

2024 Annual Groundwater Monitoring and Corrective Action Report

Ash Disposal Area

Big Stone Plant
Big Stone City, South Dakota

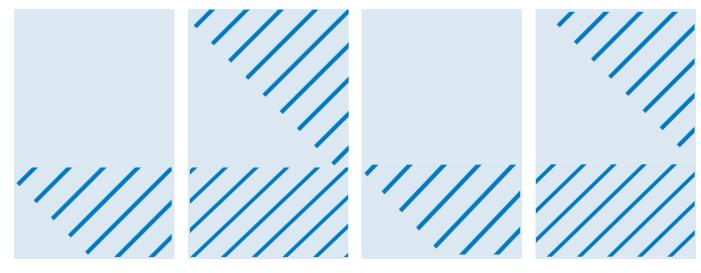
Prepared for Otter Tail Power Company

Prepared by Barr Engineering Co.

January 2025

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Acronyms

Acronym	Description
ADA	Ash Disposal Area
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
OTP	Otter Tail Power Company
SSI	Statistically Significant Increase

1 Executive Summary

This summary provides an overview of the Groundwater Monitoring & Corrective Action Program status as required by §257.90(e)(6). The CCR unit operated under the detection monitoring program described in §257.94 at the start and at the end of the 2024 annual reporting period. The current status of the facility is detection monitoring.

The monitoring program did not identify any statistically significant increases (SSIs) over background for any of the constituents listed in Appendix III to the CCR Rule; therefore, assessment monitoring of the constituents listed in Appendix IV to the CCR Rule were not monitored. Corrective action provisions of the CCR Rule were not required.

The monitoring network continues to be refined and augmented to adjust to data collected. Recent changes to the monitoring network include the installation and baseline monitoring of new upgradient and downgradient wells to adjust to changes in the interpretation groundwater flow direction.

1 Introduction

Otter Tail Power Company (OTP) operates the Big Stone Plant (Big Stone), located near Big Stone City, South Dakota. Big Stone is a coal-fired electrical generating plant, the operation of which results in coal combustion residuals (CCR) as a by-product. Management of CCR from plant operations includes placing CCR in an on-site landfill, referred to as the Ash Disposal Area (ADA). The ADA is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities) for existing CCR landfills. The location of the ADA is shown on Figure 1.

This 2024 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the ADA at Big Stone. The ADA is currently in detection monitoring, as described by §257.94 of the CCR Rule.

1.1 Purpose

As stated in Section §257.90(e), the purpose of the Annual Report is to:

- Document the status of monitoring and corrective action program for the CCR unit
- Summarize key actions completed
- · Describe any problems encountered
- Discuss actions to resolve the problems
- Highlight key activities for the upcoming year

1.2 Status of the Groundwater Monitoring and Corrective Action Program

Baseline monitoring for the network was completed in 2017, as documented in the 2017 Annual Groundwater Monitoring and Corrective Action Report, Ash Disposal Area (Barr, 2018). Wells H10, H11, and H12 were added in 2022 and 2023, as described in Section 2.1.2.

Statistical evaluation of detection monitoring results began on October 17, 2017, and continued through 2024. In 2024, the monitoring program did not identify any statistically significant increases (SSIs) over background for any of the constituents listed in Appendix III to the CCR Rule; therefore, constituents listed in Appendix IV to the CCR Rule were not monitored. Corrective action provisions of the CCR Rule were not required.

1.3 CCR Rule Requirements

This Annual Report has been prepared in accordance with the requirements of §257.90(e) of the CCR Rule, as outlined in the following Table 1.

Table 1 CCR Rule Requirements

CCR Rule Reference	Content Required in Report	Location
§257.90(e)(1)	Map showing the CCR unit and all monitoring wells that are part of the groundwater monitoring system	Section 2.1.1 Documentation; see Figure 1
§257.90(e)(2)	Discuss any new or decommissioned monitoring wells	Not applicable in 2024
§257.90(e)(3)	All monitoring data obtained under §257.90 through §257.98; provide the number and date groundwater samples were collected, and the monitoring (i.e., detection or assessment)	Section 2.2 Monitoring and Analytical Results; Table 2, Figure 2, Figure 3, Appendix A, Appendix B
§257.90(e)(4)	Discuss any transition between monitoring programs	Not applicable – no transition between monitoring programs was necessary
§257.90(e)(5)	Other information specified in §257.90 through §257.98	Throughout report
§257.90(e)(6)	Overview at beginning of annual report	Executive Summary

2 Groundwater Monitoring and Corrective Action Program

This section documents the status of the groundwater monitoring and corrective action program for the ADA for 2024. The groundwater monitoring system is described in Section 2.1, the monitoring and analytical results are described in Section 2.2, key actions completed and problems encountered are described in Section 2.3, and key activities planned for 2024 are described in Section 2.4.

2.1 Groundwater Monitoring System

2.1.1 Documentation

Figure 1 shows an aerial image of the ADA and all upgradient (background) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring system, as required by §257.90(e)(1). Further details on the monitoring system and the ADA monitoring wells can be found in the Groundwater Monitoring System Report, Big Stone Plant Ash Disposal Area (Barr, 2025).

2.1.2 Changes to Monitoring System

One upgradient monitoring well, H12, was installed east of the cooling pond on September 14, 2023, to provide a representative upgradient well for the area upgradient of H6 and H8 based on recent groundwater flow interpretations (Figure 1). Baseline sample collection began on October 17, 2023 and concluded on December 16, 2024; however, the analytical results from the December 16, 2024 event are not available at this time.

In 2022, two downgradient monitoring wells were installed (H10 and H11). Baseline sample collection for H10 and H11 wells began on May 15, 2023; however, after the data were reviewed, the initial sampling event was considered a statistical outlier due to calcium analytical results. The initial baseline sampling event for H10 and H11 is now considered to have occurred on June 12, 2023. Baseline sample collection is anticipated to conclude in early 2025.

The Groundwater Monitoring System Report, Big Stone Plant Ash Disposal Area has been updated to reflect the monitoring system changes (Barr, 2025).

No new monitoring wells were installed in 2024.

2.2 Monitoring and Analytical Results

Groundwater samples were collected from monitoring wells H2OX, H3OX, H4OX, H6, H8, and H9 during two semiannual sampling events. A total of 11 groundwater samples (six monitoring wells and two sampling events; H6 was not sampled during fall event due to insufficient well volume) were collected and analyzed for the constituents listed in Appendix III (Part 257) in 2024 under the detection monitoring program, consistent with the requirements of §257.94(c). Dates of sampling are reported on the field data sheets, and analytical laboratory reports are presented in Appendix A. Results are summarized in Table 2 from samples collected at monitoring wells previously included in the detection monitoring program. Results from samples collected at newly-installed monitoring wells are summarized in Table 3. Groundwater flow data, as required by §257.93(c), are presented in Figure 2, Figure 3 and Appendix C.

2.3 Key Actions Completed/Problems Encountered

The following key actions were completed for the groundwater monitoring program during 2024:

- Completed semiannual groundwater sampling under the detection monitoring program.
- Statistical analysis was conducted according to the Statistical Analysis Plan, Appendix B of the CCR Groundwater Sampling and Analysis Plan (Carlson McCain, 2017).
- Determined, pursuant to §257.93(h), that no statistically significant increase over background levels occurred for any of the constituents listed in Appendix III at any downgradient monitoring well during the 2024 detection monitoring sampling events.

2.4 Key Activities for Upcoming Year

The following key groundwater monitoring program activities are planned for 2025:

- Continue the detection monitoring program in accordance with the CCR Rule.
- Updated the Groundwater Monitoring Network to include monitoring wells H10, H11, and H12.
- Evaluate analytical results from the 2025 semiannual detection monitoring events for SSIs according to the Statistical Analysis Plan (Carlson McCain, 2017).

3 References

- Barr, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report, Big Stone Plant Ash Disposal Area. Prepared for Otter Tail Power Company. January 2018.
- Barr, 2024. Groundwater Monitoring System Report, Big Stone Plant Ash Disposal Area. Prepared for Otter Tail Power Company. December 2024.
- Carlson McCain, 2017. CCR Groundwater Sampling and Analysis Plan (Including Statistical Method Selection and Certification), Big Stone Plant Ash Disposal Area. Prepared for Otter Tail Power Company. October 2017.

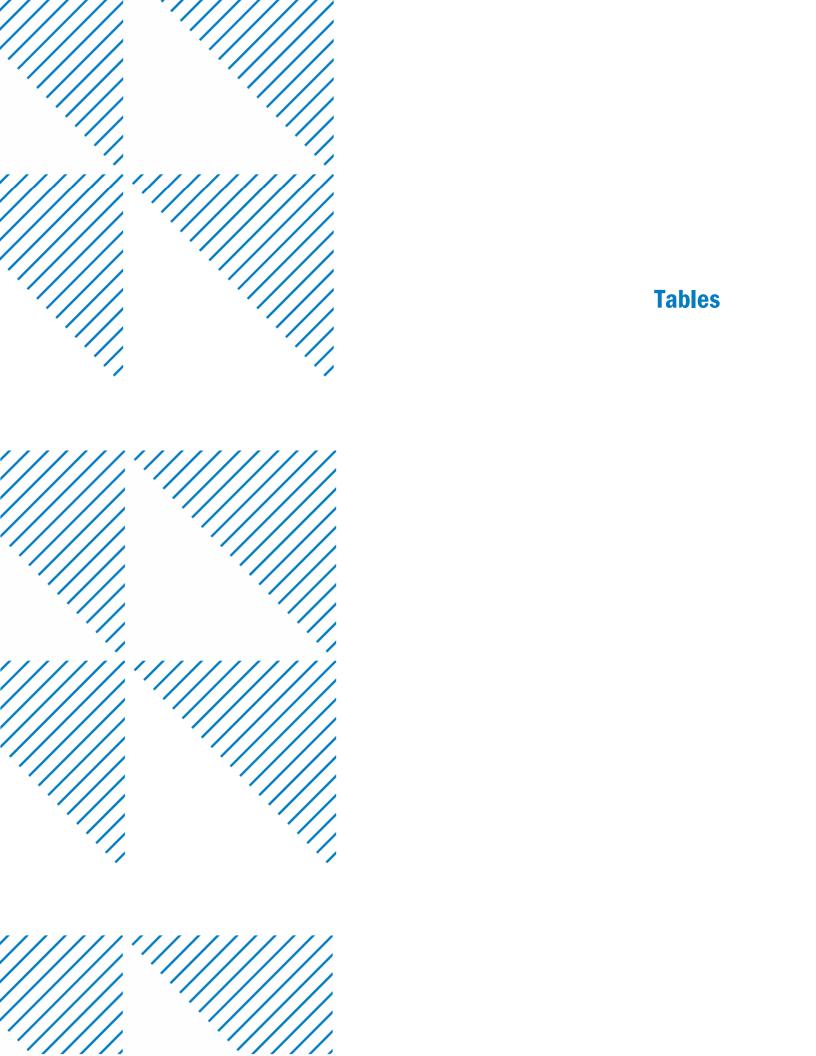


Table 2
Detection Monitoring Well Groundwater Analytical Data Summary
Big Stone Plant
Otter Tail Power Company

		Location	H2OX	H2OX	НЗОХ	НЗОХ	H4OX	H4OX	H6	Н8	Н8	H9	H9
	Da			10/14/2024	4/15/2024	10/14/2024	4/15/2024	10/14/2024	4/15/2024	4/15/2024	10/14/2024	4/15/2024	10/14/2024
	San	nple Type	N	N	N	N	N	N	N	N	N	N	N
Parameter	Analysis Location	Units											
Appendix III Parameters													
Boron, total	Lab	mg/l	0.248	0.233	7.640	6.730	0.572	0.494	2.400	3.160	2.590	1.290	1.290
Calcium, total	Lab	mg/l	514.0	500.0	425.0	383.0	318.0	272.0	53.40	119.0	112.0	615.0	610.0
Chloride	Lab	mg/l	4.1	3.5	63.6	65.4	40.8	39.6	< 3	3.7	3.4	69.5	80.8
Fluoride	Lab	mg/l	0.350	0.300	0.420	0.340	0.520	0.480	0.430	0.530	0.510	0.330	0.310
рН	Lab	pH units	7.1	7.0	7.3	7.0	7.1	7.0	7.5	7.4	7.3	6.9	6.9
рН	Field	pH units	7.18	6.45	6.88	6.40	6.93	6.51	7.24	7.16	7.16	6.58	6.60
Solids, total dissolved	Lab	mg/l	3840	3760	3040	2880	2160	2090	599	951	941	2820	2800
Sulfate, as SO4	Lab	mg/l	2230	2040	1380	1190	1070	922	104	245	276	1410	1370
Groundwater elevation	Field	ft amsl	1097.96	1093.24	1088.58	1087.41	1092.27	1088.75	1087.13	1075.76	1070.46	1078.19	1073.11

N Sample Type: Normal Detection Monitoring

Table 3 New Well Groundwater Analytical Data Summary Big Stone Plant Otter Tail Power Company

	Location	H10	H10	H10	H10	H10	H10	H10	H10	H10
	Date	5/15/2023	6/12/2023	8/21/2023	10/17/2023	12/11/2023	2/19/2024	4/15/2024	6/10/2024	10/14/2024
Sa	ample Type	N	N	N	N	N	N	N	N	N
Parameter	Units									
Appendix III										
Boron, Total	mg/l	0.292	0.284	0.298	0.358	0.349	0.359	0.369	0.368	0.273
Calcium, Total	mg/l	284.0	489.0	492.0	509.0	499.0	499.0	496.0	469.0	356.0
Chloride	mg/l	7.1	6.6	6.3	6.3	6.4	6.7	6.7	7.5	6.8
Floride	mg/l	0.200	0.180	0.180	0.190	0.200	0.240	0.240	0.220	0.190
pH	pH units	7.0	7.1	7.0	7.2	7.0	7.1	7.1	7.2	7.0
pH, Field	pH units	6.34	7.00	6.88	6.51	6.87	6.95	7.01	6.91	6.38
Solids, total dissolved	mg/l	4810	4820	4840	4840	4650	5100	4990	4970	4200
Sulfate, as SO4	mg/l	2590	2650	2270	2590	2450	2310	2930	2620	2690
Appendix IV										
Antimony, Total	mg/l	< 0.0025	< 0.001	< 0.001	< 0.0025	0.00156	< 0.001	< 0.0025	< 0.001	
Arsenic, Total	mg/l	< 0.0025	< 0.001	< 0.001	< 0.0025	0.00121	< 0.001	< 0.0025	< 0.001	
Barium, Total	mg/l	0.026	0.026	0.023	0.027	0.026	0.023	0.023	0.022	
Beryllium, Total	mg/l	< 0.005	< 0.005	< 0.00005	< 0.005	< 0.0001	< 0.0001	< 0.00025	< 0.0001	
Cadmium, Total	mg/l	< 0.0005	0.00025	< 0.0002	< 0.0005	< 0.0002	< 0.0002	< 0.0005	< 0.0002	
Chromium, Total	mg/l	< 0.01	< 0.01	< 0.0005	< 0.0025	0.00141	< 0.01	< 0.0025	< 0.001	
Cobalt, Total	mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	-
Lead, Total	mg/l	< 0.0025	< 0.001	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.001	-
Lithium, Total	mg/l	0.226	0.235	0.271	0.298	0.298	0.295	0.321	0.354	-
Mercury, Total	mg/l	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	-
Molybedenum, Total	mg/l	0.017	< 0.015	0.00865	0.0123	0.0142	0.0133	0.0176	0.0145	-
Selenium, Total	mg/l	0.00495	0.00474	0.00454	0.00379 J+	0.00482	0.00465	0.00360	0.00248	-
Thallium, Total	mg/l	< 0.0005	< 0.0002	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002	-
Radium 226	pCi/l	4.42 +/- 0.989	0.390 +/- 0.250	0.290 +/- 0.217	0.0723 +/- 0.186 ND	0.986 +/- 0.401	0.719 +/- 0.380	0.433 +/- 0.324 B	0.241 +/- 0.202	-
Radium 228	pCi/l	0.726 +/- 0.251	0.402 +/- 0.331 ND	0.465 +/- 0.265 ND	0.238 +/- 0.287 ND	0.840 +/- 0.251	0.467 +/- 0.197	-0.486 +/- 0.306 ND	0.371 +/- 0.496 ND	-
Radium, combined (226+228) [Barr Calclation]	pCi/l	5.15 +/- 1.02	0.792 +/- 0.415 q	0.755 +/- 0.340 q	0.310 +/- 0.342 ND	1.826 +/- 0.473	1.186 +/- 0.428	-0.486 +/- 0.306 ND	0.612 +/- 0.536 q	
Other										
Groundwater elevation, Field	ft amsl	1079.81	1078.28	1075.36	1073.73	1077.51	1075.85	1080.06	1085.00	1076.17

N Sample Type: Normal Detection Monitoring

Note: The samples collected from H10 and H11 on 5/15/2023 are considered to be statistical outliers and are not considered baseline samples.

J+ The reslt is an estimated qantity and may be biased high.

ND the analyte was analyzed for, but was not detected.

q The combined radium result includes both detected and not detected values.

B The analyte was detected in one of the associated laboratory,

equipment, field or trip blank samples and is considered non-detect at the concentration reported by the laboratory.

Table 3 New Well Groundwater Analytical Data Summary Big Stone Plant Otter Tail Power Company

	Location	H11	H11	H11	H11	H11	H11	H11	H11
	Date	5/15/2023	6/12/2023	8/21/2023	10/17/2023	12/11/2023	2/19/2024	4/15/2024	6/10/2024
Sa	mple Type	N	N	N	N	N	N	N	N
Parameter	Units								
Appendix III									
Boron, Total	mg/l	0.232	0.247	0.245	0.271	0.263	0.263	0.261	0.260
Calcium, Total	mg/l	217.0	547.0	543.0	573.0	558.0	552.0	553.0	551.0
Chloride	mg/l	4.7	3.9	3.5	3.6	3.7	3.9	4.0	3.9
Floride	mg/l	0.140	0.130	0.140	0.140	0.160	0.160	0.160	0.160
рН	pH units	7.0	7.0	6.9	6.9	6.8	6.8	6.9	7.0
pH, Field	pH units	6.37	6.80	6.70	6.59	6.78	6.71	6.64	6.67
Solids, total dissolved	mg/l	4270	4230	4220	4220	4160	4240	4660	4060
Sulfate, as SO4	mg/l	2640	2170	2440	2580	2410	2500	2280	1950
Appendix IV									
Antimony, Total	mg/l	< 0.0005	< 0.0005	< 0.001	< 0.0025	< 0.0005	< 0.001	< 0.0025	< 0.0005
Arsenic, Total	mg/l	< 0.0025	< 0.001	< 0.001	< 0.0025	< 0.001	< 0.001	< 0.0025	< 0.001
Barium, Total	mg/l	0.036	0.035	0.034	0.030	0.030	0.030	0.028	0.027
Beryllium, Total	mg/l	< 0.005	< 0.005	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.00025	< 0.00005
Cadmium, Total	mg/l	0.00038	0.00035	0.00027	< 0.0005	< 0.0002	< 0.0002	< 0.0005	0.00014
Chromium, Total	mg/l	< 0.01	< 0.01	< 0.001	< 0.0025	< 0.0005	< 0.01	< 0.0025	< 0.001
Cobalt, Total	mg/l	0.008	0.009	0.008	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Lead, Total	mg/l	< 0.0025	< 0.001	< 0.001	< 0.0025	< 0.001	< 0.001	< 0.0025	0.00055
Lithium, Total	mg/l	0.223	0.251	0.303	0.332	0.345	0.326	0.332	0.358
Mercury, Total	mg/l	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	0.000005	< 0.000005
Molybedenum, Total	mg/l	< 0.015	< 0.015	0.00490	0.00303	0.00204	0.00214	< 0.0025	0.00206
Selenium, Total	mg/l	< 0.0025	0.00172 J+	< 0.002	< 0.0025	0.00237	< 0.002	< 0.0025	< 0.001
Thallium, Total	mg/l	< 0.0005	< 0.0002	< 0.0002	< 0.0005	< 0.0002	< 0.0002	< 0.0005	< 0.0001
Radium 226	pCi/l	1.27 +/- 0.422	0.171 +/- 0.205 ND	1.83 +/- 0.496	0.0392 +/- 0.107 ND	0.267 +/- 0.384 ND	0.260 +/- 0.264 ND	0.119 +/- 0.184 ND	0.160 +/- 0.169 ND
Radium 228	pCi/l	0.875 +/- 0.201	0.772 +/- 0.328	0.798 +/- 0.293 B	0.538 +/- 0.242	0.128 +/- 0.262 ND	-0.421 +/- 0.381 ND	0.0113 +/- 0.279 ND	-0.115 +/- 0.699 ND
Radium, combined (226+228) [Barr Calclation]	pCi/l	2.15 +/- 0.467	0.943 +/- 0.387 q	1.83 +/- 0.496	0.577 +/- 0.265 q	0.395 +/- 0.465 ND	0.260 +/- 0.264 ND	0.130 +/- 0.334 ND	0.160 +/- 0.169 ND
Other			_	_		_			
Groundwater elevation, Field	ft amsl	1082.58	1082.19	1079.29	1078.43	1079.48	1082.61	1083.12	1086.69

N Sample Type: Normal Detection Monitoring

equipment, field or trip blank samples and is considered non-detect at the concentration reported by the laboratory.

Note: The samples collected from H10 and H11 on 5/15/2023 are considered to be statistical outliers and are not considered baseline samples.

J+ The reslt is an estimated qantity and may be biased high.

ND the analyte was analyzed for, but was not detected.

q The combined radium result includes both detected and not detected values.

B The analyte was detected in one of the associated laboratory,

Table 3 New Well Groundwater Analytical Data Summary Big Stone Plant Otter Tail Power Company

	Location Date	H11 10/14/2024	H12 10/17/2023	H12 12/11/2023	H12 2/19/2024	H12 4/15/2024	H12 6/10/2024	H12 8/12/2024	H12 10/14/2024
Sa	mple Type	N	N	N	N	N	N	N	N
Parameter	Units	.,						N N	
Appendix III									
Boron, Total	mg/l	0.218	0.402	0.415	0.392	0.381	0.610	0.369	0.358
Calcium, Total	mg/l	607.0	25.60	21.70	23.00	23.20	39.90	20.70	25.60
Chloride	mg/l	4.0	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Floride	mg/l	0.150	0.290	0.300	0.320	0.320	0.380	0.340	0.310
pН	pH units	6.8	8.2	7.8	7.9	8.2	7.8	7.2	8.0
pH, Field	pH units	6.66	7.99	7.98	8.00	8.21	7.79	7.80	8.23
Solids, total dissolved	mg/l	4140	197	156	159	184	207	133	197
Sulfate, as SO4	mg/l	2250	20.8	< 5	7.1	485	90.7	8.8	8.4
Appendix IV									
Antimony, Total	mg/l		< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Arsenic, Total	mg/l		0.00274	0.00118	0.00187	0.00164	0.00142	0.00127	0.00252
Barium, Total	mg/l		0.058	0.032	0.045	0.041	0.089	0.039	0.067
Beryllium, Total	mg/l		< 0.005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.0001	< 0.005
Cadmium, Total	mg/l		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0002
Chromium, Total	mg/l		0.00371	0.00056	< 0.01	0.00184	0.00197	0.00177	< 0.01
Cobalt, Total	mg/l		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Lead, Total	mg/l		0.00153	< 0.0005	0.00081	0.00059	0.00052	< 0.0005	0.00136
Lithium, Total	mg/l		< 0.02	< 0.02	< 0.02	< 0.02	0.031	< 0.02	< 0.02
Mercury, Total	mg/l		0.000012	< 0.000005	< 0.000005	0.000009	< 0.000005	< 0.000005	0.000009
Molybedenum, Total	mg/l		0.0342	0.0387	0.0382	0.0378	0.0277	0.0394	0.039
Selenium, Total	mg/l		< 0.0005	< 0.0005	< 0.001	< 0.0005	0.00199	< 0.0005	< 0.0005
Thallium, Total	mg/l		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Radium 226	pCi/l		0.182 +/- 0.170 ND	0.0839 +/- 0.180 ND	-0.00784 +/- 0.114 ND	0.0967 +/- 0.187 ND	0.147 +/- 0.155 ND	0.836 +/- 0.345	0.0912 +/- 0.196 ND
Radium 228	pCi/l		0.465 +/- 0.228	0.947 +/- 0.196	0.710 +/- 0.274	1.85 +/- 2.81	0.604 +/- 0.488 ND	0.0603 +/- 0.228 ND	0.742 +/- 0.238
Radium, combined (226+228) [Barr Calclation]	pCi/I		0.647 +/- 0.284 q	1.031 +/- 0.266 q	0.710 +/- 0.274 q	1.95 +/- 2.82 ND	0.751 +/- 0.512 ND	0.896 +/- 0.414 q	0.833 +/- 0.308 q
Other									
Groundwater elevation, Field	ft amsl	1079.28	1109.26	1108.72	1109.29	1108.88	1111.77	1110.62	1109.46

N Sample Type: Normal Detection Monitoring

equipment, field or trip blank samples and is considered non-detect at the concentration reported by the laboratory.

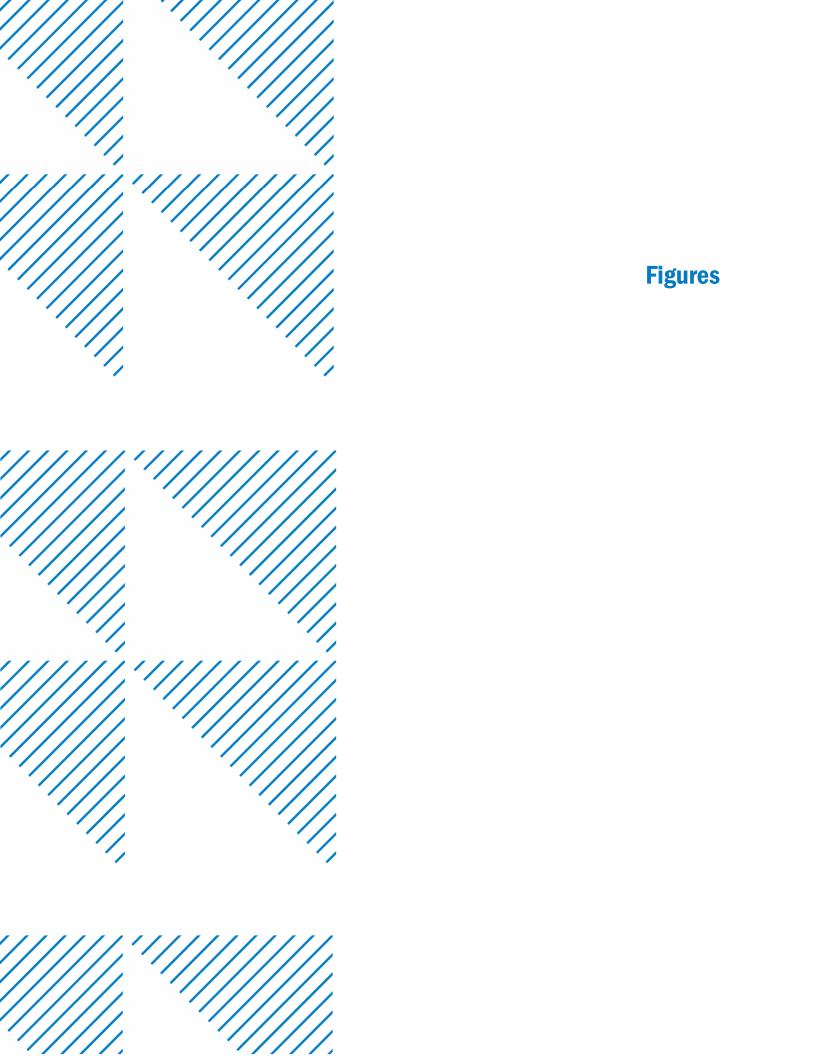
Note: The samples collected from H10 and H11 on 5/15/2023 are considered to be statistical outliers and are not considered baseline samples.

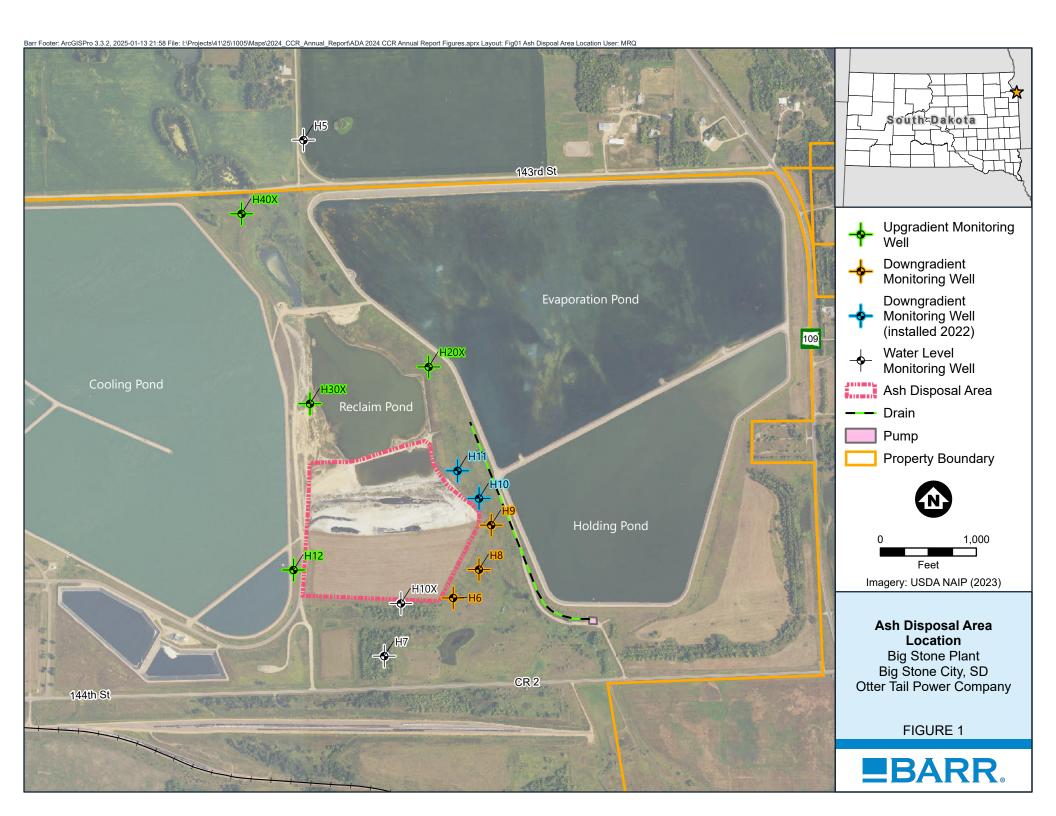
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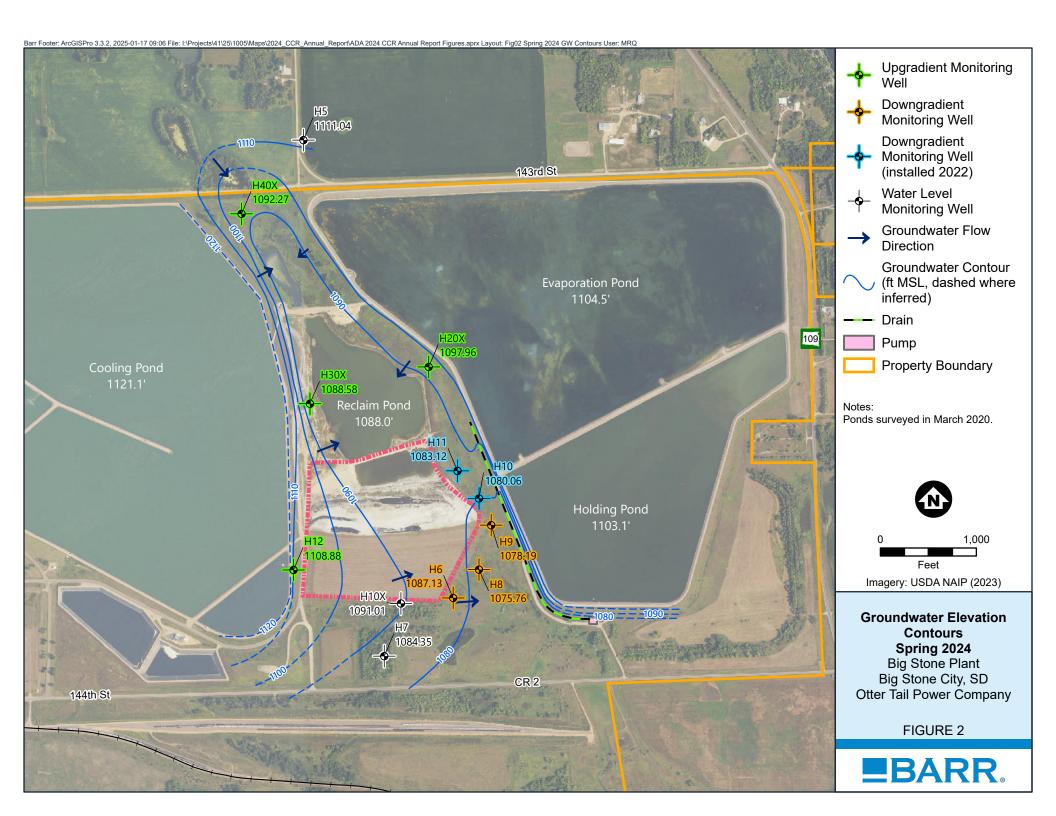
ND the analyte was analyzed for, but was not detected.

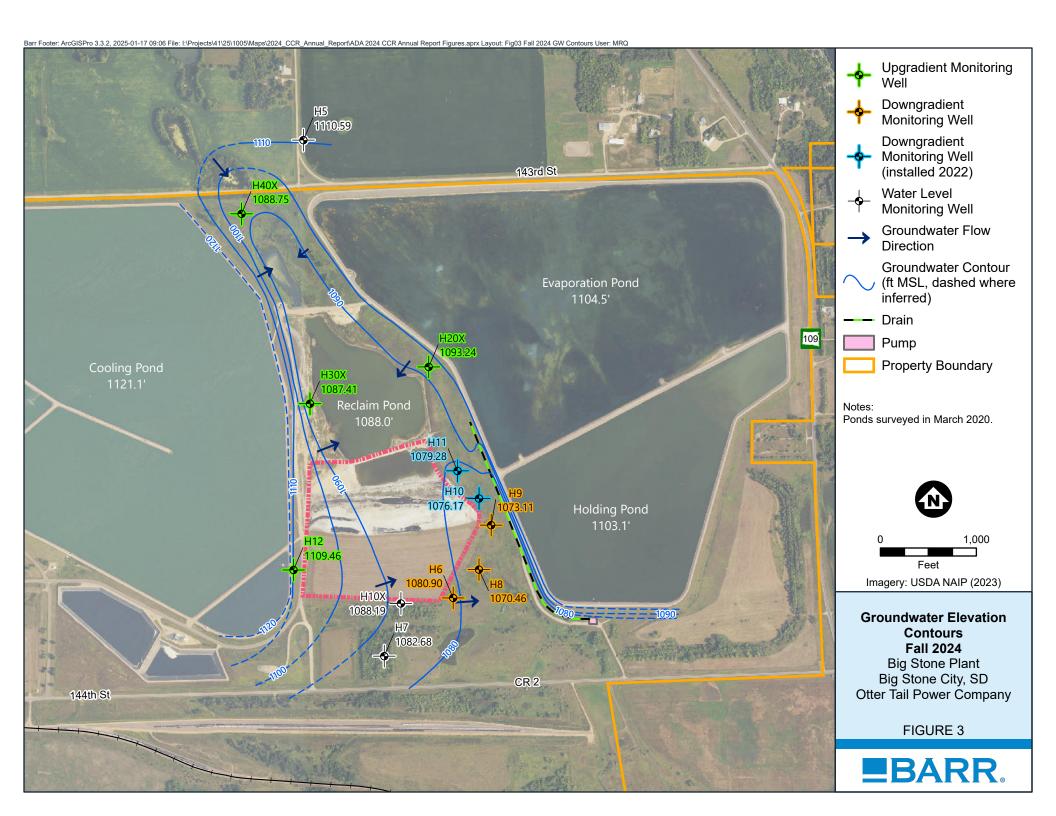
q The combined radium result includes both detected and not detected values.

