS		30.0	1	ICPMS14	210325-1
7439-93-2	Lithium	2.00	ug/L	U	MS		2.00	1	ICPMS14	210325-1
7439-95-4	Magnesium	10.0	ug/L	U	MS		10.0	1	ICPMS14	210325-1
7440-09-7	Potassium	80.0	ug/L	U	MS		80.0	1	ICPMS14	210325-1
7440-23-5	Sodium	80.0	ug/L	U	MS		80.0	1	ICPMS14	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

Quality Control Summary

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 538048

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS14

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICV01										
	Boron	104	ug/L	100	ug/L	104.3	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
	Calcium	5000	ug/L	5000	ug/L	100.1	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
	Lithium	50.3	ug/L	50	ug/L	100.6	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
	Magnesium	5110	ug/L	5000	ug/L	102.1	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
	Potassium	5010	ug/L	5000	ug/L	100.2	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
	Sodium	5120	ug/L	5000	ug/L	102.4	90.0 – 110.0	MS	25-MAR-21 17:34	210325-1
CCV01										
	Boron	100	ug/L	100	ug/L	100.5	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
	Calcium	5190	ug/L	5000	ug/L	103.7	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
	Lithium	51.6	ug/L	50	ug/L	103.1	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
	Magnesium	5300	ug/L	5000	ug/L	106	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
	Potassium	5140	ug/L	5000	ug/L	102.7	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
	Sodium	5320	ug/L	5000	ug/L	106.4	90.0 – 110.0	MS	25-MAR-21 17:51	210325-1
CCV02										
	Boron	103	ug/L	100	ug/L	103.1	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
	Calcium	5220	ug/L	5000	ug/L	104.3	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
	Lithium	52.1	ug/L	50	ug/L	104.2	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
	Magnesium	5390	ug/L	5000	ug/L	107.7	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
	Potassium	5220	ug/L	5000	ug/L	104.4	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
	Sodium	5370	ug/L	5000	ug/L	107.5	90.0 – 110.0	MS	25-MAR-21 18:02	210325-1
CCV03										
	Boron	103	ug/L	100	ug/L	103.4	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
	Calcium	5210	ug/L	5000	ug/L	104.2	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
	Lithium	52.3	ug/L	50	ug/L	104.5	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
	Magnesium	5440	ug/L	5000	ug/L	108.8	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
	Potassium	5170	ug/L	5000	ug/L	103.4	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
	Sodium	5430	ug/L	5000	ug/L	108.7	90.0 – 110.0	MS	25-MAR-21 18:47	210325-1
CCV04										
	Boron	103	ug/L	100	ug/L	102.6	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1
	Calcium	5150	ug/L	5000	ug/L	102.9	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1
	Lithium	51.2	ug/L	50	ug/L	102.3	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 538048

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS14

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Magnesium	5280	ug/L	5000	ug/L	105.7	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1
	Potassium	5000	ug/L	5000	ug/L	100	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1
	Sodium	5260	ug/L	5000	ug/L	105.2	90.0 – 110.0	MS	25-MAR-21 19:28	210325-1
CCV05										
	Boron	99.6	ug/L	100	ug/L	99.6	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1
	Calcium	5230	ug/L	5000	ug/L	104.6	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1
	Lithium	52	ug/L	50	ug/L	104.1	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1
	Magnesium	5390	ug/L	5000	ug/L	107.8	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1
	Potassium	5140	ug/L	5000	ug/L	102.8	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1
	Sodium	5390	ug/L	5000	ug/L	107.7	90.0 – 110.0	MS	25-MAR-21 20:09	210325-1

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 538048

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS14

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Advisory Limits (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
CRDL01										
	Boron	18.4	ug/L	15	ug/L	122.4	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
	Calcium	238	ug/L	200	ug/L	118.8	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
	Lithium	10.5	ug/L	10	ug/L	104.6	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
	Magnesium	31.3	ug/L	30	ug/L	104.3	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
	Potassium	296	ug/L	300	ug/L	98.7	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
	Sodium	256	ug/L	250	ug/L	102.5	70.0 – 130.0	MS	25-MAR-21 17:41	210325-1
CRDL02										
	Boron	17.7	ug/L	15	ug/L	117.7	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
	Calcium	234	ug/L	200	ug/L	116.8	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
	Lithium	10.6	ug/L	10	ug/L	105.6	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
	Magnesium	31.3	ug/L	30	ug/L	104.2	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
	Potassium	301	ug/L	300	ug/L	100.3	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
	Sodium	262	ug/L	250	ug/L	104.8	70.0 – 130.0	MS	25-MAR-21 18:36	210325-1
CRDL03										
	Boron	16.2	ug/L	15	ug/L	108	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
	Calcium	235	ug/L	200	ug/L	117.3	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
	Lithium	10.9	ug/L	10	ug/L	109.3	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
	Magnesium	32.1	ug/L	30	ug/L	107	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
	Potassium	301	ug/L	300	ug/L	100.4	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
	Sodium	266	ug/L	250	ug/L	106.6	70.0 – 130.0	MS	25-MAR-21 19:18	210325-1
CRDL04										
	Boron	16.6	ug/L	15	ug/L	111	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1
	Calcium	230	ug/L	200	ug/L	115	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1
	Lithium	10.1	ug/L	10	ug/L	101.1	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1
	Magnesium	30.5	ug/L	30	ug/L	101.5	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1
	Potassium	292	ug/L	300	ug/L	97.3	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1
	Sodium	260	ug/L	250	ug/L	104.1	70.0 – 130.0	MS	25-MAR-21 19:59	210325-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 538048

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M*</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
ICB01										
	Boron	6.2	+/-7.5	B	4.0	15.0	LIQ	MS	25-MAR-21 17:38	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 17:38	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 17:38	210325-1
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 17:38	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 17:38	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 17:38	210325-1
CCB01										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	25-MAR-21 17:55	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 17:55	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 17:55	210325-1
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 17:55	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 17:55	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 17:55	210325-1
CCB02										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	25-MAR-21 18:05	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 18:05	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 18:05	210325-1
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 18:05	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 18:05	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 18:05	210325-1
CCB03										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	25-MAR-21 18:50	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 18:50	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 18:50	210325-1
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 18:50	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 18:50	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 18:50	210325-1
CCB04										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	25-MAR-21 19:31	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 19:31	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 19:31	210325-1

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 538048

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result ug/L</u>	<u>Acceptance</u>	<u>Conc Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run</u>
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 19:31	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 19:31	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 19:31	210325-1
CCB05										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	25-MAR-21 20:13	210325-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	25-MAR-21 20:13	210325-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	25-MAR-21 20:13	210325-1
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	25-MAR-21 20:13	210325-1
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	25-MAR-21 20:13	210325-1
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	25-MAR-21 20:13	210325-1

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 538048
Contract: DMNN00101
Matrix: GW

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Acceptance Window</u>	<u>Conc Qual</u>	<u>M*</u>	<u>MDL</u>	<u>RDL</u>
1204776178	Boron	4.00	ug/L	+/-7.5	U	MS	4.00	15.0
	Calcium	30.0	ug/L	+/-50	U	MS	30.0	100
	Lithium	2.00	ug/L	+/-5	U	MS	2.00	10.0
	Magnesium	10.0	ug/L	+/-7.5	U	MS	10.0	15.0
	Potassium	80.0	ug/L	+/-150	U	MS	80.0	300
	Sodium	80.0	ug/L	+/-125	U	MS	80.0	250

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-4-
Interference Check Sample

SDG No: 538048

Contract: DMNN00101

Lab Code: GEL

Instrument: ICPMS14

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01									
	Boron	2.61	ug/L					25-MAR-21 17:44	210325-1
	Calcium	97500	ug/L	100000	ug/L	97.5	80.0 - 120.0	25-MAR-21 17:44	210325-1
	Lithium	0.109	ug/L					25-MAR-21 17:44	210325-1
	Magnesium	95000	ug/L	100000	ug/L	95	80.0 - 120.0	25-MAR-21 17:44	210325-1
	Potassium	101000	ug/L	100000	ug/L	101	80.0 - 120.0	25-MAR-21 17:44	210325-1
	Sodium	99700	ug/L	100000	ug/L	99.7	80.0 - 120.0	25-MAR-21 17:44	210325-1
ICSAB01									
	Boron	20.9	ug/L	20	ug/L	105	80.0 - 120.0	25-MAR-21 17:48	210325-1
	Calcium	102000	ug/L	100000	ug/L	102	80.0 - 120.0	25-MAR-21 17:48	210325-1
	Lithium	20.1	ug/L	20	ug/L	101	80.0 - 120.0	25-MAR-21 17:48	210325-1
	Magnesium	99000	ug/L	100000	ug/L	99	80.0 - 120.0	25-MAR-21 17:48	210325-1
	Potassium	103000	ug/L	100000	ug/L	103	80.0 - 120.0	25-MAR-21 17:48	210325-1
	Sodium	105000	ug/L	100000	ug/L	105	80.0 - 120.0	25-MAR-21 17:48	210325-1
ICSA02									
	Boron	1.35	ug/L					25-MAR-21 18:40	210325-1
	Calcium	97000	ug/L	100000	ug/L	97	80.0 - 120.0	25-MAR-21 18:40	210325-1
	Lithium	0.053	ug/L					25-MAR-21 18:40	210325-1
	Magnesium	95800	ug/L	100000	ug/L	95.8	80.0 - 120.0	25-MAR-21 18:40	210325-1
	Potassium	99900	ug/L	100000	ug/L	99.9	80.0 - 120.0	25-MAR-21 18:40	210325-1
	Sodium	101000	ug/L	100000	ug/L	101	80.0 - 120.0	25-MAR-21 18:40	210325-1
ICSAB02									
	Boron	20.8	ug/L	20	ug/L	104	80.0 - 120.0	25-MAR-21 18:43	210325-1
	Calcium	102000	ug/L	100000	ug/L	102	80.0 - 120.0	25-MAR-21 18:43	210325-1
	Lithium	20.4	ug/L	20	ug/L	102	80.0 - 120.0	25-MAR-21 18:43	210325-1
	Magnesium	99800	ug/L	100000	ug/L	99.8	80.0 - 120.0	25-MAR-21 18:43	210325-1
	Potassium	104000	ug/L	100000	ug/L	104	80.0 - 120.0	25-MAR-21 18:43	210325-1
	Sodium	106000	ug/L	100000	ug/L	106	80.0 - 120.0	25-MAR-21 18:43	210325-1
ICSA03									
	Boron	0.233	ug/L					25-MAR-21 19:21	210325-1
	Calcium	97100	ug/L	100000	ug/L	97.1	80.0 - 120.0	25-MAR-21 19:21	210325-1

METALS

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Interference Check Sample

SDG No: 538048

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Lithium	0.018	ug/L					25-MAR-21 19:21	210325-1
	Magnesium	95300	ug/L	100000	ug/L	95.3	80.0 – 120.0	25-MAR-21 19:21	210325-1
	Potassium	101000	ug/L	100000	ug/L	101	80.0 – 120.0	25-MAR-21 19:21	210325-1
	Sodium	102000	ug/L	100000	ug/L	102	80.0 – 120.0	25-MAR-21 19:21	210325-1
ICSAB03									
	Boron	19.2	ug/L	20	ug/L	95.8	80.0 – 120.0	25-MAR-21 19:24	210325-1
	Calcium	99500	ug/L	100000	ug/L	99.5	80.0 – 120.0	25-MAR-21 19:24	210325-1
	Lithium	20.0	ug/L	20	ug/L	99.8	80.0 – 120.0	25-MAR-21 19:24	210325-1
	Magnesium	98700	ug/L	100000	ug/L	98.7	80.0 – 120.0	25-MAR-21 19:24	210325-1
	Potassium	103000	ug/L	100000	ug/L	103	80.0 – 120.0	25-MAR-21 19:24	210325-1
	Sodium	105000	ug/L	100000	ug/L	105	80.0 – 120.0	25-MAR-21 19:24	210325-1
ICSA04									
	Boron	0.673	ug/L					25-MAR-21 20:02	210325-1
	Calcium	97600	ug/L	100000	ug/L	97.6	80.0 – 120.0	25-MAR-21 20:02	210325-1
	Lithium	-0.094	ug/L					25-MAR-21 20:02	210325-1
	Magnesium	95400	ug/L	100000	ug/L	95.4	80.0 – 120.0	25-MAR-21 20:02	210325-1
	Potassium	99800	ug/L	100000	ug/L	99.8	80.0 – 120.0	25-MAR-21 20:02	210325-1
	Sodium	102000	ug/L	100000	ug/L	102	80.0 – 120.0	25-MAR-21 20:02	210325-1
ICSAB04									
	Boron	19.8	ug/L	20	ug/L	99.2	80.0 – 120.0	25-MAR-21 20:06	210325-1
	Calcium	99500	ug/L	100000	ug/L	99.5	80.0 – 120.0	25-MAR-21 20:06	210325-1
	Lithium	20.3	ug/L	20	ug/L	101	80.0 – 120.0	25-MAR-21 20:06	210325-1
	Magnesium	99100	ug/L	100000	ug/L	99.1	80.0 – 120.0	25-MAR-21 20:06	210325-1
	Potassium	103000	ug/L	100000	ug/L	103	80.0 – 120.0	25-MAR-21 20:06	210325-1
	Sodium	104000	ug/L	100000	ug/L	104	80.0 – 120.0	25-MAR-21 20:06	210325-1

METALS

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Matrix Spike Summary

SDG NO. 538048 Client ID: MW-LF-03-2021Q1S

Contract: DMNN00101 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 538048003 Spike ID: 1204776181

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Boron	ug/L	75-125	112		10.2	B	100	101		MS
Calcium	ug/L	75-125	3510		1370		2000	107		MS
Lithium	ug/L	75-125	55.1		2.02	B	50.0	106		MS
Magnesium	ug/L	75-125	2820		742		2000	104		MS
Potassium	ug/L	75-125	3670		1590		2000	104		MS
Sodium	ug/L	75-125	4060		1890		2000	109		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Matrix Spike Summary

SDG NO. 538048 Client ID: AS-LF-01-2021Q1S

Contract: DMNN00101 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 538048011 Spike ID: 1204776184

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Boron	ug/L	75-125	109		12.9	B	100	96.4		MS
Calcium	ug/L	75-125	5110		3080		2000	102		MS
Lithium	ug/L	75-125	50.7		2.00	U	50.0	101		MS
Magnesium	ug/L	75-125	2840		841		2000	99.8		MS
Potassium	ug/L	75-125	3170		1230		2000	97.2		MS
Sodium	ug/L	75-125	5800		3840		2000	97.6		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

Metals
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Duplicate Sample Summary

SDG No.: 538048

Lab Code: GEL

Contract: DMNN00101

Client ID: MW-LF-03-2021Q1D

Matrix: GROUND WATER

Level: Low

Sample ID: 538048003

Duplicate ID: 1204776180

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/-30	10.2	B	8.40	B	19.1		MS
Calcium	ug/L	+/-20%	1370		1300		4.99		MS
Lithium	ug/L		2.02	B	2.00	U	200		MS
Magnesium	ug/L	+/-20%	742		721		2.97		MS
Potassium	ug/L	+/-20%	1590		1540		2.9		MS
Sodium	ug/L	+/-20%	1890		1840		2.72		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

Metals
-6-
Duplicate Sample Summary

SDG No.: 538048

Lab Code: GEL

Contract: DMNN00101

Client ID: AS-LF-01-2021Q1D

Matrix: GROUND WATER

Level: Low

Sample ID: 538048011

Duplicate ID: 1204776183

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/-30	12.9	B	11.7	B	9.79		MS
Calcium	ug/L	+/-20%	3080		3070		.333		MS
Lithium	ug/L		2.00	U	2.00	U			MS
Magnesium	ug/L	+/-20%	841		833		.936		MS
Potassium	ug/L	+/-600	1230		1210		1.12		MS
Sodium	ug/L	+/-20%	3840		3800		1.22		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Laboratory Control Sample Summary

SDG NO. 538048

Contract: DMNN00101

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1204776179	Boron	ug/L	100	99.9		99.9	85-115	MS
	Calcium	ug/L	2000	2200		110	85-115	MS
	Lithium	ug/L	50.0	51.9		104	80-120	MS
	Magnesium	ug/L	2000	2090		105	85-115	MS
	Potassium	ug/L	2000	2050		103	85-115	MS
	Sodium	ug/L	2000	2100		105	85-115	MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Serial Dilution Sample Summary

SDG NO. 538048 Client ID: MW-LF-03-2021Q1L

Contract: DMNN00101

Matrix: LIQUID Level: Low

Sample ID: 538048003 Serial Dilution ID: 1204776182

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Boron	10.2	B	33.6	B	230.548			MS
Calcium	1370		1330		2.986			MS
Lithium	2.02	B	10	U	59.733			MS
Magnesium	742		742		.113			MS
Potassium	1590		1520		4.143			MS
Sodium	1890		1880		.353			MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Serial Dilution Sample Summary

SDG NO. 538048 Client ID: AS-LF-01-2021Q1L

Contract: DMNN00101

Matrix: LIQUID Level: Low

Sample ID: 538048011 Serial Dilution ID: 1204776185

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Boron	12.9	B	32.7	B	154.45			MS
Calcium	3080		3010		2.051			MS
Lithium	2	U	10	U				MS
Magnesium	841		828		1.592		10	MS
Potassium	1230		1140	B	7.181			MS
Sodium	3840		3680		4.296			MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS
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SAMPLE PREPARATION SUMMARY

SDG No: 538048

Method Type: MS

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
Batch Number	2104295						
1204776178	MB for batch 2104296	MB	G	18-MAR-21	50mL	50mL	
1204776179	LCS for batch 2104296	LCS	G	18-MAR-21	50mL	50mL	
1204776181	MW-LF-03-2021Q1S	MS	G	18-MAR-21	50mL	50mL	
1204776184	AS-LF-01-2021Q1S	MS	G	18-MAR-21	50mL	50mL	
1204776180	MW-LF-03-2021Q1D	DUP	G	18-MAR-21	50mL	50mL	
1204776183	AS-LF-01-2021Q1D	DUP	G	18-MAR-21	50mL	50mL	
538048001	MW-LF-01-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048002	MW-LF-02-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048003	MW-LF-03-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048004	MW-LF-04-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048005	MW-LF-05-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048006	FBLK-21102	SAMPLE	G	18-MAR-21	50mL	50mL	
538048007	MW-LF-06-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048008	MW-BG-06-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048009	MW-BG-16-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048010	DU-21102	SAMPLE	G	18-MAR-21	50mL	50mL	
538048011	AS-LF-01-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048012	AS-LF-02-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	
538048013	MW-40-2021Q1	SAMPLE	G	18-MAR-21	50mL	50mL	

EPA

METALS
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SAMPLE PREPARATION SUMMARY

SDG No: 538048

Method Type: MS

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
538048014	FBLK-21103	SAMPLE	G	18-MAR-21	50mL	50mL	

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 538048**

Product: Ion Chromatography

Analytical Method: EPA 300.0

Analytical Procedure: GL-GC-E-086 REV# 29

Analytical Batches: 2104180 and 2104232

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
538048001	MW-LF-01-2021Q1
538048002	MW-LF-02-2021Q1
538048003	MW-LF-03-2021Q1
538048004	MW-LF-04-2021Q1
538048005	MW-LF-05-2021Q1
538048006	FBLK-21102
538048007	MW-LF-06-2021Q1
538048008	MW-BG-06-2021Q1
538048009	MW-BG-16-2021Q1
538048010	DU-21102
538048011	AS-LF-01-2021Q1
538048012	AS-LF-02-2021Q1
538048013	MW-40-2021Q1
538048014	FBLK-21103
1204776048	Method Blank (MB)
1204776049	Laboratory Control Sample (LCS)
1204776050	538048003(MW-LF-03-2021Q1) Sample Duplicate (DUP)
1204776051	538048003(MW-LF-03-2021Q1) Post Spike (PS)
1204776087	Method Blank (MB)
1204776088	Laboratory Control Sample (LCS)
1204776089	538048011(AS-LF-01-2021Q1) Sample Duplicate (DUP)
1204776094	538048011(AS-LF-01-2021Q1) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

The following samples 538048001 (MW-LF-01-2021Q1), 538048002 (MW-LF-02-2021Q1), 538048008 (MW-BG-06-2021Q1) and 538048013 (MW-40-2021Q1) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	538048			
	001	002	008	013
Chloride	2X	5X	2X	10X
Sulfate	1X	1X	1X	10X

Miscellaneous Information

Manual Integrations

Sample 538048011 (AS-LF-01-2021Q1) was manually integrated to correctly position the baseline as set in the calibration standards.

Product: Solids, Total Dissolved

Analytical Method: SM 2540C

Analytical Procedure: GL-GC-E-001 REV# 17

Analytical Batches: 2105101 and 2105803

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
538048001	MW-LF-01-2021Q1
538048002	MW-LF-02-2021Q1
538048003	MW-LF-03-2021Q1
538048004	MW-LF-04-2021Q1
538048005	MW-LF-05-2021Q1
538048006	FBLK-21102
538048007	MW-LF-06-2021Q1
538048008	MW-BG-06-2021Q1
538048009	MW-BG-16-2021Q1
538048010	DU-21102
538048011	AS-LF-01-2021Q1
538048012	AS-LF-02-2021Q1
538048013	MW-40-2021Q1
538048014	FBLK-21103
1204777732	Method Blank (MB)
1204777733	Laboratory Control Sample (LCS)
1204777734	537649013(MW-LF-26-2021Q1) Sample Duplicate (DUP)
1204777735	538002001(NonSDG) Sample Duplicate (DUP)
1204779251	Method Blank (MB)
1204779252	Laboratory Control Sample (LCS)
1204779253	538048003(MW-LF-03-2021Q1) Sample Duplicate (DUP)
1204779254	538295015(NonSDG) Sample Duplicate (DUP)
1204779260	538173001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Alkalinity

Analytical Method: SM 2320B

Analytical Procedure: GL-GC-E-033 REV# 13

Analytical Batch: 2104199

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
538048001	MW-LF-01-2021Q1
538048002	MW-LF-02-2021Q1
538048003	MW-LF-03-2021Q1
538048004	MW-LF-04-2021Q1
538048005	MW-LF-05-2021Q1
538048006	FBLK-21102
538048007	MW-LF-06-2021Q1
538048008	MW-BG-06-2021Q1
538048009	MW-BG-16-2021Q1
538048010	DU-21102
538048011	AS-LF-01-2021Q1
538048012	AS-LF-02-2021Q1
538048013	MW-40-2021Q1
538048014	FBLK-21103
1204776059	Method Blank (MB)
1204776060	Laboratory Control Sample (LCS)
1204776061	538048001(MW-LF-01-2021Q1) Sample Duplicate (DUP)
1204776062	538048003(MW-LF-03-2021Q1) Sample Duplicate (DUP)
1204776063	538048001(MW-LF-01-2021Q1) Matrix Spike (MS)
1204776064	538048003(MW-LF-03-2021Q1) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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

Qualifier Definition Report for

DMNN001 Dominion Energy (50149867)

Client SDG: 538048 GEL Work Order: 538048


The Qualifiers in this report are defined as follows:

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

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Aubrey Kingsbury

Date: 26 MAR 2021

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-01-2021Q1	Project: DMNN00101
Sample ID: 538048001	Client ID: DMNN001
Matrix: GW	
Collect Date: 15-MAR-21 14:10	
Receive Date: 17-MAR-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	U	ND	0.0330	0.100	mg/L		1	LXA2	03/17/21	1550	2104180	1
Sulfate		0.603	0.133	0.400	mg/L		1					
Chloride		11.9	0.134	0.400	mg/L		2	LXA2	03/17/21	2317	2104180	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		50.0	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.99	1.45	4.00	mg/L			RXB5	03/24/21	1616	2104199	4
Bicarbonate alkalinity (CaCO3)	J	2.99	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-02-2021Q1	Project: DMNN00101
Sample ID: 538048002	Client ID: DMNN001
Matrix: GW	
Collect Date: 16-MAR-21 11:20	
Receive Date: 17-MAR-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.156	0.0330	0.100	mg/L		1	LXA2	03/17/21	1620	2104180	1
Sulfate		7.19	0.133	0.400	mg/L		1					
Chloride		31.9	0.335	1.00	mg/L		5	LXA2	03/19/21	1023	2104180	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		111	3.40	14.3	mg/L			KLP1	03/23/21	1041	2105803	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	03/24/21	1623	2104199	4
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-LF-03-2021Q1	Project:	DMNN00101
Sample ID:	538048003	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	16-MAR-21 10:20		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.15	0.0670	0.200	mg/L		1	LXA2	03/17/21	2148	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		1.10	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		22.9	3.40	14.3	mg/L			KLP1	03/23/21	1041	2105803	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	3.18	1.45	4.00	mg/L			RXB5	03/24/21	1625	2104199	3
Bicarbonate alkalinity (CaCO3)	J	3.18	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-LF-04-2021Q1	Project:	DMNN00101
Sample ID:	538048004	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 17:25		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		4.46	0.0670	0.200	mg/L		1	LXA2	03/17/21	1650	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		3.70	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		45.7	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3		4.58	1.45	4.00	mg/L			RXB5	03/24/21	1630	2104199	3
Bicarbonate alkalinity (CaCO3)		4.58	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-05-2021Q1	Project: DMNN00101
Sample ID: 538048005	Client ID: DMNN001
Matrix: GW	
Collect Date: 15-MAR-21 16:00	
Receive Date: 17-MAR-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		9.13	0.0670	0.200	mg/L		1	LXA2	03/17/21	1719	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		1.06	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		50.0	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	03/24/21	1633	2104199	3
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	FBLK-21102	Project:	DMNN00101
Sample ID:	538048006	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	15-MAR-21 13:40		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		0.245	0.0670	0.200	mg/L		1	LXA2	03/17/21	1749	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	U	ND	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	1.79	1.45	4.00	mg/L			RXB5	03/24/21	1635	2104199	3
Bicarbonate alkalinity (CaCO3)	J	1.79	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-LF-06-2021Q1	Project:	DMNN00101
Sample ID:	538048007	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 15:04		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		7.53	0.0670	0.200	mg/L		1	LXA2	03/17/21	1819	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.821	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		45.7	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	1.59	1.45	4.00	mg/L			RXB5	03/24/21	1636	2104199	3
Bicarbonate alkalinity (CaCO3)	J	1.59	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-BG-06-2021Q1
Sample ID: 538048008
Matrix: GW
Collect Date: 16-MAR-21 08:35
Receive Date: 17-MAR-21
Collector: Client
Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	J	0.0622	0.0330	0.100	mg/L		1	LXA2	03/17/21	1849	2104180	1
Sulfate	J	0.296	0.133	0.400	mg/L		1					2
Chloride		18.7	0.134	0.400	mg/L		2	LXA2	03/18/21	0017	2104180	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		113	3.40	14.3	mg/L			KLP1	03/23/21	1041	2105803	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	03/24/21	1638	2104199	4
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

Notes:

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-BG-16-2021Q1 Project: DMNN00101
Sample ID: 538048009 Client ID: DMNN001
Matrix: GW
Collect Date: 16-MAR-21 09:20
Receive Date: 17-MAR-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.47	0.0670	0.200	mg/L		1	LXA2	03/17/21	1919	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		1.83	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		22.9	3.40	14.3	mg/L			KLP1	03/23/21	1041	2105803	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	1.59	1.45	4.00	mg/L			RXB5	03/24/21	1639	2104199	3
Bicarbonate alkalinity (CaCO3)	J	1.59	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	DU-21102	Project:	DMNN00101
Sample ID:	538048010	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 12:00		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		7.42	0.0670	0.200	mg/L		1	LXA2	03/17/21	2118	2104180	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.668	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		37.1	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	1.59	1.45	4.00	mg/L			RXB5	03/24/21	1641	2104199	3
Bicarbonate alkalinity (CaCO3)	J	1.59	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	AS-LF-01-2021Q1	Project:	DMNN00101
Sample ID:	538048011	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 13:26		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		2.04	0.0670	0.200	mg/L		1	LXA2	03/17/21	2150	2104232	1
Fluoride	J	0.0415	0.0330	0.100	mg/L		1					
Sulfate		15.6	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		40.0	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.79	1.45	4.00	mg/L			RXB5	03/24/21	1642	2104199	3
Bicarbonate alkalinity (CaCO3)	J	2.79	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	AS-LF-02-2021Q1	Project:	DMNN00101
Sample ID:	538048012	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 12:46		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		7.74	0.0670	0.200	mg/L		1	LXA2	03/17/21	2320	2104232	1
Fluoride	J	0.0846	0.0330	0.100	mg/L		1					
Sulfate		13.4	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		38.6	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.59	1.45	4.00	mg/L			RXB5	03/24/21	1644	2104199	3
Bicarbonate alkalinity (CaCO3)	J	2.59	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-40-2021Q1	Project:	DMNN00101
Sample ID:	538048013	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-21 11:56		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.625	0.0330	0.100	mg/L		1	LXA2	03/17/21	2350	2104232	1
Chloride		55.4	0.670	2.00	mg/L		10	LXA2	03/18/21	1351	2104232	2
Sulfate		113	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		274	3.40	14.3	mg/L			KLP1	03/19/21	1151	2105101	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	1.79	1.45	4.00	mg/L			RXB5	03/24/21	1645	2104199	4
Bicarbonate alkalinity (CaCO3)	J	1.79	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

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Certificate of Analysis

Report Date: March 26, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	FBLK-21103	Project:	DMNN00101
Sample ID:	538048014	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	16-MAR-21 10:30		
Receive Date:	17-MAR-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		0.901	0.0670	0.200	mg/L		1	LXA2	03/18/21	0020	2104232	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	4.29	3.40	14.3	mg/L			KLP1	03/23/21	1041	2105803	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.39	1.45	4.00	mg/L			RXB5	03/24/21	1647	2104199	3
Bicarbonate alkalinity (CaCO3)	J	2.39	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 26, 2021

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Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia

Contact: Kelly Hicks

Workorder: 538048

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2104180										
QC1204776050	538048003	DUP									
Chloride		3.15		3.08	mg/L	2.28		(0%-20%)	LXA2	03/17/21	22:18
Fluoride	U	ND	U	ND	mg/L	N/A					
Sulfate		1.10		1.31	mg/L	17.6 ^		(+/-8)			
QC1204776049	LCS										
Chloride	5.00			4.56	mg/L		91.2	(90%-110%)		03/17/21	15:21
Fluoride	2.50			2.39	mg/L		95.4	(90%-110%)			
Sulfate	10.0			9.41	mg/L		94.1	(90%-110%)			
QC1204776048	MB										
Chloride			U	ND	mg/L					03/17/21	14:51
Fluoride			U	ND	mg/L						
Sulfate			U	ND	mg/L						
QC1204776051	538048003	PS									
Chloride	5.00	3.15		7.93	mg/L		95.6	(90%-110%)		03/17/21	22:48
Fluoride	2.50	U	ND	2.60	mg/L		104	(90%-110%)			
Sulfate	10.0	1.10		10.4	mg/L		93	(90%-110%)			

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QC Summary

Workorder: 538048

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2104232										
QC1204776089	538048011	DUP									
Chloride		2.04		1.99	mg/L	2.47		(0%-20%)	LXA2	03/17/21	22:20
Fluoride	J	0.0415	J	0.0526	mg/L	23.6	^	(+/-2)			
Sulfate		15.6		15.2	mg/L	2.94		(0%-20%)			
QC1204776088	LCS										
Chloride	5.00			4.76	mg/L		95.2	(90%-110%)		03/17/21	17:22
Fluoride	2.50			2.37	mg/L		95	(90%-110%)			
Sulfate	10.0			9.54	mg/L		95.4	(90%-110%)			
QC1204776087	MB										
Chloride			U	0.0670	mg/L					03/17/21	16:52
Fluoride			U	0.0330	mg/L						
Sulfate			U	0.133	mg/L						
QC1204776094	538048011	PS									
Chloride	5.00	2.04		6.86	mg/L		96.5	(90%-110%)		03/17/21	22:50
Fluoride	2.50	J	0.0415	2.50	mg/L		98.5	(90%-110%)			
Sulfate	10.0	15.6		24.9	mg/L		93	(90%-110%)			
Solids Analysis											
Batch	2105101										
QC1204777734	537649013	DUP									
Total Dissolved Solids		919		897	mg/L	2.36		(0%-5%)	KLP1	03/19/21	11:51

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QC Summary

Workorder: 538048

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Solids Analysis											
Batch	2105101										
QC1204777735	538002001	DUP									
Total Dissolved Solids		481		471	mg/L	2.1		(0%-5%)	KLP1	03/19/21	11:51
QC1204777733	LCS										
Total Dissolved Solids	300			293	mg/L		97.6	(95%-105%)		03/19/21	11:51
QC1204777732	MB										
Total Dissolved Solids			U	ND	mg/L					03/19/21	11:51
<hr/>											
Batch	2105803										
QC1204779253	538048003	DUP									
Total Dissolved Solids		22.9		28.6	mg/L	22.2	^	(+/-28.6)	KLP1	03/23/21	10:41
QC1204779254	538295015	DUP									
Total Dissolved Solids		353		353	mg/L	0		(0%-5%)		03/23/21	10:41
QC1204779260	538173001	DUP									
Total Dissolved Solids		151		153	mg/L	0.939		(0%-5%)		03/23/21	10:41
QC1204779252	LCS										
Total Dissolved Solids	300			306	mg/L		102	(95%-105%)		03/23/21	10:41
QC1204779251	MB										
Total Dissolved Solids			U	ND	mg/L					03/23/21	10:41
<hr/>											
Titration and Ion Analysis											
Batch	2104199										
QC1204776061	538048001	DUP									
Alkalinity, Total as CaCO3	J	2.99	J	2.99	mg/L	0	^	(+/-8)	RXB5	03/24/21	16:20
Bicarbonate alkalinity (CaCO3)	J	2.99	J	2.99	mg/L	0	^	(+/-8)			
Carbonate alkalinity (CaCO3)	U		ND	U	ND	mg/L	N/A				

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QC Summary

Workorder: 538048

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2104199										
QC1204776062	538048003	DUP									
Alkalinity, Total as CaCO3	J	3.18	J	2.99	mg/L	6.45	^	(+/-8)	RXB5	03/24/21	16:27
Bicarbonate alkalinity (CaCO3)	J	3.18	J	2.99	mg/L	6.45	^	(+/-8)			
Carbonate alkalinity (CaCO3)	U	ND	U	ND	mg/L	N/A					
QC1204776060	LCS										
Alkalinity, Total as CaCO3	100			108	mg/L		108	(90%-110%)		03/24/21	16:06
QC1204776059	MB										
Alkalinity, Total as CaCO3			J	1.99	mg/L					03/24/21	16:04
Bicarbonate alkalinity (CaCO3)			J	1.99	mg/L						
Carbonate alkalinity (CaCO3)			U	ND	mg/L						
QC1204776063	538048001	MS									
Alkalinity, Total as CaCO3	100	J	2.99	109	mg/L		106	(80%-120%)		03/24/21	16:21
QC1204776064	538048003	MS									
Alkalinity, Total as CaCO3	100	J	3.18	109	mg/L		106	(80%-120%)		03/24/21	16:28

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 See case narrative for an explanation
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.

