2019 NOS Landfill Annual Groundwater Report

Omaha Public Power District

North Omaha Station

Omaha, Nebraska

January 31, 2020

This page intentionally left blank.

Professional Engineer Certification

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am duly licensed Professional Engineer under the laws of the Sate of Nebraska.

Print Name: Megan B. Seymour

Signature: Megan B. Seymour

Date: 1-31-2020

License #: E-15931

My license renewal date is December 31, 2020.

This page intentionally left blank.

Table of Contents

List of Tables

List of Figures

Attachments

This page intentionally left blank.

1 Introduction

On April 17, 2015, the U.S. Environmental Protection Agency (EPA) published the final rule for the regulation and management of coal combustion residuals (CCR) under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The CCR rule is formally promulgated in the U.S. Code of Federal Regulations (CFR), Title 40, Part 257. The rule – effective on October 19, 2015 – applies to electric utilities and independent power producers that fall within NAICS code 221112, and facilities that produce or store CCR materials in surface impoundments or landfills (EPA, 2015). The CCR rule defines a set of requirements for the disposal and handling of CCR within CCR units (defined as either landfills or surface impoundments). This regulation applies to the Omaha Public Power District (OPPD) North Omaha Station.

1.1 Purpose

Section 40 CFR 257.90(e) specifies that an owner or operator of an existing CCR landfill must prepare an annual groundwater monitoring and corrective action report to summarize any key actions completed, problems encountered, and upcoming activities related to the ground water monitoring system. The information included in this report complies with the requirements established in §257.90(e) of the CCR Rule. This report provides a summary of CCR groundwater monitoring system activities for calendar year 2019.

1.2 Facility Information

OPPD has a five-unit fuel-fired generating plant at the North Omaha Station in Omaha, Nebraska. Units 1, 2, and 3 are retired; Units 4 and 5 were retrofitted with air pollution control equipment and are still operating. The Station is located east of Pershing Drive and Craig Street, approximately 3.5 miles northwest of Eppley Airfield, along the west bank of the Missouri River at river mile 625.2. The first generating unit was placed in service in July 1954, and the fifth unit was placed in operation in 1968. Beneficial use and disposal of the fossil fuel combustion ash has occurred on the Station site since the 1950s.

This Station has one (1) existing active Coal Combustion Residuals (CCR) landfill, known as the North Omaha Station Ash Landfill (referenced as NOS Ash Landfill). The NOS Ash Landfill is permitted under the current Nebraska Department of Environment and Energy (NDEE) Title 132 regulations for fossil fuel combustion ash disposal areas (NDEE Permit No. NE0054739, Facility ID 59763). The NOS Ash Landfill consists of an unlined active CCR landfill of approximately 18 acres and a 1.4-acre undeveloped portion. **Figure 1** (attached) identifies the relevant CCR unit for this report and the supporting monitoring well network (§257.105(h)(1)).

2 Monitoring Program Summary

The groundwater monitoring system currently includes ten monitoring wells consisting of three (3) upgradient/background monitoring wells and seven (7) downgradient monitoring wells. Monitoring well details for the monitoring network, including the date of installation, is provided

in **Table 1** (attached). The location of the monitoring wells in the groundwater monitoring program in respect to the CCR unit, NOS Ash Landfill, are shown in the attached **Figure 1**.

2.1 Transition of Monitoring Programs

On January 31, 2018, OPPD published Statistically Significant Increases (SSIs) detected in November 2017 in downgradient monitoring wells at the NOS Ash Landfill for seventeen (17) monitoring well/constituent pairs. These SSI were noted in multiple wells and included Appendix III constituents: boron, calcium, chloride, sulfate, and TDS. OPPD evaluated an alternate source demonstration (ASD) for the SSIs detected during the November 2017 sampling event to evaluate potential error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The ASD was unsuccessful and OPPD published a notification (dated May 29, 2018) stating the facility will initiate an assessment monitoring program in accordance with §257.95.

Assessment monitoring was initiated with the June 2018 sampling event analyzed for Appendix III and Appendix IV constituents [as specified in §257.95(b)] and the October 2018 sampling event analyzed for Appendix III and detected Appendix IV constituents [as specified in §257.95(d)]. Results of the statistical analysis conducted under the assessment monitoring program indicated multiple Appendix IV constituents were detected above the groundwater protection standards (GWPS). OPPD published a notification of the exceedances on February 14, 2019. On May 30, 2019, OPPD published a notification of initiation of assessment of corrective measures (ACM). An initial assessment into potential corrective measures was completed on July 5, 2019. During the course of completing the report, data gaps were identified necessary for further development of a “selection of remedy”. OPPD has continued to comply with CCR regulations and has made progress towards “selection of remedy” by obtaining additional site information necessary to understand the hydrogeologic system at the NOS Ash Landfill. In accordance with §257.97(a), a semi-annual update describing the progress in selecting and designing a remedy for corrective action at the NOS Ash Landfill was placed in the operating record on January 6, 2020. The site will continue to be monitored in accordance with the assessment monitoring program as specified in §257.96(b).

2.2 Groundwater Monitoring Network Condition Assessment

OPPD personnel evaluated the condition of each monitoring well in the groundwater monitoring network during the semi-annual sampling events in April 2019 and October 2019. During this time period, no repairs were required and the wells were noted in good working condition, concrete pads were intact, and no damage was observed to the protective well casings. As previously mentioned in **Section 2.1**, the NOS Ash Landfill is also regulated under NDEE Title 132. As part of the Title 132 permit, the facility updated the Groundwater Sampling and Analysis Plan (SAP) and submitted to the NDEE in September 2019. The CCR certified groundwater monitoring network was updated to be consistent with the Title 132 groundwater monitoring network at this time. As part of the update, three existing monitoring wells (MW-5, MW-6, and MW-8) were added to the certified groundwater monitoring system following the April 2019 sampling event. There were no monitoring wells abandoned from the certified monitoring system in 2019.

3 Data Evaluation and Summary

3.1 Summary of Sampling Activities

Groundwater sampling events were conducted by OPPD personnel in April 2019 and October 2019 as continuation of the assessment monitoring program in accordance with §257.96(b). Samples were collected in general compliance with §257.90(c), which requires groundwater monitoring be conducted throughout the active life and post-closure care period of the CCR unit for each current background and downgradient well in the monitoring network. The number of samples collected for each background and downgradient well during each groundwater sample event, whether the sample was collected during detection or assessment monitoring programs, and the date of each event is summarized in **Table 2**.

Groundwater sampling was conducted by OPPD personnel in general accordance with the facility's Groundwater Sampling and Analysis Plan (SAP) submitted to the NDEE in September 2019. Samples were analyzed for Appendix III and Appendix IV constituents during both the April and October 2019 sampling events. Field sampling forms from the 2019 semi-annual sampling events are provided in **Appendix A**. The collected groundwater samples were analyzed by TestAmerica Laboratories, Inc. The laboratory analytical reports are provided in **Appendix B**.

3.2 Groundwater Elevations & Flow Direction

Static groundwater level measurements were recorded at the monitoring wells specified in **Table 1** prior to purging and sampling activities conducted during the groundwater sampling events. Groundwater measurements of both monitoring network wells and groundwater elevation only wells, as defined in the *CCR Groundwater Monitoring System* (amended January 2020), were used to determine groundwater contours. Monitoring well static groundwater elevations are provided in **Table 3**. Groundwater flow observed during the October 2019 sampling event indicated a flow direction to the east/northeast near the NOS Ash Landfill with an average flow velocity of 0.00356 ft/day to 0.2483 ft/day (based on a range of hydraulic conductivity at the Site of 0.054 ft/day to 3.77 ft/day, respectively [*CCR Groundwater Monitoring System Amendment*, HDR, 2020]).

3.3 Assessment Monitoring Groundwater Sampling

The NOS Ash Landfill was monitored and analyzed semi-annually in 2019 as continuation of the assessment monitoring program in accordance with §257.96(b). As specified in §257.95(b), monitoring network wells should be resampled at least annually for the full Appendix IV constituent list. In accordance with §257.95(d), monitoring network wells should be resampled at least semi-annually for the full Appendix III constituents and those Appendix IV constituents detected in response to §257.95(b). However, to be conservative, all Appendix III and Appendix IV constituents were analyzed for both the April and October 2019 sampling events. The results of the assessment monitoring events in April 2019 and October 2019 are presented in **Table 4** (Appendix III constituents) and **Table 5** (Appendix IV constituents).

3.4 Statistical Analysis Results

In the assessment monitoring program, Appendix III and IV constituents are statistically analyzed to evaluate for SSIs above the calculated BTVs, and Appendix IV constituents are statistically analyzed to evaluate for SSLs above the GWPS. Statistical analysis was performed utilizing Sanitas™ Statistical Software in accordance with the methods described in the *Groundwater Monitoring Statistical Methods Certification* (amended July 2019). Results of the statistical analysis of designated in-network downgradient monitoring wells from the April 2019 and October 2019 sampling events are provided in **Appendix C**. Statistically-derived BTVs for Appendix III and IV constituents for detection monitoring are provided in **Table 6**. The established GWPS all Appendix IV constituents are provided in **Table 7**.

Results of the analysis for the April 2019 sampling event indicated fifteen (15) SSIs above background for Appendix III constituents and nine (9) SSIs for Appendix IV constituents. Analysis of the Appendix IV constituents indicated there were eight (8) SSLs detected above the GWPS during the April 2019 sampling event.

As previously stated in **Section 2.2**, three additional wells were added to the monitoring network following the April 2019 sampling event and were included in the October 2019 analysis. Results of the analysis for the October 2019 sampling event indicated twenty-eight (28) constituent/well pairs at SSIs above background for Appendix III constituents and fifteen (15) constituent/well pairs at SSIs for Appendix IV constituents. Analysis of the Appendix IV constituents indicated there were twelve (12) SSLs detected above the GWPS during the October 2019 sampling event.

3.5 Other Information Required under §257.90 through §257.98

As previously stated in **Section 2.1** and in accordance with §257.97(a), a semi-annual update describing the progress in selecting and designing a remedy for corrective action at the NOS Ash Landfill was placed in the operating record on January 6, 2020. No other information is required under §257.90 through §257.98 at this time.

4 Key Activities for Upcoming Year

OPPD will continue to make progress towards selection and design of remedy for corrective action at the NOS Ash Landfill. In accordance with §257.97(a), a semi-annual update describing the progress in selecting and designing a remedy for corrective action will be placed in the operating record by July 4, 2020. The site will continue to be monitored in accordance with the assessment monitoring program as specified in §257.96(b), and the next semi-annual sampling event is anticipated to occur in April 2020.

Tables

This page intentionally left blank.

Table 1 - Groundwater Monitoring System
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

Monitoring Well ID	Date Installed	Well Depth (feet bgs)	Location w/ respect to Temporary Ash Disposal Area	Top of Well Casing Elevation (ft. AMSL)
CCR Monitoring Network Wells				
MW-2	3/6/1995	30	Downgradient	1001.41
MW-5	3/2/1995	30.0	Downgradient	1000.96
MW-6	3/8/1995	31.0	Downgradient	1002.65
MW-8	3/7/1995	30.0	Downgradient	1003.59
MW-9	5/4/1996	63	Background/Upgradient	1026.47
MW-13	4/12/2001	30	Downgradient	1001.91
MW-15	4/12/2001	15	Downgradient	1005.39
MW-17	5/10/2007	30	Downgradient	1002.54
MW-18	12/1/2015	71	Background/Upgradient	1037.00
MW-19	1/20/2016	76.5	Background/Upgradient	1037.10
Water Level Measurements Only				
MW-4	3/6/1995	33.0	Water Level Only Well	1004.59
MW-7	3/81995	30.0	Water Level Only Well	1001.85
MW-10	4/11/2001	15.0	Water Level Only Well	1002.48
MW-11	4/11/2001	15.0	Water Level Only Well	1002.99
MW-12	4/11/2001	15.0	Water Level Only Well	1003.78
MW-20	11/9/2015	35.0	Water Level Only Well	993.47

Table 2 - Groundwater Sampling Event Summary
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

Monitoring Well ID	# of Initial Background Samples	Initial Background Sample Dates	# of Detection Monitoring Samples	Detection Monitoring Sample Dates [1]	# of Assessment Monitoring Samples	Assessment Monitoring Sample Dates[2] [3]
Current Background Monitoring Wells						
MW-9	8	3/22/2016, 6/14/2016, 9/2/2016, 11/28/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/20/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
MW-18	8	3/22/2016, 6/14/2016, 9/2/2016, 11/28/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
MW-19	8	3/22/2016, 6/14/2016, 9/2/2016, 11/28/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
Downgradient Monitoring Wells						
MW-2	8	3/22/2016, 6/14/2016, 11/29/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
MW-5	8	3/23/2016, 6/14/2016, 11/29/2016, 5/2/2017, 6/5/2018, 10/10/2018, 4/16/2019, 10/1/2019[4]	0	N/A[5]	1	10/1/2019
MW-6	8	3/22/2016, 6/14/2016, 11/28/2016, 5/2/2017, 3/9/2018, 6/5/2018, 10/9/2018, 4/15/2019	0	N/A[5]	1	10/1/2019
MW-8	8	3/23/2016, 6/14/2016, 11/29/2016, 5/2/2017, 6/5/2018, 10/10/2018, 4/15/2019, 10/1/2019[4]	0	N/A[5]	1	10/1/2019
MW-13	8	3/22/2016, 6/14/2016, 9/2/2016, 11/28/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
MW-15	8	3/22/2016, 6/14/2016, 9/2/2016, 11/28/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019
MW-17	8	3/22/2016, 6/14/2016, 9/2/2016, 11/29/2016, 2/17/2017, 5/2/2017, 6/19/2017, 7/31/2017	2	11/7/2017, 3/9/2018	4	6/5/2018, 10/9/2018, 4/15/2019, 10/1/2019

Notes:
[1] The March 2018 Detection Monitoring event was completed as an Alternative Source Evaluation (ASD) due to detected SSIs in November 2017.
[2] The June 2018 sampling event was completed for initiation of the Assessment Monitoring Program.
[3] The April 2019 sampling event was completed as part of the initiation of Assessment of Corrective Measures in accordance with 40 CFR 257.96(b).
[4] MW-5 & MW-8 were statistically analyzed during the fall 2019 sampling event in conjunction with the eighth intial background sample occuring during the October 10, 2019 sampling
[5] Monitoring wells MW-5, MW-6, and MW-8 were added to the network after the April 2019 sampling event.

Table 3 - Groundwater Elevations
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	MW-2		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11	
	TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation	
	1001.41		1004.59		1000.96		1002.65		1001.85		1003.59		1026.47		1002.48		1002.99	
Date	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation
3/22/2016	21.20	980.21	11.84	992.75	20.30	980.66	12.75	989.90	16.57	985.28	17.55	986.04	22.41	1004.06	15.50	986.98	10.83	992.16
6/14/2016	21.65	979.76	11.19	993.40	19.15	981.81	12.05	990.60	15.70	986.15	16.00	987.59	22.10	1004.37	14.50	987.98	10.05	992.94
9/2/2016	22.90	978.51	12.20	992.39	20.50	980.46	13.30	989.35	17.21	984.64	17.48	986.11	24.70	1001.77	16.04	986.44	11.30	991.69
11/28/2016	22.06	979.35	12.30	992.29	20.55	980.41	13.48	989.17	17.80	984.05	18.18	985.41	24.65	1001.82	16.80	985.68	12.20	990.79
2/17/2017	22.45	978.96	12.90	991.69	20.73	980.23	13.89	988.76	18.30	983.55	18.67	984.92	24.70	1001.77	16.99	985.49	12.54	990.45
5/2/2017	22.00	979.41	12.35	992.24	20.25	980.71	13.40	989.25	16.69	985.16	11.32	992.27	23.71	1002.76	15.55	986.93	12.45	990.54
6/19/2017	22.00	979.41	11.85	992.74	19.60	981.36	12.50	990.15	16.15	985.70	16.45	987.14	23.90	1002.57	14.95	987.53	10.50	992.49
7/31/2017	23.10	978.31	12.45	992.14	20.21	980.75	13.37	989.28	16.72	985.13	11.38	992.21	26.65	999.82	16.00	986.48	13.02	989.97
11/7/2017	22.95	978.46	12.80	991.79	23.45	977.51	12.20	990.45	15.65	986.20	15.80	987.79	21.30	1005.17	14.25	988.23	12.00	990.99
3/9/2018	23.33	978.08	N.M.	N.M.	21.25	979.71	13.10	989.55	N.M.	N.M.	17.17	986.42	26.35	1000.12	N.M.	N.M.	12.81	990.18
4/23/2018	23.50	977.91	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	29.27	997.20	N.M.	N.M.	N.M.	N.M.
6/5/2018	22.43	978.98	13.66	990.93	19.47	981.49	14.17	988.48	17.51	984.34	18.27	985.32	26.52	999.95	16.27	986.21	12.98	990.01
10/9/2018	19.49	981.92	11.94	992.65	17.08	983.88	13.49	989.16	16.71	985.14	17.05	986.54	25.47	1001.00	15.51	986.97	12.81	990.18
4/15/2019	17.74	983.67	11.44	993.15	16.51	984.45	12.78	989.87	16.21	985.64	17.17	986.42	23.36	1003.11	15.03	987.45	11.64	991.35
10/1/2019	16.02	985.39	11.79	992.80	14.76	986.20	13.17	989.48	16.90	984.95	16.96	986.63	26.01	1000.46	15.75	986.73	11.94	991.05

Notes:
TOC: Top of PVC well casing
N.M. = not measured
AMSL = above mean sea level
[1] The casing of MW-18 was cut on November 28, 2016. Prior to this date, the top of casing was 1037.00.
[2] The casing of MW-19 was cut on November 28, 2016. Prior to this date, the top of casing was 1037.10.

Table 3 - Groundwater Elevations
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	MW-12		MW-13		MW-15		MW-17		MW-18		MW-19		MW-20	
	TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation		TOC Elevation [1]		TOC Elevation [2]		TOC Elevation	
	1003.78		1001.91		1005.39		1002.54		1037.00		1037.10		993.47	
Date	Measured Depth to Water (ft)	GW Elevation	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation (AMSL)	Measured Depth to Water (ft)	GW Elevation (AMSL)
3/22/2016	16.34	987.44	17.41	984.50	10.90	994.49	17.18	985.36	34.75	1002.25	33.85	1003.25	8.17	985.30
6/14/2016	14.55	989.23	17.40	984.51	10.40	994.99	16.10	986.44	33.92	1003.08	33.40	1003.70	7.60	985.87
9/2/2016	15.60	988.18	22.50	979.41	10.90	994.49	17.50	985.04	35.50	1001.50	34.95	1002.15	8.35	985.12
11/28/2016	17.25	986.53	18.20	983.71	11.30	994.09	17.51	985.03	35.35	1001.65	34.91	1002.19	9.00	984.47
2/17/2017	17.71	986.07	18.80	983.11	11.65	993.74	18.25	984.29	35.95	1001.05	35.30	1001.80	9.41	984.06
5/2/2017	9.39	994.39	18.41	983.50	10.45	994.94	17.12	985.42	34.80	1002.20	34.22	1002.88	8.20	985.27
6/19/2017	15.00	988.78	18.30	983.61	10.60	994.79	16.55	985.99	34.70	1002.30	34.20	1002.90	8.05	985.42
7/31/2017	10.20	993.58	19.25	982.66	12.15	993.24	17.10	985.44	36.40	1000.60	35.85	1001.25	8.70	984.77
11/7/2017	14.42	989.36	19.40	982.51	12.75	992.64	17.50	985.04	36.39	1000.61	35.86	1001.24	9.03	984.44
3/9/2018	N.M.	N.M.	20.21	981.70	13.75	991.64	19.21	983.33	36.31	1000.69	37.06	1000.04	N.M.	N.M.
4/23/2018	N.M.	N.M.	20.35	981.56	12.70	992.69	19.00	983.54	35.63	1001.37	35.15	1001.95	N.M.	N.M.
6/5/2018	16.11	987.67	18.90	983.01	12.12	993.27	17.10	985.44	35.52	1001.48	35.81	1001.29	6.08	987.39
10/9/2018	13.05	990.73	15.93	985.98	10.71	994.68	14.71	987.83	33.94	1003.06	33.78	1003.32	7.00	986.47
4/15/2019	16.23	987.55	14.16	987.75	10.67	994.72	14.73	987.81	32.68	1004.32	32.70	1004.40	7.49	985.98
10/1/2019	15.73	988.05	12.94	988.97	10.76	994.63	13.74	988.80	33.52	1003.48	33.53	1003.57	9.37	984.10

Notes:
TOC: Top of PVC well casing
N.M. = not measured
AMSL = above mean sea level
[1] The casing of MW-18 was cut on November 28, 2016. Prior to this date, the top of casing was 1037.00.
[2] The casing of MW-19 was cut on November 28, 2016. Prior to this date, the top of casing was 1037.10.

Table 4 - Appendix III Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent:	Boron	Calcium	Chloride	Sulfate	TDS	pH	Fluoride*
	Reporting Unit:	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L
MW-2	3/22/2016	1.6	267	23.1	1320	1920	6.85	<0.5
	6/14/2016	1.52	278	25.7	774	1560	6.80	<0.5
	9/2/2016	1.22	197	24.9	503	2890	7.04	<0.5
	11/28/2016	1.31	262	24.4	650	1420	7.49	0.318
	2/17/2017	1.92	292	19.3	915	2120	7.79	0.563
	5/2/2017	1.79	300	22.9	889	1840	7.27	1.94
	6/19/2017	1.48	277	24.1	631	2020	7.09	<0.5
	7/31/2017	1.81	299	24.8	799	1850	7.37	0.583
	11/7/2017	1.59	263	21.2	907	2210	7.29	0.529
	3/9/2018	1.88	292	27.4	745	1570	6.73	<0.5
	6/5/2018	1.15	239	28.5	618	1460	7.02	<0.5
	10/9/2018	1.38	302	22.2	808	1720	6.96	<0.5
	4/15/2019	2.26	339	22.5	753	1850	7.07	<0.5
	10/1/2019	2.17	306	18.2	841	1930	6.89	<0.5
MW-5	3/23/2016	0.545	458	47.7	1230	3150	NA	<0.500
	6/14/2016	0.533	434	52.1	1160	2530	NA	<0.500
	11/29/2016	0.565	443	44.3	1340	3150	NA	<0.500
	5/2/2017	0.564	435	46.9	1330	2910	NA	1.82
	6/5/2018	0.580	413	44.2	1230	2610	7.44	<0.500
	10/10/2018	0.528	412	41.6	1240	2410	7.03	<0.500
	4/16/2019[1]	NA	NA	NA	1150	NA	7.34	NA
	10/1/2019	0.614	428	40.9	1160	2620	6.88	<0.500
MW-6	3/23/2016	0.376	263	217	219	1200	NA	<0.500
	6/14/2016	0.383	261	230	226	1100	NA	<0.500
	11/28/2016	0.468	314	272	366	1730	NA	<0.500
	5/2/2017	0.461	279	224	314	1340	NA	1.32
	3/9/2018	<0.800	316	315	349	1240	6.44	0.525
	6/5/2018	0.589	339	287	293	1690	7.03	<0.500
	10/9/2018	0.415	250	181	179	988	7.03	0.520
	4/15/2019[1]	NA	NA	NA	213	NA	6.83	NA
	10/1/2019	0.543	348	326	309	1400	6.67	0.511
MW-8	3/23/2016	1.01	133	10.6	618	964	NA	<0.500
	6/14/2016	0.974	142	15.1	608	934	NA	0.518
	11/29/2016	1.04	143	9.38	589	956	NA	<0.500
	5/2/2017	1.04	121	10.5	519	814	NA	1.70
	6/5/2018	1.54	149	12.9	519	908	8.24	<0.500
	10/10/2018	1.52	132	10.8	548	900	7.96	<0.500
	4/15/2019[1]	NA	NA	NA	611	NA	7.88	NA
	10/1/2019	2.18	159	9.03	604	1010	7.21	<0.500
MW-9	3/22/2016	<0.2	147	121	23	708	6.83	1.35
	6/14/2016	<0.2	159	165	31.7	770	6.78	0.864
	9/2/2016	<0.2	122	146	19.9	766	7.27	<0.5
	11/28/2016	<0.2	166	177	35.4	790	7.02	<0.5
	2/17/2017	<0.2	116	120	26.2	640	7.47	0.585
	5/2/2017	<0.2	148	127	25.5	760	7.35	1.84
	6/19/2017	<0.2	150	149	22	888	6.99	0.517

Table 4 - Appendix III Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent:	Boron	Calcium	Chloride	Sulfate	TDS	pH	Fluoride*
	Reporting Unit:	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L
MW-9	7/31/2017	<0.2	190	275	57.1	1180	7.87	0.617
	11/7/2017	<0.2	153	220	37.7	1090	7.46	0.55
	3/20/2018	<0.2	146	210	46.1	844	6.68	<0.5
	6/5/2018	<0.2	185	231	57.5	1190	7.00	<0.5
	10/9/2018	<0.2	159	194	45.5	872	6.74	0.592
	4/15/2019	<0.2	157	127	32.7	610	7.00	0.947
	10/1/2019	<0.200	140	164	40.1	728	6.56	<0.500
MW-13	3/22/2016	2.05	127	7.97	486	1050	6.89	0.796
	6/14/2016	1.97	138	6.7	500	1030	6.70	<0.5
	9/2/2016	2.02	116	8.06	458	1170	7.03	0.652
	11/28/2016	2.21	155	11.3	583	1140	7.25	2.55
	2/17/2017	2.02	153	6.35	603	1320	7.44	<0.5
	5/2/2017	1.8	156	7.52	650	1450	7.30	1.05
	6/19/2017	2.09	179	7.83	590	1400	7.07	<0.5
	7/31/2017	2.26	133	6.3	512	1150	7.20	0.587
	11/7/2017	1.71	129	6.81	581	1080	6.79	0.67
	3/9/2018	1.98	152	7.35	663	1340	7.03	0.53
	6/5/2018	1.78	151	7.93	654	1490	8.31	<0.5
	10/9/2018	1.77	161	7.05	644	1190	6.96	<0.5
	4/15/2019	2.73	215	10.5	808	1420	7.13	1.05
	10/1/2019	2.46	206	8.24	673	1440	6.92	0.544
MW-15	3/22/2016	3.11	311	24.3	262	1510	7.09	<0.5
	6/14/2016	5.39	340	13	934	1640	6.80	<0.5
	9/2/2016	3.36	220	3.52	625	1460	6.97	0.278
	11/28/2016	2.87	285	28.2	886	1500	7.32	3.48
	2/17/2017	2.81	266	16.8	863	1370	7.65	<0.5
	5/2/2017	2.80	263	11.2	861	1280	7.02	0.878
	6/19/2017	2.57	248	9.99	643	1320	7.05	<0.5
	7/31/2017	3.01	247	11.4	641	1140	7.02	<0.5
	11/7/2017	4.13	293	11.6	900	1520	7.10	<0.5
	3/9/2018	4.10	283	13.4	819	1330	7.24	<0.5
	6/5/2018	3.26	265	16.6	745	1640	7.42	<0.5
	10/9/2018	2.48	230	11.5	656	1130	7.10	<0.5
	4/15/2019	4.65	256	8.07	634	1070	7.09	<0.5
	10/1/2019	5.13	306	6.60	633	1220	6.61	<0.5
MW-16	3/22/2016	0.367	180	64.7	345	948	6.86	1.84
	6/14/2016	0.409	180	65.5	340	968	6.67	<0.5
	9/2/2016	0.333	143	57.3	277	1160	7.18	<0.5
	11/28/2016	0.312	184	60.7	357	1040	7.11	<0.5
	2/17/2017	0.433	181	59.2	374	1410	7.51	1.37
	5/2/2017	0.320	184	60.7	381	1030	7.26	1.85
	6/19/2017	0.371	194	59.3	326	1460	6.97	<0.5
	7/31/2017	0.423	200	57.9	352	1200	7.12	0.53
	Abandoned on August 4, 2017							
MW-17	3/23/2016	0.668	392	51.3	1010	3150	6.60	1.36
	6/14/2016	0.706	376	50	990	2360	6.59	<0.5
	2/09/2016	0.637	320	43.0	807	2660	6.98	<0.5

Table 4 - Appendix III Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent:	Boron	Calcium	Chloride	Sulfate	TDS	pH	Fluoride*
	Reporting Unit:	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L
MW-17	11/29/2016	0.644	390	49.7	1080	2640	6.76	<0.5
	2/17/2017	0.700	380	62.6	1010	2250	7.31	2.91
	5/2/2017	0.649	364	45.3	1090	3040	7.47	1.66
	6/19/2017	0.679	373	42.3	944	2640	6.93	<0.5
	7/31/2017	0.753	365	44.4	913	2300	7.05	<0.5
	11/7/2017	0.660	323	46.2	952	2590	7.14	<0.5
	3/9/2018	0.745	357	46.8	907	2010	6.31	1.29
	6/5/2018	0.745	363	43.6	918	1990	6.95	<0.5
	10/10/2018	0.615	328	41.9	872	1980	6.39	<0.5
	4/15/2019	0.762	297	38.7	834	1900	6.53	0.573
	10/1/2019	0.783	342	32.7	724	1890	6.06	<0.5
MW-18	3/22/2016	<0.2	115	<5	24.8	504	6.86	<0.5
	6/14/2016	<0.2	96.1	<5	5	468	7.18	<0.5
	9/2/2016	<0.2	73.4	<5	<5	460	7.20	<0.5
	11/28/2016	<0.2	97.6	<5	<5	628	7.47	<0.5
	2/17/2017	<0.2	94.8	<5	<5	474	7.70	0.508
	5/2/2017	<0.2	98.9	<5	<5	542	7.27	1.32
	6/19/2017	<0.2	98.4	<5	<5	514	7.20	<0.5
	7/31/2017	<0.2	98.8	<5	<5	468	7.63	0.632
	11/7/2017	<0.2	87.5	<5	<5	518	7.22	0.704
	3/9/2018	<0.2	97.3	<5	<5	438	6.46	0.530
	6/5/2018	<0.2	106	<5	<5	438	6.91	0.528
	10/9/2018	<0.2	94.2	<5	<5	398	6.64	0.817
	4/15/2019	<0.2	74.6	<5	<5	416	6.51	0.518
	10/1/2019	<0.200	97.0	<5.00	<5.00	384	6.11	<0.500
MW-19	3/22/2016	<0.2	103	6.5	29.5	494	6.85	<0.5
	6/14/2016	<0.2	110	7.2	29.9	508	6.80	<0.5
	9/2/2016	<0.2	82.8	<5	21.5	492	7.12	<0.5
	11/28/2016	<0.2	110	6.02	20.7	484	7.29	<0.5
	2/17/2017	<0.2	90.5	3.55	15.7	484	7.49	0.418
	5/2/2017	<0.2	107	3.7	10.6	566	7.39	0.804
	6/19/2017	<0.2	103	<5	10.2	518	7.05	<0.5
	7/31/2017	<0.2	105	<5	8.35	480	7.53	0.693
	11/7/2017	<0.2	93	<5	6.91	410	6.98	<0.5
	3/9/2018	<0.2	113	<5	8.89	426	6.53	<0.5
	6/5/2018	<0.2	100	<5	5.53	440	6.91	0.524
	10/9/2018	<0.2	106	11.9	16.5	460	6.49	<0.5
	4/15/2019	<0.2	101	<5	<5	444	6.73	0.905
	10/1/2019	<0.200	113	<5.00	<5.00	438	6.05	0.511

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter
NA = Analyte Not Analyzed/Measured
< = not detected above the reporting limit given
* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CFR Part 257).
[1] MW-5, MW-6, & MW-8 were analyzed for only sulfate and pH during the April 2019 event under NDEE Title 132 monitoring.