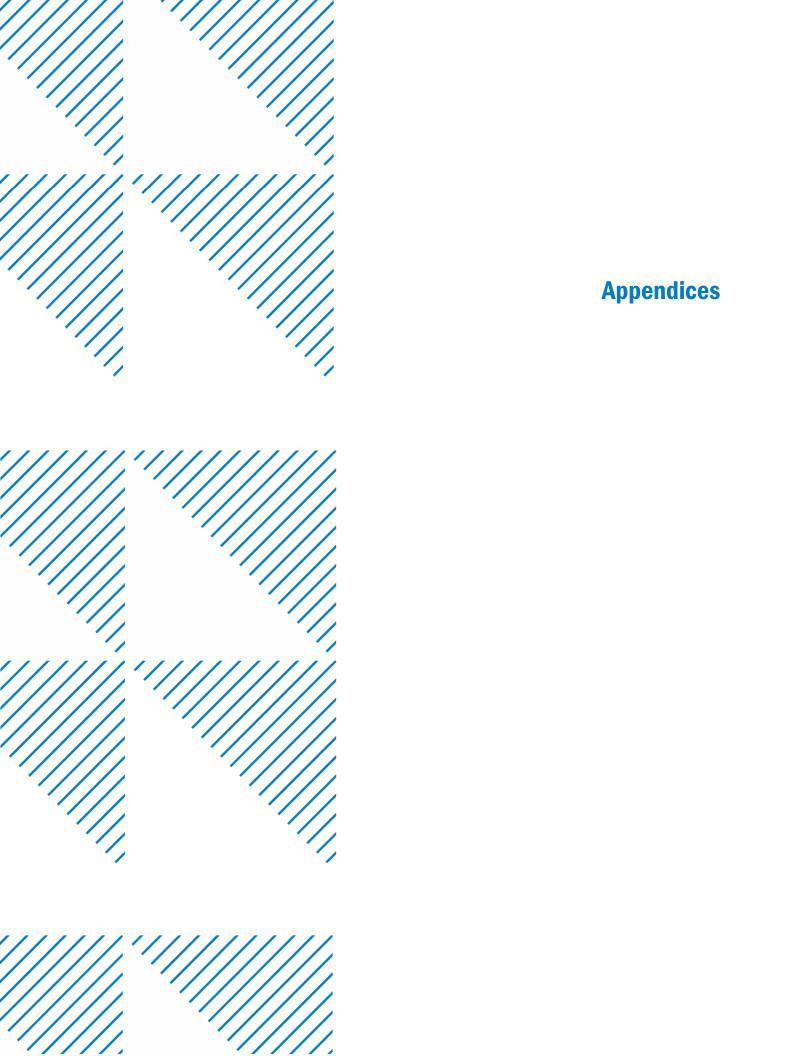
B The analyte was detected in one of the associated laboratory,















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Page:

1 of 5

FINAL REPORT COMPLETION DATE: 25 Jan 24 08

Date Reported: 23 Jan 2024

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Work Order #: 31-0319 Account #: 006106

12Jan 2024

PO #: 59601

Project Name: BIG STONE PLANT CCR

Field Service Manager/Date Reviewed

Chemistry Lab Manager/Date Reviewed

Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H10

2 of 5 Page:

Report Date: 23 Jan 2024 Lab Number: 23-A10137 Work Order #: 31-0319 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 11 Dec 2023 11:56 Sampled By: MVTL FIELD PERSONNEL Date Received: 11 Dec 2023 14:25

PO #: 59601

Temp at Receipt: 2.1C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst	
MS Water Digestions					12 Dec 23	JN	
Water Digestions					12 Dec 23	JN	
рн, Field	6.87	units	1.00	SM4500-H+-2011	11 Dec 23 11:56	BMW	
рн	* 7.0	units	1.0	SM 4500 H+ B-2000	12 Dec 23 11:53	KFL	
Radium 226	0.99	pCi/L	0.60		4 Jan 24 18:47	OL	
Radium 228	0.84	pCi/L	3.00	EPA M9320	30 Dec 23 16:21	\mathbf{OL}	
Sulfate	2450 ~	mg/L	5.0	ASTM D516-11	14 Dec 23 8:36	KRM	
Chloride	6.4	mg/L	3.0	SM 4500 Cl E	12 Dec 23 9:42	KRM	
Mercury	< 0.005	ug/L	0.005	EPA 245.7	12 Dec 23 11:38	RMB	
Solids, Total Dissolved	4650	mg/L	10	SM 2540 C-97	12 Dec 23 9:35	CC	
Calcium	499.0 ~	mg/L	. 0.500	SW6010D	13 Dec 23 12:39	SS	
Lithium	0.298	mg/L	0.020	SW6010D	13 Dec 23 12:39	SS	
Barium	0.026	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS	
Cobalt	< 0.005	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS	
Boron	0.349	mg/L	0.100	SW6010D	13 Dec 23 12:39	SS	
Antimony	1.56	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Arsenic	1.21 @	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Beryllium	< 0.1 @	ug/L	0.05	SW6020B	13 Dec 23 13:47	KAM	
Cadmium	< 0.2 @	ug/L	0.1	SW6020B	14 Dec 23 14:01	KAM	
Chromium	1.41 @	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Lead	< 2.5 @	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM	
Molybdenum	14.2 @	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Selenium	4.82 @	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Thallium	< 0.5 @	ug/L	0.1	SW6020B	13 Dec 23 13:47	KAM	
Fluoride	0.200	mg/L	0.020	EPA 300.0	19 Dec 23 4:59	MDH	

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

- ~ Sample diluted due to result above calibration of linear range.
- OL = Analysis performed by an Outside Laboratory.

= Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H11

3 of 5 Page:

Report Date: 23 Jan 2024 Lab Number: 23-A10138 Work Order #: 31-0319

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 11 Dec 2023 11:27 Sampled By: MVTL FIELD PERSONNEL Date Received: 11 Dec 2023 14:25

PO #: 59601

Temp at Receipt: 2.1C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions			 .		12 Dec 23	JN
Water Digestions					12 Dec 23	JN
pH, Field	6.78	units	1.00	SM4500-H+-2011	11 Dec 23 11:27	BMW
Н	* 6.8	units	1.0	SM 4500 H+ B-2000	12 Dec 23 11:53	KFL
Radium 226	0.27	pCi/L	0.60		4 Jan 24 18:47	OL
Radium 228	0.13	pCi/L	3.00	EPA M9320	30 Dec 23 16:21	OL
Sulfate	2410 ~	mq/L	5.0	ASTM D516-11	14 Dec 23 8:36	KRM
Chloride	3.7	mq/L	3.0	SM 4500 Cl E	12 Dec 23 9:42	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	12 Dec 23 11:38	RMB
Solids, Total Dissolved	4160	mg/L	10	SM 2540 C-97	12 Dec 23 9:35	CC
Calcium	558.0 ~	mg/L	0.500	SW6010D	13 Dec 23 12:39	SS
Lithium	0.345	mg/L	0.020	SW6010D	13 Dec 23 12:39	SS
Barium	0.030	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS
Cobalt	< 0.005	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS
Boron	0.263	mg/L	0.100	SW6010D	13 Dec 23 12:39	SS
Antimony	< 0.5	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM
Arsenic	< 1 @	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	13 Dec 23 13:47	KAM
Cadmium	< 0.2 @	ug/L	0.1	SW6020B	14 Dec 23 14:01	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM
Lead	< 1 @	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM
Molybdenum	2.04	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM
Selenium	2.37 @	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM
Thallium	< 0.2 @	ug/L	0.1	SW6020B	13 Dec 23 13:47	KAM
Fluoride	0.160	mg/L	0.020	EPA 300.0	19 Dec 23 4:59	MDH

^{*} Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

~ Sample diluted due to result above calibration of linear range.

OL = Analysis performed by an Outside Laboratory.



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JOSH HOLLEN OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H12

Page: 4 of 5

Report Date: 23 Jan 2024 Lab Number: 23-A10139 Work Order #: 31-0319 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 11 Dec 2023 10:49 Sampled By: MVTL FIELD PERSONNEL Date Received: 11 Dec 2023 14:25

PO #: 59601

Temp at Receipt: 2.1C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst	
MS Water Digestions					12 Dec 23	JN	
Water Digestions					12 Dec 23	JN	
pH, Field	7.98	units	1.00	SM4500-H+-2011	11 Dec 23 10:49	BMW	
рН	* 7.8	units	1.0	SM 4500 H+ B-2000	12 Dec 23 11:53	KFL	
Radium 226	0.08	pCi/L	0.60		4 Jan 24 18:47	OL	
Radium 228	0.95	pCi/L	3.00	EPA M9320	30 Dec 23 16:21	OL	
Sulfate	< 5	mg/L	5	ASTM D516-11	14 Dec 23 8:36	KRM	
Chloride	< 3	mg/L	3	SM 4500 Cl E	12 Dec 23 9:42	KRM	
Mercury	< 0.005	ug/L	0.005	EPA 245.7	12 Dec 23 11:38	RMB	
Solids, Total Dissolved	156	mg/L	10	SM 2540 C-97	12 Dec 23 9:35	CC	
Calcium	21.70	mg/L	0.500	SW6010D	13 Dec 23 12:39	SS	
Lithium	< 0.02	mg/L	0.02	SW6010D	13 Dec 23 12:39	SS	
Barium	0.032	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS	
Cobalt	< 0.005	mg/L	0.005	SW6010D	13 Dec 23 12:39	SS	
Boron	0.415	mg/L	0.100	SW6010D	13 Dec 23 12:39	SS	
Antimony	< 0.5	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM	
Arsenic	1.18	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Beryllium	< 0.05	ug/L	0.05	SW6020B	13 Dec 23 13:47	KAM	
Cadmium	< 0.1	ug/L	0.1	SW6020B	14 Dec 23 14:01	KAM	
Chromium	0.56	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Lead	< 0.5	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM	
Molybdenum	38.7	ug/L	0.50	SW6020B	13 Dec 23 13:47	KAM	
Selenium	< 0.5	ug/L	0.5	SW6020B	13 Dec 23 13:47	KAM	
Thallium	< 0.1	ug/L	0.1	SW6020B	13 Dec 23 13:47	KAM	
Fluoride	0.300 @	mg/L	0.020	EPA 300.0	19 Dec 23 4:59	MDH	

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit



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Page: 5 of 5

Date Reported: 23 Jan 2024

Work Order #: 202331-0319 Account Number: 006106

PO #: 59601

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INORGANIC & METALS ANALYSES: No problems were encountered.

MVTL

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MEMBER ACIL

Page: 1 of 1

Quality Control Report

Lab IDs: 23-A10137 to 23-A10139 Project: BIG STONE PLANT CCR Work Order: 202331-0319

Lab IDS: 23-A1013 / to 23-A	10139	Pro	oject: BR	2 9 I ONI	E PLANT CCI		work (Order: 20			Jan a comment	T-12-1	Leading service	1			
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony ug/L	25.0	105	85-115	25.0	23A10139q	< 0.5	27.2	109	75-125	27.2	26.9	108	1.1	10	102	90-110	< 0.5
Arsenic ug/L	25.0	106	85-115	25.0	23A10139q	1.18	28.2	108	75-125	28.2	27.1	104	4.0	10	104	90-110	< 0.5
Barium mg/L	1.000	102	85-115	1.00	23A10140q	0.030	1.030	100	75-125	1.030	1.050	102	1.9	10	98	90-110	< 0.005
Beryllium ug/L	2.50	100	85-115	2.50	23A10139q	< 0.05	2.63	105	75-125	2.63	2.42	97	8.3	10	102	90-110	< 0.05
Boron mg/L	1.000	106	85-115	1.00	23A10140q	0.397	1.480	108	75-125	1.480	1.510	111	2.0	10	102	90-110	< 0.1
Cadmium ug/L	5.00	101	85-115	5.00	23-A10139	< 0.1	5.39	108	75-125	5.39	5.21	104	3.4	10	104	90-110	< 0.1
Calcium mg/L	50.00	104	85-115	50.0	23A10140q	20.50	71.50	102	75-125	71.50	72.20	103	1.0	10	104	90-110	< 0.5
Chloride mg/L	_	_	-	60.0	23-A10140	< 3	65.1	108	80-120	65.1	64.1	107	1.5	10	94	90-110	< 3
Chromium ug/L	25.0	103	85-115	25.0	23A10139q	0.56	25.7	101	75-125	25.7	25.0	98	2.8	10	100	90-110	< 0.5
Cobalt mg/L	1.000	105	85-115	1.00	23A10140q	< 0.005	0.999	100	75-125	0.999	1.030	103	3.1	10	102	90-110	< 0.005
Fluoride mg/L	-	-	-	1.00	23-A10139	0.300	1.36	106	80-120	1.36	1.30	100	4.5	10	102	90-110	< 0.02
Lead ug/L	25.0	100	85-115	25.0	23A10139q	< 0.5	26.3	105	75-125	26.3	25.9	104	1.5	10	101	90-110	< 0.5
Lithium mg/L	1.000	104	85-115	1.00	23A10140q	< 0.02	1.010	101	75-125	1.010	1.020	102	1.0	10	103	90-110	< 0.02
Mercury ug/L	-	<u> </u>		0.10	36224001qc	< 0.005	0.096	96	63-111	0.096	0.096	96	0.0	18	102	76-113	< 0.005
Molybdenum ug/L	25.0	97	85-115	25.0	23A10139q	38.7	65.1	106	75-125	65.1	64.0	101	1.7	10	100	90-110	< 0.5
pH units	_	_		-	-	-	-	-	-	7.9	7.9	-	0.0	2.5	101	90-110	-
Selenium ug/L	25.0	102	85-115	25.0	23A10139q	< 0.5	27.2	109	75-125	27.2	26.3	105	3.4	10	102	90-110	< 0.5
Solids, Total Dissolved mg/L	-	-		-	-	-	-	-	-	156	149	-	4.6	10	99	85-115	< 10
Sulfate mg/L		-	-	50.0	23-A10140	< 5	47.7	95	80-120	47.7	47.0	94	1.5	10	81	80-120	< 5
Thallium ug/L	5.00	101	85-115	5.00	23A10139q	< 0.1	5.29	106	75-125	5.29	5.19	104	1.9	10	102	90-110	< 0.1

Approved by:





January 16, 2024

Todd Rieger MVTL Laboratories 1126 North Front Street New Ulm, MN 56073

RE:

Project:

31-0319 Otter Tail Power Co

Pace Project No.: 10678768

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Piper Gibbs

piper.gibbs@pacelabs.com

Peper & Shelos

(612)607-1700

Project Manager

Enclosures





SAMPLE SUMMARY

Project:

31-0319 Otter Tail Power Co

Pace Project No.:

10678768

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10678768001	23A10137-H10	Water	12/11/23 11:56	12/13/23 11:29
10678768002	23A10138-H11	Water	12/11/23 11:27	12/13/23 11:29
10678768003	23A10139-H12	Water	12/11/23 10:49	12/13/23 11:29



CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Yes	No	N/A	10. Is sediment vi	sible in the dissolved conf	alner? Yes N
Yes	No	•	11. If no, write	ID/Date/Time of conta	iner below:
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	10139-H12	PS	12/11/2023 10:49	10678768003	Water	2				×	<u> </u>	Ayle.							4	4	1=	<u>05 </u>
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This	chain of custody is consi	dered co	mplete as is sind	ce this informa	ation is a	availa	ble ir	the	owner	iabora	tory.		·			communication (co	er dan de manere en					
			grand of the					~														

Nage 7 of 20



INTER_LABORATORY WORK ORDER # 10678768

(To be completed by sending lab)

Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

		Sending Pro	ject No:	10678768	
	R	leceiving Pro	ject No:		
Check B	ox for C	onsolidated	Invoice:		
		Date P	repared	12/13/23	
REQUES	TED C	OMPLETION	DATE:	1/15/2024	

Sending Region	IR10-Minnesota	Sendir	ng Project	Mgr.		Piper	Gibbs
Receiving Region	IR850-Pace National	Extern	al Client			MVTL Lat	ooratories
State of Sample Origin	MN	QC De	eliverable			STD R	PORT
All qu	uestions should be addi	i a		300 <u>-</u>			
Requested Reportable Units	Report We	t or Dry Weigh			/O Lab Ne	ed to run?	Cerl, Needed
442		1702.07 (1000	REQUEST		Quantity of		Acode Desc
Method Desc	ription	Container Type	Quantity of containers	Preservative	Samples	Acade	ACOUG DESC
Redium 220	5/228	BP1N		HNO3	3	SI-38RAD	SUB PASI RAD
Special Requirements: Rep	ort C, QC Limits (C),	MPCA EQL	ıls (493)				
	FOR ANALYTIC	CAL WORK C	OMPLETE	D THIS SECTIO	N ALSO		Tipe.
Return Samples to Sending	Region: Yes X	No		35. S			
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Original sent to the receiving lab		ng lab.			orporate a	s needed	



Pace Analytical* ANALYTICAL REPORT

January 16, 2024

Pace Analytical - Minnesota

Sample Delivery Group:

L1688321

Samples Received:

12/14/2023

Project Number:

10678768

Description:

31-0319 Otter Tail Power Co

Site:

001

Report To:

Piper Gibbs

Ss

Cn

'Sr

'Qc

GI

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Entire Report Reviewed By:

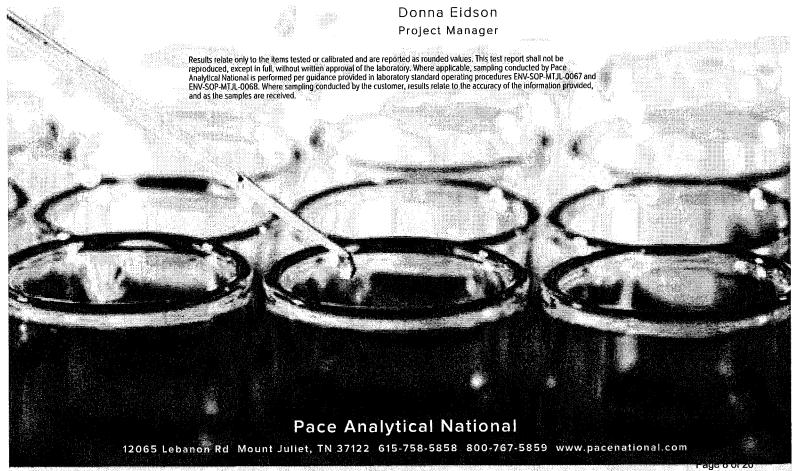


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23A10137-H11 L1688321-02	6	[Ch
23A10137-H12 L1688321-03	7	⁵Sr
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Al: Accreditations & Locations	11	8 Al
Sc: Sample Chain of Custody	12	
		°Sc

SAMPLE SUMMARY

in kundekt in mining misikalikaksi. Meleksi kundekten mengalaksi menengalaksi di sebesah menengalaksi kenalika Terlebah			Collected by	Collected date/time	Received dat	e/time
23A10137-H10 L1688321-01 Non-Potable Water				12/11/23 11:56	12/14/23 09:0	0
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Radiochemistry by Method 904/9320	WG2196101	1	12/27/23 17:05	12/30/23 16:21	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2199148	1	01/03/24 09:35	01/04/24 18:47	ZRG	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	te/time
23A10137-H11 L1688321-02 Non-Potable Water				12/11/23 11:27	12/14/23 09:0	00
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Radiochemistry by Method 904/9320	WG2196101	1	12/27/23 17:05	12/30/23 16:21	DDD	Mt. Juliet, TN
Radlochemistry by Method SM7500Ra B M	WG2199148	1	01/03/24 09:35	01/04/24 18:47	ZRG	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/lime
23A10137-H12 L1688321-03 Non-Potable Water				12/11/23 10:49	12/14/23 09:0	00
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
	·		date/time	date/time	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	
Radiochemistry by Method 904/9320	WG2196101	1	12/27/23 17:05	12/30/23 16:21	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2199148	1	01/03/24 09:35	01/04/24 18:47	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Donna Eidson Project Manager ¹Cp

²Tc















23A10137-H10

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 01

Collected date/time: 12/11/23 11:56

Radiochemistry by Method SM7500Ra B M

Radiochemistry by Method 904/9320

Result

pCi/l

0.986

84.7

Qualifier

2 slgma CE

+/-

0.401

	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-228	0.840	er en	0.251	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	0.444	AC 15-2-299000 10-200000000000000000000000000000000	12/30/2023 16:21	<u>WG2196101</u>
(T) Barium	92.6					30.0-143	12/30/2023 16:21	WG2196101
(T) Yttrium	120	z				30.0-136	12/30/2023 16:21	WG2196101

TPU

+/-

0.176

MDA

pCi/l

0.234

Lc

pCi/l

0.178

30.0-143

Analysis Date

01/04/2024 18:47

01/04/2024 18:47

date / time







\Box



⁴Cn	
-----	--

Batch

WG2199148

WG2199148

l		J
	⁵ Sr	











23A10137-H11

Analyte

RADIUM-226

(T) Barium-133

Collected date/time: 12/11/23 11:27

SAMPLE RESULTS - 02

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/l

0.267

65.8

reddiochermony by it	,							
	Result	Qualifier	2 slgma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/I		+/-	+/-	pCi/l	pCi/l	dale / lime	Language of Language and American American Committee Com
RADIUM-228	0.128	<u>U</u>	0.262	Principal C Contraction (No. 10.10.00)	0.486	otoopaavatta 2.2000aanaa daadaanaa oo o	12/30/2023 16:21	WG2196101
(T) Barium	93.5					30.0-143	12/30/2023 16:21	<u>WG2196101</u>
(T) Yttrium	103	Source Consultation In Hammer				30.0-136	12/30/2023 16:21	WG2196101

TPU

+/-

0.113

MDA

pCi/l

0.559

Lc

pCi/l

0.367

30,0-143

Analysis Date

01/04/2024 18:47

01/04/2024 18:47

date / time

2 slgma CE

+/-

0.384

Qualifier







³ Ss	³ Ss	
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_		_

١	4	C	'n	
Ī				

Batch

WG2199148

WG2199148













23A10137-H12

Analyte

RADIUM-226

(T) Barium-133

Collected date/time: 12/11/23 10:49

SAMPLE RESULTS - 03

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/l

109

0.0839

Qualifier

 $\underline{\mathsf{U}}$

2 sigma CE

+/-

0.180

-	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-228	0.947		0.196	controller controller and are full and the controller and are stated as a second	0.333		12/30/2023 16:21	WG2196101
(1) Barium	102					30.0-143	12/30/2023 16:21	<u>WG2196101</u>
(T) Yttrium	106		BH 1 HE 41-1 - 40000-30000-30			30.0-136	12/30/2023 16:21	WG2196101

TPU

+/-

0.0797

MDA

pCi/l

0.299

Lc

pCi/l

0.207

30.0-143













Batch

WG2199148

WG2199148

Analysis Date

01/04/2024 18:47

01/04/2024 18:47

date / time











WG2196101

QUALITY CONTROL SUMMARY

L1688321-01,02,03

Method Blank (MB)

Radiochemistry by Method 904/9320

							1
(MB) R4019877-1 12/	30/23 16:21						-
	MB Result	MB Qualifier	MB 2 sigma C	E MB MDA	MB Lc		[2
Analyte	pCi/l		+/-	pCi/l	pCi/I		-
Radium-228	0.0979	7	0.180	0.162			<u>_</u>
(T) Barium	113		113			The Control of the Co	3
(T) Yttrium	103		103				L









L1688114-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1688114-01 12/30/23 16:21 • (DUP) R4019877-5 12/30/23 16:21													
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/I	+/-	pCi/l	pCi/I	pCi/l	+/-	pCi/I	pCi/l	%			%	
Radium-228	0.798	0.244	0.417		0.0890	0.271	0.509		160	1.95	<u>U</u>	20	3
(T) Barium	106				108	108							
(T) Yttrium	108				103	103							









"Sc

(ECS) N+013077 Z 1273072	.5 10.21				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/i	%	%	
Radium-228	5.00	5.11	102	80.0-120	
(T) Barium			101		
(T) Yttrium			109		

L1688304-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1688304-01 12/3	0/23 16:21 • (MS) R	4019877-3 12/3	30/23 16:21 •	(MSD) R401987	7-4 12/30/23	3 16:21							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/I	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	10.0	0.0867	10.5	11.0	104	109	1	70.0-130			4.56		20
(T) Barium		99.4			97.6	99.8	36.20.00.00.00						
(T) Yttrium		107			109	104							

WG2199148

QUALITY CONTROL SUMMARY

L1688321-01,02,03

Method Blank (MB)

Radiochemistry by Method SM7500Ra B M

	MB Result	MB Qualifier	MB 2 sigma	CE MB MDA	MB Lc	
nalyte	pCi/I	·	+/-	pCi/I	рСИ	
adium-226	0.0165	U	0.0675	0.116	0.0755	
(T) Barium-133	72.0		72.0			

L1688841-02 Original Sample (OS) • Duplicate (DUP)

	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/l	pCi/l	+/-	pCi/I	pCi/l	%			%	
Radium-226	3.09	0.682	0.332	0.221	2.57	0.669	0.314	0.222	18.3	0.541		20	3
(T) Barium-133	3.09 89.3	U.68Z	U.33Z	0.221	2.57 82.9	0.669 82.9	0.314	0.222	C.OI	0.541		20	

Laboratory Control Sample (LCS)

(LCS) R4022154-2	01/04/24 18:47					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	9
Analyte	pCi/I	pCi/l	%	%		So
Radium-226	5.00	5.27	105	80.0-120		L
(T) Barium-133			73.8			

L1688321-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1688321-03 01/04/	/24 18:47 • (MS) F	R4022154-3 01	1/04/24 18:47 •	(MSD) R40221	54-4 01/04/2	4 18:47						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER RPD Limits
Analyte	pCi/I	pCi/l	pCi/l	pCi/l	%	%		%			%	%
Radium-226	20.0	0.0839	22.6	20.4	112	101	1	75.0-125			10.3	20
(T) Barium-133		109			91.7	96.2						

DATE/TIME:

01/16/24 14:28

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

Abbreviations ar	d Definitions
MDA	Minimum Detectable Activity.
Rec.	Recovery:
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for sample will provide the page and method number for the analysis reported.

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Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

each sample will provide the name and method number for the analysis reported.

Sample Summary (Ss)

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
\jaska	17-026	Nevada	TN000032021-1
rizona	AZ0612	New Hampshire	2975
rkansas	88-0469	New JerseyNELAP	TN002
alifornia	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
onnecticut	PH-0197	North Carolina	Env375
lorida	E87487	North Carolina ¹	DW21704
eorgia	NELAP	North Carolina ³	41
eorgia ¹	923	North Dakota	R-140
laho	TN00003	OhioVAP	CL0069
llinois	200008	Oklahoma	9915
ndiana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
ansas	E-10277	Rhode Island	LA000356
Centucky 16	KY90010	South Carolina	84004002
Centucky ²	16	South Dakota	n/a
ouisiana	Al30792	Tennessee 14	2006
oulsiana	LA018	Texas	T104704245-20-18
∕aine	TN00003	Texas ⁵	LAB0152
/laryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Aichigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Vississippi	TN00003	West Virginia	233
dissouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003	NORTH CONTROL OF THE	



^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.





















^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Sample D Sample Collect Type Date/Time Lab D Matrix E E E E E E E E E	finto eCOC Cert. Needed: X Yes No
Pace National 12065 Lebanon Rd 12065 Lebanon	ower Co Owner Received Date: 12/13/2023 Results Requested By: 1/15/2024
12065 Lebanon Rd 12065 Leban	Requesteu Analysis
Minor Mino	
Preserved Containers Sample Collect Lab D Matrix E D Date/Time Lab D Date/Time Date/Time Lab D Date/Time Date/	
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Sample D Type Date/Time Lab D Matrix Matr	
23A10137-H10 PS 12/11/2023 11:56 10678768001 Water 2 X X	
23A10137-H10 PS 12/11/2023 11:56 10678768001 Water 2 X X	Matrix 0 LAB USE ONLY
23A10138-H11 PS 12/11/2023 11:27 10678768002 Water 2 X	
23A10139-H12 PS 12/11/2023 10:49 10678768003 Water 2 X	
ansfers Released By Date/Time Received By Date/Time	
ansfers Released By Date/Time Received By Date/Time	
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By Coer/14(E 12/13/53 16.15 (18) 12/14/123 0 100	
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	<u>(18) 12/14/23 04/00</u>
	de la collèctica de la collèctica de la coll èctica de la collèctica de l
opier Temperature on Receint 11-2+0 > tt.2 Photoustody Seal (Y) or N Received on Ice (Y) or N Samples Intact(Y) or	Samples Intact Y) or N
ooler Temperature on Receipt 11-23000 t.2 PPACustody Seal (Y) or N Received on Ice (Y) or N Samples Intact (Y) or N Samples In	[17] OF The second of the seco



Sending Region

INTER_LABORATORY WORK ORDER # 10678768

(To be completed by sending lab)

Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

IR10-Minnesota

A. Color	S	ending Pr	oject No	10678768	i. ,	
		ceiving Pr				
Check i	3ox for Co	nsolidated	Invoice			
		Date F	repared	12/13/23		
REQUE	STED CO	MPLETIO	N DATE	1/15/2024	l	

Piper Gibbs

		1,21,244,344,34		A STATE OF THE STA	100 100 400		and the second s	
Receiving Region	IR850-Pace National	nal External Client			MVTL Laboratories			
State of Sample Origin	MN	QC De	eliverable		STD REPORT			
pIIA	uestions should be add	ressed to sen	ding proje	ct manager.	C. Add			
				1793 1796 - 179				
Requested Reportable Units	Report We	t or Dry Weigh	II? Dry We	elght IRV	VO Lab Ne	ed to run? C	ert, Needed	
		WORK	REQUEST	FŃ				
The second secon	<i>i</i>	Container Type	Quantity of	Preservative	Quantity of	Acode	Acode Desc	
Method Desc	ription		containers		Samples			
Radium 226	5/228	BP1N		HNO3	3	SI-38RAD	SUB PASI RAD	
Dan.	ort C, QC Limits (C)	MDOA EO	do /402\		1			
pecial Requirements: <u>Repu</u>	un C, QC Linius (C)	INIF CA EQL	115 (433)					
	FOR ANALYTIC	CAL WORK C	OMPLETE	D THIS SECTIO	N ALSO			
Return Samples to Sending I	Region: Yes X	Na	3	44.	54.72			
Keturi Sampies to Sending i	vedion: T les X	NO						
3 (2)	<u> </u>	Nepnei	TION of F	nem.			<u>-1-1</u>	
		Diarvai	LINE OLL	JIMR				

Sending Project Mgr.

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557 New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

Project	Otter Tail P	ower Comp	any	Project Ty	pe:	Big Stor			CR	Nam	<u>ne of</u>	San	<u>ıpler</u>	<u>s:</u>	14:01	205				
Report	Otter Tail P	ower Comp	any	Carbon Cor	oy:	Barr En	ginee	ering												
Attn:	Paul Vukon	ich		Attn:						Quo	<u>te Νι</u>	<u>ımbe</u>	<u>er:</u>		-34	21	a			Ì
Address	P.O. Box 49	96		Address:						Wor	k Or	<u>der N</u>	lumb	<u>er:</u> _2	31-	1	1			ļ
	Fergus Fall		38-0496							<u>Lab</u>	Num	bers	<u>:</u>							
Phone:	218-739-83	349		 						<u> </u>										<u> </u>
	S	sample Inf	ormation									3ott	le Ty	pe					Analy	ysis
Lab Number	Sample ID	Unique Station ID	Date	7ime	Sample Type	Sample Location	1000 HNO3 Ipp.	500 None	¹⁰⁰⁰ none	500 HNO3	Filler? Y or M.	. / 4	Filter? Y or M	1000 HNO3 P	1000 Amber	500 NaOH	Other: 150 H20	Other 150 Nor.	Analysis Required	
A 10137	H10		110:423	1156	GW				1	1	N			2					CCR 3&4	
	H11			1127	GW				1	1	N			2					CCR 3&4	
	H12			1049	GW				1	1	N			2					CCR 3&4	
						1							ı .						1	

Comments:

Samples Reling	uished By: hm	1011	Samples Received By:	U. Kleder	
	(27 Time: \L	75 Temp: 2,170	Will Date: 11 Dec 23	7 Time: 1425	Temp: 2.1C
Samples Reling	uished into: Fridge	Log in Cart) Othe	er:		
Samples Reling	uished By:		Samples Received By:		
Date:	Time:	Temp:	Date:	Time:	Temp:
Delivery:	Samplers Other:		Seal Number(s) - If Use	ed	
Transport:	Ambient (læ	Other:	Seals Intact?	Yes No	

Jeff Hoffman

Dec 11th

From:

Hollen, Josh <jhollen@otpco.com>

Sent:

Friday, December 1, 2023 2:48 PM

To:

Jeff Hoffman

Subject:

Big Stone sampling - Dec 11th

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Jeff,

Are we still on for the 11th of Dec. at Big Stone? That's the date I have on my sheet.

It would be CCR background (CCR 3 and CCR 4) for monitoring wells H10, H11, and H12.

It would be State of SD background for monitoring well H12.



Josh Hollen

Environmental Compliance Specialist Environmental Services Dept.

Phone: (218) 739-8314

otpco.com









CCR - Appendix III Detection Monitoring

Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters Method

Boron 6010 Calcium 6010

Chloride SM4500 CL E Fluoride EPA 300

pH SM 4500 H+B-96

Sulfate ASTM D516
Dissolved Solids, Total SM 2540 C-97

Note: These are non-filtered samples.

CCR - Appendix IV - Assessment Monitoring

Method
SW6020A
SW602A
SW6010C
SW6020A
SW6020A
SW6020A
SW60100
EPA 300
SW6020A
SW60100
EPA 245.7
SW6020A
SW6020 <i>A</i>
SW6020 <i>A</i>

Note: These are non-filtered samples.