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QC Summary

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

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

**Cope Power Station Groundwater Sampling
Samples Collected between: 3/15/2021 and 3/16/2021**

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

538048

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Unit
MW-LF-01-2021Q1	MW-LF-01	N	EPA 200.8	Boron	T	11.3	J	RL	4.00	15.0	ug/L
MW-LF-01-2021Q1	MW-LF-01	N	SM 2320B	Alkalinity, Total as CaCO ₃	N	2.99	J	BF,BL	1.45	4.00	mg/L
MW-LF-01-2021Q1	MW-LF-01	N	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	2.99	J	BF,BL	1.45	4.00	mg/L
MW-LF-03-2021Q1	MW-LF-03	N	EPA 200.8	Boron	T	10.2	J	RL	4.00	15.0	ug/L
MW-LF-03-2021Q1	MW-LF-03	N	EPA 200.8	Lithium	T	2.02	J	RL	2.00	10.0	ug/L
MW-LF-03-2021Q1	MW-LF-03	N	EPA 300.0	Chloride	N		U	BF	3.15	3.15	mg/L
MW-LF-03-2021Q1	MW-LF-03	N	SM 2320B	Alkalinity, Total as CaCO ₃	N	3.18	J	BF,BL	1.45	4.00	mg/L
MW-LF-03-2021Q1	MW-LF-03	N	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	3.18	J	BF,BL	1.45	4.00	mg/L
MW-LF-04-2021Q1	MW-LF-04	N	EPA 200.8	Boron	T	11.2	J	RL	4.00	15.0	ug/L
MW-LF-04-2021Q1	MW-LF-04	N	SM 2320B	Alkalinity, Total as CaCO ₃	N	4.58	J	BF,BL	1.45	4.00	mg/L
MW-LF-04-2021Q1	MW-LF-04	N	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	4.58	J	BF,BL	1.45	4.00	mg/L
MW-LF-05-2021Q1	MW-LF-05	N	EPA 200.8	Boron	T	11.2	J	RL	4.00	15.0	ug/L
FBLK-21102		FB	SM 2320B	Alkalinity, Total as CaCO ₃	N	1.79	J	RL	1.45	4.00	mg/L
FBLK-21102		FB	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	1.79	J	RL	1.45	4.00	mg/L
MW-LF-06-2021Q1	MW-LF-06	N	EPA 200.8	Boron	T	8.53	J	RL	4.00	15.0	ug/L
MW-LF-06-2021Q1	MW-LF-06	N	SM 2320B	Alkalinity, Total as CaCO ₃	N	1.59	J	BF,BL	1.45	4.00	mg/L
MW-LF-06-2021Q1	MW-LF-06	N	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	1.59	J	BF,BL	1.45	4.00	mg/L
MW-BG-06-2021Q1	MW-BG-06	N	EPA 200.8	Boron	T	8.73	J	RL	4.00	15.0	ug/L
MW-BG-06-2021Q1	MW-BG-06	N	EPA 300.0	Fluoride	N	0.0622	J	RL	0.0330	0.100	mg/L
MW-BG-06-2021Q1	MW-BG-06	N	EPA 300.0	Sulfate	N	0.296	J	RL	0.133	0.400	mg/L
MW-BG-16-2021Q1	MW-BG-16	N	EPA 200.8	Boron	T	9.39	J	RL	4.00	15.0	ug/L
MW-BG-16-2021Q1	MW-BG-16	N	EPA 300.0	Chloride	N		U	BF	3.47	3.47	mg/L
MW-BG-16-2021Q1	MW-BG-16	N	SM 2320B	Alkalinity, Total as CaCO ₃	N	1.59	J	BF,BL	1.45	4.00	mg/L
MW-BG-16-2021Q1	MW-BG-16	N	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	1.59	J	BF,BL	1.45	4.00	mg/L
DU-21102	MW-LF-06	FD	EPA 200.8	Boron	T	8.47	J	RL	4.00	15.0	ug/L
DU-21102	MW-LF-06	FD	SM 2320B	Alkalinity, Total as CaCO ₃	N	1.59	J	BF,BL	1.45	4.00	mg/L
DU-21102	MW-LF-06	FD	SM 2320B	Bicarbonate alkalinity (CaCO ₃)	N	1.59	J	BF,BL	1.45	4.00	mg/L

Sample	Location	Sample Type	Method	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Unit
AS-LF-01-2021Q1	AS-LF-01	N	EPA 200.8	Boron	T	12.9	J	RL	4.00	15.0	ug/L
AS-LF-01-2021Q1	AS-LF-01	N	EPA 300.0	Chloride	N	2.04	J+	BF	2.04	2.04	mg/L
AS-LF-01-2021Q1	AS-LF-01	N	EPA 300.0	Fluoride	N	0.0415	J	RL	0.0330	0.100	mg/L
AS-LF-01-2021Q1	AS-LF-01	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.79	J	BF,BL	1.45	4.00	mg/L
AS-LF-01-2021Q1	AS-LF-01	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.79	J	BF,BL	1.45	4.00	mg/L
AS-LF-02-2021Q1	AS-LF-02	N	EPA 300.0	Fluoride	N	0.0846	J	RL	0.0330	0.100	mg/L
AS-LF-02-2021Q1	AS-LF-02	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.59	J	BF,BL	1.45	4.00	mg/L
AS-LF-02-2021Q1	AS-LF-02	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.59	J	BF,BL	1.45	4.00	mg/L
MW-40-2021Q1	MW-40	N	SM 2320B	Alkalinity, Total as CaCO3	N	1.79	J	BF,BL	1.45	4.00	mg/L
MW-40-2021Q1	MW-40	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	1.79	J	BF,BL	1.45	4.00	mg/L
FBLK-21103		FB	SM 2320B	Alkalinity, Total as CaCO3	N	2.39	J	RL	1.45	4.00	mg/L
FBLK-21103		FB	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.39	J	RL	1.45	4.00	mg/L
FBLK-21103		FB	SM 2540C	Total Dissolved Solids	N	4.29	J	RL	3.40	14.3	mg/L

Data Qualifiers

U	The analyte was analyzed was not detected above the level of the reported sample quantitation limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	This analyte was not detected, but the reporting limit may or may not be higher due to a bias identified during data validation.
R	Unreliable positive result; analyte may or may not be present in sample.

Reason Codes and Explanations

BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and RL.
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Lab Sample ID	538048001
Sys Sample Code	MW-LF-01-2021Q1
Sample Name	MW-LF-01-2021Q1
Sample Date	3/15/2021 2:10:00 PM
Location	MW-LF-01 / MW-LF-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	11.3	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2990			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1410			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	527			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	4310			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	11.9			0.134	0.134	0.400	Y	Yes	2	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.603			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.99	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.99	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	50.0			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048002
Sys Sample Code	MW-LF-02-2021Q1
Sample Name	MW-LF-02-2021Q1
Sample Date	3/16/2021 11:20:00 AM
Location	MW-LF-02 / MW-LF-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	17.3			4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	5290			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	3720			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	5200			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	8580			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.156			0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	7.19			0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	31.9			0.335	0.335	1.00	Y	Yes	5	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	111			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048003
Sys Sample Code	MW-LF-03-2021Q1
Sample Name	MW-LF-03-2021Q1
Sample Date	3/16/2021 10:20:00 AM
Location	MW-LF-03 / MW-LF-03
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	10.2	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1370			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.02	J	RL	2.00	2.00	10.0	Y	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	742			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1590			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	1890			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L		U	BF	3.15	3.15	3.15	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	1.10			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	3.18	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	3.18	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	22.9			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048004
Sys Sample Code	MW-LF-04-2021Q1
Sample Name	MW-LF-04-2021Q1
Sample Date	3/15/2021 5:25:00 PM
Location	MW-LF-04 / MW-LF-04
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	11.2	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2590			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1940			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	426			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	5180			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	4.46			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	3.70			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	4.58	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	4.58	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	45.7			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048005
Sys Sample Code	MW-LF-05-2021Q1
Sample Name	MW-LF-05-2021Q1
Sample Date	3/15/2021 4:00:00 PM
Location	MW-LF-05 / MW-LF-05
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	11.2	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3050			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	2270			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1070			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3810			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.13			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	1.06			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	50.0			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048006
Sys Sample Code	FBLK-21102
Sample Name	FBLK-21102
Sample Date	3/15/2021 1:40:00 PM
Location	/
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L		U		4.00	4.00	15.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U		30.0	30.0	100	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L		U		10.0	10.0	15.0	N	Yes	1	NA
	Potassium	7440-09-7	T	ug/L		U		80.0	80.0	300	N	Yes	1	NA
	Sodium	7440-23-5	T	ug/L		U		80.0	80.0	250	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.245			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U		0.133	0.133	0.400	N	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	1.79	J	RL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	1.79	J	RL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U		3.40	3.40	14.3	N	Yes	1	NA

Lab Sample ID	538048007
Sys Sample Code	MW-LF-06-2021Q1
Sample Name	MW-LF-06-2021Q1
Sample Date	3/15/2021 3:04:00 PM
Location	MW-LF-06 / MW-LF-06
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	8.53	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2140			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1800			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	316			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3170			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	7.53			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.821			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	45.7			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048008
Sys Sample Code	MW-BG-06-2021Q1
Sample Name	MW-BG-06-2021Q1
Sample Date	3/16/2021 8:35:00 AM
Location	MW-BG-06 / MW-BG-06
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	8.73	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	10500			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	8710			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1780			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3200			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0622	J	RL	0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.296	J	RL	0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	18.7			0.134	0.134	0.400	Y	Yes	2	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	113			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048009
Sys Sample Code	MW-BG-16-2021Q1
Sample Name	MW-BG-16-2021Q1
Sample Date	3/16/2021 9:20:00 AM
Location	MW-BG-16 / MW-BG-16
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	9.39	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1770			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1140			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1400			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	1230			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L		U	BF	3.47	3.47	3.47	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	1.83			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	22.9			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048010
Sys Sample Code	DU-21102
Sample Name	DU-21102
Sample Date	3/15/2021 12:00:00 AM
Location	MW-LF-06 / MW-LF-06
Sample Type	FD
Matrix	GW
Parent Sample	MW-LF-06-2021Q1

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	8.47	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2140			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1820			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	326			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3210			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	7.42			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.668			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	1.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	37.1			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048011
Sys Sample Code	AS-LF-01-2021Q1
Sample Name	AS-LF-01-2021Q1
Sample Date	3/15/2021 1:26:00 PM
Location	AS-LF-01 / AS-LF-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	12.9	J	RL	4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3080			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	841			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1230			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3840			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	2.04	J+	BF	2.04	2.04	2.04	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0415	J	RL	0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	15.6			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.79	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.79	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	40.0			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048012
Sys Sample Code	AS-LF-02-2021Q1
Sample Name	AS-LF-02-2021Q1
Sample Date	3/15/2021 12:46:00 PM
Location	AS-LF-02 / AS-LF-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	16.1			4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3590			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	2910			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1630			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	2870			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	7.74			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0846	J	RL	0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	13.4			0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.59	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	38.6			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048013
Sys Sample Code	MW-40-2021Q1
Sample Name	MW-40-2021Q1
Sample Date	3/15/2021 11:56:00 AM
Location	MW-40 / MW-40
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	58.1			4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	33500			30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	9970			10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	6440			80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	25000			80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.625			0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	55.4			0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	113			1.33	1.33	4.00	Y	Yes	10	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	1.79	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	1.79	J	BF,BL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	274			3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	538048014
Sys Sample Code	FBLK-21103
Sample Name	FBLK-21103
Sample Date	3/16/2021 10:30:00 AM
Location	/
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L		U		4.00	4.00	15.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U		30.0	30.0	100	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U		2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L		U		10.0	10.0	15.0	N	Yes	1	NA
	Potassium	7440-09-7	T	ug/L		U		80.0	80.0	300	N	Yes	1	NA
	Sodium	7440-23-5	T	ug/L		U		80.0	80.0	250	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.901			0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U		0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U		0.133	0.133	0.400	N	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.39	J	RL	1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.39	J	RL	1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U		1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	4.29	J	RL	3.40	3.40	14.3	Y	Yes	1	NA

Appendix B

**Second Semiannual Detection Monitoring
Program Event Field Data Sheets, Laboratory
Reports, and Data Validation Forms**

COPE STATION - Class 2 & 3 Landfills - CCR

Date(s) Measured: 9-28-2021

Well ID	Well Diameter (inches)	Well Total Depth (ft BTOC)	Well Completion	Screen Length (ft)	Depth to Water (ft below TOC)	Pump Type
MW-LF-01	2	17.96	Stickup	10	9.92	Peristaltic
MW-LF-02	2	32.40	Stickup	10	26.06	Peristaltic
MW-LF-03	2	31.40	Stickup	10	24.95	Peristaltic
MW-LF-04	2	31.25	Stickup	10	24.65	Peristaltic
MW-LF-05	2	29.15	Stickup	10	21.20	Peristaltic
MW-LF-06	2	28.20	Stickup	10	20.49	Peristaltic
MW-BG-06	2	30.30	Stickup	10	16.30	Peristaltic
MW-BG-16	2	29.25	Stickup	10	12.01	Peristaltic
AS-LF-01	2	22.44	Stickup	10	10.81	Peristaltic
AS-LF-02	2	22.65	Stickup	10	10.54	Peristaltic
MW-40	2	28.14	Stickup	10	11.21	Peristaltic



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-LF-01
 Initial Depth to Water (feet): 9.92
 Total Depth of Well (feet): 17.96
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/28/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 8.04
 Pump Start Time: 15:07
 Pump Intake depth (feet): 15
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1509	9.98	120	28.47	4.28	98.05	2.65	NA	254.9	2.78	Clear, no odor.
1520	10.02	120	27.18	4.25	94.04	1.97	NA	289.5	1.40	Clear, no odor.
1525	10.03	120	27.17	4.25	91.33	2.02	NA	293.9	2.14	Clear, no odor.
1530	10.04	120	27.27	4.27	88.80	2.10	NA	278.7	0.93	Clear, no odor.
1535	10.05	120	27.36	4.28	87.73	2.15	NA	273.1	1.10	Clear, no odor.
1540	10.06	120	27.29	4.27	86.57	2.17	NA	269.2	1.18	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1540	27.3	4.27	86.57	2.17	NA	269.2	1.18	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
1547	10.06	120	NA	NA	NA	NA	NA	NA	0.90

Sample ID: MW-LF-01-2021Q3

Method of Sampling: Low-Flow

Sample Date: 09/28/2021

Collection Time: 15:40

Total Volume Purged (gal.): 1.25

Sample Depth (feet): 15

Heavy Equipment in Area: N

Post Metals Collection Turbidity (NTU): 0.90

Analysis: Alk., TDS, FI, Cl, SO4, Metals

Color: Clear

Odor: None

Ambient Air (°C): 30.1

Stability Reached (Y/N): Y

If No, Provide Explanation:

Top of Screen (ft. btoc): 7.96

Depth to Water Meter Manufacturer: Heron

Pump Controller Manufacturer: Proactive

Analytes: TDS/Alkalinity, Total Metals, Cl, FI, SO4

QA/QC Sample Information Below:

MS/MSD/LD Collected (Y/N?): N

Field Blank ID: NA

Field Duplicate ID: NA

Equipment Blank ID: NA

Filter Blank ID: NA

Tubing Blank ID: NA

Lab Supplied DI Water Lot #: 410921000

Tubing Lot #: NA

Filter Lot #: NA

Filter Sample Metals (Y/N?): N

Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA

Sample on-Ice: Time: 1547

Drawdown Stabilized ≤ 0.3 ft: Y

Bottom of Screen (ft. btoc): 17.96

Model: Dipper-T Serial No: 29049

Model: Alexis Peristaltic Pump Serial No: 109978

Method:	2540C/2320B	EPA 200.8	EPA 300.0
Bottle Lot Number	M120901BB	M120901BB	430221000
Bottle Type:	Plastic	Plastic	Plastic
Bottle Volume:	250 ml	250 ml	125 ml
Number of Bottles:	1	1	1
Preservative:	None	Nitric	None

Lead Sampler Name: Rick Mayer Date: 9/28/21 Signature:

Sampler Name: Jake Bradley Date: 9/28/21 Signature:

Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-LF-02
 Initial Depth to Water (feet): 26.19
 Total Depth of Well (feet): 32.40
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/29/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 6.21
 Pump Start Time: 11:47
 Pump Intake depth (feet): 29
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1155	26.26	120	30.39	3.95	205.66	3.53	NA	269.9	4.55	Clear, no odor.
1210	26.34	120	25.65	4.01	117.66	0.22	NA	323.7	1.23	Clear, no odor.
1215	26.36	120	25.62	4.02	171.51	0.22	NA	326.9	1.16	Clear, no odor.
1220	26.36	120	25.55	4.04	167.04	0.22	NA	330.1	1.01	Clear, no odor.
1225	26.36	120	25.55	4.05	164.08	0.22	NA	332.6	0.88	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1225	25.6	4.05	164.08	0.22	NA	332.6	0.88	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
Post Sample Values:	1231	26.36	120	NA	NA	NA	NA	NA	1.34

Sample ID: MW-LF-02-2021Q3

Method of Sampling: Low-Flow

Sample Date: 09/29/2021

Collection Time: 12:25

Total Volume Purged (gal.): 1.25

Sample Depth (feet): 29

Heavy Equipment in Area: N

Post Metals Collection Turbidity (NTU): 1.34

Analysis: Alk., TDS, FI, Cl, SO4, Metals

Color: Clear

Odor: None

Ambient Air (°C): 28.3

Stability Reached (Y/N): Y

If No, Provide Explanation:

Top of Screen (ft. btoc): 22.40

Depth to Water Meter Manufacturer: Heron

Pump Controller Manufacturer: Proactive

Analytes: TDS/Alkalinity, Total Metals, Cl, FI, SO4

Method: 2540C/2320B, EPA 200.8, EPA 300.0

Bottle Lot Number: M120901BB, M120901BB, 430221000

Bottle Type: Plastic, Plastic, Plastic

Bottle Volume: 250 ml, 250 ml, 125 ml

Number of Bottles: 1, 1, 1

Preservative: None, Nitric, None

QA/QC Sample Information Below:

MS/MSD/LD Collected (Y/N?): N

Field Blank ID: FBLK-COP-LF-21302

Field Duplicate ID: NA

Equipment Blank ID: NA

Filter Blank ID: NA

Tubing Blank ID: NA

Lab Supplied DI Water Lot #: 410921000

Tubing Lot #: NA

Filter Lot #: NA

Filter Sample Metals (Y/N?): N

Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA

Sample on-Ice: Time: 1231

Drawdown Stabilized ≤ 0.3 ft: Y

Bottom of Screen (ft. btoc): 32.40

Model: Dipper-T, Serial No: 29049

Model: Alexis Peristaltic Pump, Serial No: 109978

Lead Sampler Name: Rick Mayer Date: 9/29/21 Signature: _____

Sampler Name: Jake Bradley Date: 9/29/21 Signature: _____

Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-LF-04
 Initial Depth to Water (feet): 24.79
 Total Depth of Well (feet): 31.25
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/29/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 6.46
 Pump Start Time: 10:04
 Pump Intake depth (feet): 28
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1007	24.83	105	24.68	4.44	50.34	6.10	NA	225.4	36.4	Cloudy, no odor.
1020	24.83	105	24.69	4.42	49.39	4.32	NA	218.1	7.36	Clear, no odor.
1025	24.83	105	24.73	4.39	49.26	4.42	NA	217.3	5.25	Clear, no odor.
1030	24.83	105	24.70	4.41	49.18	4.38	NA	218.8	4.10	Clear, no odor.
1035	24.83	105	24.78	4.40	49.39	4.36	NA	216.3	3.56	Clear, no odor.
1040	24.83	105	24.86	4.41	49.81	4.38	NA	215.7	2.49	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1040	24.9	4.41	49.81	4.38	NA	215.7	2.49	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
1047	24.83	105	NA	NA	NA	NA	NA	NA	2.45

Sample ID: MW-LF-04-2021Q3

QA/QC Sample Information Below:

Method of Sampling: Low-Flow	MS/MSD/LD Collected (Y/N?): N
Sample Date: 09/29/2021	Field Blank ID: NA
Collection Time: 10:40	Field Duplicate ID: NA
Total Volume Purged (gal.): 1.1	Equipment Blank ID: NA
Sample Depth (feet): 28	Filter Blank ID: NA
Heavy Equipment in Area: N	Tubing Blank ID: NA
Post Metals Collection Turbidity (NTU): 2.45	Lab Supplied DI Water Lot #: 410921000
Analysis: Alk., TDS, FI, Cl, SO4, Metals	Tubing Lot #: NA
Color: Clear	Filter Lot #: NA
Odor: None	Filter Sample Metals (Y/N?): N
Ambient Air (°C): 23.9	Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA
Stability Reached (Y/N): Y	Sample on-Ice: Time: 1136
If No, Provide Explanation:	Drawdown Stabilized ≤ 0.3 ft: Y
Top of Screen (ft. btoc): 21.25	Bottom of Screen (ft. btoc): 31.25
Depth to Water Meter Manufacturer: Heron	Model: Dipper-T Serial No: 29049
Pump Controller Manufacturer: Proactive	Model: Alexis Peristaltic Pump Serial No: 109978

Analytes:	TDS/Alkalinity	Total Metals	Cl, FI, SO4
Method:	2540C/2320B	EPA 200.8	EPA 300.0
Bottle Lot Number:	M120901BB	M120901BB	430221000
Bottle Type:	Plastic	Plastic	Plastic
Bottle Volume:	250 ml	250 ml	125 ml
Number of Bottles:	1	1	1
Preservative:	None	Nitric	None

Lead Sampler Name: Rick Mayer	Date: 9/29/21	Signature:
Sampler Name: Jake Bradley	Date: 9/29/21	Signature:
Reviewed by: Rick Mayer	Date: 10/5/21	Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-LF-05
 Initial Depth to Water (feet): 21.29
 Total Depth of Well (feet): 29.15
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/29/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 7.86
 Pump Start Time: 09:07
 Pump Intake depth (feet): 26
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
0912	21.30	140	24.70	4.39	74.90	5.63	NA	211.1	1.25	Clear, no odor.
0925	21.30	140	23.88	4.29	78.85	4.40	NA	243.1	0.63	Clear, no odor.
0930	21.30	140	23.88	4.30	79.35	4.41	NA	241.3	0.85	Clear, no odor.
0935	21.30	140	23.92	4.30	79.40	4.47	NA	239.1	0.47	Clear, no odor.
0940	21.30	140	23.92	4.30	79.23	4.43	NA	238.0	0.89	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		940	23.9	4.30	79.23	4.43	NA	238.0	0.89	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
Post Sample Values:	0953	21.30	140	NA	NA	NA	NA	NA	0.40

Sample ID: MW-LF-05-2021Q3

Method of Sampling: Low-Flow

Sample Date: 09/29/2021

Collection Time: 09:40

Total Volume Purged (gal.): 1.25

Sample Depth (feet): 26

Heavy Equipment in Area: N

Post Metals Collection Turbidity (NTU): 0.40

Analysis: Alk., TDS, FI, Cl, SO4, Metals

Color: Clear

Odor: None

Ambient Air (°C): 21.1

Stability Reached (Y/N): Y

If No, Provide Explanation:

Top of Screen (ft. btoc): 19.15

Depth to Water Meter Manufacturer: Heron

Pump Controller Manufacturer: Proactive

Analytes: TDS/Alkalinity Total Metals Cl, FI, SO4

QA/QC Sample Information Below:

MS/MSD/LD Collected (Y/N?): Y

Field Blank ID: NA

Field Duplicate ID: NA

Equipment Blank ID: NA

Filter Blank ID: NA

Tubing Blank ID: NA

Lab Supplied DI Water Lot #: 410921000

Tubing Lot #: NA

Filter Lot #: NA

Filter Sample Metals (Y/N?): N

Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA

Sample on-Ice: Time: 0953

Drawdown Stabilized ≤ 0.3 ft: Y

Bottom of Screen (ft. btoc): 29.15

Model: Dipper-T Serial No: 29049

Model: Alexis Peristaltic Pump Serial No: 109978

Method:	2540C/2320B	EPA 200.8	EPA 300.0
Bottle Lot Number	M120901BB	M120901BB	430221000
Bottle Type:	Plastic	Plastic	Plastic
Bottle Volume:	250 ml	250 ml	125 ml
Number of Bottles:	2	2	2
Preservative:	None	Nitric	None

Lead Sampler Name: Rick Mayer Date: 9/29/21 Signature:

Sampler Name: Jake Bradley Date: 9/29/21 Signature:

Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-LF-06
 Initial Depth to Water (feet): 20.49
 Total Depth of Well (feet): 28.20
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/28/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 7.71
 Pump Start Time: 16:05
 Pump Intake depth (feet): 25
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1608	20.50	140	29.65	4.51	59.96	4.53	NA	209.7	22.0	Slightly cloudy, no odor.
1620	20.50	140	26.73	4.40	60.57	4.39	NA	195.6	1.12	Clear, no odor.
1625	20.50	140	26.60	4.39	60.56	4.38	NA	195.0	0.93	Clear, no odor.
1630	20.50	140	26.64	4.39	60.53	4.38	NA	194.6	1.03	Clear, no odor.
1635	20.50	140	26.56	4.38	60.51	4.37	NA	194.9	0.96	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1635	26.6	4.38	60.51	4.37	NA	194.9	0.96	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
1646	20.50	140	NA	NA	NA	NA	NA	NA	0.99

Sample ID: MW-LF-06-2021Q3

Method of Sampling: Low-Flow

Sample Date: 09/28/2021

Collection Time: 16:35

Total Volume Purged (gal.): 1.35

Sample Depth (feet): 25

Heavy Equipment in Area: N

Post Metals Collection Turbidity (NTU): 0.99

Analysis: Alk., TDS, FI, Cl, SO4, Metals

Color: Clear

Odor: None

Ambient Air (°C): 30.1

Stability Reached (Y/N): Y

If No, Provide Explanation:

Top of Screen (ft. btoc): 18.20

Depth to Water Meter Manufacturer: Heron

Pump Controller Manufacturer: Proactive

Analytes: TDS/Alkalinity Total Metals Cl, FI, SO4

QA/QC Sample Information Below:

MS/MSD/LD Collected (Y/N?): N

Field Blank ID: NA

Field Duplicate ID: DU-COP-LF-21301

Equipment Blank ID: NA

Filter Blank ID: NA

Tubing Blank ID: NA

Lab Supplied DI Water Lot #: 410921000

Tubing Lot #: NA

Filter Lot #: NA

Filter Sample Metals (Y/N?): N

Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA

Sample on-Ice: Time: 1646

Drawdown Stabilized ≤ 0.3 ft: Y

Bottom of Screen (ft. btoc): 28.20

Model: Dipper-T Serial No: 29049

Model: Alexis Peristaltic Pump Serial No: 109978

Method:	2540C/2320B	EPA 200.8	EPA 300.0
Bottle Lot Number	M120901BB	M120901BB	430221000
Bottle Type:	Plastic	Plastic	Plastic
Bottle Volume:	250 ml	250 ml	125 ml
Number of Bottles:	1	1	1
Preservative:	None	Nitric	None

Lead Sampler Name: Rick Mayer Date: 9/28/21 Signature:

Sampler Name: Jake Bradley Date: 9/28/21 Signature:

Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-BG-06
 Initial Depth to Water (feet): 16.36
 Total Depth of Well (feet): 30.30
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/29/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 13.94
 Pump Start Time: 12:59
 Pump Intake depth (feet): 26
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1303	16.38	125	24.48	4.23	183.93	5.50	NA	124.0	2.09	Clear, no odor.
1320	16.38	125	21.55	4.20	189.57	5.91	NA	185.3	1.41	Clear, no odor.
1325	16.38	125	21.45	4.20	188.75	5.80	NA	188.5	1.18	Clear, no odor.
1330	16.38	125	21.54	4.19	190.09	5.86	NA	191.8	0.59	Clear, no odor.
1335	16.38	125	21.35	4.19	192.65	6.09	NA	191.8	0.79	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1335	21.4	4.19	192.65	6.09	NA	191.8	0.79	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
Post Sample Values:	1345	16.38	125	NA	NA	NA	NA	NA	0.99

Sample ID: MW-BG-06-2021Q3

QA/QC Sample Information Below:

Method of Sampling: Low-Flow	MS/MSD/LD Collected (Y/N?): N
Sample Date: 09/29/2021	Field Blank ID: NA
Collection Time: 13:35	Field Duplicate ID: NA
Total Volume Purged (gal.): 1.1	Equipment Blank ID: NA
Sample Depth (feet): 26	Filter Blank ID: NA
Heavy Equipment in Area: N	Tubing Blank ID: NA
Post Metals Collection Turbidity (NTU): 0.99	Lab Supplied DI Water Lot #: 410921000
Analysis: Alk., TDS, FI, Cl, SO4, Metals	Tubing Lot #: NA
Color: Clear	Filter Lot #: NA
Odor: None	Filter Sample Metals (Y/N?): N
Ambient Air (°C): 29.4	Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA
Stability Reached (Y/N): Y	Sample on-Ice: Time: 1345
If No, Provide Explanation:	Drawdown Stabilized ≤ 0.3 ft: Y
Top of Screen (ft. btoc): 20.30	Bottom of Screen (ft. btoc): 30.30
Depth to Water Meter Manufacturer: Heron	Model: Dipper-T Serial No: 29049
Pump Controller Manufacturer: Proactive	Model: Alexis Peristaltic Pump Serial No: 109978
Analytes: TDS/Alkalinity Total Metals Cl, FI, SO4	
Method: 2540C/2320B EPA 200.8 EPA 300.0	
Bottle Lot Number: M120901BB M120901BB 430221000	
Bottle Type: Plastic Plastic Plastic	
Bottle Volume: 250 ml 250 ml 125 ml	
Number of Bottles: 1 1 1	
Preservative: None Nitric None	

Lead Sampler Name: Rick Mayer Date: 9/29/21 Signature: _____
 Sampler Name: Jake Bradley Date: 9/29/21 Signature: _____
 Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-BG-16
 Initial Depth to Water (feet): 12.01
 Total Depth of Well (feet): 29.25
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/29/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 17.24
 Pump Start Time: 13:55
 Pump Intake depth (feet): 25
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1357	12.05	140	23.16	4.63	37.61	6.73	NA	195.3	0.48	Clear, no odor.
1410	12.05	140	21.14	4.64	40.10	6.85	NA	187.6	0.84	Clear, no odor.
1415	12.05	140	21.06	4.64	40.21	6.83	NA	187.3	0.56	Clear, no odor.
1420	12.05	140	21.01	4.64	40.12	6.78	NA	188.9	0.68	Clear, no odor.
1425	12.05	140	21.01	4.64	40.15	6.76	NA	186.1	0.79	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1425	21.0	4.64	40.15	6.76	NA	186.1	0.79	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
1432	12.05	140	NA	NA	NA	NA	NA	NA	1.56

Sample ID: MW-BG-16-2021Q3

QA/QC Sample Information Below:

Method of Sampling: Low-Flow	MS/MSD/LD Collected (Y/N?): N
Sample Date: 09/29/2021	Field Blank ID: NA
Collection Time: 14:25	Field Duplicate ID: NA
Total Volume Purged (gal.): 1.25	Equipment Blank ID: NA
Sample Depth (feet): 25	Filter Blank ID: NA
Heavy Equipment in Area: N	Tubing Blank ID: NA
Post Metals Collection Turbidity (NTU): 1.56	Lab Supplied DI Water Lot #: 410921000
Analysis: Alk., TDS, FI, Cl, SO4, Metals	Tubing Lot #: NA
Color: Clear	Filter Lot #: NA
Odor: None	Filter Sample Metals (Y/N?): N
Ambient Air (°C): 30.6	Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA
Stability Reached (Y/N): Y	Sample on-Ice: Time: 1432
If No, Provide Explanation:	Drawdown Stabilized ≤ 0.3 ft: Y
Top of Screen (ft. btoc): 19.25	Bottom of Screen (ft. btoc): 29.25
Depth to Water Meter Manufacturer: Heron	Model: Dipper-T Serial No: 29049
Pump Controller Manufacturer: Proactive	Model: Alexis Peristaltic Pump Serial No: 109978

Analytes:	TDS/Alkalinity	Total Metals	Cl, FI, SO4
Method:	2540C/2320B	EPA 200.8	EPA 300.0
Bottle Lot Number:	M120901BB	M120901BB	430221000
Bottle Type:	Plastic	Plastic	Plastic
Bottle Volume:	250 ml	250 ml	125 ml
Number of Bottles:	1	1	1
Preservative:	None	Nitric	None

Lead Sampler Name: Rick Mayer	Date: 9/29/21	Signature: [Signature]
Sampler Name: Jake Bradley	Date: 9/29/21	Signature: [Signature]
Reviewed by: Rick Mayer	Date: 10/5/21	Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: AS-LF-01
 Initial Depth to Water (feet): 10.81
 Total Depth of Well (feet): 22.44
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/28/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 11.63
 Pump Start Time: 13:15
 Pump Intake depth (feet): 18
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1318	10.98	125	28.83	4.70	52.02	3.17	NA	142.0	0.83	Clear, no odor.
1330	10.97	125	26.97	4.62	52.72	2.95	NA	194.8	1.01	Clear, no odor.
1335	10.96	125	26.97	4.58	50.91	3.00	NA	200.7	1.14	Clear, no odor.
1340	10.96	125	26.91	4.57	50.83	3.03	NA	201.0	0.92	Clear, no odor.
1345	10.96	125	26.97	4.56	49.78	2.98	NA	200.8	0.83	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1345	27.0	4.56	49.78	2.98	NA	200.8	0.83	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
Post Sample Values:	1353	10.96	125	NA	NA	NA	NA	NA	0.92

Sample ID: AS-LF-01-2021Q3

QA/QC Sample Information Below:

Method of Sampling: Low-Flow	MS/MSD/LD Collected (Y/N?): N
Sample Date: 09/28/2021	Field Blank ID: NA
Collection Time: 13:45	Field Duplicate ID: NA
Total Volume Purged (gal.): 1.25	Equipment Blank ID: NA
Sample Depth (feet): 18	Filter Blank ID: NA
Heavy Equipment in Area: N	Tubing Blank ID: NA
Post Metals Collection Turbidity (NTU): 0.92	Lab Supplied DI Water Lot #: 410921000
Analysis: Alk., TDS, FI, Cl, SO4, Metals	Tubing Lot #: NA
Color: Clear	Filter Lot #: NA
Odor: None	Filter Sample Metals (Y/N?): N
Ambient Air (°C): 28.3	Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA
Stability Reached (Y/N): Y	Sample on-Ice: Time: 1353
If No, Provide Explanation:	Drawdown Stabilized ≤ 0.3 ft: Y
Top of Screen (ft. btoc): 12.44	Bottom of Screen (ft. btoc): 22.44
Depth to Water Meter Manufacturer: Heron	Model: Dipper-T Serial No: 29049
Pump Controller Manufacturer: Proactive	Model: Alexis Peristaltic Pump Serial No: 109978
Analytes: TDS/Alkalinity Total Metals Cl, FI, SO4	
Method: 2540C/2320B EPA 200.8 EPA 300.0	
Bottle Lot Number: M120901BB M120901BB 430221000	
Bottle Type: Plastic Plastic Plastic	
Bottle Volume: 250 ml 250 ml 125 ml	
Number of Bottles: 1 1 1	
Preservative: None Nitric None	

Lead Sampler Name: Rick Mayer Date: 9/28/21 Signature: _____
 Sampler Name: Jake Bradley Date: 9/28/21 Signature: _____
 Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



Program: CCR - Landfill
 Facility: Cope Generating Station
 Well ID: MW-40
 Initial Depth to Water (feet): 11.21
 Total Depth of Well (feet): 28.14
 Method of Purging: Low Flow
 Measuring Point (toc, tor, etc.): Top of Casing

Project Number: 416559.0007.0000.2.2
 Well Type: Monitoring Well
 Date: 09/28/2021
 Well Diameter (inches): 2
 Total Water Column (feet): 16.93
 Pump Start Time: 12:13
 Pump Intake depth (feet): 24
 * If water column is < Sample Set Volume contact TRC Project Manager

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance uS/cm	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
Stabilization Criteria			NA	± 0.1	± 3%	< 0.5 mg/L or ± 10%	NA	NA	± 10% or < 5 NTU	
1214	11.23	130	28.50	3.80	440.25	1.29	NA	194.9	3.34	Clear, no odor.
1225	11.24	130	25.88	4.17	451.28	0.28	NA	216.1	1.41	Clear, no odor.
1230	11.24	130	25.80	4.30	452.17	0.24	NA	211.9	1.34	Clear, no odor.
1235	11.24	130	25.77	4.35	455.71	0.23	NA	210.2	1.92	Clear, no odor.
1240	11.24	130	25.96	4.35	462.51	0.22	NA	214.7	1.05	Clear, no odor.
1245	11.24	130	25.68	4.31	465.88	0.21	NA	219.1	1.59	Clear, no odor.
										Controller Mode/Setting ID: NA
										Controller Pressure (PSI): NA
										Discharge Interval (seconds): NA
										Refill Interval (seconds): NA
Final Stabilization Values:		1245	25.7	4.31	465.88	0.21	NA	219.1	1.59	

Time	Water Level (feet)	Flow Rate mL/min	Temp. (°C)	pH (SU)	Specific Conductance (mS/cm)	DO (mg/L)	DO (%)	ORP (mV)	Turbidity (NTU)
1252	11.24	130	NA	NA	NA	NA	NA	NA	1.53

Sample ID: MW-40-2021Q3

Method of Sampling: Low-Flow

Sample Date: 09/28/2021

Collection Time: 12:45

Total Volume Purged (gal.): 1.25

Sample Depth (feet): 24

Heavy Equipment in Area: N

Post Metals Collection Turbidity (NTU): 1.53

Analysis: Alk., TDS, FI, Cl, SO4, Metals

Color: Clear

Odor: None

Ambient Air (°C): 28.9

Stability Reached (Y/N): Y

If No, Provide Explanation:

Top of Screen (ft. btoc): 18.14

Depth to Water Meter Manufacturer: Heron

Pump Controller Manufacturer: Proactive

Analytes: TDS/Alkalinity, Total Metals, Cl, FI, SO4

Method: 2540C/2320B, EPA 200.8, EPA 300.0

Bottle Lot Number: M120901BB, M120901BB, 430221000

Bottle Type: Plastic, Plastic, Plastic

Bottle Volume: 250 ml, 250 ml, 125 ml

Number of Bottles: 1, 1, 1

Preservative: None, Nitric, None

QA/QC Sample Information Below:

MS/MSD/LD Collected (Y/N?): N

Field Blank ID: NA

Field Duplicate ID: NA

Equipment Blank ID: NA

Filter Blank ID: NA

Tubing Blank ID: NA

Lab Supplied DI Water Lot #: 410921000

Tubing Lot #: NA

Filter Lot #: NA

Filter Sample Metals (Y/N?): N

Filter purged for a minimum of 500 mL, but no more than 750 mL prior to sample collection (Y/N?): NA

Sample on-Ice: Time: 1252

Drawdown Stabilized ≤ 0.3 ft: Y

Bottom of Screen (ft. btoc): 28.14

Model: Dipper-T, Serial No: 29049

Model: Alexis Peristaltic Pump, Serial No: 109978

Lead Sampler Name: Rick Mayer Date: 9/28/21 Signature: _____

Sampler Name: Jake Bradley Date: 9/28/21 Signature: _____

Reviewed by: Rick Mayer Date: 10/5/21 Signature: Richard A. Mayer Jr.



WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: <u>Aquatroll 400</u>	SAMPLER: <u>RM</u>
PROJECT NO.:	416559.0007.0000.2.2	SERIAL #: <u>851425</u>	DATE: <u>9-28-2021</u>

PH CALIBRATION CHECK

pH 7 (LOT #): <u>19450117</u> (EXP. DATE): <u>2/22</u>	AC pH 4/10 (LOT #): <u>AC</u> (EXP. DATE): <u>AC</u>	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD	PRE-CAL. READING / STANDARD		
<u>6.86 / 7.00</u>	<u>4.10 / 4.00</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1134</u>
<u>/</u>	<u>9.77 / 10.0</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1141</u>
<u>/</u>	<u>/</u>	<input type="checkbox"/> WITHIN RANGE	
<u>/</u>	<u>/</u>	<input type="checkbox"/> WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): <u>20440203</u> (EXP. DATE): <u>2/22</u>	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
<u>4423.3 / 4490.0</u>	<u>25.19</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1145</u>
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): <u>19460167</u> (EXP. DATE): <u>9/21</u>	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
<u>218.5 / 228</u>	<u>24.74</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1148</u>
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	
<u>/</u>		<input type="checkbox"/> WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
<u>T = 27.63</u> <u>7.82</u>	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU)		CAL. RANGE	TIME
(LOT #):	(LOT #):		
(EXP. DATE):	(EXP. DATE):		
PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD		
<u>0.0 / 0.0</u>	<u>0.0 / 0.0</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1156</u>
<u>0.78 / 1.00</u>	<u>0.98 / 1.00</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1156</u>
<u>9.72 / 10.0</u>	<u>10.02 / 10.0</u>	<input checked="" type="checkbox"/> WITHIN RANGE	<u>1157</u>
<u>/</u>	<u>/</u>	<input type="checkbox"/> WITHIN RANGE	

COMMENTS

<input checked="" type="checkbox"/> AUTOCAL SOLUTION	<input type="checkbox"/> STANDARD SOLUTION (S)
(LOT #):	LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
(EXP. DATE):	
CALIBRATED PARAMETERS	CALIBRATION RANGES ⁽¹⁾
<input checked="" type="checkbox"/> pH <u>4.0</u>	pH: +/- 0.2 S.U.
<input checked="" type="checkbox"/> COND	COND: +/- 1% OF CAL. STANDARD
<input type="checkbox"/> ORP	ORP: +/- 25 mV
<input type="checkbox"/> D.O.	D.O.: VARIES
<input type="checkbox"/> TURB	TURB: +/- 5% OF CAL. STANDARD
<input type="checkbox"/> _____	
<input type="checkbox"/> _____	

(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER

NOTES

PROBLEMS ENCOUNTERED

CORRECTIVE ACTIONS

SIGNED [Signature] DATE 9/28/2021

CHECKED BY _____ DATE _____



WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: Aquatroll 400	SAMPLER: RM
PROJECT NO.: 416559.0007.0000.2.2	SERIAL #: 8514 25	DATE: 9-29-2021

PH CALIBRATION CHECK

pH 7 (LOT #): 19450117 (EXP. DATE): 2/22	pH 4 / 10 (LOT #): (EXP. DATE):	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD	PRE-CAL. READING / STANDARD		
6.97 / 7.00	3.94 / 4.00	<input checked="" type="checkbox"/> WITHIN RANGE	0843
/	9.95 / 10.0	<input checked="" type="checkbox"/> WITHIN RANGE	0848
/	/	<input type="checkbox"/> WITHIN RANGE	
/	/	<input type="checkbox"/> WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 20440203 (EXP. DATE): 2/22	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
4425 / 4490	22.48	<input checked="" type="checkbox"/> WITHIN RANGE	0853
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 19460167 (EXP. DATE): 9/21	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
PRE-CAL. READING / STANDARD			
234 / 228	22.41	<input checked="" type="checkbox"/> WITHIN RANGE	0850
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	
/		<input type="checkbox"/> WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp = 20.12 °C Do = 9.40 mg/L Baro = 759.40 mm Hg	<input checked="" type="checkbox"/> WITHIN RANGE	0839
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	
	<input type="checkbox"/> WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU)		CAL. RANGE	TIME
(LOT #): (EXP. DATE):	(LOT #): (EXP. DATE):		
PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD		
4425 / 4490	/	<input type="checkbox"/> WITHIN RANGE	0853
0.26 / 0.00	0.01 / 0.00	<input checked="" type="checkbox"/> WITHIN RANGE	0858
1.05 / 1.00	1.00 / 1.00	<input checked="" type="checkbox"/> WITHIN RANGE	0859
9.44 / 10.00	9.97 / 10.00	<input checked="" type="checkbox"/> WITHIN RANGE	0900

COMMENTS

<input checked="" type="checkbox"/> AUTOCAL SOLUTION	<input type="checkbox"/> STANDARD SOLUTION (S)
(LOT #):	LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
(EXP. DATE):	
CALIBRATED PARAMETERS	CALIBRATION RANGES ⁽¹⁾
<input checked="" type="checkbox"/> pH 4.0	pH: +/- 0.2 S.U.
<input checked="" type="checkbox"/> COND	COND: +/- 1% OF CAL. STANDARD
<input type="checkbox"/> ORP	ORP: +/- 25 mV
<input type="checkbox"/> D.O.	D.O.: VARIES
<input type="checkbox"/> TURB	TURB: +/- 5% OF CAL. STANDARD
<input type="checkbox"/> _____	
<input type="checkbox"/> _____	

(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER

NOTES

PROBLEMS ENCOUNTERED

CORRECTIVE ACTIONS

NONE	NA

[Signature]

9/29/2021

SIGNED

DATE

CHECKED BY

DATE

October 22, 2021

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219

Re: CCR Groundwater Monitoring - Level 1 Package
Work Order: 557302

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 30, 2021. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. REV01: This package has been revised to update the metals sample data summary reporting format.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4708.

Sincerely,

Taylor Cannon
Project Manager

Purchase Order: 50149867
Chain of Custody: 2021146
Enclosures



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Case Narrative

REV01: This package has been revised to update the metals sample data summary reporting format.

**Receipt Narrative
for
Dominion Energy (50149867)
SDG: 557302**

October 22, 2021

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 30, 2021 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
557302001	MW-LF-01-2021Q3
557302002	MW-LF-02-2021Q3
557302003	MW-LF-03-2021Q3
557302004	MW-LF-04-2021Q3
557302005	MW-LF-05-2021Q3
557302006	FBLK-COP-LF-21301
557302007	MW-LF-06-2021Q3
557302008	MW-BG-06-2021Q3
557302009	MW-BG-16-2021Q3
557302010	DU-COP-LF-21301
557302011	AS-LF-01-2021Q3
557302012	AS-LF-02-2021Q3
557302013	MW-40-2021Q3
557302014	FBLK-COP-LF-21302

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: General Chemistry and Metals.

A handwritten signature in black ink, appearing to read 'T Cannon', with a stylized flourish extending to the right.

Taylor Cannon
Project Manager

Chain of Custody and Supporting Documentation

GEL Laboratories LLC
 Chemistry | Radiochemistry | Radioassay | Specialty Analytics
Chain of Custody and Analytical Request
GEL Work Order Number: 200940
 Phone # 803-258-1528
 Fax # _____
 Project/Site Name: Cape Station Landfill CCR 2021Q3
 Address: Cape, South Carolina
 Collected By: B. Medlin / A. Mistunas
 Send Results To: AReed@envstid.com

GEL Project Manager: Taylor Cannon
 GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military (hhmm))	QC Code (a)	Field Filtered (b)	Sample Matrix (c)	Should this sample be considered:		Total number of containers	Sample Analysis Requested (d) (Fill in the number of containers for each test)			Preservative Type (e)	Comments
						Radioactive (f) (Yes, please supply isotopic info.)	Known or possible Hazards		TDS/Alkalinity SM2540C/SM2320B	Total Metals B, Ca, Ni	Li, Mg, K, Na EPA 200.8		
MW-LF-01-2021Q3	9-28-21	1540	N	N	GW	N		3	1	1			
MW-LF-02-2021Q3	9-29-21	1225	N	N	GW	N		3	1	1			
MW-LF-03-2021Q3	9-29-21	1129	N	N	GW	N		3	1	1			
MW-LF-04-2021Q3	9-29-21	1040	N	N	GW	N		3	1	1			
MW-LF-05-2021Q3	9-29-21	0940	N	N	GW	N		6	2	2			
FBLK-COP-LF-21301	9-28-21	1430	FB	N	AQ	N		3	1	1			see attached work order for details
MW-LF-06-2021Q3	9-28-21	1635	N	N	GW	N		3	1	1			
MW-BG-06-2021Q3	9-29-21	1335	N	N	GW	N		3	1	1			
MW-BG-16-2021Q3	9-29-21	1425	N	N	GW	N		3	1	1			
DU-COP-LF-21301	9-28-21	—	FD	N	GW	N		3	1	1			

Chain of Custody Signatures

Relinquished By (Signed)	Date	Received by (signed)	Date	Time
<i>[Signature]</i>	9-29-21	<i>[Signature]</i>	9/30/21	0945

Fax Results: Yes No
 Select Deliverable: C of A QC Summary Level 1 Level 2 Level 3 Level 4
 Additional Remarks:
 For Lab Receiving Use Only: Custody Seal Intact? Yes No Cooler Temp: °C
 Sample Collection Time Zone: Eastern Pacific Central Mountain Other

For sample shipping and delivery details, see Sample Receipt & Review form (SRR).

1) Chain of Custody Number = Client Determined
 2) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
 4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Feecal, N=Nasal
 5) Sample Analysis Requested: Analytical method requested (i.e. 8260B-6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
 6) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank
 7) **KNOWN OR POSSIBLE HAZARDS**
 Characteristic Hazards: FL = Flammable/Ignitable, CO = Corrosive, RE = Reactive
 Listed Waste: LW = Listed Waste (F, K, P and U-listed wastes.)
 Other: OT = Other / Unknown (i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
 Description:
 RCRA Metals: As = Arsenic, Hg = Mercury, Ba = Barium, Se = Selenium
 TSCA Regulated: Cd = Cadmium, Ag = Silver, Cr = Chromium, MR = Misc. RCRA metals
 Ph = Lead, biphenyls

GEL Laboratories LLC
 Chemistry / Radiochemistry / Radioassay / Specialty Analytics
Chain of Custody and Analytical Request
GEL Work Order Number: 200940
 Phone # 803-258-1528
 Fax # _____
GEL Project Manager: Taylor Cannon

GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

Project/Site Name: Cope Station Landfill CCR 2021Q3
 Address: Cope, South Carolina
 Collected By: B. Medlin / A. Misiunas
 Send Results To: AReed@envstid.com

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military (hhmm))	QC Code (a)	Field Filtered (a)	Sample Matrix (a)	Should this sample be considered:	Total number of containers	TDS/Alkalinity SM2540C/SM2320B	Total Metals B, Ca, Li, Mg, K, Na EPA 200.8	Preservative Type (6)	Comments
AS-LF-01-2021Q3	9-28-21	1345	N	N	GW	(?) Known or isotopic info. Radiative (if yes, please supply info.)	3				Note: extra sample is required for sample specific QC
AS-LF-02-2021Q3	9-28-21	1445	N	N	GW		3				
MW-40-2021Q3	9-28-21	1245	N	N	GW		3				
FBLK-COP-LF-21302	9-29-21	1215	FB	N	AQ		3				see attached work order for details

Chain of Custody Signatures

Relinquished By (Signed)	Date	Received by (signed)	Date	Time
<i>[Signature]</i>	9-29-21	<i>[Signature]</i>	1620	

For sample shipping and delivery details, see Sample Receipt & Review form (SRR).

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Feecal, N=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals	Characteristic Hazards	Listed Waste	Other
As = Arsenic Ba = Barium Cd = Cadmium Cr = Chromium Pb = Lead	FL = Flammable/Ignitable CO = Corrosive RE = Reactive	LW = Listed Waste (F, K, P and U-listed wastes.) Waste code(s):	OT = Other / Unknown (i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.) Description:

TAT Requested: Normal: Rush: Specify: _____

For Lab Receiving Use Only: Custody Seal Intact? Yes No **Cooler Temp:** _____ °C

Sample Collection Time Zone: [X] Eastern [] Pacific [] Central [] Mountain [] Other: _____

Additional Remarks:

Fax Results: Yes [X] No

Select Deliverable: C of A QC Summary [X] Level 1 Level 2 Level 3 Level 4

TK

CEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DMUN
 Received By: BSE
 Enter one tracking number per line below.
5055 8481 7960
 Enter courier if applicable and no tracking available.

SDG/AR/COC/Work Order: 557302
 Date Received: 9/30/21
 IR temperature gun # 112-21 Daily Calibration performed Y/N
 Uncorrected temperature readings are to the 0.1 degree with final recorded temperatures rounded to the 0.5 degree. Provide individual container details when a cooler requiring 0-6°C is identified as out of specification.

Uncorrected Temp: 2.2 IR Correction Factor: +/- 0 Final Recorded Temp: 2.0 Within 0.0-6.0C? Y/N
 Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
 Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
 Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
 Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
 Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N

Suspected Hazard Information

	Yes	No
A) Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>
B) Did the client designate the samples to be received as radioactive?		<input checked="" type="checkbox"/>
C) Did the RSO classify the samples as radioactive?		<input checked="" type="checkbox"/>
D) Did the client designate samples as hazardous?		<input checked="" type="checkbox"/>
E) Did the RSO identify possible hazards?		<input checked="" type="checkbox"/>

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
 Hazard Class Shipped: UN#: _____
 If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___
 COC notation or radioactive stickers on containers equal client designation.
 Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM/mRA/hr
 Classified as: Rad 1 Rad 2 Rad 3
 COC notation or hazard labels on containers equal client designation.
 If D or E is yes, select Hazards below:
 PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
4 Samples requiring cold preservation were unpacked directly into cold storage	<input checked="" type="checkbox"/>			Uncorrected Temp: <u>3.9</u> Correction Factor: +/- <u>0</u> Final Recorded Temp: <u>4.0</u> Within 0.0-6.0C? <u>Y/N</u>
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's and Containers Affected:
6 Do any samples require Volatile Analysis?			<input checked="" type="checkbox"/>	If Preservation added, List: If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
8 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			ID's and containers affected:
9 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Circle Applicable: No container count on COC Other (describe)
11 Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>			
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials KL Date 10/1/21 Page ___ of ___

Laboratory Certifications

List of current GEL Certifications as of 22 October 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122021-36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 557302

Product: Determination of Metals by ICP-MS

Analytical Method: EPA 200.8 SC_NPDES

Analytical Procedure: GL-MA-E-014 REV# 35

Analytical Batch: 2180664

Preparation Method: EPA 200.2

Preparation Procedure: GL-MA-E-016 REV# 18

Preparation Batch: 2180663

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
557302001	MW-LF-01-2021Q3
557302002	MW-LF-02-2021Q3
557302003	MW-LF-03-2021Q3
557302004	MW-LF-04-2021Q3
557302005	MW-LF-05-2021Q3
557302006	FBLK-COP-LF-21301
557302007	MW-LF-06-2021Q3
557302008	MW-BG-06-2021Q3
557302009	MW-BG-16-2021Q3
557302010	DU-COP-LF-21301
557302011	AS-LF-01-2021Q3
557302012	AS-LF-02-2021Q3
557302013	MW-40-2021Q3
557302014	FBLK-COP-LF-21302
1204922512	Method Blank (MB) ICP-MS
1204922513	Laboratory Control Sample (LCS)
1204922516	557302005(MW-LF-05-2021Q3L) Serial Dilution (SD)
1204922519	557302012(AS-LF-02-2021Q3L) Serial Dilution (SD)
1204922514	557302005(MW-LF-05-2021Q3D) Sample Duplicate (DUP)
1204922517	557302012(AS-LF-02-2021Q3D) Sample Duplicate (DUP)
1204922515	557302005(MW-LF-05-2021Q3S) Matrix Spike (MS)
1204922518	557302012(AS-LF-02-2021Q3S) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Miscellaneous Information**Additional Comments**

All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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

Qualifier Definition Report for

DMNN001 Dominion Energy (50149867)

Client SDG: 557302 GEL Work Order: 557302

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: **Jamie Johnson**

Date: **13 OCT 2021**

Title: **Group Leader**

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302001

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: MW-LF-01-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	10.6	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:15	211011-2	2180664
7440-70-2	Calcium	3130	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:15	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:15	211011-2	2180664
7439-95-4	Magnesium	1510	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:15	211011-2	2180664
7440-09-7	Potassium	740	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:15	211011-2	2180664
7440-23-5	Sodium	6200	ug/L		80.0	250	250	1	MS	PRB	10/11/21 17:50	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302002

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-LF-02-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	17.0	ug/L		4.00	15.0	15.0	1	MS	PRB	10/11/21 20:17	211011-2	2180664
7440-70-2	Calcium	4390	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:17	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:17	211011-2	2180664
7439-95-4	Magnesium	3640	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:17	211011-2	2180664
7440-09-7	Potassium	4880	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:17	211011-2	2180664
7440-23-5	Sodium	7850	ug/L		80.0	250	250	1	MS	PRB	10/11/21 17:53	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302003

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-LF-03-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	9.29	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:19	211011-2	2180664
7440-70-2	Calcium	1090	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:19	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:19	211011-2	2180664
7439-95-4	Magnesium	656	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:19	211011-2	2180664
7440-09-7	Potassium	1170	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:19	211011-2	2180664
7440-23-5	Sodium	1610	ug/L		80.0	250	250	1	MS	PRB	10/11/21 17:56	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302004

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-LF-04-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	9.97	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:21	211011-2	2180664
7440-70-2	Calcium	1780	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:21	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:21	211011-2	2180664
7439-95-4	Magnesium	1340	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:21	211011-2	2180664
7440-09-7	Potassium	439	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:21	211011-2	2180664
7440-23-5	Sodium	2010	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:00	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302005

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-LF-05-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: AQ

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	10.4	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:26	211011-2	2180664
7440-70-2	Calcium	2710	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:26	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:26	211011-2	2180664
7439-95-4	Magnesium	2120	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:26	211011-2	2180664
7440-09-7	Potassium	966	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:26	211011-2	2180664
7440-23-5	Sodium	3430	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:10	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302006

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: FBLK-COP-LF-21301

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: AQ

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	4.00	ug/L	U	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:40	211011-2	2180664
7440-70-2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	10/11/21 20:40	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:40	211011-2	2180664
7439-95-4	Magnesium	10.0	ug/L	U	10.0	15.0	15.0	1	MS	PRB	10/11/21 20:40	211011-2	2180664
7440-09-7	Potassium	80.0	ug/L	U	80.0	300	300	1	MS	PRB	10/11/21 20:40	211011-2	2180664
7440-23-5	Sodium	80.0	ug/L	U	80.0	250	250	1	MS	PRB	10/11/21 18:33	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302007

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: MW-LF-06-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	11.3	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:42	211011-2	2180664
7440-70-2	Calcium	2000	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:42	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:42	211011-2	2180664
7439-95-4	Magnesium	1710	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:42	211011-2	2180664
7440-09-7	Potassium	345	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:42	211011-2	2180664
7440-23-5	Sodium	3150	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:37	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302008

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-BG-06-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	8.58	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:44	211011-2	2180664
7440-70-2	Calcium	9420	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:44	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:44	211011-2	2180664
7439-95-4	Magnesium	8100	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:44	211011-2	2180664
7440-09-7	Potassium	1700	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:44	211011-2	2180664
7440-23-5	Sodium	3170	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:40	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302009

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: MW-BG-16-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	10.6	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:45	211011-2	2180664
7440-70-2	Calcium	1620	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:45	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:45	211011-2	2180664
7439-95-4	Magnesium	1020	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:45	211011-2	2180664
7440-09-7	Potassium	1510	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:45	211011-2	2180664
7440-23-5	Sodium	969	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:43	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302010

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: DU-COP-LF-21301

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	11.9	ug/L	J	4.00	15.0	15.0	1	MS	PRB	10/11/21 20:47	211011-2	2180664
7440-70-2	Calcium	2060	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:47	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:47	211011-2	2180664
7439-95-4	Magnesium	1780	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:47	211011-2	2180664
7440-09-7	Potassium	355	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:47	211011-2	2180664
7440-23-5	Sodium	3240	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:47	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302011

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: AS-LF-01-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	18.6	ug/L		4.00	15.0	15.0	1	MS	PRB	10/11/21 20:49	211011-2	2180664
7440-70-2	Calcium	1680	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:49	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:49	211011-2	2180664
7439-95-4	Magnesium	605	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:49	211011-2	2180664
7440-09-7	Potassium	2020	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:49	211011-2	2180664
7440-23-5	Sodium	3540	ug/L		80.0	250	250	1	MS	PRB	10/11/21 18:50	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302012

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: AS-LF-02-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	19.1	ug/L		4.00	15.0	15.0	1	MS	PRB	10/11/21 20:55	211011-2	2180664
7440-70-2	Calcium	5630	ug/L		30.0	100	100	1	MS	PRB	10/11/21 20:55	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 20:55	211011-2	2180664
7439-95-4	Magnesium	3940	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 20:55	211011-2	2180664
7440-09-7	Potassium	1830	ug/L		80.0	300	300	1	MS	PRB	10/11/21 20:55	211011-2	2180664
7440-23-5	Sodium	2280	ug/L		80.0	250	250	1	MS	PRB	10/11/21 19:00	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302013

BASIS: As Received

DATE COLLECTED 28-SEP-21

CLIENT ID: MW-40-2021Q3

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: GW

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	43.9	ug/L		4.00	15.0	15.0	1	MS	PRB	10/11/21 21:05	211011-2	2180664
7440-70-2	Calcium	30100	ug/L		30.0	100	100	1	MS	PRB	10/11/21 21:05	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 21:05	211011-2	2180664
7439-95-4	Magnesium	9730	ug/L		10.0	15.0	15.0	1	MS	PRB	10/11/21 21:05	211011-2	2180664
7440-09-7	Potassium	4660	ug/L		80.0	300	300	1	MS	PRB	10/11/21 21:05	211011-2	2180664
7440-23-5	Sodium	15300	ug/L		80.0	250	250	1	MS	PRB	10/11/21 19:17	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 557302

CONTRACT: DMNN00101

METHOD TYPE: EPA

SAMPLE ID:557302014

BASIS: As Received

DATE COLLECTED 29-SEP-21

CLIENT ID: FBLK-COP-LF-21302

LEVEL: Low

DATE RECEIVED 30-SEP-21

MATRIX: AQ

%SOLIDS: 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	4.00	ug/L	U	4.00	15.0	15.0	1	MS	PRB	10/11/21 21:06	211011-2	2180664
7440-70-2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	10/11/21 21:06	211011-2	2180664
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/11/21 21:06	211011-2	2180664
7439-95-4	Magnesium	10.0	ug/L	U	10.0	15.0	15.0	1	MS	PRB	10/11/21 21:06	211011-2	2180664
7440-09-7	Potassium	80.0	ug/L	U	80.0	300	300	1	MS	PRB	10/11/21 21:06	211011-2	2180664
7440-23-5	Sodium	80.0	ug/L	U	80.0	250	250	1	MS	PRB	10/11/21 19:21	211011-1	2180664

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2180664	2180663	EPA 200.2	50	mL	50	mL	10/04/21	CD3

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

Quality Control Summary

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 557302

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS15

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICV01	Sodium	5070	ug/L	5000	ug/L	101.4	90.0 – 110.0	MS	11-OCT-21 17:09	211011-1
	Boron	101	ug/L	100	ug/L	100.7	90.0 – 110.0	MS	11-OCT-21 19:52	211011-2
	Calcium	4970	ug/L	5000	ug/L	99.5	90.0 – 110.0	MS	11-OCT-21 19:52	211011-2
	Lithium	48.9	ug/L	50	ug/L	97.8	90.0 – 110.0	MS	11-OCT-21 19:52	211011-2
	Magnesium	5100	ug/L	5000	ug/L	102.1	90.0 – 110.0	MS	11-OCT-21 19:52	211011-2
	Potassium	5090	ug/L	5000	ug/L	101.7	90.0 – 110.0	MS	11-OCT-21 19:52	211011-2
CCV01	Sodium	5210	ug/L	5000	ug/L	104.3	90.0 – 110.0	MS	11-OCT-21 17:26	211011-1
	Boron	99.3	ug/L	100	ug/L	99.3	90.0 – 110.0	MS	11-OCT-21 20:01	211011-2
	Calcium	5050	ug/L	5000	ug/L	101.1	90.0 – 110.0	MS	11-OCT-21 20:01	211011-2
	Lithium	49.5	ug/L	50	ug/L	99	90.0 – 110.0	MS	11-OCT-21 20:01	211011-2
	Magnesium	5180	ug/L	5000	ug/L	103.6	90.0 – 110.0	MS	11-OCT-21 20:01	211011-2
	Potassium	5170	ug/L	5000	ug/L	103.4	90.0 – 110.0	MS	11-OCT-21 20:01	211011-2
CCV02	Sodium	5320	ug/L	5000	ug/L	106.4	90.0 – 110.0	MS	11-OCT-21 17:36	211011-1
	Boron	99.3	ug/L	100	ug/L	99.3	90.0 – 110.0	MS	11-OCT-21 20:07	211011-2
	Calcium	5020	ug/L	5000	ug/L	100.4	90.0 – 110.0	MS	11-OCT-21 20:07	211011-2
	Lithium	50.1	ug/L	50	ug/L	100.1	90.0 – 110.0	MS	11-OCT-21 20:07	211011-2
	Magnesium	5160	ug/L	5000	ug/L	103.2	90.0 – 110.0	MS	11-OCT-21 20:07	211011-2
	Potassium	5150	ug/L	5000	ug/L	103.1	90.0 – 110.0	MS	11-OCT-21 20:07	211011-2
CCV03	Sodium	5180	ug/L	5000	ug/L	103.7	90.0 – 110.0	MS	11-OCT-21 18:03	211011-1
	Boron	98.8	ug/L	100	ug/L	98.8	90.0 – 110.0	MS	11-OCT-21 20:22	211011-2
	Calcium	4910	ug/L	5000	ug/L	98.3	90.0 – 110.0	MS	11-OCT-21 20:22	211011-2
	Lithium	49.3	ug/L	50	ug/L	98.7	90.0 – 110.0	MS	11-OCT-21 20:22	211011-2
	Magnesium	5110	ug/L	5000	ug/L	102.2	90.0 – 110.0	MS	11-OCT-21 20:22	211011-2
	Potassium	5000	ug/L	5000	ug/L	100	90.0 – 110.0	MS	11-OCT-21 20:22	211011-2
CCV04	Sodium	5170	ug/L	5000	ug/L	103.5	90.0 – 110.0	MS	11-OCT-21 18:27	211011-1
	Boron	98	ug/L	100	ug/L	98	90.0 – 110.0	MS	11-OCT-21 20:36	211011-2
	Calcium	4880	ug/L	5000	ug/L	97.5	90.0 – 110.0	MS	11-OCT-21 20:36	211011-2

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 557302

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS15

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Lithium	49.4	ug/L	50	ug/L	98.8	90.0 – 110.0	MS	11-OCT-21 20:36	211011-2
	Magnesium	5160	ug/L	5000	ug/L	103.2	90.0 – 110.0	MS	11-OCT-21 20:36	211011-2
	Potassium	5010	ug/L	5000	ug/L	100.3	90.0 – 110.0	MS	11-OCT-21 20:36	211011-2
CCV05										
	Sodium	5200	ug/L	5000	ug/L	103.9	90.0 – 110.0	MS	11-OCT-21 18:54	211011-1
	Boron	101	ug/L	100	ug/L	100.7	90.0 – 110.0	MS	11-OCT-21 20:51	211011-2
	Calcium	4990	ug/L	5000	ug/L	99.8	90.0 – 110.0	MS	11-OCT-21 20:51	211011-2
	Lithium	50.3	ug/L	50	ug/L	100.6	90.0 – 110.0	MS	11-OCT-21 20:51	211011-2
	Magnesium	5150	ug/L	5000	ug/L	103.1	90.0 – 110.0	MS	11-OCT-21 20:51	211011-2
	Potassium	5000	ug/L	5000	ug/L	99.9	90.0 – 110.0	MS	11-OCT-21 20:51	211011-2
CCV06										
	Sodium	5170	ug/L	5000	ug/L	103.3	90.0 – 110.0	MS	11-OCT-21 19:34	211011-1
	Boron	97.6	ug/L	100	ug/L	97.6	90.0 – 110.0	MS	11-OCT-21 21:14	211011-2
	Calcium	4960	ug/L	5000	ug/L	99.3	90.0 – 110.0	MS	11-OCT-21 21:14	211011-2
	Lithium	49.2	ug/L	50	ug/L	98.4	90.0 – 110.0	MS	11-OCT-21 21:14	211011-2
	Magnesium	5110	ug/L	5000	ug/L	102.3	90.0 – 110.0	MS	11-OCT-21 21:14	211011-2
	Potassium	5040	ug/L	5000	ug/L	100.9	90.0 – 110.0	MS	11-OCT-21 21:14	211011-2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 557302

Contract: DMNN00101

Lab Code: GEL

Instrument ID: ICPMS15

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Advisory Limits (%R)</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
CRDL01	Sodium	256	ug/L	250	ug/L	102.3	70.0 – 130.0	MS	11-OCT-21 17:16	211011-1
	Boron	14.9	ug/L	15	ug/L	99.5	70.0 – 130.0	MS	11-OCT-21 19:56	211011-2
	Calcium	224	ug/L	200	ug/L	112	70.0 – 130.0	MS	11-OCT-21 19:56	211011-2
	Lithium	9.98	ug/L	10	ug/L	99.8	70.0 – 130.0	MS	11-OCT-21 19:56	211011-2
	Magnesium	30.8	ug/L	30	ug/L	102.7	70.0 – 130.0	MS	11-OCT-21 19:56	211011-2
	Potassium	308	ug/L	300	ug/L	102.8	70.0 – 130.0	MS	11-OCT-21 19:56	211011-2
CRDL02	Sodium	255	ug/L	250	ug/L	102.1	70.0 – 130.0	MS	11-OCT-21 19:24	211011-1
	Boron	15.1	ug/L	15	ug/L	100.5	70.0 – 130.0	MS	11-OCT-21 21:08	211011-2
	Calcium	221	ug/L	200	ug/L	110.3	70.0 – 130.0	MS	11-OCT-21 21:08	211011-2
	Lithium	9.97	ug/L	10	ug/L	99.7	70.0 – 130.0	MS	11-OCT-21 21:08	211011-2
	Magnesium	31.7	ug/L	30	ug/L	105.6	70.0 – 130.0	MS	11-OCT-21 21:08	211011-2
	Potassium	310	ug/L	300	ug/L	103.2	70.0 – 130.0	MS	11-OCT-21 21:08	211011-2

*Analytical Methods:

MS EPA 200.8 SC_NPDES

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 557302

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M*</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
ICB01										
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 17:13	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 19:54	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 19:54	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 19:54	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 19:54	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 19:54	211011-2
CCB01										
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 17:29	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 20:03	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 20:03	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 20:03	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 20:03	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 20:03	211011-2
CCB02										
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 17:40	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 20:09	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 20:09	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 20:09	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 20:09	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 20:09	211011-2
CCB03										
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 18:06	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 20:24	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 20:24	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 20:24	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 20:24	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 20:24	211011-2
CCB04										
	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 18:30	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 20:38	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 20:38	211011-2

Metals
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Initial and Continuing Calibration Blank Summary