Table 5 - Appendix IV Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent	Fluoride*	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Combined Radium (Ra 226 + Ra 228)
	Reporting Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
MW-2	3/22/2016	<0.5	<0.001	0.245	0.115	<0.001	<0.0005	<0.005	0.000514	0.000601	<0.05	<0.0002	<0.002	<0.005	<0.001	0.664
	6/14/2016	<0.5	<0.001	0.234	0.113	<0.001	<0.0005	<0.005	0.000566	0.00211	<0.05	<0.0002	<0.002	<0.005	<0.001	0.488
	9/2/2016	<0.5	<0.001	0.22	0.104	<0.001	<0.0005	<0.005	0.000619	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.300
	11/28/2016	0.318	<0.001	0.204	0.0952	<0.001	<0.0005	<0.005	0.000559	<0.0005	<0.05	<0.0002(*)	<0.002	<0.005	<0.001	0.914
	2/17/2017	0.563	<0.001	0.234	0.126	<0.001	<0.0005	<0.005	0.000656	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.679
	5/2/2017	1.94	<0.001	0.231	0.118	<0.001	<0.0005	<0.005	0.000833	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.123
	6/19/2017	<0.5	<0.001	0.212	0.101	<0.001	<0.0005	<0.005	0.000725	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.469
	7/31/2017	0.583	<0.001	0.217	0.117	<0.001	<0.0005	<0.005	0.000953	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.549
	11/7/2017[1]	0.529	NA	0.137	0.0923	NA	<0.0005	<0.005	NA	<0.0005	NA	<0.0002	NA	<0.005	NA	NA
	3/9/2018	<0.5	<0.001	0.219	0.113	<0.001	<0.0005	<0.005	0.000620	<0.0005	0.0415	<0.0002	<0.002	<0.005	<0.001	1.050
	6/5/2018	<0.5	<0.001	0.225	0.0896	<0.001	<0.0005	<0.005	0.000997	0.000586	0.0330	<0.0002	<0.002	<0.005	<0.001	0.422
	10/9/2018[2]	<0.5	<0.001	0.247	0.112(F1)	NA	<0.0005	<0.005	0.00135	<0.0005	0.0423	<0.0002	<0.002	<0.005	NA	0.901
	4/15/2019	<0.5	<0.001	0.234	0.140	<0.001	<0.0005	<0.005	0.00156	<0.0005	0.0444	<0.0002	<0.002	<0.005	<0.001	1.010
	10/1/2019	<0.500	<0.001	0.141	0.141	<0.001	<0.0001	<0.005	0.000828	<0.0005	0.0424	<0.0002	<0.002	<0.005	<0.001	0.620
MW-5	3/23/2016	<0.500	<0.00100	0.0432	0.0437	<0.00100	<0.000500	<0.00500	<0.000500	<0.000500	0.0799	<0.000200	<0.00200	<0.00500	<0.00100	0.391U
	6/14/2016	<0.500	<0.00100	0.0389	0.0701	<0.00100	<0.000500	<0.00500	0.000509	<0.000500	0.0866	<0.000200	<0.00200	<0.00500	<0.00100	0.653
	11/29/2016	<0.500	<0.00100	0.0564	0.0491	<0.00100	<0.000500	<0.00500	<0.000500	<0.000500	0.0894	<0.000200	<0.00200	<0.00500	<0.00100	0.637
	5/2/2017	1.82	<0.00100	0.0544	0.0488	<0.00100	<0.000500	<0.00500	<0.000500	<0.000500	0.0819	<0.000200	<0.00200	<0.00500	<0.00100	0.0966U
	6/5/2018	<0.500	<0.00100	0.0486	0.0447	<0.00100	<0.000500	<0.00500	<0.000500	0.00262	0.0700	<0.000200	<0.00200	<0.00500	<0.00100	NA
	10/10/2018[2]	<0.500	<0.00100	0.0549	0.0402	NA	<0.000500	<0.00500	<0.000500	0.000627	0.0797	<0.000200	<0.00200	<0.00500	NA	0.305
	4/16/2019[3]	NA	NA	0.0545	0.0625	NA	<0.000500	<0.00500	NA	<0.000500	NA	NA	NA	<0.00500	NA	NA
	10/1/2019	<0.500	<0.00100	0.0557	0.0467	<0.00100	<0.000100	<0.00500	<0.000500	<0.000500	0.0869	<0.000200	<0.00200	<0.00500	<0.00100	0.373U
MW-6	3/22/2016	<0.500	<0.00100	0.0365	0.183	<0.00100	0.00213	<0.00500	0.00592	0.00596	<0.0500	<0.000200	0.0435	<0.00500	<0.00100	1.16
	6/14/2016	<0.500	<0.00100	0.0324	0.225	<0.00100	<0.000500	<0.00500	0.00527	0.00269	<0.0500	<0.000200	0.0507	<0.00500	<0.00100	0.825
	11/28/2016	<0.500	<0.00100	0.0133	0.166	<0.00100	<0.000500	<0.00500	0.00640	0.00139	<0.0500	<0.000200	0.0696	<0.00500	<0.00100	0.653
	5/2/2017	1.32	<0.00100	0.0243	0.195	<0.00100	<0.000500	<0.00500	0.00562	0.00169	<0.0500	<0.000200	0.0610	<0.00500	<0.00100	0.819
	3/9/2018	0.525	<0.00400	0.0194	0.165	<0.00400	<0.00200	<0.0200	0.00654	<0.00200	0.0407	<0.000200	0.0683	<0.0200	<0.00400	0.673
	6/5/2018	<0.500	<0.00100	0.0136	0.196	<0.00100	0.000564	<0.00500	0.00700	0.00319	0.0480	<0.000200	0.0702	<0.00500	<0.00100	NA
	10/9/2018[2]	0.520	<0.00100	0.0393	0.295	NA	0.000834	<0.00500	0.00661	0.00660	0.0407	<0.000200	0.0537	<0.00500	NA	1.05
	4/15/2019[3]	NA	NA	0.0200	0.212	NA	<0.000500	<0.00500	NA	0.00286	NA	NA	NA	<0.00500	NA	NA
	10/1/2019	0.511	<0.00100	0.0170	0.192	<0.00100	0.000317	<0.00500	0.00761	0.00287	0.0510	<0.000200	0.0654	<0.00500	<0.00100	0.985
MW-8	3/23/2016	<0.500	<0.00100	0.0163	0.0880	<0.00100	<0.000500	<0.00500	<0.000500	0.00168	<0.0500	<0.000200	0.107	<0.00500	<0.00100	0.353U
	6/14/2016	0.518	<0.00100	0.0162	0.100	<0.00100	<0.000500	<0.00500	<0.000500	0.00169	<0.0500	<0.000200	0.102	<0.00500	<0.00100	0.380U
	11/29/2016	<0.500	<0.00100	0.0210	0.0954	<0.00100	<0.000500	<0.00500	0.000516	0.00190	<0.0500	<0.000200	0.0994	<0.00500	<0.00100	0.565
	5/2/2017	1.70	<0.00100	0.0256	0.0813	<0.00100	<0.000500	<0.00500	<0.000500	0.00155	<0.0500	<0.000200	0.101	<0.00500	<0.00100	0.647
	6/5/2018	<0.500	<0.00100	0.0189	0.0954	<0.00100	<0.000500	<0.00500	0.00281	0.00956	0.0115	<0.000200	0.0753	<0.00500	<0.00100	NA
	10/10/2018[2]	<0.500	<0.00100	0.0121	0.0892	NA	<0.000500	<0.00500	0.000864	0.00200	0.0108	<0.000200	0.0950	<0.00500	NA	0.310
	4/16/2019[3]	NA	NA	0.0122	0.101	NA	<0.000500	<0.00500	NA	0.000657	NA	NA	NA	<0.00500	NA	NA
	10/1/2019	<0.500	<0.00100	0.0106	0.101	<0.00100	<0.000100	<0.00500	0.000623	<0.000500	0.0149	<0.000200	0.111	<0.00500	<0.00100	0.535U
MW-9	3/22/2016	1.35	<0.001	0.00454	0.442	<0.001	<0.0005	<0.005	0.00146	0.00366	<0.05	<0.0002	<0.002	<0.005	<0.001	1.240
	6/14/2016	0.864	<0.001	0.00542	0.542	<0.001	<0.0005	<0.005	0.00148	0.00339	<0.05	<0.0002	<0.002	<0.005	<0.001	0.822
	9/2/2016	<0.5	<0.001	0.00397	0.538	<0.001	<0.0005	<0.005	0.00103	0.00289	<0.05	<0.0002	<0.002	<0.005	<0.001	2.010
	11/28/2016	<0.5	<0.001	0.00572	0.536	<0.001	<0.0005	<0.005	0.00159	0.00499	0.0533	<0.0002(*)	<0.002	<0.005	<0.001	1.910
	2/17/2017	0.585	<0.001	0.0118	0.383	<0.001	<0.0005	0.00555	0.00265	0.00419	<0.05	<0.0002	<0.002	<0.005	<0.001	0.623

Table 5 - Appendix IV Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent	Fluoride*	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Combined Radium (Ra 226 + Ra 228)
	Reporting Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
MW-9	5/2/2017	1.84	<0.001	0.00423	0.487	<0.001	<0.0005	<0.005	0.000974	0.00246	<0.05	<0.0002	<0.002	<0.005	<0.001	1.160
	6/19/2017	0.517	<0.001	0.00345	0.481	<0.001	<0.0005	<0.005	0.00123	0.00322	<0.05	<0.0002	<0.002	<0.005	<0.001	2.620
	7/31/2017	0.617	<0.001	0.00662	0.624	<0.001	<0.0005	<0.005	0.00195	0.00474	0.0505	0.00022	<0.002	<0.005	<0.001	3.280
	11/7/2017[1]	0.55	NA	0.00772	0.500	NA	<0.0005	<0.005	NA	0.00461	NA	<0.0002	NA	<0.005	NA	NA
	3/20/2018	<0.5	<0.001	0.00777	0.526	<0.001	<0.0005	<0.005	0.000895	0.00284	0.0428	<0.0002	<0.002	<0.005	<0.001	1.250
	6/5/2018	<0.5	<0.001	0.00768	0.625	<0.001	<0.0005	<0.005	0.00293	0.00885	0.0541	<0.0002	<0.002	<0.005	<0.001	2.450
	10/9/2018[2]	0.592	<0.001	0.00571	0.469	NA	<0.0005	<0.005	0.00150	0.00407	0.0482	<0.0002	<0.002	<0.005	NA	2.410
	4/15/2019	0.947	<0.001	0.00677	0.576	<0.001	<0.0005	<0.005	0.00234	0.00559	0.0426	<0.0002	<0.002	<0.005	<0.001	1.030
	10/1/2019	<0.500	<0.00100	0.00540	0.468		<0.00100	<0.00500	<0.000500	0.000655	0.0473	<0.000200	<0.00200	<0.00500	<0.00100	0.939
MW-13	3/22/2016	0.796	<0.001	0.0923	0.0652	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.704	0.0205	<0.001	0.575
	6/14/2016	<0.5	<0.001	0.217	0.0906	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.592	0.0141	<0.001	0.389
	9/2/2016	0.652	<0.001	0.142	0.0825	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.945	0.0313	<0.001	0.362
	11/28/2016	2.55	<0.001	0.154	0.0959	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002(*)	0.837	0.0248	<0.001	0.27
	2/17/2017	<0.5	<0.001	0.112(F1)	0.0946	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.817	0.0345	<0.001	0.455
	5/2/2017	1.05	<0.001	0.133	0.0882	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.951	0.0403	<0.001	0.301
	6/19/2017	<0.5	<0.001	0.26	0.118	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.881	0.0372	<0.001	0.3
	7/31/2017	0.587	<0.001	0.274	0.112	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.839	0.0233	<0.001	0.298
	11/7/2017[1]	0.67	NA	0.0925	0.0682	NA	<0.0005	<0.005	NA	<0.0005	NA	<0.0002	NA	0.00837	NA	NA
	3/9/2018	0.53	<0.001	0.205	0.0982	<0.001	<0.0005	<0.005	0.000613	<0.0005	0.0212	<0.0002	1.22	0.0609	<0.001	0.546
	6/5/2018	<0.5	<0.001	0.0544	0.0605	<0.001	<0.0005	<0.005	0.000718	<0.0005	0.0205	<0.0002	1.28	0.0483	<0.001	0.374
	10/9/2018[2]	<0.5	<0.001	0.0782	0.0775	NA	<0.0005	<0.005	<0.0005	<0.0005	0.0213	<0.0002	0.980	0.0298	NA	0.435
	4/15/2019	1.05	<0.001	0.108	0.119	<0.001	<0.0005	<0.005	<0.0005	<0.0005	0.0274	<0.0002	0.916	0.0150	<0.001	0.223(U)
	10/1/2019	0.544	<0.001	0.104	0.113	<0.001	0.000294	<0.005	<0.0005	<0.0005	0.0283	<0.0002	0.915	0.0204	<0.001	0.770
MW-15	3/22/2016	<0.5	0.00145	<0.002	0.0314	<0.001	<0.0005	0.0194	<0.0005	<0.0005	<0.05	<0.0002	0.389	0.104	<0.001	0.245
	6/14/2016	<0.5	0.00195	<0.002	0.0552	<0.001	<0.0005	0.0199	<0.0005	0.000668	<0.05	<0.0002	0.254	0.115	<0.001	0.378
	9/2/2016	0.278	0.0015	<0.002	0.066	<0.001	<0.0005	0.00548	<0.0005	<0.0005	<0.05	<0.0002	0.319	0.0867	<0.001	0.0439
	11/28/2016	3.48	0.00166	<0.002	0.0523	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002(*)	0.402	0.0896	<0.001	0.871
	2/17/2017	<0.5	0.00204	0.00241	0.0448	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.408	0.105	<0.001	0.143
	5/2/2017	0.878	0.0013	<0.002	0.0382	<0.001	<0.0005	0.0153	<0.0005	<0.0005	<0.05	<0.0002	0.316	0.0785	<0.001	0.158
	6/19/2017	<0.5	0.00119	<0.002	0.0447	<0.001	<0.0005	0.00678	<0.0005	<0.0005	<0.05	<0.0002	0.242	0.0638	<0.001	0.229
	7/31/2017	<0.5	0.00131	<0.002	0.0467	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	0.264	0.0699	<0.001	0.455
	11/7/2017[1]	<0.5	NA	0.00240	0.0428	NA	<0.0005	0.0253	NA	<0.0005	NA	<0.0002	NA	0.0850	NA	NA
	3/9/2018	<0.5	0.00172	0.00337	0.0405	<0.001	<0.0005	<0.005	<0.0005	<0.0005	0.0126	<0.0002	0.353	0.0653	<0.001	0.232
	6/5/2018	<0.5	0.00157	<0.002	0.0424	<0.001	<0.0005	0.0267	<0.0005	<0.0005	<0.01	<0.0002	0.353	0.0934	<0.001	0.282(U)
	10/9/2018[2]	<0.5	0.00168	<0.002	0.0394	NA	<0.0005	0.0182	<0.0005	<0.0005	0.0139	<0.0002	0.290	0.0631	NA	0.303(U)
	4/15/2019	<0.5	0.00207	<0.002	0.0752	<0.001	<0.0005	0.0204	<0.0005	<0.0005	0.0111	<0.0002	0.208	0.0553	<0.001	-0.0756(U)
	10/1/2019	<0.5	0.00218	<0.002	0.0666	<0.001	0.000109	0.0284	<0.0005	<0.0005	0.0156	<0.0002	0.245	0.0680	<0.001	0.419(U)
MW-16	3/22/2016	1.84	<0.001	<0.002	0.0665	<0.001	<0.0005	<0.005	0.00083	<0.0005	<0.05	<0.0002	0.018	<0.005	<0.001	0.214
	6/14/2016	<0.5	<0.001	<0.002	0.0730	<0.001	<0.0005	<0.005	0.000634	<0.0005	0.0514	<0.0002	0.0125	<0.005	<0.001	0.392
	9/2/2016	<0.5	<0.001	0.00233	0.0837	<0.001	<0.0005	<0.005	0.00126	<0.0005	<0.05	<0.0002	0.0262	<0.005	<0.001	0.22
	11/28/2016	<0.5	<0.001	<0.002	0.0794	<0.001	<0.0005	<0.005	0.000925	<0.0005	0.0501	<0.0002(*)	0.0193	<0.005	<0.001	0.436

Table 5 - Appendix IV Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent	Fluoride*	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Combined Radium (Ra 226 + Ra 228)
	Reporting Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
MW-16	2/17/2017	1.37	<0.001	<0.002	0.0857	<0.001	<0.0005	<0.005	0.00102	<0.0005	0.053	<0.0002	0.0164	<0.005	<0.001	0.362
	5/2/2017	1.85	<0.001	<0.002	0.0818	<0.001	<0.0005	<0.005	0.000952	<0.0005	0.0503	<0.0002	0.00651	<0.005	<0.001	0.354
	6/19/2017	<0.5	<0.001	<0.002	0.0752	<0.001	<0.0005	<0.005	0.000769	<0.0005	<0.05	<0.0002	0.0105	<0.005	<0.001	0.463
	7/31/2017	0.528	<0.001	<0.002	0.0722	<0.001	<0.0005	<0.005	0.000519	<0.0005	<0.05	<0.0002	0.0185	<0.005	<0.001	0.353
	Abandoned on August 4, 2017															
MW-17	3/23/2016	1.36	<0.001	0.00735	0.0276	<0.001	<0.0005	<0.005	0.00813	<0.0005	0.114	<0.0002	<0.002	<0.005	<0.001	0.366
	6/14/2016	<0.5	<0.001	0.0360	0.0396	<0.001	<0.0005	<0.005	0.0127	<0.0005	0.129	<0.0002	<0.002	<0.005	<0.001	0.469
	9/2/2016	<0.5	<0.001	0.0152	0.0424	<0.001	<0.0005	<0.005	0.0134	<0.0005	0.116	<0.0002	<0.002	<0.005	<0.001	0.651
	11/29/2016	<0.5	<0.001	0.00691	0.0356	<0.001	<0.0005	<0.005	0.00829	<0.0005	0.116	<0.0002(*)	0.00219	<0.005	<0.001	0.479
	2/17/2017	2.91	<0.001	0.0219	0.0406	<0.001	<0.0005	<0.005	0.0112	0.0071	0.115	<0.0002	0.00214	<0.005	<0.001	NA
	5/2/2017	1.66	<0.001	0.0300	0.0411	<0.001	<0.0005	<0.005	0.0113	<0.0005	0.116	<0.0002	<0.002	<0.005	<0.001	0.059
	6/19/2017	<0.5	<0.001	0.0163	0.0361	<0.001	<0.0005	<0.005	0.012	<0.0005	0.114	<0.0002	<0.002	<0.005	<0.001	0.777
	7/31/2017	<0.5	<0.001	0.0159	0.0373	<0.001	<0.0005	<0.005	0.0123	<0.0005	0.109	<0.0002	<0.002	<0.005	<0.001	0.284
	11/7/2017[1]	<0.5	NA	0.00794	0.0305	NA	<0.0005	<0.005	NA	<0.0005	NA	<0.0002	NA	<0.005	NA	NA
	3/9/2018	1.29	<0.001	0.0257	0.0351	<0.001	<0.0005	<0.005	0.0107	<0.0005	0.112	<0.0002	0.0032	<0.005	<0.001	0.738
	6/5/2018	<0.5	<0.001	0.0224	0.0505	<0.001	<0.0005	<0.005	0.0134	<0.0005	0.0990	<0.0002	0.00356	<0.005	<0.001	0.960
	10/10/2018[2]	<0.5	<0.001	0.0173	0.0346	NA	<0.0005	<0.005	0.0114	<0.0005	0.104	<0.0002	<0.002	<0.005	NA	1.02
	4/15/2019	0.573	<0.001	0.0102	0.0369	<0.001	<0.0005	<0.005	0.0103	<0.0005	0.0948	<0.0002	<0.002	<0.005	<0.001	0.328(U)
	10/1/2019	<0.500	<0.001	0.0117	0.0407	<0.001	<0.0001	<0.005	0.0123	<0.0005	0.120	<0.0002	0.00212	<0.005	<0.001	1.12
MW-18	3/22/2016	<0.5	<0.001	0.00345	0.343	<0.001	<0.0005	<0.005	0.00152	0.00479	<0.05	<0.0002	<0.002	<0.005	<0.001	2.7
	6/14/2016	<0.5	<0.001	<0.002	0.319	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.72
	9/2/2016	<0.5	<0.001	<0.002	0.307	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.814
	11/28/2016	<0.5	<0.001	<0.002	0.306	<0.001	<0.0005	<0.005	<0.0005	0.000577	<0.05	<0.0002(*)	<0.002	<0.005	<0.001	1.56
	2/17/2017	0.508	<0.001	<0.002	0.314	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.907
	5/2/2017	1.32	<0.001	<0.002	0.329	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	NA
	6/19/2017	<0.5	<0.001	<0.002	0.304	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	0.000204	<0.002	<0.005	<0.001	0.465
	7/31/2017	0.632	<0.001	<0.002	0.309	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.899
	11/7/2017[1]	0.704	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/9/2018	0.530	<0.001	<0.002	0.303	<0.001	<0.0005	<0.005	<0.0005	0.00137	0.0282	<0.0002	<0.002	<0.005	<0.001	1.090
	6/5/2018	0.528	<0.001	0.00327	0.449	<0.001	0.000537	<0.005	0.00271	0.0114	0.0243	<0.0002	<0.002	<0.005	<0.001	2.20
	10/9/2018[2]	0.817	<0.001	<0.002	0.293	NA	<0.0005	<0.005	<0.0005	0.000938	0.0254	NA	<0.002	<0.005	NA	1.21
	4/15/2019	0.518	<0.001	<0.002	0.272	<0.001	<0.0005	<0.005	<0.0005	<0.0005	0.0203	<0.0002	<0.002	<0.005	<0.001	0.765
	10/1/2019	<0.500	<0.00100	<0.00200	0.321	<0.00100	<0.000100	<0.00500	<0.000500	<0.000500	0.0263	<0.000200	<0.00200	<0.00500	<0.00100	0.666
MW-19	3/22/2016	<0.5	<0.001	<0.002	0.33	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	1.93
	6/14/2016	<0.5	<0.001	<0.002	0.324	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.386
	9/2/2016	<0.5	<0.001	<0.002	0.325	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	1.55
	11/28/2016	<0.5	<0.001	<0.002	0.317	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002(*)	<0.002	<0.005	<0.001	1.14
	2/17/2017	0.418	<0.001	<0.002	0.281	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.82
	5/2/2017	0.804	<0.001	<0.002	0.328	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	NA
	6/19/2017	<0.5	<0.001	<0.002	0.297	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	0.744
	7/31/2017	0.693	<0.001	<0.002	0.296	<0.001	<0.0005	<0.005	<0.0005	<0.0005	<0.05	<0.0002	<0.002	<0.005	<0.001	1
	11/7/2017[1]	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5 - Appendix IV Constituents in Groundwater
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

	Constituent	Fluoride*	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Combined Radium (Ra 226 + Ra 228)
	Reporting Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
MW-19	3/9/2018	<0.5	<0.001	<0.002	0.323	<0.001		<0.005	<0.0005	<0.0005	0.0334	<0.0002	<0.002	<0.005	<0.001	0.691
	6/5/2018	0.524	<0.001	<0.002	0.355	<0.001	<0.0005	<0.005	<0.0005	0.00121	0.0306	<0.0002	<0.002	<0.005	<0.001	1.40
	10/9/2018[2]	<0.5	<0.001	<0.002	0.334	NA	<0.0005	<0.005	<0.0005	<0.0005	0.0336	NA	<0.002	<0.005	NA	0.364(U)
	4/15/2019	0.905	<0.001	<0.002	0.322	<0.001	<0.0005	<0.005	<0.0005	<0.0005	0.0333	<0.0002	<0.002	<0.005	<0.001	0.614
	10/1/2019	0.511	<0.00100	<0.00200	0.331	<0.00100	<0.000100	<0.00500	<0.000500	<0.000500	0.0386	<0.000200	<0.00200	<0.00500	<0.00100	0.932

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter

Notes:
NA = Analyte Not Analyzed/Measured. Appendix IV constituent not previously detected; therefore only required to be monitored annually.
< = not detected above the reporting limit given
* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CFR Part 257).
[1] November 2017 sampling event was conducted as part of detection monitoring; select Appendix IV constituents were analyzed under NDEE Title 132.
[2] October 2018 sampling event was conducted as subsequent Assessment Monitoring event for previously detected Appendix IV constituents.
[3] MW-5, MW-6, & MW-8 were analyzed under NDEE Title 132 monitoring during the April 2019 sampling event for select Appendix IV constituents.
Laboratory Reported Qualifiers
(F1) = MS and/or MSD Recovery is outside acceptance limits.
(U) = Result is less than the sample detection limit.
(*) = LCS or LCSD is outside acceptance limits

Table 6 - Background Threshold Values for Assessment Monitoring
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

Constituents	Units	Background Threshold Values (UPLs)
Appendix III		
Boron	mg/l	0.200
Calcium	mg/l	195
Chloride	mg/l	275
Fluoride [1]	mg/l	1.84
pH (LPL) [2]	SU	6.29
pH (UPL) [3]	SU	7.78
Sulfate	mg/l	57.5
TDS	mg/l	1190
Appendix IV		
Antimony	mg/l	0.001
Arsenic	mg/l	0.0118
Barium	mg/l	0.625
Beryllium	mg/l	0.001
Cadmium	mg/l	0.000537
Chromium	mg/l	0.005
Cobalt	mg/l	0.00293
Lead	mg/l	0.0114
Lithium	mg/l	0.0541
Mercury	mg/l	0.00022
Molybdenum	mg/l	0.002
Radium 226 + 228	pCi/l	3.77
Selenium	mg/l	0.005
Thallium	mg/l	0.001

Notes:

[1] Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CFR Part 257).