Minnesota Valley Testing Laboratories, Inc.New Ulm, MN 56073 507 354 8517

Groundwater Assessment	Site:	Otter Tail Power Co./ Big Stone
Sampling Personnel: p	Facility ID:	
15W	Date: // /)c	.c23
20.	Unique Statio	
	Sample ID:	H10
Well Condition		
Well Locked? Yes No	Protective Po	
Well Labeled? Yes No	State ID Tag	
Casing Straight? (es) No	Grout Seal In	tact? Xes No
Repairs Necessary:		
Well Information		1000 002
Well Depth: $38-53$	Well Casing I	Elevation: 1090 · 83
Constructed Depth:	Static Water	Elevation: 1077-51
Casing Diameter: 2"	Previous State	
Water Level Before Purge: 13.32		After Sample: Sclov Pump
Well Volume: 4.11 Gall	ons Measuremen	t Method: Flec. WLI Steel Tape
Sampling Information		- (-
Weather Conditions: Temp: 25	Wind: NOS	sky: Fair
	der S\$/T Disp. Bailer Whale	Grab Other:
Dedicated Equipment: Yes No	Pumping Rat	te: 25 gpm
Well Purged Dry? Yes No	Time Pump I	
Time Purged Dry?	Time of Sam	
Duplicate Sample? Yes No ID:	Sample EH:	136.0
Sample Appearance: General: Cl	Color: NOW Phase	e: NO7~ Odor: NO7~
Specific len	.	Gallons SEQ
Time pH Cond. OC	mg/L NTU	Removed # Comments:
1151 6.89 5025 8	76 MA MA	4,25 1
		2
1156 6-87 5013 8	-79 + +	- 3 Recharge
		4 ~
		5
Stabiliz Yes (No)	Amount Water Removed	

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

New Ulm, MN 56073

Groundw	ater Ass	essment			Site:		Otte	r Tail Pov	wer Co./	Big Stone
Sampling P	ersonnel:	D			Facility					
		15W			Date:	11 020				
		20				Station II	D:			
					Sample	e ID:			H11_	
		· · · ———								
Well Cond	dition			<u>,</u>		_				
Well Locke	d?	(es No			Protect	ive Posts	? Yes		KO	_
Well Labele	ed?	Yes No				D Tag?	Yes		NO)	- -
Casing Stra	aight?	Yes No			Grout S	Seal Intac	t? (YGS		No	_
Repairs Ne	cessary:	· · · · · · · · · · · · · · · · · · ·								
Well Info	rmation									2
Well Depth	:	44.32			Well C	asing Elev	/ation:		104	3.24
Constructe		-	•		Static \	Nater Ele	vation:	1079	7.48	
Casing Dia	meter:	2"	•		Previo	us Static:	·			
Water Leve	el Before Pu	urge: 13-	76		Water	Level Afte	r Sample		-07	
Well Volum	ne:	4.99	Gallons	_	Measu	rement M	ethod:	Elec.	WLI_	Steel Tape
					1					
					· · · · · · · · · · · · · · · · · · ·					
Sampling	Informat	ion	>.		من ج			<u>, </u>	<u> </u>	· <u> · · · · · · · · · · · · · · · · · </u>
Sampling Weather C		ion Temp:	25	Wind:	NG/5		Sky:	Fai'		
	onditions:		25 Pladder SS/T	Wind: Disp. Baile	er Whale	Gra	b Other:			
Weather C Sampling N	onditions:	Temp: Gr <u>u</u> ndfos			er Whale	Gra	b Other:	Fai's	gpm	
Weather C Sampling N	onditions: Method: Equipment:	Temp: Gr <u>u</u> ndfos			er Whale Pumpi Time F	ng Rate: Pump Beg	b Other: 2 an	5		€mJ/I pm
Weather C Sampling M Dedicated	onditions: Method: Equipment: ed Dry?	Temp: Grundfos Yes No Yes No	Pladder SS/T		Pumpi Time F	ng Rate: Pump Beg of Samplir	an //	5		(am) / pm (am) / pm
Weather C Sampling M Dedicated Well Purge	onditions: Method: Equipment: ed Dry? ed Dry?	Temp: Grundfos Ves No	Bladder SS/T ID:	Disp. Baile	Pumpi Time F Time c Sampl	ng Rate: Pump Beg of Samplir e EH:	b Other: 2 an	5	gpm	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purge	onditions: Method: Equipment: ed Dry? ed Dry? Sample?	Temp: Grundfos Yes No Yes No	Pladder SS/T	Disp. Baile	Pumpi Time F Time c	ng Rate: Pump Beg of Samplir	an //	5	gpm	
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S	onditions: Method: Equipment: ed Dry? ed Dry? Sample?	Gryndfos Yes No Yes No 11,22 Yes No	Bladder SST ID: Clear	Disp. Baile	Pumpi Time F Time c Sampl	ng Rate: Pump Beg of Samplir e EH: Phase:	an III	5 02 27	gpm	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S	onditions: Method: Equipment: ed Dry? ed Dry? Sample?	Gryndfos Yes No Yes No 11,22 Yes No	Bladder SS/T ID: Clear	Disp. Baile	Whale Pumpi Time F Time c Sampl	ng Rate: Pump Beg of Samplir e EH: Phase:	an III	5 02 27 SEQ	gpm Odor:	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Grundfos Yes No Yes No General: Specific Cond.	ID: Clear I emp C	Color: D. O. mg/L	Pumpi Time F Time C Sampl VO7~	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	5 02 27 SEQ #	gpm	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Temp: Grundfos Yes No Yes No Yes No General: Specific	Bladder SS/T ID: Clear	Color: D. O.	Whale Pumpi Time F Time c Sampl	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an III	5 0ユ ンプ SEQ #	gpm Odor:	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap Time pH 1123-	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Temp: Grundfos Yes No Yes No Hijz Yes No General: Specific Cond. 4246	ID: Clear I emp C C C C C C C C C C C C C	Color: D. O. mg/L	Pumpi Time F Time C Sampl VO7~	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	5 クユ スフ SEQ # 1 2	gpm Odor:	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap Time pH	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Grundfos Yes No Yes No General: Specific Cond.	ID: Clear I emp C	Color: D. O. mg/L	Pumpi Time F Time C Sampl VO7~	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	SEQ # 1 2 3	gpm Odor:	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap Time pH 1123-	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Temp: Grundfos Yes No Yes No Hijz Yes No General: Specific Cond. 4246	ID: Clear I emp C C C C C C C C C C C C C	Color: D. O. mg/L	Pumpi Time F Time C Sampl VO7~	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	SEQ # 1 2 3 4	gpm Odor:	(am) / pm
Weather C Sampling M Dedicated Well Purge Time Purg Duplicate S Sample Ap Time pH	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Temp: Gryndfos Yes No Yes No J122 Yes No General: Specific Cond. 4246	ID: Clear I emp C C C C C C C C C C C C C	Color: D. O. mg/L	Turbid	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	SEQ # 1 2 3	gpm Odor:	am) / pm
Weather C Sampling N Dedicated Well Purge Time Purg Duplicate S Sample Ap Time pH 1123-	onditions: Method: Equipment: ed Dry? ed Dry? Sample? opearance:	Temp: Grundfos Yes No Yes No Hijz Yes No General: Specific Cond. 4246	ID: Clear I emp C C C C C C C C C C C C C	Color: D. O. mg/L	Pumpi Time F Time C Sampl VO7~	ng Rate: Pump Beg of Samplir e EH: Phase: ity Ga	an Hag: 1/3/9	SEQ # 1 2 3 4	gpm Odor:	am) / pm

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment			Site:	Otter T	ail Power	Co./ Big Stone
Sampling Personnel:			Facility ID:			
BW			Date: //	lec 23		
20	_		Unique Stat	ion ID:		
	_		Sample ID:		н	12
Well Condition) (O) Vo-		
Well Locked? Yes No	•		Protective F			6
Well Labeled? Yes No Casing Straight? Yes No	_		State ID Ta	~		XIII
Submig Curanger	_		Olour Ocur			
Repairs Necessary:						
Well Information				- 1	. /A	_
Well Depth: 22-63	_		Well Casing		NI	
Constructed Depth: 24.00	_		Static Water	er Elevation:		
Casing Diameter: 2"	_		Previous S	tatic:	<u> </u>	
Water Level Before Purge: 18.6	8		Water Leve	el After Sample:	190	72
Well Volume: , 64	Gallons		Measurem	ent Method:	Elec. V	ILI Steel Tape
Sampling Information						_
Veather Conditions: Temp:	75	Wind: 👠	105	Sky:	Fail	
ampling Method: Grundfos	Bladder SS/)	Disp. Bailer	Whale	Grab Other:		
dicated Equipment: Yes No			Pumping F			gpm
Well Purged Dry? Yes (No)	- 		Time Pum	<u> </u>	40	am/pm
Time Purged Dry?			Time of Sa	ampling: 10	49_	am / pm
Duplicate Sample? Yes No	「ID: ~		Sample El	H: 107-8	<u> </u>	
Sample Appearance: General:	1/24.	Color:	n/d7~ Pha	ase: NOT		Odor: NUN
Sample Appearance. Ceneral.		,				
Specific		D. O.	Turbidity	Gallons	SEQ	
Time pH Cond.	4	mg/L	NTU	Removed	#	Comments:
1043 7.93 302	0.51	NA	NA	.75	1	
1046 7.96 299	10-58			1.50	2	
1049 7-98 298	10.59		1	2-25	3	
					4	
					5	
Stabilized? (Ves) No		Amount V	Vater Remove	ed: 2-25		Gallons
		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Comments:						



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page: 1 of 25

FINAL REPORT COMPLETION DATE: 32 Apra4 ax

Date Reported: 18 Apr 2024

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0022 Account #: 006106

PO #: 108267

Project Name: BIG STONE PLANT - STATE CCR

Field Service Manager/Date Reviewed

Chemistry Lab Manager/Date Reviewed

Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



MINNESOTA VALLEY TESTING LABORATORIES, INC. 1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



2 of 25 Page:

Report Date: 18 Apr 2024 Lab Number: 24-A352 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:40 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: WELL 10

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	47.01	feet	NA	Field	19 Feb 24 12:40	BMW
Water Level Before Purge	16.34	feet	NA	NA	19 Feb 24 12:40	
Static Elevation, Field	1082.36	ft	NA	Field	19 Feb 24 12:40	

RL = Reporting Limit



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: WELL 11

3 of 25 Page:

Report Date: 18 Apr 2024 Lab Number: 24-A353 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:36 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result	Method RL	Method Reference .	Date Analyzed	Analyst	
Well Depth, Field	127.22 feet	NA	Field	19 Feb 24 12:36	BMW	
Water Level Before Purge	96.12 feet	NA	NA	19 Feb 24 12:36		
Static Elevation, Field	1007.88 ft	NA	Field	19 Feb 24 12:36		

RL = Reporting Limit RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



4 of 25 Page:

Report Date: 18 Apr 2024 Lab Number: 24-A354 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 12:31 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: WELL 12

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	112.40 feet	NA	Field	19 Feb 24 12:31	BMW
Water Level Before Purge	65.11 feet	NA	NA	19 Feb 24 12:31	BMW
Static Elevation, Field	1006.78 ft	NA	Field	19 Feb 24 12:31	BMW

RL = Reporting Limit



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



5 of 25 Page:

Report Date: 18 Apr 2024 Lab Number: 24-A355 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:26 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: WELL 1

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field Water Level Before Purge Static Elevation, Field	, •	eet eet t	NA NA NA	Field NA Field	19 Feb 24 12:26 19 Feb 24 12:26 19 Feb 24 12:26	BMW

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix
| = Due to sample quantity
| = Due to sample quantity
| = Due to internal standard response
| = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



JOSH HOLLEN OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H10X

6 of 25 Page:

Report Date: 18 Apr 2024 Lab Number: 24-A356 Work Order #: 31-0022

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:16 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.33	feet	NA	Field	19 Feb 24 12:16	BMW
Water Level Before Purge	25.01	feet	NA	NA	19 Feb 24 12:16	
Static Elevation, Field	1090.88	ft	NA	Field	19 Feb 24 12:16	



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H1INT

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Report Date: 18 Apr 2024 Lab Number: 24-A357 Work Order #: 31-0022

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result	Method RL	Method Reference .	Date Analyzed	Analyst
Well Depth, Field	60.15 feet	NA	Field	19 Feb 24 12:15	BMW
Water Level Before Purge	25.54 feet	NA	NA	19 Feb 24 12:15	
Static Elevation, Field	1090.27 ft	NA	Field	19 Feb 24 12:15	

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.



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Project Name: BIG STONE PLANT - STATE

Sample Description: H20X

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Report Date: 18 Apr 2024 Lab Number: 24-A358 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 12:03

Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.83 feet	NA	Field	19 Feb 24 12:03	BMW
Water Level Before Purge	8.89 feet	NA	NA	19 Feb 24 12:03	
Static Elevation, Field	1094.97 ft	NA	Field	19 Feb 24 12:03	

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H2INT

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Report Date: 18 Apr 2024 Lab Number: 24-A359 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:02 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	62.45 feet	NA	Field	19 Feb 24 12:02	BMW
Water Level Before Purge	61.44 feet	NA	NA	19 Feb 24 12:02	
Static Elevation, Field	1042.47 ft	NA	Field	19 Feb 24 12:02	

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Report Date: 18 Apr 2024 Lab Number: 24-A360 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 11:51 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H30X

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	22.68	feet	NA	Field	19 Feb 24 11:51	BMW
Water Level Before Purge	5.74	feet	NA	NA	19 Feb 24 11:51	BMW
Static Elevation, Field	1089.52	ft	NA	Field	19 Feb 24 11:51	BMW

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

| e | Due to sample matrix | # = Due to concentration of other analytes | | = Due to sample quantity | + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040 RL = Reporting Limit



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Project Name: BIG STONE PLANT - STATE

Sample Description: H3INT

Report Date: 18 Apr 2024

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Lab Number: 24-A361 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 11:52 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received	Method	Method	Date
	Result	RL	Reference ,	Analyzed Analyst
Well Depth, Field	54.42 feet	NA	Field	19 Feb 24 11:52 BMW
Water Level Before Purge	26.19 feet	NA	NA	19 Feb 24 11:52 BMW
Static Elevation, Field	1068.98 ft	NA	Field	19 Feb 24 11:52 BMW

RL = Reporting Limit

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Project Name: BIG STONE PLANT - STATE

Sample Description: H40X

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Report Date: 18 Apr 2024 Lab Number: 24-A362 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 11:45 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received	Method	Method	Date
	Result	RL	Reference	Analyzed Analyst
Well Depth, Field	27.48 feet	NA	Field	19 Feb 24 11:45 BMW
Water Level Before Purge	16.66 feet	NA	NA	19 Feb 24 11:45 BMW
Static Elevation, Field	1091.59 ft	NA	Field	19 Feb 24 11:45 BMW

RL = Reporting Limit RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 18 Apr 2024 Lab Number: 24-A363 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 11:47

Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H4INT

	As Receive Result	d	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	60.10	feet	NA	Field	19 Feb 24 11:47	BMW
Water Level Before Purge	16.10	feet	NA	NA	19 Feb 24 11:47	BMW
Static Elevation, Field	1092.51	ft	NA	Field	19 Feb 24 11:47	BMW

RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

CERTIFICATION: MN LAB # 027-015-125



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Project Name: BIG STONE PLANT - STATE

Sample Description: H5

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Report Date: 18 Apr 2024 Lab Number: 24-A364 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:50 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	44.90	feet	NA	Field	19 Feb 24 12:50	BMW
Water Level Before Purge	10.63	feet	NA	NA	19 Feb 24 12:50	BMW
Static Elevation, Field	1112.17	ft	NA	Field	19 Feb 24 12:50	BMW

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040 RL = Reporting Limit



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Project Name: BIG STONE PLANT - STATE

Sample Description: H6

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Report Date: 18 Apr 2024 Lab Number: 24-A365 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:20 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Receive Result	ed	Method RL	Method Reference .	Date Analyzed	Analyst
Well Depth, Field	17.92	feet	NA	Field	19 Feb 24 12:20	BMW
Water Level Before Purge	12.14	feet	NA	NA	19 Feb 24 12:20	BMW
Static Elevation, Field	1085.62	ft	NA	Field	19 Feb 24 12:20	BMW

RL = Reporting Limit



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Report Date: 18 Apr 2024 Lab Number: 24-A366 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 12:12 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H7

	As Received	Method	Method	Date
	Result	RL	Reference	Analyzed Analyst
Well Depth, Field	35.60 feet	NA	Field	19 Feb 24 12:12 BMW
Water Level Before Purge	21.72 feet	NA	NA	19 Feb 24 12:12 BMW
Static Elevation, Field	1084.34 ft	NA	Field	19 Feb 24 12:12 BMW

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix
| = Due to sample matrix
| = Due to sample quantity
| = Due to sample quantity
| = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040 RL = Reporting Limit



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Project Name: BIG STONE PLANT - STATE

Sample Description: H8

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Report Date: 18 Apr 2024 Lab Number: 24-A367 Work Order #: 31-0022

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:10 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field Water Level Before Purge Static Elevation, Field	22.33 feet 4.98 feet 1076.25 ft		Field NA Field	19 Feb 24 12:10 19 Feb 24 12:10 19 Feb 24 12:10	BMW

RL = Reporting Limit



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Report Date: 18 Apr 2024 Lab Number: 24-A368 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 12:08 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H9

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	30.71	feet	NA	Field	19 Feb 24 12:08	BMW
Water Level Before Purge	8.55	feet	NA	NA	19 Feb 24 12:08	BMW
Static Elevation, Field	1077.66	ft	NA	Field	19 Feb 24 12:08	BMW

RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

\[\begin{align*}
\text{# = Due to concentration of other analytes} \\ \text{! = Due to sample quantity} \\ \text{ + = Due to internal standard response} \]

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 18 Apr 2024 Lab Number: 24-A369 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:08 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - STATE

Sample Description: H9

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	30.71	feet	NA	Field	19 Feb 24 12:08	BMW
Water Level Before Purge	8.55	feet	NA	AN	19 Feb 24 12:08	
Static Elevation, Field	1077.66	ft	NA	Field	19 Feb 24 12:08	BMW

RL = Reporting Limit



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Report Date: 18 Apr 2024 Lab Number: 24-A370 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 19 Feb 2024 13:13 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

Temp at Receipt: 0.8C

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Project Name: BIG STONE PLANT - CCR

Sample Description: H10

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Feb 24	JN
Water Digestions					21 Feb 24	JN
рН, Field	6.95	units	1.00	SM4500-H+-2011	19 Feb 24 13:13	BMW
pH	* 7.1	units	1.0	SM 4500 H+ B-2000	20 Feb 24 13:40	KFL
Radium 226	0.72	pCi/L	0.60		6 Mar 24 10:44	or
Radium 228	0.47	pCi/L	3.00	EPA M9320	15 Mar 24 23:27	OP
Sulfate	2310 ~	mg/L	5.0	ASTM D516-11	22 Feb 24 8:02	LNK
Chloride	6.7	mq/L	3.0	SM 4500 Cl E	22 Feb 24 8:33	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	20 Feb 24 13:16	RMB
neroury	See Narra					
Solids, Total Dissolved	5100	mg/L	10	SM 2540 C-97	22 Feb 24 10:55	MDH
Calcium	499.0 ~	mg/L	0.500	SW6010D	22 Feb 24 13:14	KAM
Lithium	0.295	mg/L	0.020	SW6010D	26 Feb 24 12:13	TMM
Barium	0.023	mg/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Chromium	< 0.01	mg/L	0.01	SW6010D	26 Feb 24 12:13	MMT
Cobalt	< 0.005	mg/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Boron	0.359	mg/L	0.100	SW6010D	22 Feb 24 13:14	KAM
Antimony	< 1 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Arsenic	< 1 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	
Beryllium	< 0.1 @	ug/L	0.05	SW6020B	22 Feb 24 12:15	
Cadmium	< 0.2 @	ug/L	0.1	SW6020B	22 Feb 24 12:15	
Lead	< 2.5 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	
Molybdenum	13.3 @	ug/L	0.50	SW6020B	22 Feb 24 12:15	
Selenium	4.65 @^	ug/L	0.50	SW6020B	22 Feb 24 12:15	
Thallium	< 0.5 @	ug/L	0.1	SW6020B	22 Feb 24 12:15	SS
Fluoride	0.240	mg/L	0.020	EPA 300.0	21 Feb 24 16:16	MDH



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PO BOX 496

Sample Description: H10

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Project Name: BIG STONE PLANT - CCR

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Report Date: 18 Apr 2024 Lab Number: 24-A370 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 19 Feb 2024 13:13
Sampled By: MVTL FIELD PERSONNEL
Date Received: 19 Feb 2024 16:05

PO #: 108267

Temp at Receipt: 0.8C

As Received

Result

Method

Method Reference Date Analyzed

Analyst

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

- ~ Sample diluted due to result above calibration of linear range.
- ^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

OL = Analysis performed by an Outside Laboratory.



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Project Name: BIG STONE PLANT - CCR

Sample Description: H11

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Report Date: 18 Apr 2024 Lab Number: 24-A371 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:46 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

Temp at Receipt: 0.8C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Feb 24	JN
Water Digestions					21 Feb 24	JN
pH, Field	6.71	units	1.00	SM4500-H+-2011	19 Feb 24 12:46	DS
Hq	* 6.8	units	1.0	SM 4500 H+ B-2000	20 Feb 24 13:40	KFL
Radium 226	0.26	pCi/L	0.60		6 Mar 24 10:44	OL
Radium 228	-0.42	pCi/L	3.00	EPA M9320	15 Mar 24 23:27	$\mathbf{O}\mathbf{L}$
Sulfate	2500 ~	mg/L	5.0	ASTM D516-11	22 Feb 24 8:02	LNK
Chloride	3.9	mg/L	3.0	SM 4500 Cl E	22 Feb 24 8:33	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	20 Feb 24 13:16	RMB
,	See Narra	tive				
Solids, Total Dissolved	4240	mg/L	10	SM 2540 C-97	22 Feb 24 10:55	MDH
Calcium	552.0 ~	mg/L	0.500	SW6010D	22 Feb 24 13:14	KAM
Lithium	0.326	mg/L	0.020	SW6010D	26 Feb 24 12:13	TMM
Barium	0.030	mg/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Chromium	< 0.01	mg/L	0.01	SW6010D	26 Feb 24 12:13	TMM
Cobalt	< 0.005	mq/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Boron	0.263	mg/L	0.100	SW6010D	22 Feb 24 13:14	KAM
Antimony	< 1 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Arsenic	< 1 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Beryllium	< 0.1 @	ug/L	0.05	SW6020B	22 Feb 24 12:15	SS
Cadmium	< 0.2 @	ug/L	0.1	SW6020B	22 Feb 24 12:15	SS
Lead	< 1 @	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Molybdenum	2.14 0	ug/L	0.50	SW6020B	22 Feb 24 12:15	SS
Selenium	< 2 @^	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Thallium	< 0.2 @	ug/L	0.1	SW6020B	22 Feb 24 12:15	SS
Fluoride	0.160	mg/L	0.020	EPA 300.0	21 Feb 24 16:16	MDH

RL = Reporting Limit



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Page: 23 of 25

Report Date: 18 Apr 2024 Lab Number: 24-A371 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 19 Feb 2024 12:46
Sampled By: MVTL FIELD PERSONNEL
Date Received: 19 Feb 2024 16:05

PO #: 108267

Temp at Receipt: 0.8C

Project Name: BIG STONE PLANT - CCR

OTTER TAIL POWER CO

FERGUS FALLS MN 56538-0496

Sample Description: H11

JOSH HOLLEN

PO BOX 496

As Received Result Method RL Method Reference Date

Analyzed

Analyst

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

- ~ Sample diluted due to result above calibration of linear range.
- ^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

OL = Analysis performed by an Outside Laboratory.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - CCR

Sample Description: H12

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Report Date: 18 Apr 2024 Lab Number: 24-A372 Work Order #: 31-0022 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 19 Feb 2024 12:09 Sampled By: MVTL FIELD PERSONNEL Date Received: 19 Feb 2024 16:05

PO #: 108267

Temp at Receipt: 0.8C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Feb 24	JN
Water Digestions					21 Feb 24	JN
pH, Field	8.00	units	1.00	SM4500-H+-2011	19 Feb 24 12:09	DS
pH	* 7.9	units	1.0	SM 4500 H+ B-2000	20 Feb 24 13:40	KFL
Radium 226	-0.01	pCi/L	0.60		6 Mar 24 10:44	\mathbf{OL}
Radium 228	0.71	pCi/L	3.00	EPA M9320	15 Mar 24 23:27	\mathbf{OL}
Sulfate	7.1	mg/L	5.0	ASTM D516-11	22 Feb 24 8:02	LNK
Chloride	< 3	mg/L	3	SM 4500 Cl E	22 Feb 24 8:33	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	20 Feb 24 13:16	RMB
1.01041	See Narra					
Solids, Total Dissolved	159	mg/L	10	SM 2540 C-97	22 Feb 24 10:55	MDH
Calcium	23.00	mg/L	0.500	SW6010D	22 Feb 24 13:14	KAM
Lithium	< 0.02	mg/L	0.02	SW6010D	26 Feb 24 12:13	MMT
Barium	0.045	mg/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Chromium	< 0.01	mg/L	0.01	SW6010D	26 Feb 24 12:13	TMM
Cobalt	< 0.005	mg/L	0.005	SW6010D	22 Feb 24 13:14	KAM
Boron	0.392	mg/L	0.100	SW6010D	22 Feb 24 13:14	KAM
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Arsenic	1.87	ug/L	0.50	SW6020B	22 Feb 24 12:15	SS
Beryllium	< 0.05	ug/L	0.05	SW6020B	22 Feb 24 12:15	SS
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Feb 24 12:15	SS
Lead	0.81	ug/L	0.50	SW6020B	22 Feb 24 12:15	SS
Molybdenum	38.2	ug/L	0.50	SW6020B	22 Feb 24 12:15	SS
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Feb 24 12:15	SS
Thallium	< 0.1	ug/L	0.1	SW6020B	22 Feb 24 12:15	SS
Fluoride	0.320	mg/L	0.020	EPA 300.0	21 Feb 24 16:16	MDH

^{*} Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.



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Date Reported: 18 Apr 2024

Work Order #: 202431-0022 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT - CCR

LABORATORY NARRATIVE

INORGANIC AND METALS ANALYSES: The percent recovery of mercury was above the acceptable range in the matrix spike and matrix spike duplicate for samples 24-A370 through 23-A372. Since the spikes failed high, results below the reporting limit were reported.

No other problems were encountered with these analyses.

MVTL

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MEMBER ACIL

Page: 1 of 1

Quality Control Report

Lab IDs: 24-A370 to 24-A37		Pro	niect: BIO	3 STONI	E PLANT - CC	R	Work (Order: 20	02431-00	22							
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony ug/L	25.0	104	85-115	25.0	41150001qc	< 0.5	26.5	106	75-125	26.5	27.1	108	2.2	10	98	90-110	< 0.5
Arsenic ug/L	25.0	105	85-115	25.0	41150001qc	1.35	29.0	111	75-125	29.0	29.2	111	0.7	10	102	90-110	< 0.5
Barium mg/L	1.000	100	85-115	1.00	24A351dissq	0.029	1.060	103	75-125	1.060	1.040	101	1.9	10	99	90-110	< 0.005
Beryllium ug/L	2.50	102	85-115	2.50	41150001qc	< 0.05	2.46	98	75-125	2.46	2.38	95	3.3	10	100	90-110	< 0.05
Boron mg/L	1.000	104	85-115	1.00	24A351dissq	0.392	1.480	109	75-125	1.480	1.480	109	0.0	10	99	90-110	< 0.1
Cadmium ug/L	5.00	106	85-115	5.00	41150001qc	< 0.1	5.22	104	75-125	5.22	5.35	107	2.5	10	99	90-110	< 0.1
Calcium mg/L	50.00	103	85-115	50.0	24A351dissq	20.40	73.10	105	75-125	73.10	72.20	104	1.2	10	104	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	24-A372	< 3	62.1	104	80-120	62.1	60.8	101	2.1	10	96	90-110	< 3
Chromium mg/L	1.000	98	85-115	1.00	24-A351qc	< 0.01	0.984	98	75-125	0.984	0.975	98	0.9	10	100	90-110	< 0.01
Cobalt mg/L	1.000	102	85-115	1.00	24A351dissq	< 0.005	1.010	101	75-125	1.010	1.010	101	0.0	10	100	90-110	< 0.005
Fluoride mg/L		-	-	1.00	41044001	< 0.1	1.03	103	80-120	1.03	1.05	105	1.9	10	102	90-110	< 0.02
Lead ug/L	25.0	101	85-115	25.0	41150001qc	< 0.5	26.3	105	75-125	26.3	26.6	106	1.1	10	102	90-110	< 0.5
Lithium mg/L	1.000	98	90-110	1.00	24-A351qc	< 0.02	0.978	98	90-110	0.978	0.971	97	0.7	10	100	90-110	< 0.02
Mercury ug/L	_	_	-	0.10	24-A372	< 0.005	0.114	114	63-111	0.114	0.114	114_	0.0	18	98	76-113	< 0.005
Molybdenum ug/L	25.0	100	85-115	25.0	41150001qc	9.91	36.6	107	75-125	36.6	37.8	112	3.2	10	99	90-110	< 0.5
pH units	-	-	-	-	-	-	-	_	-	7.9	8.0	-	1.3	2.5	101	90-110	-
Selenium ug/L	25.0	105	85-115	25.0	41150001qc	< 1	28.4	114	75-125	28.4	28.7	115	1.1	10	99	90-110	< 0.5
Solids, Total Dissolved mg/L	-	-	-	-	-	-		_	-	5100	4970		2.6	7	101	85-115	< 10
Sulfate mg/L	-	-	-	50.0	24-A372	7.1	48.9	84	80-120	48.9	49.6	85	1.4	10	104	80-120	< 5
Thallium ug/L	5.00	101	85-115	5.00	41150001qc	< 0.1	5.41	108	75-125	5.41	5.43	109	0.4	10	102	90-110	< 0.1

Mercury matrix spikes recoveries were outside of acceptance limits, see narrative.

Approved by:





April 05, 2024

Todd Rieger MVTL Laboratories 1126 North Front Street New Ulm, MN 56073

RE:

Project: 31-0022 Ottertail Power Co.

Pace Project No.: 10684495

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Piper Gibbs

piper.gibbs@pacelabs.com

Propert Diklos

(612)607-1700

Project Manager

Enclosures





SAMPLE SUMMARY

Project:

31-0022 Ottertail Power Co.

Pace Project No.: 10684495

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10684495001	24A370 - H10	Water	02/19/24 13:13	02/21/24 10:43
10684495002	24A371 - H11	Water	02/19/24 12:46	02/21/24 10:43
10684495003	24A372 - H12	Water	02/19/24 12:09	02/21/24 10:43

WO#: 10684495

CHAIN-OF-CUSTODY / Analytical Request Document

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

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	NEW ULM, M	N 56073	 								Addn	ess:	11	26 N	ORTI	H FR	ONT E	LDG	2		25,807.17	IPDES	3.000,000	ivas auto	UND			DRINKING	G WATER
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Phone:	507-233-7134	Fax:	Project Nan	пе: (Otterta	il Powe	r Co		··	-		Project										Site Location							
Request	ed Due Date/TAT:	standard	Project Nun	nber: V	Vork C	Order: 3	31-0022				Mana Pace	ger: Profile	#:								SAID.	STATE	42		N.	_			
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	Section D Required Client Information		CODE	to left)	C=COMP)		COLL	ECTED		Γ			Pre	serva	itives	5	N.W.												
		DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID	WT WW P SL	(see valid codes to left)	(G=GRAB C=C	COMPOS STAR		COMPO END/GF	SITE PAB	COLLECTION			ļ					thod161		2						(N/K)			
	SAMPLE (A-Z, 0-9 /	AIR ,-) OTHER	OL WP AR OT		l l	Ì	-			IP AT CO	AINERS	9					Test	DD me	226/228 tate Pricin	rans						hlorine			
TEM #	Sample IDs MUST E	e unique tissue	TS	MATRIX CODE	SAMPLE TYPE		- 11.4-			SAMPLE TEMP AT	# OF CONTAINERS	Unpreserved	HNO3	IS R	Na ₂ S ₂ O ₃	Methanol	Outei ↓Analysis Test↓	2,3,7,8 TCDD method16	Kadium 226/228 PFAs State Pricing	Dioxins/Furans						Residual Chlorine (Y/N)	Done	Boolook I	da (Lab I B
 [e-1		24A370 - H10		WT	"	DATE	TIME	DATE 02/19/24	13:13	165	2	171	┿	1	-	2	' →		X I	╬	$\vdash\vdash$	++	+	+	+	N	Pace		lo./ Lab I.D.
2		24A371 - H11		WT	+-			02/19/24	12:46	\vdash	2	Ħ	+	\vdash	+	H			$\frac{2}{x}$	╁╌	\vdash	+	+		╁	N		007	
3		24A372 - H12		WT	╅	-		02/19/24	12:09	Т	2	\forall	\top	-	T	H	- 22	+	$\hat{\mathbf{x}}$	十		† †	+	\dashv	+	i N		003	
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9							!	SIGNATURE	Name of SAMPLER: DATE Signed (MM/DD/YY): DATE Signed (MM/DD/YY):					Samples Intact (Y/N)															

ENV-FRM-MIN4-0150 v15_Sample Condition Upon Receipt **CLIENT NAME:** PROJECT #: WO#: 10684495 Client COURIER: ☐ Commercial ☐ FedEx □ Pace PM: PG Due Date: 03/21/24 □ UPS □ USPS □ SpeeDee CLIENT: MVTL TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142 Custody Seal on Coole/Box Present: 🗆 YES 💆 NO Seals Intact: ☐ YES 12 NO Biological Tissue Frozen: ☐ YES ☐ NO 🛂 N/A Packing Material: Bubble Bags Bubble Wrap None Other Temp Blank: YES NO Type of Ice: Blue Dry Wet Thermometer: ☐ 【1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) Did Samples Originate in West Virginia: ☐ YES Correction Factor: ______ Cooler Tem M NO Were All Container Temps taken: ☐ YES ☐ NO Cooler Temp Read w/Temp Blank: Average Corrected Temp (no Temp Blank Only): NOTE: Temp should be above freezing to 6°C. ☐ See Exceptions Form ENV-FRM-MIN4-0142 □ 1 Container USDA Regulated Soil: N/A - Water Sample/Other (describe): Initials & Date of Person Examining Contents: EC2-21-24 Did Samples originate from one of the following states (check maps) - AL, AR, AZ, CA, FL, Did samples originate from a foreign source (international, including GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO Hawaii and Puerto Rico): ☐ YES ☐ NO NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork. LOCATION (check one): DULUTH MINNEAPOLIS VIRGINIA YES, NO N/A COMMENT(S) Chain of Custody Present and Filled Out? M 1. Chain of Custody Relinquished? 1 2. Sampler Name and/or Signature on COC? Ø 3. (V Samples Arrived within Hold Time? П 4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □No Short Hold Time Analysis (<72 hr)? 5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total collform/E. coll ☐ Other: M **Rush Turn Around Time Requested?** 6. V Sufficient Sample Volume? 1 Correct Containers Used? 8. - Pace Containers Used? Containers Intact? 9. $\overline{\Box}$ 10. Is sediment visible in the dissolved container: Field Filtered Volume Received for Dissolved Tests? \Box ☐ YES ☐ NO Is sufficient information available to reconcile the samples to the COC? V 11. If NO, write ID/Date/Time of container below: NOTE: If ID/Date/Time don't march fill out section 11. Matrix: □ OII □ Soil ☑ Water □ Other ☐ See Exceptions form ENV-FRM-MIN4-0142 12. Sample #: 001-003 All containers needing acid/base preservation have been checked? П MHNO₃ □ H₂SO₄ □ NaOH □ Zinc Acetate All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cvanide) Positive for Residual Chlorine: YES NO Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and pH Paper Lot # Dioxins/PFAS Residual 0-6 Roll 0-6 Strlp 0-14 Strip Chlorine NOTE: If adding preservative to a container, it must be added to associated 213923 field and equipment blanks-verify with PM first. ☐ See Exceptions form ENV-FRM-MIN4-0142 Headspace in Methyl Mercury Container? Extra labels present on soil VOA or WIDRO containers? V Headspace in VOA Vials (greater than 6mm)? İΤ ☐ See Exceptions form ENV-FRM-MIN4-0142 Trip Blanks Present? **Trip Blank Custody Seals Present?** Pace Trip Blank Lot # (if purchased): CLIENT NOTIFICATION / RESOLUTION FIELD DATA REQUIRED: ☐ YES ☐ NO Person Contacted: Date & Time:

Comments / Resolution:				
	. n		•	•
Project Manager Review:	Riper Dilelos	Date:	2/21/24	
•	fecting North Carolina compliance samples, a co ervative, out of temp, incorrect containers).	py of this form w	ill be sent to the North C	arolina DEHNR Certification Office

Qualtrax ID: 52742

Effective Date: 02/06/24



Pace Analytical* ANALYTICAL REPORT

Pace Analytical - Minnesota

Sample Delivery Group:

L1708270

Samples Received:

02/22/2024

Project Number:

10684495

Description:

31-0022 Ottertail Power Co.