SDG No.: 557302

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result ug/L</u>	<u>Acceptance</u>	<u>Conc Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M*</u>	<u>Analysis Date/Time</u>	<u>Run</u>
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 20:38	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 20:38	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 20:38	211011-2
CCB05	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 18:57	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 20:53	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 20:53	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 20:53	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 20:53	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 20:53	211011-2
CCB06	Sodium	80.0	+/-125	U	80.0	250	LIQ	MS	11-OCT-21 19:37	211011-1
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	11-OCT-21 21:16	211011-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	11-OCT-21 21:16	211011-2
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	11-OCT-21 21:16	211011-2
	Magnesium	10.0	+/-7.5	U	10.0	15.0	LIQ	MS	11-OCT-21 21:16	211011-2
	Potassium	80.0	+/-150	U	80.0	300	LIQ	MS	11-OCT-21 21:16	211011-2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 557302
Contract: DMNN00101
Matrix: GW

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Acceptance Window</u>	<u>Conc Qual</u>	<u>M*</u>	<u>MDL</u>	<u>RDL</u>
1204922512	Boron	4.00	ug/L	+/-7.5	U	MS	4.00	15.0
	Calcium	30.0	ug/L	+/-50	U	MS	30.0	100
	Lithium	2.00	ug/L	+/-5	U	MS	2.00	10.0
	Magnesium	10.0	ug/L	+/-7.5	U	MS	10.0	15.0
	Potassium	80.0	ug/L	+/-150	U	MS	80.0	300
	Sodium	80.0	ug/L	+/-125	U	MS	80.0	250

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS
-4-
Interference Check Sample

SDG No: 557302

Contract: DMNN00101

Lab Code: GEL

Instrument: ICPMS15

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01	Sodium	90200	ug/L	100000	ug/L	90.2	80.0 – 120.0	11-OCT-21 17:19	211011-1
ICSAB01	Sodium	91100	ug/L	100000	ug/L	91.1	80.0 – 120.0	11-OCT-21 17:23	211011-1
ICSA02	Sodium	90700	ug/L	100000	ug/L	90.7	80.0 – 120.0	11-OCT-21 19:27	211011-1
ICSAB02	Sodium	90800	ug/L	100000	ug/L	90.8	80.0 – 120.0	11-OCT-21 19:31	211011-1

METALS

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Interference Check Sample

SDG No: 557302

Contract: DMNN00101

Lab Code: GEL

Instrument: ICPMS15

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01									
	Boron	1.93	ug/L					11-OCT-21 19:58	211011-2
	Calcium	95800	ug/L	100000	ug/L	95.8	80.0 – 120.0	11-OCT-21 19:58	211011-2
	Lithium	0.033	ug/L					11-OCT-21 19:58	211011-2
	Magnesium	86500	ug/L	100000	ug/L	86.5	80.0 – 120.0	11-OCT-21 19:58	211011-2
	Potassium	85800	ug/L	100000	ug/L	85.8	80.0 – 120.0	11-OCT-21 19:58	211011-2
ICSAB01									
	Boron	20.4	ug/L	20	ug/L	102	80.0 – 120.0	11-OCT-21 19:59	211011-2
	Calcium	94500	ug/L	100000	ug/L	94.5	80.0 – 120.0	11-OCT-21 19:59	211011-2
	Lithium	19.3	ug/L	20	ug/L	96.6	80.0 – 120.0	11-OCT-21 19:59	211011-2
	Magnesium	86400	ug/L	100000	ug/L	86.4	80.0 – 120.0	11-OCT-21 19:59	211011-2
	Potassium	85700	ug/L	100000	ug/L	85.7	80.0 – 120.0	11-OCT-21 19:59	211011-2
ICSA02									
	Boron	1.61	ug/L					11-OCT-21 21:10	211011-2
	Calcium	95400	ug/L	100000	ug/L	95.4	80.0 – 120.0	11-OCT-21 21:10	211011-2
	Lithium	0.029	ug/L					11-OCT-21 21:10	211011-2
	Magnesium	87300	ug/L	100000	ug/L	87.3	80.0 – 120.0	11-OCT-21 21:10	211011-2
	Potassium	86200	ug/L	100000	ug/L	86.2	80.0 – 120.0	11-OCT-21 21:10	211011-2
ICSAB02									
	Boron	20.0	ug/L	20	ug/L	100	80.0 – 120.0	11-OCT-21 21:12	211011-2
	Calcium	94800	ug/L	100000	ug/L	94.8	80.0 – 120.0	11-OCT-21 21:12	211011-2
	Lithium	19.4	ug/L	20	ug/L	97.1	80.0 – 120.0	11-OCT-21 21:12	211011-2
	Magnesium	87600	ug/L	100000	ug/L	87.6	80.0 – 120.0	11-OCT-21 21:12	211011-2
	Potassium	85900	ug/L	100000	ug/L	85.9	80.0 – 120.0	11-OCT-21 21:12	211011-2

METALS

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Matrix Spike Summary

SDG NO. 557302 Client ID: MW-LF-05-2021Q3S

Contract: DMNN00101 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 557302005 Spike ID: 1204922515

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Boron	ug/L	75-125	108		10.4	B	100	97.8		MS
Calcium	ug/L	75-125	4610		2710		2000	95.1		MS
Lithium	ug/L	75-125	48.9		2.00	U	50.0	96.5		MS
Magnesium	ug/L	75-125	4050		2120		2000	96.2		MS
Potassium	ug/L	75-125	2880		966		2000	95.7		MS
Sodium	ug/L	75-125	5460		3430		2000	102		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

-5a-

Matrix Spike Summary

SDG NO. 557302 Client ID: AS-LF-02-2021Q3S

Contract: DMNN00101 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 557302012 Spike ID: 1204922518

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Boron	ug/L	75-125	121		19.1		100	101		MS
Calcium	ug/L	75-125	7690		5630		2000	103		MS
Lithium	ug/L	75-125	50.5		2.00	U	50.0	99.5		MS
Magnesium	ug/L	75-125	6100		3940		2000	108		MS
Potassium	ug/L	75-125	3860		1830		2000	102		MS
Sodium	ug/L	75-125	4310		2280		2000	101		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

Metals
-6-
Duplicate Sample Summary

SDG No.: 557302

Lab Code: GEL

Contract: DMNN00101

Client ID: MW-LF-05-2021Q3D

Matrix: GROUND WATER

Level: Low

Sample ID: 557302005

Duplicate ID: 1204922514

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/-30	10.4	B	11.1	B	6.16		MS
Calcium	ug/L	+/-20%	2710		2760		1.7		MS
Lithium	ug/L		2.00	U	2.00	U			MS
Magnesium	ug/L	+/-20%	2120		2170		2		MS
Potassium	ug/L	+/-600	966		999		3.36		MS
Sodium	ug/L	+/-20%	3430		3460		.868		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

Metals
-6-
Duplicate Sample Summary

SDG No.: 557302

Lab Code: GEL

Contract: DMNN00101

Client ID: AS-LF-02-2021Q3D

Matrix: GROUND WATER

Level: Low

Sample ID: 557302012

Duplicate ID: 1204922517

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/-30	19.1		19.9		4.2		MS
Calcium	ug/L	+/-20%	5630		5650		.372		MS
Lithium	ug/L		2.00 U		2.00 U				MS
Magnesium	ug/L	+/-20%	3940		4010		1.85		MS
Potassium	ug/L	+/-20%	1830		1830		.0822		MS
Sodium	ug/L	+/-20%	2280		2250		1.38		MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Laboratory Control Sample Summary

SDG NO. 557302

Contract: DMNN00101

Aqueous LCS Source: Enviromental Express

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1204922513	Boron	ug/L	100	95.7		95.7	80-120	MS
	Calcium	ug/L	2000	2000		100	80-120	MS
	Lithium	ug/L	50.0	47.8		95.7	80-120	MS
	Magnesium	ug/L	2000	2000		99.9	80-120	MS
	Potassium	ug/L	2000	1990		99.6	80-120	MS
	Sodium	ug/L	2000	1940		97.1	80-120	MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Serial Dilution Sample Summary

SDG NO. 557302 Client ID: MW-LF-05-2021Q3L

Contract: DMNN00101

Matrix: LIQUID Level: Low

Sample ID: 557302005 Serial Dilution ID: 1204922516

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Boron	10.4	B	20	U	52.686			MS
Calcium	2710		2640		2.557			MS
Lithium	2	U	10	U				MS
Magnesium	2120		2040		3.871		10	MS
Potassium	966		949	B	1.741			MS
Sodium	3430		3310		3.275			MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS

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Serial Dilution Sample Summary

SDG NO. 557302 Client ID: AS-LF-02-2021Q3L

Contract: DMNN00101

Matrix: LIQUID Level: Low

Sample ID: 557302012 Serial Dilution ID: 1204922519

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Boron	19.1		25.5	B	33.638			MS
Calcium	5630		5580		.927		10	MS
Lithium	2	U	10	U				MS
Magnesium	3940		3960		.571		10	MS
Potassium	1830		1830		.331			MS
Sodium	2280		2210		3.369			MS

*Analytical Methods:

MS EPA 200.8 SC_NPDES

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 557302

Method Type: MS

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
Batch Number 2180663							
1204922512	MB for batch 2180663	MB	G	04-OCT-21	50mL	50mL	
1204922513	LCS for batch 2180663	LCS	G	04-OCT-21	50mL	50mL	
1204922515	MW-LF-05-2021Q3S	MS	G	04-OCT-21	50mL	50mL	
1204922518	AS-LF-02-2021Q3S	MS	G	04-OCT-21	50mL	50mL	
1204922514	MW-LF-05-2021Q3D	DUP	G	04-OCT-21	50mL	50mL	
1204922517	AS-LF-02-2021Q3D	DUP	G	04-OCT-21	50mL	50mL	
557302001	MW-LF-01-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302002	MW-LF-02-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302003	MW-LF-03-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302004	MW-LF-04-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302005	MW-LF-05-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302006	FBLK-COP-LF-21301	SAMPLE	W	04-OCT-21	50mL	50mL	
557302007	MW-LF-06-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302008	MW-BG-06-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302009	MW-BG-16-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302010	DU-COP-LF-21301	SAMPLE	G	04-OCT-21	50mL	50mL	
557302011	AS-LF-01-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302012	AS-LF-02-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	
557302013	MW-40-2021Q3	SAMPLE	G	04-OCT-21	50mL	50mL	

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 557302

Method Type: MS

Contract: DMNN00101

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
557302014	FBLK-COP-LF-21302	SAMPLE	W	04-OCT-21	50mL	50mL	

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 557302**

Product: Ion Chromatography

Analytical Method: EPA 300.0

Analytical Procedure: GL-GC-E-086 REV# 29

Analytical Batches: 2180609 and 2180949

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
557302001	MW-LF-01-2021Q3
557302002	MW-LF-02-2021Q3
557302003	MW-LF-03-2021Q3
557302004	MW-LF-04-2021Q3
557302005	MW-LF-05-2021Q3
557302006	FBLK-COP-LF-21301
557302007	MW-LF-06-2021Q3
557302008	MW-BG-06-2021Q3
557302009	MW-BG-16-2021Q3
557302010	DU-COP-LF-21301
557302011	AS-LF-01-2021Q3
557302012	AS-LF-02-2021Q3
557302013	MW-40-2021Q3
557302014	FBLK-COP-LF-21302
1204922381	Method Blank (MB)
1204922382	Laboratory Control Sample (LCS)
1204922383	557302005(MW-LF-05-2021Q3) Sample Duplicate (DUP)
1204922385	557302005(MW-LF-05-2021Q3) Post Spike (PS)
1204923053	Method Blank (MB)
1204923054	Laboratory Control Sample (LCS)
1204923055	557302011(AS-LF-01-2021Q3) Sample Duplicate (DUP)
1204923057	557302011(AS-LF-01-2021Q3) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Chloride	1204922385 (MW-LF-05-2021Q3PS)	125* (90%-110%)

Technical Information

Sample Dilutions

The following samples 557302001 (MW-LF-01-2021Q3), 557302002 (MW-LF-02-2021Q3), 557302008 (MW-BG-06-2021Q3), 557302012 (AS-LF-02-2021Q3) and 557302013 (MW-40-2021Q3) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	557302				
	001	002	008	012	013
Chloride	5X	5X	5X	2X	10X
Sulfate	1X	1X	1X	1X	10X

Sample Re-analysis

Samples 1204923053 (MB) and 1204923054 (LCS) were re-analyzed due to instrument failure. The results from the reanalysis are reported.

Miscellaneous Information

Manual Integrations

Samples 1204922382 (LCS), 1204922383 (MW-LF-05-2021Q3DUP), 1204922385 (MW-LF-05-2021Q3PS), 557302001 (MW-LF-01-2021Q3), 557302002 (MW-LF-02-2021Q3), 557302003 (MW-LF-03-2021Q3), 557302004 (MW-LF-04-2021Q3), 557302005 (MW-LF-05-2021Q3), 557302007 (MW-LF-06-2021Q3), 557302008 (MW-BG-06-2021Q3), 557302009 (MW-BG-16-2021Q3), 557302010 (DU-COP-LF-21301) and 1204923055 (AS-LF-01-2021Q3DUP) were manually integrated to correctly position the baseline as set in the calibration standards.

Additional Comments

All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Product: Solids, Total Dissolved
Analytical Method: SM 2540C
Analytical Procedure: GL-GC-E-001 REV# 19
Analytical Batch: 2181284

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
557302001	MW-LF-01-2021Q3
557302002	MW-LF-02-2021Q3
557302003	MW-LF-03-2021Q3
557302004	MW-LF-04-2021Q3
557302005	MW-LF-05-2021Q3
557302006	FBLK-COP-LF-21301
557302007	MW-LF-06-2021Q3
557302008	MW-BG-06-2021Q3
557302009	MW-BG-16-2021Q3
557302010	DU-COP-LF-21301
557302011	AS-LF-01-2021Q3
557302012	AS-LF-02-2021Q3
557302013	MW-40-2021Q3
557302014	FBLK-COP-LF-21302
1204923827	Method Blank (MB)
1204923828	Laboratory Control Sample (LCS)
1204923829	557302005(MW-LF-05-2021Q3) Sample Duplicate (DUP)
1204923830	557302007(MW-LF-06-2021Q3) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplicate Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

Analyte	Sample	Value
Total Dissolved Solids	1204923830 (MW-LF-06-2021Q3DUP)	abs(20 - 35.7)* (+/-14.3 mg/L)

Miscellaneous Information

Additional Comments

All method-driven specifications are followed for these analyses except where client-specific SOW requirements are

required to be met.

Product: Alkalinity

Analytical Method: SM 2320B

Analytical Procedure: GL-GC-E-033 REV# 14

Analytical Batch: 2180533

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
557302001	MW-LF-01-2021Q3
557302002	MW-LF-02-2021Q3
557302003	MW-LF-03-2021Q3
557302004	MW-LF-04-2021Q3
557302005	MW-LF-05-2021Q3
557302006	FBLK-COP-LF-21301
557302007	MW-LF-06-2021Q3
557302008	MW-BG-06-2021Q3
557302009	MW-BG-16-2021Q3
557302010	DU-COP-LF-21301
557302011	AS-LF-01-2021Q3
557302012	AS-LF-02-2021Q3
557302013	MW-40-2021Q3
557302014	FBLK-COP-LF-21302
1204922266	Laboratory Control Sample (LCS)
1204922267	557302001(MW-LF-01-2021Q3) Sample Duplicate (DUP)
1204922268	557302005(MW-LF-05-2021Q3) Sample Duplicate (DUP)
1204922269	557302001(MW-LF-01-2021Q3) Matrix Spike (MS)
1204922270	557302005(MW-LF-05-2021Q3) Matrix Spike (MS)
1204930538	Method Blank (MB)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments

All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report for

DMNN001 Dominion Energy (50149867)

Client SDG: 557302 GEL Work Order: 557302


The Qualifiers in this report are defined as follows:

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

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Aubrey Kingsbury

Date: 14 OCT 2021

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-01-2021Q3	Project: DMNN00101
Sample ID: 557302001	Client ID: DMNN001
Matrix: GW	
Collect Date: 28-SEP-21 15:40	
Receive Date: 30-SEP-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	J	0.0913	0.0330	0.100	mg/L		1	LXA2	10/01/21	0118	2180609	1
Sulfate		0.418	0.133	0.400	mg/L		1					
Chloride		17.0	0.335	1.00	mg/L		5	LXA2	10/01/21	1827	2180609	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		32.9	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1759	2180533	4
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-02-2021Q3 Project: DMNN00101
Sample ID: 557302002 Client ID: DMNN001
Matrix: GW
Collect Date: 29-SEP-21 12:25
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.203	0.0330	0.100	mg/L		1	LXA2	09/30/21	1837	2180609	1
Sulfate		5.70	0.133	0.400	mg/L		1					
Chloride		31.0	0.335	1.00	mg/L		5	LXA2	10/01/21	1858	2180609	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		97.1	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	10/12/21	1805	2180533	4
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-03-2021Q3	Project: DMNN00101
Sample ID: 557302003	Client ID: DMNN001
Matrix: GW	
Collect Date: 29-SEP-21 11:29	
Receive Date: 30-SEP-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.15	0.0670	0.200	mg/L		1	LXA2	09/30/21	1908	2180609	1
Fluoride	J	0.0740	0.0330	0.100	mg/L		1					
Sulfate		0.698	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	5.71	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	3.02	1.45	4.00	mg/L			RXB5	10/12/21	1807	2180533	3
Bicarbonate alkalinity (CaCO3)	J	3.02	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-04-2021Q3	Project: DMNN00101
Sample ID: 557302004	Client ID: DMNN001
Matrix: GW	
Collect Date: 29-SEP-21 10:40	
Receive Date: 30-SEP-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		4.52	0.0670	0.200	mg/L		1	LXA2	09/30/21	1938	2180609	1
Fluoride	J	0.0773	0.0330	0.100	mg/L		1					
Sulfate		0.558	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		18.6	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	10/12/21	1808	2180533	3
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-LF-05-2021Q3 Project: DMNN00101
Sample ID: 557302005 Client ID: DMNN001
Matrix: AQ
Collect Date: 29-SEP-21 09:40
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		9.68	0.0670	0.200	mg/L		1	LXA2	09/30/21	2009	2180609	1
Fluoride	J	0.0859	0.0330	0.100	mg/L		1					
Sulfate		0.541	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		18.6	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	10/12/21	1810	2180533	3
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: FBLK-COP-LF-21301 Project: DMNN00101
Sample ID: 557302006 Client ID: DMNN001
Matrix: AQ
Collect Date: 28-SEP-21 14:30
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride	J	0.139	0.0670	0.200	mg/L		1	LXA2	09/30/21	2040	2180609	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	U	ND	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1814	2180533	3
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-LF-06-2021Q3	Project:	DMNN00101
Sample ID:	557302007	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	28-SEP-21 16:35		
Receive Date:	30-SEP-21		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		7.90	0.0670	0.200	mg/L		1	LXA2	10/01/21	0352	2180609	1
Fluoride	J	0.0885	0.0330	0.100	mg/L		1					
Sulfate		0.457	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		35.7	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1817	2180533	3
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-BG-06-2021Q3	Project: DMNN00101
Sample ID: 557302008	Client ID: DMNN001
Matrix: GW	
Collect Date: 29-SEP-21 13:35	
Receive Date: 30-SEP-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	J	0.0793	0.0330	0.100	mg/L		1	LXA2	09/30/21	2111	2180609	1
Sulfate	J	0.273	0.133	0.400	mg/L		1					
Chloride		17.4	0.335	1.00	mg/L		5	LXA2	10/01/21	1928	2180609	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		88.6	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	U	ND	1.45	4.00	mg/L			RXB5	10/12/21	1820	2180533	4
Bicarbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-BG-16-2021Q3 Project: DMNN00101
Sample ID: 557302009 Client ID: DMNN001
Matrix: GW
Collect Date: 29-SEP-21 14:25
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		2.34	0.0670	0.200	mg/L		1	LXA2	09/30/21	2142	2180609	1
Fluoride	J	0.0661	0.0330	0.100	mg/L		1					
Sulfate		1.95	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	12.9	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1821	2180533	3
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: DU-COP-LF-21301 Project: DMNN00101
Sample ID: 557302010 Client ID: DMNN001
Matrix: GW
Collect Date: 28-SEP-21 12:00
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		7.96	0.0670	0.200	mg/L		1	LXA2	09/30/21	2213	2180609	1
Fluoride	J	0.0868	0.0330	0.100	mg/L		1					
Sulfate		0.615	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		25.7	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1823	2180533	3
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: AS-LF-01-2021Q3 Project: DMNN00101
Sample ID: 557302011 Client ID: DMNN001
Matrix: GW
Collect Date: 28-SEP-21 13:45
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.31	0.0670	0.200	mg/L		1	JLD1	10/02/21	0708	2180949	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		8.71	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		25.7	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3		4.42	1.45	4.00	mg/L			RXB5	10/12/21	1824	2180533	3
Bicarbonate alkalinity (CaCO3)		4.42	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
 Address : 120 Tredegar Street
 Richmond, Virginia 23219
 Contact: Kelly Hicks
 Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: AS-LF-02-2021Q3	Project: DMNN00101
Sample ID: 557302012	Client ID: DMNN001
Matrix: GW	
Collect Date: 28-SEP-21 14:45	
Receive Date: 30-SEP-21	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.105	0.0330	0.100	mg/L		1	JLD1	10/02/21	0841	2180949	1
Sulfate		9.07	0.133	0.400	mg/L		1					
Chloride		15.1	0.134	0.400	mg/L		2	JLD1	10/04/21	1710	2180949	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		41.4	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1826	2180533	4
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-40-2021Q3 Project: DMNN00101
Sample ID: 557302013 Client ID: DMNN001
Matrix: GW
Collect Date: 28-SEP-21 12:45
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.679	0.0330	0.100	mg/L		1	JLD1	10/02/21	0911	2180949	1
Chloride		47.6	0.670	2.00	mg/L		10	JLD1	10/04/21	1741	2180949	2
Sulfate		126	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		274	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	3
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3		9.05	1.45	4.00	mg/L			RXB5	10/12/21	1828	2180533	4
Bicarbonate alkalinity (CaCO3)		9.05	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	
4	SM 2320B	

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

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Certificate of Analysis

Report Date: October 14, 2021

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: FBLK-COP-LF-21302 Project: DMNN00101
Sample ID: 557302014 Client ID: DMNN001
Matrix: AQ
Collect Date: 29-SEP-21 12:15
Receive Date: 30-SEP-21
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride	U	ND	0.0670	0.200	mg/L		1	JLD1	10/02/21	0942	2180949	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	U	ND	3.40	14.3	mg/L			KLP1	10/04/21	1140	2181284	2
Titration and Ion Analysis												
SM 2320B Total Alkalinity "As Received"												
Alkalinity, Total as CaCO3	J	2.01	1.45	4.00	mg/L			RXB5	10/12/21	1831	2180533	3
Bicarbonate alkalinity (CaCO3)	J	2.01	1.45	4.00	mg/L							
Carbonate alkalinity (CaCO3)	U	ND	1.45	4.00	mg/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	
3	SM 2320B	

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

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: October 14, 2021

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Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia

Contact: Kelly Hicks

Workorder: 557302

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2180609										
QC1204922383	557302005	DUP									
Chloride		9.68		9.69	mg/L	0.146		(0%-20%)	LXA2	10/01/21	02:51
Fluoride	J	0.0859	J	0.0895	mg/L	4.1	^	(+/-2)			
Sulfate		0.541		0.451	mg/L	18.3	^	(+/-8)			
QC1204922382	LCS										
Chloride	5.00			4.68	mg/L			93.6 (90%-110%)		10/01/21	02:20
Fluoride	2.50			2.50	mg/L			99.9 (90%-110%)			
Sulfate	10.0			9.63	mg/L			96.3 (90%-110%)			
QC1204922381	MB										
Chloride			U	ND	mg/L					10/01/21	01:49
Fluoride			U	ND	mg/L						
Sulfate			U	ND	mg/L						
QC1204922385	557302005	PS									
Chloride	5.00	9.68		15.9	mg/L			125* (90%-110%)		10/01/21	03:21
Fluoride	2.50	J 0.0859		2.71	mg/L			105 (90%-110%)			
Sulfate	10.0	0.541		10.7	mg/L			102 (90%-110%)			

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QC Summary

Workorder: 557302

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	2180949										
QC1204923055	557302011		DUP								
Chloride		3.31		3.29	mg/L	0.764		(0%-20%)	JLD1	10/02/21	07:39
Fluoride	U	0.0330	U	0.0330	mg/L	N/A					
Sulfate		8.71		8.27	mg/L	5.25		(0%-20%)			
QC1204923054	LCS										
Chloride	5.00			4.75	mg/L		95.1	(90%-110%)		10/04/21	14:37
Fluoride	2.50			2.47	mg/L		98.7	(90%-110%)			
Sulfate	10.0			9.79	mg/L		97.9	(90%-110%)			
QC1204923053	MB										
Chloride			U	0.0670	mg/L					10/04/21	14:06
Fluoride			U	0.0330	mg/L						
Sulfate			U	0.133	mg/L						
QC1204923057	557302011		PS								
Chloride	5.00	3.31		8.70	mg/L		108	(90%-110%)		10/02/21	08:10
Fluoride	2.50	U	0.0299	2.64	mg/L		104	(90%-110%)			
Sulfate	10.0	8.71		18.8	mg/L		101	(90%-110%)			
Solids Analysis											
Batch	2181284										
QC1204923829	557302005		DUP								
Total Dissolved Solids		18.6		28.6	mg/L	42.4 ^		(+/-28.6)	KLP1	10/04/21	11:40

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QC Summary

Workorder: 557302

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Solids Analysis											
Batch	2181284										
QC1204923830	557302007		DUP								
Total Dissolved Solids		35.7		20.0	mg/L	56.4	^	(+/-28.6)	KLP1	10/04/21	11:40
QC1204923828	LCS										
Total Dissolved Solids	300			304	mg/L			101 (95%-105%)		10/04/21	11:40
QC1204923827	MB										
Total Dissolved Solids			U	ND	mg/L					10/04/21	11:40
Titration and Ion Analysis											
Batch	2180533										
QC1204922267	557302001		DUP								
Alkalinity, Total as CaCO3	J	2.01	J	2.01	mg/L	0	^	(+/-8)	RXB5	10/12/21	18:00
Bicarbonate alkalinity (CaCO3)	J	2.01	J	2.01	mg/L	0	^	(+/-8)			
Carbonate alkalinity (CaCO3)	U	ND	U	ND	mg/L	N/A					
QC1204922268	557302005		DUP								
Alkalinity, Total as CaCO3	U	ND	U	ND	mg/L	N/A				10/12/21	18:11
Bicarbonate alkalinity (CaCO3)	U	ND	U	ND	mg/L	N/A					
Carbonate alkalinity (CaCO3)	U	ND	U	ND	mg/L	N/A					
QC1204922266	LCS										
Alkalinity, Total as CaCO3	100			110	mg/L			110 (90%-110%)		10/12/21	17:58
QC1204930538	MB										
Alkalinity, Total as CaCO3			J	1.81	mg/L					10/12/21	17:57
Bicarbonate alkalinity (CaCO3)			J	1.81	mg/L						

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QC Summary

Workorder: 557302

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	2180533										
Carbonate alkalinity (CaCO3)			U	ND	mg/L				RXB5	10/12/21	17:57
QC1204922269 557302001 MS											
Alkalinity, Total as CaCO3	100	J	2.01	108	mg/L		106	(80%-120%)		10/12/21	18:04
QC1204922270 557302005 MS											
Alkalinity, Total as CaCO3	100	U	ND	107	mg/L		107	(80%-120%)		10/12/21	18:13

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 See case narrative for an explanation
- 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
- 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.
- ^ 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

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QC Summary

Workorder: 557302

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<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
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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.

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

**Cope Power Station Groundwater Sampling
Samples Collected between: 9/28/2021 and 9/29/2021**

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

557302

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-LF-01-2021Q3	MW-LF-01	N	EPA 200.8	Boron	T	10.6	J	RL	4.00	15.0		ug/L
MW-LF-01-2021Q3	MW-LF-01	N	EPA 300.0	Fluoride	N	0.0913	J	RL	0.0330	0.100		mg/L
MW-LF-01-2021Q3	MW-LF-01	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-01-2021Q3	MW-LF-01	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-01-2021Q3	MW-LF-01	N	SM 2540C	Total Dissolved Solids	N	32.9	J	LD	3.40	14.3		mg/L
MW-LF-02-2021Q3	MW-LF-02	N	SM 2540C	Total Dissolved Solids	N	97.1	J	LD	3.40	14.3		mg/L
MW-LF-03-2021Q3	MW-LF-03	N	EPA 200.8	Boron	T	9.29	J	RL	4.00	15.0		ug/L
MW-LF-03-2021Q3	MW-LF-03	N	EPA 300.0	Fluoride	N	0.0740	J	RL	0.0330	0.100		mg/L
MW-LF-03-2021Q3	MW-LF-03	N	SM 2320B	Alkalinity, Total as CaCO3	N	3.02	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-03-2021Q3	MW-LF-03	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	3.02	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-03-2021Q3	MW-LF-03	N	SM 2540C	Total Dissolved Solids	N	5.71	J	LD	3.40	14.3		mg/L
MW-LF-04-2021Q3	MW-LF-04	N	EPA 200.8	Boron	T	9.97	J	RL	4.00	15.0		ug/L
MW-LF-04-2021Q3	MW-LF-04	N	EPA 300.0	Fluoride	N	0.0773	J	RL	0.0330	0.100		mg/L
MW-LF-04-2021Q3	MW-LF-04	N	SM 2540C	Total Dissolved Solids	N	18.6	J	LD	3.40	14.3		mg/L
MW-LF-05-2021Q3	MW-LF-05	N	EPA 200.8	Boron	T	10.4	J	RL	4.00	15.0		ug/L
MW-LF-05-2021Q3	MW-LF-05	N	EPA 300.0	Fluoride	N	0.0859	J	RL	0.0330	0.100		mg/L
FBLK-COP-LF-21301		FB	EPA 300.0	Chloride	N	0.139	J	RL	0.0670	0.200		mg/L
FBLK-COP-LF-21301		FB	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	RL	1.45	4.00		mg/L
FBLK-COP-LF-21301		FB	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	RL	1.45	4.00		mg/L
MW-LF-06-2021Q3	MW-LF-06	N	EPA 200.8	Boron	T	11.3	J	RL	4.00	15.0		ug/L
MW-LF-06-2021Q3	MW-LF-06	N	EPA 300.0	Fluoride	N	0.0885	J	RL	0.0330	0.100		mg/L
MW-LF-06-2021Q3	MW-LF-06	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-06-2021Q3	MW-LF-06	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-LF-06-2021Q3	MW-LF-06	N	SM 2540C	Total Dissolved Solids	N	35.7	J	LD	3.40	14.3		mg/L
MW-BG-06-2021Q3	MW-BG-06	N	EPA 200.8	Boron	T	8.58	J	RL	4.00	15.0		ug/L
MW-BG-06-2021Q3	MW-BG-06	N	EPA 300.0	Fluoride	N	0.0793	J	RL	0.0330	0.100		mg/L
MW-BG-06-2021Q3	MW-BG-06	N	EPA 300.0	Sulfate	N	0.273	J	RL	0.133	0.400		mg/L
MW-BG-06-2021Q3	MW-BG-06	N	SM 2540C	Total Dissolved Solids	N	88.6	J	LD	3.40	14.3		mg/L

Sample	Location	Sample Type	Method	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-BG-16-2021Q3	MW-BG-16	N	EPA 200.8	Boron	T	10.6	J	RL	4.00	15.0		ug/L
MW-BG-16-2021Q3	MW-BG-16	N	EPA 300.0	Fluoride	N	0.0661	J	RL	0.0330	0.100		mg/L
MW-BG-16-2021Q3	MW-BG-16	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-BG-16-2021Q3	MW-BG-16	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
MW-BG-16-2021Q3	MW-BG-16	N	SM 2540C	Total Dissolved Solids	N	12.9	J	LD	3.40	14.3		mg/L
DU-COP-LF-21301	MW-LF-06	FD	EPA 200.8	Boron	T	11.9	J	RL	4.00	15.0		ug/L
DU-COP-LF-21301	MW-LF-06	FD	EPA 300.0	Fluoride	N	0.0868	J	RL	0.0330	0.100		mg/L
DU-COP-LF-21301	MW-LF-06	FD	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
DU-COP-LF-21301	MW-LF-06	FD	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
DU-COP-LF-21301	MW-LF-06	FD	SM 2540C	Total Dissolved Solids	N	25.7	J	LD	3.40	14.3		mg/L
AS-LF-01-2021Q3	AS-LF-01	N	SM 2320B	Alkalinity, Total as CaCO3	N	4.42	J+	BL,BF	1.45	4.00		mg/L
AS-LF-01-2021Q3	AS-LF-01	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	4.42	J+	BL,BF	1.45	4.00		mg/L
AS-LF-01-2021Q3	AS-LF-01	N	SM 2540C	Total Dissolved Solids	N	25.7	J	LD	3.40	14.3		mg/L
AS-LF-02-2021Q3	AS-LF-02	N	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
AS-LF-02-2021Q3	AS-LF-02	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	BL,BF,RL	1.45	4.00		mg/L
AS-LF-02-2021Q3	AS-LF-02	N	SM 2540C	Total Dissolved Solids	N	41.4	J	LD	3.40	14.3		mg/L
MW-40-2021Q3	MW-40	N	SM 2320B	Alkalinity, Total as CaCO3	N	9.05	J+	BL,BF	1.45	4.00		mg/L
MW-40-2021Q3	MW-40	N	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	9.05	J+	BL,BF	1.45	4.00		mg/L
MW-40-2021Q3	MW-40	N	SM 2540C	Total Dissolved Solids	N	274	J	LD	3.40	14.3		mg/L
FBLK-COP-LF-21302		FB	SM 2320B	Alkalinity, Total as CaCO3	N	2.01	J	RL	1.45	4.00		mg/L
FBLK-COP-LF-21302		FB	SM 2320B	Bicarbonate alkalinity (CaCO3)	N	2.01	J	RL	1.45	4.00		mg/L

Data Qualifiers	
U	The analyte was not detected above the level of the reported sample quantitation limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	This analyte was not detected, but the reporting limit may or may not be higher due to a bias identified during data validation.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and RL.