[2] Indicates the lower bound of the range is the lower prediction limit (LPL).

[3] Indicates the upper bound is the upper prediction limit (UPL).

Table 7 - Established Groundwater Protection Standards
2019 Annual Groundwater Monitoring and Corrective Action Report
Omaha Public Power District - NOS Ash Disposal Area
January 2020

Constituents	Units	Established Groundwater Protection Standard (GWPS)[1]
Appendix IV		
Antimony	mg/l	0.006
Arsenic	mg/l	0.0118[2]
Barium	mg/l	2.00
Beryllium	mg/l	0.004
Cadmium	mg/l	0.005
Chromium	mg/l	0.10
Cobalt	mg/l	0.006
Flouride	mg/l	4.0
Lead	mg/l	0.015
Lithium	mg/l	0.0541[2]
Mercury	mg/l	0.002
Molybdenum	mg/l	0.10
Radium 226 + 228	pCi/l	5.0
Selenium	mg/l	0.05
Thallium	mg/l	0.002

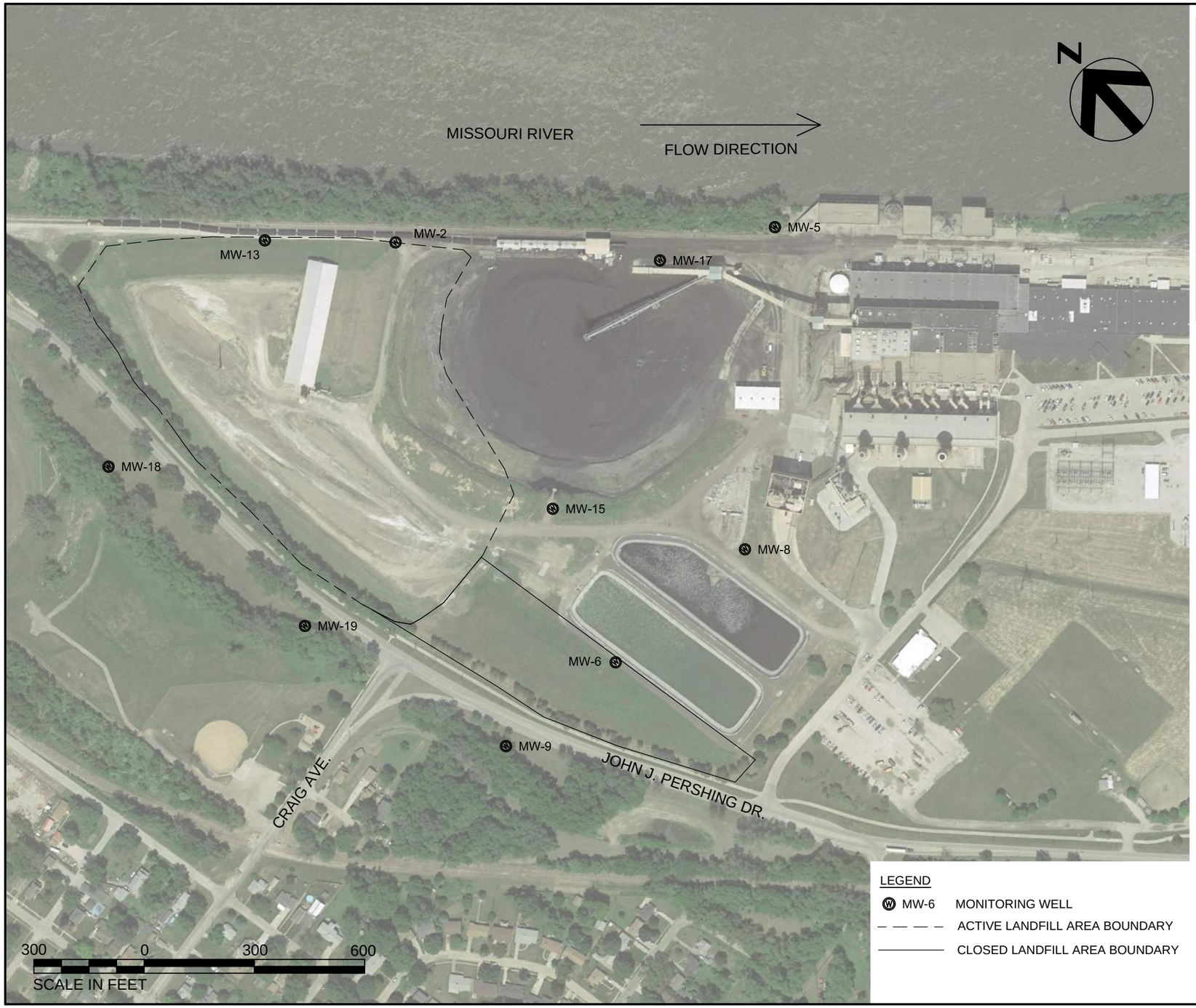
Notes:

[1] GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

[2] GWPS is established as the upper tolerance limit (UTL) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

Figures

This page intentionally left blank.



LEGEND

- MW-6 MONITORING WELL
- ACTIVE LANDFILL AREA BOUNDARY
- CLOSED LANDFILL AREA BOUNDARY

COMPLIANCE AND BACKGROUND MONITORING WELLS

WELL ID	NORTHING	EASTING	SURFACE EL	TOP OF CASING (TOC) EL	INSTALL DATE	COMMENTS
MW-2	572580	2753258	998.30	1001.41	3/6/1995	DOWNGRADIENT
MW-5	571959.9	2754084	998.10	1000.96	3/2/1995	DOWNGRADIENT
MW-6	571316.1	2753000	999.60	1002.65	3/8/1995	DOWNGRADIENT
MW-8	571331.8	2753467	1000.30	1003.59	3/7/1995	DOWNGRADIENT
MW-9	571328	2752624	1027.10	1026.47	5/4/1996	BACKGROUND
MW-13	572808.9	2752986	999.02	1001.91	4/12/2001	DOWNGRADIENT
MW-15	571747.9	2753132	1002.80	1005.39	4/12/2001	DOWNGRADIENT
MW-17	572087.4	2753785	999.60	1002.54	5/10/2007	DOWNGRADIENT
MW-18	572600.9	2752267	1037.10	1037.00	12/1/2015	BACKGROUND
MW-19*	571927.2	2752407	1037.30	1037.10	1/20/2016	BACKGROUND

* FLUSH MOUNT WELL

OMAHA PUBLIC POWER DISTRICT
NORTH OMAHA STATION - ASH LANDFILL
MONITORING WELL LOCATION MAP

2019 GROUNDWATER MONITORING

DATE
JANUARY 2020

FIGURE
1

Appendix A

Field Sampling Forms

This page intentionally left blank.

NORTH OMAHA STATION

Water Levels Prior to Purging

MW2	Date of Sampling	4/15/2019	Time of Sampling	8:12	Static Water Level	17.74
MW4	Date of Sampling	4/15/2019	Time of Sampling	8:35	Static Water Level	11.44
MW5	Date of Sampling	4/15/2019	Time of Sampling	9:09	Static Water Level	16.51
MW6	Date of Sampling	4/15/2019	Time of Sampling	8:42	Static Water Level	12.78
MW7	Date of Sampling	4/15/2019	Time of Sampling	8:49	Static Water Level	16.21
MW8	Date of Sampling	4/15/2019	Time of Sampling	8:56	Static Water Level	17.17
MW9	Date of Sampling	4/15/2019	Time of Sampling	8:04	Static Water Level	23.36
MW10	Date of Sampling	4/15/2019	Time of Sampling	8:50	Static Water Level	15.03
MW11	Date of Sampling	4/15/2019	Time of Sampling	8:45	Static Water Level	11.64
MW12	Date of Sampling	4/15/2019	Time of Sampling	8:57	Static Water Level	16.23
MW13	Date of Sampling	4/15/2019	Time of Sampling	8:16	Static Water Level	14.16
MW15	Date of Sampling	4/15/2019	Time of Sampling	8:34	Static Water Level	10.67
MW17	Date of Sampling	4/15/2019	Time of Sampling	9:02	Static Water Level	14.73
MW18	Date of Sampling	4/15/2019	Time of Sampling	7:54	Static Water Level	32.68
MW19	Date of Sampling	4/15/2019	Time of Sampling	7:59	Static Water Level	32.70
MW20	Date of Sampling	4/15/2019	Time of Sampling	9:22	Static Water Level	7.49
MW21	Date of Sampling	4/15/2019	Time of Sampling	8:29	Static Water Level	22.24
MW22	Date of Sampling	4/15/2019	Time of Sampling	8:25	Static Water Level	12.16
MW23	Date of Sampling	4/15/2019	Time of Sampling	8:18	Static Water Level	10.77

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW2 - 4**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Partly Cloudy, Sunny, 69°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:12	Pump Start Time	13:02
Static Water Level (+/- 0.01 feet)*	17.74	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	28.35	Time to Purge Well (hours:minutes)	0:29
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	6.55		
Actual Volume of Water Purged (mL)	5,800		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
13:07	1,000	15.55	2.49	314	7.15	2.26	18.24
13:10	1,600	15.78	1.76	241	7.12	2.25	18.27
13:13	2,200	15.85	1.39	150	7.11	2.26	18.27
13:16	2,800	15.70	5.30	76.2	7.05	2.29	18.27
13:19	3,400	15.64	5.45	62.6	7.02	2.34	18.27
13:22	4,000	15.68	1.27	41.1	7.07	2.32	18.27
13:25	4,600	15.66	1.09	34.5	7.05	2.34	18.27
13:28	5,200	15.70	1.06	31.9	7.07	2.33	18.27
13:31	5,800	15.73	1.07	24.4	7.07	2.33	18.27

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
13:31	5,800	15.73	1.07	24.4	7.07	2.33	18.27
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~30 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW9 - 3**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Clear, Sunny, 61°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:04	Pump Start Time	11:38
Static Water Level (+/- 0.01 feet)*	23.36	Purge Rate (mL/minute)	100-300
Bottom of Well Casing (+/- 0.01 feet)*	56.65	Time to Purge Well (hours:minutes)	0:38
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	20.56		
Actual Volume of Water Purged (mL)	5,400		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
11:43	1,500	13.07	1.14	241	7.13	1.56	26.74
11:46	2,100	13.54	0.88	256	7.10	1.55	26.82
11:49	2,700	13.91	0.78	351	7.10	1.54	26.89
11:52	3,000	13.48	0.73	450	7.10	1.51	27.60
11:55	3,300	13.73	0.68	506	7.09	1.39	27.46
11:58	3,600	14.57	0.66	475	7.07	1.24	27.16
12:01	3,900	14.75	1.96	445	7.06	1.15	27.00
12:04	4,200	15.10	1.91	409	7.03	0.986	26.67
12:07	4,500	15.44	1.81	382	7.02	0.929	26.51
12:10	4,800	15.74	1.66	382	7.00	0.887	26.30
12:13	5,100	15.82	1.60	392	7.01	0.891	26.19
12:16	5,400	15.90	1.57	408	7.00	0.902	26.06

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
12:16	5,400	15.90	1.57	408	7.00	0.902	26.06
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		100

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Turbid	QED Pump Control Information	CPM-2, 28/2, ~35 psi
Sample Color	Light Brown	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW13 - 5**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Clear, Sunny, 69°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:16	Pump Start Time	13:56
Static Water Level (+/- 0.01 feet)*	14.16	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	23.98	Time to Purge Well (hours:minutes)	0:47
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	6.06		
Actual Volume of Water Purged (mL)	9,400		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
14:01	1,000	15.46	1.75	532	7.04	2.07	15.28
14:04	1,600	15.54	1.36	573	7.07	2.06	15.28
14:07	2,200	15.67	1.14	469	7.11	2.05	15.29
14:10	2,800	15.73	1.01	363	7.09	2.03	15.28
14:13	3,400	15.89	0.94	267	7.08	2.03	15.27
14:16	4,000	15.73	0.95	181	7.05	2.02	15.27
14:19	4,600	15.64	0.91	160	7.03	2.01	15.27
14:22	5,200	15.43	0.87	125	7.05	2.01	15.27
14:25	5,800	15.32	0.85	93.4	7.07	2.00	15.27
14:28	6,400	15.24	0.84	76.0	7.08	2.00	15.26
14:31	7,000	15.16	0.84	66.1	7.09	2.00	15.26
14:34	7,600	15.14	0.84	57.9	7.11	1.99	15.27
14:37	8,200	15.08	0.83	56.5	7.09	2.00	15.27
14:40	8,800	15.12	0.85	52.4	7.11	1.99	15.27
14:43	9,400	15.08	0.85	53.6	7.13	2.00	15.27

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
14:43	9,400	15.08	0.85	53.6	7.13	2.00	15.27
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Lightly Turbid	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Light Yellow	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW15 - 6**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Partly Cloudy, Sunny, 73°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:34	Pump Start Time	15:10
Static Water Level (+/- 0.01 feet)*	10.67	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	15.60	Time to Purge Well (hours:minutes)	0:17
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	3.04		
Actual Volume of Water Purged (mL)	3,400		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
15:15	1,000	14.60	5.54	14.8	7.09	1.36	11.26
15:18	1,600	14.49	5.47	5.7	7.09	1.34	11.79
15:21	2,200	15.85	5.33	4.1	7.09	1.27	11.81
15:24	2,800	15.92	5.62	3.8	7.09	1.30	11.83
15:27	3,400	15.99	5.48	2.7	7.09	1.29	11.85

Well Evacuated to Dryness? No

Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
15:27	3,400	15.99	5.48	2.7	7.09	1.29	11.85
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 28/2, ~15 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW17 - 9**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 77°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	9:02	Pump Start Time	17:38
Static Water Level (+/- 0.01 feet)*	14.73	Purge Rate (mL/minute)	150-300
Bottom of Well Casing (+/- 0.01 feet)*	25.45	Time to Purge Well (hours:minutes)	0:28
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	6.62		
Actual Volume of Water Purged (mL)	5,100		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
17:43	1,500	17.41	2.38	22	6.57	2.41	17.04
17:46	2,400	16.89	1.20	18.7	6.56	2.41	17.23
17:49	2,850	16.59	0.88	18.1	6.53	2.41	17.26
17:52	3,300	16.32	0.72	16.5	6.51	2.45	17.28
17:55	3,750	16.24	0.63	24.5	6.55	2.44	17.29
17:58	4,200	16.03	0.56	27.3	6.54	2.43	17.33
18:01	4,650	16.00	0.52	30.6	6.55	2.41	17.35
18:04	5,100	15.89	0.50	43.6	6.53	2.41	17.37

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
18:06	5,100	15.89	0.50	43.6	6.53	2.41	17.37
Duplicate?	Yes, DUP1	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		150

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28

Notes / Unusual Occurrences: Sample time is 18:06 instead of 18:04 due to error in the field.

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW18 - 1**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Clear, Sunny, 53°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:54	Pump Start Time	9:33
Static Water Level (+/- 0.01 feet)*	32.68	Purge Rate (mL/minute)	150-250
Bottom of Well Casing (+/- 0.01 feet)*	70.90	Time to Purge Well (hours:minutes)	0:47
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	23.60		
Actual Volume of Water Purged (mL)	9,500		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
9:38	1,250	13.10	2.81	77.3	6.27	0.805	36.43
9:41	2,000	13.07	4.28	33.4	6.21	0.807	36.98
9:44	2,750	12.73	4.64	20.4	6.25	0.801	37.49
9:47	3,500	12.66	7.01	13.0	6.28	0.796	37.83
9:50	4,250	12.44	6.75	9.6	6.33	0.740	38.01
9:53	5,000	12.37	6.50	10.6	6.33	0.609	38.34
9:56	5,600	12.39	5.89	10.1	6.32	0.524	38.65
9:59	6,200	12.36	5.74	11.9	6.33	0.426	38.92
10:02	6,800	12.33	5.65	12.6	6.35	0.451	38.91
10:05	7,250	12.32	5.40	11.1	6.47	0.551	38.90
10:08	7,700	12.35	5.00	8.9	6.56	0.648	38.80
10:11	8,150	12.42	4.64	8.3	6.52	0.688	38.71
10:14	8,600	12.44	4.55	8.8	6.53	0.733	38.68
10:17	9,050	12.47	4.40	8.6	6.51	0.744	38.64
10:20	9,500	12.45	4.32	9.2	6.51	0.746	38.60

Well Evacuated to Dryness? No

Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
10:20	9,500	12.45	4.32	9.2	6.51	0.746	38.60
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		150

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 28/2, ~65 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28

Notes / Unusual Occurrences: None

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle Uhing (79776)
Monitoring Well Identification - Sample Number: **MW19 - 2**	Date: 4/15/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Clear, Sunny, 58°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:59	Pump Start Time	10:45
Static Water Level (+/- 0.01 feet)*	32.70	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	76.70	Time to Purge Well (hours:minutes)	0:26
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	27.17		
Actual Volume of Water Purged (mL)	5,200		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
10:50	1,000	12.54	2.36	47.2	6.69	0.784	32.79
10:53	1,600	12.71	1.39	29.5	6.67	0.775	32.74
10:56	2,200	13.15	1.28	28.2	6.67	0.767	32.76
10:59	2,800	13.44	1.24	27.9	6.67	0.770	32.78
11:02	3,400	13.32	1.17	19.0	6.69	0.775	32.85
11:05	4,000	13.22	1.01	10.1	6.72	0.776	32.85
11:08	4,600	13.04	1.03	9.2	6.72	0.776	32.85
11:11	5,200	12.89	1.02	8.8	6.73	0.778	32.85

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
11:11	5,200	12.89	1.02	8.8	6.73	0.78	32.85
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~65 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	4/15/2019, 6:28
Notes / Unusual Occurrences: None			

Equipment Calibration Sheet

Date: 4/15/2019
Time: 6:28

Person Calibrating Instrument: Kyle K. Uhing

Instrument Type	Instrument Brand	Instrument Model	Instrument Serial Number
Multiparameter Water Meter	Horiba	U-5000/U-52	KE3AGWPR/NTKDC76Y

Parameter:	Reading	Units
pH 4	4.00	SU
Conductivity	4.34	µS/cm
Turbidity	0.0	NTU
DO	9.83	mg/L

Comments:

The Horiba was calibrated using pH 4.0 AutoCal buffer solution.

SU = Standard Units

.

This page intentionally left blank.

NORTH OMAHA STATION

Water Levels Prior to Purging

MW2	Date of Sampling	10/1/2019	Time of Sampling	7:59	Static Water Level	16.02
MW4	Date of Sampling	10/1/2019	Time of Sampling	8:05	Static Water Level	11.79
MW5	Date of Sampling	10/1/2019	Time of Sampling	9:00	Static Water Level	14.76
MW6	Date of Sampling	10/1/2019	Time of Sampling	8:35	Static Water Level	13.17
MW7	Date of Sampling	10/1/2019	Time of Sampling	8:39	Static Water Level	16.90
MW8	Date of Sampling	10/1/2019	Time of Sampling	8:46	Static Water Level	16.96
MW9	Date of Sampling	10/1/2019	Time of Sampling	7:38	Static Water Level	26.01
MW10	Date of Sampling	10/1/2019	Time of Sampling	8:40	Static Water Level	15.75
MW11	Date of Sampling	10/1/2019	Time of Sampling	8:34	Static Water Level	11.94
MW12	Date of Sampling	10/1/2019	Time of Sampling	8:45	Static Water Level	15.73
MW13	Date of Sampling	10/1/2019	Time of Sampling	7:56	Static Water Level	12.94
MW15	Date of Sampling	10/1/2019	Time of Sampling	8:07	Static Water Level	10.76
MW17	Date of Sampling	10/1/2019	Time of Sampling	8:53	Static Water Level	13.74
MW18	Date of Sampling	10/1/2019	Time of Sampling	7:30	Static Water Level	33.52
MW19	Date of Sampling	10/1/2019	Time of Sampling	7:34	Static Water Level	33.53
MW23	Date of Sampling	10/1/2019	Time of Sampling	7:52	Static Water Level	9.37

NORTH OMAHA STATION

Water Levels Prior to Purging

MW2	Date of Sampling	11/19/2019	Time of Sampling	13:50	Static Water Level	19.31
MW2D	Date of Sampling	11/19/2019	Time of Sampling	13:52	Static Water Level	20.29
MW4	Date of Sampling	11/19/2019	Time of Sampling	12:33	Static Water Level	11.31
MW4D	Date of Sampling	11/19/2019	Time of Sampling	12:36	Static Water Level	12.23
MW5	Date of Sampling	11/19/2019	Time of Sampling	14:13	Static Water Level	16.59
MW5D	Date of Sampling	11/19/2019	Time of Sampling	14:15	Static Water Level	46.75
MW6	Date of Sampling	11/19/2019	Time of Sampling	12:11	Static Water Level	12.8
MW6D	Date of Sampling	11/19/2019	Time of Sampling	12:12	Static Water Level	6.99
MW7	Date of Sampling	11/19/2019	Time of Sampling	12:20	Static Water Level	17.07
MW8	Date of Sampling	11/19/2019	Time of Sampling	12:25	Static Water Level	17.04
MW8D	Date of Sampling	11/19/2019	Time of Sampling	12:27	Static Water Level	16.91
MW9	Date of Sampling	11/19/2019	Time of Sampling	11:10	Static Water Level	24.53
MW10	Date of Sampling	11/19/2019	Time of Sampling	12:22	Static Water Level	15.85
MW11	Date of Sampling	11/19/2019	Time of Sampling	12:14	Static Water Level	11.99
MW12	Date of Sampling	11/19/2019	Time of Sampling	12:28	Static Water Level	15.98
MW13	Date of Sampling	11/19/2019	Time of Sampling	13:36	Static Water Level	15.51
MW15	Date of Sampling	11/19/2019	Time of Sampling	12:32	Static Water Level	10.67
MW17	Date of Sampling	11/19/2019	Time of Sampling	14:24	Static Water Level	14.64
MW17D	Date of Sampling	11/19/2019	Time of Sampling	14:25	Static Water Level	14.85
MW18	Date of Sampling	11/19/2019	Time of Sampling	10:54	Static Water Level	32.90
MW19	Date of Sampling	11/19/2019	Time of Sampling	11:00	Static Water Level	32.98
MW19S	Date of Sampling	11/19/2019	Time of Sampling	11:02	Static Water Level	27.29
MW20	Date of Sampling	11/19/2019	Time of Sampling	12:05	Static Water Level	7.85
MW22	Date of Sampling	11/19/2019	Time of Sampling	12:45	Static Water Level	11.78
MW23	Date of Sampling	11/19/2019	Time of Sampling	13:21	Static Water Level	10.37
MW25S	Date of Sampling	11/19/2019	Time of Sampling	13:22	Static Water Level	23.56
MW25D	Date of Sampling	11/19/2019	Time of Sampling	13:52	Static Water Level	20.79
MW26S	Date of Sampling	11/19/2019	Time of Sampling	14:04	Static Water Level	17.49
MW26D	Date of Sampling	11/19/2019	Time of Sampling	14:06	Static Water Level	17.47

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW2 - 5**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, Raining, 61°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:59	Pump Start Time	16:07
Static Water Level (+/- 0.01 feet)*	16.02	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	28.35	Time to Purge Well (hours:minutes)	0:17
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	7.61		
Actual Volume of Water Purged (mL)	3,400		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
16:12	1,000	15.23	2.22	72.8	6.85	2.42	16.22
16:15	1,600	15.06	1.84	73.4	6.86	2.45	16.37
16:18	2,200	15.02	1.37	56.6	6.87	2.46	16.44
16:21	2,800	14.99	1.39	36.5	6.88	2.47	16.48
16:24	3,400	14.95	1.37	23.2	6.89	2.46	16.55

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
16:24	3,400	14.95	1.37	23.2	6.89	2.46	16.55
Duplicate?	Yes, DUP1	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~30 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Patrick Finigan
Monitoring Well Identification - Sample Number: **MW5 - 10**	Date: 10/2/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, Raining, 53°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	9:00	Pump Start Time	9:18
Static Water Level (+/- 0.01 feet)*	14.76	Purge Rate (mL/minute)	250
Bottom of Well Casing (+/- 0.01 feet)*	33.20	Time to Purge Well (hours:minutes)	0:26
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	11.39		
Actual Volume of Water Purged (mL)	6,500		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
9:23	1,250	14.09	3.70	185	6.69	2.84	15.40
9:26	2,000	13.89	3.72	59.0	6.74	2.88	15.53
9:29	2,750	13.82	2.34	31.2	6.75	2.83	15.58
9:32	3,500	13.78	2.26	18.3	6.77	2.84	15.60
9:35	4,250	13.76	2.30	11.4	6.74	2.91	15.61
9:38	5,000	13.74	2.24	9.0	6.80	2.89	15.62
9:41	5,750	13.73	2.26	2.6	6.86	2.91	15.62
9:44	6,500	13.70	2.21	5.1	6.88	2.92	15.62

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
9:44	6,500	13.70	2.21	5.1	6.88	2.92	15.62
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		250

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/2/2019, 6:59
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW6 - 7**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, Raining, 60°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:35	Pump Start Time	18:06
Static Water Level (+/- 0.01 feet)*	13.17	Purge Rate (mL/minute)	150
Bottom of Well Casing (+/- 0.01 feet)*	33.18	Time to Purge Well (hours:minutes)	0:26
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	12.36		
Actual Volume of Water Purged (mL)	3,900		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
18:11	750	15.26	2.65	76.8	6.79	2.08	13.21
18:14	1,200	15.08	2.29	81.6	6.77	2.10	13.23
18:17	1,650	15.02	2.00	89.0	6.73	2.13	13.24
18:20	2,100	14.85	1.88	83.2	6.71	2.14	13.25
18:23	2,550	14.81	1.79	73.2	6.69	2.17	13.27
18:26	3,000	14.79	1.72	72.0	6.68	2.18	13.27
18:29	3,450	14.75	1.65	73.0	6.67	2.19	13.27
18:32	3,900	14.74	1.63	74.2	6.67	2.20	13.28

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
18:32	3,900	14.74	1.63	74	6.67	2.20	13.28
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		150

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Lightly Turbid	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Patrick Finigan
Monitoring Well Identification - Sample Number: **MW8 - 8**	Date: 10/2/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 51°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:46	Pump Start Time	7:27
Static Water Level (+/- 0.01 feet)*	16.96	Purge Rate (mL/minute)	250
Bottom of Well Casing (+/- 0.01 feet)*	25.45	Time to Purge Well (hours:minutes)	0:26
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	5.24		
Actual Volume of Water Purged (mL)	6,500		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
7:32	1,250	15.40	2.25	11.4	7.31	1.18	19.15
7:35	2,000	14.92	2.47	7.8	7.55	1.21	19.17
7:38	2,750	14.73	3.47	6.8	7.64	1.24	19.17
7:41	3,500	14.73	5.22	6.8	7.46	1.27	19.19
7:44	4,250	14.73	1.90	6.5	7.53	1.27	19.20
7:47	5,000	14.69	1.88	4.7	7.23	1.32	19.20
7:50	5,750	14.63	1.86	4.4	7.21	1.32	19.20
7:53	6,500	14.61	1.84	4.1	7.21	1.33	19.20

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
7:53	6,500	14.61	1.84	4.1	7.21	1.33	19.20
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		250