Site:

001

Report To:

Piper Gibbs

1700 Elm Street Suite 200

Haley Torrence

Minneapolis, MN 55414

Ss

'n

Sr

Qc

Gl

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Entire Report Reviewed By: Hally Torrence

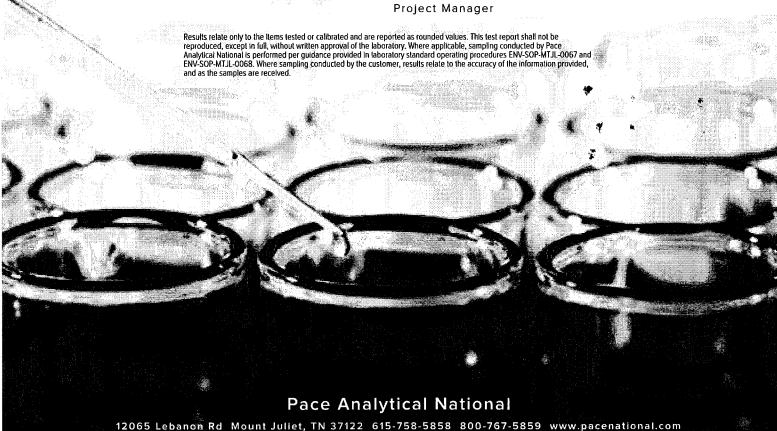


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Cn: Case Narrative	4	
Sr: Sample Results	5	Ss
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24A371-H11 L1708270-02	6	Cn
24A372-H12 L1708270-03	7	⁵ Sr
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Radiochemistry by Method 904/9320	8	°Qc
Radiochemistry by Method SM7500Ra B M	9	7 (1
GI: Glossary of Terms	10	GI
Al: Accreditations & Locations	11	εAI
Sc: Sample Chain of Custody	12	
		°Sc

SAMPLE SUMMARY

24A370-H10 L1708270-01 Non-Potable Water			Collected by	Collected date/time 02/19/24 13:13	Received dat 02/22/24 09	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2240337	1	03/06/24 18:38	03/15/24 23:27	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2237432	1	03/04/24 09:48	03/06/24 10:44	ZRG	Mt. Juliet, TN
244274 LIM 14700270 02 Nov. Dotable Mater			Collected by	Collected date/time	Received da 02/22/24 09	
24A371-H11 L1708270-02 Non-Potable Water				02/10/21 12:10		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2240337	1	03/06/24 18:38	03/15/24 23:27	DDD	Mt. Juliet, TN
Radlochemistry by Method SM7500Ra B M	WG2237432	1	03/04/24 09:48	03/06/24 10:44	ZRG	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	
24A372-H12 L1708270-03 Non-Potable Water				02/19/24 12:09	02/22/24 09	:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2240337	1	03/06/24 18:38	03/15/24 23:27	DDD	Mt. Juliet, TN

03/04/24 09:48

03/06/24 10:44

ZRG

Mt. Juliet, TN

WG2237432

Radiochemistry by Method SM7500Ra B M

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Haley Torrence

Project Manager

¹Cp

²Tc















24A370-H10

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 01

Lc

pCl/I

0.235

30.0-143

Analysis Date

03/06/2024 10:44

03/06/2024 10:44

date / time

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/l

0.719

89.7

Qualifier

2 sigma CE

+/-

0.380

Collected date/time: 02/19/24 13:13

	, , , <u> </u>								
	Resul	t <u>Qualifier</u>	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch	
Analyte	pCi/I		+/-	+/-	pCi/I	pCi/l	date / time		
RADIUM-228	0.467	· · · · · · · · · · · · · · · · · · ·	0.197	1.15	0.358	0.190	03/15/2024 23:27	WG2240337	
(T) Barium	138					30.0-143	03/15/2024 23:27	WG2240337	
(T) Yttrium	94.8					30.0-136	03/15/2024 23:27	WG2240337	

TPU

+/-

0.169

MDA

pCi/l

0.342







3	Ss	
	Ss	1

35	
4Cp]

١	^⁴ Cn l	

Batch

WG2237432

WG2237432











24A371-H11 Collected date/time: 02/19/24 12:46

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 02

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/l

0.260

82.5

Qualifier

2 sigma CE

+/-

0.264

	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-228	-0.421	<u>U</u>	0.381	2.03	0.733	0.382	03/15/2024 23:27	WG2240337
(1) Barium	122					30.0-143	03/15/2024 23:27	WG2240337
(T) Yttrium	92.8					30.0-136	03/15/2024 23:27	WG2240337

TPU

+/-

0.104

MDA

pCi/l

0.337

Lc

pCi/l

0.238

30.0-143



³ Ss

	25	
ſ	4 Cn	1



Batch

WG2237432

WG2237432

Analysis Date

03/06/2024 10:44

03/06/2024 10:44

date / time











24A372-H12

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 03

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

-0.00784

pCi/l

97.6

Qualifier

<u>U</u>

2 sigma CE

+/-

0.114

Collected date/time: 02/19/24 12:09

	, .,						
	Result <u>Qu</u>	alifier 2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/l	+/-	+/-	pCi/I	pCi/l	date / time	
RADIUM-228	0.710	0.274	1.26	0.496	0.263	03/15/2024 23:27	WG2240337
(T) Barium	135	그렇게 하게 한다.	일 말이 원칙하는		30.0-143	03/15/2024 23:27	WG2240337
(T) Yttrium	115				30,0-136	03/15/2024 23:27	WG2240337

TPU

+/-

0.0426

MDA

pCI/I

0.273

Lc

pCi/l

0.195

30,0-143

Analysis Date

03/06/2024 10:44

03/06/2024 10:44

date / time









İ	Cn	İ
ļ	⁵ C-	

Batch

WG2237432

WG2237432













WG2240337

QUALITY CONTROL SUMMARY

L1708270-01,02,03

Method Blank (MB)

Radlochemistry by Method 904/9320

(MB) R4047930-1 C	3/15/24 23:27					
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
Analyte	pCi/I		+/-	pCi/I	pCi/I	
Radium-228	0.0701	<u>U</u>	0.165	0.310	0.163	
(T) Barium	104		104			
(T) Yttrium	104		104			







Cn

L1708671-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1708671-01 03.	Original Resu	Original 2	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/l	pCi/l	+/-	pCi/l	pCi/l	%			%	
Radium-228	1.78	0.314	0.534	0.282	2.55	0.298	0.466	0.248	35.8	1.79		20	3
(T) Barium	117				117	117							
(T) Yttrium	103				97.1	97.1							





Laboratory Control Sample (LCS)

(LCS) R4047930-2	03/15/24 23:27				-							
	Spike Amount	LCS Result	LCS Rec	. Rec. Limits	LCS Qualifier							
Analyte	pCi/I	pCi/l	%	%			and and the second of the seco	 	***************************************		********************************	gagana ana ana ana ana ana ana ana ana a
Radium-228	5.00	4.83	96.6	80.0-120				(200503)		reareasur (1) HAV		
(T) Barium			137									
(T) Yttrium			109									

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-0	6 03/15/24 23:27 • (MS)	R4047930-3 0	3/15/24 23:2	7 • (MSD) R404	7930-4 03/1	15/24 23:27							
•		Original Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	-0.136	16.2	16.6	96.9	99.5	1	70.0-130			2.62		20
(T) Barium		131			113	125							
(T) Yttrium		106			116	100							

WG2237432

QUALITY CONTROL SUMMARY

Radiochemistry by Method SM7500Ra B M

L1708270-01,02,03

Method Blank (MB)

	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/l		+/-	pCi/l	pCi/l
Radium-226	0.0272	<u>J</u>	0.0381	0.0572	0.0373
(T) Barium-133	91.0		91.0		





³Ss

L1707848-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1/0/848-02 03	Original Result	Original 2	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/l	pCi/l	+/-	pCi/l	pCi/I	%			%	
Radium-226	0.783	0.342	0.235	0.171	0.163	0.247	0.364	0.238	131	1.47	ī	20	3
(T) Barium-133	91.9	PRESTABLE	Nama katawa		81.4	81.4							





⁷Gl

Laboratory Control Sample (LCS)

(LCS) R4046172-2 03	/06/24 10:44				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/l	%	%	
Radium-226	5.00	4.76	95.1	80.0-120	
(T) Barium-133			83.6		



³Sc

L1707848-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1707848-05 03/06	5/24 10:44 • (MS)	R4046172-3 0	3/06/24 10:44	4 • (MSD) R404	5172-4 03/06/2	24 10:44							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/I	%	%		%			%	p. p. p. co. co. co. co. co. co. co. co. co. co	%
Radium-226	20.0	0.274	18.9	18.2	92.9	89.8	1	75.0-125			3.29		20
(T) Barium-133		89.2			84.9	82.1							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Тс

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.



'Ss

Cn

'Sr

Qc

Sc

Cp

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(1)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resul reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section fo each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Page 15 of 18

Qualifier

Description

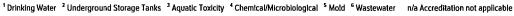
The identification of the analyte is acceptable; the reported value is an estimate.

Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National	12065 Lebanon Rd Mount.	Juliet. TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	· New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
-lorida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Seorgla ¹	923	North Dakota	R-140
daho	TN00003	Ohlo-VAP	CL0069
llinois	200008	Okłahoma	9915
ndlana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
(ansas	E-10277	Rhode Island	LAO00356
Kentucky ¹⁶	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
ouislana	A130792	Tennessee 14	2006
.ouisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
vlichigan	9958	Virginia	110033
vlinnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERTO086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461,02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		······································



















^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.

^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

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Pipe Pace 1700 Minn	r Gibbs Analytical Minnesota Elm Street leapolis, MN 55414 ne (612)607-1700		12065 Mt. Ju	National i Lebanon Rd liet, TN 37122 a (615) 758-585	8	P	reserve	ed Cor	tainers	3adium 226/228 (2										
ltem	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HN03		X			Ÿ				N.				LAB US	ZX) EONLY
1	24A370 - H10	PS	2/19/2024 13:13	10684495001	Water	1				Х									-01	
2	24A371 - H11	PS	2/19/2024 12:46	10684495002	Water	1				X					$\perp \perp$			1_	-04	
3	24 A3 72 - H12	PS	2/19/2024 12:09	10684495003	Water	1				<u> x</u>	1 4		14		1-1				<u>-00</u>	
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Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10684495

(To be completed by sending lab)

Sending Project No. 10684495

Receiving Project No.

Check Box for Consolidated Involce

Date Prepared 02/21/24

REQUESTED COMPLETION DATE: 3/21/2024

Sending Region	IR IV-Minnesota	Sendir	ig Project i	vigr.		er Gibos		
Receiving Region	IR850-Pace National	Extern	al Client			MVTL	aboratories	
State of Sample Origin	MN	QC De	eliverable			STD	REPORT	
All	uestions should be addr	essed to sen	ding proje	ct manager.				
Requested Reportable Units	Report Wet	or Dry Welgh	t? Dry We	ight IRW	/O Lab Ne	ed to run?	Cert. Needed	
		WORK	REQUEST	ED		1.66		
Method Des	cription	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc	
Radium 22	26/228	BP1N		НИОЗ	3	SI-38RA	SUB PASI RAD	
Special Requirements: <u>Re</u> r	oort C, QC Limits (C),				N ALSO			
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Original sent to the receiving la When work completed: Origina		-	ory. Copie	s are made to co	orporate as	needed.		

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557 New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

This is an exact copy of the original document

By Date 19 Feb 24

Pages 1-8

Project	Otter Tail	Power Com	oany	Project Ty	pe:	Big Sto			CR	Nan	ne of	San	pler	<u>s:</u>		-		BI			7
		Power Com		Carbon Co	py:	Barr En	ginee	ring								<u>ت</u>	<u> </u>	<u>ر:</u>			_
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	_	lls, MN 565	38-0496							<u>Lab</u>	Num	bers		u		000	9				
Phone:	218-739-8																				╛
		Sample In	formation								E	Bott	е Ту	ре						Analys	sis
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	1000 HNO3 Inner	No None	¹⁰⁰⁰ none	500 HNO3	- I L	500 H2SO4	Filler? Y or M	1000 HNO3 P.	1000 Amber H2SO,	00 NaOH	Other: 150 Hag	Other 150 M.	Analysis Recuir	Palinba	/
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Comments:

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Date: 19Fc	624	Time:	1605	Temp:0,8	TMK Date: 19 Kb 24	र्योme:	1605	Temp: 0.8C
Samples Reling		Eriage>	Log in C	art Ot	her:			
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Date:		Time:		Temp:	Date:	Time:		Temp:
Delivery:	Samplers	Other:			Seal Number(s) - If L	Jsed		
Transport:	Ambient	(Ice)		Other:	Séals Intacţ?	Yes	No	

CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
Antimony	SW6020A
Arsenic	SW602A
Barium	SW6010C
Beryllium	SW6020A
Cadmium	SW6020A
Chromium, Total	SW6020A
Cobalt	SW6010C
Fluoride	EPA 300
Lead	SW6020A
Lithium	SW6010C
Mercury	EPA 245.7
Molybdenum	SW6020A
Selenium	SW6020A
Thallium	SW6020A
Radium 226 + 228	

Note: These are non-filtered samples.

CCR - Appendix III Detection Monitoring

Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters Method

Boron 6010 Calcium 6010

Chloride SM4500 CL E Fluoride EPA 300

 pH
 SM 4500 H+B-96

 Sulfate
 ASTM D516

 Dissolved Solids, Total
 SM 2540 C-97

Note: These are non-filtered samples.

Minnesota Valley Testing Laboratories, Inc.New Ulm, MN 56073 507 354 8517

Groundwater Ass	sessment			Site:	Otte	r Tail Pow	er Co./ Big Stone
Sampling Personnel:	Ð			Facility ID:			
	BW			Date: 9	24		
	20	-		Unique Stati	on ID:		
		-		Sample ID:	W. 4	F	110
					· · · ·		
Well Condition		 		- 1,			<u></u>
Well Locked?	Xey No			Protective P	osts? Yes _	4	1 8
Well Labeled?	Yes No	-		State ID Tag			
Casing Straight?	Yes No	-		Grout Seal I			No
Repairs Necessary:		-					.
Well Information					 		
Well Depth:	35.49			Well Casing	Elevation:	10	96. CZ
Constructed Depth:		-		Static Water		10	90.SZ 15.8S
Casing Diameter:	2"	_		Previous Sta		-26	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Water Level Before P	urge: "Ц.	9 8			After Sample	3 U	76.71
Well Volume:	3.35	Gallons		Measureme		Ælec. V	
	<u> </u>		_	1			<u> </u>
Sampling Informa	tion						
Weather Conditions:	Temp:	33_	Wind: /	VB10	Skv: C	cicud	¥
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		/
Dedicated Equipment	t: Yes No			Pumping Ra	ite: .25		gpm
Well Purged Dry?	Yes No	_		Time Pump		1254	am /(pm)
Time Purged Dry?	1300	_		Time of San		1313	am /(pm)
Duplicate Sample?	Yes (No	ID:		Sample EH:			
Duplicate Sample? Sample Appearance:	Yes (No		Color:	Sample EH:		111.1	
	Yes (No	ID: Cleas	Color: N	Sample EH: Phase	/	111.1	Odor: Nove
	Yes (No	Cleas	Color: N	Phase		111.1	
Sample Appearance:	Yes (No General:	Clcec Temp OC	D. O.		e: Non-	SEQ	
Sample Appearance:	Yes (No General: Specific Cond.	Clcec Temp OC	D. O. mg/L	Turbidity NTU	e: Gallons Removed	SEQ	Odor: None
Sample Appearance:	Yes (No General:	Cleas	D. O.	Phase Turbidity	e: Agra-		Odor: None
Sample Appearance:	Yes (No General: Specific Cond.	Clcec Temp OC	D. O. mg/L	Turbidity NTU	e: Gallons Removed	SEQ # 1	Odor: None
Sample Appearance:	Yes (No) General: Specific Cond. 5064	Clcec Temp OC	D. O. mg/L	Turbidity NTU	e: Gallons Removed	SEQ # 1 2	Odor: None
Sample Appearance:	Yes (No) General: Specific Cond. 5064	ClcaC Temp °C & 16	D. O. mg/L	Turbidity NTU	e: Gallons Removed	SEQ # (1) 2 3	Odor: Nove
Sample Appearance: (I4) Time pH 1308 7.01	Yes (No General: Specific Cond.	Clcec Temp OC	D. O. mg/L NA	Turbidity NTU	Gallons Removed	SEQ # 1 2 3 4 5	Odor: None

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessmen	t		Site:	Otter	Tail Pov	ver Co./ Big Stone
Sampling Personnel:			Facility ID:			
03			Date:	19 F	674	
	—		Unique Statio	n ID:	<u> </u>	
	_		Sample ID:			H11
	_					<u> </u>
Well Condition						
Well Locked? Yes No)		Protective Po	sts? Yes	•	(No)
Well Labeled? (es) No			State ID Tag	? Yes		No)
Casing Straight? (Yes) No	_		Grout Seal In			No
Repairs Necessary:						·
Well Information						
Well Depth: 42.15			Well Casing	Elevation:	109	13.24
Constructed Depth:			Static Water	Elevation:	108	7.61
Casing Diameter: 2"			Previous Sta	tic:	107	9.25
Water Level Before Purge:	<u> </u>		Water Level	After Sample	:	32.48
Well Volume: 5.14	Gallons		Measuremer	t Method:	Elec.	WL) Steel Tape
	-	-	1		-	
Sampling Information	(· 0	·				C1 A
Weather Conditions: Temp:	34	Wind: S€	012	Sky: /	MUS	His Cloudy
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		/ 0
Dedicated Equipment Yes No	The same of the sa		Pumping Ra	te: 🔘, 7	25	gpm
Well Purged Dry? (es) No	,		Time Pump	Begar 17	220	am / pm
Time Purged Dry?			Time of Sam	pling: プラ	46	am / (pm)
Duplicate Sample? Yes (10	<u> </u>	·	Sample EH:	(11-	3	
Sample Appearance: General:	Cleus	Color:	Phase	: None		Odor: Nom
				. 10 300		
		70	111000	· 10 400		
(Specific	Temp	D. O.	Turbidity	Gallons	SEQ	
Time pH Cond.	l emp	· · · · · · · · · · · · · · · · · · ·			SEQ #	Comments:
1 \ ' 4 1 1 1 1 1 1 1 1 1	l emp	D. O.	Turbidity NTU	Gallons	L	Comments:
Time pH Cond.	l emp °C	D. O. mg/L	Turbidity NTU	Gallons Removed	# 1 2	Comments:
Time pH Cond.	l emp	D. O. mg/L	Turbidity NTU	Gallons Removed	#	Comments:
Time pH Cond.	l emp	D. O. mg/L	Turbidity NTU	Gallons Removed	# 1 2	Comments:
Time pH Cond.	1 & 3	D. O. mg/L	Turbidity NTU	Gallons Removed	# 1 2 3	Comments:
Time pH Cond. 1241 6.55 4785	1 emp °C 1 '8.03	D. O. mg/L	Turbidity NTU	Gallons Removed	# 1 2 3 4	

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment		Site:	Otter T	ail Pow	er Co./	Big Stone
Sampling Personnel:		Facility ID:				
<u>DS</u>		Date:		19Fc624		
		Unique Statio	n ID:			
		Sample ID:			H12	
Well Condition Well Locked? (es) No Well Labeled? (es) No		Protective Po				
Casing Straight? Yes No		Grout Seal In	tact? Yes		(No)	
Repairs Necessary:		<u> </u>		 		
Well Information						
Well Depth: 22.63		Well Casing	Elevation:		NA	
Constructed Depth: 24.00		Static Water	Elevation:		1	
Casing Diameter: 2"		Previous Sta	tic:		<u> </u>	
Water Level Before Purge: 8. 1		Water Level After Sample: 16.74				
Well Volume: 0.74 Gallons	<u></u>	Measuremer	nt Method:	Elec.	WLD	Steel Tape
Sampling Information	· · ·					
Weather Conditions: Temp: 34°	Wind: S ϵ	012	Sky:	Most	lu Cla	oucla
Sampling Method: Grundfos Bladder SS/)	Disp. Bailer	Whale	Grab Other:		<u> </u>	
Dedicated Equipment: Yes No		Pumping Ra	te: 0.25	<u> </u>	<u>.g</u> pm	
Well Purged Dry? Yes		Time Pump Began: ROS am (pm)				am pm
Time Purged Dry?		Time of Sampling: 29 am pm				
Duplicate Sample? Yes No ID:		Sample EH:		5.5		
Sample Appearance: General: SICIOM	Color: 🍂	Phase	e: None	,	Odor:	None
Specific Temp OC	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comn	nents:
1203 7.99 297 10.53	3 N4A	NA	0.75	1	_	
1206 8.00 297 10.50	1		1.5	2		
1209 8.00 297 10.49			2.25	3		
				4		-
		-	 	5	1	
Stabilized? Yes No	Δmount \Λ/-	ater Removed:	2.2		Gallo	ne
Otabilized 1 400 110	A TOURIL VV	ator removed.			Cano	110

CCR+ State

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

507 354 8517

A 352-A368

Groundwater Level Measurements

Sampling Personnel:	Site:
BU	Facility ID:
	Date: 19 Feb 24

Well Number	Well 10	Well 11	Well 12	Well 1	Н1ОХ	H1INT	H2OX
Unique Station ID	. NA	NA	NA	NA	. NA	NA	NA
Date	14 Feyz	4					
Time	1240	1236	1231	1226	12/6	1215	1203
Well Casing Elevation	1098.7	1104	1071.89	1090.71	1115.89	1115.81	1103.86
Depth to Water	16.34	96-12	65.11	64.65	25.01	25.54	8.89
Static Elevation	1082-36	1007.88	1006-78	102626	1090.88	1090-27	1094.97
Casing Diameter	4"	4"	4"	4"	2"	2"	2"
Well Depth	4701	127.22	112.40	78.00	32.33	60.15	32.83
Well Volume	20.04	20.32	30.91	8-73	1,19	5-65	3.91
Well Locked	yes / no	yes / 🔞	yes / no	yes (no)	yes/ no	(yes/ no	(yes/ no
Well Labeled	yes / no	yes / no	yes / no	yes / no	yes/no	Øes / no	ves) no
Well Straight	yes / no	yes i no	yes/ no	(es) no	ves/ no	∦es∕l no	(yes)/ no
Protective Posts	yes / no	yes / no	yeş/ no	√es∕l no	yes (mg)	yes /no	yes / pro
Grout Seal Intact	yes/no/	yes /mg	yes /mo	yes / fig	yes / no	yes / no	yes /ŋ͡o
Dedicated Equipment	yes /no	xes / no	(yes/ no	yes) no	yes (no)	yes / ng	yes/ no

Well Number	H2INT	H30X	H3INT	H4OX	H4INT	H5	Н6
Unique Station ID	NA	NA	NA	NA	NA	NA	NA
Date	19 Fun24						
Time	1202	1/51	1152	1145	1147	1250	1220
Well Casing Elevation	1103.91	1095.26	1095.17	1108.25	1108.61	1122.8	1097.76
Depth to Water	(01.44	5.74	26.19	16.66	16-10	10-63	12.14
Static Elevation	1042.47	1089-52	1068.98	109/59	1092.51	1112.17	1085.62
Casing Diameter	2"	2"	2"	2"	2"	2"	2"
Well Depth	62.45	22.68	54.42	27.48	60-10	44.90	17.92
Well Volume	.16	2.76	4.61	1.77	7.18	5-59	94
Well Locked	ves/ no	(yes / no	४९डि∕ no	yes/i no	(yes) / no	∕€\$/ no	∦98 / no
Well Labeled	yes /no)	yes/I no	yes /vio	y(ês / no	y€ş/no	∦e͡s / no	yes no
Well Straight	es no	yes / no	yes no	(Jes) I no	ves / no	yes// no	χ 9 ₹/ no
Protective Posts	yes /no	yes (mg)	yes / no	yes (no)	yes / no	yeş / no	yes/ no
Grout Seal Intact	yes no	yes / no	yes / no	yes / no	yes /and	yes / no	yes / hg
Dedicated Equipment	yes / no	(es/m	yes / no	yes/l no	yes / no	yes (fig	ves / no

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Level Measurements

Sampling Personnel:	•				Site:		
	BW				Facility ID:		
	<u> </u>					Feb 24	
					Bato.		
Well Number	H7	Н8	H9	······································			
Unique Station ID	NA	NA	NA				
Date	19 Fey 24			-			
Time	1212	12/0	1208			•	
Well Casing Elevation	1106.06	1081.23	1086.21				
Depth to Water	21.72	4.98	8-66			-	
Static Elevation	1084.84	1076-25	1077-66				
Casing Diameter	2"	2"	2"				
Well Depth	35.60	22.33	30.71			_	
Well Volume	2.26	283	3.62				
Well Locked	yes/ no	∕yes no	yes/ no	yes / no	yes / no	yes / no	yes / no
Well Labeled	yes/l no	γes∕/ no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes/I no	√es/no	अ€डि/ no	yes / no	yes / no	yes / no	yes / no
Protective Posts	yes) no	yes/l no	yes∕/ no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact	yes /no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Dedicated Equipment	yes / no	yes no	yes/ no	yes / no	yes / no	yes / no	yes / no
		=					-
Well Number	Γ -		T	Т	 	T	T
		-			 		
Unique Station ID	-			<u> </u>	 		
Date			-		ļ		
Time			ļ	<u> </u>	<u> </u>	<u> </u>	
Well Casing Elevation	1		-		ļ	 	
Depth to Water			 	-	<u> </u>		
Static Elevation		-	-				
Casing Diameter					 		
Well Volume	<u> </u>				<u> </u>	<u> </u>	
Well Volume	100/00		100/100				
Well Locked	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Labeled	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Protective Posts	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact Dedicated Equipment	yes / no	yes / no yes / no	yes / no yes / no	yes / no	yes / no	yes / no yes / no	yes / no



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Page:

1 of 11

FINAL REPORT COMPLETION DATE: 20 Jun 2408

Date Reported: 19 Jun 2024

Work Order #: 31-0050 Account #: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

uality Assurance Director/Date Reviewe

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H20X

2 of 11 Page:

Report Date: 19 Jun 2024

Lab Number: 24-A931 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 12:29 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	7.18	units	1.00	SM4500-H+-2011	15 Apr 24 12:29	BMW
рН	* 7.1	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	2230 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	4.1	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	3840	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	514.0 ~	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	0.248	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.350 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H30X

3 of 11 Page:

Report Date: 19 Jun 2024

Lab Number: 24-A932 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 15 Apr 2024 10:39 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	6.88	units	1.00	SM4500-H+-2011	15 Apr 24 10:39	BMW
Н	* 7.3	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	1380 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	63.6	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	3040	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	425.0 ~	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	7.640 ~	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.420 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H40X

4 of 11 Page:

Report Date: 19 Jun 2024

Lab Number: 24-A933 Work Order #: 31-0050

Account #: 006106 Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 11:23 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	6.93	units	1.00	SM4500-H+-2011	15 Apr 24 11:23	BMW
На	* 7.1	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	1070 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	40.8	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	2160	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	318.0	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	0.572	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.520 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H6

Page: 5 of 11

Report Date: 19 Jun 2024

Lab Number: 24-A934 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 12:44 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	7.24	units	1.00	SM4500-H+-2011	15 Apr 24 12:44	DGF
pH	* 7.5	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	104	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	< 3	mg/L	3	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	599	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	53.40	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	2,400	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.430 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix

= Due to concentration of other analytes

! = Due to sample quantity

= Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H8

Page: 6 of 11

Report Date: 19 Jun 2024

Lab Number: 24-A935 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 13:27 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	7.16	units	1.00	SM4500-H+-2011	15 Apr 24 13:27	DGF
рH	* 7.4	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	245 @	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	3.7	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	951	mq/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	119.0	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	3.160	mq/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.530 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H9

7 of 11 Page:

Report Date: 19 Jun 2024

Lab Number: 24-A936 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 15 Apr 2024 14:22 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 24	JN
pH, Field	6.58	units	1.00	SM4500-H+-2011	15 Apr 24 14:22	DGF
рН	* 6.9	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Sulfate	1410 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	69.5	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Solids, Total Dissolved	2820	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	615.0 ~	mq/L	0.500	SW6010D	17 Apr 24 12:22	SS
Boron	1.290	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Fluoride	0.330 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H10

Page: 8 of 11

Report Date: 19 Jun 2024

Lab Number: 24-A937 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 13:27 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					17 Apr 24	KAM
Water Digestions					16 Apr 24	JN
рН, Field	7.01	units	1.00	SM4500-H+-2011	15 Apr 24 13:27	BMW
рН	* 7.1	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:18	JR
Radium 226	0.43	pCi/L	0.60		30 Apr 24 23:29	OL
Radium 228	-0.49	pCi/L	3.00	EPA M9320	14 May 24 16:50	OL
Sulfate	2930 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	6.7	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:32	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	24 Apr 24 10:55	RMB
	See Narra	tive				
Solids, Total Dissolved	4990	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	496.0 ~	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Lithium	0.321	mg/L	0.020	SW6010D	17 Apr 24 12:22	SS
Barium	0.023	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Cobalt	< 0.005	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Boron	0.369	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Antimony	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Arsenic	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Beryllium	< 0.25 @	ug/L	0.05	SW6020B	19 Apr 24 13:29	KAM
Cadmium	< 0.5 @	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Chromium	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Lead	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Molybdenum	17.6 @	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Selenium	3.60 @	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Thallium	< 0.5 @	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Fluoride	0.240 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

~ Sample diluted due to result above calibration of linear range.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit AL = Reporting limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H11

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Report Date: 19 Jun 2024

Lab Number: 24-A938 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 13:02 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					17 Apr 24	KAM
Water Digestions					16 Apr 24	JN
pH, Field	6.64	units	1.00	SM4500-H+-2011	15 Apr 24 13:02	BMW
рН	* 6.9	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:30	JR
Radium 226	0.12	pCi/L	0.60		30 Apr 24 23:29	OL
Radium 228	0.01	pCi/L	3.00	EPA M9320	14 May 24 16:50	OL
Sulfate	2280 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 8:11	LNK
Chloride	4.0	mg/L	3.0	SM 4500 Cl E	18 Apr 24 8:49	KRM
Mercury	0.005	ug/L	0.005	EPA 245.7	24 Apr 24 10:55	RMB
_	See Narra	tive				
Solids, Total Dissolved	4660	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
	See Narra	tive				
Calcium	553.0 ~	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Lithium	0.332	mg/L	0.020	SW6010D	17 Apr 24 12:22	SS
Barium	0.028	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Cobalt	< 0.005	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Boron	0.261	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Antimony	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Arsenic	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Beryllium	< 0.25 @	ug/L	0.05	SW6020B	19 Apr 24 13:29	KAM
Cadmium	< 0.5 @	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Chromium	< 2,5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Lead	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Molybdenum	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Selenium	< 2.5 @	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Thallium	< 0.5 @	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Fluoride	0.160 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

^{*} Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

~ Sample diluted due to result above calibration of linear range.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H12

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Report Date: 19 Jun 2024

Lab Number: 24-A939 Work Order #: 31-0050

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 15 Apr 2024 13:36 Sampled By: MVTL FIELD PERSONNEL Date Received: 15 Apr 2024 17:00

PO #: 108267

Temp at Receipt: 0.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					17 Apr 24	KAM
Water Digestions					16 Apr 24	JN
pH, Field	8.21	units	1.00	SM4500-H+-2011	15 Apr 24 13:36	DS
рН	* 8.2	units	1.0	SM 4500 H+ B-2000	16 Apr 24 12:30	JR
Radium 226	0.10	pCi/L	0.60		30 Apr 24 23:29	OL
Radium 228	1.85	pCi/L	3.00	EPA M9320	17 May 24 17:37	OL
Sulfate	485 ~	mg/L	5.0	ASTM D516-11	18 Apr 24 9:15	LNK
Chloride	< 3	mg/L	3	SM 4500 Cl E	18 Apr 24 8:49	KRM
Mercury	0.009	ug/L	0.005	EPA 245.7	24 Apr 24 10:55	RMB
	See Narra	tive				
Solids, Total Dissolved	184	mg/L	10	SM 2540 C-97	17 Apr 24 8:05	KFL
Calcium	23.20	mg/L	0.500	SW6010D	17 Apr 24 12:22	SS
Lithium	< 0.02	mg/L	0.02	SW6010D	17 Apr 24 12:22	SS
Barium	0.041	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Cobalt	< 0.005	mg/L	0.005	SW6010D	17 Apr 24 12:22	SS
Boron	0.381	mg/L	0.100	SW6010D	17 Apr 24 12:22	SS
Antimony	< 0.5	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Arsenic	1.64	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	19 Apr 24 13:29	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Chromium	1.84	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Lead	0.59	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Molybdenum	37.8	ug/L	0.50	SW6020B	19 Apr 24 13:29	KAM
Selenium	< 0.5	ug/L	0.5	SW6020B	19 Apr 24 13:29	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	19 Apr 24 13:29	KAM
Fluoride	0.320 @	mg/L	0.020	EPA 300.0	18 Apr 24 19:47	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

~ Sample diluted due to result above calibration of linear range.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Date Reported: 19 Jun 2024

Work Order #: 202431-0050 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INORGANIC AND METALS ANAYLSES: The mercury matrix spike duplicate recovery was outside of acceptable limits for samples 24-A937 through 24-A939. Mercury was reported based on acceptable matrix spike recovery and acceptable duplication of the matrix spikes.

Sample 24-A938 failed to achieve constant weight in Total Dissolved Solids analysis.

No other problems were encountered with these analyses.

MVTL

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MEMBER ACIL

Quality Control Report

Lab IDs: 24-A931 to 24-A93	9	Pro	oject: BIG	G STONI	E PLANT CCI	₹		Work O	rder: 20	2431-005	50				Page:	1 of 1	
	LCS Spike	LCS Rec	LCS % Rec	Matrix Spike	Matrix Spike	Matrix Spike Orig	Matrix Spike	Matrix Spike Rec	Matrix Spike % Rec	Dup Orig	MSD/ Dup	MSD Rec	MSD/ Dup	MSD/ Dup RPD	Known Rec	Known % Rec	Method
Analyte *	Amt	%	Limits	Amt	ID	Result	Result	%	Limits	Result	Result	%	RPD	Limit (<)	(%)	Limits	Blank
Antimony ug/L	25.0	103	85-115	25.0	45739004qc	0.82	28.1	109	75-125	28.1	26.4	102	6.2	10	102	90-110	< 0.5
Arsenic ug/L	25.0	101	85-115	25.0	45739004qc	< 0.5	27.5	110	75-125	27.5	26.7	107	3.0	10	99	90-110	< 0.5
Barium mg/L	1.000	100	85-115	1.00	24A943qc	0.080	1.100	102	75-125	1.100	1.100	102	0.0	10	100	90-110	< 0.005
Beryllium ug/L	2.50	100	85-115	2.50	45739004qc	< 0.05	2.33	93	75-125	2.33	2.36	94	1.3	10	93	90-110	< 0.05
Boron mg/L	1.000	102	85-115	1.00	24A943qc	< 0.1	1.110	111	75-125	1.110	1.120	112	0.9	10	98	90-110	< 0.1
Cadmium ug/L	5.00	102	85-115	5.00	45739004qc	< 0.1	5.04	101	75-125	5.04	5.06	101	0.4	10	96	90-110	< 0.1
Calcium mg/L	50.00	101	85-115	50.0	24A943qc	127.0	179.0	104	75-125	179.0	181.0	108	1.1	10	102	90-110	< 0.5
Chloride mg/L	-	-	-	60.0 600	24-A937 24-A950	6.7 3.9	65.3 591	98 98	80-120 80-120	65.3 591	66.8 591	100 98	2.3 0.0	10 10	91 90	90-110 90-110	< 3 < 3
Chromium ug/L	25.0	98	85-115	25.0	45739004qc	0.94	24.8	95	75-125	24.8	24.6	95	0.8	10	98	90-110	< 0.5
Cobalt mg/L	1.000	101	85-115	1.00	24A943qc	< 0.005	0.958	96	75-125	0.958	0.974	97	1.7	10	100	90-110	< 0.005
Fluoride mg/L	-	-	-	1.00	24-A939	0.320	1.36	104	80-120	1.36	1.35	103	0.7	10	104	90-110	< 0.02
Lead ug/L	25.0	98	85-115	25.0	45739004qc	< 0.5	25.8	103	75-125	25.8	25.3	101	2.0	10	99	90-110	< 0.5
Lithium mg/L	1.000	102	85-115	1.00	24-A943qc	0.021	1.040	102	75-125	1.040	1.040	102	0.0	10	101	90-110	< 0.02
Mercury ug/L		_	-	0.10	24-A958	0.017	0.128	111	63-111	0.128	0.132	115	3.1	18	88	76-113	< 0.005
Molybdenum ug/L	25.0	97	85-115	25.0	45739004qc	0.90	26.9	104	75-125	26.9	26.7	103	0.7	10	95	90-110	< 0.5
pH units	-	-	-	-	-	- -	-	-	-	7.3 6.9	7.3 6.9	-	0.0 0.0	2.5 2.5	101 101	90-110 90-110	-
Selenium ug/L	25.0	103	85-115	25.0	45739004qc	1.19	28.7	110	75-125	28.7	27.7	106	3.5	10	100	90-110	< 0.5
Solids, Total Dissolved mg/L	-	-	-	-	-	-	-	-	-	3840 201	3890 191	-	1.3 5.1	10 10	101 -	85-115 -	< 10
Sulfate mg/L	-	-	-	500 50.0	24-A938 24-A943	2280 199	2780 240	100 82	80-120 80-120	2780 240	2730 242	90 86	1.8 0.8	10 10	98 98	80-120 80-120	< 5 < 5
Thallium ug/L	5.00	97	85-115	5.00	45739004qc	< 0.1	5.12	102	75-125	5.12	5.04	101	1.6	10	98	90-110	< 0.1

Mercury matrix spike duplicate recovery was above acceptance limits, see narrative.