S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Lab Sample ID	557302001
Sys Sample Code	MW-LF-01-2021Q3
Sample Name	MW-LF-01-2021Q3
Sample Date	9/28/2021 3:40:00 PM
Location	MW-LF-01 / MW-LF-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	10.6	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3130				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1510				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	740				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	6200				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0913	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.418				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	17.0				0.335	0.335	1.00	Y	Yes	5	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	32.9	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302002
Sys Sample Code	MW-LF-02-2021Q3
Sample Name	MW-LF-02-2021Q3
Sample Date	9/29/2021 12:25:00 PM
Location	MW-LF-02 / MW-LF-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	17.0				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4390				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	3640				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	4880				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	7850				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	31.0				0.335	0.335	1.00	Y	Yes	5	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.203				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	5.70				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	97.1	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302003
Sys Sample Code	MW-LF-03-2021Q3
Sample Name	MW-LF-03-2021Q3
Sample Date	9/29/2021 11:29:00 AM
Location	MW-LF-03 / MW-LF-03
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	9.29	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1090				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	656				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1170				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	1610				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.15				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0740	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.698				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	3.02	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	3.02	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	5.71	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302004
Sys Sample Code	MW-LF-04-2021Q3
Sample Name	MW-LF-04-2021Q3
Sample Date	9/29/2021 10:40:00 AM
Location	MW-LF-04 / MW-LF-04
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	9.97	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1780				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1340				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	439				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	2010				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	4.52				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0773	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.558				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	18.6	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302005
Sys Sample Code	MW-LF-05-2021Q3
Sample Name	MW-LF-05-2021Q3
Sample Date	9/29/2021 9:40:00 AM
Location	MW-LF-05 / MW-LF-05
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	10.4	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2710				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	2120				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	966				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3430				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.68				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0859	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.541				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	18.6				3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302006
Sys Sample Code	FBLK-COP-LF-21301
Sample Name	FBLK-COP-LF-21301
Sample Date	9/28/2021 2:30:00 PM
Location	/
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L		U			4.00	4.00	15.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			30.0	30.0	100	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L		U			10.0	10.0	15.0	N	Yes	1	NA
	Potassium	7440-09-7	T	ug/L		U			80.0	80.0	300	N	Yes	1	NA
	Sodium	7440-23-5	T	ug/L		U			80.0	80.0	250	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.139	J	RL		0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			3.40	3.40	14.3	N	Yes	1	NA

Lab Sample ID	557302007
Sys Sample Code	MW-LF-06-2021Q3
Sample Name	MW-LF-06-2021Q3
Sample Date	9/28/2021 4:35:00 PM
Location	MW-LF-06 / MW-LF-06
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	11.3	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2000				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1710				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	345				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3150				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	7.90				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0885	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.457				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	35.7	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302008
Sys Sample Code	MW-BG-06-2021Q3
Sample Name	MW-BG-06-2021Q3
Sample Date	9/29/2021 1:35:00 PM
Location	MW-BG-06 / MW-BG-06
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	8.58	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	9420				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	8100				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1700				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3170				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	17.4				0.335	0.335	1.00	Y	Yes	5	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0793	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.273	J	RL		0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	88.6	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302009
Sys Sample Code	MW-BG-16-2021Q3
Sample Name	MW-BG-16-2021Q3
Sample Date	9/29/2021 2:25:00 PM
Location	MW-BG-16 / MW-BG-16
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	10.6	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1620				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1020				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1510				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	969				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	2.34				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0661	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	1.95				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	12.9	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302010
Sys Sample Code	DU-COP-LF-21301
Sample Name	DU-COP-LF-21301
Sample Date	9/28/2021 12:00:00 AM
Location	MW-LF-06 / MW-LF-06
Sample Type	FD
Matrix	GW
Parent Sample	MW-LF-06-2021Q3

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	11.9	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2060				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	1780				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	355				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3240				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	7.96				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0868	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.615				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	25.7	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302011
Sys Sample Code	AS-LF-01-2021Q3
Sample Name	AS-LF-01-2021Q3
Sample Date	9/28/2021 1:45:00 PM
Location	AS-LF-01 / AS-LF-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	18.6				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1680				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	605				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	2020				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	3540				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.31				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	8.71				0.133	0.133	0.400	Y	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	4.42	J+	BL,BF		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	4.42	J+	BL,BF		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	25.7	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302012
Sys Sample Code	AS-LF-02-2021Q3
Sample Name	AS-LF-02-2021Q3
Sample Date	9/28/2021 2:45:00 PM
Location	AS-LF-02 / AS-LF-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	19.1				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	5630				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	3940				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	1830				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	2280				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.105				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	9.07				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	15.1				0.134	0.134	0.400	Y	Yes	2	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	BL,BF,RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	41.4	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302013
Sys Sample Code	MW-40-2021Q3
Sample Name	MW-40-2021Q3
Sample Date	9/28/2021 12:45:00 PM
Location	MW-40 / MW-40
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	43.9				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	30100				30.0	30.0	100	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L	9730				10.0	10.0	15.0	Y	Yes	1	NA
	Potassium	7440-09-7	T	ug/L	4660				80.0	80.0	300	Y	Yes	1	NA
	Sodium	7440-23-5	T	ug/L	15300				80.0	80.0	250	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.679				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	47.6				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	126				1.33	1.33	4.00	Y	Yes	10	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	9.05	J+	BL,BF		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	9.05	J+	BL,BF		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	274	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	557302014
Sys Sample Code	FBLK-COP-LF-21302
Sample Name	FBLK-COP-LF-21302
Sample Date	9/29/2021 12:15:00 PM
Location	/
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L		U			4.00	4.00	15.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			30.0	30.0	100	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Magnesium	7439-95-4	T	ug/L		U			10.0	10.0	15.0	N	Yes	1	NA
	Potassium	7440-09-7	T	ug/L		U			80.0	80.0	300	N	Yes	1	NA
	Sodium	7440-23-5	T	ug/L		U			80.0	80.0	250	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
SM 2320B	Alkalinity, Total as CaCO3	ALK	N	mg/L	2.01	J	RL		1.45	1.45	4.00	Y	Yes	1	NA
	Bicarbonate alkalinity (CaCO3)	ALKB	N	mg/L	2.01	J	RL		1.45	1.45	4.00	Y	Yes	1	NA
	Carbonate alkalinity (CaCO3)	ALKC	N	mg/L		U			1.45	1.45	4.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			3.40	3.40	14.3	N	Yes	1	NA

Appendix C

First Semiannual Detection Monitoring Program Statistical Evaluation



DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III LANDFILL

SEMIANNUAL DETECTION MONITORING

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

For the

March 2021 Sampling Event

July 2021



A handwritten signature in blue ink, reading "Joyce E. Peterson".

Joyce Peterson, P.E.
Senior Environmental Engineer

A handwritten signature in blue ink, reading "Richard A. Mayer Jr.".

Richard A. Mayer Jr., P.G.
Project Manager

*TRC Environmental Corporation | Dominion Energy South Carolina
Cope Station Class III Landfill – Detection Monitoring*

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Appendix B	Trend Test Outputs
Appendix C	Background Threshold Values

Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this Statistically Significant Increases (SSI) notification for the Cope Station Class 3 Landfill for the eighth semiannual detection monitoring event. Samples were collected on March 15 – 16, 2021. The laboratory analytical data packages for the event were received on March 30, 2021, and the data validation report was received on April 7, 2021.

Statistical Analysis

Statistically Significant Level (SSL) exceedances above background concentrations include the following:

- MW-LF-02: chloride
- MW-LF-03: none
- MW-LF-04: none
- MW-LF-05: none
- MW-LF-06: none

As has been done since the initiation of detection monitoring at the Wateree Station, the evaluation of potential SSIs was conducted using prediction limits to compare data from the background set of monitoring wells to the most recent results from the downgradient monitoring wells. Minor changes to the statistical procedures have been enacted for this detection monitoring event as described below. The statistical calculations have been conducted using United States Environmental Protection Agency's (USEPA's) ProUCL (v.5.1) software. Previous rounds of detection monitoring statistical evaluations were conducted using EPRI's MANAGES (v.4.1.0) software. Updates to the Site's Statistical Analysis Plan (StAP) are in progress to formally establish and describe the statistical methods being employed.

- For previous detection monitoring events, background statistics were calculated for each new detection monitoring event using all analytical results for the six background or upgradient wells (MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, AS-LF-02, and MW-40¹). In accordance with *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, Unified Guidance March 2009 (EPA 530/R-09-007), Chapter 5, background will now be updated after every four detection monitoring events, assuming the analytical results of the four events remain part of the established background distribution.
- The data set used for establishing background for the March 2021 detection monitoring included the results from the baseline events conducted prior to the October 2017 initiation of detection

¹ MW-40 was determined to be significantly different from the other monitoring wells and was not included in the background statistical calculations.

monitoring, plus the results from the semiannual detection monitoring events between October 2017 and October 2020.

- The background data sets were observed graphically for potential outlier values. Graphically apparent outliers were tested using ProUCL. Outlier values for which there is a verification resample result were replaced by the resample result. Outlier values for which there is no verification resample result were removed from the background data set without replacement.
- Background data sets with greater than 50 percent detections were tested for trends using the ProUCL Theil-Sen trend test at 95 percent confidence. For background data sets with statistically significant trends, the 95 percent upper confidence limit of the slope of the background data set was compared to the 95 percent lower confidence limit slopes of the data sets for individual downgradient monitoring wells. A downgradient well was considered to have an SSI if the slope of its trend (LCL) exceeded the slope of the trend of the background data set (UCL).
- ProUCL was used to calculate a background threshold value (BTV). For data sets with greater than 50 percent detected values, the BTV was calculated based on the distribution of the data. For data sets with 50 percent or fewer detected values, nonparametric BTVs were used. Kaplan-Meier adjustments were used for data sets with fewer than 50 percent nondetect values.
- Upper prediction limits (UPLs) were the preferred BTVs for data sets that met the requirements for parametric statistical methods. The UPLs were calculated for 20 future sampling events (five downgradient wells and four sampling events). UPLs will be updated following the four sampling events. If a calculated UPL is less than the reporting limit, the comparison value is set at the reporting limit.
- Upper statistical limits (USL) were the preferred BTVs for data sets that required use of nonparametric statistical methods to account for the lower level of confidence inherent in nonparametric statistical methods. If a calculated USL is less than the reporting limit, the comparison value is set at the reporting limit.
- For background data sets with no or very few data points exceeding the reporting limit for that constituent, the double quantification rule (DQR) was used to establish a potential SSI. Based on the DQR, a downgradient well would need to have a detected concentration above the reporting limit for two consecutive sampling events to consider the well/constituent to have a potential SSI.
- Direct comparisons were made between the statistically derived BTVs and the downgradient monitoring results to identify potential SSIs for the eighth detection monitoring event.

Table 1 presents the data selected to represent background. Table 2 presents basic statistical information regarding the data sets and the calculated BTVs. Table 3 presents the data set for the eighth detection monitoring event and highlights results that are potential SSIs. Appendix A includes ProUCL outputs. An Alternative Source Demonstration (ASD) should be prepared for these potential SSIs.

Table 1

**Background Data Set for March 2021 Semiannual
Detection Monitoring Event**

Table 1 Background Data Set for March 2021 Semiannual Detection Monitoring Event

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
BL-1	MW-LF-01	< 0.0557	4.84	13.7	0.0679	5.4	2.72	72
BL-2	MW-LF-01	< 0.0557	3.77	19	0.14	4.2	1.9	56
BL-3	MW-LF-01	< 0.0557	2.35	6.67	< 0.033	5	0.69	24
BL-4	MW-LF-01	< 0.0557	2.63	11.23	0.0548	4.2	0.63	30
BL-5	MW-LF-01	< 0.0442	2	7.92	0.044	5.4	< 0.5	130
BL-6	MW-LF-01	< 0.0442	2.805	12.48	0.0865	4.6	< 0.5	41
BL-7	MW-LF-01	< 0.0442	2.66	10.87	0.0364	4.4	< 0.5	45
BL-8	MW-LF-01	< 0.0442	2.47	16.03	0.0624	4.2	< 0.5	70
DM-1	MW-LF-01	< 0.0442	1.818	9.06	< 0.033	4.8	< 0.5	32
DM-2	MW-LF-01	< 0.0442	1.93	7.14	< 0.033	4.6	< 0.129	23
DM-3	MW-LF-01	< 0.0219	2.56	15.4	< 0.025	4.3	0.75	41
DM-4	MW-LF-01	< 0.2	2.75	13.2	< 0.1	4.7	< 0.5	46
DM-5	MW-LF-01	< 0.2	2.68	20.6	< 0.1	4.4	< 0.5	51
DM-6	MW-LF-01	0.0545	2.42	9.21	< 0.1	4.6	< 0.5	39
DM-7	MW-LF-01	< 0.2	1.76	7.04	< 0.1	4.1	< 0.5	36
BL-4	MW-BG-06	< 0.0557	9.49	18.69	0.0624	3.9	1	106
BL-5	MW-BG-06	< 0.0442	8.86	19.28	0.0631	4.4	< 0.5	84
BL-6	MW-BG-06	< 0.0442	10.02	18.12	0.0883	4.3	< 0.5	118
BL-7	MW-BG-06	< 0.0442	10.1	17.96	0.0621	3.8	< 0.5	103

Table 1 Background Data Set for March 2021 Semiannual Detection Monitoring Event

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
BL-8	MW-BG-06	< 0.0442	10.6	19.72	0.165	4.1	< 0.5	123
DM-1	MW-BG-06	< 0.0442	9.973	18.3	< 0.033	4	< 0.5	109
DM-2	MW-BG-06	< 0.0442	10.9	19.8	0.0571	4.7	< 0.129	82
DM-3	MW-BG-06	< 0.0219	9.15	18.3	< 0.025	3.98	< 0.129	110
DM-4	MW-BG-06	< 0.2	8.84	18.7	< 0.1	4.4	< 0.5	101
DM-5	MW-BG-06	0.176	9.42	18.6	< 0.1	4.1	< 0.5	109
DM-6	MW-BG-06	< 0.2	11.4	18.9	< 0.1	4.4	< 0.5	143
DM-7	MW-BG-06	< 0.2	10.2	18.3	< 0.1	3.4	< 0.5	125
BL-4	MW-BG-16	< 0.0557	2.06	4.11	0.0356	4.1	1.09	14
BL-5	MW-BG-16	< 0.0442	1.87	3.98	0.0598	5	1.35	15
BL-6	MW-BG-16	< 0.0442	1.711	3.37	0.0495	4.6	1.31	23
BL-7	MW-BG-16	< 0.0442	1.78	3.03	< 0.033	4.2	1.16	24
BL-8	MW-BG-16	< 0.0442	1.97	3.38	< 0.033	4.1	1.03	43
DM-1	MW-BG-16	< 0.0442	2.145	3.81	< 0.033	4.2	0.79	31
DM-2	MW-BG-16	< 0.0442	2.54	5.22	0.034	4.7	0.83	28
DM-3	MW-BG-16	< 0.0219	1.81	3.75	< 0.025	4.14	1.13	26
DM-4	MW-BG-16	< 0.2	1.7	4.12	< 0.1	4.8	1.48	12
DM-5	MW-BG-16	< 0.2	1.58	3.29	< 0.1	4.5	1.41	< 2
DM-6	MW-BG-16	< 0.2	1.93	4.17	< 0.1	4.8	0.87	43
DM-7	MW-BG-16	< 0.2	1.78	2.86	< 0.1	3.8	1.43	31

Table 1 Background Data Set for March 2021 Semiannual Detection Monitoring Event

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-1	AS-LF-01	< 1	7.872	6.29	0.0854	5.3	4.65	59
DM-2	AS-LF-01	< 0.0442	4.03	7.07	0.0804	5	2.08	40
DM-3	AS-LF-01	< 0.0219	2.69	7.19	< 0.025 ^[3]	4.28	2.85	33
DM-4	AS-LF-01	< 0.2	3.12	4.5	< 0.1	4.7	8.86	28
DM-5	AS-LF-01	0.0745	2.09	5.2	< 0.1	4.4	5.35	22
DM-6	AS-LF-01	< 0.2	3.09	3.02	< 0.1	4.7	12.8	38
DM-7	AS-LF-01	< 0.2	2.19	2.14	< 0.1	4.1	13.4	45
DM-1	AS-LF-02	< 1	24.06 ^[4]	21.9	0.025 ^[3]	6.3	14.3	203
DM-2	AS-LF-02	< 0.0442	24.4 ^[2]	20.3	0.108	5.8	3.35	107
DM-3	AS-LF-02	< 0.0219	15.8	19.1	< 0.025	5.29	4.7	104
DM-4	AS-LF-02	< 0.2	5.74	14.4	< 0.1	5	14.5	76
DM-5	AS-LF-02	< 0.2	6.98	16.1	< 0.1	4.8	7.02	64
DM-6	AS-LF-02	< 0.2	4.22	9.67	< 0.1	4.7	16.1	75
DM-7	AS-LF-02	0.0577	4.63	5.71	< 0.1	4.2	21.6	64

- [1] pH expressed in standard units (s.u.)
- [2] Outlier with no verification resample – removed from data set
- [3] Outlier data replaced by verification resample result (value shown on table)
- [4] Outlier data replace by verification resample result (shown), which was then removed as an outlier.
- < Result less than the indicated detection limit.

Table 2 Data Set Details and Background Threshold Values

Table 2 Data Set Details and Background Threshold Values

CONSTITUENT	NUMBER of RESULTS	PERCENT DETECTED	DISTRIBUTION	TREND	BACKGROUND THRESHOLD VALUE	BASIS
Boron (µg/L)	53	8	Nonparametric	NA	1.0	95% USL
Calcium (µg/L)	51 ^[1]	100	Nonparametric	None	15.8	95% USL
Chloride (mg/L)	53	100	Nonparametric	None	21.9	95% USL
Fluoride(mg/L)	53	40	Nonparametric	NA	0.165	95% USL
pH (s.u.)	53	100	Gamma	None	3.4 - 6.2	95% HW UPL (k=20); LCL is the minimum background result
Sulfate (mg/L)	53	60	Nonparametric	Increasing	0.00562 (21.6)	95% UCL of trend (95% USL)
TDS (mg/L)	53	98	Gamma	None	295.3	95% HW UPL (k=20)

[1] Outliers excluded from data set

[2] BTV for sulfate is the UCL of the trend slope. March 2021 concentration follows in parentheses.

N/A Not Applicable – trend test not conducted for data sets with fewer than 50 percent detections

Table 3
March 2021 Downgradient Results
and Potential SSIs

Table 3 March 2021 Downgradient Concentrations and Potential SSLs – Cope Class 3 Landfill

WELL	CONSTITUENT / BTV / RESULT (mg/L except as noted) ^[1]						
	BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE ^[3]	TDS
	1.0	15.8	21.9	0.165	3.4 - 6.2	0.00562 ^[2] (21.6)	295.3
BACKGROUND WELLS							
MW-LF-01	0.0113 J	2.99	11.9	< 0.1	4.7	0.603	50
MW-BG-06	0.00873 J	10.5	18.7	0.0622 J	4.4	0.296 J	113
MW-BG-16	0.00939 J	1.77	< 3.47	< 0.1	4.8	1.83	22.9
AS-LF-01	0.0129 J	3.08	2.04	0.0415 J	4.8	15.6	40
AS-LF-02	0.0161	3.59	7.74	0.0846 J	4.7	13.4	38.6
MW-40 ^[4]	0.0581	33.5	55.4	0.625	4.4	113	274
DOWNGRADIENT WELLS							
MW-LF-02	0.0173	5.29	31.9	0.156	4.2	5.34E-04 (7.19)	111
MW-LF-03	0.0102 J	1.37	< 3.15	< 0.1	4.8	0 (1.10)	22.9
MW-LF-04	0.0112 J	2.59	4.46	< 0.1	4.9	0 (3.70)	45.7
MW-LF-05	0.0112 J	3.05	9.13	< 0.1	4.6	0 (1.06)	50
MW-LF-06	0.00853 J	2.14	7.53	< 0.1	4.6	0 (0.821)	45.7

[1] pH expressed in standard units (s.u.)

[2] Sulfate had an increasing trend in background concentrations; comparison value is UCL of background slope (95% UPL in parentheses)

[3] Values for sulfate are LCL of trend followed by concentration in parentheses

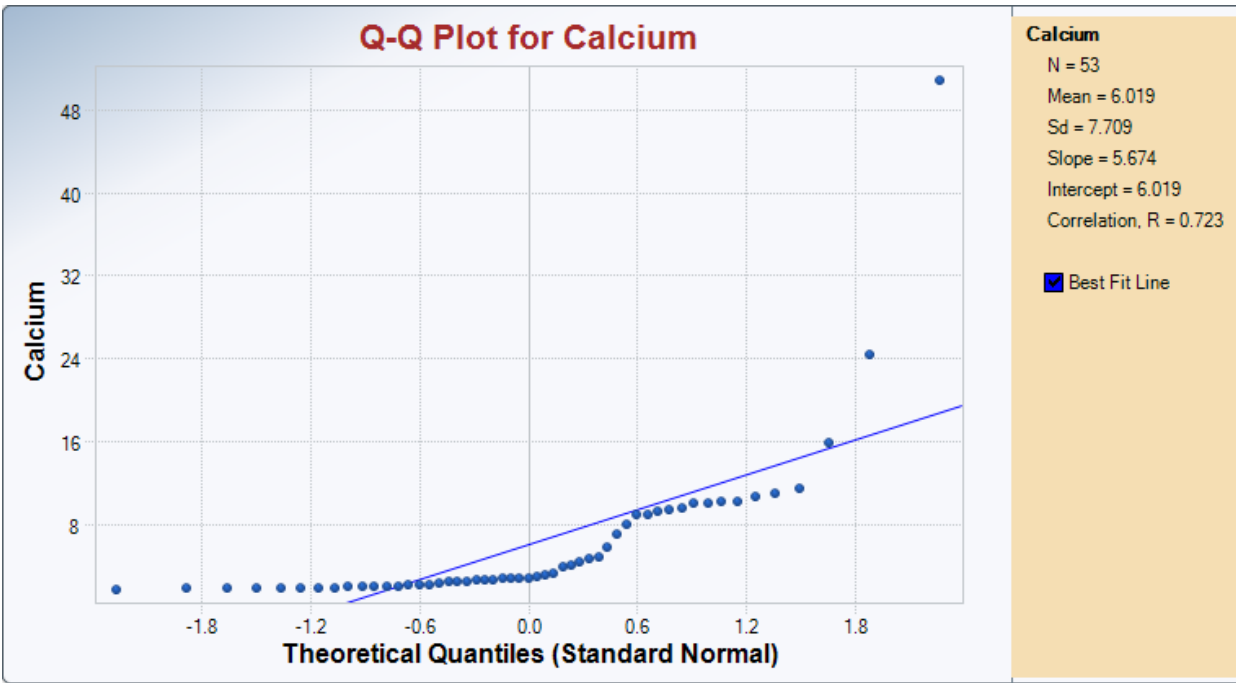
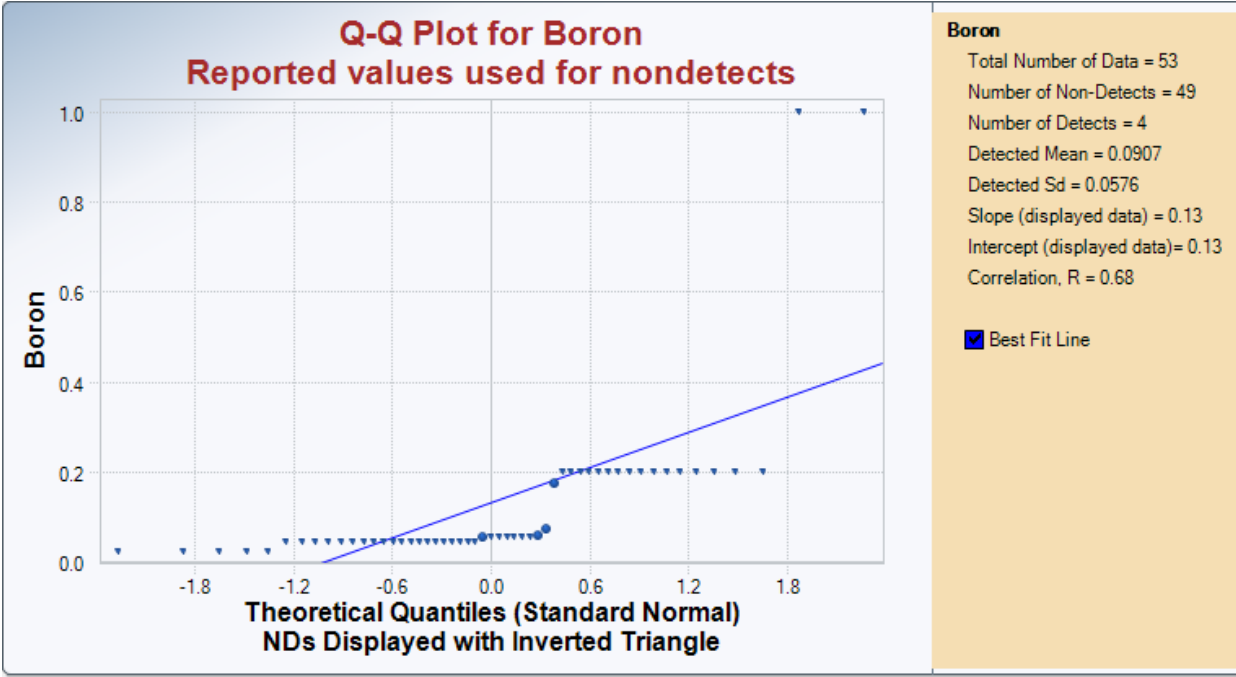
[4] Upgradient well not used in background concentration calculations

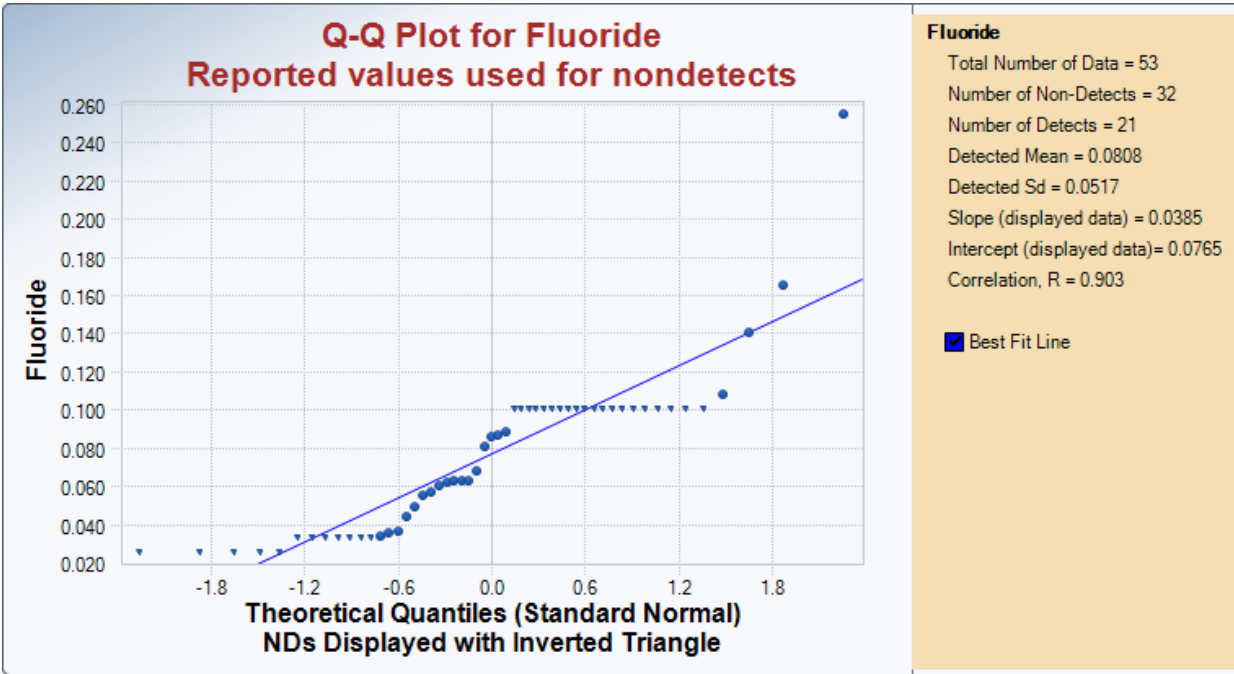
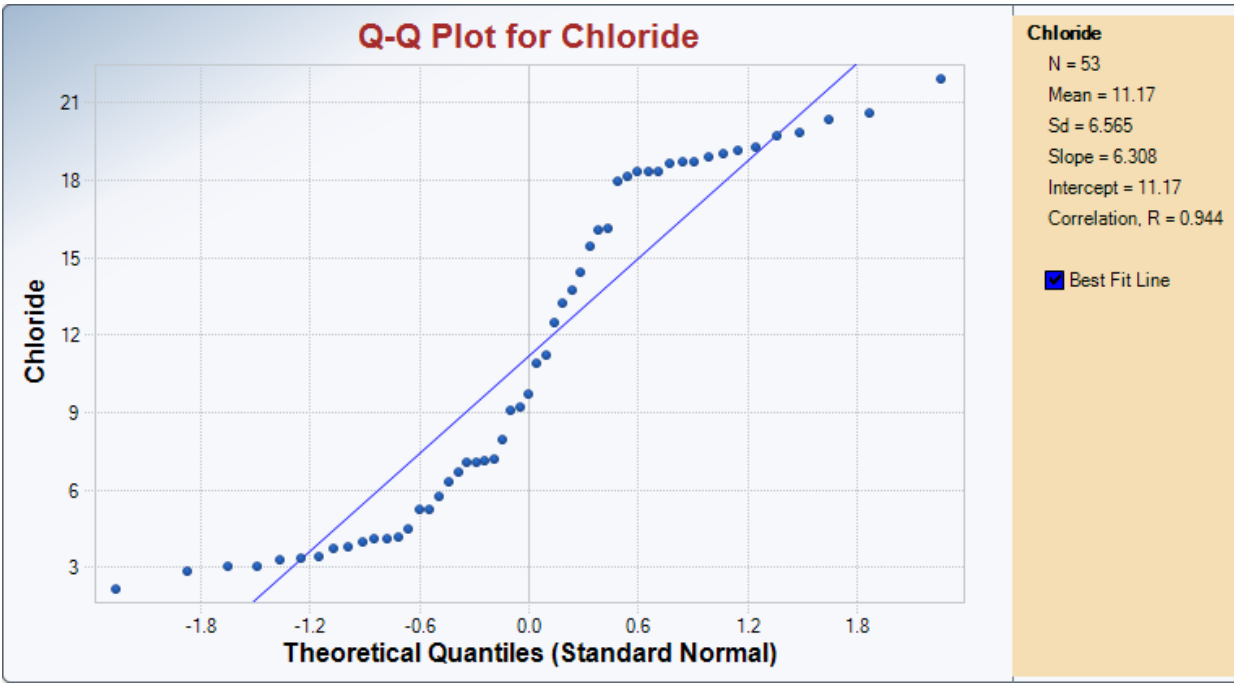
J Estimated value between the method detection limit and the practical quantitation limit

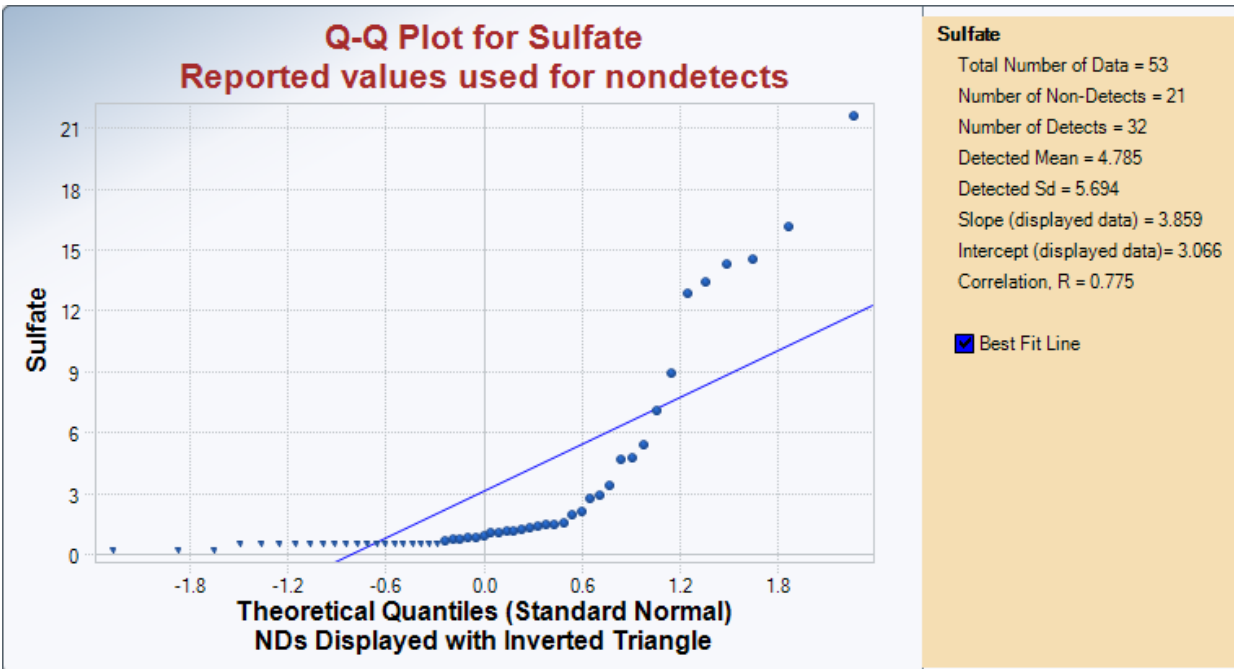
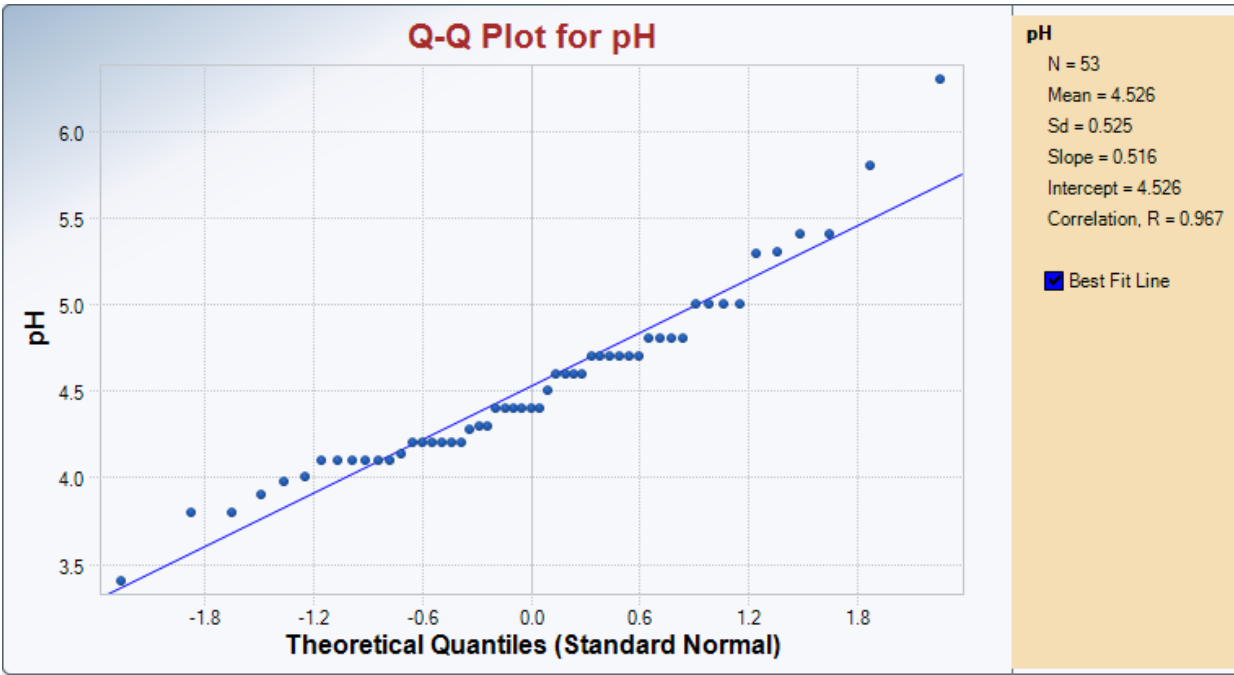
< Result less than the indicated detection limit.