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/2/2019, 6:59
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW9 - 3**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 62°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:38	Pump Start Time	12:31
Static Water Level (+/- 0.01 feet)*	26.01	Purge Rate (mL/minute)	300
Bottom of Well Casing (+/- 0.01 feet)*	56.65	Time to Purge Well (hours:minutes)	0:53
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	18.92		
Actual Volume of Water Purged (mL)	15,900		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
12:39	2,400	15.43	2.27	827	6.50	1.26	29.83
12:42	3,300	14.11	0.77	669	6.39	1.41	33.47
12:45	4,200	13.94	0.70	673	6.45	1.49	34.29
12:48	5,100	13.74	0.66	706	6.48	1.49	34.99
12:51	6,000	13.63	0.67	515	6.49	1.39	35.96
12:54	6,900	13.72	0.63	342	6.49	1.28	35.95
12:57	7,800	13.60	0.62	253	6.47	1.23	36.14
13:00	8,700	13.58	0.59	196	6.46	1.23	36.22
13:03	9,600	13.50	0.59	133	6.47	1.24	36.27
13:06	10,500	13.51	0.62	108	6.48	1.27	36.33
13:09	11,400	13.54	0.60	91.2	6.49	1.28	36.40
13:12	12,300	13.55	0.60	76.2	6.51	1.30	36.43
13:15	13,200	13.59	0.58	64.7	6.53	1.32	36.47
13:18	14,100	13.62	0.56	59.9	6.54	1.33	36.50
13:21	15,000	13.65	0.60	57.2	6.55	1.34	36.50
13:24	15,900	13.61	0.61	56.4	6.56	1.34	36.50

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
13:24	15,900	13.61	0.61	56.4	6.56	1.34	36.50
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		300

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 28/2, ~35 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Sulfur	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW13 - 4**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, Raining, 60°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:56	Pump Start Time	15:09
Static Water Level (+/- 0.01 feet)*	12.94	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	23.98	Time to Purge Well (hours:minutes)	0:38
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	6.82		
Actual Volume of Water Purged (mL)	7,600		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
15:14	1,000	14.36	2.35	449	6.76	1.87	13.02
15:17	1,600	14.32	2.25	301	6.82	1.85	13.04
15:20	2,200	14.29	2.26	185	6.84	1.84	13.03
15:23	2,800	14.25	1.82	144	6.86	1.86	13.05
15:26	3,400	14.28	1.66	108	6.87	1.87	13.05
15:29	4,000	14.16	1.66	98.6	6.88	1.87	13.06
15:32	4,600	14.20	1.65	77.0	6.89	1.87	13.07
15:35	5,200	14.16	1.63	69.5	6.90	1.88	13.07
15:38	5,800	14.16	1.36	57.3	6.90	1.88	13.07
15:41	6,400	14.16	1.07	49.9	6.91	1.88	13.08
15:44	7,000	14.09	1.21	48.3	6.91	1.89	13.07
15:47	7,600	14.08	1.01	47.6	6.92	1.89	13.07

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
15:47	7,600	14.08	1.01	47.6	6.92	1.89	13.07
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Sulfur	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW15 - 6**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, Rainy, 60°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:07	Pump Start Time	17:25
Static Water Level (+/- 0.01 feet)*	10.76	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	15.60	Time to Purge Well (hours:minutes)	0:17
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	2.99		
Actual Volume of Water Purged (mL)	3,400		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
17:30	1,000	14.79	2.87	26.6	6.79	1.50	10.86
17:33	1,600	15.13	2.34	9.5	6.60	1.44	10.90
17:36	2,200	15.15	2.27	5.2	6.60	1.49	10.92
17:39	2,800	15.17	2.33	4.6	6.59	1.50	10.93
17:42	3,400	15.16	2.29	4.7	6.61	1.49	10.93

Well Evacuated to Dryness? No

Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
17:42	3,400	15.16	2.29	4.7	6.61	1.49	10.93
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 28/2, ~15 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42

Notes / Unusual Occurrences: None

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Patrick Finigan
Monitoring Well Identification - Sample Number: **MW17 - 9**	Date: 10/2/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 52°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	8:53	Pump Start Time	8:22
Static Water Level (+/- 0.01 feet)*	13.74	Purge Rate (mL/minute)	250
Bottom of Well Casing (+/- 0.01 feet)*	25.45	Time to Purge Well (hours:minutes)	9:44
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	7.23		
Actual Volume of Water Purged (mL)	8,000		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
8:27	1,250	14.93	1.57	415	6.05	2.31	15.62
8:30	2,000	14.94	1.25	299	6.04	2.30	17.22
8:33	2,750	14.96	1.00	220	6.04	2.29	18.00
8:36	3,500	14.97	0.90	155	6.04	2.29	18.55
8:39	4,250	14.95	0.78	101	6.04	2.28	19.27
8:42	5,000	14.94	0.76	63.7	6.05	2.28	20.02
8:45	5,750	14.92	0.73	47.3	6.05	2.28	20.56
8:48	6,500	14.91	0.73	37.8	6.06	2.28	21.10
8:51	7,250	14.90	0.74	28.0	6.07	2.28	21.57
8:54	8,000	14.90	0.74	23.1	6.06	2.28	21.57

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
18:06	8,000	14.90	0.74	23.1	6.06	2.28	21.57
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		250

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~20 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/2/2019, 6:59
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW18 - 1**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 63°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:30	Pump Start Time	10:06
Static Water Level (+/- 0.01 feet)*	33.52	Purge Rate (mL/minute)	250
Bottom of Well Casing (+/- 0.01 feet)*	70.90	Time to Purge Well (hours:minutes)	0:59
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	23.08		
Actual Volume of Water Purged (mL)	14,750		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
10:11	1,250	15.37	3.52	130	6.05	0.662	36.82
10:14	2,000	14.77	2.20	573	6.23	0.738	37.23
10:17	2,750	14.45	1.94	592	6.34	0.750	37.68
10:20	3,500	14.21	1.56	268.0	6.39	0.755	38.02
10:23	4,250	14.04	1.37	141	6.39	0.753	38.00
10:26	5,000	14.07	1.33	113	6.38	0.751	38.12
10:29	5,750	14.11	1.34	98.2	6.40	0.751	38.15
10:32	6,500	14.26	1.52	91.8	6.38	0.740	38.26
10:35	7,250	14.16	1.45	88.7	6.35	0.737	38.24
10:38	8,000	13.98	1.64	81.5	6.32	0.724	38.24
10:41	8,750	14.12	1.76	72.8	6.32	7.180	38.25
10:44	9,500	14.04	1.78	65.9	6.28	0.707	38.24
10:47	10,250	14.12	1.77	62.2	6.26	0.703	38.24
10:50	11,000	14.08	1.91	53.7	6.24	0.695	38.24
10:53	11,750	13.94	1.83	51.5	6.20	0.693	38.24
10:56	12,500	13.99	1.77	43.0	6.19	0.692	38.25
10:59	13,250	13.92	1.87	37.1	6.17	0.692	38.24
11:02	14,000	13.87	1.88	31.4	6.14	0.692	38.23
11:05	14,750	13.87	1.88	24.3	6.11	0.692	38.24

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
11:05	14,750	13.87	1.88	24.3	6.11	0.692	38.24
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		250

Sample Physical Characteristics / **Equipment Information**

Sample Clarity	Clear	QED Pump Control Information	CPM-2, 28/2, ~65 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Odorless	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Field Notes For Monitoring Well Sampling

Facility Name: OPPD North Omaha Station	Sampler Name(s): Kyle K. Uhing (79776), Bryan Lorence
Monitoring Well Identification - Sample Number: **MW19 - 2**	Date: 10/1/2019
Wellhead Inspection (Condition): Compliant	Weather Conditions: Overcast, 64°F

Groundwater Measurements and Purge Data

Time of Water Level Measurement	7:34	Pump Start Time	11:37
Static Water Level (+/- 0.01 feet)*	33.53	Purge Rate (mL/minute)	200
Bottom of Well Casing (+/- 0.01 feet)*	76.70	Time to Purge Well (hours:minutes)	0:26
Pump Intake Elevation (+/- 0.01 feet)*	NM	Purge and Sample Equipment: Dedicated Bladder Pump with QED Flow Controller and Nitrogen Gas, Graduated Measuring Bucket and Cup, Multi-Parameter Water Meter, and Electronic Water Level Indicator	
2" Well Casing Volume (L)	26.66		
Actual Volume of Water Purged (mL)	5,200		

*Measurement collected from a defined point on the edge of the surveyed top of monitoring well casing using an electronic water level indicator.

Groundwater Parameter Data

Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
11:42	1,000	14.06	1.81	21.1	6.10	0.729	33.56
11:45	1,600	13.95	1.09	17.6	6.03	0.731	33.57
11:48	2,200	13.75	0.83	13.3	6.00	0.737	33.58
11:51	2,800	13.50	0.82	10.3	6.01	0.737	33.59
11:54	3,400	13.52	0.78	6.8	6.02	0.740	33.60
11:57	4,000	13.50	0.84	6.6	6.03	0.743	33.61
12:00	4,600	13.52	0.87	6.8	6.04	0.742	33.63
12:03	5,200	13.48	0.89	5.9	6.05	0.743	33.64

Well Evacuated to Dryness? No Recharge time? Not Measured

Groundwater Sample Information

Sample Time	Volume Purged (mL)	Temperature (°C)	DO (mg/L)	Turbidity (NTU)	pH	Conductivity (mS/cm)	Water Level (feet)
12:03	5,200	13.48	0.89	5.9	6.05	0.743	33.64
Duplicate?	No	Preservation?	Cool on Ice, HNO_3 for Metals		Pump Rate (mL/minute)		200

Sample Physical Characteristics		**Equipment Information**	
Sample Clarity	Clear	QED Pump Control Information	CPM-2, 27/3, ~65 psi
Sample Color	Clear	Decontamination Procedure	Alconox and DI Water Rinse
Sample Odor	Sulfur	Instrument Calibration By	Kyle K. Uhing
Immiscible Layer Observed? If so, thickness?	No	Date and Time of Calibration	10/1/2019, 6:42
Notes / Unusual Occurrences: None			

Equipment Calibration Sheet

Date: 10/1/2019
Time: 6:42

Person Calibrating Instrument: Kyle K. Uhing

Instrument Type	Instrument Brand	Instrument Model	Instrument Serial Number
Multiparameter Water Meter	Horiba	U-5000/U-52	KE3AGWPR/NTKDC76Y

Parameter:	Reading	Units
pH 4	4.00	SU
Conductivity	4.43	µS/cm
Turbidity	0.0	NTU
DO	10.03	mg/L

Comments:

The Horiba was calibrated using pH 4.0 AutoCal buffer solution.

SU = Standard Units

.

Equipment Calibration Sheet

Date: 10/2/2019
Time: 6:59

Person Calibrating Instrument: Kyle K. Uhing

Instrument Type	Instrument Brand	Instrument Model	Instrument Serial Number
Multiparameter Water Meter	Horiba	U-5000/U-52	KE3AGWPR/NTKDC76Y

Parameter:	Reading	Units
pH 4	4.00	SU
Conductivity	4.50	µS/cm
Turbidity	0.0	NTU
DO	9.62	mg/L

Comments:

The Horiba was calibrated using pH 4.0 AutoCal buffer solution.

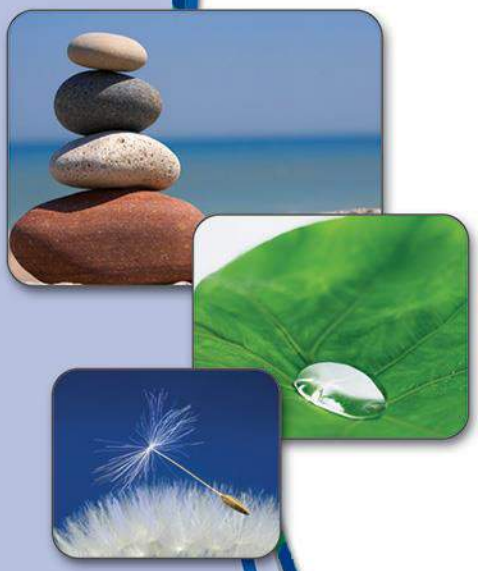
SU = Standard Units

.

Appendix B

Laboratory Analytical Reports

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-153493-1
Client Project/Site: North Omaha Station

For:
Omaha Public Power District
Attn: Accounts Payable, 4E/EP-5
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

Attn: Kyle Uhing

Authorized for release by:
5/2/2019 4:55:20 PM

Shawn Hayes, Senior Project Manager
(319)229-8211
shawn.hayes@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Job ID: 310-153493-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative
310-153493-1

Comments
No additional comments.

Receipt
The samples were received on 4/17/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.3º C.

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

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

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

Sample Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-153493-1	MW2	Ground Water	04/15/19 13:31	04/17/19 09:20
310-153493-4	MW9	Ground Water	04/15/19 12:16	04/17/19 09:20
310-153493-5	MW13	Ground Water	04/15/19 14:43	04/17/19 09:20
310-153493-6	MW15	Ground Water	04/15/19 15:27	04/17/19 09:20
310-153493-7	MW17	Ground Water	04/15/19 18:06	04/17/19 09:20
310-153493-8	MW18	Ground Water	04/15/19 10:20	04/17/19 09:20
310-153493-9	MW19	Ground Water	04/15/19 11:11	04/17/19 09:20
310-153493-10	DUP-1	Ground Water	04/15/19 00:00	04/17/19 09:20

Detection Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW2 — Lab Sample ID: 310-153493-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	753		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.234		0.00200		mg/L	1		6020A	Total/NA
Barium	0.140		0.00200		mg/L	1		6020A	Total/NA
Boron	2.26		0.200		mg/L	1		6020A	Total/NA
Calcium	339		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.00156		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.0444		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1850		150		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW9 — Lab Sample ID: 310-153493-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	127		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.947		0.500		mg/L	5		9056A	Total/NA
Sulfate	32.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00677		0.00200		mg/L	1		6020A	Total/NA
Barium	0.576		0.00200		mg/L	1		6020A	Total/NA
Calcium	157		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.00234		0.000500		mg/L	1		6020A	Total/NA
Lead	0.00559		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.0426		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	610		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW13 — Lab Sample ID: 310-153493-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	10.5		5.00		mg/L	5		9056A	Total/NA
Fluoride	1.05		0.500		mg/L	5		9056A	Total/NA
Sulfate	808		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.108		0.00200		mg/L	1		6020A	Total/NA
Barium	0.119		0.00200		mg/L	1		6020A	Total/NA
Boron	2.73		0.200		mg/L	1		6020A	Total/NA
Calcium	215		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0274		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.916		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.0150		0.00500		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1420		60.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW15 — Lab Sample ID: 310-153493-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.07		5.00		mg/L	5		9056A	Total/NA
Sulfate	634		50.0		mg/L	50		9056A	Total/NA
Antimony	0.00207		0.00100		mg/L	1		6020A	Total/NA
Barium	0.0752		0.00200		mg/L	1		6020A	Total/NA
Boron	4.65		0.400		mg/L	2		6020A	Total/NA
Calcium	256		0.500		mg/L	1		6020A	Total/NA
Chromium	0.0204		0.00500		mg/L	1		6020A	Total/NA
Lithium	0.0111		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.208		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.0553		0.00500		mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW15 (Continued) — Lab Sample ID: 310-153493-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	1070		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW17 — Lab Sample ID: 310-153493-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38.7		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.573		0.500		mg/L	5		9056A	Total/NA
Sulfate	834		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.0102		0.00200		mg/L	1		6020A	Total/NA
Barium	0.0369		0.00200		mg/L	1		6020A	Total/NA
Boron	0.762		0.200		mg/L	1		6020A	Total/NA
Calcium	297		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.0103		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.0948		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1900		150		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW18 — Lab Sample ID: 310-153493-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.518		0.500		mg/L	5		9056A	Total/NA
Barium	0.272		0.00200		mg/L	1		6020A	Total/NA
Calcium	74.6		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0203		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	416		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW19 — Lab Sample ID: 310-153493-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.905		0.500		mg/L	5		9056A	Total/NA
Barium	0.322		0.00200		mg/L	1		6020A	Total/NA
Calcium	101		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0333		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	444		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-1 — Lab Sample ID: 310-153493-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	39.9		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.662		0.500		mg/L	5		9056A	Total/NA
Sulfate	905		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.0107		0.00200		mg/L	1		6020A	Total/NA
Barium	0.0414		0.00200		mg/L	1		6020A	Total/NA
Boron	0.743		0.200		mg/L	1		6020A	Total/NA
Calcium	335		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.0116		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.105		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1970		150		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW2

Date Collected: 04/15/19 13:31
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.5**		5.00		mg/L			04/19/19 13:55	5
Fluoride	<0.500		0.500		mg/L			04/19/19 13:55	5
Sulfate	**753**		50.0		mg/L			04/19/19 14:21	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:01	1
Arsenic	**0.234**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:01	1
Barium	**0.140**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:01	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:01	1
Boron	**2.26**		0.200		mg/L		04/18/19 07:55	05/01/19 20:01	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Calcium	**339**		0.500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Cobalt	**0.00156**		0.000500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Lithium	**0.0444**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:01	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:01	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:01	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 13:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1850**		150		mg/L			04/18/19 11:02	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW9

Date Collected: 04/15/19 12:16
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**127**		5.00		mg/L			04/19/19 15:51	5
Fluoride	**0.947**		0.500		mg/L			04/19/19 15:51	5
Sulfate	**32.7**		5.00		mg/L			04/19/19 15:51	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:21	1
Arsenic	**0.00677**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:21	1
Barium	**0.576**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:21	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:21	1
Boron	<0.200		0.200		mg/L		04/18/19 07:55	05/01/19 20:21	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Calcium	**157**		0.500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Cobalt	**0.00234**		0.000500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Lead	**0.00559**		0.000500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Lithium	**0.0426**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:21	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:21	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:21	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**610**		30.0		mg/L			04/18/19 11:02	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW13

Date Collected: 04/15/19 14:43
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10.5**		5.00		mg/L			04/19/19 16:04	5
Fluoride	**1.05**		0.500		mg/L			04/19/19 16:04	5
Sulfate	**808**		50.0		mg/L			04/19/19 16:17	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:24	1
Arsenic	**0.108**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:24	1
Barium	**0.119**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:24	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:24	1
Boron	**2.73**		0.200		mg/L		04/18/19 07:55	05/01/19 20:24	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Calcium	**215**		0.500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Cobalt	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Lithium	**0.0274**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:24	1
Molybdenum	**0.916**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:24	1
Selenium	**0.0150**		0.00500		mg/L		04/18/19 07:55	05/01/19 20:24	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1420**		60.0		mg/L			04/18/19 11:02	1

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW15

Date Collected: 04/15/19 15:27
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-6

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.07**		5.00		mg/L			04/19/19 16:29	5
Fluoride	<0.500		0.500		mg/L			04/19/19 16:29	5
Sulfate	**634**		50.0		mg/L			04/19/19 16:42	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00207**		0.00100		mg/L		04/18/19 07:55	05/01/19 20:31	1
Arsenic	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:31	1
Barium	**0.0752**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:31	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:31	1
Boron	**4.65**		0.400		mg/L		04/18/19 07:55	05/02/19 15:19	2
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Calcium	**256**		0.500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Chromium	**0.0204**		0.00500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Cobalt	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Lithium	**0.0111**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:31	1
Molybdenum	**0.208**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:31	1
Selenium	**0.0553**		0.00500		mg/L		04/18/19 07:55	05/01/19 20:31	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1070**		30.0		mg/L			04/19/19 08:35	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW17

Date Collected: 04/15/19 18:06
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-7

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.7**		5.00		mg/L			04/19/19 16:54	5
Fluoride	**0.573**		0.500		mg/L			04/19/19 16:54	5
Sulfate	**834**		50.0		mg/L			04/19/19 17:32	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:34	1
Arsenic	**0.0102**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:34	1
Barium	**0.0369**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:34	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:34	1
Boron	**0.762**		0.200		mg/L		04/18/19 07:55	05/01/19 20:34	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Calcium	**297**		0.500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Cobalt	**0.0103**		0.000500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Lithium	**0.0948**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:34	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:34	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:34	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1900**		150		mg/L			04/19/19 08:35	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW18

Date Collected: 04/15/19 10:20
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-8

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/19/19 17:45	5
Fluoride	**0.518**		0.500		mg/L			04/19/19 17:45	5
Sulfate	<5.00		5.00		mg/L			04/19/19 17:45	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:37	1
Arsenic	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:37	1
Barium	**0.272**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:37	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:37	1
Boron	<0.200		0.200		mg/L		04/18/19 07:55	05/01/19 20:37	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Calcium	**74.6**		0.500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Cobalt	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Lithium	**0.0203**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:37	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:37	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:37	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**416**		30.0		mg/L			04/19/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW19

Date Collected: 04/15/19 11:11
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-9

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/19/19 17:57	5
Fluoride	**0.905**		0.500		mg/L			04/19/19 17:57	5
Sulfate	<5.00		5.00		mg/L			04/19/19 17:57	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:41	1
Arsenic	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:41	1
Barium	**0.322**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:41	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:41	1
Boron	<0.200		0.200		mg/L		04/18/19 07:55	05/01/19 20:41	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Calcium	**101**		0.500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Cobalt	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Lithium	**0.0333**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:41	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:41	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:41	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**444**		30.0		mg/L			04/19/19 08:35	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: DUP-1

Date Collected: 04/15/19 00:00
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-10

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39.9**		5.00		mg/L			04/19/19 18:10	5
Fluoride	**0.662**		0.500		mg/L			04/19/19 18:10	5
Sulfate	**905**		50.0		mg/L			04/19/19 18:23	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:44	1
Arsenic	**0.0107**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:44	1
Barium	**0.0414**		0.00200		mg/L		04/18/19 07:55	05/01/19 20:44	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:44	1
Boron	**0.743**		0.200		mg/L		04/18/19 07:55	05/01/19 20:44	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Calcium	**335**		0.500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Cobalt	**0.0116**		0.000500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Lithium	**0.105**		0.0100		mg/L		04/18/19 07:55	05/01/19 20:44	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 20:44	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 20:44	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 20:44	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1970**		150		mg/L			04/19/19 08:35	1

Definitions/Glossary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Glossary

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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-236894/3
Matrix: Water
Analysis Batch: 236894

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/19/19 09:08	1
Fluoride	<0.100		0.100		mg/L			04/19/19 09:08	1
Sulfate	<1.00		1.00		mg/L			04/19/19 09:08	1

Lab Sample ID: LCS 310-236894/4
Matrix: Water
Analysis Batch: 236894

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.973		mg/L		100	90 - 110
Fluoride	2.00	1.997		mg/L		100	90 - 110
Sulfate	10.0	10.27		mg/L		103	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-236223/1-A
Matrix: Water
Analysis Batch: 237971

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 236223

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 19:11	1
Arsenic	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 19:11	1
Barium	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 19:11	1
Beryllium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 19:11	1
Boron	<0.200		0.200		mg/L		04/18/19 07:55	05/01/19 19:11	1
Cadmium	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Calcium	<0.500		0.500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Chromium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Cobalt	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Lead	<0.000500		0.000500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Lithium	<0.0100		0.0100		mg/L		04/18/19 07:55	05/01/19 19:11	1
Lithium	<0.0100		0.0100		mg/L		04/18/19 07:55	05/01/19 19:11	1
Molybdenum	<0.00200		0.00200		mg/L		04/18/19 07:55	05/01/19 19:11	1
Selenium	<0.00500		0.00500		mg/L		04/18/19 07:55	05/01/19 19:11	1
Thallium	<0.00100		0.00100		mg/L		04/18/19 07:55	05/01/19 19:11	1

Lab Sample ID: LCS 310-236223/2-A
Matrix: Water
Analysis Batch: 237971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 236223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0200	0.02312		mg/L		116	80 - 120
Arsenic	0.0400	0.04383		mg/L		110	80 - 120
Barium	0.0400	0.04634		mg/L		116	80 - 120
Beryllium	0.0200	0.02119		mg/L		106	80 - 120
Boron	0.880	0.9387		mg/L		107	80 - 120
Cadmium	0.0200	0.02291		mg/L		115	80 - 120
Calcium	2.00	2.236		mg/L		112	80 - 120
Chromium	0.0400	0.04278		mg/L		107	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-236223/2-A
Matrix: Water
Analysis Batch: 237971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 236223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0200	0.02165		mg/L		108	80 - 120
Lead	0.0200	0.02341		mg/L		117	80 - 120
Lithium	0.100	0.09883		mg/L		99	80 - 120
Molybdenum	0.0400	0.04258		mg/L		106	80 - 120
Selenium	0.0400	0.04415		mg/L		110	80 - 120
Thallium	0.0160	0.01798		mg/L		112	80 - 120

Lab Sample ID: 310-153493-5 DU
Matrix: Ground Water
Analysis Batch: 237971

Client Sample ID: MW13
Prep Type: Total/NA
Prep Batch: 236223

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00100		<0.00100		mg/L		NC	20
Arsenic	0.108		0.1079		mg/L		0.2	20
Barium	0.119		0.1213		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	2.73		2.785		mg/L		2	20
Cadmium	<0.000500		<0.000500		mg/L		NC	20
Calcium	215		217.3		mg/L		1	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	0.0274		0.02851		mg/L		4	20
Molybdenum	0.916		0.9280		mg/L		1	20
Selenium	0.0150		0.01461		mg/L		3	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-236308/1-A
Matrix: Water
Analysis Batch: 236547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 236308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/18/19 12:17	04/19/19 13:27	1

Lab Sample ID: LCS 310-236308/2-A
Matrix: Water
Analysis Batch: 236547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 236308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00167	0.001642		mg/L		99	80 - 120

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

Lab Sample ID: MB 310-236297/1
Matrix: Water
Analysis Batch: 236297

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<30.0		30.0		mg/L			04/18/19 11:02	1

Lab Sample ID: LCS 310-236297/2
Matrix: Water
Analysis Batch: 236297

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	1036		mg/L		104	90 - 110		

Lab Sample ID: MB 310-236400/1
Matrix: Water
Analysis Batch: 236400

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<30.0		30.0		mg/L			04/19/19 08:35	1

Lab Sample ID: LCS 310-236400/2
Matrix: Water
Analysis Batch: 236400

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	1000		mg/L		100	90 - 110		

Lab Sample ID: 310-153493-6 DU
Matrix: Ground Water
Analysis Batch: 236400

Client Sample ID: MW15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1070			1062		mg/L				0.9	24

HPLC/IC

Analysis Batch: 236894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	9056A	
310-153493-1	MW2	Total/NA	Ground Water	9056A	
310-153493-4	MW9	Total/NA	Ground Water	9056A	
310-153493-5	MW13	Total/NA	Ground Water	9056A	
310-153493-5	MW13	Total/NA	Ground Water	9056A	
310-153493-6	MW15	Total/NA	Ground Water	9056A	
310-153493-6	MW15	Total/NA	Ground Water	9056A	
310-153493-7	MW17	Total/NA	Ground Water	9056A	
310-153493-7	MW17	Total/NA	Ground Water	9056A	
310-153493-8	MW18	Total/NA	Ground Water	9056A	
310-153493-9	MW19	Total/NA	Ground Water	9056A	
310-153493-10	DUP-1	Total/NA	Ground Water	9056A	
310-153493-10	DUP-1	Total/NA	Ground Water	9056A	
MB 310-236894/3	Method Blank	Total/NA	Water	9056A	
LCS 310-236894/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 236223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	3010A	
310-153493-4	MW9	Total/NA	Ground Water	3010A	
310-153493-5	MW13	Total/NA	Ground Water	3010A	
310-153493-6	MW15	Total/NA	Ground Water	3010A	
310-153493-7	MW17	Total/NA	Ground Water	3010A	
310-153493-8	MW18	Total/NA	Ground Water	3010A	
310-153493-9	MW19	Total/NA	Ground Water	3010A	
310-153493-10	DUP-1	Total/NA	Ground Water	3010A	
MB 310-236223/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-236223/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-153493-5 DU	MW13	Total/NA	Ground Water	3010A	

Prep Batch: 236308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	7470A	
310-153493-4	MW9	Total/NA	Ground Water	7470A	
310-153493-5	MW13	Total/NA	Ground Water	7470A	
310-153493-6	MW15	Total/NA	Ground Water	7470A	
310-153493-7	MW17	Total/NA	Ground Water	7470A	
310-153493-8	MW18	Total/NA	Ground Water	7470A	
310-153493-9	MW19	Total/NA	Ground Water	7470A	
310-153493-10	DUP-1	Total/NA	Ground Water	7470A	
MB 310-236308/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-236308/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 236547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	7470A	236308
310-153493-4	MW9	Total/NA	Ground Water	7470A	236308
310-153493-5	MW13	Total/NA	Ground Water	7470A	236308
310-153493-6	MW15	Total/NA	Ground Water	7470A	236308