Pace Analytical Services, LLC 1700 Elm Street Minneapolis, MN 55414 (612)607-1700



June 12, 2024

Todd Rieger MVTL Laboratories 1126 North Front Street New Ulm, MN 56073

RE:

Project: 31-0050 Otter Tail Power

Pace Project No.: 10689780

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on April 17, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Piper Gibbs

piper.gibbs@pacelabs.com

Juper J. Sikles

(612)607-6456

Project:Manager

Enclosures

cc: Barb Zins, MVTL







SAMPLE SUMMARY

Project:

31-0050 Otter Tail Power

Pace Project No.:

10689780

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10689780001	24A937 H10	Water	04/15/24 13:27	04/17/24 10:40
10689780002	24A938 H11	Water	04/15/24 13:02	04/17/24 10:40
10689780003	24A939 H12	Water	04/15/24 13:36	04/17/24 10:40



CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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10			丄					L		$\perp \downarrow$	\perp	_	Ш	_ _	┸		Ш	7	. 4	<u> </u>	1		+	H		1	_					
11				<u> </u>	ļ	ļ		上	<u> </u>	$\perp \downarrow$		_		_	+		Ш	_	4	┦—	Ш	_	 	\perp	1		╀—					_
12:41		market reservation as	0.03.25%		part of Committee	1.04cm	Constitution of	1	- tunning na	1,14,772.23	introduces		127707			鯔		mparque)	× 34**84233	Section -	Sugra	S. 2259	*** *****	,	100000		Щ					_
	ADDITIONAL COMMENTS	THE BUILDING R	ELINQ	UISHED BY	/ AFFILIAT	ION	DATI		3.00	TIME		sippi)	1000	75000	Will the	D BY.	AFF	LIAT	ION :	, it	.≔.D/	THE WHILE		TIME	eserger.			SAMPL	LE CONDI	TION	<u>-</u> —	_
							_				_	WA		MA	M /	PO	<u>W</u>	<u>/</u>			4-1	7-2	4 1	04	0	2.3	⊥ Y	\perp	N	17		
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1	Page			-	SAMPL	ER NAME A	ND SIGN	ATUI	Œ					QII)	T. Na	3779.) 1225			niko. Mari	i pie ji			1165.71 1165.71			ပ္	5	2	fy poler		Samples Intact (Y/N)	
(ge မ				1 1	PRINT Nam	e of SAMP	LER:																	_	Temp in "C) sivec	Ice (Y/N)	Custody Sealed Cooler (Y/N)		ples (V/V)	
	o o					SIGNATUR	E of SAMP	LER:										TE SI	gned							ř	%	۱ ۲	Sea		Sam	

CLIENT NAME: MUT	PROJE	CT #: [_	0#:10689780
COURIER: Client Commercial FedEx CF	ace			
☐ SpeeDee ☐ UPS ☐ USPS				: PG
TRACKING NUMBER: 715 (613 797) See Exception			CL	IENT: MVTL
Custody Seal on Coole/Box Present:	YES [ס אנ	Blologic	cal Tissue Frozen: YES NO NO NA
Packing Material: ☐ Bubble Bags ☐ Bubble Wrap ☐ None ☐ Other				•
Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402)			·	
Ø17 (0042) □ T8 (0775) □ T9 (0727) □ 01339252:	(1710)		,	,
Did Samples Originate in West Virginia: ☐ YES ☐ NO AGV Y	-172	2.7)	Were All	Container Temps taken: ☐ YES ☐ NO ☐ N/A
Correction Factor: Cooler Temp Read w/Temp Blank:		_	Average	Corrected Temp (no Temp Blank Only):°C
Cooler Temp Corrected w/Temp Blank:	.}	_°c	□ See E	xceptions Form ENV-FRM-MIN4-0142
USDA Regulated Soil: N/A - Water Sample/Other (describe):			Initials 8	k Date of Person Examining Contents: 4-17-14 AGG
Did Samples originate from one of the following states (check maps) – AL, AR,	AZ, CA,	FL,	Did samı	ples originate from a foreign source (international, including
GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO				and Puerto Rico): YES NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM		A Comment of the Comment		
LOCATION (check one): DULUTH MINNEAPOLIS VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	7		 	2.
Chain of Custody Relinquished? Sampler Name and/or Signature on COC?	 	╽╬	12/	3.
Samples Arrived within Hold Time?	Ī	1	12	4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □No
Short Hold Time Analysis (<72 hr)?		<u> </u>		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom
				☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos
				☐ Total coliform/E. coll ☐ Other:
Rush Turn Around Time Requested?		Z		6.
Sufficient Sample Volume? Correct Containers Used?			+-	7. 2 containes each not
- Pace Containers Used?				ο,
Containers Intact?	12	一	 	9.
Field Filtered Volume Received for Dissolved Tests?			Ø	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC?	12		+	11. If NO, write ID/Date/Time of container below:
NOTE: If ID/Date/Time don't match fill out section 11.	'	_		
Matrix: □ Oil □ Soil ☑ Water □ Other	ļ		<u> </u>	☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? All containers needing preservation are found to be in compliance with EPA		\ <u>\alpha</u>		12. Sample #:
recommendation? (HNO ₃ , H ₂ SO ₄ , < 2 pH, NaOH > 9 Sulfide, NaOH > 10	"		ط	☐ HNO₃ ☐ H₂SO₄ ☐ NaOH ☐ Zinc Acetate
Cyanide)			1 /	Positive for Residual Chlorine: ☐ YES ☐ NO
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and			🖊	pH Paper Lot #
Dioxins/PFAS		ŀ		Tabadalia Revision aureasan establishera
NOTE: If adding preservative to a container, it must be added to associated				Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
field and equipment blanks—verify with PM first.				
				☐ See Exceptions form ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container?				13.
Extra labels present on soil VOA or WIDRO containers?			Ø	14.
Headspace in VOA Vials (greater than 6mm)?				☐ See Exceptions form ENV-FRM-MIN4-0142
Trip Blanks Present?				15.
Trip Blank Custody Seals Present?	<u> </u>			Pace Trip Blank Lot # (if purchased): FIELD DATA REQUIRED: ☐ YES ☐ NO
CLIENT NOTIFICATION / RESOLUTION		D-4-	0. Ti	•
Person Contacted:		_ Date	& Time:	
Comments / Resolution:				
Project Manager Review: Puper J. Likel	 99		Date:	4/17/24
NOTE: When there is a discrepancy affecting North Carolina compliance sam	_	onv of t		will be sent to the North Carolina DEHNR Certification Office
(i.e., out of hold, incorrect preservative, out of temp, incorrect contain	ners).			120
	-	Lab	eled By:	

Internal Transfer Ch	ain c	of Custo	dy 			·			······			- 120 - 1				····					/	Paca
Workorder: 10689780 Work	order N	Sample	fultiplier es Pre-Logged 50 Otter Tail Po	into eCC	C	* ************************************	Ce	ert.	Of C Need or Re	ded	: [MN × Ye Date		4/17/	_ No 2024		esul	ts R	equ	este	d By	ract 5/16/2024
Report To		Subcontra		32									#0.74		quest		alysis	5				
Piper Gibbs Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700		1206 Mt. J	National 5 Lebanon Rd 5 Letanon Rd 6 Letanon Rd 6 Letanon Rd 6 Letanon Rd 6 Letanon Rd 7 Letanon Rd 7 Letanon Rd 7 Letanon Rd 8 Letanon Rd 8 Letanon Rd 8 Letanon Rd 9 Letanonon Rd 9 Letanon Rd 9 Letanon Rd 9 Letanon Rd 9 Letanon Rd 9 Letan								Radium 226/228											J095
	5.53 792. 786.0				F	eser	ved (Cont	alner	s	Radi		į.									
Item Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	3.4																UTZ7507 LAB USE ONLY
1 24A937 H10	PS	4/15/2024 13:27	10689780001	Water	1						x		1	十			222	<u> </u>				-0
2 24A938 H11	PS	4/15/2024 13:02		Water	1					1111	Х											-02
3 24A939 H12	PS	4/15/2024 13:36	10689780003	Water	1				2.1		Х											-03
44 (-																
5																	200			01.65 to 1		
																	C	omn	nents			
Transfers Released By 1 & Coevilla 2 3	E	Date/Time H//8/24		iy W.F	- Lat	Te			Date			200		_								
Cooler Temperature on Receipt		°C Cu	stody Seal /	<u>Y/&r </u>	<u> </u>		R	ece	ivec	i on	lce	Υ	ог	(N	!	<u> </u>	S	am	ples	Inta	ct/	Y)or N
***In order to maintain client confid This chain of custody is conside	ared con		rice this information	ation is a	vailat	ole ir						ry.	4	۱ ،	rovide) 54						neh t	



Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Market against a			- C
INTED I	I DODATODY WO	YEK ORNER E	t TOKKY/XO
MILES LA	ADUNAIVAI TIL	11/12 OIZDEIL 18	10000100
****	ABORATORY WO	NICE WITH PROPERTY	" DAGA CA

(To be completed by sending lab)

	Sending Project No:	10689780		
	Receiving Project No:			
Check B	ox for Consolidated Invoice:			
	Date Prepared:	04/17/24		
REQUES	TED COMPLETION DATE:	5/16/2024	<u> </u>	

Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Gibbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

	WORK	REQUEST	ED			
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Radium 226/228	BP1N		HNO3	3	SI-38RAD	SUB PASI RAC
pecial Regulrements: Report C, QC Limits (C),FR Only no	EDD (0				
),FR Only no	in in its		N ALSO		
	ICAL WORK C	in in its		N ALSO		



Pace Analytical® ANALYTICAL REPORT

Pace Analytical - Minnesota

Sample Delivery Group:

L1727507

Samples Received:

04/19/2024

Project Number:

10689780

Description:

31-0050 Otter Tail Power

Site:

001

Report To:

Piper Gibbs

1700 Elm Street Suite 200

Minneapolis, MN 55414

Αl

Ss

Cn

Sr

СQс

GI

Sc

Entire Report Reviewed By: Maly Tomena

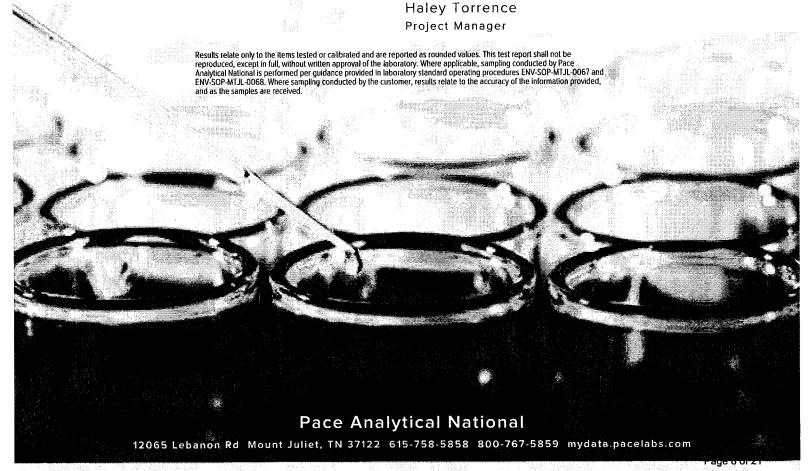


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Cn

⁵Sr

⁶Qc

GI

⁹Sc

SAMPLE SUMMARY

24A937 H10 L1727507-01 Non-Potable Water			Collected by	Collected date/time 04/15/24 13:27	Received dat 04/19/24 09:	
Method	Batch	Dilution	Preparation date/time	Analysis date/lime	Analyst	Location
Radiochemistry by Method 904/9320	WG2283150	1	05/09/24 13:13	05/14/24 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	04/30/24 23:29	ZRG	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
24A938 H11 L1727507-02 Non-Potable Water				04/15/24 13:02	04/19/24 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2283150	1	05/09/24 13:13	05/14/24 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	04/30/24 23:29	ZRG	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	ite/time
24A939 H12 L1727507-03 Non-Potable Water				04/15/24 13:36	04/19/24 09	:00
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
	201001-0-101-001-001-001-001-001-001-001		date/time	date/time	cockessockers Palekkaskaskaskaskaskaska	
Radiochemistry by Method 904/9320	WG2283150	1	05/09/24 13:13	05/17/24 17:37	DDD	Mt. Juliet, TN

WG2275054

04/26/24 13:39























Radiochemistry by Method SM7500Ra B M

ZRG

04/30/24 23:29

Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Ср





















Haley Torrence Project Manager

Project Narrative

Haly Torrence

Insufficient sample volume provided resulting in smaller sample sizes taken.

24A937 H10 Collected date/time: 04/15/24 13:27

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 01

Lc

pCi/l

0.244

30.0-143

Analysis Date

04/30/2024 23:29

04/30/2024 23:29

date / time

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/l

0.433

74.6

Qualifier

2 sigma CE

+/-

0.324

Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch	
pCi/l		+/-	+/-	pCi/l	pCi/l	date / time		
-0.486	U	0.306	0.438	0.585	0.308	05/14/2024 16:50	WG2283150	
94.5					30.0-143	05/14/2024 16:50	WG2283150	
71.9					30.0-136	05/14/2024 16:50	WG2283150	
	pCi/l -0.486 <i>94.5</i>	pCi/l -0.486 <u>U</u> 94.5	pCi/l + / - -0.486 <u>U</u> 0.306 94.5	pCi/l +/- +/- -0.486 <u>U</u> 0.306 0.438 94.5	pCi/l + / - + / - pCi/l -0.486	PCi/I + / - + / - PCi/I PCi/I -0.486	pCi/l +/- +/- pCi/l pCi/l date / time -0.486 □ 0.306 0.438 0.585 0.308 05/14/2024 16:50 94.5 30.0-143 05/14/2024 16:50	pCi/l +/- +/- pCi/l pCi/l date / time -0.486 U 0.306 0.438 0.585 0.308 05/14/2024 16:50 WG2283150 94.5 30.0-143 05/14/2024 16:50 WG2283150

TPU

+/-

0.120

MDA

pCi/l

0.329







<u>Batch</u>

WG2275054

WG2275054















24A938 H11

SAMPLE RESULTS - 02

Collected date/time: 04/15/24 13:02

Radiochemistry by Method 904/9320

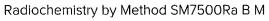
	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/I		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-228	 0.0113	<u>U</u>	0.279	0.379	0.511	0.267	05/14/2024 16:50	WG2283150
(T) Barium	98.3					30.0-143	05/14/2024 16:50	WG2283150
(T) Yttrium	110					30.0-136	05/14/2024 16:50	WG2283150





au Parár sas 1		
30.0-136	05/14/2024 16:50	WG228





	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l	•	+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.119	7	0.184	0.0691	0,287	0,218	04/30/2024 23:29	WG2275054
(T) Barium-133	78.9					30.0-143	04/30/2024 23:29	<u>WG2275054</u>



Cn











24A939 H12 Collected date/time: 04/15/24 13:36

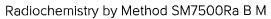
SAMPLE RESULTS - 03

Radiochemistry by Method 904/9320

	D 14	0	2 -1 CF	TOLL	MDA		Analysis Date	Datch
	Result	Qualifier	2 sigma CE	TPU	MDA	LC	•	<u>Batch</u>
Analyte	pCi/l		+/-	+/-	pCi/I	pCi/l	dale / lime	
RADIUM-228	1.85	uniter i i i i i i i i i i i i i i i i i i i	2.81	3.01	1.58	0.820	05/17/2024 17:37	WG2283150
(T) Barium	114					30.0-143	05/17/2024 17:37	WG2283150
(T) Yttrium	95.0					30.0-136	05/17/2024 17:37	WG2283150







	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.0967	Ū	0.187	0.0791	0.305	0.213	04/30/2024 23:29	WG2275054
(T) Barium-133	94.3					30.0-143	04/30/2024 23:29	WG2275054















WG2283150

QUALITY CONTROL SUMMARY

Radiochemistry by Method 904/9320

L1727507-01,02,03

Method	Blank	(MR)
IVICUIOU		11411

(MB) R407025	6-1 05/14/24 16:50					_
	MB Result	MB Qualifier	MB 2 si	gma CE MB MDA	MB Lc	2
Analyte	pCi/I		+/-	pCi/l	pCi/l	
Radium-228	-0.248	<u>U</u>	0.198	0.372	0.194	
(T) Barium	102		102			 ا
(T) Yttrium	89.5		89.5			L
						4

Method Blank (MB)

(MB) R4070256-6 05/17	24 21:37						
	MB Result	MB Qualifier	MB 2 s	igma CE MB MDA	MB Lc		l
Analyte	pCi/I		+/-	pCi/I	pCi/l		
Radium-228	-0.497	U	0.188	0.176	0.0912		Section 1
(T) Barium	96.4		96.4				
(T) Yttrium	98.3		98.3				

L1732347-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1732347-04 05	/14/24 16:50 • (0	DUP) R40702	56-5 05/14/24 °	16:50									
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/I	pCi/l	pCi/l	+/-	pCi/I	pCi/l	%			%	
Radium-228	0.619	0.350	0.625	0.327	-0.300	0.322	0.611	0.323	200	1.93	<u>U</u>	20	3
(T) Barium	<i>7</i> 9.6	agana arean Prima area (milita)		emparke Industrial	84.0	84.0							
(T) Yttrium	91.4				97.9	97.9							

Laboratory Control Sample (LCS)

(LCS) R4070256-2 05/	14/24 16:50			
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits <u>LCS Qualifier</u>
Analyte	pCi/l	pCi/I	%	%
Radium-228	5.00	4.61	92.3	80.0-120
(T) Barium			111	
(T) Yttrium			101	

L1732366-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	0.664	16.8	18.7	96.4	108	1	70.0-130			10.8		20
(T) Barium		101			112	118							Page 15 of 2
	ACCOUNT:				JECT:			SDG:		DATE/	TIME:		PAGE:

WG2283150

QUALITY CONTROL SUMMARY L1727507-01,02,03

Radiochemistry by Method 904/9320

L1732366-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732366-01 05/14/2	4 16:50 • (MS) R	4070256-3 0	5/14/24 16:50	(MSD) R40702	256-4 05/14/2	4 16:50							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/I	pCi/l	pCi/l	%	%		%		~~~~~	%		%
(T) Yttrium	***************************************	94.9			91.2	78.2	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						



















WG2275054

QUALITY CONTROL SUMMARY

Radiochemistry by Method SM7500Ra B M

L1727507-01,02,03

Method Blank (MB)

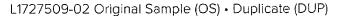
(MB) R4064940-5 05/0)1/24 15:54				
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/l		+/-	pCi/l	pCi/l
Radium-226	0.0644	7	0.0385	0.0416	0.0275
(T) Barium-133	84.5		84.5		







Cn

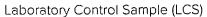


(OS) L1727509-02 04	/30/24 23:29 • Original Result	Original 2	940-4 04/30/2 Original MDA	4 23:29 Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/I	pCi/l	+/-	pCi/l	pCi/l	%			%	
Radium-226	0.272	0.263	0.325	0.233	0.144	0.210	0.317	0.231	61.4	0.379	7	20	3
(T) Barium-133	83.0				<i>7</i> 9. <i>7</i>	<i>79.7</i>							









(LCS) R4064940	0-1 04/30/24 23:29				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/l	%	%	
Radium-226	5.00	5.97	119	80.0-120	
(T) Barium-133			83.6		왕은 발표되었다. 내용으로 발표되는 생활에 그렇게 그렇게 나가지 아내는 아래를 하고 있다. 그렇게 나를 다 나는





L1727509-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727509-09 04/30)/24 23:29 • (MS) R4064940-2	04/30/24 23:	29 • (MSD) R40	64940-3 04/3	0/24 23:29								
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits	
Analyte	pCi/I	pCi/l	pCi/I	pCi/l	%	%		%			%		%	troote
Radium-226	20.0	0.0408	20.8	18.0	104	89.8	1	75.0-125			14.4		20	
(T) Barium-133		92.0			93.1	92.8								

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference,
SDG	Sample Delivery Group.
(I)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample-Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

Below Detectable Limits: Indicates that the analyte was not detected.

Ср

Ss

Cn

Sr

'Qc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina 1	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
ldaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
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owa	364	Pennsylvania	68-02979
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Kentucky ¹⁶	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	A 30792	Tennessee 14	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
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Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		



^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.



















^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

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Piper Gibbs			National										Ť	1	T	Τ					
Pace Analytical Minnesota			Lebanon Rd	*** #**																	
1700 Elm Street			liet, TN 37122								ë,	1									1/4
Minneapolis, MN 55414 Phone (612)607-1700		Pnone	e (615) 758-585	00		. E.				.				1							J095
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Item Sample ID	Sample Type	Collect Date/Time	Lab ID	Metrix	Ž																LAB USE ONLY
1 24A937 H10	PS	4/15/2024 13:27	10689780001	Water	╂╁	+		1	-	X	70.0					1					-01
2 24A938 H11	PS	4/15/2024 13:02	10689780002	Water	$\frac{1}{1}$			1	1	X	-2 5				1	1		- 1			-02
3 24A939 H12	PS	4/15/2024 13:36	10689780003	Water	11		+	1	†	X	11.1				1	1					-03
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This chain of custody is consi	dered col	mplete as is sin	ce this inform	ation is a	vailabl	e in t	he o	vner	labo	orato	гу.										
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	Eul	ficient volume sen																			



Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10689780

(To be completed by sending lab)

	Sending Project No:	10689780	
	Receiving Project No:		
Check Bo	x for Consolidated Invoice:		
	Date Prepared:	04/17/24	
REQUEST	ED COMPLETION DATE:	5/16/2024	

Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Gibbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

	WORK	REQUEST	ED			
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Radium 226/228	BP1N		HNO3	3	SI-38RAD	SUB PASI RAD
		EDD (0'			****	
cial Requirements: Report C, QC Lir		1.3/8/		N ALSO		
cial Requirements: Report C, QC Lir	nits (C),FR Only no	1.3/8/		N ALSO		

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557 New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

Project	Otter Tail Power Company	Project Type:	Big Stone Plant CCR	Name of Samplers: BV, PS, DF, J	H, NM
Report Attn: Address	Otter Tail Power Company Paul Vukonich P.O. Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Barr Engineering	Quote Number: Work Order Number: 31-0050 Lab Numbers:	
Phone:	218-739-8349	<u> </u>		Bottle Type	Analysis
Imber	Sample Information		NO3 Inner	7 or N Y or N Y or N NO3 Pace mber 150 H2SO ₄	'sis 'ired

											$-\tau$	-r	- 1 - 1	_ /	_ /	/	
Lab Number Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	1000 HNO3 Inner	1000 none	500 HNO3	ي /	500 H2SO4	Filter? Y or N	14	1000 Amber H2SOA 500 NaOH	Other: 150 Ho.	Other	Anal Requ	
	1202	15 APR		GW		- 1	1	1	N							CCR 3	_]
14931 H2OX		HOYN,	7 100	GW	 		1	1	N							CCR 3	
1430X		 	1039		ļ	 	+ ;	+ +	N	-	1		-		<u> </u>	CCR 3	7
140X			11187	GW	ļ			+-	_	├		-+		 		CCR 3	┨
4934 H6		1 1	1244	GW			1	1 1	N					├ ─			4
17935 H8			1327	GW			1	1	N	'	1				i	CCR 3	_
			1422	GW	<u> </u>		1	1	N							CCR 3	
A936 H9						 	1	+ +	N		-	2				CCR 3&4	7
4937 H10			1327	GW	ļ	 	- + +	+ :	+			_	-+-	+-	\vdash	CCR 3&4	┪
A938 H11			1302	GW	1	IL	1	1_	N	<u> </u>		2		↓	 		-
14934 H12	-1		1336	GW			1	1	N.			2		<u> </u>		CCR 3&4	4
11 13 11112			1,7,72	1									1		L		╛

Comments: Samples Received By: Samples Relinguished By: Temp: Temp:2.ctms2Date: Time: 18 A/24 Time: Date: 4 Tidge Log in Cart Other: Samples Relinquished into: Samples Received By: Samples Relinquished By: Temp: Time: Temp: Date: Time: Date: Seal Number(s) - If Used Samplers Delivery: Other: Yes No Seals Intact? Ambient Ice Other: Transport:

Apr 2024

2024 Big Stone Sampling - CCR

Landfill or ADA wells

s	iite	Parameter List	Well Depth (constructed)	Diameter (Inches)	Well Elevation (TOC)	Sample Equipment	Dedicated?	Pump Rate (ml/minute)	Goes Dry?	Sampling Seasons**
H2OX		CCR 3	32.20	2	1103.86	Bladder	Yes	100	Yes	April & Oct
H3OX		CCR 3	22.55	2	1095.26	Bladder	Yes	100	Yes	April & Oct
H4OX		CCR 3	27.20	2	1108.25	Bladder	Yes	100	No	April & Oct
H6		CCR 3	15.00	2	1097.76	Bladder	Yes	100	Yes	April & Oct
H8		CCR 3	22.05	. 2	1081.23	Bladder	Yes	100	No	April & Oct
H9		CCR 3	30.20	2	1086.21	Bladder	Yes	100	No	April & Oct
H10		CCR 3 and 4	35.49	2	1090.83 1093.24	Bladder Bladder	Yes Yes	100 100		See highlighted note below See highlighted note below
H11		CCR 3 and 4	42.15	2	1093.24	Diaddei	103	100		
H12		CCR 3 and 4	22.00	2	1127.40	Bladder	Yes	100		See highlighted note below

Note: Wells H10 and H11 need to be sampled in February, April and June for CCR 3 and CCR 4. This will complete CCR Background sampling for these wells. Wells H10 and H11 will then be sampled in October for CCR 3 like a normal, CCR event.

Well H12 will be sampled in February, April, June, August, October, and December for CCR 3 and CCR 4. This will complete CCR Background sampling for this well.

Note: CCR sampling is for total recoverable metals. They are not filtered in the field.

CCR 3 & 4 parameters see the first two tabs labeled CCR 3 and CCR 4 $\,$

CCR - Appendix III Detection Monitoring

Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters Method

 Boron
 6010

 Calcium
 6010

Chloride SM4500 CL E Fluoride EPA 300

 pH
 SM 4500 H+B-96

 Sulfate
 ASTM D516

 Dissolved Solids, Total
 SM 2540 C-97

Note: These are non-filtered samples.

CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
Antimony	SW6020A
Arsenic	SW602A
Barium	SW6010C
Beryllium	SW6020A
Cadmium	SW6020A
Chromium, Total	SW6020A
Cobalt	SW6010C
Fluoride	EPA 300
Lead	SW6020A
Lithium	SW6010C
Mercury	EPA 245.7
Molybdenum	SW6020A
Selenium	SW6020A
Thallium	SW6020A
Radium 226 + 228	

Note: These are non-filtered samples.

Minnesota Valley Testing Laboratories, Inc.New Ulm, MN 56073 507 354 8517

Groundwater Assessment		Site:	Otter T	ail Pow	er Co./ Big Stone
Sampling Personnel: 7		Facility ID:			
Bu		Date: 15 /	40-24		
		Unique Statio	n ID:	<u>. </u>	
		Sample ID:	_	Wel	H2OX
Well Condition		· · · · · · · · · · · · · · · · · · ·			
Well Locked? (eg. No		Protective Po			NO.
Well Labeled? Yes No		State ID Tag			No No
Casing Straight? Yes No		Grout Seal In	tact? Yes		<u>No</u>
Repairs Necessary: Well Information	<u> </u>	·			
Well Depth: 32.83		Well Casing	Elevation:		1103.91
Constructed Depth: 32.20		Static Water		1198.	01
Casing Diameter: 2"		Previous Sta	100	7.73	
Water Level Before Purge: 5-90			After Sample	$\overline{}$	-low page
Well Volume: 4-39 Gallons		Measuremen		Elec. V	
Sampling Information					
Weather Conditions: Temp: 59	Wind: /	NOIO	Sky:	Far's	~
Sampling Method: Grundfos Bladder SS/	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: No		Pumping Ra	te: 25		gpm
Well Purged Dry? Xes No		Time Pump	Began:	206	am / /pm)
Time Purged Dry? 1224		Time of Sam	1 -	29	am / pm
Duplicate Sample? Yes No ID:		Sample EH:	<i>\$3.</i> 7	•	
Sample Appearance: General: Car	Color: N	の)シ Phase	E NO TU		Odor:None
Specific Temp	D. O.	Turbidity	Gallons	SEQ	
Time DH Cond. C	mg/L	NTU	Removed	#	Comments:
1224 7.16 3284 7.99	MA	NH	4.5	1	
				2	
1229 7.18 3296 8.20	T	1		3	Recharge
				4	
			-	5	
Stabilized? Yes No	Amount W	ater Removed	: 4.5	. .	Gallons

Comments:

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

Groundwater Assessment		Site:	Otter T	ail Powe	r Co./ Big Stone
Sampling Personnel:		Facility ID:			
Bu		Date: 15 A	124		
		Unique Station	1D:		
		Sample ID:		Well	нзох
Well Condition					
Well Locked? Yes No		Protective Pos			
Well Labeled? Casing Straight? Ves No		State ID Tag? Grout Seal Int			<u>40)</u>
Repairs Necessary:		Stout Ocal III	401: 100		<u>-9</u> _
Well Information					
Well Depth: 22.68		Well Casing E	Elevation:		1095.19
Constructed Depth: 22.55		Static Water I	Elevation:	1088	5-5/
Casing Diameter: 2"		Previous Stat	ic: 10 60	5-19	
Water Level Before Purge: 10.65		Water Level /	After Sample	: <i>B</i> e	10W/Comp
Well Volume: 2.61 Gallons	<u>.</u>	Measurement	t Method:	Elec. V	VL) Steel Tape
Sampling Information	4	01		<i>></i> (-	
Weather Conditions: Temp: 55	Wind: N	~40 <u> </u>	Sky:	fer &	
Sampling Method: Grundfox Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: Yes No		Pumping Rat			gpm
Well Purged Dry? Yes No		Time Pump E		<u> 23 </u>	(am)/ pm
Time Purged Dry? 103 4		Time of Sam	pling: /ሪ。	39	(and / pm
Duplicate Sample? Yes No ID:	<u> </u>	Sample EH:		· · · · · · · · · · · · · · · · · · ·	
Sample Appearance: General: Cleur	Color: //	クァン Phase	Non	. <u>-</u>	Odor: NOn
// Specific Temp	D. O.	Turbidity	Gallons	SEQ	
// Specific Temp Time pH Cond. OC	mg/L	NTU	Removed	#	Comments:
p34 6.63 2931 8.48	MA	NA	2.75	1	
1001 U. 100 D 10	 / / 	1			
1039 6-88 2969 9.55		+		3	Recharge
100 1 60 88 2709 700	+ -				1-094.90
	 	-		5	
	1		2-75		
Stabilized? Yes	Amount W	ater Removed	200		Gailons

Comments:

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

Groundwater Assessment		Site:	Otter T	ail Pow	er Co./ Big Stone
Sampling Personnel:		Facility ID:			·
13W		Date: 15	H0-24		
		Unique Statio	n ID:		
		Sample ID:		Wel	H4OX
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:		Protective Po State ID Tag Grout Seal In	? Xes.		No No
Well Information					•
Well Depth: 27-48		Well Casing		- W	1108.22
Constructed Depth: 27.20		Static Water	Elevation:	<i></i>	2,24
Casing Diameter: 2"		Previous Sta	tic: 104	1,25	
Water Level Before Purge: 15.98		Water Level	After Sample	: [3,	JOW PURE
Well Volume: 1.88 Gallons		Measuremer	nt Method:	Elec. V	VI) Steel Tape
Sampling Information		1 0 -		/\ <u>"</u>	
Weather Conditions: Temp: 57	Wind:	Web	Sky:	For	`
Sampling Method: Grundfos Bladder SST	Disp. Bailer	Whale	Grab Other:		·
Dedicated Equipment: Yes No		Pumping Ra			gpm
Well Purged Dry? Yes No		Time Pump		0_	am / pm
Time Purged Dry?		Time of San		<u> 23 </u>	(am) / pm
Duplicate Sample? Yes No ID:		Sample EH:	1110-6		
Duplicate Sample? Yes (No) ID:	·				
Sample Appearance: General: Cheer	Color: N	でって Phase			Odor: Non-
Sample Appearance: General: Check Specific Temp Cond. Cond.	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Odor: Non-
Sample Appearance: General: Check Specific Temp Cond. Cond.	D. O. mg/L	Turbidity NTU	Gallons		
Sample Appearance: General: Check Specific Temp Cond. Cond.	D. O. mg/L	Turbidity	Gallons Removed	#	
Sample Appearance: General: Check Time pH Specific Cond. CC	D. O. mg/L	Turbidity NTU	Gallons Removed	1	Comments:
Sample Appearance: General: Check Time pH Specific Cond. CC	D. O. mg/L	Turbidity NTU	Gallons Removed	1 2	
Sample Appearance: General: Check Time pH Specific Cond. CC	D. O. mg/L	Turbidity NTU	Gallons Removed	# 1 2 3	Comments:

Comments:

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

Groundwater Assessment		Site: Otter Tail Power Co./ Big Stone			
Sampling Personnel:	<u>F</u>	acility ID:			
<u> </u>	1	Date: 15 Apr 2 4			
	<u>. </u>	Jnique Statior	1D: '	_	
	<u>.</u>	Sample ID:		We	II H6
Well Condition				-	
Well Locked? As No		Protective Pos			<u>lo</u>
Well Labeled? es No		State ID Tag? Yes To Grout Seal Intact? Yes			
Casing Straight? (e) No	<u>- '</u>	Grout Sear Inc	actr res		<u> </u>
Repairs Necessary:			- _		
Well Information					.
Well Depth: 17.92	-	Well Casing Elevation:			
Constructed Depth: 17.70	-	Static Water Elevation:			
Casing Diameter: 2"		Previous Static:			<u> </u>
Water Level Before Purge: 10.63 Water Level After			After Sample	<u>: 1</u>	1.25
Well Volume: Gallons		Measurement Method: Elec. WALI Steel Tape			
Sampling Information		-		,	
Weather Conditions: Temp:	Wind:	SE 19	Sky:	Synn	1
Sampling Method: Grundfos Bladder Se	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: Yes No		Pumping Rat			gpm
Well Purged Dry? Yes No		Time Pump Began: 1229 am / 📾			
Time Purged Dry?		Time of Sampling: 244 am / 602			
Duplicate Sample? Yes 10:		Sample EH:			
Sample Appearance: General: Clar	Color: 🎜	e Phase	None		Odor: None
Specific Temp	D. O.	Turbidity	Gallons	SEQ	
Time pH Cond. °C	mg/L	NTU	Removed	#	Comments:
1234 7.27 1030 7.6		ΛA	1.25	1	
1239 7.26 1031 7.5		1	2.5	2	
1244 7.24 1032 7.5	\$		3.75	3	
1271 /21 1032 /10	- 	+	21/3	1.	
		 		4	
			L	5	
Stabilized? Yes No	Amount Wa	ter Removed	3.75		Gallons
Comments:					

Exceptions to Protocol:

Groundwater Ass	essment				Site:		Otte	er Tail Po	ower Co./	Big Stone
Sampling Personnel:					Facili	tv ID:	<u>د</u>	•		g
DF					Date:		15 April	Ŋ		
		_			Uniqu	ie Sta	tion ID:			
					Samp	ole ID:	_		Well H8	
Well Condition										
Well Locked?	res No				Prote	ctive F	Posts? (Yes		No	
Well Labeled?	Yes No	-				ID Ta		·	<u> </u>	
Casing Straight?	res No	_			Grout	Seal	Intact? Yes		NO	
Repairs Necessary:										
Well Information										
Well Depth:	22.33				Well (Casing	Elevation:		1081.23	
Constructed Depth:	22.05	_			Static	Wate	r Elevation:	107	5.76	
Casing Diameter:	2"	_			Previo					
Water Level Before Pu	rge: 5.4	17			Water	Leve	After Samp	e· d	5.72	
Well Volume:	2.75	Gallons					nt Method:	Elec.		teel Tape
Sampling Information	n			=						·
Weather Conditions:	Temp: (e	Wind:	E	96	19	Sky:	Synn		
Sampling Method:	Grundfos	Bladder S8/T	Disp. Ba		Whale	<u> </u>	Grab Other:		7	
Dedicated Equipment:	Yes No	_			Pumpi	ing Ra			gpm	
Well Purged Dry?	Yes (No)	_						254	ar	n / 🍿
Time Purged Dry?		_			Time o			327	an	
Duplicate Sample?	Yes No	ID:			Sampl		99.0	<i></i>		
Sample Appearance:	General:	Clea	Color:	Non	e	Phase			Odor:	Vane
	Specific	Temp	D. O.	_	Turbid	ity	Gallons	SEQ		
Time pH	Cond.	°C	mg/L		NTU		Removed	#	Commen	its:
1305 7.16	1453	7.75	/	VA	N	A	2.75	1		
1316 7.16	1454	7.76	1				55	2		
1327 7.16	1454	7.78					8.25	3	<u> </u>	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				_						
} -		 	╌┼		-			4		
		1	1		()			le le	1	<u>I</u>
Stabilized? Res	No		Amour	nt Wet	er Rem	oved.	8.2	5	Gallons	

Exceptions to Protocol:

New Ulm, MN 56073

Groundwater Assessment		Site:	Otter Ta	ail Power Co./ Big Stone
Sampling Personnel:		Facility ID:		
DF.		Date:	15Apra	4
		Unique Station	ID: -	
		Sample ID:	<u>-,</u>	Well H9
Well Condition		· · · · · · · · · · · · · · · · · · ·	·	· · · · · · · · · · · · · · · · · · ·
Well Locked? Yes No		Protective Post	ts? (es	No
Well Labeled? Yes No		State ID Tag?	Yes	O V8
Casing Straight? Yes No		Grout Seal Inta	ct? Yes	
Repairs Necessary:				
Well Information				
Well Depth: 30.7	•	Well Casing El	evation:	1086.21
Constructed Depth: 30.20		Static Water E	levation:	1078.19
Casing Diameter: 2"		Previous Station	D:	
Water Level Before Purge: 8.02		Water Level A	fter Sample:	8.30
Well Volume: 3.70 Gallons	<u> </u>	Measurement	Method:	Elec. WD Steel Tape
Sampling Information	· ·			1
Weather Conditions: Temp:	Wind: F	SE 19	Sky: £	Sunny
Sampling Method: Grundfos Bladder S	Disp. Bailer	Whale G	rab Other:	
Dedicated Equipment: No No		Pumping Rate		gpm
Well Purged Dry? Yes		Time Pump Be	egan: 33	37 am / offs
Time Purged Dry?		Time of Samp	ling: 14	22 am / pm
Duplicate Sample? Yes No ID:		Sample EH:	116.6	
Sample Appearance: General:	Color: No	Phase:	None	Odor: None
Specific Temp	D. O.	Turbidity (Gallons	SEQ
Time pH Specific relip	mg/L	, ,	Removed	# Comments:
1352 6.59 3305 9.3		NA	3.75	1 /
1407 6.58 3315 93			7.5	2
1422 6.58 3328 93			11.25	3
1100 000 100			11:00	
			11.0/	5
Stabilized? Yes No	Amount Wa	ater Removed:	11.25	Gallons
Comments:				

Exceptions to Protocol:

Groundwater Assessment		Site:	Otter Ta	ail Power	Co./ Big Stone	
Sampling Personnel:		Facility ID:				
BW		Date: 15 A	pr 24			
		Unique Statio	on ID:	···.,	 	
		Sample ID:		H1	0	
Well Condition						
Well Locked? Yes No		Protective Po				
Well Labeled? No		State ID Tag Grout Seal Ir		No.		
Casing Straight? Yes No		Grout Sear II	ilaci? (Tes)	INC		
Repairs Necessary:		 -				
Well Information						
Well Depth: 39.49		Well Casing	Elevation:		090.83	
Constructed Depth: 35.49		Static Water		1080.0	06	
Casing Diameter: 2"		Previous Sta	atic: 107	9.81		
Water Level Before Purge: 10.77		Water Level	After Sample:	33.6	>5	
Well Volume: 4-03 Gallons	_	Measuremer	nt Method:	€lec. WI	Steel Tape	
Sampling Information				<u>ک</u> '~		
Weather Conditions: Temp:	Wind:	valo	Sky: /	tee 1		
Sampling Method: Grundfos Bladder S8/T	Disp. Bailer	Whale	Grab Other:			
Dedicated Equipment: Ves No		Pumping Ra			pm	
Well Purged Dry? Yes No		Time Pump Began: 1306 am 1600				
Time Purged Dry? 1322		Time of San	npling: 132	7	am / pm	
Duplicate Sample? Yes No ID:		Sample EH:	121.2			
Sample Appearance: General:	Color: 1	/0 7レ Phas	e: ハンフレ	C	Odor: NO フレ	
Specific Temp	D. O.	Turbidity	Gallons ·	SEQ		
Time pH Specific reliip oC	mg/L	NTU	Removed		Comments:	
1322 7-06 4317 906	NA	M	4.25	1		
10 100 101 100		17	1	2		
1227 701 11270 9 0				 	0 .(
1327 7-01 4330 9:00	1	 •	<u> </u>	1 !	Recharge	
				4		
			<u> </u>	5		
Stabilized? Yes No7	Amount W	ater Removed	d: 4,25	(Gallons	
Comments:	<u> </u>				-	

New Ulm, MN 56073

Groundwater Assessment	Site:	Otter ⁻	Tail Power Co	o./ Big Stone
Sampling Personnel:	<u>Facility</u>	ID:		
BW	Date: /	5 Apr24		_
	<u>Unique</u>	Station ID:		
	Sample	ID:	H11	
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	State II	ive Posts? Yes D Tag? Yes Seal Intact? Yes	No (No	
Well Information				
Well Depth: 42.15	Well C	asing Elevation:	1093	3.24
Constructed Depth: 42.15	·	Water Elevation:	1083,12	
Casing Diameter: 2"	Previo	us Static: /08	文· <i>58</i>	
Water Level Before Purge: 10,12	Water	Level After Sample	e: 3&.09	,
Well Volume: 5-23 Gallons	Measu	rement Method:	Elec. Will	Steel Tape
Sampling Information	1 0		X ,	
Weather Conditions: Temp: 37	Wind: W@10	Sky:	far	
Sampling Method: Grundfos Bladder SS/	Disp. Bailer Whale	Grab Other:		
Dedicated Equipment: Yes No	Pumpi	ng Rate: 25		
Well Purged Dry? Zes No	Time I		310	am (pm)
Time Purged Dry? 1257	Time o		2	am / pm
Duplicate Sample? Yes No ID:	Sampl	e EH: 123.5		
Sample Appearance: General: Cear	Color: NO70	Phase: NOne	Odd	r. Nose
Time pH Specific Temp °C 1267 6.58 3645 9.43	D. O. Turbid	Gallons Removed 5, 25	SEQ Con	nments:
1302 6.64 3628 9.81	1 1 8		3 Re	charge
			4	
			5	
Stabilized? Yes			Θ Gal	

Comments:

New Ulm, MN 56073

Groundwater Assessment		Site:	Otter T	ail Power Co	./ Big Stone
Sampling Personnel:		Facility ID:			
<u>D5</u>		Date:	(54p	r24	
		Unique Statio	n ID:	·	
		Sample ID:		H12	·
Well Condition	-	- 		_	
Well Locked? Yes (No)		Protective Po		< <u>√√√</u>	<u>)</u>
Well Labeled? (Yes) No		State ID Tag		<u>₩0</u>	_
Casing Straight? Yes No		Grout Seal In	tact? Yes	(<u>M</u> 0)	_
Repairs Necessary: Well Information					
77 (7				1	
Well Depth: 22.63		Well Casing		NA	
Constructed Depth: 24.00		Static Water	Elevation:		
Casing Diameter: 2"		Previous Sta	tic:		
Water Level Before Purge: 8.52_		Water Level	After Sample	: 19.2	<u>'</u> S
Well Volume: 0.67 Gallon	s	Measuremer	nt Method: (Elec. Wbl	Steel Tape
Sampling Information			 _		
Weather Conditions: Temp: 55°	Wind: E	E E 15	Sky:	partly	Clardy
Sampling Method: Grundfos Bladder	SSD Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: (es) No		Pumping Ra	te: 0,2	25 gpm	
Well Purged Dry? Yes (No)		Time Pump	Began: (327	am /(pm)
Time Purged Dry?		Time of Sam	npling:	336	am /(pm)
Duplicate Sample? Yes (No) ID:		Sample EH:	14	.9	
Sample Appearance: General: Clea	Color:	√a~e_ Phase	: None	, Odo	r: Naru
Specific Temp	15.0	Tr 1 . 116	0. "	loco I	<u>-</u> :
Time pH Specific Temp Cond. C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ Com	nments:
1 . 1	OO NA	NA	0.75	1	·
	95 1	1	1.5	2	
	94		2.25	3	
				4	
				5	
Stabilizad 2 (Van)	A 1 A	Jotor Demosia	: 2.2		long
Stabilized? (Yes) No	Amount V	Vater Removed	_, _, _	Gall	OUIS
Comments:					

State + CCR

Exceptions to Protocol:



JOSH HOLLEN

PO BOX 496

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MINNESOTA VALLEY TESTING LABORATORIES, INC.