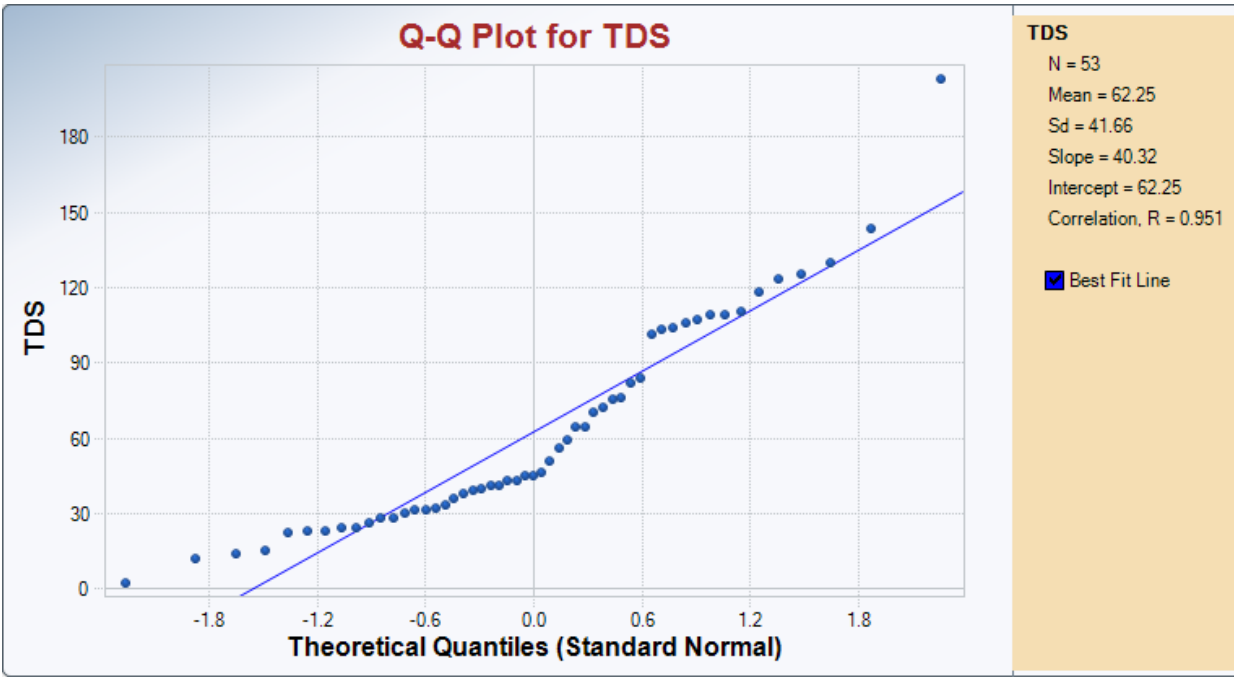
Appendix A

Q-Q Plots and Outlier Tests









Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.16/14/2021 1:07:35 PM

From File Worksheet_a.xls

Full Precision OFF

Rosner's Outlier Test for Calcium

Mean 6.019
 Standard Deviation 7.709
 Number of data 53
 Number of suspected outliers 10

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
---	------	----	-------------------	-------------	------------	---------------------	---------------------

1	6.019	7.636	50.87	47	5.873	3.151	3.504
2	5.156	4.516	24.4	48	4.261	3.141	3.494
3	4.779	3.64	15.8	49	3.027	3.134	3.487
4	4.558	3.316	11.4	26	2.063	3.124	3.484
5	4.419	3.198	10.9	22	2.026	3.114	3.474
6	4.284	3.088	10.6	20	2.046	3.107	3.463
7	4.149	2.976	10.2	27	2.033	3.099	3.452
8	4.018	2.867	10.1	19	2.121	3.092	3.442
9	3.883	2.748	10.02	18	2.234	3.084	3.431
10	3.743	2.613	9.973	21	2.384	3.077	3.42

For 5% significance level, there are 2 Potential Outliers

Potential outliers are:

50.87, 24.4

For 1% Significance Level, there are 2 Potential Outliers

Potential outliers are:

50.87, 24.4

Outlier Tests for Selected Variables excluding nondetects

User Selected Options

Date/Time of Computation ProUCL 5.16/14/2021 1:08:48 PM

From File WorkSheet_a.xls

Full Precision OFF

Dixon's Outlier Test for **Fluoride**

Total N = 53

Number NDs = 32

Number Detects = 21

10% critical value: 0.391

5% critical value: 0.44

1% critical value: 0.524

Note: NDs excluded from Outlier

Test

1. Data Value 0.255 is a Potential Outlier (Upper Tail)?

Test Statistic:

0.526

For 10% significance level, 0.255 is an outlier.

For 5% significance level, 0.255 is an outlier.

For 1% significance level, 0.255 is an outlier.

2. Data Value 0.034 is a Potential Outlier (Lower Tail)?

Test Statistic:

0.023

For 10% significance level, 0.034 is not an outlier.

For 5% significance level, 0.034 is not an outlier.

For 1% significance level, 0.034 is not an outlier.

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.16/29/2021 4:31:51 PM

From File WorkSheet.xls

Full Precision OFF

Rosner's Outlier Test for

TDS

Mean 62.25

Standard Deviation 41.66

Number of data 53

Number of suspected outliers 1

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	62.25	41.27	203	47	3.411	3.151	3.504

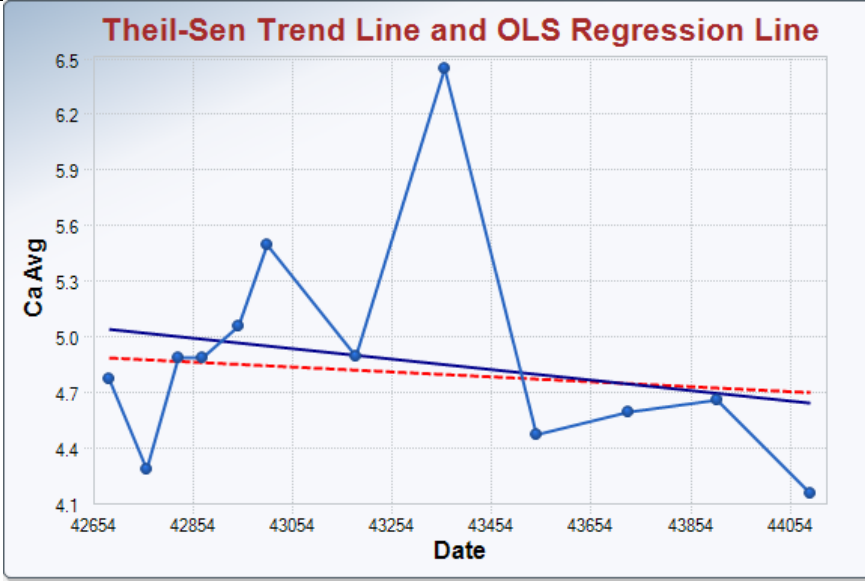
For 5% Significance Level, there is 1 Potential Outlier

Potential outlier is: 203

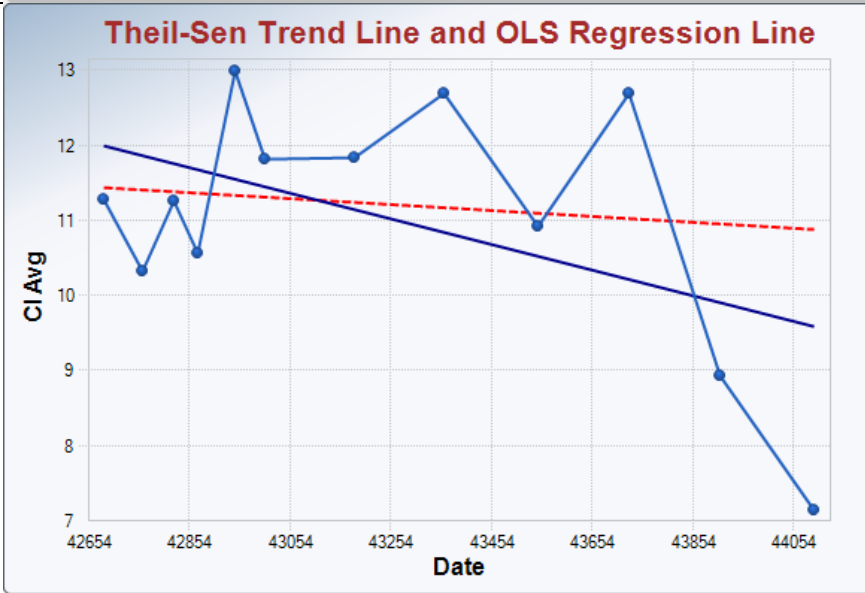
For 1% Significance Level, there is no Potential Outlier

Appendix B

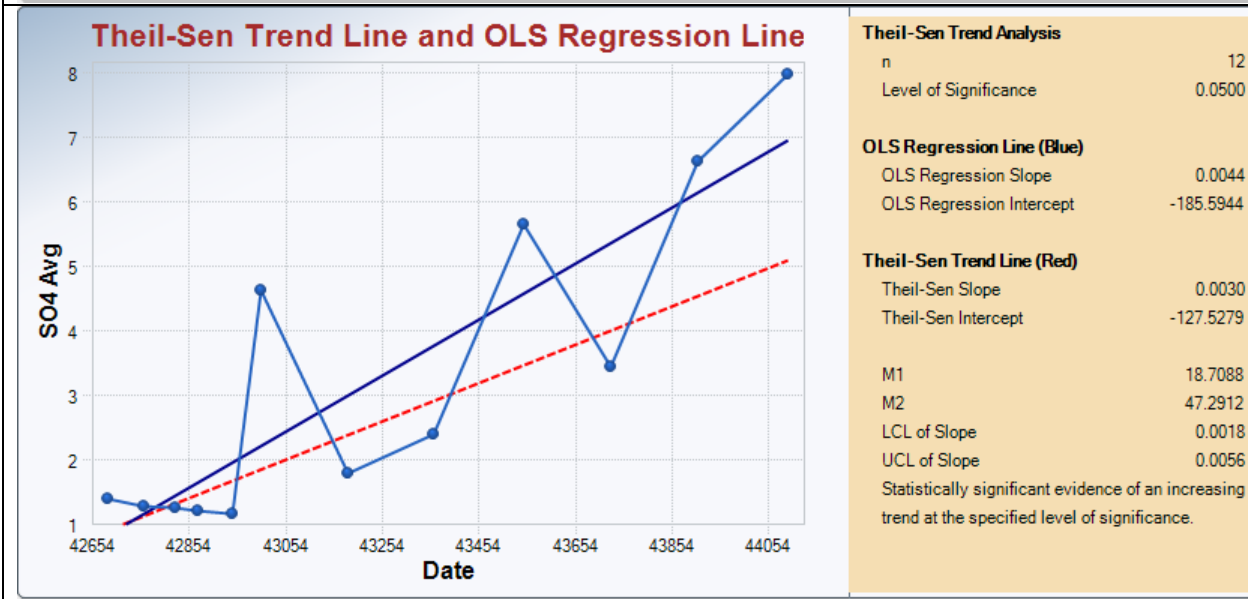
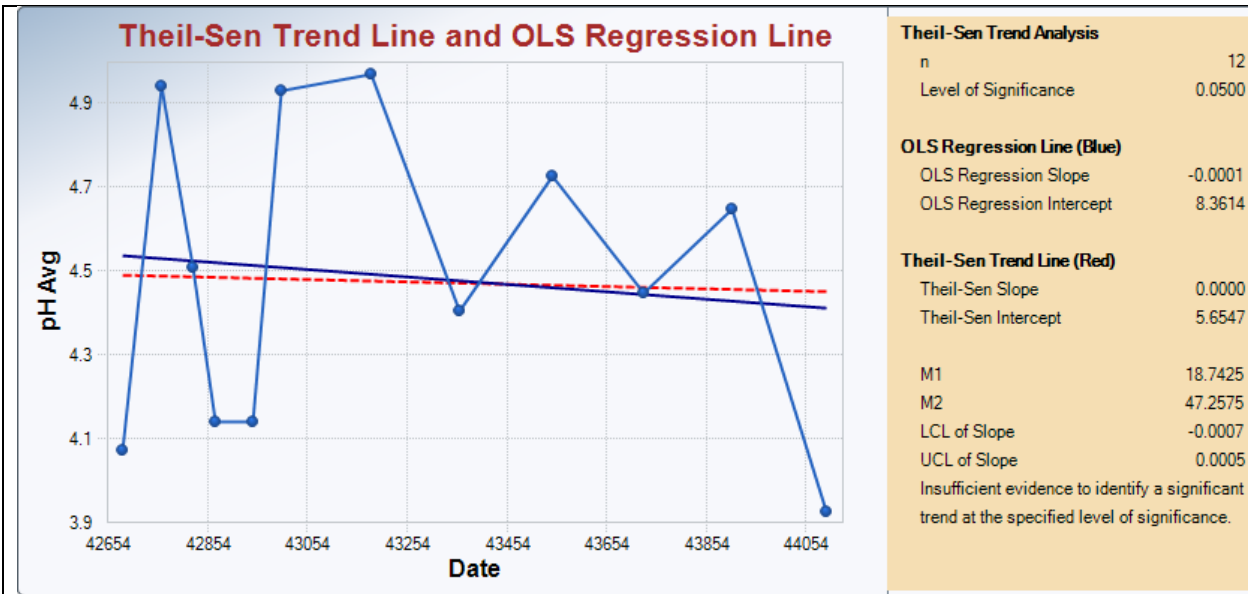
Trend Test Outputs

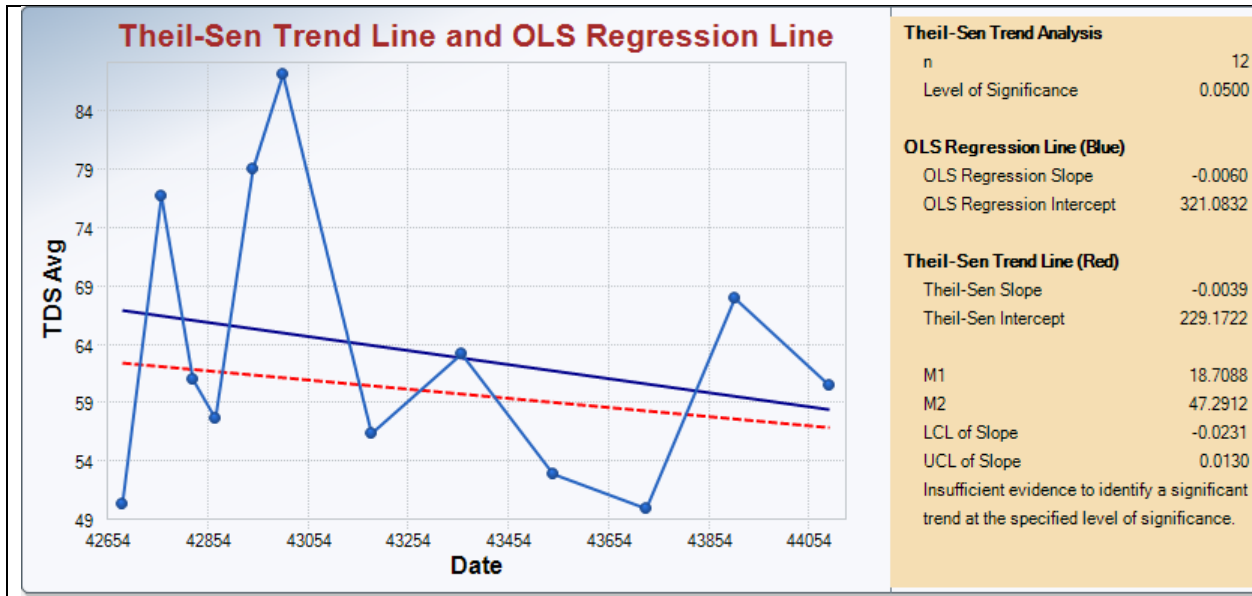


Theil-Sen Trend Analysis	
n	12
Level of Significance	0.0500
OLS Regression Line (Blue)	
OLS Regression Slope	-0.0003
OLS Regression Intercept	16.9646
Theil-Sen Trend Line (Red)	
Theil-Sen Slope	-0.0001
Theil-Sen Intercept	10.5507
M1	18.7088
M2	47.2912
LCL of Slope	-0.0006
UCL of Slope	0.0009
Insufficient evidence to identify a significant trend at the specified level of significance.	



Theil-Sen Trend Analysis	
n	12
Level of Significance	0.0500
OLS Regression Line (Blue)	
OLS Regression Slope	-0.0017
OLS Regression Intercept	84.5335
Theil-Sen Trend Line (Red)	
Theil-Sen Slope	-0.0004
Theil-Sen Intercept	28.1668
M1	18.7088
M2	47.2912
LCL of Slope	-0.0036
UCL of Slope	0.0021
Insufficient evidence to identify a significant trend at the specified level of significance.	





Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/25/2021 4:14:30 PM
From File	WorkSheet_c.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Calcium

General Statistics

Number of Events	12
Number of Values Reported (n)	12
Number of Values After Averaging	12
Number of Replicates	0
Minimum	4.112
Maximum	6.402
Mean	4.84
Geometric Mean	4.809
Median	4.786
Standard Deviation	0.607
Coefficient of Variation	0.125

Mann-Kendall Statistics

M-K Test Value (S)	-4
Tabulated p-value	0.42
Standard Deviation of S	14.58
Standardized Value of S	-0.206
Approximate p-value	0.419

Approximate inference for Theil-Sen Trend Test

Number of Slopes	66
Theil-Sen Slope	-1.34E-04
Theil-Sen Intercept	10.55
M1	18.71
M2	47.29
95% LCL of Slope (0.025)	-6.05E-04
95% UCL of Slope (0.975)	9.21E-04

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42684	4.727	4.841	-0.114
2	42761	4.243	4.83	-0.587
3	42824	4.845	4.822	0.0234
4	42871	4.847	4.816	0.031
5	42945	5.013	4.806	0.208
6	43003	5.452	4.798	0.654
7	43181	4.85	4.774	0.0759
8	43360	6.402	4.75	1.652
9	43545	4.43	4.725	-0.295
10	43728	4.55	4.701	-0.151
11	43907	4.612	4.677	-0.065
12	44095	4.112	4.652	-0.54

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/25/2021 4:14:45 PM
From File	WorkSheet_c.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Chloride

General Statistics

Number of Events	12
Number of Values Reported (n)	12
Number of Values After Averaging	12
Number of Replicates	0
Minimum	7.21
Maximum	13.04
Mean	11.1
Geometric Mean	10.97
Median	11.33
Standard Deviation	1.676
Coefficient of Variation	0.151

Mann-Kendall Statistics

M-K Test Value (S)	-4
Tabulated p-value	0.42
Standard Deviation of S	14.58
Standardized Value of S	-0.206
Approximate p-value	0.419

Approximate inference for Theil-Sen Trend Test

Number of Slopes	66
Theil-Sen Slope	-3.91E-04
Theil-Sen Intercept	28.17
M1	18.71
M2	47.29
95% LCL of Slope (0.025)	-0.00356
95% UCL of Slope (0.975)	0.00207

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42684	11.34	11.49	-0.15
2	42761	10.39	11.46	-1.069
3	42824	11.32	11.44	-0.115
4	42871	10.62	11.42	-0.8
5	42945	13.04	11.39	1.652
6	43003	11.87	11.37	0.504
7	43181	11.91	11.3	0.607
8	43360	12.75	11.23	1.519
9	43545	10.98	11.16	-0.172
10	43728	12.76	11.08	1.673
11	43907	8.994	11.01	-2.021
12	44095	7.21	10.94	-3.732

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/25/2021 4:15:09 PM
From File	WorkSheet_c.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

pH

General Statistics

Number of Events	12
Number of Values Reported (n)	12
Number of Values After Averaging	12
Number of Replicates	0
Minimum	3.92
Maximum	4.96
Mean	4.48
Geometric Mean	4.467
Median	4.47
Standard Deviation	0.363
Coefficient of Variation	0.0809

Mann-Kendall Statistics

M-K Test Value (S)	-1
Tabulated p-value	0.527
Standard Deviation of S	14.55
Standardized Value of S	0
Approximate p-value	0.5

Approximate inference for Theil-Sen Trend Test

Number of Slopes	66
Theil-Sen Slope	-2.75E-05
Theil-Sen Intercept	5.655
M1	18.74
M2	47.26
95% LCL of Slope (0.025)	-6.53E-04
95% UCL of Slope (0.975)	4.89E-04

Insufficient evidence to identify a significant

trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42684	4.067	4.481	-0.415
2	42761	4.933	4.479	0.454
3	42824	4.5	4.477	0.0226
4	42871	4.133	4.476	-0.343
5	42945	4.133	4.474	-0.341
6	43003	4.92	4.472	0.448
7	43181	4.96	4.468	0.492
8	43360	4.398	4.463	-0.0646
9	43545	4.72	4.458	0.262
10	43728	4.44	4.453	-0.0125
11	43907	4.64	4.448	0.192
12	44095	3.92	4.442	-0.522

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/25/2021 4:15:28 PM
From File	WorkSheet_c.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Sulfate

General Statistics

Number of Events	12
Number of Values Reported (n)	12
Number of Values After Averaging	12
Number of Replicates	0
Minimum	0.677
Maximum	7.486
Mean	2.749
Geometric Mean	1.879
Median	1.608
Standard Deviation	2.417
Coefficient of Variation	0.879

Mann-Kendall Statistics

M-K Test Value (S)	38
Tabulated p-value	0.004
Standard Deviation of S	14.58
Standardized Value of S	2.537
Approximate p-value	0.00559

Approximate inference for Theil-Sen Trend Test

Number of Slopes	66
Theil-Sen Slope	0.003
Theil-Sen	
Intercept	-127.5
M1'	21.01
One-sided 95% lower limit of Slope	0.00188
95% LCL of Slope (0.025)	0.00177

95% UCL of Slope (0.975)	0.00562
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Statistically significant evidence of an increasing trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42684	0.907	0.384	0.523
2	42761	0.783	0.614	0.169
3	42824	0.77	0.803	-0.0331
4	42871	0.72	0.944	-0.224
5	42945	0.677	1.166	-0.489
6	43003	4.148	1.341	2.807
7	43181	1.304	1.874	-0.571
8	43360	1.912	2.411	-0.499
9	43545	5.168	2.965	2.203
10	43728	2.956	3.514	-0.558
11	43907	6.154	4.05	2.104
12	44095	7.486	4.613	2.873

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/25/2021 4:16:12 PM
From File	WorkSheet_c.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

TDS Avg

General Statistics

Number of Events	12
Number of Values Reported (n)	12
Number of Values After Averaging	12
Number of Replicates	0
Minimum	49.6
Maximum	86.8
Mean	63.22
Geometric Mean	62.25
Median	60.43
Standard Deviation	11.91
Coefficient of Variation	0.188

Mann-Kendall Statistics

M-K Test Value (S)	-6
Tabulated p-value	0.369
Standard Deviation of S	14.58
Standardized Value of S	-0.343
Approximate p-value	0.366

Approximate inference for Theil-Sen Trend Test

Number of Slopes	66
Theil-Sen Slope	-0.00392
Theil-Sen Intercept	229.2
M1	18.71
M2	47.29
95% LCL of Slope (0.025)	-0.0231
95% UCL of Slope (0.975)	0.013

Insufficient evidence to identify a significant

trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42684	50	62.03	-12.03
2	42761	76.33	61.73	14.6
3	42824	60.67	61.48	-0.818
4	42871	57.33	61.3	-3.967
5	42945	78.67	61.01	17.66
6	43003	86.8	60.78	26.02
7	43181	56	60.08	-4.085
8	43360	62.8	59.38	3.416
9	43545	52.6	58.66	-6.059
10	43728	49.6	57.94	-8.343
11	43907	67.6	57.24	10.36
12	44095	60.2	56.51	3.694

Theil-Sen Outputs Downgradient Data Sets for Sulfate

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation	ProUCL 5.16/29/2021 5:55:44 PM
From File	WorkSheet_a.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Sulfate-mw-lf-02

General Statistics

Number of Events	16
Number of Values Reported (n)	16
Number of Values After Averaging	16
Number of Replicates	0
Minimum	1.73
Maximum	7.19
Mean	3.384
Geometric Mean	3.16
Median	3.175
Standard Deviation	1.352
Coefficient of Variation	0.4

Mann-Kendall Statistics

M-K Test Value (S)	60
Tabulated p-value	0.003
Standard Deviation of S	22.21
Standardized Value of S	2.656
Approximate p-value	0.00395

Approximate inference for Theil-Sen Trend Test

Number of Slopes	120
Theil-Sen Slope	0.00164
Theil-Sen Intercept	-67.45
M1'	41.73
One-sided 95% lower limit of Slope	7.14E-04

95% LCL of Slope (0.025)	5.34E-04
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95% UCL of Slope (0.975)	0.0024
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Statistically significant evidence of an increasing trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.81	2.401	-0.591
2	42566	3.1	2.505	0.595
3	42628	3.25	2.607	0.643
4	42683	2.63	2.697	-0.0672
5	42761	3.82	2.825	0.995
6	42824	1.86	2.929	-1.069
7	42871	1.73	3.006	-1.276
8	42944	2.62	3.126	-0.506
9	43003	2.8	3.224	-0.424
10	43180	2.61	3.515	-0.905
11	43361	4.08	3.812	0.268
12	43544	4.07	4.113	-0.043
13	43727	4.03	4.414	-0.384
14	43906	4.06	4.708	-0.648
15	44095	4.48	5.018	-0.538
16	44271	7.19	5.308	1.882

Sulfate-mw-lf-03

General Statistics

Number of Events	16
Number of Values Reported (n)	16
Number of Values After Averaging	16
Number of Replicates	0
Minimum	0.129
Maximum	4.2
Mean	0.823
Geometric Mean	0.608
Median	0.5
Standard Deviation	0.947
Coefficient of Variation	1.151

Mann-Kendall Statistics

M-K Test Value (S)	19
Tabulated p-value	0.225

Standard Deviation of S	19.19
Standardized Value of S	0.938
Approximate p-value	0.174

Approximate inference for Theil-Sen Trend Test

Number of Slopes	120
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	41.19
M2	78.81

95% LCL of Slope (0.025)	0
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95% UCL of Slope (0.975)	1.00E-04
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Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.43	0.5	0.93
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.55	0.5	0.05
12	43544	0.76	0.5	0.26
13	43727	0.5	0.5	0
14	43906	4.2	0.5	3.7
15	44095	0.5	0.5	0
16	44271	1.1	0.5	0.6

Sulfate-mw-lf-04

General Statistics

Number of Events	16
Number of Values Reported (n)	16

Number of Values After Averaging	16
Number of Replicates	0
Minimum	0.129
Maximum	8.05
Mean	1.154
Geometric Mean	0.596
Median	0.5
Standard Deviation	2.013
Coefficient of Variation	1.744

Mann-Kendall Statistics	
M-K Test Value (S)	-6
Tabulated p-value	0.412
Standard Deviation of S	19.17
Standardized Value of S	-0.261
Approximate p-value	0.397

Approximate inference for Theil-Sen Trend Test	
Number of Slopes	120
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	41.22
M2	78.78
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	0.63	0.5	0.13
2	42566	0.83	0.5	0.33
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0

9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	8.05	0.5	7.55
15	44095	0.5	0.5	0
16	44270	3.7	0.5	3.2

Sulfate-mw-lf-05

General Statistics

Number of Events	16
Number of Values Reported (n)	16
Number of Values After Averaging	16
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.474
Geometric Mean	0.435
Median	0.5
Standard Deviation	0.156
Coefficient of Variation	0.33

Mann-Kendall Statistics

M-K Test Value (S)	5
Tabulated p-value	0.447
Standard Deviation of S	14.96
Standardized Value of S	0.267
Approximate p-value	0.395

Approximate inference for Theil-Sen Trend Test

Number of Slopes	120
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	45.34
M2	74.66

95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0
15	44092	0.5	0.5	0
16	44270	0.821	0.5	0.321

Sulfate-mw-lf-06

General Statistics

Number of Events	16
Number of Values Reported (n)	16
Number of Values After Averaging	16
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.474
Geometric Mean	0.435
Median	0.5
Standard Deviation	0.156
Coefficient of Variation	0.33

Mann-Kendall Statistics

M-K Test Value (S)	5
Tabulated p-value	0.447
Standard Deviation of S	14.96

Standardized Value of S	0.267
Approximate p-value	0.395

Approximate inference for Theil-Sen Trend Test

Number of Slopes	120
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	45.34
M2	74.66

95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42629	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43004	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0
15	44092	0.5	0.5	0
16	44270	0.821	0.5	0.321

Appendix C

Background Threshold Values

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.16/14/2021 2:55:12 PM
From File	WorkSheet_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	20

Boron

General Statistics

Total Number of Observations	53	Number of Distinct Observations	9
Number of Detects	4	Number of Non-Detects	49
Number of Distinct Detects	4	Number of Distinct Non-Detects	5
Minimum Detect	0.0545	Minimum Non-Detect	0.0219
Maximum Detect	0.176	Maximum Non-Detect	1
Variance Detected	0.00331	Percent Non-Detects	92.45%
Mean Detected	0.0907	SD Detected	0.0576
Mean of Detected Logged Data	-2.524	SD of Detected Logged Data	0.542

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.045	d2max (for USL)	2.98
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Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.03	SD	0.0277
95% UTL95% Coverage	0.0866	95% KM UPL (t)	0.0768
95% KM UPL for Next 20 Observations	0.112	95% KM UPL for Mean of Next 20 Observations	0.0421
95% KM Chebyshev UPL	0.152	90% KM Percentile (z)	0.0655
95% KM Percentile (z)	0.0755	99% KM Percentile (z)	0.0944

95% KM USL	0.112		
Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)			
Order of Statistic, r	52	95% UTL with95% Coverage	1
Approx, f used to compute achieved CC	1.368	Approximate Actual Confidence Coefficient achieved by UTL	0.75
Approximate Sample Size needed to achieve specified CC	93	95% UPL	0.44
95% USL	1	95% KM Chebyshev UPL	0.152

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations. The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Fluoride OL rem

General Statistics

Total Number of Observations	52	Number of Distinct Observations	22
Number of Missing Observations	1		
Number of Detects	20	Number of Non-Detects	32
Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.034	Minimum Non-Detect	0.025
Maximum Detect	0.165	Maximum Non-Detect	0.1
Variance Detected	0.00114	Percent Non-Detects	61.54%
Mean Detected	0.0721	SD Detected	0.0338
Mean of Detected Logged Data	-2.719	SD of Detected Logged Data	0.424
Critical Values for Background Threshold Values (BTVs)			
Tolerance Factor K (For UTL)	2.049	d2max (for USL)	2.972

Nonparametric Distribution Free Background Statistics
 Data appear to follow a Discernible Distribution at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.0511	SD	0.0306
95% UTL	0.114	95% KM UPL (t)	0.103
95% KM UPL for Next 20 Observations	0.142	95% KM UPL for Mean of Next 20 Observations	0.0646
95% KM Chebyshev UPL	0.186	90% KM Percentile (z)	0.0904
95% KM Percentile (z)	0.102	99% KM Percentile (z)	0.122
95% KM USL	0.142		
Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)			
Order of Statistic, r	51	95% UTL with 95% Coverage	0.14
Approx, f used to compute achieved CC	1.342	Approximate Actual Confidence Coefficient achieved by UTL	0.741
Approximate Sample Size needed to achieve specified CC	93	95% UPL	0.119
95% USL	0.165	95% KM Chebyshev UPL	0.186

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Sulfate

General Statistics

Total Number of Observations	53	Number of Distinct Observations	34
Number of Detects	32	Number of Non-Detects	21
Number of Distinct Detects	32	Number of Distinct Non-Detects	2
Minimum Detect	0.63	Minimum Non-Detect	0.129
Maximum Detect	21.6	Maximum Non-Detect	0.5
Variance Detected	32.42	Percent Non-Detects	39.62%
Mean Detected	4.785	SD Detected	5.694
Mean of Detected Logged Data	0.944	SD of Detected Logged Data	1.105

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.045	d2max (for USL)	2.98
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Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	2.94	SD	4.914
95% UTL/95% Coverage	12.99	95% KM UPL (t)	11.25
95% KM UPL for Next 20 Observations	17.48	95% KM UPL for Mean of Next 20 Observations	5.1
95% KM Chebyshev UPL	24.56	90% KM Percentile (z)	9.238
95% KM Percentile (z)	11.02	99% KM Percentile (z)	14.37
95% KM USL	17.58		

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	52	95% UTL with 95% Coverage	16.1
Approx, f used to compute achieved CC	1.368	Approximate Actual Confidence Coefficient achieved by UTL	0.75
Approximate Sample Size needed to achieve specified CC	93	95% UPL	14.98
95% USL	21.6	95% KM Chebyshev UPL	24.56

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation	ProUCL 5.16/14/2021 1:15:32 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
New or Future K Observations	20
Number of Bootstrap Operations	2000

Calcium OL rem

General Statistics

Total Number of Observations	51	Number of Distinct Observations
		Number of Missing Observations
Minimum	1.58	First Quartile
Second Largest	11.4	Median
Maximum	15.8	Third Quartile
Mean	4.779	SD
Coefficient of Variation	0.762	Skewness
Mean of logged Data	1.309	SD of logged Data
Critical Values for Background Threshold Values (BTVs)		
Tolerance Factor K (For UTL)	2.054	d2max (for USL)
Normal GOF Test		
Shapiro Wilk Test Statistic	0.783	Normal GOF Test
5% Shapiro Wilk P Value	1.39E-09	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	Lilliefors GOF Test
5% Lilliefors Critical Value	0.123	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		
Background Statistics Assuming Normal Distribution		
95% UTL with 95% Coverage	12.26	90% Percentile (z)
95% UPL (t)	10.94	95% Percentile (z)
95% UPL for Next 20 Observations	15.58	99% Percentile (z)
95% UPL for Mean of 20 Observations	6.389	95% USL
Gamma GOF Test		
A-D Test Statistic	3.391	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.762	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.23	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.126	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics

k hat (MLE)	2.113	k star (bias corrected MLE)
Theta hat (MLE)	2.262	Theta star (bias corrected MLE)
nu hat (MLE)	215.5	nu star (bias corrected)
MLE Mean (bias corrected)	4.779	MLE Sd (bias corrected)

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	11.42	90% Percentile
95% Hawkins Wixley (HW) Approx. Gamma UPL	11.55	95% Percentile
95% WH UPL for Next 20 Observations	20.79	99% Percentile
95% HW UPL for Next 20 Observations	22.19	
95% WH Approx. Gamma UTL with 95% Coverage	13.71	95% HW Approx. Gamma UTL with 95% Coverage
95% WH USL	20.78	95% HW USL

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.852	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk P Value	1.32E-06	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.123	Data Not Lognormal at 5% Significance Level
Data Not Lognormal at 5% Significance Level		

Background Statistics assuming Lognormal Distribution

95% UTL with 95% Coverage	15.57	90% Percentile (z)
95% UPL (t)	12.09	95% Percentile (z)
95% UPL for Next 20 Observations	29.46	99% Percentile (z)
95% UPL for Mean of 20 Observations	5.045	95% USL