Metals (Continued)

Analysis Batch: 236547 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-7	MW17	Total/NA	Ground Water	7470A	236308
310-153493-8	MW18	Total/NA	Ground Water	7470A	236308
310-153493-9	MW19	Total/NA	Ground Water	7470A	236308
310-153493-10	DUP-1	Total/NA	Ground Water	7470A	236308
MB 310-236308/1-A	Method Blank	Total/NA	Water	7470A	236308
LCS 310-236308/2-A	Lab Control Sample	Total/NA	Water	7470A	236308

Analysis Batch: 237971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	6020A	236223
310-153493-4	MW9	Total/NA	Ground Water	6020A	236223
310-153493-5	MW13	Total/NA	Ground Water	6020A	236223
310-153493-6	MW15	Total/NA	Ground Water	6020A	236223
310-153493-7	MW17	Total/NA	Ground Water	6020A	236223
310-153493-8	MW18	Total/NA	Ground Water	6020A	236223
310-153493-9	MW19	Total/NA	Ground Water	6020A	236223
310-153493-10	DUP-1	Total/NA	Ground Water	6020A	236223
MB 310-236223/1-A	Method Blank	Total/NA	Water	6020A	236223
LCS 310-236223/2-A	Lab Control Sample	Total/NA	Water	6020A	236223
310-153493-5 DU	MW13	Total/NA	Ground Water	6020A	236223

Analysis Batch: 237980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	6020A	236223
310-153493-4	MW9	Total/NA	Ground Water	6020A	236223
310-153493-5	MW13	Total/NA	Ground Water	6020A	236223
310-153493-6	MW15	Total/NA	Ground Water	6020A	236223
310-153493-7	MW17	Total/NA	Ground Water	6020A	236223
310-153493-8	MW18	Total/NA	Ground Water	6020A	236223
310-153493-9	MW19	Total/NA	Ground Water	6020A	236223
310-153493-10	DUP-1	Total/NA	Ground Water	6020A	236223
MB 310-236223/1-A	Method Blank	Total/NA	Water	6020A	236223
LCS 310-236223/2-A	Lab Control Sample	Total/NA	Water	6020A	236223
310-153493-5 DU	MW13	Total/NA	Ground Water	6020A	236223

Analysis Batch: 238065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-6	MW15	Total/NA	Ground Water	6020A	236223

General Chemistry

Analysis Batch: 236297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	SM 2540C	
310-153493-4	MW9	Total/NA	Ground Water	SM 2540C	
310-153493-5	MW13	Total/NA	Ground Water	SM 2540C	
MB 310-236297/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-236297/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

General Chemistry

Analysis Batch: 236400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-6	MW15	Total/NA	Ground Water	SM 2540C	
310-153493-7	MW17	Total/NA	Ground Water	SM 2540C	
310-153493-8	MW18	Total/NA	Ground Water	SM 2540C	
310-153493-9	MW19	Total/NA	Ground Water	SM 2540C	
310-153493-10	DUP-1	Total/NA	Ground Water	SM 2540C	
MB 310-236400/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-236400/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-153493-6 DU	MW15	Total/NA	Ground Water	SM 2540C	

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW2

Lab Sample ID: 310-153493-1

Date Collected: 04/15/19 13:31

Matrix: Ground Water

Date Received: 04/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 13:55	MLU	TAL CF
Total/NA	Analysis	9056A		50	236894	04/19/19 14:21	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:01	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:01	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 13:49	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236297	04/18/19 11:02	SAS	TAL CF

Client Sample ID: MW9

Lab Sample ID: 310-153493-4

Date Collected: 04/15/19 12:16

Matrix: Ground Water

Date Received: 04/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 15:51	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:21	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:21	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:00	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236297	04/18/19 11:02	SAS	TAL CF

Client Sample ID: MW13

Lab Sample ID: 310-153493-5

Date Collected: 04/15/19 14:43

Matrix: Ground Water

Date Received: 04/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 16:04	MLU	TAL CF
Total/NA	Analysis	9056A		50	236894	04/19/19 16:17	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:24	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:24	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:02	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236297	04/18/19 11:02	SAS	TAL CF

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW15

Date Collected: 04/15/19 15:27
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 16:29	MLU	TAL CF
Total/NA	Analysis	9056A		50	236894	04/19/19 16:42	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:31	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:31	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		2	238065	05/02/19 15:19	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:04	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236400	04/19/19 08:35	SAS	TAL CF

Client Sample ID: MW17

Date Collected: 04/15/19 18:06
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 16:54	MLU	TAL CF
Total/NA	Analysis	9056A		50	236894	04/19/19 17:32	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:34	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:34	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:07	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236400	04/19/19 08:35	SAS	TAL CF

Client Sample ID: MW18

Date Collected: 04/15/19 10:20
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 17:45	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:37	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:37	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:09	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236400	04/19/19 08:35	SAS	TAL CF

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Client Sample ID: MW19

Date Collected: 04/15/19 11:11
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 17:57	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:41	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:41	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:11	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236400	04/19/19 08:35	SAS	TAL CF

Client Sample ID: DUP-1

Date Collected: 04/15/19 00:00
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	236894	04/19/19 18:10	MLU	TAL CF
Total/NA	Analysis	9056A		50	236894	04/19/19 18:23	MLU	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237971	05/01/19 20:44	SAD	TAL CF
Total/NA	Prep	3010A			236223	04/18/19 07:55	HED	TAL CF
Total/NA	Analysis	6020A		1	237980	05/01/19 20:44	SAD	TAL CF
Total/NA	Prep	7470A			236308	04/18/19 12:17	JNR	TAL CF
Total/NA	Analysis	7470A		1	236547	04/19/19 14:13	JNR	TAL CF
Total/NA	Analysis	SM 2540C		1	236400	04/19/19 08:35	SAS	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Omaha Public Power District
Job ID: 310-153493-1
Project/Site: North Omaha Station

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
AIHA-LAP, LLC	IHLAP		101044	11-01-20
Georgia	State Program	4	IA100001 (OR)	09-29-19
Illinois	NELAP	5	200024	11-29-19
Iowa	State Program	7	007	12-01-19
Kansas	NELAP	7	E-10341	01-31-20
Minnesota	NELAP	5	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	1	3349	08-22-19
North Dakota	State Program	8	R-186	09-29-19
Oregon	NELAP	10	IA100001	09-29-19
USDA	Federal		P330-19-00003	01-02-22

Method Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station

Job ID: 310-153493-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

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

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

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL (319)277-2401

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

310-153493 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public

City/State: CITY Omaha STATE NE | Project:

Receipt Information

Date/Time Received: DATE 4/17/19 TIME 0920 | Received By: DW

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ TA Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: | Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.2 | Corrected Temp (°C): 1.3

• **Sample Container Temperature**

Container type(s) used: CONTAINER 1 CONTAINER 2

Uncorrected Temp (°C): TEMP 1 TEMP 2 | Corrected Temp (°C): TEMP 1 TEMP 2

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Place COC scanning label here 228

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public

City/State: CITY Omaha STATE NE | Project:

Receipt Information

Date/Time Received: DATE 4/17/19 TIME 0920 | Received By: DB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ TA Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 2
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 1 | Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.9 | Corrected Temp (°C): 0.8

• **Sample Container Temperature**

Container type(s) used: CONTAINER 1 | CONTAINER 2

Uncorrected Temp (°C): TEMP 1 TEMP 2 | Corrected Temp (°C): TEMP 1 TEMP 2

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

TestAmerica Omaha SC
268

TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica

Client Information	Sampler: Kyle K. Uhing	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: Kyle Uhing	Phone:	E-Mail: shawn.hayes@testamericainc.com		Page:
Company: Omaha Public Power District		Analysis Requested		Job #:
Address: 444 South 16th Street Mall 9E/EP1	Due Date Requested:			Preservation Codes:
City: Omaha	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: NE, 68102-2247				
Phone: 402-636-2515(Tel)	PO #:			
Email: balorence@oppd.com	WO #:			Other:
Project Name: North Omaha Station CCR	TestAmerica Project #: 31007560			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226; 9320_Ra228; Combined Ra226 and Ra228	6020A CCR List, 7470A Mercury	2540C TDS, 9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
MW2	4/15/2019	13:31	G	GW			X	X	X		Appendix III and IV
MW9		12:16	G	GW			X	X	X		Appendix III and IV
MW13		14:43	G	GW			X	X	X		Appendix III and IV
MW15		15:27	G	GW			X	X	X		Appendix III and IV
MW17		18:06	G	GW			X	X	X		Appendix III and IV
MW18		10:20	G	GW			X	X	X		Appendix III and IV
MW19		11:11	G	GW			X	X	X		Appendix III and IV
DUP1	4/15/2019	—	G	GW			X	X	X		Appendix III and IV

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Kyle K. Uhing	4/16/2019 9:00	OPPD		4.16.19 0900	TestA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4.16.19 1700	TestA		4/17/19 0920	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW2	310-153493-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW2	310-153493-C-1	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW2	310-153493-D-1	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW6	310-153493-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW8	310-153493-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW9	310-153493-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW9	310-153493-C-4	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW9	310-153493-D-4	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW13	310-153493-A-5	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW13	310-153493-C-5	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW13	310-153493-D-5	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW15	310-153493-A-6	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW15	310-153493-C-6	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW15	310-153493-D-6	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW17	310-153493-A-7	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW17	310-153493-C-7	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW17	310-153493-D-7	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW18	310-153493-A-8	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW18	310-153493-C-8	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW18	310-153493-D-8	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW19	310-153493-A-9	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW19	310-153493-C-9	Plastic 1 liter - Nitric Acid	<2	_____	_____
MW19	310-153493-D-9	Plastic 1 liter - Nitric Acid	<2	_____	_____
DUP-1	310-153493-A-10	Plastic 250ml - with Nitric Acid	<2	_____	_____
DUP-1	310-153493-C-10	Plastic 1 liter - Nitric Acid	<2	_____	_____
DUP-1	310-153493-D-10	Plastic 1 liter - Nitric Acid	<2	_____	_____

Login Sample Receipt Checklist

Client: Omaha Public Power District

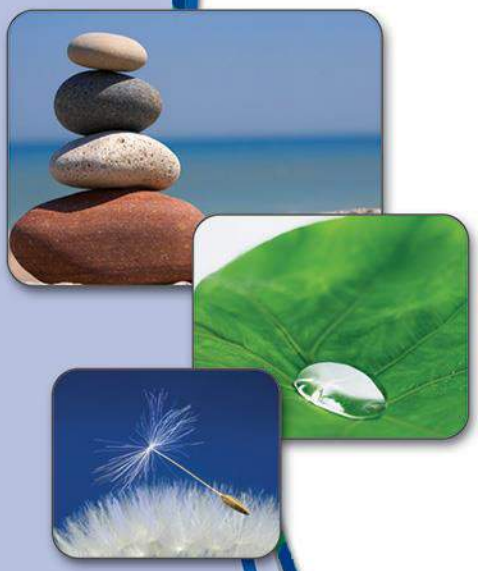
Job Number: 310-153493-1

Login Number: 153493
List Number: 1
Creator: Bovy, Lorrainna L

List Source: Eurofins TestAmerica, Cedar Falls

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

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-153493-2
Client Project/Site: North Omaha Station CCR

For:
Omaha Public Power District
Attn: Accounts Payable, 4E/EP-5
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

Attn: Kyle Uhing

Authorized for release by:
7/24/2019 12:05:28 PM

Shawn Hayes, Senior Project Manager
(319)229-8211
shawn.hayes@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Job ID: 310-153493-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative
310-153493-2

Comments
No additional comments.

Receipt
The samples were received on 4/17/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.3º C.

RAD
Method(s) 9320: Ra-228 Prep Batch 160-430972

The detector used to count the LCSD (Orange 1) failed its beta background for 6/26. This excursion does not directly affect client samples. The LCS and LCSD both were within QC limits demonstrating acceptable method performance. The data is reported. MW15 (310-153493-6), MW17 (310-153493-7), MW18 (310-153493-8), MW19 (310-153493-9), DUP-1 (310-153493-10), (LCS 160-430972/1-A), (LCSD 160-430972/2-A) and (MB 160-430972/18-A)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-430972:

The following samples were prepared at a reduced aliquot due to yellow discoloration: MW18 (310-153493-8) and MW19 (310-153493-9).

Method(s) PrecSep_0: Radium 228 Prep Batch 160-430946:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: MW9 (310-153493-4)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-430963

The following samples were prepared at a reduced aliquot due to yellow discoloration: MW18 (310-153493-8) and MW19 (310-153493-9).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-430886:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: MW9 (310-153493-4)

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

Sample Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-153493-1	MW2	Ground Water	04/15/19 13:31	04/17/19 09:20	
310-153493-4	MW9	Ground Water	04/15/19 12:16	04/17/19 09:20	
310-153493-5	MW13	Ground Water	04/15/19 14:43	04/17/19 09:20	
310-153493-6	MW15	Ground Water	04/15/19 15:27	04/17/19 09:20	
310-153493-7	MW17	Ground Water	04/15/19 18:06	04/17/19 09:20	
310-153493-8	MW18	Ground Water	04/15/19 10:20	04/17/19 09:20	
310-153493-9	MW19	Ground Water	04/15/19 11:11	04/17/19 09:20	
310-153493-10	DUP-1	Ground Water	04/15/19 00:00	04/17/19 09:20	

Detection Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW2 — Lab Sample ID: 310-153493-1

No Detections.

Client Sample ID: MW9 — Lab Sample ID: 310-153493-4

No Detections.

Client Sample ID: MW13 — Lab Sample ID: 310-153493-5

No Detections.

Client Sample ID: MW15 — Lab Sample ID: 310-153493-6

No Detections.

Client Sample ID: MW17 — Lab Sample ID: 310-153493-7

No Detections.

Client Sample ID: MW18 — Lab Sample ID: 310-153493-8

No Detections.

Client Sample ID: MW19 — Lab Sample ID: 310-153493-9

No Detections.

Client Sample ID: DUP-1 — Lab Sample ID: 310-153493-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW2

Date Collected: 04/15/19 13:31
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-1

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.221		0.102	0.103	1.00	0.116	pCi/L	06/06/19 08:14	07/22/19 10:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*40 - 110*	*06/06/19 08:14*	*07/22/19 10:36*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.791		0.383	0.390	1.00	0.564	pCi/L	06/06/19 09:13	07/02/19 15:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*40 - 110*	*06/06/19 09:13*	*07/02/19 15:51*	*1*
Y Carrier	*74.4*		*40 - 110*	*06/06/19 09:13*	*07/02/19 15:51*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.396	0.403	5.00	0.564	pCi/L		07/23/19 08:26	1

Client Sample ID: MW9

Date Collected: 04/15/19 12:16
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-4

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.839**		0.194	0.209	1.00	0.150	pCi/L	06/05/19 09:32	07/22/19 21:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*06/05/19 09:32*	*07/22/19 21:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.188	U	0.480	0.480	1.00	0.820	pCi/L	06/05/19 11:06	07/08/19 09:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*06/05/19 11:06*	*07/08/19 09:42*	*1*
Y Carrier	*82.6*		*40 - 110*	*06/05/19 11:06*	*07/08/19 09:42*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.03**		0.518	0.524	5.00	0.820	pCi/L		07/24/19 08:24	1

Client Sample ID: MW13

Date Collected: 04/15/19 14:43
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-5

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0507	U	0.0676	0.0678	1.00	0.113	pCi/L	06/05/19 09:32	07/22/19 21:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*06/05/19 09:32*	*07/22/19 21:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.172	U	0.352	0.352	1.00	0.597	pCi/L	06/05/19 11:06	07/08/19 09:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*06/05/19 11:06*	*07/08/19 09:42*	*1*
Y Carrier	*78.5*		*40 - 110*	*06/05/19 11:06*	*07/08/19 09:42*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.223	U	0.358	0.358	5.00	0.597	pCi/L		07/24/19 08:24	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW15

Date Collected: 04/15/19 15:27
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-6

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.123	U	0.0926	0.0933	1.00	0.134	pCi/L	06/05/19 12:57	07/02/19 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:30*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.198	U	0.273	0.274	1.00	0.514	pCi/L	06/05/19 13:24	06/26/19 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*
Y Carrier	*80.0*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0756	U	0.288	0.289	5.00	0.514	pCi/L		07/24/19 08:24	1

Client Sample ID: MW17

Date Collected: 04/15/19 18:06
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-7

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0965	U	0.0771	0.0776	1.00	0.112	pCi/L	06/05/19 12:57	07/02/19 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:30*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.231	U	0.291	0.292	1.00	0.482	pCi/L	06/05/19 13:24	06/26/19 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*
Y Carrier	*78.9*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.328	U	0.301	0.302	5.00	0.482	pCi/L		07/24/19 08:24	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW18

Date Collected: 04/15/19 10:20
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-8

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.321**		0.131	0.134	1.00	0.134	pCi/L	06/05/19 12:57	07/02/19 13:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:31*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.444	U	0.354	0.357	1.00	0.563	pCi/L	06/05/19 13:24	06/26/19 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*
Y Carrier	*78.1*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.765**		0.377	0.381	5.00	0.563	pCi/L		07/19/19 07:50	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW19

Date Collected: 04/15/19 11:11
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-9

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.396**		0.164	0.168	1.00	0.176	pCi/L	06/05/19 12:57	07/02/19 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.219	U	0.331	0.332	1.00	0.556	pCi/L	06/05/19 13:24	06/26/19 11:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:54*	*1*
Y Carrier	*81.1*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:54*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.614**		0.369	0.372	5.00	0.556	pCi/L		07/19/19 07:50	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: DUP-1

Date Collected: 04/15/19 00:00
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-10

Matrix: Ground Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0169	U	0.0628	0.0628	1.00	0.139	pCi/L	06/05/19 12:57	07/02/19 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.497**		0.268	0.272	1.00	0.400	pCi/L	06/05/19 13:24	06/26/19 11:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:54*	*1*
Y Carrier	*79.6*		*40 - 110*	*06/05/19 13:24*	*06/26/19 11:54*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.480**		0.275	0.279	5.00	0.400	pCi/L		07/24/19 08:24	1

Definitions/Glossary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-430886/24-A
Matrix: Water
Analysis Batch: 436097

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430886

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04720	U	0.0661	0.0662	1.00	0.112	pCi/L	06/05/19 09:32	07/23/19 10:14	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*06/05/19 09:32*	*07/23/19 10:14*	*1*

Lab Sample ID: LCS 160-430886/1-A
Matrix: Water
Analysis Batch: 435773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430886

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.093		0.947	1.00	0.0720	pCi/L	80	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: MB 160-430963/18-A
Matrix: Water
Analysis Batch: 433407

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430963

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03779	U	0.0600	0.0601	1.00	0.105	pCi/L	06/05/19 12:57	07/02/19 13:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*06/05/19 12:57*	*07/02/19 13:32*	*1*

Lab Sample ID: LCS 160-430963/1-A
Matrix: Water
Analysis Batch: 433408

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430963

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	8.968		0.968	1.00	0.110	pCi/L	79	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*100*		*40 - 110*

Lab Sample ID: LCSD 160-430963/2-A
Matrix: Water
Analysis Batch: 433410

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 430963

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	9.097		0.976	1.00	0.127	pCi/L	80	75 - 125	0.07	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-430963/2-A
Matrix: Water
Analysis Batch: 433410

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 430963

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	101		40 - 110

Lab Sample ID: MB 160-431033/23-A
Matrix: Water
Analysis Batch: 435762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431033

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01530	U	0.0479	0.0479	1.00	0.0915	pCi/L	06/06/19 08:14	07/22/19 10:36	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	06/06/19 08:14	07/22/19 10:36	1

Lab Sample ID: LCS 160-431033/1-A
Matrix: Water
Analysis Batch: 435081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431033

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.865		1.03	1.00	0.101	pCi/L	87	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.5		40 - 110

Lab Sample ID: LCSD 160-431033/2-A
Matrix: Water
Analysis Batch: 435081

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431033

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	11.90		1.24	1.00	0.126	pCi/L	105	75 - 125	0.90	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	86.7		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-430946/24-A
Matrix: Water
Analysis Batch: 434008

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430946

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2219	U	0.269	0.270	1.00	0.445	pCi/L	06/05/19 11:06	07/08/19 09:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110	06/05/19 11:06	07/08/19 09:46	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-430946/24-A
Matrix: Water
Analysis Batch: 434008

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430946

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.4		40 - 110	06/05/19 11:06	07/08/19 09:46	1

Lab Sample ID: LCS 160-430946/1-A
Matrix: Water
Analysis Batch: 434009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430946

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.04	8.616		1.02	1.00	0.375	pCi/L	95	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	87.5		40 - 110

Lab Sample ID: MB 160-430972/18-A
Matrix: Water
Analysis Batch: 432948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430972

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07694	U	0.213	0.213	1.00	0.367	pCi/L	06/05/19 13:24	06/26/19 11:54	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110	06/05/19 13:24	06/26/19 11:54	1
Y Carrier	82.2		40 - 110	06/05/19 13:24	06/26/19 11:54	1

Lab Sample ID: LCS 160-430972/1-A
Matrix: Water
Analysis Batch: 432948

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430972

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.08	9.745		1.13	1.00	0.405	pCi/L	107	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	77.8		40 - 110

Lab Sample ID: LCSD 160-430972/2-A
Matrix: Water
Analysis Batch: 432948

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 430972

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.08	9.520		1.10	1.00	0.355	pCi/L	105	75 - 125	0.10	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-430972/2-A
Matrix: Water
Analysis Batch: 432948

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 430972

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	80.4		40 - 110

Lab Sample ID: MB 160-431038/23-A
Matrix: Water
Analysis Batch: 433445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431038

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4491	U	0.303	0.305	1.00	0.469	pCi/L	06/06/19 09:13	07/02/19 15:51	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	06/06/19 09:13	07/02/19 15:51	1
Y Carrier	71.8		40 - 110	06/06/19 09:13	07/02/19 15:51	1

Lab Sample ID: LCS 160-431038/1-A
Matrix: Water
Analysis Batch: 433407

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431038

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.06	9.372		1.16	1.00	0.519	pCi/L	103	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.5		40 - 110
Y Carrier	70.7		40 - 110

Lab Sample ID: LCSD 160-431038/2-A
Matrix: Water
Analysis Batch: 433407

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431038

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.06	10.21		1.25	1.00	0.541	pCi/L	113	75 - 125	0.35	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	86.7		40 - 110
Y Carrier	70.7		40 - 110

Rad

Prep Batch: 430886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-4	MW9	Total/NA	Ground Water	PrecSep-21	
310-153493-5	MW13	Total/NA	Ground Water	PrecSep-21	
MB 160-430886/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-430886/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 430946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-4	MW9	Total/NA	Ground Water	PrecSep_0	
310-153493-5	MW13	Total/NA	Ground Water	PrecSep_0	
MB 160-430946/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-430946/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 430963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-6	MW15	Total/NA	Ground Water	PrecSep-21	
310-153493-7	MW17	Total/NA	Ground Water	PrecSep-21	
310-153493-8	MW18	Total/NA	Ground Water	PrecSep-21	
310-153493-9	MW19	Total/NA	Ground Water	PrecSep-21	
310-153493-10	DUP-1	Total/NA	Ground Water	PrecSep-21	
MB 160-430963/18-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-430963/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-430963/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 430972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-6	MW15	Total/NA	Ground Water	PrecSep_0	
310-153493-7	MW17	Total/NA	Ground Water	PrecSep_0	
310-153493-8	MW18	Total/NA	Ground Water	PrecSep_0	
310-153493-9	MW19	Total/NA	Ground Water	PrecSep_0	
310-153493-10	DUP-1	Total/NA	Ground Water	PrecSep_0	
MB 160-430972/18-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-430972/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-430972/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 431033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	PrecSep-21	
MB 160-431033/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-431033/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-431033/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 431038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-153493-1	MW2	Total/NA	Ground Water	PrecSep_0	
MB 160-431038/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-431038/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-431038/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW2

Date Collected: 04/15/19 13:31
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			431033	06/06/19 08:14	EJQ	TAL SL
Total/NA	Analysis	9315		1	435762	07/22/19 10:36	CDR	TAL SL
Total/NA	Prep	PrecSep_0			431038	06/06/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9320		1	433445	07/02/19 15:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	435960	07/23/19 08:26	SMP	TAL SL

Client Sample ID: MW9

Date Collected: 04/15/19 12:16
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430886	06/05/19 09:32	EJQ	TAL SL
Total/NA	Analysis	9315		1	435773	07/22/19 21:17	CDR	TAL SL
Total/NA	Prep	PrecSep_0			430946	06/05/19 11:06	EJQ	TAL SL
Total/NA	Analysis	9320		1	434009	07/08/19 09:42	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	436151	07/24/19 08:24	SMP	TAL SL

Client Sample ID: MW13

Date Collected: 04/15/19 14:43
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430886	06/05/19 09:32	EJQ	TAL SL
Total/NA	Analysis	9315		1	435773	07/22/19 21:17	CDR	TAL SL
Total/NA	Prep	PrecSep_0			430946	06/05/19 11:06	EJQ	TAL SL
Total/NA	Analysis	9320		1	434009	07/08/19 09:42	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	436151	07/24/19 08:24	SMP	TAL SL

Client Sample ID: MW15

Date Collected: 04/15/19 15:27
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430963	06/05/19 12:57	ORM	TAL SL
Total/NA	Analysis	9315		1	433408	07/02/19 13:30	CDR	TAL SL
Total/NA	Prep	PrecSep_0			430972	06/05/19 13:24	ORM	TAL SL
Total/NA	Analysis	9320		1	432948	06/26/19 11:53	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	436151	07/24/19 08:24	SMP	TAL SL

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Client Sample ID: MW17
Date Collected: 04/15/19 18:06
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430963	06/05/19 12:57	ORM	TAL SL
Total/NA	Analysis	9315		1	433408	07/02/19 13:30	CDR	TAL SL
Total/NA	Prep	PrecSep_0			430972	06/05/19 13:24	ORM	TAL SL
Total/NA	Analysis	9320		1	432948	06/26/19 11:53	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	436151	07/24/19 08:24	SMP	TAL SL

Client Sample ID: MW18
Date Collected: 04/15/19 10:20
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430963	06/05/19 12:57	ORM	TAL SL
Total/NA	Analysis	9315		1	433407	07/02/19 13:31	KLS	TAL SL
Total/NA	Prep	PrecSep_0			430972	06/05/19 13:24	ORM	TAL SL
Total/NA	Analysis	9320		1	432948	06/26/19 11:53	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	435564	07/19/19 07:50	SMP	TAL SL

Client Sample ID: MW19
Date Collected: 04/15/19 11:11
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430963	06/05/19 12:57	ORM	TAL SL
Total/NA	Analysis	9315		1	433407	07/02/19 13:32	KLS	TAL SL
Total/NA	Prep	PrecSep_0			430972	06/05/19 13:24	ORM	TAL SL
Total/NA	Analysis	9320		1	432948	06/26/19 11:54	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	435564	07/19/19 07:50	SMP	TAL SL

Client Sample ID: DUP-1
Date Collected: 04/15/19 00:00
Date Received: 04/17/19 09:20

Lab Sample ID: 310-153493-10
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			430963	06/05/19 12:57	ORM	TAL SL
Total/NA	Analysis	9315		1	433407	07/02/19 13:32	KLS	TAL SL
Total/NA	Prep	PrecSep_0			430972	06/05/19 13:24	ORM	TAL SL
Total/NA	Analysis	9320		1	432948	06/26/19 11:54	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	436151	07/24/19 08:24	SMP	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Omaha Public Power District
Job ID: 310-153493-2
Project/Site: North Omaha Station CCR

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
AIHA-LAP, LLC	IHLAP		101044	11-01-20
Georgia	State		IA100001 (OR)	09-29-19
Georgia	State Program	4	IA100001 (OR)	09-29-19
Illinois	NELAP	5	200024	11-29-19
Illinois	NELAP		200024	11-29-19
Iowa	State Program	7	007	12-01-19
Kansas	NELAP	7	E-10341	01-31-20
Minnesota	NELAP	5	019-999-319	12-31-19
Minnesota	NELAP		019-999-319	12-31-19
Minnesota (Petrofund)	State Program	1	3349	08-22-19
North Dakota	State Program	8	R-186	09-29-19
Oregon	NELAP	10	IA100001	09-29-19
Oregon	NELAP		IA100001	09-29-19
USDA	Federal		P330-19-00003	01-02-22