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Page:

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FINAL REPORT COMPLETION DATE: 13 Aug 24 08

Date Reported: 8 Aug 2024

08Augzy 42024

Work Order #: 31-0090

Account #: 006106

PO #: 108267

Project Name: BIG STONE PLANT CCR

FERGUS FALLS MN 56538-0496

Manager/Date

Quality Assurance Director/Date

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H10

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Report Date: 8 Aug 2024 Lab Number: 24-A1636 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:12 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Temp at Receipt: 1.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions			_		11 Jun 24	JN
Water Digestions					11 Jun 24	JN
pH, Field	6.91	units	1.00	SM4500-H+-2011	10 Jun 24 11:12	NM
pн	* 7.2	units	1.0	SM 4500 H+ B-2000	11 Jun 24 17:07	HO
Radium 226	0.24	pCi/L	0.60		5 Jul 24 12:08	OL
Radium 228	0.37	pCi/L	3.00	EPA M9320	10 Jul 24 17:01	OL
Sulfate	2620 ~	mg/L	5.0	ASTM D516-11	13 Jun 24 10:02	AKF
Chloride	7.5	mg/L	3.0	SM 4500 Cl E	13 Jun 24 8:53	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	11 Jun 24 11:35	RMB
Solids, Total Dissolved	4970	mg/L	10	SM 2540 C-97	12 Jun 24 8:58	KFL
Calcium	469.0 ~	mg/L	0.500	SW6010D	12 Jun 24 10:59	TMM
Lithium	0.354	mg/L	0.020	SW6010D	12 Jun 24 10:59	TMM
Barium	0.022	mg/L	0.005	SW6010D	12 Jun 24 10:59	TMM
Cobalt	< 0.005	mg/L	0.005	SW6010D	12 Jun 24 10:59	TMM
Boron	0.368	mg/L	0.100	SW6010D	12 Jun 24 10:59	TMM
Antimony	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Arsenic	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Beryllium	< 0.1 @	ug/L	0.05	SW6020B	14 Jun 24 11:56	KAM
Cadmium	< 0.2 @	ug/L	0.1	SW6020B	12 Jun 24 14:37	KAM
Chromium	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Lead	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Molybdenum	14.5 @	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Selenium	2.48 @	ug/L	0,50	SW6020B	12 Jun 24 14:37	KAM
Thallium	< 0.2 @	ug/L	0.1	SW6020B	12 Jun 24 14:37	KAM
Fluoride	0.220 @	mg/L	0.020	EPA 300.0	11 Jun 24 23:26	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

- ~ Sample diluted due to result above calibration of linear range.
- OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H11

Page: 3 of 22

Report Date: 8 Aug 2024 Lab Number: 24-A1637 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 10 Jun 2024 11:50 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Temp at Receipt: 1.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					11 Jun 24	JN
Water Digestions					11 Jun 24	JN
pH, Field	6.67	units	1.00	SM4500-H+-2011	10 Jun 24 11:50	NM
рН	* 7.0	units	1.0	SM 4500 H+ B-2000	11 Jun 24 17:07	HO
Radium 226	0.16	pCi/L	0.60		5 Jul 24 12:08	OL
Radium 228	-0.12	pCi/L	3.00	EPA M9320	10 Jul 24 17:01	OL
Sulfate	1950 ~	mg/L	5.0	ASTM D516-11	13 Jun 24 10:02	AKF
Chloride	3.9	mg/L	3.0	SM 4500 Cl E	13 Jun 24 8:53	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	11 Jun 24 11:35	RMB
Solids, Total Dissolved	4060	mg/L	10	SM 2540 C-97	12 Jun 24 8:58	KFL
Calcium	551.0 ~	mg/L	0.500	SW6010D	12 Jun 24 10:59	TMM
Lithium	0.358	mg/L	0.020	SW6010D	12 Jun 24 10:59	\mathbf{TMM}
Barium	0.027	mg/L	0.005	SW6010D	12 Jun 24 10:59	$\mathbf{T}\mathbf{M}\mathbf{M}$
Cobalt	< 0.005	mg/L	0.005	SW6010D	12 Jun 24 10:59	TMM
Boron	0.260	mg/L	0.100	SW6010D	12 Jun 24 10:59	TMM
Antimony	< 0.5	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Arsenic Arsenic	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	14 Jun 24 11:56	KAM
Cadmium	0.14	ug/L	0.10	SW6020B	12 Jun 24 14:37	KAM
Chromium	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Lead	0.55	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Molybdenum	2.06	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Selenium	< 1 @	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	12 Jun 24 14:37	KAM
Fluoride	0.160 @	mg/L	0.020	EPA 300.0	11 Jun 24 23:26	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

~ Sample diluted due to result above calibration of linear range.

publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting LimitRL = Reporting limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

| = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H12

Page: 4 of 22

Report Date: 8 Aug 2024 Lab Number: 24-A1638 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 12:28 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Temp at Receipt: 1.2C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					11 Jun 24	JN
Water Digestions					11 Jun 24	JN
рН, Field	7.79	units	1.00	SM4500-H+-2011	10 Jun 24 12:28	NM
На	* 7.8	units	1.0	SM 4500 H+ B-2000	11 Jun 24 17:07	HO
Radium 226	0.15	pCi/L	0.60		12 Jul 24 15:13	OL
Radium 228	0.60	pCi/L	3.00	EPA M9320	10 Jul 24 17:01	OL
Sulfate	90.7	mg/L	5.0	ASTM D516-11	13 Jun 24 10:02	AKF
Chloride	< 3	mg/L	3	SM 4500 Cl E	13 Jun 24 8:53	KRM
Mercury	< 0.005	ug/L	0.005	EPA 245.7	11 Jun 24 11:35	RMB
Solids, Total Dissolved	207	mg/L	10	SM 2540 C-97	12 Jun 24 8:58	KFL
Calcium	39.90	mg/L	0.500	SW6010D	12 Jun 24 10:59	TMM
Lithium	0.031	mg/L	0.020	SW6010D	12 Jun 24 10:59	TMM
Barium	0.089	mg/L	0.005	SW6010D	12 Jun 24 10:59	TMM
Cobalt	< 0.005	mg/L	0.005	SW6010D	12 Jun 24 10:59	TMM
Boron	0.610	mg/L	0.100	SW6010D	12 Jun 24 10:59	TMM
Antimony	< 0.5	ug/L	0.5	SW6020B	12 Jun 24 14:37	KAM
Arsenic	1.42	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	14 Jun 24 11:56	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	12 Jun 24 14:37	KAM
Chromium	1.97	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Lead	0.52	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Molybdenum	27.7	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Selenium	1.99	ug/L	0.50	SW6020B	12 Jun 24 14:37	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	12 Jun 24 14:37	KAM
Fluoride	0.380 @	mg/L	0.020	EPA 300.0	11 Jun 24 23:26	MDH

^{*} Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

OL = Analysis performed by an Outside Laboratory.



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Date Reported: 8 Aug 2024

Work Order #: 202431-0090 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INORGANIC AND METALS ANALYSES: The final Total Dissolve Solids certified referance sample for the analysis batch associated with samples 24-A1636 through 24-A1638 failed to recover within acceptance limits. Data accepted based on all other QC for the batch being acceptable.

No other problems were encountered with these analyses.



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JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 10

6 of 22 Page:

Report Date: 8 Aug 2024 Lab Number: 24-A1639 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:35 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receive Result	d .	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	47.01	feet	NA	Field	10 Jun 24 11:35	
Water Level Before Purge	14.79	feet	NA	NA	10 Jun 24 11:35	
Static Elevation, Field	1083.91	ft	NA	Field	10 Jun 24 11:35	DS

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix
| = Due to sample quantity
| = Due to sample quantity
| = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 8 Aug 2024 Lab Number: 24-A1640

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Sample Matrix: GROUNDWATER

Work Order #: 31-0090

Account #: 006106

Date Sampled: 10 Jun 2024 11:31 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 11

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	127.22	feet	NA	Field	10 Jun 24 11:31	DS
Water Level Before Purge	95.33	feet	NA	NA	10 Jun 24 11:31	
Static Elevation, Field	1008.67	ft	NA	Field	10 Jun 24 11:31	



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Report Date: 8 Aug 2024 Lab Number: 24-A1641

Work Order #: 31-0090

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Account #: 006106 Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:26 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 12

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	112.40	feet	NA	Field	10 Jun 24 11:26	DS
Water Level Before Purge	62.13	feet	NA	NA	10 Jun 24 11:26	DS
Static Elevation, Field	1009.76	ft	NA	Field	10 Jun 24 11:26	DS

RL = Reporting Limit NL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

0 = Due to sample matrix # = Due to concentration of other analytes

1 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 8 Aug 2024 Lab Number: 24-A1642

Work Order #: 31-0090

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Account #: 006106 Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:21 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 1

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	78.00	feet	NA	Field	10 Jun 24 11:21	DS
Water Level Before Purge	60.65	feet	NA	NA	10 Jun 24 11:21	DS
Static Elevation, Field	1030.06	ft	NA	Field	10 Jun 24 11:21	DS

RL = Reporting Limit



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OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H10X

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Report Date: 8 Aug 2024 Lab Number: 24-A1643 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:10 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.33	feet	NA	Field	10 Jun 24 11:10	
Water Level Before Purge	21.06	feet	NA	NA	10 Jun 24 11:10	DS
Static Elevation, Field	1094.83	ft	NA	Field	10 Jun 24 11:10	DS



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Report Date: 8 Aug 2024 Lab Number: 24-A1644 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 10 Jun 2024 11:12 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H1INT

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	60.15	feet	NA	Field	10 Jun 24 11:12	DS
Water Level Before Purge	21.77	feet	NA	NA	10 Jun 24 11:12	
Static Elevation, Field	1094.04	ft	NA	Field	10 Jun 24 11:12	

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H20X

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Report Date: 8 Aug 2024 Lab Number: 24-A1645 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 10 Jun 2024 10:50 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.83	feet	NA	Field	10 Jun 24 10:50	DS
Water Level Before Purge	4.87	feet	NA	NA	10 Jun 24 10:50	DS
Static Elevation, Field	1098.99	ft	NA	Field	10 Jun 24 10:50	DS

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
= Due to concentration of other analytes
! = Due to sample quantity
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H2INT -

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Report Date: 8 Aug 2024 Lab Number: 24-A1646 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 10 Jun 2024 10:48 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	62.45	feet	NA	Field	10 Jun 24 10:48	DS
Water Level Before Purge	55.21	feet	NA	NA	10 Jun 24 10:48	DS
Static Elevation, Field	1048.70	ft	NA .	Field	10 Jun 24 10:48	DS

RL = Reporting Limit RNL = Reporting limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 8 Aug 2024 Lab Number: 24-A1647 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 10 Jun 2024 10:40 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

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Project Name: BIG STONE PLANT CCR

Sample Description: H30X

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	22.68	feet	NA	Field	10 Jun 24 10:40	DS
Water Level Before Purge	2.71	feet	NA	NA	10 Jun 24 10:40	
Static Elevation, Field	1092.55	ft	NA	Field	10 Jun 24 10:40	

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
= Due to concentration of other analytes
! = Due to sample quantity
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Project Name: BIG STONE PLANT CCR

Sample Description: H3INT

Page: 15 of 22

Report Date: 8 Aug 2024 Lab Number: 24-A1648 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 10:42 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	54.42	feet	NA	Field	10 Jun 24 10:42	DS
Water Level Before Purge	22.05	feet	NA	NA	10 Jun 24 10:42	
Static Elevation, Field	1073.12	ft	NA	Field	10 Jun 24 10:42	

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes # = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Project Name: BIG STONE PLANT CCR

Sample Description: H40X

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Report Date: 8 Aug 2024 Lab Number: 24-A1649 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 10 Jun 2024 10:35 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	27.48	feet	NA	Field	10 Jun 24 10:35	DS
Water Level Before Purge	12.79	feet	NA	NA	10 Jun 24 10:35	DS
Static Elevation, Field	1095.46	ft	NА	Field	10 Jun 24 10:35	DS

RL = Reporting Limit RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

8 = Due to sample matrix # = Due to concentration of other analytes

9 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 8 Aug 2024 Lab Number: 24-A1650 Work Order #: 31-0090

Account #: 006106 Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 10:37 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H4INT

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	60.10	feet	NA	Field	10 Jun 24 10:37	DS
Water Level Before Purge	13.25	feet	NA	NA	10 Jun 24 10:37	DS
Static Elevation, Field	1095.36	ft	NA	Field	10 Jun 24 10:37	DS

RL = Reporting Limit RND = RepOTTING Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

0 = Due to sample matrix # = Due to concentration of other analytes

1 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Report Date: 8 Aug 2024 Lab Number: 24-A1651 Work Order #: 31-0090 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 10 Jun 2024 11:46 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H5

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	44.90	feet	NA	Field	10 Jun 24 11:46	DS
Water Level Before Purge	6.21	feet	NA	NA	10 Jun 24 11:46	DS
Static Elevation, Field	1116.59	ft	NA	Field	10 Jun 24 11:46	DS

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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Project Name: BIG STONE PLANT CCR

Sample Description: H6

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Report Date: 8 Aug 2024 Lab Number: 24-A1652 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	17.92	feet	NA	Field	10 Jun 24 11:15	DS
Water Level Before Purge	7.59	feet	NA	NA	10 Jun 24 11:15	
Static Elevation, Field	1090.17	ft	NA	Field	10 Jun 24 11:15	

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H7

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Report Date: 8 Aug 2024 Lab Number: 24-A1653 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 11:02 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	35.60	feet	NA	Field	10 Jun 24 11:02	DS
Water Level Before Purge	18.71	feet	NA	NA	10 Jun 24 11:02	DS
Static Elevation, Field	1087.35	ft	NА	Field	10 Jun 24 11:02	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H8

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Report Date: 8 Aug 2024 Lab Number: 24-A1654 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 10:58 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	22.33	feet	NA	Field	10 Jun 24 10:58	DS
Water Level Before Purge	14.66	feet	NA	NA	10 Jun 24 10:58	DS
Static Elevation, Field	1066.57	ft	NA	Field	10 Jun 24 10:58	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

0 = Due to sample matrix # = Due to concentration of other analytes

1 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H9

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Report Date: 8 Aug 2024 Lab Number: 24-A1655 Work Order #: 31-0090

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 10 Jun 2024 10:55 Sampled By: MVTL FIELD PERSONNEL Date Received: 10 Jun 2024 15:48

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	30.71	feet	NA	Field	10 Jun 24 10:55	DS
Water Level Before Purge	12.73	feet	NA	NA	10 Jun 24 10:55	DS
Static Elevation, Field	1073.48	ft	AN	Field	10 Jun 24 10:55	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

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Page: 1 of 1

Quality Control Report

Thallium ug/L

5.00

104

Lab IDs: 24-A1636 to 24-A1638 Project: BIG STONE PLANT CCR Work Order: 202431-0090

5.00

51073001qc

< 0.1

5.25

105

85-115

Lab IDs: 24-A1636 to 24-A1	1638	Pr	oject: BIG	G STONI	E PLANT CCI	₹	Work (Order: 20	02431-00	90							
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit(<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony ug/L	25.0	102	85-115	25.0	51073001qc	2.13	28.4	105	75-125	28.4	29.0	107	2.1	10	98	90-110	< 0.5
Arsenic ug/L	25.0	107	85-115	25.0	51073001qc	1.11	28.0	108	75-125	28.0	27.5	106	1.8	10	103	90-110	< 0.5
Barium mg/L	1.000	98	85-115	1.00	51085001qc	< 0.005	0.990	99	75-125	0.990	0.995	100	0.5	10	98	90-110	< 0.005
Beryllium ug/L	2.50	113	85-115	2.50	51073001qc	< 0.1	2.97	119	75-125	2.97	2.72	109	8.8	10	94	90-110	< 0.05
Boron mg/L	1.000	98	85-115	1.00	51085001qc	0.426	1.490	106	75-125	1.490	1.480	105	0.7	10	97	90-110	< 0.1
Cadmium ug/L	5.00	105	85-115	5.00	51073001qc	< 0.1	5.03	101	75-125	5.03	5.20	104	3.3	10	97	90-110	< 0.1
Calcium mg/L	50.00	98	85-115	50.0	51085001qc	109.0	158.0	98	75-125	158.0	158.0	98	0.0	10	102	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	24-A1638	< 3	65.3	109	80-120	65.3	64.2	107	1.7	10	94	90-110	< 3
Chromium ug/L	25.0	101	85-115	25.0	51073001qc	< 1	25.5	102	75-125	25.5	24.7	99	3.2	10	97	90-110	< 0.5
Cobalt mg/L	1.000	98	85-115	1.00	51085001qc	< 0.005	1.010	101	75-125	1.010	1.010	101	0.0	10	100	90-110	< 0.005
Fluoride mg/L	-	-	-	4.00	51013001qc	0.490	4.71	106	75-125	4.71	4.69	105	0.4	10	104	90-110	< 0.02
Lead ug/L	25.0	105	85-115	25.0	51073001qc	< 0.5	26.8	107	75-125	26.8	26.5	106	1.1	10	101	90-110	< 0.5
Lithium mg/L	1.000	101	85-115	1.00	51085001qc	0.073	1.110	104	75-125	1.110	1.130	106	1.8	10	103	90-110	< 0.02
Mercury ug/L	-	_	-	0.10	50945001qc	0.091	0.155	64	63-111	0.155	0.157	66	1.3	18	102	76-113	< 0.005
Molybdenum ug/L	25.0	98	85-115	25.0	51073001qc	0.53	24.8	97	75-125	24.8	25.9	101	4.3	10	97	90-110	< 0.5
pH units		-	_	-	-	-	_	_	-	7.2	7.2	•	0.0	2.5	101	90-110	-
Selenium ug/L	25.0	100	85-115	25.0	51073001qc	< 1	27.1	108	75-125	27.1	25.8	103	4.9	10	103	90-110	< 0.5
Solids, Total Dissolved mg/L	_	-	-	-	-	-	-	-	-	4970	4840	-	2.7	7	92	85-115	< 10
Sulfate mg/L	-	-	-	5000	24-A1636	2620	8330	114	80-120	8330	8510	118	2.1	10	100	80-120	< 5

Approved by: _

75-125 5.25

5.18

104

10

100

1.3

90-110

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July 18, 2024

Todd Rieger **MVTL** Laboratories 1126 North Front Street New Ulm, MN 56073

RE:

Project: 31-0090 Otter Tail Power Co

Pace Project No.: 10696218

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Piper Gibbs

piper.gibbs@pacelabs.com

Piper J Siklas

(612)607-6456

Project Manager

Enclosures

cc: Barb Zins, MVTL





SAMPLE SUMMARY

Project:

31-0090 Otter Tail Power Co

Pace Project No.: 10696218

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10696218001	24A1636 - H10	Water	06/10/24 11:12	06/12/24 10:36
10696218002	24A1637 - H11	Water	06/10/24 11:50	06/12/24 10:36
10696218003	24A1638 - H12	Water	06/10/24 12:28	06/12/24 10:36



WO#:10696218

10696218

AIN-OF-CUSTODY / Analytical Request Document

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3 of 3							SIGNATURE												Signe			-		<u>.</u>	\dashv	Temp	Received on Ice (Y/N)	Custody Sealed Coole (Y/N)		Samples Intact (Y/N)

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt CLIENT NAME: <u> WO#:10696218</u> PROJECT #: Client COURIER: ☐ Commercial ☐ FedEx ☐ Pace Due Date: 07/12/24 ☐ SpeeDee □ UPS □ USPS PM: PG CLIENT: MVTL TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142 Custody Seal on Cooler/Box Present: YES NO Seals Intact: YES NO Biological Tissue Frozen: ☐ YES ☐ NO ☑ N/A Thermometer: . 1 1 (0461) □ T2 (0436) □ T3 (0459) □ T4 (0402) □ T5 (0178) □ T6 (0235) ☐ Melted ☐ None □ T7 (0042) □ T8 (0775) □ T9 (0727) □ 01339252 (1710) Did Samples Originate in West Virginia: ☐ YES **V**NO Were All Container Temps taken: ☐ YES ☐ NO Correction Factor: True Cooler Temp Read w/Temp Blank: Average Corrected Temp (no Temp Blank Only): Cooler Temp Corrected w/Temp Blank: 133 NOTE: Temp should be above freezing to 6°C. ☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container USDA Regulated Soil: N/A Water Sample/Other (describe): Initials & Date of Person Examining Contents: = 26-12-24 Dld Samples originate from one of the following states (check maps) - AL, AR, AZ, CA, FL, Did samples originate from a foreign source (international, including GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO Hawail and Puerto Rico): ☐ YES ☐ NO NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork. LOCATION (check one): DULUTH MINNEAPOLIS VIRGINIA NO Chain of Custody Present and Filled Out? П Chain of Custody Relinquished? 2. Sampler Name and/or Signature on COC? ď 3. Samples Arrived within Hold Time? 4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □No ₽ Short Hold Time Analysis (<72 hr)? И 5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/E. coll. ☐ Other: **Rush Turn Around Time Requested?** Sufficient Sample Volume? Correct Containers Used? 8. - Pace Containers Used? П Containers Intact? Field Filtered Volume Received for Dissolved Tests? 10. Is sediment visible in the dissolved container: ☐ YES ☐ NO Is sufficient information available to reconcile the samples to the COC? 11. If NO, write ID/Date/Time of container below: NOTE: If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☐ Soil ☑ Water ☐ Other ☐ See Exceptions form ENV-FRM-MIN4-0142 All containers needing acid/base preservation have been checked? 12. Sample #: 00 100 3 All containers needing preservation are found to be in compliance with EPA M HNO₃ □ H₂SO₄ □ NaOH □ Zinc Acetate recommendation? (HNO₃, H₂SO₄, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Positive for Residual Chlorine: YES NO Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and pH Paper Lot # Residual 0-6 Roll 0-6 Strip 0-14 Strip Chlorine NOTE: If adding preservation to the container, verify with the PM first. Clients may require adding preservative to the field and equipment 213923 blanks when this occurs. ☐ See Exceptions form ENV-FRM-MIN4-0142 Headspace in Methyl Mercury Container? W Extra labels present on soil VOA or WIDRO containers? Ø 14. Headspace in VOA Vials (greater than 6mm)? W ☐ See Exceptions form ENV-FRM-MIN4-0140 Trip Blanks Present? П Trip Blank Custody Seals Present? П Pace Trip Blank Lot # (if purchased): CLIENT NOTIFICATION / RESOLUTION FIELD DATA REQUIRED: ☐ YES ☐ NO Person Contacted: Comments / Resolution: Project Manager Review: NOTE: When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Qualtrax ID: 52742

Effective Date: 05/10/24

Page 1 of 1



CHAIN-OF-CUSTODY / Analytical Request Document

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

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	Rush Multiplier	X	State Of Origin:		(11131	
L	Samples Pre-Logged			X Yes No	Results Requested By: 7/25/202	24
Workorder: 10696218 Workorder Name	: 31-0090 Otter Tail Po		Owner Received	Date: 6/12/2024 Requested	7	 8418
Report To	A CONTRACTOR OF THE CONTRACTOR					
Piper Gibbs Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-6456	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-585		station 226/228		L12514	g2
Sample Coll Item Sample ID Type Date	ect a/Time Lab ID	Matrix 1967	164		LAB USE OF	
	/2024 11:12 10696218001	Water 11			-:3	
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	/2024 12:28 10696218003	Water 22	X		_3	
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Cooler Temperature on Receipt°C	Custody Seal	Y or N	Received on Ice		Samples Intact Y or N	

Thursday, June 13, 2024 2:44:35 PM

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^{***}In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.





Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10696218

(To be completed by sending lab)

Sending Project No.	10696218	
Receiving Project No:		
Check Box for Consolidated Invoice:		1.000
Date Prepared:	06/13/24	
REQUESTED COMPLETION DATE:	7/25/2024	-

Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Gibbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units stnd	Report Wet or Dry Wei	ht? Dry We	eight IRV	VO Lab Ne	ed to run?	Cert. Needed MN
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Special Requirements: Report C, QC	C Limits (C),FR Only r	o EDD (0)	1	SI-38RAD	SUB PASI RAD

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.



AIN-OF-CUSTODY / Analytical Request Document

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

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	ADDITIONA	COMMENT	S III SARAH	第 宗統	RELIN	QUIS	HED BY L	AFFILLATIO	建設KC	DATE		Ţ	IME :	蒙		AC	CEPT	ED BY	1 AE	ILIAT	ION.	· cocking	DĀ		******	IME:	7		SAME	LE CONDIT	IONS	
_							Barb Zins	3		5/23/2	4	7	am		W		MIL	WA		YG.	10		<u> </u>	24	19	<u> 36</u>	16	3	Y_	N	4	
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		ر ق ر عر	2449					SAMPLE	RNAMEA	ND SIGNA	TUR	Eggi													Nic.	MD102	٥		E 2	oofer	ntact	
							[PRINT Nam	of SAMP	ER:																Temo In °C		Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact	3
								,	SIGNATUR	e of SAMPI	ER:								DA (M	TE SI M/DD	gned /YY):						1		A Z	Sea	Sam	

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt CLIENT NAME: PROJECT #: Worthalloracia;zaka COURIER: M Client □ Commercial □ FedEx ☐ Pace ☐ SpeeDee □ UPS □ USPS (c) SIEKITA (NYTILA TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142 Custody Seal on Cooler/Box Present: YES NO Seals Intact: YES NO Blological Tissue Frozen: ☐ YES ☐ NO Packing Material: 🗆 Bubble Bags 🗆 Bubble Wrap 🔯 None 🗀 Other 🗆 Temp Blank: 💆 YES 🗆 NO Type of ice: 🗀 Biue 🗀 Dry 💆 Wet ☐ Melted ☐ None Thermometer: ☐/T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ¹ T7 (0042) □ T8 (0775) □ T9 (0727) □ 01339252 (1710) Were All Container Temps taken: ☐ YES ☐ NO ☐ N/A Correction Factor: - 3 Cooler Temp Read w/Temp Blank: Average Corrected Temp (no Temp Blank Only): Cooler Temp Corrected w/Temp Blank: ______O NOTE: Temp should be above freezing to 6°C. ☐ See Exceptions Form ENV-FRM-MIN4-0142 □ 1 Container USDA Regulated Soil: 1 N/A - Wate Sample/Other (describe): Initials & Date of Person Examining Contents: 5~6/21124 Did Samples originate from one of the following states (check maps) - AL, AR, AZ, CA, FL, Did samples originate from a foreign source (international, including GA. ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO Hawaii and Puerto Rico): ☐ YES ☐ NO NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork. LOCATION (check one): DULUTH MINNEAPOLIS VIRGINIA COMMENT(S) NO N/A Chain of Custody Present and Filled Out? Chain of Custody Relinquished? d 2. Sampler Name and/or Signature on COC? A 3. Samples Arrived within Hold Time? 4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □No Short Hold Time Analysis (<72 hr)?. 5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/E. coli ☐ Other: Rush Turn Around Time Requested? 囡 Sufficient Sample Volume? ď \Box 7. d **Correct Containers Used?** \Box – Pace Containers Used? 団 Containers intact? 9. Field Filtered Volume Received for Dissolved Tests? ^ 10. Is sediment visible in the dissolved container: ☐ YES ☐ NO Is sufficient information available to reconcile the samples to the COC? П 11. If NO, write ID/Date/Time of container below: NOTE: If ID/Date/Time don't match fill out section 11. Matrix: □ Oll □ Soil 🗹 Water □ Other ☐ See Exceptions form ENV-FRM-MIN4-0142 All containers needing acid/base preservation have been checked? 12. Sample #: 00 | - 00] All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 M HNO₃ ☐ H₂SO₄ ☐ NaOH ☐ Zinc Acetate Positive for Residual Chlorine: ☐ YES ☐ NO Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS pH Paper Lot # Residual 0-6 Roll 0-6 Strip 0-14 Strlp NOTE: If adding preservation to the container, verify with the PM first. Clients may require adding preservative to the field and equipment blanks when this occurs. ☐ See Exceptions form ENV-FRM-MIN4-0142 Headspace in Methyl Mercury Container? Extra labels present on soil VOA or WIDRO containers? Ø Headspace in VOA Vials (greater than 6mm)? \mathbf{Z} ☐ See Exceptions form ENV-FRM-MIN4-0140 Trip Blanks Present? Trip Blank Custody Seals Present? Pace Trip Blank Lot # (If purchased): CLIENT NOTIFICATION / RESOLUTION FIELD DATA REQUIRED: ☐ YES ☐ NO Person Contacted: Comments / Resolution: Juper J Diklas Project Manager Review: NOTE: When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

LIENT NAME: MVT	PROJE	CT #:	1.10	0#:10696218
COURIER: Client Commercial FedEx F	ace		==	: PG Due Date: 07/12/24
C shaenee C n.2 C 02k2			1	IENT: MVTL
TRACKING NUMBER: See Exception ENV-FRM-N			L.	TENI: MAIC
:ustody Seal on Cooler/Box Present: 🗆 YES 🗹 NO Segis intact: 🗆	YES 1	NO	Biologi	Ical Tissue Frozen: DYES DNO MN/A
acking Material: 🗆 Bubble Bags 🗆 Bubble Wrap 🕩 None 🗆 Other	Ten	p Blar		
hermometer: 💯 T1 (0461) 🗆 T2 (0436) 🗀 T3 (0459) 🗀 T4 (0402) ☐ T7 (0042) 🗀 T8 (0775) 🗀 T9 (0727) 🗀 01339252 (□ T5 (
Pid Samples Originate in West Virginia:				Container Temps taken: ☐ YES ☐ NO 12 N/A
Cooler Temp Read w/Temp Blank: Cooler Temp Corrected w/Temp Blank:	3	- <u>:</u> c	Average	Corrected Temp (no Temp Blank Only):*C
IOTE: Temp should be above freezing to 6°C.	177	- ' c	∏ See F	xceptions Form ENV-FRM-MIN4-0142
ISDA Regulated Soil: N/A, Water Sample/Other (describe):				
old Samples originate from one of the following states (check maps) — AL, AR,	AZ. CA.	FL.		& Date of Person Examining Contents; = 6-12-29 ples originate from a foreign source (International, including
A, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO		·	Hawaii a	and Puerto Rico): YES NO
IOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-	MIN4-0	154) a	nd includ	e with SCUR/COC paperwork.
LOCATION (check one): 🖆 🗆 DULUTH 🖫 🗹 MINNEAPOLIS 🛴 🗀 .VIRGINIA 🕍	-YES	NO	N/A	COMMENT(S)
hain of Custody Present and Filled Out?	N/			1.
haln of Custody Relinquished?				2
ampler Name and/or Signature on COC? amples Arrived within Hold Time?	N	무		3.
hort Hold Time Analysis (<72 hr)?				4. If Fecal:
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				5. BOD / cBOD Fecal colliform Hex Chrom HPC Nitrate Nitrite Ortho Phos
			. [☐ Total coliform/E. coli. ☐ Other:
ush Turn Around Time Requested?		19	'	6.
ufficient Sample Volume?	14			7.
orrect Containers Used?	H			8.
Pace Containers Used? ontainers Intact?	M	<u> </u>		
ield Filtered Volume Received for Dissolved Tests?			1	9. 10. is sediment visible in the dissolved container:
Maria Maria		L	•	10. Is sediment visible in the dissolved container:
sufficient information available to reconcile the samples to the COC?	M	_	-	11. If NO, write ID/Date/Time of container below:
OTE: If ID/Date/Time don't march fill out section 11.				
fatrix: 🔲 Oil 🔲 Soil 💆 Water 🔲 Other Il containers needing acid/base preservation have been checked?			+=	☐ See Exceptions form ENV-FRM-MIN4-0142
il containers needing acid/base preservation have been checked?	प्रव			12. Sample #: 00 00 7
ecommendation? (HNO ₃ , H ₂ SO ₄ , < 2 pH, NaOH > 9 Sulfide, NaOH > 10	2		"	M HNO₃ □ H₂SO₄ □ NaOH □ Zinc Acetate
yanide)			اررا	Positive for Residual Chlorine: YES NO
xceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and loxins/PFAS			1 fz/	-
IVAIIS/FFAS				PH Paper Lot # Residual 0-6 Strip 0-14 Strip
OTE: If adding preservation to the container, verify with the PM first.	•			Chlorine 20-6 Roll - 0-6 Strip 0-14 Strip
Clients may require adding preservative to the field and equipment				213923
blanks when this occurs.			1 1	☐ See Exceptions form ENV-FRM-MIN4-0142
eadspace in Methyl Mercury Container?			10	13.
xtra labels present on soll VOA or WIDRO containers?			1	14.
eadspace In VOA Vials (greater than 6mm)?			12	☐ See Exceptions form ENV-FRM-MIN 4-0140
rip Blanks Present? rip Blank Custody Seals Present?				15,
LIENT NOTIFICATION / RESOLUTION				Pace Trip Blank Lot # (if purchased):
		p	o 	FIELD DATA REQUIRED: ☐ YES ☐ N
Person Contacted:		vate	& Time:	
Comments / Resolution:				
				6/13/24
Project Manager Review: Puper J. Kalele	350		Date:	
		nu af i	Date:	
Project Manager Review: Yugu J. Like B OTE: When there is a discrepancy affecting North Carolina compliance samp (I.e., out of hold, incorrect preservative, out of temp, incorrect contains	— les, a co	py of t	Date:	

Todd Rieger

From:

Piper Gibbs <Piper.Gibbs@pacelabs.com>

Sent:

Thursday, June 20, 2024 10:52 AM

To:

Todd Rieger

Subject:

Low Volume 10696218

Attachments:

10696218_coc.pdf

Importance:

High

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Todd,

The lab just informed me they do not have enough volume for Radium 226/228. They need 1L per sample and only received 250mL. Would you be able to send in additional volume? Let me know if you need additional containers. I have also updated in our system to send out 1L for future orders.