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	50	95% UTL with 95% Coverage
Approx, f used to compute achieved CC	1.316	Approximate Actual Confidence Coefficient achieved by UTL Approximate Sample Size needed to achieve specified CC

95% Percentile Bootstrap UTL with 95% Coverage	13.6	95% BCA Bootstrap UTL with 95% Coverage
95% UPL	11.1	90% Percentile
90% Chebyshev UPL	15.81	95% Percentile
95% Chebyshev UPL	20.8	99% Percentile
95% USL	15.8	

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Chloride

General Statistics

Total Number of Observations	53	Number of Distinct Observations
Minimum	2.14	First Quartile
Second Largest	20.6	Median
Maximum	21.9	Third Quartile
Mean	11.17	SD
Coefficient of Variation	0.588	Skewness
Mean of logged Data	2.198	SD of logged Data
Critical Values for Background Threshold Values (BTVs)		
Tolerance Factor K (For UTL)	2.045	d2max (for USL)
Normal GOF Test		
Shapiro Wilk Test Statistic	0.862	Normal GOF Test
5% Shapiro Wilk P Value	2.15E-06	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.17	Lilliefors GOF Test
5% Lilliefors Critical Value	0.121	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Background Statistics Assuming Normal Distribution

TRC Environmental Corporation | Dominion Energy South Carolina
Cope Station Class III Landfill – Detection Monitoring

95% UTL with 95% Coverage	24.59	90% Percentile (z)
95% UPL (t)	22.27	95% Percentile (z)
95% UPL for Next 20 Observations	30.6	99% Percentile (z)
95% UPL for Mean of 20 Observations	14.05	95% USL
Gamma GOF Test		
A-D Test Statistic	2.041	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.166	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.123	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		
Gamma Statistics		
k hat (MLE)	2.478	k star (bias corrected MLE)
Theta hat (MLE)	4.507	Theta star (bias corrected MLE)
nu hat (MLE)	262.7	nu star (bias corrected)
MLE Mean (bias corrected)	11.17	MLE Sd (bias corrected)
Background Statistics Assuming Gamma Distribution		
95% Wilson Hilferty (WH) Approx. Gamma UPL	25.54	90% Percentile
95% Hawkins Wixley (HW) Approx. Gamma UPL	26.3	95% Percentile
95% WH UPL for Next 20 Observations	44.83	99% Percentile
95% HW UPL for Next 20 Observations	48.92	
95% WH Approx. Gamma UTL with 95% Coverage	30.21	95% HW Approx. Gamma UTL with 95% Coverage
95% WH USL	45.2	95% HW USL
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.881	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk P Value	1.68E-05	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.157	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.121	Data Not Lognormal at 5% Significance Level
Data Not Lognormal at 5% Significance Level		
Background Statistics assuming Lognormal Distribution		

95% UTL with 95% Coverage	38.05	90% Percentile (z)
95% UPL (t)	29.64	95% Percentile (z)
95% UPL for Next 20 Observations	72.49	99% Percentile (z)
95% UPL for Mean of 20 Observations	12.28	95% USL

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	52	95% UTL with 95% Coverage
Approx, f used to compute achieved CC	1.368	Approximate Actual Confidence Coefficient achieved by UTL
		Approximate Sample Size needed to achieve specified CC
95% Percentile Bootstrap UTL with 95% Coverage	21.12	95% BCA Bootstrap UTL with 95% Coverage
95% UPL	20.39	90% Percentile
90% Chebyshev UPL	31.05	95% Percentile
95% Chebyshev UPL	40.05	99% Percentile
95% USL	21.9	

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

pH

General Statistics

Total Number of Observations	53	Number of Distinct Observations
Minimum	3.4	First Quartile
Second Largest	5.8	Median
Maximum	6.3	Third Quartile
Mean	4.526	SD
Coefficient of Variation	0.116	Skewness

Mean of logged Data	1.504	SD of logged Data
Critical Values for Background Threshold Values (BTVs)		
Tolerance Factor K (For UTL)	2.045	d2max (for USL)
Normal GOF Test		
Shapiro Wilk Test Statistic	0.948	Normal GOF Test
5% Shapiro Wilk P Value	0.0372	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.123	Lilliefors GOF Test
5% Lilliefors Critical Value	0.121	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		
Background Statistics Assuming Normal Distribution		
95% UTL with 95% Coverage	5.599	90% Percentile (z)
95% UPL (t)	5.413	95% Percentile (z)
95% UPL for Next 20 Observations	6.078	99% Percentile (z)
95% UPL for Mean of 20 Observations	4.757	95% USL
Gamma GOF Test		
A-D Test Statistic	0.682	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.748	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.113	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.122	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		
Gamma Statistics		
k hat (MLE)	79.7	k star (bias corrected MLE)
Theta hat (MLE)	0.0568	Theta star (bias corrected MLE)
nu hat (MLE)	8448	nu star (bias corrected)
MLE Mean (bias corrected)	4.526	MLE Sd (bias corrected)
Background Statistics Assuming Gamma Distribution		
95% Wilson Hilferty (WH) Approx. Gamma UPL	5.426	90% Percentile
95% Hawkins Wixley (HW) Approx. Gamma UPL	5.428	95% Percentile
95% WH UPL for Next 20 Observations	6.193	99% Percentile

95% HW UPL for Next 20 Observations		6.21
95% WH Approx. Gamma UTL with 95% Coverage	5.633	95% HW Approx. Gamma UTL with 95% Coverage
95% WH USL	6.205	95% HW USL
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.974	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk P Value	0.471	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.106	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.121	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		
Background Statistics assuming Lognormal Distribution		
95% UTL with 95% Coverage	5.657	90% Percentile (z)
95% UPL (t)	5.437	95% Percentile (z)
95% UPL for Next 20 Observations	6.268	99% Percentile (z)
95% UPL for Mean of 20 Observations	4.725	95% USL
Nonparametric Distribution Free Background Statistics		
Data appear Gamma Distributed at 5% Significance Level		
Nonparametric Upper Limits for Background Threshold Values		
Order of Statistic, r	52	95% UTL with 95% Coverage
Approx, f used to compute achieved CC	1.368	Approximate Actual Confidence Coefficient achieved by UTL
		Approximate Sample Size needed to achieve specified CC
95% Percentile Bootstrap UTL with 95% Coverage	5.8	95% BCA Bootstrap UTL with 95% Coverage
95% UPL	5.52	90% Percentile
90% Chebyshev UPL	6.115	95% Percentile
95% Chebyshev UPL	6.834	99% Percentile
95%		
USL	6.3	

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

TDS

General Statistics

Total Number of Observations	53	Number of Distinct Observations
Minimum	2	First Quartile
Second Largest	143	Median
Maximum	203	Third Quartile
Mean	62.25	SD
Coefficient of Variation	0.669	Skewness
Mean of logged Data	3.879	SD of logged Data

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.045	d2max (for USL)
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Normal GOF Test

Shapiro Wilk Test Statistic	0.905	Normal GOF Test
5% Shapiro Wilk P Value	2.79E-04	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.18	Lilliefors GOF Test
5% Lilliefors Critical Value	0.121	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Background Statistics Assuming Normal Distribution

95% UTL with 95% Coverage	147.4	90% Percentile (z)
95% UPL (t)	132.7	95% Percentile (z)
95% UPL for Next 20 Observations	185.5	99% Percentile (z)
95% UPL for Mean of 20 Observations	80.56	95% USL

Gamma GOF Test

A-D Test Statistic	0.54	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.762	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.103	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.124	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.136	k star (bias corrected MLE)
Theta hat (MLE)	29.14	Theta star (bias corrected MLE)
nu hat (MLE)	226.4	nu star (bias corrected)
MLE Mean (bias corrected)	62.25	MLE Sd (bias corrected)
Background Statistics Assuming Gamma Distribution		
95% Wilson Hilferty (WH) Approx. Gamma UPL	148	90% Percentile
95% Hawkins Wixley (HW) Approx. Gamma UPL	153.5	95% Percentile
95% WH UPL for Next 20 Observations	266.7	99% Percentile
95% HW UPL for Next 20 Observations	295.3	
95% WH Approx. Gamma UTL with 95% Coverage	176.5	95% HW Approx. Gamma UTL with 95% Coverage
95% WH USL	269	95% HW USL
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.931	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk P Value	0.00532	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0864	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.121	Data appear Lognormal at 5% Significance Level
Data appear Approximate Lognormal at 5% Significance Level		
Background Statistics assuming Lognormal Distribution		
95% UTL with 95% Coverage	247.7	90% Percentile (z)
95% UPL (t)	186.6	95% Percentile (z)
95% UPL for Next 20 Observations	514.2	99% Percentile (z)
95% UPL for Mean of 20 Observations	68.73	95% USL
Nonparametric Distribution Free Background Statistics		
Data appear Gamma Distributed at 5% Significance Level		
Nonparametric Upper Limits for Background Threshold Values		
Order of Statistic, r	52	95% UTL with 95% Coverage
Approx, f used to compute achieved CC	1.368	Approximate Actual Confidence Coefficient achieved by UTL
		Approximate Sample Size needed to achieve specified CC
95% Percentile Bootstrap UTL with 95% Coverage	167	95% BCA Bootstrap UTL with 95% Coverage

95% UPL	133.9	90% Percentile
90% Chebyshev UPL	188.4	95% Percentile
95% Chebyshev UPL	245.6	99% Percentile
95%		
USL	203	

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Ca OL rem

General Statistics

Total Number of Observations	51	Number of Distinct Observations Number of Missing Observations
Minimum	1.58	First Quartile
Second Largest	11.4	Median
Maximum	15.8	Third Quartile
Mean	4.779	SD
Coefficient of Variation	0.762	Skewness
Mean of logged Data	1.309	SD of logged Data
Critical Values for Background Threshold Values (BTVs)		
Tolerance Factor K (For UTL)	2.054	d2max (for USL)
Normal GOF Test		
Shapiro Wilk Test Statistic	0.783	Normal GOF Test
5% Shapiro Wilk P Value	1.39E-09	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	Lilliefors GOF Test
5% Lilliefors Critical Value	0.123	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		
Background Statistics Assuming Normal Distribution		

95% UTL with 95% Coverage	12.26	90% Percentile (z)
95% UPL (t)	10.94	95% Percentile (z)
95% UPL for Next 20 Observations	15.58	99% Percentile (z)
95% UPL for Mean of 20 Observations	6.389	95% USL
Gamma GOF Test		
A-D Test Statistic	3.391	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.762	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.23	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.126	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		
Gamma Statistics		
k hat (MLE)	2.113	k star (bias corrected MLE)
Theta hat (MLE)	2.262	Theta star (bias corrected MLE)
nu hat (MLE)	215.5	nu star (bias corrected)
MLE Mean (bias corrected)	4.779	MLE Sd (bias corrected)
Background Statistics Assuming Gamma Distribution		
95% Wilson Hilferty (WH) Approx. Gamma UPL	11.42	90% Percentile
95% Hawkins Wixley (HW) Approx. Gamma UPL	11.55	95% Percentile
95% WH UPL for Next 20 Observations	20.79	99% Percentile
95% HW UPL for Next 20 Observations	22.19	
95% WH Approx. Gamma UTL with 95% Coverage	13.71	95% HW Approx. Gamma UTL with 95% Coverage
95% WH USL	20.78	95% HW USL
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.852	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk P Value	1.32E-06	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.123	Data Not Lognormal at 5% Significance Level
Data Not Lognormal at 5% Significance Level		
Background Statistics assuming Lognormal Distribution		

95% UTL with 95% Coverage	15.57	90% Percentile (z)
95% UPL (t)	12.09	95% Percentile (z)
95% UPL for Next 20 Observations	29.46	99% Percentile (z)
95% UPL for Mean of 20 Observations	5.045	95% USL

Nonparametric Distribution Free Background Statistics
Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	50	95% UTL with 95% Coverage
Approx, f used to compute achieved CC	1.316	Approximate Actual Confidence Coefficient achieved by UTL Approximate Sample Size needed to achieve specified CC
95% Percentile Bootstrap UTL with 95% Coverage	13.6	95% BCA Bootstrap UTL with 95% Coverage
95% UPL	11.1	90% Percentile
90% Chebyshev UPL	15.81	95% Percentile
95% Chebyshev UPL	20.8	99% Percentile
95% USL	15.8	

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Appendix D

Alternate Source Demonstration



DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III INDUSTRIAL LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

ALTERNATE SOURCE DEMONSTRATION REPORT

First Semiannual 2021 Detection Monitoring Event

January 2022



Handwritten signature of Nakia W. Addison in blue ink.

Nakia W. Addison, P.E.
Senior Engineer

Handwritten signature of Richard A. Mayer Jr. in blue ink.

Richard A. Mayer Jr., P.G.
Project Hydrogeologist

*TRC Environmental Corporation | Dominion Energy South Carolina
Cope Station Class III Industrial Landfill
Alternate Source Demonstration*

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Executive Summary

Dominion Energy South Carolina (DESC) performed the most recent semiannual detection monitoring sampling (first semiannual 2021 sampling event) in March 2021 for the Cope Generating Station (Station) Class III Industrial Landfill (Unit) pursuant to the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, 40 CFR Part 257 (CCR Rule). The constitutes the coal combustion residuals (CCR) Unit per the CCR Rule. Per 40 CFR §257.94, the samples were analyzed for the Appendix III detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed and evaluated for potential statistically significant increases (SSI) above background concentrations.

The following SSI above the background concentration was identified based on direct comparisons made between the statistically derived background threshold value (95 percent upper prediction limit) and the downgradient monitoring results:

- Chloride (MW-LF-02).

The information provided in this report serves as DESC's alternate source demonstration (ASD) prepared in accordance with 40 CFR §257.94(e)(2) and successfully demonstrates that the SSI is not due to a release from the Unit to groundwater, but is due to the following:

- Natural variation in groundwater quality within the area.

Therefore, based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring for Appendix III constituents in accordance with 40 CFR §257.94 at the certified groundwater monitoring well system (Certified Monitoring Well Network) for the CCR Unit.

Section 1

Introduction

1.1 Background

Dominion Energy South Carolina, Inc. (DESC) operates the Cope Generating Station (Station), a coal-fired power plant, to generate electricity. The Station is located at 405 Teamwork Drive in Cope, Orangeburg County, South Carolina as shown on **Figure 1**. Coal combustion residuals (CCR) are produced as part of the electrical generation operations. The Station has been generating and disposing of CCR on-site in a coal ash disposal landfill (Unit) since it began operations in 1996. The Unit is a Class 3N non-commercial industrial landfill and operates under South Carolina Department of Health and Environmental Control (SCDHEC) Solid Waste Permit No. LF-3-00038.

The Unit receives both fly ash and flue gas desulfurization (FGD) waste from the Station and includes a liner system consisting of a minimum 2-foot-thick compacted clay layer (maximum permeability of 1×10^{-7} cm/sec) overlain by a 60-mil HDPE geomembrane and leachate collection system.

The Unit accepts CCR for disposal in accordance with the federal *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (CCR Rule), effective October 19, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA).

1.2 Groundwater Monitoring and Statistical Analysis

In accordance with 40 CFR §257.90 through §257.94, DESC installed a groundwater monitoring system for the Unit and has collected samples from the Certified Monitoring Well Network for laboratory analysis for CCR constituents and performed statistical analysis of the collected samples. DESC installed a Certified Monitoring Well Network for the CCR Unit in accordance with 40 CFR §257.90 and §257.91. The location of the EPA CCR Rule Compliance Monitoring Well Network is presented on **Figure 2**. The Certified Monitoring Well Network consists of 10 wells installed into the subsurface to monitor shallow groundwater as follows:

- Five wells were installed as background monitoring wells and include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, and AS-LF-02.
- Five wells were installed as compliance monitoring wells and include MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06.
- Additionally, monitoring well MW-40 was installed to support alternate source demonstration activities.

Pursuant to 40 CFR §257.91(f), DESC obtained certification by a qualified South Carolina-registered professional engineer (P.E.) stating that the Certified Monitoring Well Network has been designed and constructed to meet the requirements of 40 CFR §257.91 of the CCR Rule (Garrett & Moore 2017).

As discussed above, the Unit is currently being monitored pursuant to the CCR Rule. A groundwater sampling and analysis program including selection of statistical procedures to evaluate groundwater data was prepared per the CCR Rule (Nautilus 2016). Eight quarterly background CCR detection monitoring events were performed from May 2016 through July 2017 in accordance with 40 CFR §257.93(d) and §257.94(b). The eight quarterly detection monitoring background samples were analyzed for Appendix III to Part 257 – Constituents for Detection Monitoring and for Appendix IV to Part 257 – Constituents for Assessment Monitoring.

Following completion of quarterly background detection monitoring in July 2017, DESC implemented semiannual detection monitoring per 40 CFR §257.94(b) for the CCR Unit. The first semiannual 2017 detection monitoring event was performed in September 2017 (2nd 2017 Semiannual Sampling Event). Subsequent detection monitoring events, with associated verification sampling when appropriate, have been performed on a semiannual basis since September 2017. DESC performed the most recent semiannual detection monitoring event (first semiannual 2021 sampling event) in March 2021. Per the CCR Rule, the semiannual detection monitoring event samples were analyzed for Appendix III constituents.

After completion of each semiannual detection monitoring event, the Appendix III data were statistically evaluated to identify potential SSIs for Appendix III constituents above background levels. In accordance with 40 CFR §257.93(f)(6), DESC obtained certification by a qualified South Carolina-registered P.E. stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR Unit (SCE&G 2017).

Pursuant to 40 CFR §257.93(h), statistical analysis of the laboratory analytical data was performed to identify potential SSIs for the first semiannual 2021 detection monitoring event. Data from the first semiannual 2021 detection monitoring event is presented in **Table 1**. One SSI was identified for chloride at MW-LF-20.

1.3 Purpose

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSIs identified or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this report is to provide written documentation of the successful ASD for the SSIs identified for the first semiannual 2021 detection monitoring event, pursuant to 40 CFR §257.94(e)(2) of the CCR Rule.

1.4 Site Hydrogeology

The Station is located within the Edisto River Subbasin (Ace Basin watershed) of the Coastal Plain physiographic province. Aquifers and confining units in the South Carolina portion of the Coastal Plain are composed of crystalline carbonate rocks, sand, clay, silt, and gravel that contain large volumes of high-quality groundwater (SAWSC 2016). The Unit groundwater monitoring wells are within the surficial aquifer of the Huber-Congaree geologic formation. This formation consists of thinly layered, well-sorted, fine-grained sand with minimal interstitial clay and thin, laterally continuous clay interlayers (SCDNR 2009). Hydraulic conductivity values in the surficial aquifer at the Station range from 9.87×10^{-5} cm/s to 8.61×10^{-3} cm/s with an estimated groundwater flow velocities of between 0.002 to 0.84 feet/day (Nautilus 2021a).

1.5 General Groundwater Quality

Regionally, groundwater quality in the Edisto River Subbasin consists of a sodium bicarbonate water type grading to a sodium chloride water type with depth and proximity to the coast (SCDNR 2009). Reported water quality concentrations for select secondary drinking water contaminants compared to USEPA secondary maximum contaminant levels (MCLs) are provided in the table below.

Edisto River Subbasin Groundwater Water Quality

Constituent	Concentration Range		USEPA Secondary MCL
	Low	High	
Chloride (mg/L)	1.0	1,000	250

As noted in the table above, the natural range of chloride within the Edisto River Subbasin, exceeds the secondary drinking water MCLs established by the USEPA for drinking water (SCDNR 2009).

Section 2

Alternate Source Demonstration

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As discussed previously, the first semiannual 2021 detection monitoring event was performed in March 2021. Statistical analysis of the first semiannual 2021 detection monitoring data was performed pursuant to 40 CFR §257.93(f) and (g) and in accordance with the Statistical Methods Certification (SCE&G 2017) and the Statistical Analysis Plan (OBG 2017). Based on either increasing trends at 95% confidence levels using Thiel-Sen's trend test and/or interwell prediction limits statistical analyses, the following SSI was identified:

- Chloride (MW-LF-02).

All other Appendix III constituent concentrations were within their trends at 95% confidence levels using Thiel-Sen's trend and/or interwell prediction limits in all the CCR Rule groundwater monitoring system wells.

A discussion of the SSI and associated evidence demonstrating that the SSI was not caused by a release from the Unit is provided in the subsections below.

The chloride SSI identified at MW-LF-02 is a result of natural variation in groundwater quality from areas upgradient from the Unit. The following evidence supports this determination:

- Chloride was detected in MW-LF-02 at a concentration of 31.9 mg/L in the March 2021 sample. This concentration exceeds the background threshold value of 21.9 mg/L. Based on review of potentiometric surface mapping (**Figure 3**), shallow groundwater flow in the Unit is generally to the west-southwest. The location of MW-LF-02 is hydraulically cross-gradient of the southeastern corner of the Unit, consistent with historical delineation of groundwater flow made at the site. Dissolved solutes in groundwater travel by advection and dispersion. In advection, the movement of dissolved solutes in groundwater is dominated by changes in hydraulic head while movement through dispersion is due to changes in solute concentrations. Given the cross-gradient location of MW-LF-02, advection is unlikely to have carried chloride or other solutes from the Unit. Although dispersion of chloride from the Unit remains a possibility, given the distribution of groundwater flow in the MW-LF-02 area, it is more likely that the source of chloride is from upgradient areas of the Unit such as MW-AS-01, MW-AS-02, and MW-40.
- To further evaluate the potential source of chloride in the Unit area, an isoconcentration map was prepared for the March 2021 data and presented as **Figure 4**. Monitoring wells MW-AS-01, MW-AS 02, MW-40, MW-LF-01, and MW-BG-06 are all located upgradient from MW-LF-02 with chloride concentrations ranging from 2.04 mg/L (MW-AS-01) to 55.4 mg/L (MW-40) based on the

March 2021 data. The chloride concentration at MW-LF-02 from March 2021 (31.9 mg/L) falls within this range. Historically, the highest chloride concentrations have been detected at MW-40 with a range of between 45.8 mg/L (December 2017) to 140 mg/L (September 2018) (Nautilus 2021a). The distribution of chloride in groundwater depicted by the isoconcentration map suggests that the source for chloride at MW-LF-02 is to the south-southeast of the monitoring well and the Unit.

- There are several constituents which are good indicators of coal ash impacts with lithium being one of them. Previous analysis of leachate from the Unit have indicated detections of lithium between 3,350 µg/L and 6,254 µg/L (Nautilus 2021a). Total lithium was analyzed during the March 2021 event and was not detected above the laboratory method detection limit (MDL) of 2.00 µg/L at all locations sampled with the exception of MW-LF-03 where lithium was detected at 2.02 µg/L. Historically, lithium has not been detected above the laboratory MDL within the Unit monitoring well network with the exception of MW-LF-03 (2.4 µg/L in March 2019) and AS-LF-01 (2.41 µg/L in February 2018) (Nautilus 2021b). The general absence of lithium within the Unit monitoring well network suggests that a release of leachate from the Unit has not occurred.
- Most natural waters contain cations and anions found in equilibrium (Piper 1944). Evaluation of the geochemistry of groundwater can assist in understanding the source(s) of the dissolved constituents. A geochemical analysis of major cations (calcium, magnesium, sodium, and potassium) and anions (total alkalinity, chloride, fluoride, and sulfate) was conducted during the March 2021 sampling event and presented in **Table 2**. A useful tool to graph the major distribution of the dissolved constituents in groundwater is through the use of a Piper diagram (Piper 1944). A Piper diagram was prepared using the March 2021 geochemical data and presented as **Figure 5**. The following observations were noted:
 - With respect to anions (bottom right triangle of Piper diagram), MW-LF-02 plotted closely (within the 80 to 100% chloride distribution) with background wells MW-LF-01 and MW-BG-06, along with downgradient wells MW-LF-05, and MW-LF-06.
 - With respect to cations (bottom left triangle of Piper diagram), MW-LF-02 plotted closely (within the 60 to 80% sodium + potassium distribution) with background well MW-LF-01 and downgradient well MW-LF-04.
 - With respect to the overall hydrochemical distribution (diamond in Piper diagram), MW-LF-02 plotted within the same area of the diamond as background wells MW-LF-01 and AS-LF-01 within the calcium chloride and sodium chloride mixed type water hydrochemical facies.

Evaluation of the geochemical distribution of cations and anions in the groundwater samples suggests that the water type for MW-LF-02 has similarities to that of background wells MW-LF-01, MW-BG-06, and AS-LF-01. This observation suggests that the source for chloride at MW-02-LF is not from the Unit. The similar geochemical signature of MW-LF-02 with background wells MW-LF-01 and MW-BG-06 further suggests that the SSI for chloride is the result of natural variations of chloride in the groundwater at the site.

Section 3

Conclusions

The information provided in this report serves as the ASD prepared in accordance with 40 CFR §257.94(e)(2) of the CCR Rule and demonstrates that the SSIs determined based on statistical analysis of the first semiannual 2021 detection monitoring event performed in March of 2021 was not due to a release from the Unit to the subsurface.

Based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring in accordance with 40 CFR §257.94 at the Certified Monitoring Well Network for the Unit.

Section 4 Certification

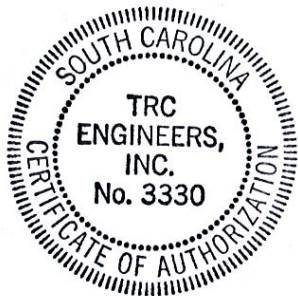
I hereby certify that the alternative source demonstration presented within this document for the DESC Cope Generating Station Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)2 of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e) 2.

Name: Nakia W. Addison, P.E.

Expiration Date: June 30, 2022

Company: TRC Environmental Corporation

Date: January 28, 2022



(SEAL)

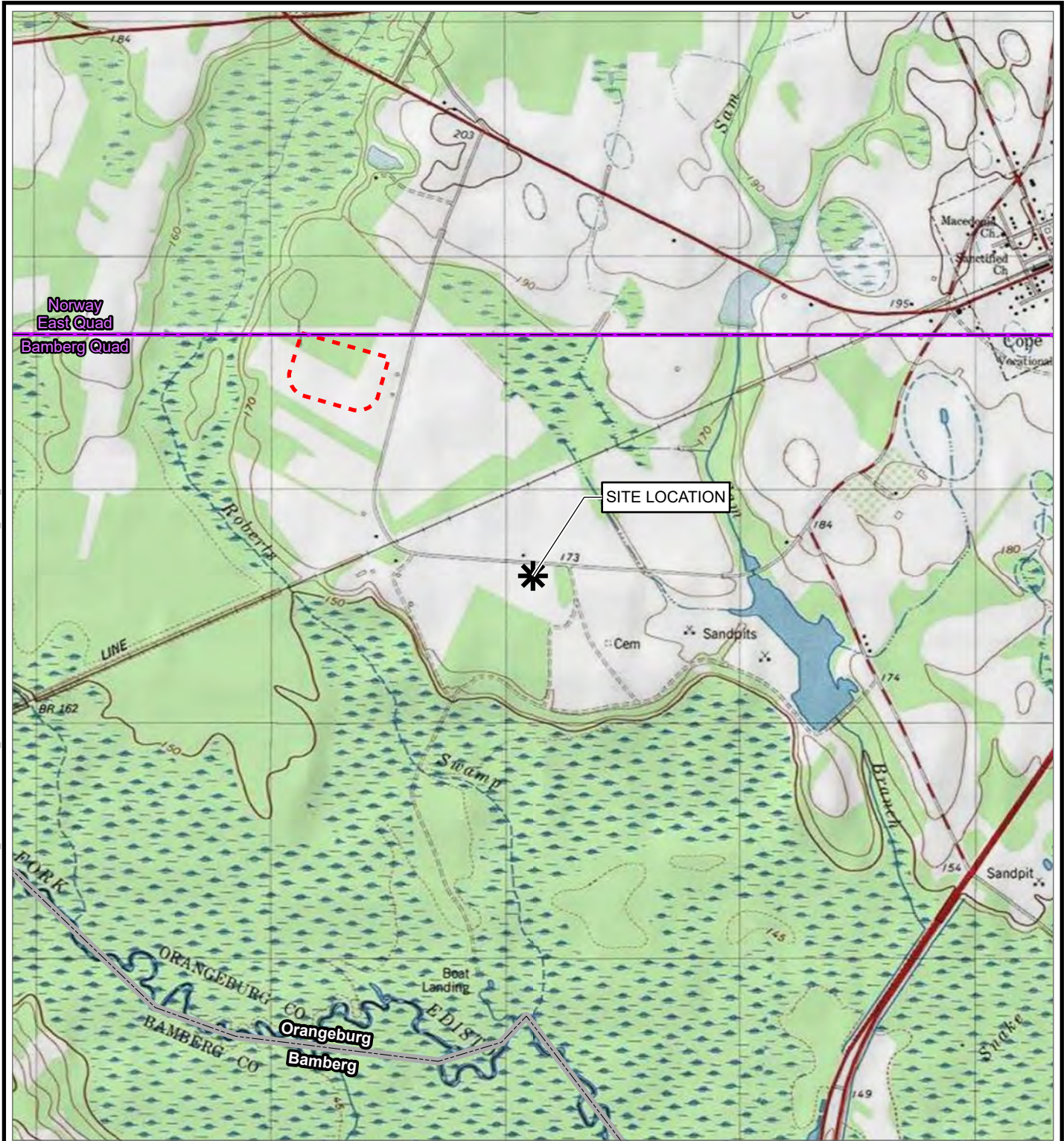
Section 5





References

- Garrett and Moore 2017. Groundwater Monitoring System Certification, Cope Station Landfill, Orangeburg County, South Carolina: Garrett & Moore, Inc.
- Nautilus 2016. Groundwater Sampling and Analysis Plan, Cope Generating Station Class Three Landfill. Cope, South Carolina: Nautilus Geologic Consulting, PLLC.
- Nautilus 2018. Alternate Source Demonstration Report, Cope Station Class Three Landfill. Cope, South Carolina: Nautilus Geologic Consulting, PLLC.
- Nautilus 2021a. Analysis of Groundwater Flow Rate and Direction: September 2020 Monitoring Data, Cope Station: Class III Landfill, Wateree Station: Class III Landfill, FGD Pond, Ash Pond, Williams Station: FGD Pond, Highway 52 Class III Landfill: Nautilus Geologic Consulting, PLLC. February 2021.
- Nautilus 2021b. Alternate Source Demonstration Report, Cope Station Class Three Landfill. Cope, South Carolina: Nautilus Geologic Consulting, PLLC. January 2021.
- O'Brien & Gere, (OBG). 2017. Statistical Analysis Plan, SCE&G Cope Station Class III Landfill. Cope, South Carolina: O'Brien & Gere Engineers, Inc.
- Piper, A.M., 1944. A graphic procedure in the geochemical interpretation of water-analyses. *Eos, Transactions American Geophysical Union*, 25(6), pp.914–928.
- South Atlantic Water Science Center (SAWC), 2016. Atlantic Coastal Plain Physiographic Provinces. <https://www.usgs.gov/media/images/atlantic-coastal-plain-physiographic-provinces>.
- South Carolina Department of Natural Resources (SCDNR), 2009, South Carolina State Water Assessment, 2nd Edition. 408 pp.
- United States Environmental Protection Agency. 2017. Secondary Drinking Water Standards: Guidance for Nuisance Chemicals, March 8, 2017.

Figures

COORDINATE SYSTEM: NAD 1983 STATEPLANE SOUTH CAROLINA FIPS 3900 FEET, MAP ROTATION: 0
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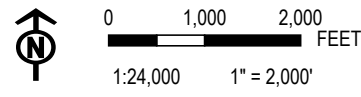
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-  CLASS III LANDFILL BOUNDARY
-  COUNTY BOUNDARY
-  USGS 24K QUAD BOUNDARY

PROJECT: **DOMINION ENERGY SOUTH CAROLINA
 COPE STATION**
 405 TEAMWORK ROAD,
 COPE, SC 29038

TITLE: **SITE LOCATION MAP**

DRAWN BY: R. BARBER	PROJ. NO.: 416559.0007.0000
CHECKED BY: A. HORRIE	FIGURE 1
APPROVED BY: R. MAYER	
DATE: JANUARY 2022	

BASE MAP: USGS TOPO MAP
 DATA SOURCES: TRC, USGS 7.5' QUADRANGLES:
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 (1980) QUAD ID: 33081-C1, SC








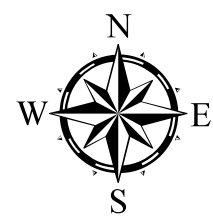
708 HEARTLAND TRAIL
 SUITE 3000
 MADISON, WI 53717
 PHONE: 608.826.3600

FILE: DOMINION_VARIOUS



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- LEGEND**
-  Monitoring Well
 -  Class II Landfill
 -  Class III Landfill



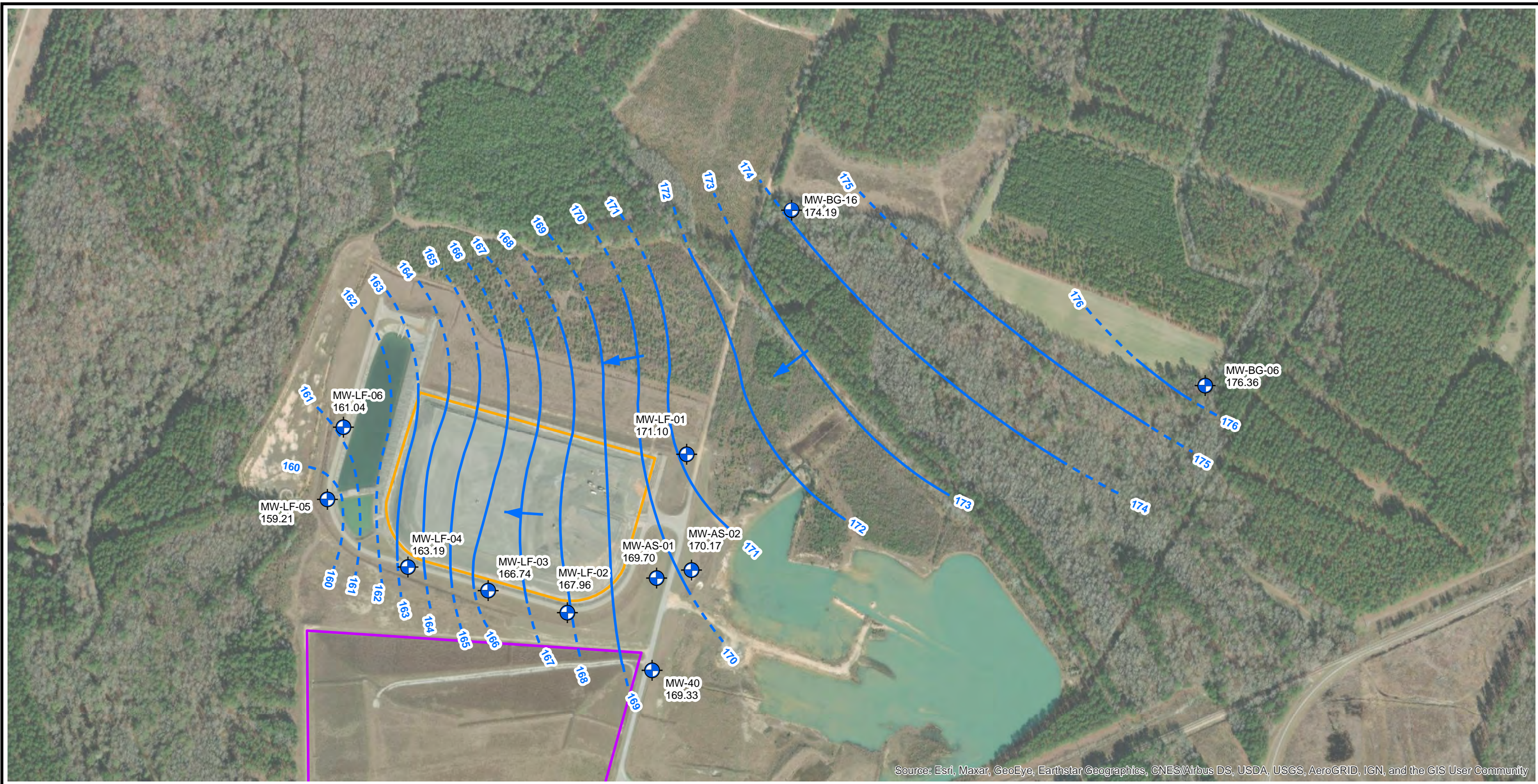
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NOTE: Aerial Image from ESRI World Imagery dated January 2020.