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP		L2305	04-06-22
ANAB	DoD		L2305	04-06-22
ANAB	DOE		L2305.01	04-06-22
Arizona	State		AZ0813	12-08-19
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-20
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-20
Florida	NELAP		E87689	06-30-20
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-20
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-20
Missouri	State Program	7	780	06-30-19 *
Nevada	State Program	9	MO000542018-1	07-31-19 *
New Jersey	NELAP	2	MO002	06-30-20
New York	NELAP	2	11616	03-31-20
New York	NELAP		11616	04-01-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State		9997	08-31-19
Oklahoma	State Program	6	9997	08-31-19 *
Pennsylvania	NELAP	3	68-00540	02-28-20
Pennsylvania	NELAP		68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19 *
Texas	NELAP	6	T104704193-18-13	07-31-19 *
Texas	NELAP		T104704193-19-13	07-31-20
US Fish & Wildlife	Federal		058448	07-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Omaha Public Power District
Job ID: 310-153493-2
Project/Site: North Omaha Station CCR

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19 *
Virginia	NELAP	3	460230	06-14-20
Virginia	NELAP		10310	06-14-20
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

310-153493 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: Omaha Public			
City/State: CITY Omaha	STATE NE	Project:	
Receipt Information			
Date/Time Received: DATE 4/17/19	TIME 0920	Received By: DV	
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ TA Field Services ☐ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 1 of 2	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID:		Correction Factor (°C): -0.1	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 1.2		Corrected Temp (°C): 1.3	
• **Sample Container Temperature**			
Container type(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):	TEMP 1 TEMP 2	Corrected Temp (°C):	TEMP 1 TEMP 2
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Document: CF-LG-WI-002
Revision: 24
Date: 03/07/2019

TestAmerica-Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Place COC scanning label here 268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public

City/State: CITY Omaha STATE NE | Project:

Receipt Information

Date/Time Received: DATE 4/17/19 TIME 0920 | Received By: DD

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ TA Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 2
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 1 | Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.9 | Corrected Temp (°C): 0.8

• **Sample Container Temperature**

Container type(s) used: CONTAINER 1 | CONTAINER 2

Uncorrected Temp (°C): TEMP 1 TEMP 2 | Corrected Temp (°C): TEMP 1 TEMP 2

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

TestAmerica Omaha SC
268

TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica

Client Information	Sampler: Kyle K. Uhing	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: Kyle Uhing	Phone:	E-Mail: shawn.hayes@testamericainc.com		Page:
Company: Omaha Public Power District				Job #:
Address: 444 South 16th Street Mall 9E/EP1	Due Date Requested:			
City: Omaha	TAT Requested (days):			
State, Zip: NE, 68102-2247				
Phone: 402-636-2515(Tel)	PO #:			
Email: balorence@oppd.com	WO #:			
Project Name: North Omaha Station CCR	TestAmerica Project #: 31007560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra226, Combined Ra226 and Ra228	6020A CCR List, 7470A Mercury	2540C TDS, 9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
MW2	4/15/2019	13:31	G	GW			X	X	X		Appendix III and IV
MW9		12:16	G	GW			X	X	X		Appendix III and IV
MW13		14:43	G	GW			X	X	X		Appendix III and IV
MW15		15:27	G	GW			X	X	X		Appendix III and IV
MW17		18:06	G	GW			X	X	X		Appendix III and IV
MW18		10:20	G	GW			X	X	X		Appendix III and IV
MW19		11:11	G	GW			X	X	X		Appendix III and IV
DUP1	4/15/2019	—	G	GW			X	X	X		Appendix III and IV

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Kyle K. Uhing	4/16/2019 9:00	OPPD		4.16.19 0900	Test A
2		4.16.19 1700	Test A		4/17/19 0920	TAA
3		Date/Time:	Company		Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Container Summary Report

310-153493

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW2	310-153493-A-1	Plastic 250ml - with Nitric Acid	<2		
MW2	310-153493-C-1	Plastic 1 liter - Nitric Acid	<2		
MW2	310-153493-D-1	Plastic 1 liter - Nitric Acid	<2		
MW6	310-153493-A-2	Plastic 250ml - with Nitric Acid	<2		
MW8	310-153493-A-3	Plastic 250ml - with Nitric Acid	<2		
MW9	310-153493-A-4	Plastic 250ml - with Nitric Acid	<2		
MW9	310-153493-C-4	Plastic 1 liter - Nitric Acid	<2		
MW9	310-153493-D-4	Plastic 1 liter - Nitric Acid	<2		
MW13	310-153493-A-5	Plastic 250ml - with Nitric Acid	<2		
MW13	310-153493-C-5	Plastic 1 liter - Nitric Acid	<2		
MW13	310-153493-D-5	Plastic 1 liter - Nitric Acid	<2		
MW15	310-153493-A-6	Plastic 250ml - with Nitric Acid	<2		
MW15	310-153493-C-6	Plastic 1 liter - Nitric Acid	<2		
MW15	310-153493-D-6	Plastic 1 liter - Nitric Acid	<2		
MW17	310-153493-A-7	Plastic 250ml - with Nitric Acid	<2		
MW17	310-153493-C-7	Plastic 1 liter - Nitric Acid	<2		
MW17	310-153493-D-7	Plastic 1 liter - Nitric Acid	<2		
MW18	310-153493-A-8	Plastic 250ml - with Nitric Acid	<2		
MW18	310-153493-C-8	Plastic 1 liter - Nitric Acid	<2		
MW18	310-153493-D-8	Plastic 1 liter - Nitric Acid	<2		
MW19	310-153493-A-9	Plastic 250ml - with Nitric Acid	<2		
MW19	310-153493-C-9	Plastic 1 liter - Nitric Acid	<2		
MW19	310-153493-D-9	Plastic 1 liter - Nitric Acid	<2		
DUP-1	310-153493-A-10	Plastic 250ml - with Nitric Acid	<2		
DUP-1	310-153493-C-10	Plastic 1 liter - Nitric Acid	<2		
DUP-1	310-153493-D-10	Plastic 1 liter - Nitric Acid	<2		

Login Sample Receipt Checklist

Client: Omaha Public Power District

Job Number: 310-153493-2

Login Number: 153493
List Number: 1
Creator: Bovy, Lorrainna L

List Source: Eurofins TestAmerica, Cedar Falls

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

Login Sample Receipt Checklist

Client: Omaha Public Power District

Job Number: 310-153493-2

Login Number: 153493
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 04/22/19 08:47 AM

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

Tracer/Carrier Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-153493-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
310-153493-1	MW2	82.8
310-153493-4	MW9	83.1
310-153493-5	MW13	86.7
310-153493-6	MW15	86.7
310-153493-7	MW17	96.6
310-153493-8	MW18	99.7
310-153493-9	MW19	95.8
310-153493-10	DUP-1	95.8

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
LCS 160-430886/1-A	Lab Control Sample	101
LCS 160-430963/1-A	Lab Control Sample	100
LCS 160-431033/1-A	Lab Control Sample	95.5
LCSD 160-430963/2-A	Lab Control Sample Dup	101
LCSD 160-431033/2-A	Lab Control Sample Dup	86.7
MB 160-430886/24-A	Method Blank	96.3
MB 160-430963/18-A	Method Blank	105
MB 160-431033/23-A	Method Blank	101

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
310-153493-1	MW2	82.8	74.4
310-153493-4	MW9	83.1	82.6
310-153493-5	MW13	86.7	78.5
310-153493-6	MW15	86.7	80.0
310-153493-7	MW17	96.6	78.9
310-153493-8	MW18	99.7	78.1
310-153493-9	MW19	95.8	81.1
310-153493-10	DUP-1	95.8	79.6

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

Tracer/Carrier Summary

Client: Omaha Public Power District
Job ID: 310-153493-2
Project/Site: North Omaha Station CCR

Method: 9320 - Radium-228 (GFPC)

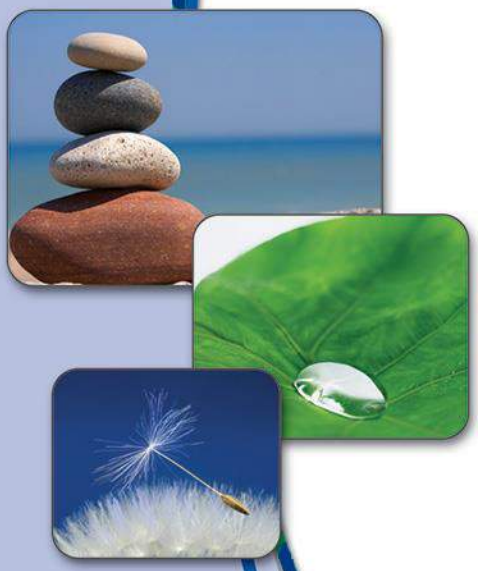
Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
LCS 160-430946/1-A	Lab Control Sample	101	87.5
LCS 160-430972/1-A	Lab Control Sample	100	77.8
LCS 160-431038/1-A	Lab Control Sample	95.5	70.7
LCSD 160-430972/2-A	Lab Control Sample Dup	101	80.4
LCSD 160-431038/2-A	Lab Control Sample Dup	86.7	70.7
MB 160-430946/24-A	Method Blank	96.3	83.4
MB 160-430972/18-A	Method Blank	105	82.2
MB 160-431038/23-A	Method Blank	101	71.8

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-166418-1
Client Project/Site: North Omaha Station CCR

For:
Omaha Public Power District
Attn: Accounts Payable, 4E/EP-5
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

Attn: Kyle Uhing

Authorized for release by:
10/14/2019 6:27:54 PM

Shawn Hayes, Senior Project Manager
(319)229-8211
shawn.hayes@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 310-166418-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative
310-166418-1

Comments
No additional comments.

Receipt
The samples were received on 10/3/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.5º C, 0.7º C, 1.0º C and 2.7º C.

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

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

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

Sample Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-166418-1	MW2	Water	10/01/19 16:24	10/03/19 09:30	
310-166418-2	MW5	Water	10/02/19 09:44	10/03/19 09:30	
310-166418-3	MW6	Water	10/01/19 18:32	10/03/19 09:30	
310-166418-4	MW8	Water	10/02/19 07:53	10/03/19 09:30	
310-166418-5	MW9	Water	10/01/19 13:24	10/03/19 09:30	
310-166418-6	MW13	Water	10/01/19 15:47	10/03/19 09:30	
310-166418-7	MW15	Water	10/01/19 17:42	10/03/19 09:30	
310-166418-8	MW17	Water	10/02/19 08:54	10/03/19 09:30	
310-166418-9	MW18	Water	10/01/19 11:05	10/03/19 09:30	
310-166418-10	MW19	Water	10/01/19 12:03	10/03/19 09:30	
310-166418-11	DUP1	Water	10/01/19 00:00	10/03/19 09:30	

Detection Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW2 — Lab Sample ID: 310-166418-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	841		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.297		0.00200		mg/L	1		6020A	Total/NA
Barium	0.141	F1	0.00200		mg/L	1		6020A	Total/NA
Boron	2.17		0.200		mg/L	1		6020A	Total/NA
Calcium	306		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.000828		0.000500		mg/L	1		6020A	Total/NA
Iron	44.9		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0424		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1930		60.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW5 — Lab Sample ID: 310-166418-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	1160		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.0557		0.00200		mg/L	1		6020A	Total/NA
Barium	0.0467		0.00200		mg/L	1		6020A	Total/NA
Boron	0.614		0.200		mg/L	1		6020A	Total/NA
Calcium	428		0.500		mg/L	1		6020A	Total/NA
Iron	49.5		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0869		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	2620		150		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW6 — Lab Sample ID: 310-166418-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	326		20.0		mg/L	20		9056A	Total/NA
Fluoride	0.511		0.500		mg/L	5		9056A	Total/NA
Sulfate	309		20.0		mg/L	20		9056A	Total/NA
Aluminum	0.369		0.0500		mg/L	1		6020A	Total/NA
Arsenic	0.0170		0.00200		mg/L	1		6020A	Total/NA
Barium	0.192		0.00200		mg/L	1		6020A	Total/NA
Boron	0.543		0.200		mg/L	1		6020A	Total/NA
Cadmium	0.000317		0.000100		mg/L	1		6020A	Total/NA
Calcium	348		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.00761		0.000500		mg/L	1		6020A	Total/NA
Iron	5.29		0.100		mg/L	1		6020A	Total/NA
Lead	0.00287		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.0510		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.0654		0.00200		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1400		150		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW8 — Lab Sample ID: 310-166418-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.03		5.00		mg/L	5		9056A	Total/NA
Sulfate	604		20.0		mg/L	20		9056A	Total/NA
Arsenic	0.0106		0.00200		mg/L	1		6020A	Total/NA
Barium	0.101		0.00200		mg/L	1		6020A	Total/NA
Boron	2.18		0.200		mg/L	1		6020A	Total/NA
Calcium	159		0.500		mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW8 (Continued) — Lab Sample ID: 310-166418-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.000623		0.000500		mg/L	1		6020A	Total/NA
Iron	0.158		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0149		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.111		0.00200		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1010		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW9 — Lab Sample ID: 310-166418-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	164		5.00		mg/L	5		9056A	Total/NA
Sulfate	40.1		5.00		mg/L	5		9056A	Total/NA
Aluminum	0.201		0.0500		mg/L	1		6020A	Total/NA
Arsenic	0.00540		0.00200		mg/L	1		6020A	Total/NA
Barium	0.468		0.00200		mg/L	1		6020A	Total/NA
Calcium	140		0.500		mg/L	1		6020A	Total/NA
Iron	6.98		0.100		mg/L	1		6020A	Total/NA
Lead	0.000655		0.000500		mg/L	1		6020A	Total/NA
Lithium	0.0473		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	728		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW13 — Lab Sample ID: 310-166418-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.24		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.544		0.500		mg/L	5		9056A	Total/NA
Sulfate	673		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.104		0.00200		mg/L	1		6020A	Total/NA
Barium	0.113		0.00200		mg/L	1		6020A	Total/NA
Boron	2.46		0.200		mg/L	1		6020A	Total/NA
Cadmium	0.000294		0.000100		mg/L	1		6020A	Total/NA
Calcium	206		0.500		mg/L	1		6020A	Total/NA
Iron	22.7		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0283		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.915		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.0204		0.00500		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1440		60.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW15 — Lab Sample ID: 310-166418-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.60		5.00		mg/L	5		9056A	Total/NA
Sulfate	633		50.0		mg/L	50		9056A	Total/NA
Aluminum	0.330		0.0500		mg/L	1		6020A	Total/NA
Antimony	0.00218		0.00100		mg/L	1		6020A	Total/NA
Barium	0.0666		0.00200		mg/L	1		6020A	Total/NA
Boron	5.13		0.800		mg/L	4		6020A	Total/NA
Cadmium	0.000109		0.000100		mg/L	1		6020A	Total/NA
Calcium	306		0.500		mg/L	1		6020A	Total/NA
Chromium	0.0284		0.00500		mg/L	1		6020A	Total/NA
Iron	0.172		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0156		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.245		0.00200		mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW15 (Continued) — Lab Sample ID: 310-166418-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0680		0.00500		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1220		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW17 — Lab Sample ID: 310-166418-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	32.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	724		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.0117		0.00200		mg/L	1		6020A	Total/NA
Barium	0.0407		0.00200		mg/L	1		6020A	Total/NA
Boron	0.783		0.200		mg/L	1		6020A	Total/NA
Calcium	342		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.0123		0.000500		mg/L	1		6020A	Total/NA
Iron	7.68		0.100		mg/L	1		6020A	Total/NA
Lithium	0.120		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00212		0.00200		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1890		150		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW18 — Lab Sample ID: 310-166418-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.0844		0.0500		mg/L	1		6020A	Total/NA
Barium	0.321		0.00200		mg/L	1		6020A	Total/NA
Calcium	97.0		0.500		mg/L	1		6020A	Total/NA
Iron	4.34		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0263		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	384		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW19 — Lab Sample ID: 310-166418-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.511		0.500		mg/L	5		9056A	Total/NA
Barium	0.331		0.00200		mg/L	1		6020A	Total/NA
Calcium	113		0.500		mg/L	1		6020A	Total/NA
Iron	1.71		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0386		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	438		30.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP1 — Lab Sample ID: 310-166418-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	818		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.307		0.00200		mg/L	1		6020A	Total/NA
Barium	0.154		0.00200		mg/L	1		6020A	Total/NA
Boron	2.27		0.200		mg/L	1		6020A	Total/NA
Calcium	323		0.500		mg/L	1		6020A	Total/NA
Cobalt	0.00102		0.000500		mg/L	1		6020A	Total/NA
Iron	48.0		0.100		mg/L	1		6020A	Total/NA
Lithium	0.0444		0.0100		mg/L	1		6020A	Total/NA
Total Dissolved Solids	1930		150		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW2

Date Collected: 10/01/19 16:24
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18.2**		5.00		mg/L			10/07/19 22:05	5
Fluoride	<0.500		0.500		mg/L			10/07/19 22:05	5
Sulfate	**841**		50.0		mg/L			10/07/19 22:21	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Arsenic	**0.297**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:27	1
Barium	**0.141**	**F1**	0.00200		mg/L		10/07/19 07:56	10/08/19 14:27	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Boron	**2.17**		0.200		mg/L		10/07/19 07:56	10/08/19 14:27	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Calcium	**306**		0.500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Cobalt	**0.000828**		0.000500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Iron	**44.9**		0.100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Lithium	**0.0424**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:27	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:27	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:27	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1930**		60.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW5

Date Collected: 10/02/19 09:44
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40.9**		5.00		mg/L			10/07/19 22:37	5
Fluoride	<0.500		0.500		mg/L			10/07/19 22:37	5
Sulfate	**1160**		50.0		mg/L			10/07/19 22:53	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Arsenic	**0.0557**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:40	1
Barium	**0.0467**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:40	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Boron	**0.614**		0.200		mg/L		10/07/19 07:56	10/08/19 14:40	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Calcium	**428**		0.500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Iron	**49.5**		0.100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Lithium	**0.0869**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:40	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:40	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:40	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2620**		150		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW6

Date Collected: 10/01/19 18:32
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**326**		20.0		mg/L			10/10/19 06:59	20
Fluoride	**0.511**		0.500		mg/L			10/07/19 23:09	5
Sulfate	**309**		20.0		mg/L			10/10/19 06:59	20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.369**		0.0500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Arsenic	**0.0170**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:50	1
Barium	**0.192**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:50	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Boron	**0.543**		0.200		mg/L		10/07/19 07:56	10/08/19 14:50	1
Cadmium	**0.000317**		0.000100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Calcium	**348**		0.500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Cobalt	**0.00761**		0.000500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Iron	**5.29**		0.100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Lead	**0.00287**		0.000500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Lithium	**0.0510**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Molybdenum	**0.0654**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:50	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:50	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:50	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		150		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW8

Date Collected: 10/02/19 07:53
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.03**		5.00		mg/L			10/07/19 23:25	5
Fluoride	<0.500		0.500		mg/L			10/07/19 23:25	5
Sulfate	**604**		20.0		mg/L			10/07/19 23:41	20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Arsenic	**0.0106**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:53	1
Barium	**0.101**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:53	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Boron	**2.18**		0.200		mg/L		10/07/19 07:56	10/08/19 14:53	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Calcium	**159**		0.500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Cobalt	**0.000623**		0.000500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Iron	**0.158**		0.100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Lithium	**0.0149**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Molybdenum	**0.111**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:53	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:53	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:53	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1010**		30.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW9

Date Collected: 10/01/19 13:24
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**164**		5.00		mg/L			10/07/19 23:58	5
Fluoride	<0.500		0.500		mg/L			10/07/19 23:58	5
Sulfate	**40.1**		5.00		mg/L			10/07/19 23:58	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.201**		0.0500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Arsenic	**0.00540**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:55	1
Barium	**0.468**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:55	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Boron	<0.200		0.200		mg/L		10/07/19 07:56	10/08/19 14:55	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Calcium	**140**		0.500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Iron	**6.98**		0.100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Lead	**0.000655**		0.000500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Lithium	**0.0473**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:55	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:55	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:55	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**728**		30.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW13

Date Collected: 10/01/19 15:47
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.24**		5.00		mg/L			10/08/19 00:14	5
Fluoride	**0.544**		0.500		mg/L			10/08/19 00:14	5
Sulfate	**673**		50.0		mg/L			10/08/19 00:30	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Arsenic	**0.104**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:58	1
Barium	**0.113**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:58	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Boron	**2.46**		0.200		mg/L		10/07/19 07:56	10/08/19 14:58	1
Cadmium	**0.000294**		0.000100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Calcium	**206**		0.500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Iron	**22.7**		0.100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Lithium	**0.0283**		0.0100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Molybdenum	**0.915**		0.00200		mg/L		10/07/19 07:56	10/08/19 14:58	1
Selenium	**0.0204**		0.00500		mg/L		10/07/19 07:56	10/08/19 14:58	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:58	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1440**		60.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW15

Date Collected: 10/01/19 17:42
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.60**		5.00		mg/L			10/08/19 01:18	5
Fluoride	<0.500		0.500		mg/L			10/08/19 01:18	5
Sulfate	**633**		50.0		mg/L			10/08/19 01:35	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.330**		0.0500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Antimony	**0.00218**		0.00100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Arsenic	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:00	1
Barium	**0.0666**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:00	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Boron	**5.13**		0.800		mg/L		10/07/19 07:56	10/09/19 16:31	4
Cadmium	**0.000109**		0.000100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Calcium	**306**		0.500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Chromium	**0.0284**		0.00500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Iron	**0.172**		0.100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Lithium	**0.0156**		0.0100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Molybdenum	**0.245**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:00	1
Selenium	**0.0680**		0.00500		mg/L		10/07/19 07:56	10/08/19 15:00	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:00	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:05	10/04/19 13:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1220**		30.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW17

Date Collected: 10/02/19 08:54
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.7**		5.00		mg/L			10/08/19 01:52	5
Fluoride	<0.500		0.500		mg/L			10/08/19 01:52	5
Sulfate	**724**		50.0		mg/L			10/08/19 02:09	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Arsenic	**0.0117**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:03	1
Barium	**0.0407**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:03	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Boron	**0.783**		0.200		mg/L		10/07/19 07:56	10/08/19 15:03	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Calcium	**342**		0.500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Cobalt	**0.0123**		0.000500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Iron	**7.68**		0.100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Lithium	**0.120**		0.0100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Molybdenum	**0.00212**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:03	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:03	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:03	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:05	10/04/19 13:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1890**		150		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW18

Date Collected: 10/01/19 11:05
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/08/19 02:25	5
Fluoride	<0.500		0.500		mg/L			10/08/19 02:25	5
Sulfate	<5.00		5.00		mg/L			10/08/19 02:25	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0844**		0.0500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Arsenic	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:05	1
Barium	**0.321**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:05	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Boron	<0.200		0.200		mg/L		10/07/19 07:56	10/08/19 15:05	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Calcium	**97.0**		0.500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Iron	**4.34**		0.100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Lithium	**0.0263**		0.0100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:05	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:05	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:05	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:05	10/04/19 13:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**384**		30.0		mg/L			10/03/19 17:41	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW19

Date Collected: 10/01/19 12:03
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-10

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/08/19 02:42	5
Fluoride	**0.511**		0.500		mg/L			10/08/19 02:42	5
Sulfate	<5.00		5.00		mg/L			10/08/19 02:42	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Arsenic	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:08	1
Barium	**0.331**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:08	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Boron	<0.200		0.200		mg/L		10/07/19 07:56	10/08/19 15:08	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Calcium	**113**		0.500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Iron	**1.71**		0.100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Lithium	**0.0386**		0.0100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:08	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:08	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:08	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:05	10/04/19 13:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**438**		30.0		mg/L			10/03/19 17:41	1

Client Sample Results

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: DUP1

Date Collected: 10/01/19 00:00
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18.8**		5.00		mg/L			10/08/19 02:59	5
Fluoride	<0.500		0.500		mg/L			10/08/19 02:59	5
Sulfate	**818**		50.0		mg/L			10/08/19 03:16	50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Arsenic	**0.307**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:10	1
Barium	**0.154**		0.00200		mg/L		10/07/19 07:56	10/08/19 15:10	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Boron	**2.27**		0.200		mg/L		10/07/19 07:56	10/08/19 15:10	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Calcium	**323**		0.500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Cobalt	**0.00102**		0.000500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Iron	**48.0**		0.100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Lithium	**0.0444**		0.0100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 15:10	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 15:10	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:10	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 15:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 14:01	10/04/19 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1930**		150		mg/L			10/03/19 17:41	1

Definitions/Glossary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-256211/3
Matrix: Water
Analysis Batch: 256211

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/07/19 19:23	1
Fluoride	<0.100		0.100		mg/L			10/07/19 19:23	1
Sulfate	<1.00		1.00		mg/L			10/07/19 19:23	1

Lab Sample ID: LCS 310-256211/4
Matrix: Water
Analysis Batch: 256211

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.099		mg/L		91	90 - 110
Sulfate	10.0	9.394		mg/L		94	90 - 110

Lab Sample ID: LCS 310-256211/42
Matrix: Water
Analysis Batch: 256211

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.00	1.834		mg/L		92	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-255672/1-A
Matrix: Water
Analysis Batch: 255950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Antimony	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Arsenic	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:21	1
Barium	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:21	1
Beryllium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Boron	<0.200		0.200		mg/L		10/07/19 07:56	10/08/19 14:21	1
Cadmium	<0.000100		0.000100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Calcium	<0.500		0.500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Chromium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Cobalt	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Iron	<0.100		0.100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Lead	<0.000500		0.000500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Lithium	<0.0100		0.0100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Molybdenum	<0.00200		0.00200		mg/L		10/07/19 07:56	10/08/19 14:21	1
Selenium	<0.00500		0.00500		mg/L		10/07/19 07:56	10/08/19 14:21	1
Silver	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:21	1
Thallium	<0.00100		0.00100		mg/L		10/07/19 07:56	10/08/19 14:21	1

Lab Sample ID: LCS 310-255672/2-A
Matrix: Water
Analysis Batch: 255950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.078		mg/L		104	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-255672/2-A
Matrix: Water
Analysis Batch: 255950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0200	0.01917		mg/L		96	80 - 120
Arsenic	0.0400	0.03781		mg/L		95	80 - 120
Barium	0.0400	0.04035		mg/L		101	80 - 120
Beryllium	0.0200	0.02027		mg/L		101	80 - 120
Boron	0.880	0.8751		mg/L		99	80 - 120
Cadmium	0.0200	0.02024		mg/L		101	80 - 120
Calcium	2.00	2.045		mg/L		102	80 - 120
Chromium	0.0400	0.04043		mg/L		101	80 - 120
Cobalt	0.0200	0.02041		mg/L		102	80 - 120
Iron	2.00	2.128		mg/L		106	80 - 120
Lead	0.0200	0.01993		mg/L		100	80 - 120
Lithium	0.100	0.1003		mg/L		100	80 - 120
Molybdenum	0.0400	0.03989		mg/L		100	80 - 120
Selenium	0.0400	0.03891		mg/L		97	80 - 120
Silver	0.0200	0.02045		mg/L		102	80 - 120
Thallium	0.0160	0.01619		mg/L		101	80 - 120

Lab Sample ID: 310-166418-1 MS
Matrix: Water
Analysis Batch: 255950

Client Sample ID: MW2
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	<0.0500		2.00	2.175		mg/L		109	75 - 125
Antimony	<0.00100		0.0200	0.02035		mg/L		102	75 - 125
Arsenic	0.297		0.0400	0.3450	4	mg/L		121	75 - 125
Barium	0.141	F1	0.0400	0.1936	F1	mg/L		131	75 - 125
Beryllium	<0.00100		0.0200	0.02079		mg/L		104	75 - 125
Boron	2.17		0.880	3.157		mg/L		112	75 - 125
Cadmium	<0.000100		0.0200	0.02122		mg/L		106	75 - 125
Calcium	306		2.00	316.9	4	mg/L		544	75 - 125
Chromium	<0.00500		0.0400	0.04202		mg/L		105	75 - 125
Cobalt	0.000828		0.0200	0.02170		mg/L		104	75 - 125
Iron	44.9		2.00	48.53	4	mg/L		180	75 - 125
Lead	<0.000500		0.0200	0.02177		mg/L		109	75 - 125
Lithium	0.0424		0.100	0.1454		mg/L		103	75 - 125
Molybdenum	<0.00200		0.0400	0.04412		mg/L		107	75 - 125
Selenium	<0.00500		0.0400	0.04446		mg/L		111	75 - 125
Silver	<0.00100		0.0200	0.02134		mg/L		107	75 - 125
Thallium	<0.00100		0.0160	0.01676		mg/L		105	75 - 125