Thanks,

Piper Gibbs (she/her/hers) Project Manager | Client Services 1700 Elm St SE Minneapolis, MN 55414 612-607-6456 | pacelabs.com



PROCESS PAYMENTS ONLINE - click on the link below

Online Bill Pay

A 2.5% surcharge may be added to your payment should you choose to use a credit card for payment. Debit and ACH/e-checks incur no additional fee.

Pace[©] Analytical Services will be closed on Thursday, July 4th, 2024, in observance of Inde

Please contact me in advance of submitting any samples to the laboratory over the holiday as hours of o

All Rush requests must be pre-approved by the laboratory. Please contact me before submitting a Rush project. Bottle orders requested with less than 48 hours notice will incur a minimum \$100 surcharge.

Please note starting January 1, 2024, a minimum workorder fee of \$275 may apply to your projects.

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and delete any copies.

Please consider the environment before printing this email



Pace Analytical* ANALYTICAL REPORT

July 18, 2024

Pace Analytical - Minnesota

Sample Delivery Group:

L1751482

Samples Received:

06/28/2024

Project Number:

10696218

Description:

31-0090 Otter Tail Power Co

Site:

001

Report To:

Piper Gibbs

1700 Elm Street Suite 200

Minneapolis, MN 55414

Ss

Cn

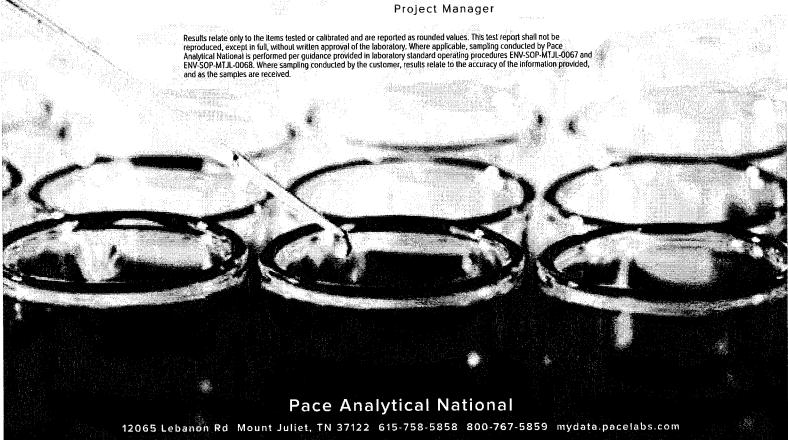
Sr

Qc

G١

Entire Report Reviewed By:

Naomi M Sackett



ACCOUNT: Pace Analytical - Minnesota PROJECT: 10696218

SDG: L1751482

DATE/TIME: 07/18/24 13:59 1 of 18

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24A1637-H11 L1751482-02	6		
24A1638-H12 L1751482-03	7		
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Al: Accreditations & Locations			
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SAMPLE SUMMARY

			Collected by	Collected date/time 06/10/24 11:12	Received date/time 06/28/24 09:00		
24A1636-H10 L1751482-01 Non-Potable Water Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Radiochemistry by Method 904/9320	WG2317917	1	07/05/24 18:12	07/10/24 17:01	DDD	Mt. Juliet, TN	
Radiochemistry by Method SM7500Ra B M	WG2316133	1	07/02/24 16:28	07/05/24 12:08	ZRG	Mt. Juliet, TN	
			Collected by	Collected date/time	Received da	ste/time	
24A1637-H11 L1751482-02 Non-Potable Water				06/10/24 11:50	06/28/24 09	9:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Radiochemistry by Method 904/9320	WG2317917	1	07/05/24 18:12	07/10/24 17:01	DDD	Mt. Juliet, TN	
Radiochemistry by Method SM7500Ra B M	WG2316133	1	07/02/24 16:28	07/05/24 12:08	ZRG	Mt. Juliet, TN	
24A1638-H12 L1751482-03 Non-Potable Water			Collected by	Collected date/time 06/10/24 12:28	Received da 06/28/24 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Radiochemistry by Method 904/9320	WG2317917	1	07/05/24 18:12	07/10/24 17:01	DDD	Mt. Juliet, TN	

WG2319521

07/10/24 13:03























Radiochemistry by Method SM7500Ra B M

ZRG

07/12/24 15:13

Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Naomi M Sackett Project Manager Ср

²Tc

³Ss

[∠]Cn













24A1636-H10

Collected date/time: 06/10/24 11:12

SAMPLE RESULTS - 01

Radiochemistry by Method 904/9320

	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/I		+/-	+/-	pCi/l	pCi/l	dale / lime	
RADIUM-228	0.371	<u>U</u>	0.496	0.601	0.937	0.496	07/10/2024 17:01	<u>WG2317917</u>
(T) Barium	97.0					30.0-143	07/10/2024 17:01	WG2317917
(T) Yttrium	91.8					30.0-136	07/10/2024 17:01	WG2317917

Ss



	Result	Qualifier 2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l	+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.241	0.202	0.341	0.191	0.158	07/05/2024 12:08	WG2316133
(T) Barium-133	80.0				30.0-143	07/05/2024 12:08	WG2316133















24A1637-H11

Analyte

RADIUM-226

(T) Barium-133

SAMPLE RESULTS - 02

Collected date/time: 06/10/24 11:50

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

Result

pCi/i

0.160

79.1

Qualifler

7

2 sigma CE

+/-

0.169

• •								
<u> </u>	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/I		+/-	+/-	pCi/l	pCi/l	date / time	
ŘADIUM-228	-0.115	Ū	0.699	0.822	1.34	0.709	07/10/2024 17:01	WG2317917
(T) Barium	84.1	t Tayla				30.0-143	07/10/2024 17:01	WG2317917
(T) Yttrium	77.9					30.0-136	07/10/2024 17:01	WG2317917

TPU

+/-

0.309

MDA

pCi/l

0.194

Lc

pCi/l

0.161

30.0-143



³ Ss



4	Cn	1
L		

Batch

WG2316133

WG2316133

Analysis Date

07/05/2024 12:08

07/05/2024 12:08

date / time

"Cn	
5	I











24A1638-H12 Collected date/lime: 06/10/24 12:28

SAMPLE RESULTS - 03

Radiochemistry by Method 904/9320

	Result	Qualif	îler 2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/I	date / time	
RADIUM-228	0.604	<u> 7</u>	0.488	0.596	0.915	0.487	07/10/2024 17:01	WG2317917
(T) Barlum	91.9	- J .				30.0-143	07/10/2024 17:01	WG2317917
(T) Yttrium	91.8					30.0-136	07/10/2024 17:01	WG2317917





Radiochemistry by Method SM7500Ra B M

	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.147	7	0.155	0.289	0.178	0.147	07/12/2024 15:13	WG2319521
(T) Barium-133	<i>86</i> .7					30.0-143	07/12/2024 15:13	WG2319521



Cn













WG2317917

QUALITY CONTROL SUMMARY

L1751482-01,02,03

Method Blank (MB)

Radiochemistry by Method 904/9320

(MB) R4092316-1 07/10/24	17:01				
	MB Result	MB Qualifier	MB 2 sigma	CE MB MDA	MB Lc
Analyte	pCi/I		+/-	pCi/I	pCi/l
Radium-228	-0.206	<u>U</u>	0.234	0.451	0.236
(T) Barium	101		101		
(T) Yttrium	71.4		71.4		







⁺Cn

L1753253-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753253-01 07/	10/24 17:01 • (D	UP) R4092316	-4 07/10/24 17:	:01								ממת מנות	
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/I	pCi/l	pCi/l	+/-	pCi/l	pCi/l	%			%	
Radium-228	-0.162	0.285	0.554	0.293	0.217	0.337	0.639	0.339	200	0.860	<u> </u>	20	3
(T) Barium	94.2				88.9	88.9							
(T) Yttrium	99.4				<i>85.7</i>	<i>85.7</i>							









Laboratory Control Sample (LCS)

(LCS) R4092316-2	07/10/24 17:01	<u> </u>			
(LCS) (14032310 Z	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/I	%	%	
Radium-228 (T) Barlum (T) Yttrium	5.00	5.72	114 88.4 83.0	80.0-120	CARTINETE SE LE LE LE LE LE LE LE LE LE LE LE LE LE

L1751170-29 Original Sample (OS) • Matrix Spike (MS)

(OS) L1751170-29 07/10/2	4 17:01 • (MS) R4	092316-3 07/1	0/24 17:01			-	
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	pCi/l	pCi/l	pCi/I	%	ooraanaanaa kalii dhaadaa oo dhahadada	%	
Radium-228	16.7	50.5	69.4	113	1	70.0-130	
(T) Barium		93.4		54.1			[설문] [전기 전기
(T) Yttrium		86.0		78.1			

WG2316133

QUALITY CONTROL SUMMARY

Radiochemistry by Method SM7500Ra B M

N 4 - 4 hr D - / N 4	
Method Blank (M	\Box

(MB) R4091092-1 0	7/05/24 12:08				
	MB Result	MB Qualifier	MB 2 sigm	a CE MB MDA	MB Lc
Analyte	pCi/I		+/-	pCi/l	pCi/l
Radium-226	0.0238	7	0.0300	0.0456	0.0293
(T) Barium-133	89.8		89.8		









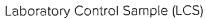
(OS) L1751245-06 (07/05/24 12:08 • (DUP) R409109	92-5 07/05/24	12:08									
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Resul	t DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/l	pCi/l	+/-	pCi/l	pCi/l	%			%	
Radium-226	-0.00829	0.0363	0.191	0.158	0.0916	0.256	0.418	0.272	200	0.386	П	20	3
(T) Barium-133	82.2				<i>93.7</i>	93. <i>7</i>							



[‡]Cn







(LCS) R4091092-2 07/05/	24 12:08				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/l	%	%	
Radium-226	5.00	5.74	115	75.0-125	
(T) Barium-133			86.6		등 전쟁이 있다. 이번 10년 1일 전쟁이 10년 10년 10년 10년 10년 10년 10년 10년 10년 10년



L1751245-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1751245-02	OS) L1751245-02 07/05/24 12:08 • (MS) R4091092-3 07/05/24 12:08 • (MSD) R4091092-4 07/05/24 12:08													
(,		, t Original Resuli				MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits	
Analyte	pCi/l	pCi/l	pCi/I	pCi/l	%	%		%			%		%	
Radium-226	20.0	1.02	20.2	20.5	95.6	97.4	1	75.0-125			1.77		20	
(T) Barium-133		94.7			90.5	94.2								

WG2319521

QUALITY CONTROL SUMMARY

L1751482-03

Method Blank (MB)

Radiochemistry by Method SM7500Ra B M

(MB) R4093914-6 07/12/24 15:13 MB Lc MB Result MB Qualifier MB 2 sigma CE MB MDA pCî/l pCi/l pCi/l Analyte 0.0726 0.0467 Radium-226 0.0103 U 0.0394 57.2 57.2 (T) Barium-133



²Tc



Cn

L1751476-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1751476-01 07/1	12/24 15:13 • (DU Original Result	Original 2	4-10 07/12/24 15 Original MDA	:13 Original Lc	DUP Result	DUP 2 sigma	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/I	+/-	pCi/I	pCi/I	pCi/I	+/-	pCi/l	pCi/l	%			%	
Radium-226	0.240	0.202	0.191	0.158	-0.0342	0.0749	0.266	0.197	200	1.27	<u>U</u>	20	3
(T) Barium-133	80.6				87.9	87.9							





₹GI

Laboratory Control Sample (LCS)

(LCS) R4093914-7	7 07/12/24 15:13				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	pCi/I	pCi/l	%	%	
Radium-226	5.00	5.29	106	75.0-125	
(T) Barium-133			65.0		



[®]Sc

L1751656-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1751656-06 07/12	(OS) L1751656-06 07/12/24 15:13 • (MS) R4093914-8 07/12/24 15:13 • (MSD) R4093914-9 07/12/24 15:13													
•		Original Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER RPD Lie	nits	
Analyte	pCi/l	pCi/l	pCi/I	pCi/I	%	%		%		or and the second secon	%	%	<u> </u>	
Radium-226	20.0	0.163	20.8	18.5	103	91.4	1	75.0-125			12.1	20		
(T) Barium-133		<i>76</i> .8	AND SOL		65.3	69.7								

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The Information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery. 마이트 이 마이트 그는 그리고 그리고 그리고 있다면 그리고 있다면 그리고 모든 그리고 있다.
RER	Replicate Error Ratio,
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resul reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section fo each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

Page 24 of 31

Below Detectable Limits: Indicates that the analyte was not detected.

Ss

Cn

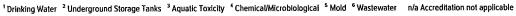
Sr

Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Mabama	40660	Nebraska	NE-OS-15-05
ılaska	17-026	Nevada	TN000032021-1
rizona	AZ0612	New Hampshire	2975
arkansas	88-0469	New JerseyNELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
lorida	E87487	North Carolina 1	DW21704
ieorgia	NELAP	North Carolina 3	41
Seorgia ¹	923	North Dakota	R-140
daho	TN00003	Ohio-VAP	CL0069
llinois	200008	Oklahoma	9915
ndiana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
(ansas	E-10277	Rhode Island	LA000356
Centucky ¹⁶	KY90010	South Carolina	84004002
Centucky ²	16	South Dakota	n/a
oulsiana	Al30792	Tennessee 14	2006
ouislana	LA018	Texas	T104704245-20-18
faine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461,02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		



^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.

Cp

















^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

1151 7/25/2024
B USE ONLY
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54
<u> </u>
r N

1,640.) = 4.4 EVA7 coc seal Present/Intect: coc signed/Accurate:	ncle Rece	ipt Checklis II VOA Zero Pres. Corre	Headapace;	Y
Bottles arrive intact: Correct bottles used: Sufficient volume sent: FA Screen <0.5 mR/hr:	Z, N	6476	5644	634



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





Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10696218

(To be completed by sending lab)

Sending Project No:	10696218	
Receiving Project No:		
Check Box for Consolidated Invoice:		
Date Prepared:	06/13/24	
REQUESTED COMPLETION DATE:	7/25/2024	

Sending Region	(R10-Minnesota	Sending Project Mgr.	Piper Gibbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

lequested Reportable Units stnd	Report Wet or Dry Weigh	t? Dry We	ight IRW	/O Lab Ne	ed to run?	Cert. Needed	MN
	Work	REQUEST	ED			7	
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode	Desc
Radium 226/228	BP3N	6	ниоз	3	SI-38RAD	SUB PAS	SI RAD
pecial Requirements: Report C, QC	Limits (C),FR Only no			N ALSO			guración en en esta
FO	R ANALYTICAL WORK C	UMPLEIE	n tule ere tic	11.7400	马克特第三种价值	259 YA KANSANZOYAY	

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

1069 Internal Transfer Chain of Custody State Of Origin: MN Rush Multiplier Cert. Needed: | X | Yes No Samples Pre-Logged into eCOC Results Requested By: 7/25/2024 **Owner Received Date:** 6/12/2024 31-0090 Otter Tail Power Co Workorder: 10696218 Workorder Name: Requested Analysis Subcontract To Report To Pace National Piper Gibbs 12065 Lebanon Rd Pace Analytical Minnesota Mt. Juliet, TN 37122 1700 Elm Street Phone (615) 758-5858 Minneapolis, MN 55414 Phone (612)607-6456 Preserved Containers Sample Collect LAB USE ONLY Matrix Date/Time Lab ID Type Item Sample ID Х 6/10/2024 11:12 10696218001 Water PS 24A1636 - H10 X 10696218002 Water 6/10/2024 11:50 PS 24A1637 - H11 10696218003 Water PS 6/10/2024 12:28 24A1638 - H12 Comments Date/Time Date/Time Received By Released By **Transfers** 6/14/34 17:00

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Custody Seal Y or N

°C

Received on Ice Y or N

Sa	mple Receipt Cherklist	
COC Seal Present/Intact: COC Signed/Accurate: Bottles accuve intact: Correct bottles used: Sufficient volume sent: PA Screen KO.5 mR/hr:	The volume of Applicable The volume of Applica	; {

Samples Intact Y or N

Cooler Temperature on Receipt

2



1751482

Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10696218

(To be completed by sending lab)

Sending Project No:	10696218
Receiving Project No:	
Check Box for Consolidated Invoice:	
Date Prepared	06/13/24
REQUESTED COMPLETION DATE:	7/25/2024

Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Glbbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Radium 226/228	BP3N	6	HNO3	3	SI-38RAD	SUB PASI RAD
F	R ANALYTICAL WORK C	OMPLETE	D THIS SECTIO	N ALSO	this year	
le Care de la care de		the least and the second	Contracting the Contracting th	According to the second		

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

5 NCF-PACEMN WO#10696218	R5
Time estimate: 0h	Time spent: Oh
Members	
Nicolle Faulk (responsible) Naomi Sac	kett
Due on 21 June 2024 5:00 PM for target Done	
✓ Login Clarification needed	
Chain of custody is incomplete	
Please specify Metals requested	
Please specify TCLP requested	
Received additional samples not listed on COC	
Sample IDs on containers do not match IDs on o	coc
Client did not "X" analysis	
Chain of Custody is missing	
If no COC: Received by:	
If no COC: Date/Time:	
If no COC: Temp./Cont.Rec./pH:	
If no COC: Carrier:	
If no COC: Tracking #:	
Client informed by call	
Client informed by Email	
Client informed by Voicemail	
Date/Time:	
PM initials:	
Client Contact:	
Comments	
Nicolle Faulk	15 June 2024 1:04 PM
Client requesting RA-226 & RA-228. Only receiv	ed a 250ml HN03. insufficient sample volume
Nicolle Faulk	19 June 2024 12:52 PM
any word?	
Naomi Sackett	20 June 2024 10:44 AM
	20 02:02 2024 20:44 20:
contacting client	
Naomi Sackett	20 June 2024 1:52 PM
client sending more volume tomorrow	
P ag	
Page 30 of 3	
of 3	

Nicolle Faulk	25 June 2024 10:16 ÅM
I do not see this logged anywhere, any upda	te on additional volume
Nicolle Faulk	26 June 2024 2:35 PM
Any update?	
Nicolle Faulk	2 July 2024 8:02 AM
Any word?	
Nicolle Faulk	2 July 2024 8:56 AM
This has been logged under L1751482. Wou disposed of?	ıld you like the 250ml HN03 containers added or
Naomi Sackett	2 July 2024 12:13 PM
please add them for now	
Nicolle Faulk	2 July 2024 12:24 PM
done	

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557 New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

This is an exact copy of the original document

By Date 1/Jun24

pages 1-8

Project	Otter Tail P	ower Comp	any	Project Ty	pe:	Big Stor	ne Plan	t CCR	<u> Nan</u>	ne of	San	pler	<u>s:</u>	N:	5 N	IM			
	Otter Tail P			Carbon Co	py:	Barr En	gineeri	ng						_					
Attn:	Paul Vukon	ich	-	Attn:					Quote Number:										
Address	P.O. Box 49			<u>Address:</u>	<u>ddress:</u>				Work Order Number: 31-0090										
ľ	Fergus Fall		38-0496						Lab	Num	ibers	<u>:</u>							
Phone:	218-739-83							<u> </u>	<u> </u>									Analy	<u> </u>
	S	Sample In	ormation								Bott	е Ту	pe					Analy	SIS
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample	Mountain Socialista	1000 none	500 HIVO3	1.	500 H2SO4	Filter? Y or M	250 HNO3 Pace	1000 Amber	HOEN OUR Other: 45	Other 150	Analysis Records	pa _{inbo}	
k 1636 37 38	H10 H11 H12		105024 105024 105024	1112 1150 1228	GW GW GW			1 1 1	1 1 1	N N N			1 1 1				CCR CCR CCR	3&4	
Comme	nts:			<u> </u>		J	<u> </u>		-										

Samples Received By: Samples Relinquished By: 1548 Temp: 1.2C 5 48 0 Temp: 1,27 15 Date: 10 Jun 24 Time: 105624 Time: Date: Other: Log in Cart Samples Relinquished into: Fridge Samples Received By: Samples Relinquished By: Temp: Time: Date: Time: Temp: Date: Seal Number(s) - If Used Sarnplers Other: Delivery: Yes No Seals Intact? Other: Ambient (ce-Transport:

CCR	- Appendix	III Detec	tion M	onitoring
-----	------------	-----------	--------	-----------

Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters

Boron Calcium

Chloride

Fluoride

рН

Sulfate

Dissolved Solids, Total

Note: These are non-filtered samples.

Method

6010 6010

SM4500 CL E

EPA 300

SM 4500 H+B-96

ASTM D516

SM 2540 C-97

CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
Antimony	SW6020A
Arsenic	SW602A
Barium	SW6010C
Beryllium	SW6020A
Cadmium	SW6020A
Chromium, Total	SW6020A
Cobalt	SW6010C
Fluoride	EPA 300
Lead	SW6020A
Lithium	SW6010C
Mercury	EPA 245.7
Molybdenum	SW6020A
Selenium	SW6020A
Thallium	SW6020A
Radium 226 + 228	

Note: These are non-filtered samples.

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

New Ulm, MN 56073

Groundwater Assessment	-	Site:	Otter	Tail Pov	wer Co./ Big S	tone
Sampling Personnel:	-	Facility ID:				
		Date: 10 3	m24			
	•	Unique Station	n ID:			
	•	Sample ID:			H10	
	•					
Well Condition	<u> </u>	· <u>-</u>			- ::::===	
Well Locked? (Yes No		Protective Pos	sts? Yes	,	No.	
Well Labeled? Yes No		State ID Tag?			NO	
Casing Straight? Yes No		Grout Seal Inf			No.	
Repairs Necessary:						
Well Information						
Well Depth: 28,53		Well Casing E	Elevation: \	GPG.	.83	
Constructed Depth: 35 40		Static Water I	Elevation:	1085	, 	
Casing Diameter: 2"		Previous Stat		WO J		
Water Level Before Purge: 5,43		Water Level A		: 20	5.70	
Well Volume: 5,30 Gallons		Measurement		Elec.		el Tape
3,70		1			,,,,,	<u></u>
Sampling Information		7		Δ.	_	
Weather Conditions: Temp: (550 V	Vind:	75Ē	Sky:	Cla	ear	- · · -
Weather Conditions: Temp: しつつ v	Wind: Disp. Bailer		Sky: Grab Other:	Cle	ear	
Weather Conditions: Temp: 0 V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No			Grab Other:	Cla	gpm	
Weather Conditions: Temp: 0 0 V Sampling Method: Grundfos Bladder S\$/T D		Whale	Grab Other: e: • 2 F	,)		/ pm.
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: Yes No Well Purged Dry? Yes, No Time Purged Dry?		Whale Pumping Rate Time Pump E Time of Sam	Grab Other: e: • 2 F Begar \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	,)	gpm	
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? (Yes, No Time Purged Dry? (O) Duplicate Sample? Yes (No) ID:	Disp. Bailer	Whale Pumping Rate Time Pump E Time of Samp Sample EH:	Grab Other: e: • 2 F Begar \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	15	gpm	
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? (Yes, No Time Purged Dry? (O) Duplicate Sample? Yes (No) ID:	Disp. Bailer	Whale Pumping Rate Time Pump E Time of Samp Sample EH:	Grab Other: e: • 2 F Begar © C poling:	15	gpm Garri) / pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? (Yes, No Time Purged Dry? (O) Duplicate Sample? Yes (No) ID:		Whale Pumping Rate Time Pump E Time of Samp Sample EH:	Grab Other: e: • 2 6 Begar \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	15	gpm) / pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes No ID: Sample Appearance: General: (Yes Conditions)	Disp. Bailer	Whale Pumping Rate Time Pump E Time of Sample EH: Phase:	Grab Other: e: • 2 F Begar © C poling:	15	gpm Garri) / pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes (No) ID: Sample Appearance: General: (Yes Cond.) Specific Temp Cond.	Disp. Bailer Color: 1/49	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: , ZF Begar Si pling:	5 15 27 3	gpm Garri)/ pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes (No) ID: Sample Appearance: General: (Yes Cond.) Specific Temp Cond.	Disp. Bailer Color: 100	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: +2F Begar 5 pling: Gallons Removed	15 2 3	gpm am em)/ pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes, No Time Purged Dry? Yes, No Duplicate Sample? Yes (No) ID: Sample Appearance: General: (Yes) C Time pH Cond. C	Disp. Bailer Color: γ _{ν⊕ σ} D. O. mg/L	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: • 2 F Begar 0 F poling: 3 0 F Gallons	3 SEQ #	gpm am em)/ pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes (No) ID: Sample Appearance: General: (Yes Cond.) Specific Temp Cond.	Disp. Bailer Color: γ _{ν⊕ σ} D. O. mg/L	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: +2F Begar 5 pling: Gallons Removed) 15) 3 SEQ #	gpm am em)/ pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes No ID: Sample Appearance: General: (Yes Cond.) Cond. Cond	Disp. Bailer Color: γ _{ν⊕ σ} D. O. mg/L	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: +2F Begar 5 pling: Gallons Removed	SEQ # 1 2	gpm am em)/ pm
Weather Conditions: Temp: V Sampling Method: Grundfos Bladder S\$/T D Dedicated Equipment: (Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes No ID: Sample Appearance: General: (Yes Cond.) Cond. Cond	Disp. Bailer Color: γ _{ν⊕ σ} D. O. mg/L	Whale Pumping Rate Time Pump E Time of Sample EH: Phase: Turbidity	Grab Other: e: +2F Begar 5 pling: Gallons Removed	SEQ # 1 2 3	gpm an en Comments) / pm) h.e. s:
Weather Conditions: Temp: VSampling Method: Grundfos Bladder S\$/T DDedicated Equipment: Yes No Well Purged Dry? Yes, No Time Purged Dry? Yes, No Time Purged Dry? Yes No Duplicate Sample? Yes No Sample Appearance: General: Cond. Specific Temp Cond. 1107 L.99 Specific Temp Cond. 1107 Specific T	Oisp. Bailer Color: γ ₄₉ (Whale Pumping Rate Time Pump E Time of Sam Sample EH: Phase: Turbidity NTU	Grab Other: e: +2F Begar 5 pling: Gallons Removed	SEQ # 1 2 3 4 5 5	gpm am em) / pm) h.e. s:

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment		Site:	Otter	Tail Po	wer Co./ Big Stone
Sampling Personnel:		Facility ID:			
NM		Date: \C	5 June 24		
<u> </u>		Unique Statio	n ID:		•
		Sample ID:			H11
		<u>'</u>	-		
Well Condition		- 12. d. 1. d. 5.16-1	 		
Well Locked? Yes No		Protective Po	sts? Yes		Ŋ̂o
Well Labeled? Yes No		State ID Tag	? Yes		No
Casing Straight? Yes No		Grout Seal In	tact? Yes		No
Repairs Necessary:					
Well Information	·	 			
Well Depth: 44.分し		Well Casing	Elevation:	lo	93,27
Constructed Depth: 42,15		Static Water		10	
Casing Diameter: 2"		Previous Sta	tic:		1. 4. 5 (4.)
Water Level Before Purge: しょろう		Water Level	After Sample	: 3	2.80
Well Volume: (3.19 Gallons		Measuremen		Elec.	
		1			
		•			
Sampling Information		000			
Weather Conditions: Temp: 67	Wind:	75E	Sky:	C	Lear
Weather Conditions: Temp: 67		75E Whale	Sky:	C	loar
Weather Conditions: Temp: 67			Grab Other:	C	
Weather Conditions: Temp: 6 Sampling Method: Grundfos Bladder SE/		Whale Pumping Rat	Grab Other:		gpm
Weather Conditions: Temp: Sampling Method: Grundfos Bladder SET Dedicated Equipment: Yes No Well Purged Dry? Yes No		Whale Pumping Rat Time Pump I	Grab Other: e: 25 Begar \\7	<u></u>	gpm am / pm
Weather Conditions: Temp: (Sampling Method: Grundfos Bladder SE/T Dedicated Equipment: Yes No Well Purged Dry? (Yes No Time Purged Dry? (145)		Whale Pumping Rai Time Pump I Time of Sam	Grab Other: e: 25 Begar \\77 pling: \\100041		gpm
Weather Conditions: Temp: Sampling Method: Grundfos Bladder SS/ Dedicated Equipment: Yes No Well Purged Dry? (Yes No Time Purged Dry? (146 Duplicate Sample? Yes (No) ID:	T Disp. Bailer	Whale Pumping Rat Time Pump I Time of Sam Sample EH:	Grab Other: e: .ZS Begar \\7 pling: \\1	<u></u>	gpm an / pm
Weather Conditions: Temp: (Sampling Method: Grundfos Bladder SE/T Dedicated Equipment: Yes No Well Purged Dry? (Yes No Time Purged Dry? (145)		Whale Pumping Rat Time Pump I Time of Sam Sample EH:	Grab Other: e: .ZS Begar \\7 pling: \\1	<u></u>	gpm am / pm
Weather Conditions: Temp: Conditions: Temp: Conditions: Temp: Conditions: Bladder SEAD Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? (146) Duplicate Sample? Yes (No) ID: Sample Appearance: General: Clear	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase	Grab Other: ie: , Z G Begar \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	20 50	gpm am / pm Odor: フ෭レヘ෫
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID: Sample Appearance: General: Clear Time pH Specific Temp Cond.	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase	Grab Other: Te: ZS Begar \\Z pling: \\\Z \\Z Gallons	SEQ	gpm am / pm Odor: //w/
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID: Sample Appearance: General: Clear Time pH Specific Temp Cond.	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU	Grab Other: Te: ZS Begar \\Z pling: \\Z \Z Gallons Removed	とら ちい SEQ #	gpm am / pm Odor: フ෭レヘ෫
Weather Conditions: Temp: (Sampling Method: Grundfos Bladder SE/Dedicated Equipment: Yes No Well Purged Dry? (Yes No Time Purged Dry? (Yes No) Duplicate Sample? Yes (No) ID: Sample Appearance: General: C leace [29] Specific Temp	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase	Grab Other: Te: ZS Begar \\Z pling: \\\Z \\Z Gallons	SEQ #	gpm am / pm Odor: //w/
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID: Sample Appearance: General: Clear Time pH Specific Temp Cond.	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU	Grab Other: Te: ZS Begar \\Z pling: \\Z \Z Gallons Removed	SEQ # 1 2	gpm am / pm Odor: //w/
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID: Sample Appearance: General: Clear Time pH Specific Temp Cond.	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU	Grab Other: Te: ZS Begar \\Z pling: \\Z \Z Gallons Removed	SEQ # 1 2 3	gpm am / pm Odor: //w/
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes No ID: Sample Appearance: General: Clear Time pH Cond. CC	Color: Mc	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU ZO 12	Grab Other: Te: ZS Begar \\Z pling: \\Z \Z Gallons Removed \(ZS\)	SEQ # 1 2 3 4	gpm am / pm am / pm Odor: // Comments:
Weather Conditions: Temp: Colored Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID: Sample Appearance: General: Clear Time pH Specific Temp Cond.	Color: Mc D. O. mg/L 1.3	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU	Grab Other: Ge: ZS Gegar \\Z pling: \\Z \C Callons Removed \(\Q Z S \)	SEQ # 1 2 3	gpm am / pm Odor: //w/
Weather Conditions: Temp: 6 Sampling Method: Grundfos Bladder SEA Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No Duplicate Sample? Yes No ID: Sample Appearance: General: Clear Time pH Cond. C 1150 6 71 4305 9.00	Color: Mc D. O. mg/L 1.3	Whale Pumping Rat Time Pump I Time of Sam Sample EH: Phase Turbidity NTU ZO.13	Grab Other: Ge: ZS Gegar \\Z pling: \\Z \C Callons Removed \(\Q Z S \)	SEQ # 1 2 3 4	gpm am / pm am / pm Odor: /w/

Exceptions to Protocol:

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment		Site:	Otter T	ail Power C	o./ Big Stone
Sampling Personnel:		Facility ID:			
		Date:	10:500	24	
-N.M		Unique Statio	n ID:		
<u> </u>		Sample ID:		H12	· · · · · · · · · · · · · · · · · · ·
Well Condition					
Well Locked? Yes Νδ,		Protective Po		No	·
Well Labeled? Yes No		State ID Tag?		<u>M</u>	
Casing Straight? Yes No		Grout Seal In	tact? Yes	₩ ₀	<u> </u>
Repairs Necessary: Well Information					
22.60				<i>(</i>	
Well Depth: 22.53		Well Casing I	Elevation:	NA_	
Constructed Depth: 24.00		Static Water	Elevation:		
Casing Diameter: 2"		Previous Stat	tic:	1	
Water Level Before Purge: 15.63		Water Level	After Sample:	15.8	5
Well Volume: (,) 4 Gallons		Measuremen	t Method:	Elec. WLI	Steel Tape
Sampling Information	· · · · · · · · · · · · · · · · · · ·	7/	,	/ I	<u> </u>
Weather Conditions: Temp: (28)	Wind:	156	Sky:	Clea	<u>r</u>
Sampling Method: Grundfos Bladder SS	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: (Yes No		Pumping Rat	e: <i>1</i> 25	gpr	m
Well Purged Dry? Yes		Time Pump E	Began: (て	.03	am / pm)
Time Purged Dry?	NM (3)	Time of Sam	pling: -12	18-172	
Duplicate Sample? Yes (No) ID:	107,,24	Sample EH:	89.1	96.0	
Sample Appearance: General: ([[ac	Color: No	ne Phase	: none	Od	or: heny
(R) In ITama	<u> </u>		l	10-0	
Specific Temp Time pH Cond. C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ Co	mments:
1208 7.97 459.7 10.2	D 2.19	51.87	1,25	1	minorio.
1213 7,96 4664 10,20		29.84	7.50	2	
1218 7,92 472.6 10.78	1.00	18 39	3.75	3	
1223 7.87 546 10.70		20.61	5.00	4	
1278 7.79 604 10.20		20.81	6.25	5	
Stabilizada (Sa) (NA NMC)		ater Removed:	275 %	M & GE Junzy GE	allons
Comments:			6.75		

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

507 354 8517

Froundwater Level Measurements

Sampling Personnel:	site: Ofter tail power- Rig stone
05	Facility ID:
	Date: 10 Tune 24