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TITLE:		CCR RULE COMPLIANCE MONITORING WELL NETWORK	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 2	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
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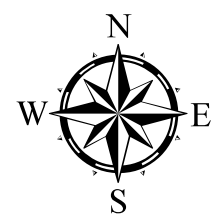
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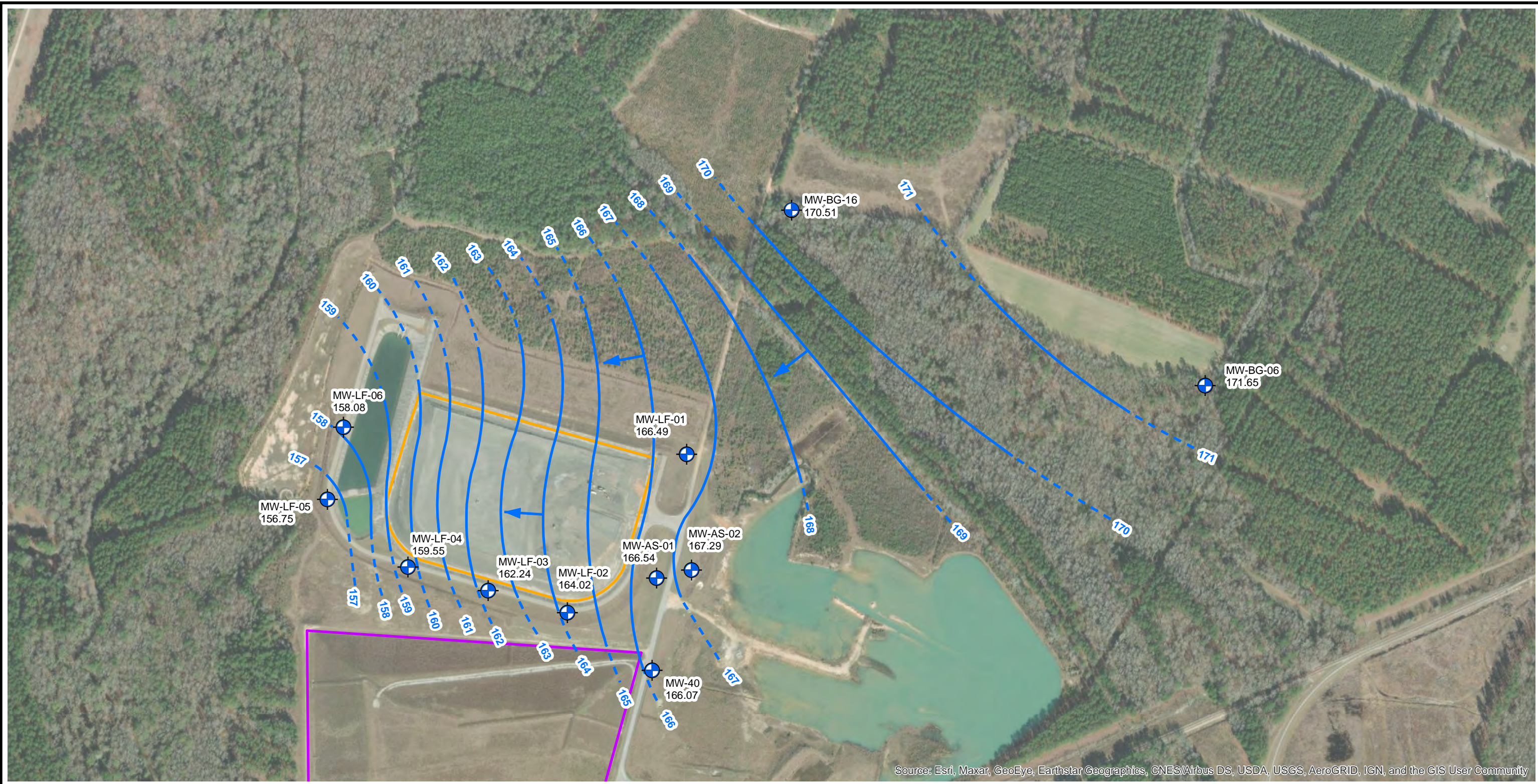
LEGEND

- Monitoring Well
- 159.21 Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill



NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:		DESC COPE STATION CLASS III LANDFILL COPE, SOUTH CAROLINA	
TITLE:		GROUNDWATER POTENTIOMETRIC SURFACE MAP MARCH 15 & 16, 2021	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 3	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
		50 International Drive, S Palmetto Plaza Three Greenville, SC 29615 Phone: 864.291.0030 www.TRCCompanies.ca	
FILE NO.:	Figure3_Cope_Class_III_CCR_202101.mxd		



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

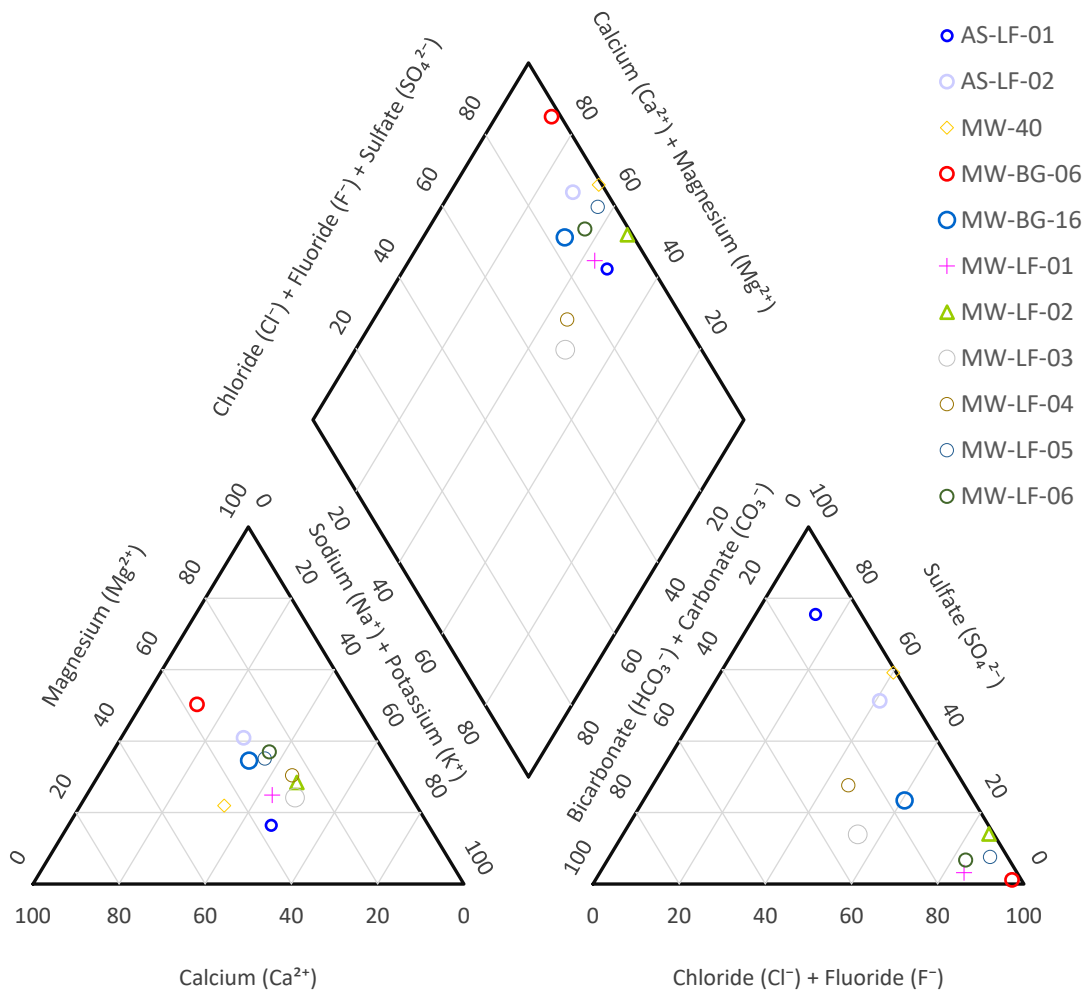
- Monitoring Well
- 156.75 Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill



NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:		DESC COPE STATION CLASS III LANDFILL COPE, SOUTH CAROLINA	
TITLE:		GROUNDWATER POTENTIOMETRIC SURFACE MAP SEPTEMBER 28, 2021	
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER	FIGURE 4	
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2022		
		50 International Drive, Suite 150 Patwood Plaza Three Greenville, SC 29615 Phone: 864.281.0030 www.TRCCompanies.com	
FILE NO.:	Figure4_Cope_Class_III_CCR_202103.mxd		

FIGURE 5
DESC Cope Station
Class III Landfill
Piper Diagram - March 2021



Tables

Table 1 March 2021 Downgradient Concentrations and Potential SSIs – Cope Class 3 Landfill

WELL	CONSTITUENT / BTV / RESULT (mg/L except as noted) ^[1]						
	BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE ^[3]	TDS
	1.0	15.8	21.9	0.165	3.4 - 6.2	0.00562 ^[2] (21.6)	295.3
BACKGROUND WELLS							
MW-LF-01	0.0113 J	2.99	11.9	< 0.1	4.7	0.603	50
MW-BG-06	0.00873 J	10.5	18.7	0.0622 J	4.4	0.296 J	113
MW-BG-16	0.00939 J	1.77	< 3.47	< 0.1	4.8	1.83	22.9
AS-LF-01	0.0129 J	3.08	2.04	0.0415 J	4.8	15.6	40
AS-LF-02	0.0161	3.59	7.74	0.0846 J	4.7	13.4	38.6
MW-40 ^[4]	0.0581	33.5	55.4	0.625	4.4	113	274
DOWNGRADIENT WELLS							
MW-LF-02	0.0173	5.29	31.9	0.156	4.2	5.34E-04 (7.19)	111
MW-LF-03	0.0102 J	1.37	< 3.15	< 0.1	4.8	0 (1.10)	22.9
MW-LF-04	0.0112 J	2.59	4.46	< 0.1	4.9	0 (3.70)	45.7
MW-LF-05	0.0112 J	3.05	9.13	< 0.1	4.6	0 (1.06)	50
MW-LF-06	0.00853 J	2.14	7.53	< 0.1	4.6	0 (0.821)	45.7

[1] pH expressed in standard units (s.u.)

[2] Sulfate had an increasing trend in background concentrations; comparison value is UCL of background slope (95% UPL in parentheses)

[3] Values for sulfate are LCL of trend followed by concentration in parentheses

[4] Upgradient well not used in background concentration calculations

J Estimated value between the method detection limit and the practical quantitation limit

< Result less than the indicated detection limit.

Table 2
Summary of Alternate Source Demonstration Parameters
First Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	CCR GWPS	Background Wells																			
				MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
				Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
				Sample ID: MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
				Sample Date: 03/15/2021				03/16/2021				03/16/2021				03/15/2021				03/15/2021			
ASD Support Parameters																							
Calcium	mg/L	15.8	--	2.99		30.0	100	10.5		30.0	100	1.77		30.0	100	3.08		30.0	100	3.59		30.0	100
Chloride	mg/L	21.9	--	11.9		0.134	0.400	18.7		0.134	0.400	<3.47	U	3.47	0.400	2.04	J+	2.04	0.400	7.74		0.0670	0.400
Fluoride	mg/L	0.165	4	<0.0330	U	0.0330	0.100	0.0622	J	0.0330	0.100	<0.0330	U	0.0330	0.100	0.042	J	0.0330	0.100	0.0846	J	0.0330	0.100
Sulfate	mg/L	21.6	--	0.603		0.133	0.400	0.296	J	0.133	0.400	1.83		0.133	0.400	15.6		0.133	0.400	13.4		0.133	0.400
Total Dissolved Solids	mg/L	295.3	--	50.0		3.40	14.3	113		3.40	14.3	22.9		3.40	14.3	40.0		3.40	14.3	38.6		3.40	14.3
Alkalinity, Total as CaCO3	mg/L			2.99	J	1.45	4.00	<1.45	U	1.45	4.00	1.59	J	1.45	4.00	2.79	J	1.45	4.00	2.59	J	1.45	4.00
Lithium	µg/L	--	40	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0
Magnesium	µg/L			1410		10.0	15.0	8710		10.0	15.0	1140		10.0	15.0	841		10.0	15.0	2910		10.0	15.0
Potassium	µg/L			527		80.0	300	1780		80.0	300	1400		80.0	300	1230		80.0	300	1630		80.0	300
Sodium	µg/L			4310		80.0	250	3200		80.0	250	1230		80.0	250	3840		80.0	250	2870		80.0	250

Notes:

MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
CCR = Coal Combustion Residuals
GWPS = Groundwater Protection Standards
CCR = Coal Combustion Residuals
GWPS = Groundwater Protection Standards

Qualifiers (Qual)

J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL

 = Concentration greater than Background Threshold Values
 = Concentration greater than Background Threshold Values and Federal CCR GWPS
Bold font = Detected constituent

Table 2
Summary of Alternate Source Demonstration Parameters
First Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	CCR GWPS	Downgradient Wells																			
				MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06 DUP			
				Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
				Sample ID: MW-LF-02				Sample ID: MW-LF-03				Sample ID: MW-LF-04				Sample ID: MW-LF-05				Sample ID: MW-LF-06 DUP			
				Sample Date: 03/16/2021				Sample Date: 03/16/2021				Sample Date: 03/15/2021				Sample Date: 03/15/2021				Sample Date: 03/15/2021			
ASD Support Parameters																							
Calcium	mg/L	15.8	--	5.29		30.0	100	1.37		30.0	100	2.59		30.0	100	3.05		30.0	100	2.14		30.0	100
Chloride	mg/L	21.9	--	31.9		0.335	0.400	<3.15	U	3.15	0.400	4.46		0.0670	0.400	9.13		0.0670	0.400	7.42		0.0670	0.400
Fluoride	mg/L	0.165	4	0.156		0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100	<0.0330	U	0.0330	0.100
Sulfate	mg/L	21.6	--	7.19		0.133	0.400	1.10		0.133	0.400	3.70		0.133	0.400	1.06		0.133	0.400	0.668		0.133	0.400
Total Dissolved Solids	mg/L	295.3	--	111		3.40	14.3	22.9		3.40	14.3	45.7		3.40	14.3	50.0		3.40	14.3	37.1		3.40	14.3
Alkalinity, Total as CaCO3	mg/L			<1.45	U	1.45	4.00	3.18	J	1.45	4.00	4.58	J	1.45	4.00	<1.45	U	1.45	4.00	1.59	J	1.45	4.00
Lithium	µg/L	--	40	<2.00	U	2.00	10.0	2.02	J	2.00	10.0	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0
Magnesium	µg/L			3720		10.0	15.0	742		10.0	15.0	1940		10.0	15.0	2270		10.0	15.0	1820		10.0	15.0
Potassium	µg/L			5200		80.0	300	1590		80.0	300	426		80.0	300	1070		80.0	300	326		80.0	300
Sodium	µg/L			8580		80.0	250	1890		80.0	250	5180		80.0	250	3810		80.0	250	3210		80.0	250

Notes:

MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
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CCR = Coal Combustion Residuals
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Table 2
Summary of Alternate Source Demonstration Parameters
First Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Parameter Name	Units	Background Threshold Values	CCR GWPS	Downgradient Well				ASD Support Well			
				MW-LF-06				MW-40			
				03/15/2021				03/15/2021			
Sample ID:	Sample Date:	Result	Qual	MDL	RL	Result	Qual	MDL	RL		
ASD Support Parameters											
Calcium	mg/L	15.8	--	2.14		30.0	100	33.5		30.0	100
Chloride	mg/L	21.9	--	7.53		0.0670	0.400	55.4		0.670	0.400
Fluoride	mg/L	0.165	4	<0.0330	U	0.0330	0.100	0.625		0.0330	0.100
Sulfate	mg/L	21.6	--	0.821		0.133	0.400	113		1.33	0.400
Total Dissolved Solids	mg/L	295.3	--	45.7		3.40	14.3	274		3.40	14.3
Alkalinity, Total as CaCO3	mg/L			1.59	J	1.45	4.00	1.79	J	1.45	4.00
Lithium	µg/L	--	40	<2.00	U	2.00	10.0	<2.00	U	2.00	10.0
Magnesium	µg/L			1800		10.0	15.0	9970		10.0	15.0
Potassium	µg/L			316		80.0	300	6440		80.0	300
Sodium	µg/L			3170		80.0	250	25000		80.0	250

Notes:

MDL = Method Detection Limit
 RL = Reporting Limit
 mg/L = Milligram per liter
 µg/L = Microgram per liter
 CCR = Coal Combustion Residuals
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Bold font = Detected constituent

Appendix E

Second Semiannual Detection Monitoring Program Statistical Evaluation



DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III LANDFILL

SEMIANNUAL DETECTION MONITORING

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

For the

September 2021 Sampling Event

January 2022



A handwritten signature in blue ink, reading "Joyce E. Peterson".

Joyce Peterson, P.E.
Senior Environmental Engineer

A handwritten signature in blue ink, reading "Richard A. Mayer Jr.".

Richard A. Mayer Jr., P.G.
Project Manager

*TRC Environmental Corporation | Dominion Energy South Carolina
Cope Station Class III Landfill – Detection Monitoring*

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Appendix B	Trend Test Outputs

Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this Statistically Significant Increases (SSI) notification for the Cope Station Class III Landfill for the ninth semiannual detection monitoring event. Samples were collected on September 28 - 29, 2021. The final laboratory analytical data packages for the event were received on October 22, 2021, and the data validation report was received on October 19, 2021. This report addresses results from Detection Monitoring wells MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06. Background wells for the Class III Landfill include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, AS-LF-02, and MW-40.

Statistical Analysis

Statistically Significant Level (SSL) exceedances above background concentrations include the following:

- MW-LF-02: chloride and fluoride
- MW-LF-03: none
- MW-LF-04: none
- MW-LF-05: none
- MW-LF-06: none

As has been done since the initiation of detection monitoring at the Cope Station, the evaluation of potential SSIs was conducted using prediction limits to compare data from the background set of monitoring wells to the most recent results from the downgradient monitoring wells. Minor changes to the statistical procedures were enacted for this detection monitoring event as described below. The statistical calculations have been conducted using United States Environmental Protection Agency's (USEPA's) ProUCL (v.5.1) software. Updates to the Site's Statistical Analysis Plan (StAP) are in progress to formally establish and describe the statistical methods being employed. The prediction limits used for the first monitoring event in 2021 were calculated to be used for four semiannual sampling events, of which this is the second.

Appendix A presents the background data used for the prediction limit calculations. **Table 1** presents the BTVs calculated based on the background data. **Table 2** presents the data set for the ninth detection monitoring event and highlights results that are potential SSIs. **Appendix B** includes ProUCL outputs for the trend tests used to evaluate potential SSI for sulfate because the background data set has a statistically significant upward trend. An Alternative Source Demonstration (ASD) should be prepared for these potential SSIs.

Table 1

Background Threshold Values for 2021 and 2022

Table 1
Background Threshold Values for 2021 and 2022
Dominion Energy South Carolina
Cope Station Class III Landfill

CONSTITUENT	NUMBER of RESULTS	PERCENT DETECTED	DISTRIBUTION	TREND	BACKGROUND THRESHOLD VALUE	BASIS
Boron (µg/L)	53	8	Nonparametric	N/A	1.0	95% USL
Calcium (µg/L)	51 ^[1]	100	Nonparametric	None	15.8	95% USL
Chloride (mg/L)	53	100	Nonparametric	None	21.9	95% USL
Fluoride (mg/L)	53	40	Nonparametric	N/A	0.165	95% USL
pH (s.u.)	53	100	Gamma	None	3.4 - 6.2	95% HW UPL (k = 20); LCL is the minimum background result
Sulfate (mg/L)	53	60	Nonparametric	Increasing	0.00562 (21.6) ^[2]	95% UCL of trend (95% USL)
TDS (mg/L)	53	98	Gamma	None	295.3	95% HW UPL (k = 20)

[1] Outlier excluded from data set.

[2] BTV for sulfate is the UCL of the trend slope. 95% UPL follows in parentheses.

N/A Not Applicable – trend test not conducted for data sets with fewer than 50 percent detections.

Table 2

September 2021 Downgradient Results and Potential SSIs

Table 2
September 2021 Downgradient Results and Potential SSIs
Dominion Energy South Carolina
Cope Station Class III Landfill

WELL	CONSTITUENT / BTV / RESULT (mg/L except as noted) ^[1]						
	BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE ^[3]	TDS
	1.0	15.8	21.9	0.165	3.4 - 6.2	0.00562 ^[2] (21.6)	295.3
BACKGROUND WELLS							
MW-LF-01	0.0106 J	3.13	17	0.0913	4.3	0.418	32.9
MW-BG-06	0.00858 J	9.42	17.4	0.0793 J	4.2	0.273 J	88.6
MW-BG-16	0.0106 J	1.62	2.34	0.0661 J	4.6	1.95	12.9
AS-LF-01	0.0186	1.68	3.31	< 0.033	4.6	8.71	24.7
AS-LF-02	0.0191	5.63	15.1	0.105	4.4	9.07	41.4 J
MW-40 ^[4]	0.0439	30.1	47.6	0.679	4.3	126	274
DOWNGRADIANT WELLS							
MW-LF-02	0.0170	4.39	31.0	0.203	4.1	7.56 E-04 (5.7)	97.1 J
MW-LF-03	0.00929 J	1.09	3.15	0.074 J	4.5	0 (0.689)	5.71 J
MW-LF-04	0.0009 J	1.78	4.52	0.0773 J	4.4	0 (0.558)	18.6 J
MW-LF-05	0.0104 J	2.71	9.68	0.0859 J	4.3	0 (0.541)	18.6
MW-LF-06	0.0113 J	2.00	7.90	0.0885 J	4.4	0 (0.457)	35.7 J

Shaded cells indicate an SSI.

[1] Boron and calcium concentration expressed in µg/L; pH expressed in standard units (s.u.).

[2] Sulfate had an increasing trend in background concentrations; comparison value is UCL of background slope (95% UPL in parentheses).

[3] Values for sulfate are LCL of trend followed by concentration in parentheses.

[4] Upgradient well not used in background concentration calculations.

< Result is less than the stated detection limit.

J Estimated value between the method detection limit and the practical quantitation limit.

Appendix A

Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Appendix A
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events
Dominion Energy South Carolina
Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
BL-1	MW-LF-01	< 0.0557	4.84	13.7	0.0679	5.4	2.72	72
BL-2	MW-LF-01	< 0.0557	3.77	19	0.14	4.2	1.9	56
BL-3	MW-LF-01	< 0.0557	2.35	6.67	< 0.033	5.0	0.69	24
BL-4	MW-LF-01	< 0.0557	2.63	11.23	0.0548	4.2	0.63	30
BL-5	MW-LF-01	< 0.0442	2	7.92	0.044	5.4	< 0.5	130
BL-6	MW-LF-01	< 0.0442	2.805	12.48	0.0865	4.6	< 0.5	41
BL-7	MW-LF-01	< 0.0442	2.66	10.87	0.0364	4.4	< 0.5	45
BL-8	MW-LF-01	< 0.0442	2.47	16.03	0.0624	4.2	< 0.5	70
DM-1	MW-LF-01	< 0.0442	1.818	9.06	< 0.033	4.8	< 0.5	32
DM-2	MW-LF-01	< 0.0442	1.93	7.14	< 0.033	4.6	< 0.129	23
DM-3	MW-LF-01	< 0.0219	2.56	15.4	< 0.025	4.3	0.75	41
DM-4	MW-LF-01	< 0.2	2.75	13.2	< 0.1	4.7	< 0.5	46
DM-5	MW-LF-01	< 0.2	2.68	20.6	< 0.1	4.4	< 0.5	51
DM-6	MW-LF-01	0.0545	2.42	9.21	< 0.1	4.6	< 0.5	39
DM-7	MW-LF-01	< 0.2	1.76	7.04	< 0.1	4.1	< 0.5	36
BL-4	MW-BG-06	< 0.0557	9.49	18.69	0.0624	3.9	1	106
BL-5	MW-BG-06	< 0.0442	8.86	19.28	0.0631	4.4	< 0.5	84
BL-6	MW-BG-06	< 0.0442	10.02	18.12	0.0883	4.3	< 0.5	118
BL-7	MW-BG-06	< 0.0442	10.1	17.96	0.0621	3.8	< 0.5	103
BL-8	MW-BG-06	< 0.0442	10.6	19.72	0.165	4.1	< 0.5	123
DM-1	MW-BG-06	< 0.0442	9.973	18.3	< 0.033	4.0	< 0.5	109
DM-2	MW-BG-06	< 0.0442	10.9	19.8	0.0571	4.7	< 0.129	82

[1] Boron and calcium concentrations expressed in µg/L; pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events
Dominion Energy South Carolina
Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-3	MW-BG-06	< 0.0219	9.15	18.3	< 0.025	3.98	< 0.129	110
DM-4	MW-BG-06	< 0.2	8.84	18.7	< 0.1	4.40	< 0.5	101
DM-5	MW-BG-06	0.176	9.42	18.6	< 0.1	4.10	< 0.5	109
DM-6	MW-BG-06	< 0.2	11.4	18.9	< 0.1	4.40	< 0.5	143
DM-7	MW-BG-06	< 0.2	10.2	18.3	< 0.1	3.40	< 0.5	125
BL-4	MW-BG-16	< 0.0557	2.06	4.11	0.0356	4.10	1.09	14
BL-5	MW-BG-16	< 0.0442	1.87	3.98	0.0598	5.00	1.35	15
BL-6	MW-BG-16	< 0.0442	1.711	3.37	0.0495	4.60	1.31	23
BL-7	MW-BG-16	< 0.0442	1.78	3.03	< 0.033	4.20	1.16	24
BL-8	MW-BG-16	< 0.0442	1.97	3.38	< 0.033	4.10	1.03	43
DM-1	MW-BG-16	< 0.0442	2.145	3.81	< 0.033	4.20	0.79	31
DM-2	MW-BG-16	< 0.0442	2.54	5.22	0.034	4.70	0.83	28
DM-3	MW-BG-16	< 0.0219	1.81	3.75	< 0.025	4.14	1.13	26
DM-4	MW-BG-16	< 0.2	1.7	4.12	< 0.1	4.80	1.48	12
DM-5	MW-BG-16	< 0.2	1.58	3.29	< 0.1	4.50	1.41	< 2
DM-6	MW-BG-16	< 0.2	1.93	4.17	< 0.1	4.80	0.87	43
DM-7	MW-BG-16	< 0.2	1.78	2.86	< 0.1	3.80	1.43	31
DM-1	AS-LF-01	< 1	7.872	6.29	0.0854	5.30	4.65	59
DM-2	AS-LF-01	< 0.0442	4.03	7.07	0.0804	5.00	2.08	40
DM-3	AS-LF-01	< 0.0219	2.69	7.19	< 0.025 ^[3]	4.28	2.85	33
DM-4	AS-LF-01	< 0.2	3.12	4.5	< 0.1	4.70	8.86	28
DM-5	AS-LF-01	0.0745	2.09	5.2	< 0.1	4.40	5.35	22
DM-6	AS-LF-01	< 0.2	3.09	3.02	< 0.1	4.70	12.8	38

[1] Boron and calcium concentrations expressed in µg/L; pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events
Dominion Energy South Carolina
Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) ^[1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-7	AS-LF-01	< 0.2	2.19	2.14	< 0.1	4.1	13.4	45
DM-1	AS-LF-02	< 1	24.06 ^[4]	21.9	0.025 ^[3]	6.3	14.3	203
DM-2	AS-LF-02	< 0.0442	24.4 ^[2]	20.3	0.108	5.8	3.35	107
DM-3	AS-LF-02	< 0.0219	15.8	19.1	< 0.025	5.3	4.7	104
DM-4	AS-LF-02	< 0.2	5.74	14.4	< 0.1	5.0	14.5	76
DM-5	AS-LF-02	< 0.2	6.98	16.1	< 0.1	4.8	7.02	64
DM-6	AS-LF-02	< 0.2	4.22	9.67	< 0.1	4.7	16.1	75
DM-7	AS-LF-02	0.0577	4.63	5.71	< 0.1	4.2	21.6	64

[1] Boron and calcium concentrations expressed in µg/L; pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix B

Trend Test Outputs

Theil-Sen Trend Test Analysis

User Selected Options

Date/Time of Computation ProUCL 5.111/10/2021 3:01:10 PM
 From File WorkSheet_a.xls
 Full Precision OFF
 Replicates at sampling events will be averaged!

Average Replicates
 Confidence Coefficient 0.95
 Level of Significance 0.05

Sulfate-mw-lf-02

General Statistics

Number of Events 17
 Number of Values Reported (n) 17
 Number of Values After Averaging 17
 Number of Replicates 0
 Minimum 1.73
 Maximum 7.19
 Mean 3.52
 Geometric Mean 3.271
 Median 3.25
 Standard Deviation 1.425
 Coefficient of Variation 0.405

Mann-Kendall Statistics

M-K Test Value (S) 74
 Tabulated p-value 0.001
 Standard Deviation of S 24.28
 Standardized Value of S 3.007
 Approximate p-value 0.00132

Approximate inference for Theil-Sen Trend Test

Number of Slopes 136
 Theil-Sen Slope 0.00171
 Theil-Sen Intercept -70.24
 M1' 48.03
 One-sided 95% lower limit of Slope 9.05E-04
95% LCL of Slope (0.025) 7.56E-04
 95% UCL of Slope (0.975) 0.00239

Statistically significant evidence of an increasing trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.81	2.395	-0.585
2	42566	3.1	2.502	0.598
3	42628	3.25	2.608	0.642
4	42683	2.63	2.702	-0.0723
5	42761	3.82	2.836	0.984
6	42824	1.86	2.943	-1.083
7	42871	1.73	3.024	-1.294

8	42944	2.62	3.148	-0.528
9	43003	2.8	3.25	-0.45
10	43180	2.61	3.552	-0.942
11	43361	4.08	3.862	0.218
12	43544	4.07	4.175	-0.105
13	43727	4.03	4.487	-0.457
14	43906	4.06	4.793	-0.733
15	44095	4.48	5.116	-0.636
16	44271	7.19	5.417	1.773
17	44469	5.7	5.754	-0.0544

Sulfate-mw-lf-03

General Statistics

Number of Events	17
Number of Values Reported (n)	17
Number of Values After Averaging	17
Number of Replicates	0
Minimum	0.129
Maximum	4.2
Mean	0.816
Geometric Mean	0.613
Median	0.5
Standard Deviation	0.917
Coefficient of Variation	1.125

Mann-Kendall Statistics

M-K Test Value (S)	27
Tabulated p-value	0.154
Standard Deviation of S	21.55
Standardized Value of S	1.207
Approximate p-value	0.114

Approximate inference for Theil-Sen Trend Test

Number of Slopes	136
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	46.88
M2	89.12
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	1.21E-04

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.43	0.5	0.93
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0

5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.55	0.5	0.05
12	43544	0.76	0.5	0.26
13	43727	0.5	0.5	0
14	43906	4.2	0.5	3.7
15	44095	0.5	0.5	0
16	44271	1.1	0.5	0.6
17	44468	0.698	0.5	0.198

Sulfate-mw-lf-04

General Statistics

Number of Events	17
Number of Values Reported (n)	17
Number of Values After Averaging	17
Number of Replicates	0
Minimum	0.129
Maximum	8.05
Mean	1.119
Geometric Mean	0.594
Median	0.5
Standard Deviation	1.955
Coefficient of Variation	1.746

Mann-Kendall Statistics

M-K Test Value (S)	2
Tabulated p-value	0.484
Standard Deviation of S	21.53
Standardized Value of S	0.0465
Approximate p-value	0.481

Approximate inference for Theil-Sen Trend Test

Number of Slopes	136
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	46.91
M2	89.09
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	0.63	0.5	0.13

2	42566	0.83	0.5	0.33
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	8.05	0.5	7.55
15	44095	0.5	0.5	0
16	44270	3.7	0.5	3.2
17	44468	0.558	0.5	0.058

Sulfate-mw-lf-05

General Statistics

Number of Events	17
Number of Values Reported (n)	17
Number of Values After Averaging	17
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.478
Geometric Mean	0.441
Median	0.5
Standard Deviation	0.152
Coefficient of Variation	0.319

Mann-Kendall Statistics

M-K Test Value (S)	19
Tabulated p-value	0.245
Standard Deviation of S	17.88
Standardized Value of S	1.007
Approximate p-value	0.157

Approximate inference for Theil-Sen Trend Test

Number of Slopes	136
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	50.48
M2	85.52
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	0.5		0.5
2	42566	0.5		0.5
3	42628	0.5		0.5
4	42683	0.5		0.5
5	42761	0.5		0.5
6	42825	0.5		0.5
7	42871	0.5		0.5
8	42944	0.5		0.5
9	43003	0.5		0.5
10	43180	0.129		0.5
11	43361	0.129		0.5
12	43544	0.5		0.5
13	43727	0.5		0.5
14	43906	0.5		0.5
15	44092	0.5		0.5
16	44270	0.821		0.5
17	44468	0.541		0.5

Sulfate-mw-lf-06

General Statistics

Number of Events	17
Number of Values Reported (n)	17
Number of Values After Averaging	17
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.473
Geometric Mean	0.437
Median	0.5
Standard Deviation	0.152
Coefficient of Variation	0.321

Mann-Kendall Statistics

M-K Test Value (S)	-7
Tabulated p-value	0.42
Standard Deviation of S	17.88
Standardized Value of S	-0.336
Approximate p-value	0.369

Approximate inference for Theil-Sen Trend Test

Number of Slopes	136
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	50.48
M2	85.52

95% LCL of Slope (0.025)

95% UCL of Slope (0.975)	0
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Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates		Residuals
1	42503	0.5		0.5	0
2	42566	0.5		0.5	0
3	42629	0.5		0.5	0
4	42683	0.5		0.5	0
5	42761	0.5		0.5	0
6	42825	0.5		0.5	0
7	42871	0.5		0.5	0
8	42944	0.5		0.5	0
9	43004	0.5		0.5	0
10	43180	0.129		0.5	-0.371
11	43361	0.129		0.5	-0.371
12	43544	0.5		0.5	0
13	43727	0.5		0.5	0
14	43906	0.5		0.5	0
15	44092	0.5		0.5	0
16	44270	0.821		0.5	0.321
17	44468	0.457		0.5	-0.043