Lab Sample ID: 310-166418-1 MSD
Matrix: Water
Analysis Batch: 255950

Client Sample ID: MW2
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	<0.0500		2.00	2.217		mg/L		111	75 - 125	2	20
Antimony	<0.00100		0.0200	0.02067		mg/L		103	75 - 125	2	20
Arsenic	0.297		0.0400	0.3538	4	mg/L		143	75 - 125	3	20
Barium	0.141	F1	0.0400	0.1937	F1	mg/L		131	75 - 125	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-166418-1 MSD
Matrix: Water
Analysis Batch: 255950

Client Sample ID: MW2
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	<0.00100		0.0200	0.02131		mg/L		107	75 - 125	2	20
Boron	2.17		0.880	3.259		mg/L		124	75 - 125	3	20
Cadmium	<0.000100		0.0200	0.02193		mg/L		110	75 - 125	3	20
Calcium	306		2.00	324.1	4	mg/L		901	75 - 125	2	20
Chromium	<0.00500		0.0400	0.04334		mg/L		108	75 - 125	3	20
Cobalt	0.000828		0.0200	0.02215		mg/L		107	75 - 125	2	20
Iron	44.9		2.00	49.71	4	mg/L		239	75 - 125	2	20
Lead	<0.000500		0.0200	0.02210		mg/L		110	75 - 125	1	20
Lithium	0.0424		0.100	0.1496		mg/L		107	75 - 125	3	20
Molybdenum	<0.00200		0.0400	0.04553		mg/L		111	75 - 125	3	20
Selenium	<0.00500		0.0400	0.04525		mg/L		113	75 - 125	2	20
Silver	<0.00100		0.0200	0.02202		mg/L		110	75 - 125	3	20
Thallium	<0.00100		0.0160	0.01712		mg/L		107	75 - 125	2	20

Lab Sample ID: 310-166418-11 DU
Matrix: Water
Analysis Batch: 255950

Client Sample ID: DUP1
Prep Type: Total/NA
Prep Batch: 255672

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	<0.0500		<0.0500		mg/L		NC	20
Antimony	<0.00100		<0.00100		mg/L		NC	20
Arsenic	0.307		0.3137		mg/L		2	20
Barium	0.154		0.1544		mg/L		0.3	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	2.27		2.283		mg/L		0.5	20
Cadmium	<0.000100		<0.000100		mg/L		NC	20
Calcium	323		330.1		mg/L		2	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	0.00102		0.001041		mg/L		2	20
Iron	48.0		49.20		mg/L		2	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	0.0444		0.04482		mg/L		0.9	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-255363/1-A
Matrix: Water
Analysis Batch: 255551

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255363

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/03/19 13:50	10/04/19 11:49	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-255363/2-A
Matrix: Water
Analysis Batch: 255551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255363

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00167	0.001526		mg/L		92	80 - 120		

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

Lab Sample ID: MB 310-255389/1
Matrix: Water
Analysis Batch: 255389

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<30.0		30.0		mg/L			10/03/19 17:41	1

Lab Sample ID: LCS 310-255389/2
Matrix: Water
Analysis Batch: 255389

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	998.0		mg/L		100	90 - 110		

Lab Sample ID: 310-166418-2 DU
Matrix: Water
Analysis Batch: 255389

Client Sample ID: MW5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2620			2510		mg/L				4	24

HPLC/IC

Analysis Batch: 256211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	9056A	
310-166418-1	MW2	Total/NA	Water	9056A	
310-166418-2	MW5	Total/NA	Water	9056A	
310-166418-2	MW5	Total/NA	Water	9056A	
310-166418-3	MW6	Total/NA	Water	9056A	
310-166418-3	MW6	Total/NA	Water	9056A	
310-166418-4	MW8	Total/NA	Water	9056A	
310-166418-4	MW8	Total/NA	Water	9056A	
310-166418-5	MW9	Total/NA	Water	9056A	
310-166418-6	MW13	Total/NA	Water	9056A	
310-166418-6	MW13	Total/NA	Water	9056A	
310-166418-7	MW15	Total/NA	Water	9056A	
310-166418-7	MW15	Total/NA	Water	9056A	
310-166418-8	MW17	Total/NA	Water	9056A	
310-166418-8	MW17	Total/NA	Water	9056A	
310-166418-9	MW18	Total/NA	Water	9056A	
310-166418-10	MW19	Total/NA	Water	9056A	
310-166418-11	DUP1	Total/NA	Water	9056A	
310-166418-11	DUP1	Total/NA	Water	9056A	
MB 310-256211/3	Method Blank	Total/NA	Water	9056A	
LCS 310-256211/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 310-256211/42	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 255363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	7470A	
310-166418-2	MW5	Total/NA	Water	7470A	
310-166418-3	MW6	Total/NA	Water	7470A	
310-166418-4	MW8	Total/NA	Water	7470A	
310-166418-5	MW9	Total/NA	Water	7470A	
310-166418-6	MW13	Total/NA	Water	7470A	
310-166418-7	MW15	Total/NA	Water	7470A	
310-166418-8	MW17	Total/NA	Water	7470A	
310-166418-9	MW18	Total/NA	Water	7470A	
310-166418-10	MW19	Total/NA	Water	7470A	
310-166418-11	DUP1	Total/NA	Water	7470A	
MB 310-255363/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-255363/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 255551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	7470A	255363
310-166418-2	MW5	Total/NA	Water	7470A	255363
310-166418-3	MW6	Total/NA	Water	7470A	255363
310-166418-4	MW8	Total/NA	Water	7470A	255363
310-166418-5	MW9	Total/NA	Water	7470A	255363
310-166418-6	MW13	Total/NA	Water	7470A	255363
310-166418-7	MW15	Total/NA	Water	7470A	255363
310-166418-8	MW17	Total/NA	Water	7470A	255363

Metals (Continued)

Analysis Batch: 255551 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-9	MW18	Total/NA	Water	7470A	255363
310-166418-10	MW19	Total/NA	Water	7470A	255363
310-166418-11	DUP1	Total/NA	Water	7470A	255363
MB 310-255363/1-A	Method Blank	Total/NA	Water	7470A	255363
LCS 310-255363/2-A	Lab Control Sample	Total/NA	Water	7470A	255363

Prep Batch: 255672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	3010A	
310-166418-2	MW5	Total/NA	Water	3010A	
310-166418-3	MW6	Total/NA	Water	3010A	
310-166418-4	MW8	Total/NA	Water	3010A	
310-166418-5	MW9	Total/NA	Water	3010A	
310-166418-6	MW13	Total/NA	Water	3010A	
310-166418-7	MW15	Total/NA	Water	3010A	
310-166418-8	MW17	Total/NA	Water	3010A	
310-166418-9	MW18	Total/NA	Water	3010A	
310-166418-10	MW19	Total/NA	Water	3010A	
310-166418-11	DUP1	Total/NA	Water	3010A	
MB 310-255672/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-255672/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-166418-1 MS	MW2	Total/NA	Water	3010A	
310-166418-1 MSD	MW2	Total/NA	Water	3010A	
310-166418-11 DU	DUP1	Total/NA	Water	3010A	

Analysis Batch: 255950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	6020A	255672
310-166418-2	MW5	Total/NA	Water	6020A	255672
310-166418-3	MW6	Total/NA	Water	6020A	255672
310-166418-4	MW8	Total/NA	Water	6020A	255672
310-166418-5	MW9	Total/NA	Water	6020A	255672
310-166418-6	MW13	Total/NA	Water	6020A	255672
310-166418-7	MW15	Total/NA	Water	6020A	255672
310-166418-8	MW17	Total/NA	Water	6020A	255672
310-166418-9	MW18	Total/NA	Water	6020A	255672
310-166418-10	MW19	Total/NA	Water	6020A	255672
310-166418-11	DUP1	Total/NA	Water	6020A	255672
MB 310-255672/1-A	Method Blank	Total/NA	Water	6020A	255672
LCS 310-255672/2-A	Lab Control Sample	Total/NA	Water	6020A	255672
310-166418-1 MS	MW2	Total/NA	Water	6020A	255672
310-166418-1 MSD	MW2	Total/NA	Water	6020A	255672
310-166418-11 DU	DUP1	Total/NA	Water	6020A	255672

Analysis Batch: 256161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-7	MW15	Total/NA	Water	6020A	255672

QC Association Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

General Chemistry

Analysis Batch: 255389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	SM 2540C	
310-166418-2	MW5	Total/NA	Water	SM 2540C	
310-166418-3	MW6	Total/NA	Water	SM 2540C	
310-166418-4	MW8	Total/NA	Water	SM 2540C	
310-166418-5	MW9	Total/NA	Water	SM 2540C	
310-166418-6	MW13	Total/NA	Water	SM 2540C	
310-166418-7	MW15	Total/NA	Water	SM 2540C	
310-166418-8	MW17	Total/NA	Water	SM 2540C	
310-166418-9	MW18	Total/NA	Water	SM 2540C	
310-166418-10	MW19	Total/NA	Water	SM 2540C	
310-166418-11	DUP1	Total/NA	Water	SM 2540C	
MB 310-255389/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-255389/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-166418-2 DU	MW5	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW2
Date Collected: 10/01/19 16:24
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/07/19 22:05	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/07/19 22:21	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:27	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:10	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW5
Date Collected: 10/02/19 09:44
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/07/19 22:37	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/07/19 22:53	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:40	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:13	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW6
Date Collected: 10/01/19 18:32
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/07/19 23:09	CJT	TAL CF
Total/NA	Analysis	9056A		20	256211	10/10/19 06:59	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:50	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:15	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW8
Date Collected: 10/02/19 07:53
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/07/19 23:25	CJT	TAL CF
Total/NA	Analysis	9056A		20	256211	10/07/19 23:41	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:53	SAD	TAL CF

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW8

Lab Sample ID: 310-166418-4
Matrix: Water
Date Collected: 10/02/19 07:53
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:17	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW9

Lab Sample ID: 310-166418-5
Matrix: Water
Date Collected: 10/01/19 13:24
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/07/19 23:58	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:55	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:23	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW13

Lab Sample ID: 310-166418-6
Matrix: Water
Date Collected: 10/01/19 15:47
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 00:14	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/08/19 00:30	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 14:58	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:25	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW15

Lab Sample ID: 310-166418-7
Matrix: Water
Date Collected: 10/01/19 17:42
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 01:18	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/08/19 01:35	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 15:00	SAD	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		4	256161	10/09/19 16:31	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:05	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:28	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Client Sample ID: MW17

Lab Sample ID: 310-166418-8
Matrix: Water
Date Collected: 10/02/19 08:54
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 01:52	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/08/19 02:09	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 15:03	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:05	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:30	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW18

Lab Sample ID: 310-166418-9
Matrix: Water
Date Collected: 10/01/19 11:05
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 02:25	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 15:05	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:05	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:32	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: MW19

Lab Sample ID: 310-166418-10
Matrix: Water
Date Collected: 10/01/19 12:03
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 02:42	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 15:08	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:05	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:34	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Client Sample ID: DUP1

Lab Sample ID: 310-166418-11
Matrix: Water
Date Collected: 10/01/19 00:00
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	256211	10/08/19 02:59	CJT	TAL CF
Total/NA	Analysis	9056A		50	256211	10/08/19 03:16	CJT	TAL CF
Total/NA	Prep	3010A			255672	10/07/19 07:56	HED	TAL CF
Total/NA	Analysis	6020A		1	255950	10/08/19 15:10	SAD	TAL CF
Total/NA	Prep	7470A			255363	10/03/19 14:01	ACJ	TAL CF
Total/NA	Analysis	7470A		1	255551	10/04/19 13:08	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	255389	10/03/19 17:41	SAS	TAL CF

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Omaha Public Power District
Job ID: 310-166418-1
Project/Site: North Omaha Station CCR

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19
Iowa	State Program	007	12-01-19
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

Method Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

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

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

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing TestAmerica

310-166418 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE | Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930 | Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 4
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☑ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M | Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 | Corrected Temp (°C): 0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 4
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☑ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1

Corrected Temp (°C): 1.0

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 3 of 4	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact?	☒ Yes ☐ No
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact?	☐ Yes ☐ No
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6

Corrected Temp (°C): 0.5

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 4 of 4
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.8

Corrected Temp (°C): 2.7

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

TestAmerica Omaha SC 268

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kyle K. Uhing	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: Kyle Uhing	Phone: (402) 636-2515	E-Mail: shawn.hayes@testamericainc.com		Page:
Company: Omaha Public Power District		Analysis Requested		Job #:
Address: 444 South 16th Street Mall 9E/EP1	Due Date Requested:			Preservation Codes:
City: Omaha	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: NE, 68102-2247				
Phone: 531-226-2515	PO #:			
Email: kkuhing@oppd.com	WO #:			Other:
Project Name: North Omaha Station Landfill	TestAmerica Project #: 31007560			
Site: North Omaha Station	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Total Metals - See Attached List	7470A Mercury	9056A Chloride, Fluoride, Sulfate	2540C TDS	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	N	N	X	
MW2	10/1/19	16:24	G	W	N		X	X	X	X	2	
MW5	10/2/19	9:44	G	W	N		X	X	X	X	2	
MW6	10/1/19	18:32	G	W	N		X	X	X	X	2	
MW8	10/2/19	7:53	G	W	N		X	X	X	X	2	
MW9	10/1/19	13:24	G	W	N		X	X	X	X	2	
MW13	10/1/19	15:47	G	W	N		X	X	X	X	2	
MW15	10/1/19	17:42	G	W	N		X	X	X	X	2	
MW17	10/2/19	8:54	G	W	N		X	X	X	X	2	
MW18	10/1/19	11:05	G	W	N		X	X	X	X	2	
MW19	10/1/19	12:03	G	W	N		X	X	X	X	2	
DUP1	10/1/19	—	G	W	N		X	X	X	X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Kyle K. Uhing	10/2/2019 14:50	OPD		10/3/19 1450	TA Omaha
2		10/3/19 1100	TA Omaha		10-3-19 0930	
3		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Sample Analysis (Some Parameters Need Reported Separate From Others [See COCs])

- Total and dissolved metals: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, iron, lithium, lead, molybdenum, silver, selenium, and thallium via USEPA Method 6020A
- Radium 226+228 Combined via USEPA Method 9315 and 9320
- Mercury via USEPA Method 7470A
- TDS via SM 2540C
- TSS via Method I-3765-85
- Chloride, fluoride, and sulfate via USEPA Method 9056A
- Nitrate and Nitrites via USEPA Method 353.2

Login Container Summary Report

310-166418

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW2	310-166418-A-1	Plastic 250ml - w/nitric - dis	<2		
MW2	310-166418-B-1	Plastic 250ml - with Nitric Acid	<2		
MW2	310-166418-C-1	Plastic 250ml - with Sulfuric Acid	<2		
MW2	310-166418-D-1	Plastic 1 liter - Nitric Acid	<2		
MW2	310-166418-E-1	Plastic 1 liter - Nitric Acid	<2		
MW5	310-166418-A-2	Plastic 250ml - w/nitric - dis	<2		
MW5	310-166418-B-2	Plastic 250ml - with Nitric Acid	<2		
MW5	310-166418-C-2	Plastic 250ml - with Sulfuric Acid	<2		
MW5	310-166418-D-2	Plastic 1 liter - Nitric Acid	<2		
MW5	310-166418-E-2	Plastic 1 liter - Nitric Acid	<2		
MW6	310-166418-A-3	Plastic 250ml - w/nitric - dis	<2		
MW6	310-166418-B-3	Plastic 250ml - with Nitric Acid	<2		
MW6	310-166418-C-3	Plastic 250ml - with Sulfuric Acid	<2		
MW6	310-166418-D-3	Plastic 1 liter - Nitric Acid	<2		
MW6	310-166418-E-3	Plastic 1 liter - Nitric Acid	<2		
MW8	310-166418-A-4	Plastic 250ml - w/nitric - dis	<2		
MW8	310-166418-B-4	Plastic 250ml - with Nitric Acid	<2		
MW8	310-166418-C-4	Plastic 250ml - with Sulfuric Acid	<2		
MW8	310-166418-D-4	Plastic 1 liter - Nitric Acid	<2		
MW8	310-166418-E-4	Plastic 1 liter - Nitric Acid	<2		
MW9	310-166418-A-5	Plastic 250ml - w/nitric - dis	<2		
MW9	310-166418-B-5	Plastic 250ml - with Nitric Acid	<2		
MW9	310-166418-C-5	Plastic 250ml - with Sulfuric Acid	<2		
MW9	310-166418-D-5	Plastic 1 liter - Nitric Acid	<2		
MW9	310-166418-E-5	Plastic 1 liter - Nitric Acid	<2		
MW13	310-166418-A-6	Plastic 250ml - w/nitric - dis	<2		
MW13	310-166418-B-6	Plastic 250ml - with Nitric Acid	<2		
MW13	310-166418-C-6	Plastic 250ml - with Sulfuric Acid	<2		
MW13	310-166418-D-6	Plastic 1 liter - Nitric Acid	<2		
MW13	310-166418-E-6	Plastic 1 liter - Nitric Acid	<2		
MW15	310-166418-A-7	Plastic 250ml - w/nitric - dis	<2		
MW15	310-166418-B-7	Plastic 250ml - with Nitric Acid	<2		
MW15	310-166418-C-7	Plastic 250ml - with Sulfuric Acid	<2		
MW15	310-166418-D-7	Plastic 1 liter - Nitric Acid	<2		
MW15	310-166418-E-7	Plastic 1 liter - Nitric Acid	<2		
MW17	310-166418-A-8	Plastic 250ml - w/nitric - dis	<2		
MW17	310-166418-B-8	Plastic 250ml - with Nitric Acid	<2		

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW17	310-166418-C-8	Plastic 250ml - with Sulfuric Acid	<2		
MW17	310-166418-D-8	Plastic 1 liter - Nitric Acid	<2		
MW17	310-166418-E-8	Plastic 1 liter - Nitric Acid	<2		
MW18	310-166418-A-9	Plastic 250ml - w/nitric - dis	<2		
MW18	310-166418-B-9	Plastic 250ml - with Nitric Acid	<2		
MW18	310-166418-C-9	Plastic 250ml - with Sulfuric Acid	<2		
MW18	310-166418-D-9	Plastic 1 liter - Nitric Acid	<2		
MW18	310-166418-E-9	Plastic 1 liter - Nitric Acid	<2		
MW19	310-166418-A-10	Plastic 250ml - w/nitric - dis	<2		
MW19	310-166418-B-10	Plastic 250ml - with Nitric Acid	<2		
MW19	310-166418-C-10	Plastic 250ml - with Sulfuric Acid	<2		
MW19	310-166418-D-10	Plastic 1 liter - Nitric Acid	<2		
MW19	310-166418-E-10	Plastic 1 liter - Nitric Acid	<2		
DUP1	310-166418-A-11	Plastic 250ml - w/nitric - dis	<2		
DUP1	310-166418-B-11	Plastic 250ml - with Nitric Acid	<2		
DUP1	310-166418-C-11	Plastic 250ml - with Sulfuric Acid	<2		
DUP1	310-166418-D-11	Plastic 1 liter - Nitric Acid	<2		
DUP1	310-166418-E-11	Plastic 1 liter - Nitric Acid	<2		

Login Sample Receipt Checklist

Client: Omaha Public Power District

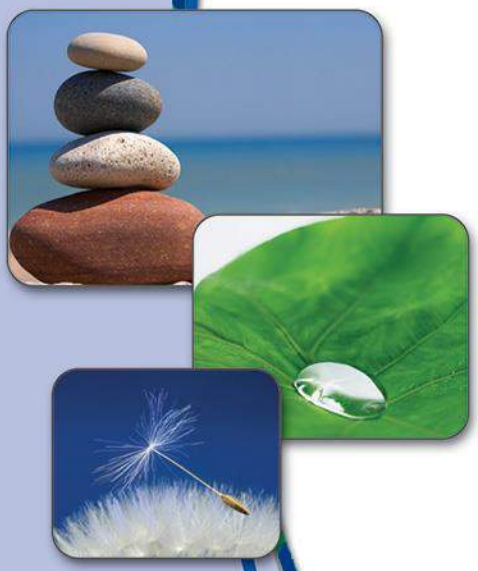
Job Number: 310-166418-1

Login Number: 166418
List Number: 1
Creator: Bovy, Lorrainna L

List Source: Eurofins TestAmerica, Cedar Falls

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

eurofins | Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-166418-2
Client Project/Site: North Omaha Station CCR

For:
Omaha Public Power District
Attn: Accounts Payable, 4E/EP-5
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

Attn: Kyle Uhing

Authorized for release by:
11/4/2019 10:22:38 AM

Shawn Hayes, Senior Project Manager
(319)229-8211
shawn.hayes@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 310-166418-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative
310-166418-2

Comments
No additional comments.

Receipt
The samples were received on 10/3/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.5º C, 0.7º C, 1.0º C and 2.7º C.

RAD
Method 9320: Radium-228 Prep Batch 160-445348

The following batch had an LCS (132%) that was above the upper limit. The MS, MSD and MB were all within limits. The data has been reported with this narrative.

MW2 (310-166418-1), MW5 (310-166418-2), MW6 (310-166418-3), MW8 (310-166418-4), MW9 (310-166418-5), MW13 (310-166418-6), MW15 (310-166418-7), MW17 (310-166418-8), MW18 (310-166418-9), MW19 (310-166418-10), DUP1 (310-166418-11), (LCS 160-445348/1-A), (MB 160-445348/20-A).

Method PrecSep_0: Radium 228 Prep Batch 160-445348:

The following samples had light yellow discoloration: MW2 (310-166418-1), MW5 (310-166418-2), MW9 (310-166418-5), MW13 (310-166418-6), MW19 (310-166418-10) and DUP1 (310-166418-11). Sample MW9 (310-166418-5) and MW13 (310-166418-6) also had light suspended solids

Method PrecSep-21: Radium 226 Prep Batch 160-445345:

The following samples had light yellow discoloration: MW2 (310-166418-1), MW5 (310-166418-2), MW9 (310-166418-5), MW13 (310-166418-6), MW19 (310-166418-10) and DUP1 (310-166418-11). Sample MW9 (310-166418-5) and MW13 (310-166418-6) also had light suspended solids.

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

Sample Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-166418-1	MW2	Water	10/01/19 16:24	10/03/19 09:30	
310-166418-2	MW5	Water	10/02/19 09:44	10/03/19 09:30	
310-166418-3	MW6	Water	10/01/19 18:32	10/03/19 09:30	
310-166418-4	MW8	Water	10/02/19 07:53	10/03/19 09:30	
310-166418-5	MW9	Water	10/01/19 13:24	10/03/19 09:30	
310-166418-6	MW13	Water	10/01/19 15:47	10/03/19 09:30	
310-166418-7	MW15	Water	10/01/19 17:42	10/03/19 09:30	
310-166418-8	MW17	Water	10/02/19 08:54	10/03/19 09:30	
310-166418-9	MW18	Water	10/01/19 11:05	10/03/19 09:30	
310-166418-10	MW19	Water	10/01/19 12:03	10/03/19 09:30	
310-166418-11	DUP1	Water	10/01/19 00:00	10/03/19 09:30	

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW2
Date Collected: 10/01/19 16:24
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-1
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.332**		0.129	0.133	1.00	0.139	pCi/L	10/07/19 18:06	10/29/19 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:54*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.288	U	0.313	0.315	1.00	0.514	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.620**		0.339	0.342	5.00	0.514	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW5
Date Collected: 10/02/19 09:44
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-2
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.221		0.107	0.109	1.00	0.125	pCi/L	10/07/19 18:06	10/29/19 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:54*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.152	U	0.323	0.323	1.00	0.551	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*77.0*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.373	U	0.340	0.341	5.00	0.551	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW6
Date Collected: 10/01/19 18:32
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.482**		0.155	0.161	1.00	0.123	pCi/L	10/07/19 18:06	10/29/19 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*66.4*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:54*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.503	U	0.372	0.375	1.00	0.585	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*66.4*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*86.0*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.985**		0.403	0.408	5.00	0.585	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW8
Date Collected: 10/02/19 07:53
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-4
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.142	0.143	1.00	0.195	pCi/L	10/07/19 18:06	10/29/19 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.1*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:54*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.291	U	0.360	0.361	1.00	0.597	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.535	U	0.387	0.388	5.00	0.597	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW9
Date Collected: 10/01/19 13:24
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-5
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.584**		0.158	0.167	1.00	0.134	pCi/L	10/07/19 18:06	10/29/19 09:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.354	U	0.322	0.323	1.00	0.518	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*80.7*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.939**		0.359	0.364	5.00	0.518	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW13
Date Collected: 10/01/19 15:47
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-6
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.312**		0.129	0.132	1.00	0.132	pCi/L	10/07/19 18:06	10/29/19 09:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.3*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.458	U	0.364	0.366	1.00	0.578	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.3*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.770**		0.386	0.389	5.00	0.578	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW15
Date Collected: 10/01/19 17:42
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-7
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.231		0.133	0.134	1.00	0.185	pCi/L	10/07/19 18:06	10/29/19 09:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.8*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.187	U	0.275	0.275	1.00	0.461	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.8*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.419	U	0.305	0.306	5.00	0.461	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW17
Date Collected: 10/02/19 08:54
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-8
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.224		0.131	0.133	1.00	0.160	pCi/L	10/07/19 18:06	10/29/19 09:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*65.3*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.897		0.406	0.414	1.00	0.585	pCi/L	10/07/19 18:35	10/23/19 13:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*65.3*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*
Y Carrier	*87.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:24*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.12		0.427	0.435	5.00	0.585	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW18

Date Collected: 10/01/19 11:05
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-9

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.456**		0.149	0.155	1.00	0.144	pCi/L	10/07/19 18:06	10/29/19 09:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.3*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.210	U	0.312	0.313	1.00	0.524	pCi/L	10/07/19 18:35	10/23/19 13:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.3*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.666**		0.346	0.349	5.00	0.524	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW19
Date Collected: 10/01/19 12:03
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-10
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.451**		0.170	0.175	1.00	0.167	pCi/L	10/07/19 18:06	10/29/19 09:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*55.1*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.481	U	0.396	0.398	1.00	0.626	pCi/L	10/07/19 18:35	10/23/19 13:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*55.1*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*
Y Carrier	*87.9*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.932**		0.431	0.435	5.00	0.626	pCi/L		11/04/19 08:35	1

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: DUP1
Date Collected: 10/01/19 00:00
Date Received: 10/03/19 09:30

Lab Sample ID: 310-166418-11
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.357		0.134	0.138	1.00	0.135	pCi/L	10/07/19 18:06	10/29/19 09:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.6*		*40 - 110*	*10/07/19 18:06*	*10/29/19 09:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.662		0.328	0.334	1.00	0.479	pCi/L	10/07/19 18:35	10/23/19 13:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.6*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*
Y Carrier	*86.0*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:25*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.02		0.354	0.361	5.00	0.479	pCi/L		11/04/19 08:36	1

Client: Omaha Public Power District
Job ID: 310-166418-2
Project/Site: North Omaha Station CCR

Qualifiers

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
U	Result is less than the sample detection limit.

Glossary

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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-445345/20-A
Matrix: Water
Analysis Batch: 448106

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445345

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06552	U	0.0849	0.0851	1.00	0.142	pCi/L	10/07/19 18:06	10/29/19 10:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.6*		*40 - 110*	*10/07/19 18:06*	*10/29/19 10:00*	*1*

Lab Sample ID: LCS 160-445345/1-A
Matrix: Water
Analysis Batch: 448106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445345

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.252		1.06	1.00	0.149	pCi/L	82	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*62.7*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-445348/20-A
Matrix: Water
Analysis Batch: 447458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445348

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.02912	U	0.299	0.299	1.00	0.524	pCi/L	10/07/19 18:35	10/23/19 13:18	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.6*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:18*	*1*
Y Carrier	*91.2*		*40 - 110*	*10/07/19 18:35*	*10/23/19 13:18*	*1*

Lab Sample ID: LCS 160-445348/1-A
Matrix: Water
Analysis Batch: 447324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445348

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.47	12.48	*	1.51	1.00	0.655	pCi/L	132	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*62.7*		*40 - 110*
Y Carrier	*87.1*		*40 - 110*

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Rad

Prep Batch: 445345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	PrecSep-21	
310-166418-2	MW5	Total/NA	Water	PrecSep-21	
310-166418-3	MW6	Total/NA	Water	PrecSep-21	
310-166418-4	MW8	Total/NA	Water	PrecSep-21	
310-166418-5	MW9	Total/NA	Water	PrecSep-21	
310-166418-6	MW13	Total/NA	Water	PrecSep-21	
310-166418-7	MW15	Total/NA	Water	PrecSep-21	
310-166418-8	MW17	Total/NA	Water	PrecSep-21	
310-166418-9	MW18	Total/NA	Water	PrecSep-21	
310-166418-10	MW19	Total/NA	Water	PrecSep-21	
310-166418-11	DUP1	Total/NA	Water	PrecSep-21	
MB 160-445345/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-445345/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 445348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-166418-1	MW2	Total/NA	Water	PrecSep_0	
310-166418-2	MW5	Total/NA	Water	PrecSep_0	
310-166418-3	MW6	Total/NA	Water	PrecSep_0	
310-166418-4	MW8	Total/NA	Water	PrecSep_0	
310-166418-5	MW9	Total/NA	Water	PrecSep_0	
310-166418-6	MW13	Total/NA	Water	PrecSep_0	
310-166418-7	MW15	Total/NA	Water	PrecSep_0	
310-166418-8	MW17	Total/NA	Water	PrecSep_0	
310-166418-9	MW18	Total/NA	Water	PrecSep_0	
310-166418-10	MW19	Total/NA	Water	PrecSep_0	
310-166418-11	DUP1	Total/NA	Water	PrecSep_0	
MB 160-445348/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-445348/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW2

Lab Sample ID: 310-166418-1

Date Collected: 10/01/19 16:24
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:54	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW5

Lab Sample ID: 310-166418-2

Date Collected: 10/02/19 09:44
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:54	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW6

Lab Sample ID: 310-166418-3

Date Collected: 10/01/19 18:32
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:54	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW8

Lab Sample ID: 310-166418-4

Date Collected: 10/02/19 07:53
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:54	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW9

Lab Sample ID: 310-166418-5

Date Collected: 10/01/19 13:24
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:55	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW13

Lab Sample ID: 310-166418-6

Date Collected: 10/01/19 15:47
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:55	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW15

Lab Sample ID: 310-166418-7

Date Collected: 10/01/19 17:42
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:55	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW17

Lab Sample ID: 310-166418-8

Date Collected: 10/02/19 08:54
Matrix: Water
Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:56	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:24	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Lab Chronicle

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Client Sample ID: MW18

Lab Sample ID: 310-166418-9

Date Collected: 10/01/19 11:05

Matrix: Water

Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:57	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:25	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: MW19

Lab Sample ID: 310-166418-10

Date Collected: 10/01/19 12:03

Matrix: Water

Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:57	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:25	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:35	SMP	TAL SL

Client Sample ID: DUP1

Lab Sample ID: 310-166418-11

Date Collected: 10/01/19 00:00

Matrix: Water

Date Received: 10/03/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			445345	10/07/19 18:06	ORM	TAL SL
Total/NA	Analysis	9315		1	448106	10/29/19 09:57	SCB	TAL SL
Total/NA	Prep	PrecSep_0			445348	10/07/19 18:35	ORM	TAL SL
Total/NA	Analysis	9320		1	447324	10/23/19 13:25	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	448672	11/04/19 08:36	SMP	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19
Iowa	State	007	12-01-19
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19
Iowa	State	373	09-17-20
Iowa	State Program	373	12-01-20
Kansas	NELAP	E-10236	10-31-19 *
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C592	08-30-20
West Virginia DEP	State Program	381	10-31-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

eurofins | Environment Testing TestAmerica

310-166418 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: Omaha (CITY) NE (STATE)

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: 10/3/19 (DATE) 930 (TIME)

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 1 of 4	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☑ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8

Corrected Temp (°C): 0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 2 of 4	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1

Corrected Temp (°C): 1.0

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 3 of 4	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6

Corrected Temp (°C): 0.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing TestAmerica

Place COC scanning label here
268

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Omaha Public Power District

City/State: CITY Omaha STATE NE

Project: North Omaha Station Landfill

Receipt Information

Date/Time Received: DATE 10/3/19 TIME 930

Received By: LAB

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 4 of 4	
Cooler Custody Seals Present?	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☒ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M

Correction Factor (°C): -0.1

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.8

Corrected Temp (°C): 2.7

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

TestAmerica Omaha SC
268

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kyle K. Uhing	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: Kyle Uhing	Phone: (402) 636-2515	E-Mail: shawn.hayes@testamericainc.com		Page:
Company: Omaha Public Power District				Job #:
Address: 444 South 16th Street Mall 9E/EP1	Due Date Requested:			
City: Omaha	TAT Requested (days):			
State, Zip: NE, 68102-2247	PO #:			
Phone: 531-226-2515	WO #:			
Email: kkuhing@oppd.com	TestAmerica Project #: 31007560			
Project Name: North Omaha Station Landfill	SSOW#:			
Site: North Omaha Station				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Dissolved Metals - See Attached List	I-3765-85 TSS	353.2 Nitrate and Nitrite	9315/9320 Radium 226+28 Combined	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N		
MW2	10/1/19	16:24	G	W	N		X	X	X	X	2	
MW5	10/2/19	9:44	G	W	N		X	X	X	X	2	
MW6	10/1/19	18:32	G	W	N		X	X	X	X	2	
MW8	10/2/19	7:53	G	W	N		X	X	X	X	2	
MW9	10/1/19	13:24	G	W	N		X	X	X	X	2	
MW13	10/1/19	15:47	G	W	N		X	X	X	X	2	
MW15	10/1/19	17:42	G	W	N		X	X	X	X	2	
MW17	10/2/19	8:54	G	W	N		X	X	X	X	2	
MW18	10/1/19	11:05	G	W	N		X	X	X	X	2	
MW19	10/1/19	12:03	G	W	N		X	X	X	X	2	
DUP1	10/1/19	--	G	W	N		X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/2/2019 1450	Company: OPPD	Received by:	Date/Time: 10/2/19 1450	Company: Courtesy
Relinquished by:	Date/Time: 10/2/19 1700	Company: GLS	Received by:	Date/Time: 10-3-19 0930	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Sample Analysis (Some Parameters Need Reported Separate From Others [See COCs])

- Total and dissolved metals: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, iron, lithium, lead, molybdenum, silver, selenium, and thallium via USEPA Method 6020A
- Radium 226+228 Combined via USEPA Method 9315 and 9320
- Mercury via USEPA Method 7470A
- TDS via SM 2540C
- TSS via Method I-3765-85
- Chloride, fluoride, and sulfate via USEPA Method 9056A
- Nitrate and Nitrites via USEPA Method 353.2

Login Container Summary Report

310-166418

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW2	310-166418-A-1	Plastic 250ml - w/nitric - dis	<2		
MW2	310-166418-B-1	Plastic 250ml - with Nitric Acid	<2		
MW2	310-166418-C-1	Plastic 250ml - with Sulfuric Acid	<2		
MW2	310-166418-D-1	Plastic 1 liter - Nitric Acid	<2		
MW2	310-166418-E-1	Plastic 1 liter - Nitric Acid	<2		
MW5	310-166418-A-2	Plastic 250ml - w/nitric - dis	<2		
MW5	310-166418-B-2	Plastic 250ml - with Nitric Acid	<2		
MW5	310-166418-C-2	Plastic 250ml - with Sulfuric Acid	<2		
MW5	310-166418-D-2	Plastic 1 liter - Nitric Acid	<2		
MW5	310-166418-E-2	Plastic 1 liter - Nitric Acid	<2		
MW6	310-166418-A-3	Plastic 250ml - w/nitric - dis	<2		
MW6	310-166418-B-3	Plastic 250ml - with Nitric Acid	<2		
MW6	310-166418-C-3	Plastic 250ml - with Sulfuric Acid	<2		
MW6	310-166418-D-3	Plastic 1 liter - Nitric Acid	<2		
MW6	310-166418-E-3	Plastic 1 liter - Nitric Acid	<2		
MW8	310-166418-A-4	Plastic 250ml - w/nitric - dis	<2		
MW8	310-166418-B-4	Plastic 250ml - with Nitric Acid	<2		
MW8	310-166418-C-4	Plastic 250ml - with Sulfuric Acid	<2		
MW8	310-166418-D-4	Plastic 1 liter - Nitric Acid	<2		
MW8	310-166418-E-4	Plastic 1 liter - Nitric Acid	<2		
MW9	310-166418-A-5	Plastic 250ml - w/nitric - dis	<2		
MW9	310-166418-B-5	Plastic 250ml - with Nitric Acid	<2		
MW9	310-166418-C-5	Plastic 250ml - with Sulfuric Acid	<2		
MW9	310-166418-D-5	Plastic 1 liter - Nitric Acid	<2		
MW9	310-166418-E-5	Plastic 1 liter - Nitric Acid	<2		
MW13	310-166418-A-6	Plastic 250ml - w/nitric - dis	<2		
MW13	310-166418-B-6	Plastic 250ml - with Nitric Acid	<2		
MW13	310-166418-C-6	Plastic 250ml - with Sulfuric Acid	<2		
MW13	310-166418-D-6	Plastic 1 liter - Nitric Acid	<2		
MW13	310-166418-E-6	Plastic 1 liter - Nitric Acid	<2		
MW15	310-166418-A-7	Plastic 250ml - w/nitric - dis	<2		
MW15	310-166418-B-7	Plastic 250ml - with Nitric Acid	<2		
MW15	310-166418-C-7	Plastic 250ml - with Sulfuric Acid	<2		
MW15	310-166418-D-7	Plastic 1 liter - Nitric Acid	<2		
MW15	310-166418-E-7	Plastic 1 liter - Nitric Acid	<2		
MW17	310-166418-A-8	Plastic 250ml - w/nitric - dis	<2		
MW17	310-166418-B-8	Plastic 250ml - with Nitric Acid	<2		

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW17	310-166418-C-8	Plastic 250ml - with Sulfuric Acid	<2		
MW17	310-166418-D-8	Plastic 1 liter - Nitric Acid	<2		
MW17	310-166418-E-8	Plastic 1 liter - Nitric Acid	<2		
MW18	310-166418-A-9	Plastic 250ml - w/nitric - dis	<2		
MW18	310-166418-B-9	Plastic 250ml - with Nitric Acid	<2		
MW18	310-166418-C-9	Plastic 250ml - with Sulfuric Acid	<2		
MW18	310-166418-D-9	Plastic 1 liter - Nitric Acid	<2		
MW18	310-166418-E-9	Plastic 1 liter - Nitric Acid	<2		
MW19	310-166418-A-10	Plastic 250ml - w/nitric - dis	<2		
MW19	310-166418-B-10	Plastic 250ml - with Nitric Acid	<2		
MW19	310-166418-C-10	Plastic 250ml - with Sulfuric Acid	<2		
MW19	310-166418-D-10	Plastic 1 liter - Nitric Acid	<2		
MW19	310-166418-E-10	Plastic 1 liter - Nitric Acid	<2		
DUP1	310-166418-A-11	Plastic 250ml - w/nitric - dis	<2		
DUP1	310-166418-B-11	Plastic 250ml - with Nitric Acid	<2		
DUP1	310-166418-C-11	Plastic 250ml - with Sulfuric Acid	<2		
DUP1	310-166418-D-11	Plastic 1 liter - Nitric Acid	<2		
DUP1	310-166418-E-11	Plastic 1 liter - Nitric Acid	<2		

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No: 310-20490.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: shawn.hayes@testamericainc.com	State of Origin: Nebraska	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 310-166418-2
Address: 13715 Rider Trail North,	Due Date Requested: 10/31/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: North Omaha Station CCR	Project #: 31007560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226	9320_Ra228/PrecSep_0 Radium-228	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW2 (310-166418-1)	10/1/19	16:24 Central		Water			X	X	X	2	
MW5 (310-166418-2)	10/1/19	09:44 Central		Water			X	X	X	2	
MW6 (310-166418-3)	10/1/19	18:32 Central		Water			X	X	X	2	
MW8 (310-166418-4)	10/1/19	07:53 Central		Water			X	X	X	2	
MW9 (310-166418-5)	10/1/19	13:24 Central		Water			X	X	X	2	
MW13 (310-166418-6)	10/1/19	15:47 Central		Water			X	X	X	2	
MW15 (310-166418-7)	10/1/19	17:42 Central		Water			X	X	X	2	
MW17 (310-166418-8)	10/1/19	08:54 Central		Water			X	X	X	2	
MW18 (310-166418-9)	10/1/19	11:05 Central		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	T Dell	10/3/19 1542			10/4/19 0920	TASTL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No: 310-20490.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: shawn.hayes@testamericainc.com	State of Origin: Nebraska	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 310-166418-2
Address: 13715 Rider Trail North,	Due Date Requested: 10/31/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: North Omaha Station CCR	Project #: 31007560			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226	9320_Ra228/PrecSep_0 Radium-228	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW19 (310-166418-10)	10/1/19	12:03 Central		Water			X	X	X	2	
DUP1 (310-166418-11)	10/1/19	Central		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/3/19 1545			10/4/19 0920	TASTL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Omaha Public Power District

Job Number: 310-166418-2

Login Number: 166418

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Bovy, Lorrainna L

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

Login Sample Receipt Checklist

Client: Omaha Public Power District

Job Number: 310-166418-2

Login Number: 166418
List Number: 2
Creator: Harris, Lorin C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/04/19 03:45 PM

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

Tracer/Carrier Summary

Client: Omaha Public Power District
Project/Site: North Omaha Station CCR

Job ID: 310-166418-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
310-166418-1	MW2	81.4	
310-166418-2	MW5	84.7	
310-166418-3	MW6	66.4	
310-166418-4	MW8	70.1	
310-166418-5	MW9	83.1	
310-166418-6	MW13	70.3	
310-166418-7	MW15	80.8	
310-166418-8	MW17	65.3	
310-166418-9	MW18	76.3	
310-166418-10	MW19	55.1	
310-166418-11	DUP1	76.6	
LCS 160-445345/1-A	Lab Control Sample	62.7	
MB 160-445345/20-A	Method Blank	85.6	

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)		
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)	
310-166418-1	MW2	81.4	84.5	
310-166418-2	MW5	84.7	77.0	
310-166418-3	MW6	66.4	86.0	
310-166418-4	MW8	70.1	84.1	
310-166418-5	MW9	83.1	80.7	
310-166418-6	MW13	70.3	84.1	
310-166418-7	MW15	80.8	84.1	
310-166418-8	MW17	65.3	87.1	
310-166418-9	MW18	76.3	84.5	
310-166418-10	MW19	55.1	87.9	
310-166418-11	DUP1	76.6	86.0	
LCS 160-445348/1-A	Lab Control Sample	62.7	87.1	
MB 160-445348/20-A	Method Blank	85.6	91.2	

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

Appendix C

Spring and Fall 2019
Statistical Memos

Technical Memorandum

Date: Tuesday, July 30, 2019

To: Omaha Public Power District (OPPD)

From: HDR Engineering, Inc.

Subject: Summary of Statistical Analysis and Evaluation for SSLs
North Omaha Station Ash Disposal Area
Spring 2019 CCR Groundwater Monitoring Network

OPPD has a five-unit fuel-fired generating plant at the North Omaha Station (Station) in Omaha, Nebraska. Units 1, 2, and 3 are retired; Units 4 and 5 were retrofitted with air pollution control equipment and are still operating. This Station has one (1) existing active Coal Combustion Residuals (CCR) landfill, known as the North Omaha Station (NOS) Ash Landfill, which is subject to the U.S. Environmental Protection Agency's (USEPA's) final CCR Rule. This memorandum provides a discussion and evaluation of the North Omaha Station Ash Disposal Area. The NOS Ash Landfill consists of an unlined active CCR landfill of approximately 18 acres and a 1.4-acre undeveloped portion.

Groundwater sampling was completed as part of an assessment monitoring program for the North Omaha Ash Landfill in April 2019 (as specified in §257.95(d) and Title 132 Chapter 7 Section 005.06). The statistical analysis of groundwater data was performed in accordance with the methods described in the *Groundwater Monitoring Statistical Certification* for the North Omaha Station – NOS Ash Landfill, amended July 2019 and the facility's SAP (dated June 2017) as permitted under Title 132. Sampling results used to update background threshold values (BTVs) were obtained during monitoring events performed between March 2016 and April 2019. Downgradient sampling results from the April 2019 assessment monitoring were used to evaluate for statistically significant increases (SSIs) over background and statistically significant levels (SSLs) over the groundwater protection standard (GWPS). The calculated BTVs and the evaluation for SSIs over background for the Appendix III (Detection Monitoring) constituents and Appendix IV (Assessment Monitoring) constituents are provided in **Table 1**. The calculated lower confidence levels (LCLs) and the evaluation for SSLs over the GWPS for the Appendix IV constituents are provided in **Table 2**.

Summary of Evaluation for SSIs over Background (April 2019)

		Well ID:	MW-2	MW-13	MW-15	MW-17
	BTV (UPL):	*Unit*	*Assessment Monitoring Results in accordance with §257.96(b)*			
Appendix III Constituents						
Boron	*0.200*	*mg/L*	**2.26**	**2.73**	**4.65**	**0.762**
Calcium	*177*	*mg/L*	**339**	**215**	**256**	**297**
Chloride	*275*	*mg/L*	22.5	10.5	8.07	38.7
Fluoride	*1.84*	*mg/L*	<0.500	1.05	<0.500	0.573
pH*	*6.49 – 7.71*	*SU*	7.07	7.13	7.09	6.53

Summary of Evaluation for SSIs over Background (April 2019)

		Well ID:	MW-2	MW-13	MW-15	MW-17
Sulfate	*57.5*	*mg/L*	**753**	**808**	**634**	**834**
TDS	*1190*	*mg/L*	**1850**	**1420**	1070	**1900**
Appendix IV Constituents						
Antimony	*0.001*	*mg/L*	<0.001	<0.001	**0.00207**	<0.001
Arsenic	*0.0118*	*mg/L*	**0.234**	**0.108**	<0.002	0.0102
Barium	*0.625*	*mg/L*	0.140	0.119	0.0752	0.0369
Beryllium	*0.001*	*mg/L*	<0.001	<0001	<0.001	<0.001
Cadmium	*0.000537*	*mg/L*	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	*0.0500*	*mg/L*	<0.005	<0.005	0.0204	<0.005
Cobalt	*0.00293*	*mg/L*	0.00156	<0.0005	<0.0005	**0.0103**
Fluoride	*1.84*	*mg/L*	<0.500	1.05	<0.500	0.573
Lead	*0.0114*	*mg/L*	<0.0005	<0.0005	<0.0005	<0.0005
Lithium	*0.0541*	*mg/L*	0.0444	0.0274	0.0111	**0.0948**
Mercury	*0.00022*	*mg/L*	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	*0.0020*	*mg/L*	<0.002	**0.916**	**0.208**	<0.002
Radium 226+228	*3.81*	*pCi/L*	1.01	0.223(U)	-0.0756(U)	0.328(U)
Selenium	*0.005*	*mg/L*	<0.005	**0.0150**	**0.0553**	<0.005
Thallium	*0.001*	*mg/L*	<0.001	<0.001	<0.001	<0.001

Bold and underlined concentration indicates an SSI over background.
* indicates the lower bound of the range is the lower prediction limit (LPL). The upper bound is the upper prediction limit (UPL).
(U) = Detection is below the sample reporting limit.

Summary of Evaluation for SSLs over GWPS (April 2019)

		Well ID:	MW-2	MW-13	MW-15	MW-17
Constituent	*GWPS*[1]	*Unit*	*Confidence Intervals in accordance with §257.95(d)(3)*			
Antimony	*0.006*	*mg/L*	0.001	0.001	0.001469	0.001
Arsenic	*0.0118*[2]	*mg/L*	**0.2117**	**0.1131**	0.002	**0.01347**
Barium	*2.00*	*mg/L*	0.1035	0.08056	0.04191	0.03472
Beryllium	*0.004*	*mg/L*	0.001	0.001	0.001	0.001
Cadmium	*0.005*	*mg/L*	0.0005	0.0005	0.0005	0.0005
Chromium	*0.10*	*mg/L*	0.005	0.005	0.005	0.005
Cobalt	*0.006*	*mg/L*	0.00065	0.0005	0.0005	**0.01037**
Fluoride	*4.0*	*mg/L*	0.5	0.5	0.278	0.5
Lead	*0.015*	*mg/L*	0.0005	0.0005	0.0005	0.0005
Lithium	*0.0541*[2]	*mg/L*	0.0423	0.0213	0.0126	**0.1069**
Mercury	*0.002*	*mg/L*	0.0002	0.0002	0.0002	0.0002
Molybdenum	*0.10*	*mg/L*	0.002	**0.8141**	**0.2821**	0.002
Radium 226+228	*5.0*	*pCi/L*	0.549	0.455	0.871	0.738
Selenium	*0.05*	*mg/L*	0.005	0.02263	**0.07411**	0.005
Thallium	*0.002*	*mg/L*	0.001	0.001	0.001	0.001

Bold and underlined concentration indicates an SSL over the GWPS.
[1] GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2).
[2] GWPS is established as the UPL when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

Technical Memorandum

Date:	Friday, January 31, 2020
To:	Omaha Public Power District (OPPD)
From:	HDR Engineering, Inc.
Subject:	Summary of Statistical Analysis and Evaluation for SSLs North Omaha Station Ash Disposal Area Fall 2019 CCR Annual Groundwater Monitoring Report

OPPD has a five-unit fuel-fired generating plant at the North Omaha Station (Station) in Omaha, Nebraska. Units 1, 2, and 3 are retired; Units 4 and 5 were retrofitted with air pollution control equipment and are still operating. This Station has one (1) existing active Coal Combustion Residuals (CCR) landfill, known as the North Omaha Station (NOS) Ash Landfill, which is subject to the U.S. Environmental Protection Agency's (USEPA's) final CCR Rule. This memorandum provides a discussion and evaluation of the North Omaha Station Ash Disposal Area. The NOS Ash Landfill consists of an unlined active CCR landfill of approximately 18 acres and a 1.4-acre undeveloped portion.

Groundwater sampling was completed as part of an assessment monitoring program for the North Omaha Ash Landfill in October 2019 (as specified in §257.95(d) and Title 132 Chapter 7 Section 005.06). The statistical analysis of groundwater data was performed in accordance with the methods described in the *Groundwater Monitoring Statistical Certification* for the North Omaha Station – NOS Ash Landfill, amended January 24, 2020 and the facility's most recent SAP (dated January 2020) as permitted under Title 132. Sampling results used to update background threshold values (BTVs) were obtained during monitoring events performed between March 2016 and October 2019. Downgradient sampling results from the October 2019 assessment monitoring were used to evaluate for statistically significant increases (SSIs) over background and statistically significant levels (SSLs) over the groundwater protection standard (GWPS). The calculated BTVs and the evaluation for SSIs over background for the Appendix III (Detection Monitoring) constituents and Appendix IV (Assessment Monitoring) constituents are provided in **Table 1**. The calculated lower confidence levels (LCLs) and the evaluation for SSLs over the GWPS for the Appendix IV constituents are provided in **Table 2**.

Table 1. Summary of Evaluation for SSIs over Background (October 2019)

		Well ID:	MW-2	MW-5	MW-6	MW-8	MW-13	MW-15	MW-17
	BTV (UPL):	*Unit*	*Assessment Monitoring Results in accordance with §257.95(d)(1) – October 2019*						
Appendix III Constituents									
Boron	*0.200*	*mg/L*	**2.17**	**0.614**	**0.543**	**2.18**	**2.46**	**5.13**	**0.783**
Calcium	*195*	*mg/L*	**306**	**428**	**348**	159	**206**	**306**	**342**
Chloride	*275*	*mg/L*	18.2	40.9	**326**	9.03	8.24	6.60	32.7
Fluoride	*1.84*	*mg/L*	<0.5	<0.5	0.511	<0.5	0.544	<0.5	<0.5
pH	*6.24-7.83**	*SU*	6.89	6.88	6.67	7.21	6.92	6.61	**6.06**
Sulfate	*57.5*	*mg/L*	**841**	**1160**	**309**	**604**	**673**	**633**	**724**
TDS	*1190*	*mg/L*	**1930**	**2620**	**1400**	1010	**1440**	**1220**	**1890**
Appendix IV Constituents									
Antimony	*0.001*	*mg/L*	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00218**	<0.001
Arsenic	*0.0118*	*mg/L*	**0.297**	**0.0557**	**0.0170**	0.0106	0.104	<0.002	0.0117
Barium	*0.625*	*mg/L*	0.141	0.0467	0.192	0.101	0.113	0.0666	0.0407
Beryllium	*0.001*	*mg/L*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	*0.000537*	*mg/L*	<0.0001	<0.0001	0.000317	<0.0001	0.000294	0.000109	<0.0001
Chromium	*0.005*	*mg/L*	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0284**	<0.005
Cobalt	*0.00293*	*mg/L*	0.000828	<0.0005	**0.00761**	0.000623	<0.0005	<0.0005	**0.0123**
Fluoride	*1.84*	*mg/L*	<0.5	<0.5	0.511	<0.5	0.544	<0.5	<0.5
Lead	*0.0114*	*mg/L*	<0.0005	<0.0005	0.00287	<0.0005	<0.0005	<0.0005	<0.0005
Lithium	*0.0541*	*mg/L*	0.0424	**0.0869**	0.0510	0.0149	0.0283	0.0156	0.120
Mercury	*0.00022*	*mg/L*	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	*0.002*	*mg/L*	<0.002	<0.002	**0.0654**	**0.111**	**0.915**	**0.245**	**0.00212**
Radium 226+228	*3.77*	*pCi/L*	0.620	0.373(U)	0.985	0.535(U)	0.770	0.419(U)	1.12
Selenium	*0.005*	*mg/L*	<0.005	<0.005	<0.005	<0.005	**0.0204**	**0.0680**	<0.005
Thallium	*0.001*	*mg/L*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Bold and underlined concentration indicates an SSI over background.

* indicates the lower bound of the range is the lower prediction limit (LPL). The upper bound is the upper prediction limit (UPL).

(U) = Result is less than the sample detection limit.

Table 2. Summary of Evaluation for SSLs over GWPS (October 2019)

	Well ID:		MW-2	MW-5	MW-6	MW-8	MW-13	MW-15	MW-17
	GWPS[1]	*Unit*	*Confidence Intervals in accordance with §257.95(d)(1)*						
Antimony	*0.006*	*mg/L*	0.001	0.001	0.001	0.001	0.001	0.001505	0.001
Arsenic	*0.0118*[2]	*mg/L*	**0.217**	**0.04856**	**0.0179**	**0.0132**	**0.1123**	0.001	**0.01331**
Barium	*2.00*	*mg/L*	0.1052	0.04395	0.1792	0.08912	0.08248	0.04323	0.03514
Beryllium	*0.004*	*mg/L*	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	*0.005*	*mg/L*	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Chromium	*0.1*	*mg/L*	0.005	0.005	0.005	0.005	0.005	0.00548	0.005
Cobalt	*0.006*	*mg/L*	0.0006662	0.0005	0.005865	0.0005	0.0005	0.0005	**0.01051**
Fluoride	*4.00*	*mg/L*	0.5	0.5	0.5	0.5	0.5	0.278	0.5
Lead	*0.015*	*mg/L*	0.0005	0.0005	0.001836	0.00091	0.005	0.0005	0.0005
Lithium	*0.0541*[2]	*mg/L*	0.01	**0.07728**	0.01	0.01	0.01	0.01	**0.1078**
Mercury	*0.002*	*mg/L*	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum	*0.10*	*mg/L*	0.002	0.002	0.05364	0.0902	**0.8229**	**0.2781**	0.002
Radium 226+228	*5.0*	*pCi/L*	0.594	0.305	0.7403	0.31	0.546	0.871	0.777
Selenium	*0.05*	*mg/L*	0.005	0.005	0.005	0.005	0.02243	**0.07354**	0.005
Thallium	*0.002*	*mg/L*	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Bold and underlined concentration indicates an SSL over the GWPS.

[1] GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2).

[2] GWPS is established as the UPL when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).