				<u>.</u>			
Well Number	Well 10	Well 11	Well 12	Well 1	H1OX	H1INT	H2OX
Unique Station ID	NA	NA	. NA	NA	. NA	NA	. NA
Date	10 June 24						1050
Time	1136	1131	1126	1121	///۵	1112	/05ö
Well Casing Elevation	1098.7	1104	1071.89	1090.71	1115.89	1115.81	1103.86
Depth to Water	14.79	95.33	62.13	60.65	21.06	21.77	4.87
Static Elevation	1083.91	1008,67	1009.76	1030,06	109483	1094.04	1098.99
Casing Diameter	4"	4"	4"	4"	2"	2"	2"
Well Depth	47.01	127.22	112.40	78.00	32.33	6015	32.83
Well Volume	21.06	20,84	32.86	11.34	1.84	6.26	4.56
Well Locked	yes (no)	yes (no)	yes /(ŋo/	yes /no	(yes) no	(yes) no	yes no
Well Labeled	yes no	ves no	yes (no	yes /(no)	yes / no	(yes)/ no	yes no
Well Straight	yes) no	ves) no	(yes) no	(yes) no	(yes) no	(yes) no	ves) no
rotective Posts	(yes) no	(ves)/ no	yes no	(yes) no	yes (no	yes (no	yes (no
Grout Seal Intact	yes (no)	yes (no)	yes (no)	yes (no	yes no	yes(no)	yes (no)
Dedicated Equipment	yes(no	yes√ no	(yes))no	(yes I)no	yes (no	yes (no)	yes no

	3		2				6
Well Number	H2INT	H30X	H3INT	H4OX	H4INT	H5	Н6
Unique Station ID	NA	NA	NA	NA	NA	NA	NA
Date	Votrane 24						
Time	1040	1040	1042	1035	1037	1146	1/15
Well Casing Elevation	1103.91	1095.26	1095.17	1108.25	1108.61	1122.8	1097.76
Depth to Water	55,21	2.71	22, 05	12.79	157208	6.21	7.59
Static Elevation	1048.70	12.5901	1073.12	1095.46	4.57. W.Z.	1116.59	1090.17
Casing Diameter	2"	2"	2"	2"	2"	2"	2"
Well Depth	62.45	72.68	54.42	27.48	60.10	44.90	17.92
Well Volume	1.18	3,26	5.28	2.40	7.64	6,31	1.69
Well Locked	yes no	(yes) no	ves no	yes I no	ves/ no	yes/ no	(yes/ no
Well Labeled	yes (no	(yes) no	yes (no)	ves no	(yes)/ no	yes/ no	yes) no
Well Straight	(yes) no	yes) no	yes no	(yes /)no	(yes/ no	(yes) no	(yes) no
Protective Posts	yes(no)	yes(/no)	yes / Ro	yes (no	yes / (no)	(yes) no	(yes) no
Grout Seal Intact	yes) no	yes (no	yes / no	yes (no	yes (no)	(yes / no	yeş (no
edicated Equipment	yes (no	yes) no	yes /(no	yes \no	yes (no)	yes /(no)	(yes) no

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Froundwater Level Measurements

Produitated Ecto	i ilicasui c	ments			_	، نسب ، ر	in the
Sampling Personnel:	۸				Site: C	Her /4:1	Power-Big
	72				Facility ID:		,
		· · · · · · · · · · · · · · · · · · ·		,	Date: /᠔	Tine 24	
		4	· · · · · · · · · · · · · · · · · · ·			UIME/CV	
Well Number	H7	Н8	Н9				
Unique Station ID	NA	NA	NA	-			
Date	1102,	10281	1055,				
Time	2	P	2				
Well Casing Elevation	1106.06	1081.23	1086.21			,	
Depth to Water	18.71	14.66	12.73	-			
Static Elevation	(087.35	1066.57	157348				
Casing Diameter	2"	2"	2"				
Well Depth	35.66	22.33	30.71				
Well Volume	2.76	1.25	3.93				
Well Locked	yes) no	(yes) no	(yes) no	yes / no	yes / no	yes / no	yes / no
Well Labeled	ves no	(yes) no	(yes) no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes / no	yes) no	yes / no	yes / no	yes / no	yes / no	yes / no
Protective Posts	(yes) no	(yes) no	ves/ no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact	yes (no	yes (no	yes(/no)	yes / no	yes / no	yes / no	yes / no
Dedicated Equipment	yes kno	(yes) no	(yes) no	yes / no	yes / no	yes / no	yes / no
Well Number	T	<u> </u>	<u> </u>		<u> </u>		
Unique Station ID							
Date	,			<u> </u>			
Time	<u> </u>	-					
Well Casing Elevation	-						+
Depth to Water		<u> </u>	 				
Static Elevation		1					
Casing Diameter	 				-		
Well Depth	 	 				-	
Well Volume	 		<u> </u>		<u> </u>	<u> </u>	
Well Locked	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Labeled	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Protective Posts	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
edicated Equipment	ves / no	ves / no	ves / no	yes / no	yes / no	yes / no	yes / no



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Page: 1 of 20

FINAL REPORT COMPLETION DATE: 8 Oct 2408

Date Reported: 4 Oct 2024

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0122 Account #: 006106

PO #: 108267

Project Name: BIG STONE PLANT CCR

Quality Assurance Director/Date Reviewe

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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OTTER TAIL POWER CO

PO BOX 496

JOSH HOLLEN

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H12

Page: 2 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2341 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 12:12 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Temp at Receipt: 0.8C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions			•		15 Aug 24	NS
Water Digestions					15 Aug 24	NS
pH, Field	7.80	units	1.00	SM4500-H+-2011	12 Aug 24 12:12	DS
рН	* 7.2	units	1.0	SM 4500 H+ B-2000	13 Aug 24 13:17	KFL
Radium 226	0.84	pCi/L	0.60		26 Aug 24 16:32	OL
Radium 228	0.06	pCi/L	3.00	EPA M9320	26 Aug 24 14:44	OL
Sulfate	8.8	mg/L	5.0	ASTM D516-11	15 Aug 24 12:59	KRM
Chloride	< 3	mg/L	3	SM 4500 Cl E	15 Aug 24 13:02	AKF
Mercury	< 0.005	ug/L	0.005	EPA 245.7	29 Aug 24 13:37	RMB
Solids, Total Dissolved	133	mg/L	10	SM 2540 C-97	16 Aug 24 10:00	CC
Calcium	20.70	mg/L	0.500	SW6010D	16 Aug 24 16:57	KAM
Lithium	< 0.02	mg/L	0.02	SW6010D	16 Aug 24 16:57	KAM
Barium	0.039	mg/L	0.005	SW6010D	16 Aug 24 16:57	KAM
Cobalt	< 0.005	mg/L	0.005	SW6010D	16 Aug 24 16:57	KAM
Boron	0.369	mg/L	0.100	SW6010D	21 Aug 24 23:44	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	19 Aug 24 12:44	SS
Arsenic	1.27	ug/L	0.50	SW6020B	19 Aug 24 9:52	SS
Beryllium	< 0.1 ^	ug/L	0.05	SW6020B	19 Aug 24 12:44	SS
Cadmium	< 0.1	ug/L	0.1	SW6020B	19 Aug 24 9:52	SS
Chromium	1.77 ^	ug/L	0.50	SW6020B	19 Aug 24 12:44	SS
Lead	< 0.5	ug/L	0.5	SW6020B	19 Aug 24 9:52	SS
Molybdenum	39.4	ug/L	0.50	SW6020B	19 Aug 24 12:44	SS
Selenium	< 0.5	ug/L	0.5	SW6020B	19 Aug 24 12:44	SS
Thallium	< 0.1	ug/L	0.1	SW6020B	19 Aug 24 12:44	SS
Fluoride	0.340 @	mg/L	0.020	EPA 300.0	14 Aug 24 2:21	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

= Due to concentration of other analytes + = Due to internal standard response



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Date Reported: 4 Oct 2024

Work Order #: 202431-0122 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INORGANIC AND METALS ANALYSES: No problems were encountered with these analyses.



MINNESOTA VALLEY TESTING LABORATORIES, INC.

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Page: 4 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2342 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:48 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 10

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	47.01	feet	NA	Field	12 Aug 24 11:48	DS
Water Level Before Purge	16.48	feet	AN	NA	12 Aug 24 11:48	
Static Elevation, Field	1082.22	ft	AN	Field	12 Aug 24 11:48	

RL = Reporting Limit



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JOSH HOLLEN

OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

Page: 5 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2343 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:45 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: WELL 11

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	127.22	feet	NA	Field	12 Aug 24 11:45	DS
Water Level Before Purge	97,65	feet	NA	NA	12 Aug 24 11:45	DS
Static Elevation, Field	1006.35	ft	NA	Field	12 Aug 24 11:45	DS

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

9 = Due to sample matrix # = Due to concentration of other analytes

1 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



MINNESOTA VALLEY TESTING LABORATORIES, INC.

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JOSH HOLLEN

OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

Page: 6 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2344 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:38 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: WELL 12

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	112.80	feet	NA	Field	12 Aug 24 11:38	DS
Water Level Before Purge	65.74	feet	NA	NA	12 Aug 24 11:38	DS
Static Elevation, Field	1006.15	ft	NA	Field	12 Aug 24 11:38	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040





JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: WELL 1

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Report Date: 4 Oct 2024 Lab Number: 24-A2345 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:33 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	78.00	feet	NA	Field	12 Aug 24 11:33	DS
Water Level Before Purge	61.18	feet	NA	NA	12 Aug 24 11:33	DS
Static Elevation, Field	1029.53	ft	NA	Field	12 Aug 24 11:33	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040





JOSH HOLLEN

OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

8 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2346 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:09 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: H10X

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.33	feet	NA	Field	12 Aug 24 11:09	DS
Water Level Before Purge	25.33	feet	NA	NA	12 Aug 24 11:09	DS
Static Elevation, Field	1090.56	ft	NA	Field	12 Aug 24 11:09	DS

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. # = Due to concentration of other analytes
+ = Due to internal standard response





JOSH HOLLEN

OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H1INT

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Report Date: 4 Oct 2024 Lab Number: 24-A2347 Work Order #: 31-0122

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:11 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	60.15	feet	NA	Field	12 Aug 24 11:11	DS
Water Level Before Purge	25.80	feet	NA	NA	12 Aug 24 11:11	DS
Static Elevation, Field	1090.01	ft	NA	Field	12 Aug 24 11:11	DS

RL = Reporting Limit





Page: 10 of 20

> Report Date: 4 Oct 2024 Lab Number: 24-A2348 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 10:55 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

Sample Description: H20X

	As Receive Result	d	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	32.83	feet	NA	Field	12 Aug 24 10:55	DS
Water Level Before Purge	7.95	feet	NA	NA	12 Aug 24 10:55	DS
Static Elevation, Field	1095.91	ft	NA	Field	12 Aug 24 10:55	DS

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

© = Due to sample matrix # = Due to concentration of other analytes

| = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040





11 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2349 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 10:57 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H2INT

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	62.45	feet	NA	Field	12 Aug 24 10:57	DS
Water Level Before Purge	61.36	feet	NA	NA	12 Aug 24 10:57	DS
Static Elevation, Field	1042.55	ft	NA	Field	12 Aug 24 10:57	DS

RL = Reporting Limit RD = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix
= Due to concentration of other analy

! = Due to sample quantity
= Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040 # = Due to concentration of other analytes
+ = Due to internal standard response



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12 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2350 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:04 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

Project Name: BIG STONE PLANT CCR

FERGUS FALLS MN 56538-0496

Sample Description: H30X

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	22.68	feet	NA	Field	12 Aug 24 11:04	DS
Water Level Before Purge	5.13	feet	NA	NA	12 Aug 24 11:04	DS
Static Elevation, Field	1090.13	ft	NA	Field	12 Aug 24 11:04	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

| = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



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13 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2351 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:02 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H3INT

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	54.42	feet	NA	Field	12 Aug 24 11:02	DS
Water Level Before Purge	27.09	feet	NA	NA	12 Aug 24 11:02	DS
Static Elevation, Field	1068.08	ft	NΑ	Field	12 Aug 24 11:02	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

© = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040





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OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

14 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2352 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 10:45 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: H40X

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	27.48	feet	NA	Field	12 Aug 24 10:45	
Water Level Before Purge	15.38	feet	NA	NA	12 Aug 24 10:45	DS
Static Elevation, Field	1092.87	ft	NA	Field	12 Aug 24 10:45	DS





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OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

Sample Description: H4INT

15 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2353 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 10:47 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	60.10	feet	AN	Field	12 Aug 24 10:47	
Water Level Before Purge Static Elevation, Field	15.79 1092.82	feet ft	AN AN	NA Field	12 Aug 24 10:47 12 Aug 24 10:47	

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

© = Due to sample matrix # = Due to concentration of other analy
! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

= Due to concentration of other analytes + = Due to internal standard response



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16 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2354 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:53 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

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Project Name: BIG STONE PLANT CCR

FERGUS FALLS MN 56538-0496

Sample Description: H5

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	44.90	feet	NA	Field	12 Aug 24 11:53	DS
Water Level Before Purge	8.95	feet	NA	NA	12 Aug 24 11:53	DS
Static Elevation, Field	1113.85	ft	NA	Field	12 Aug 24 11:53	DS

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

| = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040





JOSH HOLLEN

PO BOX 496

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Project Name: BIG STONE PLANT CCR

Sample Description: H6

Page: 17 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2355 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field Water Level Before Purge	17.92 10.71	feet feet	NA NA	Field NA	12 Aug 24 11:15 12 Aug 24 11:15	
Static Elevation, Field	1087.05	ft	NA	Field	12 Aug 24 11:15	DS

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.



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OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

Page: 18 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2356 Work Order #: 31-0122

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:30 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: H7

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	35.60	feet	NA	Field	12 Aug 24 11:30	
Water Level Before Purge	18.52	feet	NA	NA	12 Aug 24 11:30	
Static Elevation, Field	1087.54	ft	NA	Field	12 Aug 24 11:30	DS





Page: 19 of 20

Report Date: 4 Oct 2024 Lab Number: 24-A2357 Work Order #: 31-0122 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:20 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

Project Name: BIG STONE PLANT CCR

FERGUS FALLS MN 56538-0496

Sample Description: H8

As Received Method Method Date Reference Analyzed Analyst Result RL12 Aug 24 11:20 DS Field Well Depth, Field 22.33 feet NA Water Level Before Purge 18.85 NA NA 12 Aug 24 11:20 DS feet NA Field 12 Aug 24 11:20 DS Static Elevation, Field 1062.38 ft

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to con
| = Due to sample quantity + = Due to information of the control of the co

= Due to concentration of other analytes + = Due to internal standard response





JOSH HOLLEN

OTTER TAIL POWER CO

Project Name: BIG STONE PLANT CCR

PO BOX 496

FERGUS FALLS MN 56538-0496

20 of 20 Page:

Report Date: 4 Oct 2024 Lab Number: 24-A2358 Work Order #: 31-0122

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 12 Aug 2024 11:23 Sampled By: MVTL FIELD PERSONNEL Date Received: 12 Aug 2024 15:32

PO #: 108267

Sample Description: H9

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	30.71	feet	NA	Field	12 Aug 24 11:23	DS
Water Level Before Purge	16.93	feet	NA	NA	12 Aug 24 11:23	DS
Static Elevation, Field	1069.28	ft	NA	Field	12 Aug 24 11:23	DS

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix # = Due to cor

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CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

= Due to concentration of other analytes
+ = Due to internal standard response

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MEMBER ACIL

Page: 1 of 1

Quality Control Report

Lab ID: 24-A2341 Project: BIG STONE PLANT CCR Work Order: 202431-0122

Lab ID: 24-A2541	Project: BIG STONE PLANT CCR Work Order: 202431-0122																
Analyte	LCS Spike Amt	ECS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony ug/L	25.0	101	85-115	25.0	59237004qc	< 1	26.2	105	75-125	26.2	26.2	105	0.0	10	98	90-110	< 0.5
Arsenic ug/L	25.0	99	85-115	25.0	59237004qc	< 0.5	27.8	111	75-125	27.8	27.2	109	2.2	10	98	90-110	< 0.5
Barium mg/L	1.000	98	85-115	1.00	59170001qc	0.136	1.130	99	75-125	1.130	1.140	100	0.9	10	98	90-110	< 0.005
Beryllium ug/L	2.50	88	85-115	2.50	59237004qc	< 0.1	2.14	86	75-125	2.14	2.17	87	1.4	10	96	90-110	< 0.05
Boron mg/L	2.000	102	85-115	2.00	59560001qc	0.315	2.500	109	75-125	2.500	2.540	111	1.6	10	98	90-110	< 0.1
Cadmium ug/L	5.00	95	85-115	5.00	59237004qc	< 0.1	4.70	94	75-125	4.70	4.69	94	0.2	10	96	90-110	< 0.1
Calcium mg/L	50.00	100	85-115	50.0	59170001qc	82.80	135.0	104	75-125	135.0	135.0	104	0.0	10	103	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	3916qc	< 3	60.9	101	80-120	60.9	60.6	101	0.5	10	102	90-110	< 3
Chromium ug/L	25.0	97	85-115	25.0	59237004qc	3.32	26.0	91	75-125	26.0	25.2	88	3.1	10	98	90-110	< 0.5
Cobalt mg/L	1.000	98	85-115	1.00	59170001qc	< 0.005	0.967	97	75-125	0.967	0.972	97	0.5	10	101	90-110	< 0.005
Fluoride mg/L	-	_	-	1.00	58564001qc	< 0.1	1.10	110	80-120	1.10	1.10	110	0.0	10	104	90-110	-
Lead ug/L	25.0	96	85-115	25.0	59237004qc	< 2.5	26.0	104	75-125	26.0	25.4	102	2.3	10	97	90-110	< 0.5
Lithium mg/L	1.000	102	85-115	1.00	59170001qc	< 0.02	1.020	102	75-125	1.020	1.020	102	0.0	10	99	90-110	< 0.02
Mercury ug/L	_	-	-	0.10	24-A2341	< 0.005	0.107	107	63-111	0.107	0.108	108	0.9	18	91	76-113	< 0.005
Molybdenum ug/L	25.0	97	85-115	25.0	59237004qc	5.14	31.4	105	75-125	31.4	31.9	107	1.6	10	96	90-110	< 0.5
pH units		_		-	-	-	-	-	-	7.2	7.2	-	0.0	2.5	100	90-110	-
Selenium ug/L	25.0	107	85-115	25.0	59237004qc	< 1	28.8	115	75-125	28.8	28.8	115	0.0	10	100	90-110	< 0.5
Solids, Total Dissolved mg/L	_	-		_	-	-	-	-	-	133	126	-	5.4	50	100	85-115	< 10
Sulfate mg/L	_		-	50.0	24-A2341	8.8	57.3	97	85-115	57.3	61.4	105	6.9	10	97	80-120	< 5
Thallium ug/L	5.00	97	85-115	5.00	59237004qc	< 0.2	5.24	105	75-125	5.24	5.30	106	1.1	10	98	90-110	< 0.1

Approved by:





August 28, 2024

Todd Rieger **MVTL Laboratories** 1126 North Front Street New Ulm, MN 56073

RE:

Project:

31-0122 Ottertail Power

Pace Project No.: 10704316

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on August 15, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Peper Sibles

Piper Gibbs piper.gibbs@pacelabs.com (612)607-6456 Project Manager

Enclosures

cc: Barb Zins, MVTL







SAMPLE SUMMARY

Project:

31-0122 Ottertail Power

Pace Project No.: 10704316

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10704316001	24-A2341	Water	08/12/24 12:12	08/15/24 10:12



CHAIN-OF-CUSTODY / Analytical Request Document

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

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	o → 10704316						SIGNATURI	e of SAMP	LER:									ATE S						_] }		Rec	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	

ENV-FRM-MIN4-0150 v17 Sample Condition Upon Receipt **CLIENT NAME:** WO#: 10704316 Z Client COURIER: □ Commercial ☐ FedEx □ Pace Due Date: 09/16/24 □ SpeeDee ☐ UPS □ USPS CLIENT: MYTL TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142 Custody Seal on Cooler/Box Present: YES NO Seals Intact: YES NO Biological Tissue Frozen: ☐ YES ☐ NO ØN/A Packing Material: ☐ Bubble Bags ☐ Bubble Wrap ☑ None ☐ Other Temp Blank: ☑ YES ☐ NO Type of ice: ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710) Did Samples Originate in West Virginia: ☐ YES ☐ NO Were All Container Temps taken: 🔲 YES 🗀 NO 🛂 N/A Correction Factor: __O.7__ Cooler Temp Read w/Temp Blank: _ Average Corrected Temp (no Temp Blank Only): _ Cooler Temp Corrected w/Temp Blank: ☐ See Exceptions Form ENV-FRM-MIN4-0142 NOTE: Temp should be above freezing to 6°C. Initials & Date of Person Examining Contents: \\M(\mu) \&//(\ell_{\ell}) USDA Regulated Soil: N/A Wate Sample/Other (describe): Did Samples originate from one of the following states (check maps) - AL, AR, AZ, CA, FL, Did samples originate from a foreign source (international, including GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO Hawaii and Puerto Rico): ☐ YES ØNO NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork. LOCATION (check one): 🔲 DULUTH . 🗆 MINNEAPOLIS . 🗇 VIRGINIA 🗊 TNO -YES N/A COMMENT(S) Chain of Custody Present and Filled Out? 7 Chain of Custody Relinquished? Ø 2. Sampler-Name and/or Signature on COC? Ø Samples Arrived within Hold Time? Ø 4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □No Short Hold Time Analysis (<72 hr)? 5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos . □ Total coliform/E. coli □ Other: Rush Turn Around Time Requested? Sufficient Sample Volume? **Correct Containers Used?** Ø 8. Ø – Pace Containers Used? q. Containers Intact? Ø Field Filtered Volume Received for Dissolved Tests? Ø 10. Is sediment visible in the dissolved container: ☐ YES ☐ NO 11. If NO, write ID/Date/Time of container below: Is sufficient information available to reconcile the samples to the COC? NOTE: If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☐ Soil ☐ Water ☐ Other ☐ See Exceptions form ENV-FRM-MIN4-0142 All containers needing acid/base preservation have been checked? ď П 12, Sample #: Madium All containers needing preservation are found to be in compliance with EPA P ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH ☐ Zinc Acetate recommendation? (HNO3, H2SO4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Ø pH Paper Lot # Dioxins/PFAS Residual 0-6 Roll 0-6 Strip 0-14 Strip Chlorine NOTE: If adding preservation to the container, verify with the PM first. Clients may require adding preservative to the field and equipment blanks when this occurs. ☐ See Exceptions form ENV-FRM-MIN4-0142 Headspace in Methyl Mercury Container? 13. Extra labels present on soil VOA or WIDRO containers? Ø 14. ☐ See Exceptions form ENV-FRM-MIN4-0140 Headspace In VOA VIals (greater than 6mm)? Trip Blanks Present? Pace Trlp Blank Lot # (if purchased): Trip Blank Custody Seals Present? **CLIENT NOTIFICATION / RESOLUTION** FIELD DATA REQUIRED: ☐ YES ☐ NO Person Contacted: Comments / Resolution: 8/16/24 Project Manager Review: NOTE: When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Qualtrax ID: 52742

Effective Date: 05/10/24

Page 1 of 1

Rep Pipe	rkorder: 107 ort To or Gibbs	'04316 W o	rkorder i	Sampl Name: 31-01 Subcontr	es Pre-Logge 22 Ottertail Po	_X d into eC ower	ос		Cert	e Of C Need er Re	:bet	>	Ye	. 8/	15/20 Reque		Resuli nalysis	is Re	queste	Pace
170 Mini	e Analytical Mi DEIm Street Reapolis, MN Re (612)607-6	55414		1206 Mt. J	7 Lebanon Rd uliet, TN 3712; le (615) 758-58	2 58				.*	um 226/228	1						v		
ltem	Sample ID		Sample Type	Collect Date/Time	Lab ID	Matrix	HN03	reserve	d Cont	ainers	Rad									LIDATE
1 2 3	24-A2341		PS	8/12/2024 12:12	10704316001	Water	1				X	-			_			_		LAB USE ONLY
4 5																				
Trans 1 2	fers Releas	ed By (LL)/PACI		Date/Time	Received E	y Peyant	4			Date/∏; }{0 }		8					Com	ments		
In	order to main	ure on Receipt	dentiality.	location/name	tody Seal Y of the samplin	a cita a	ample			ed or		*************************************	or v not	N he nr	ovide.		Sam	ples I	ntact \	or N
DOC COC Bott COLC Suff	IS CHAIN OF CL Seal Present/In Signed/Accurate: les arrive inta- ect bottles used ccient volume se breen <0.5 mR/hr	Sample Receipt Lact: N N LL: N N RE	Checklist If A /OA Zero Heades. Correct;	pplicable adapace: Y H /Check: Y H	e this informa	tion is ava PH-10RDH09 TRC-3223A22	941	e in the	∍ own	er labo	orator	.л. _{д.} у.				a on tr	nis CO	C dod	cument.	
		**************************************		-010					,	<i>*</i>										



Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10704316

(To be completed by sending lab)

REQUESTED COMPLETION DATE:	9/16/2024
Date Prepared:	08/16/24
Check Box for Consolidated Invoice:	
Check David Co.	<u></u>
Receiving Project No.	
Sending Project No	10704316

Sending Region	ID40 M		
Receiving Region	IR10-Minnesota	Sending Project Mgr.	Di avi
	IR850-Pace National	External Client	Piper Gibbs
State of Sample Origin	5.45.4		MVTL Laboratories
		QC Deliverable	
Ali	questions should be addresse	d to sending project manage	STD REPORT
			yr,

Requested Reportable Units Report Wet or Dry Weight? Dry Weight IRWO Lab Need to run? Cert, Needed WORK REQUESTED Quantity of containers **Method Description** Quantity of Samples Preservative Acode Desc Radium 226/228 BP1N HNO₃ SI-38RAD SUB PASI RAD Special Requirements: Report C, QC Limits (C),FR Only no EDD (0) FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO Return Samples to Sending Region: Yes x No DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.



Pace Analytical® ANALYTICAL REPORT

Pace Analytical - Minnesota

Sample Delivery Group:

L1769277

Samples Received:

08/20/2024

Project Number:

10704316

Description:

Site:

001

Report To:

Piper Gibbs

GΙ

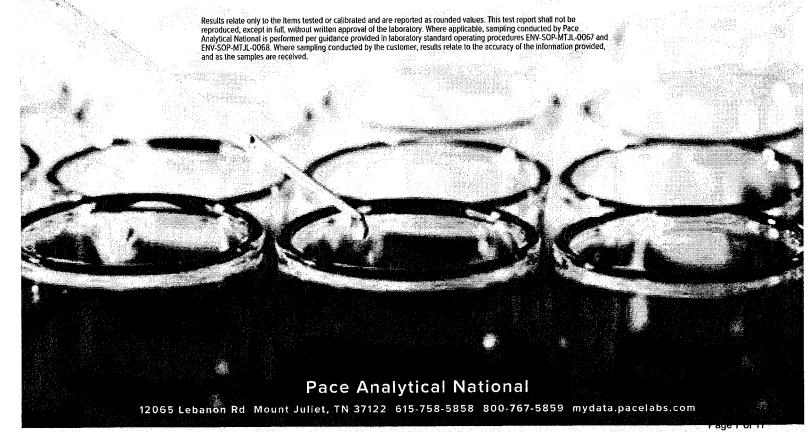
Ss

Cn

Sr

Entire Report Reviewed By: Maley Torrence

Haley Torrence Project Manager



ACCOUNT:

PROJECT: 10704316

SDG: L1769277

DATE/TIME: 08/27/24 16:35 1 of 11

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Cp: Cover Page	1
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Al: Accreditations & Locations	9
Sc: Sample Chain of Custody	10





















SAMPLE SUMMARY

Dilution

1

Batch

WG2346919

WG2349255

Collected by

Preparation

date/time

08/20/24 17:04

08/23/24 15:02

Collected date/time Received date/time

Analysis

date/time

08/26/24 14:44

08/26/24 16:32

Location

Mt. Juliet, TN

Mt. Juliet, TN

Analyst

ALG

ZRG

08/12/24 12:12 08/20/24 09:00

(SAC)	² Tc

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ī C c	
25	













24-A2341 L1769277-01 Non-Potable Water

Method

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Haley Torrence
Project Manager

Cp

²Tc

















24-A2341

SAMPLE RESULTS - 01

Collected date/time: 08/12/24 12:12

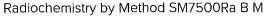
Radiochemistry by Method 904/9320

		Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte		pCi/l		+/-	+/-	pCi/I	pCi/l	date / time	
RADIUM-228	entre en en en en en en en en en en en en en	0.0603	╝	0.228	0.437	0.420	0.222	08/26/2024 14:44	WG2346919
(T) Barium		104					30.0-143	08/26/2024 14:44	WG2346919
(T) Yttrium		90.2					30.0-136	08/26/2024 14:44	WG2346919









_	Result Qua	<u>llifier</u> 2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/l	+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.836	0.345	0.750	0.249	0.174	08/26/2024 16:32	WG2349255
(T) Barlum-133	108				30.0-143	08/26/2024 16:32	WG2349255















WG2346919

QUALITY CONTROL SUMMARY

L1769277<u>-01</u>

Method Blank (MB)

Radiochemistry by Method 904/9320

(MB) R4112196-1 08/2	6/24 14:44				
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/I		+/-	pCi/l	pCi/I
Radium-228	0.238	7	0.143	0.257	0.135
(T) Barlum	113		113		
(T) Yttrium	108		108		







⁴Cn

L1769402-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1769402-01 08/	/26/24 14:44 • (I	DUP) R4112196	5-5 08/26/24 14	1:44								ממת מווח	
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/l	pCi/I	pCi/I	+/-	pCi/l	pCi/l	%			%	
Radium-228	0.612	0.320	0.570	0.300	0.660	0.418	0.750	0.392	7.53	0.0910	agaag <u>J</u> awa w	20	3
(T) Barium	116				113	113							
(T) Yttrium	99.8				<i>7</i> 9.5	<i>7</i> 9. <i>5</i>					-		







⁸Al

Laboratory Control Sample (LCS)

(LCS) R4112196-2 08/2	6/24 14:44				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/I	%	%	
Radium-228	5.00	5.36	107	80.0-120	itti ole. Tarangan salah salah salah salah salah salah seberah seberah seberah salah salah seberah salah seberah salah s
(T) Barium			117		살기 없는 사람들은 사람들은 아이들은 사람들은 사람들이 되었다.
(T) Yttrium			94.0		

⁹Sc

L1766049-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1766049-03 08/	26/24 14:44 • (MS)	R4112196-3 08	3/26/24 14:44	• (MSD) R411219	6-4 08/26/24	14:44							
(,-	Spike Amount			MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/I	pCi/l	pCi/l	%	%	AND MAKEUM	%		*******************************	%		<u>%</u>
Radium-228	16.7	2.05	15.9	17.7	82.8	93.8	1	70.0-130			10.9		20
(T) Barium		105			119	92.2							
(T) Yttrium		99.4			95.3	109							

WG2349255

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

Method Blank (MB)

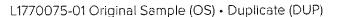
(MB) R4112000-1	08/26/24 16:32				
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/I		+/-	pCi/I	pCi/I
Radium-226	0.0275	U	0.0645	0.102	0.0659
(T) Barium-133	<i>88.7</i>		88.7		







[†]Cn



(OS) L1770075-01	08/26/24 16:32 • (0	DUP) R4112000-	5 08/26/24	16:32
	Original Pacult	Original 2	Original MDA	Origina

(05) [17/0075-01 08/	Original Result	•	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/I	+/-	pCi/I	pCi/I	pCi/I	+/-	pCi/l	pCi/I	%		140, mark 100 day 1 mm	%	
Radium-226	0.210	0.224	0.294	0.206	0.302	0.248	0.289	0.200	35.8	0.274		20	3
(T) Barium-133	96.4				90.0	90.0							

LCS Qualifier









(LCS) R4112000-2	08/26/24 16:32
(LCS) K4112000-2	00/20/24 10.32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits
Analyte	pCi/l	pCi/I	%	%
Radium-226	5.00	5.38	108	75.0-125
(T) Barium-133			94.9	





L1770070-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1770070-04	1 08/26/24 16:32 • (MS)	R4112000-3 0	8/26/24 16:32	2 • (MSD) R4112	00-4 08/26/2	24 16:32						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier RPD	MS RER RPD	Limits
Analyte	pCi/l	pCi/I	pCi/l	pCi/l	%	%		%		%	%	
Radium-226	20.0	0.0754	18.3	19.2	90.9	95.5	1	75.0-125		4.91	20	
(T) Barium-133		91.6			87.3	92.1						

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

Minimum Detectable Activity.

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Tc

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.



Ss

Cn

Sr

Abbreviations and Definitions

MDA

Rec.	Recovery. The state of the stat
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the

Sample Summary (S	This section of the Analytical Report defines the specific analyses performed for each sample ID, including times of preparation and/or analysis.	
Qualifier	Description	
J .0023398611.50 1	The identification of the analyte is acceptable; the reported value is an estimate. Below Detectable Limits: Indicates that the analyte was not detected.	

This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for

samples from the time of collection until delivery to the laboratory for analysis.

each sample will provide the name and method number for the analysis reported.

Sample Results (Sr)

ACCREDITATIONS & LOCATIONS

Alabama	40660	Nebraska	NE-OS-15-05
Naska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
ldaho	TN00003	OhioVAP	CL0069
ltinois	200008	Oklahoma	9915
ndiana	C-TN-01	Огедол	TN200002
lowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ^z	16	South Dakota	n/a
Louisiana	AJ30792	Tennessee 14	2006
Louisiana	LA018	Texas	T104704245-20-18
Malne	TN00003	Texas ⁵	LAB0152
Maryland	324	<u> </u>	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA - ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA - ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234



^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.

EPA-Crypto

TN00003

















^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

per Gibbs ace Analytical Minnesota 00 Elm Street anneapolis, MN 55414 anne (612)607-6456 Sample ID 24-A2341 PS PS Released By Bia Cear / FACE coler Temperature on Receipt a order to maintain client confidentiality, This chain of custody is considered con	Pace National 12065 Lebanon Rd Mt. Juliet, TN 3712 Phone (615) 758-50 Collect Date/Time Lab ID 8/12/2024 12:12 10704316001	22 858	d Containers	X Radium 226/228 C. 2	equested Analys	ults Reques	LABUSE ONLY
n Sample ID Type 24-A2341 PS nsfers Released By Bi~ (eer /FACE oler Temperature on Receipt n order to maintain client confidentiality,	Date/Time Lab ID	Matrix.					LAB USE ONLY
n Sample ID Type 24-A2341 PS nsfers Released By Bi~ (eer /FACE oler Temperature on Receipt n order to maintain client confidentiality,	Date/Time Lab ID	matrix	X	X			LAB USE ONLY
nsfers Released By Bia (PA) / PACE oler Temperature on Receipt n order to maintain client confidentiality,	8/12/2024 12:12 10704316001	Water 1	X	X			
Bi= (ee) /PACE oler Temperature on Receipt n order to maintain client confidentiality,							
Bi= (ee) /PACE oler Temperature on Receipt n order to maintain client confidentiality,							
Bi= (ee) /PACE oler Temperature on Receipt n order to maintain client confidentiality,				_ _ _			
Bi= (ee) /PACE oler Temperature on Receipt n order to maintain client confidentiality,				1 1 1	- 	I <u>-</u> L	
oler Temperature on Receipt	Date/Time Received	D			l Co	omments	
n order to maintain client confidentiality	707	Demaner	Date/Time				
n order to maintain client confidentiality		txe-daylet	० ५५०५६	2390			
n order to maintain client confidentiality							
This chain of custody is considered con	°C Custody Seal	Y or N F	Received on Ice	e Y or N	Sai	mples Intaci	Y or N
	/, location/name of the sampli molete as is since this informa	ing site, sampler's nar	ne and signature	re may not be prov	vided on this C	COC docume	ent.
163=12TU19	G) (PH-108DH0941	e owner laborato	tory.			
ttles errive intect: N Pres. Correct	Applicable eadspace: _Y_H t/Check: _Y_H	TRC-3223A228					
fficient volume sent: The 6476f	eaze810		water the second				



Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10704316

(To be completed by sending lab)

Sending Project No	10704316
Receiving Project No.	
Check Box for Consolidated Invoice	
Date Prepared:	08/16/24
REQUESTED COMPLETION DATE:	9/16/2024

Sending Region	15.4		1130N DATE: 9/16/2024					
	IR10-Minnesota	Sending Project Mgr.						
Receiving Region		External Client	Piper Gibbs					
State of Sample Origin			MVTL Laboratories					
		QC Deliverable						
All questions should be addressed to sending project manager.								
		· · /· · · · · · · · · · · · · · · ·	*					

	WORK	REQUEST	ED			
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Semples	Acode	Acode Desc
Radium 226/228	BP1N	2	HNO3	1	SI-38RAD	SUB PASI RAI
FORA	NALYTICAL WORK CO	OMPLETE	THIS SECTION	MALEA	9001328355555	STATES A STATE AND AND AND AND AND AND AND AND AND AND
FOR A	NALYTICAL WORK CO	OMPLETE	THIS SECTION	N ALSO		
Return Samples to Sending Region: Yes	· 	OMPLETE	THIS SECTION	N ALSO		

31-0122

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557

New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

Project Otter Tail Power Company	Project Type:	Big Stone Plant CCR	Name of Samplers:	\sim
Report Otter Tail Power Company	Carbon Copy:	Barr Engineering		<i>DS</i>
Attn: Paul Vukonich	Attn:		Quote Number:	
Address P.O. Box 496	Address:		Work Order Number:	
Fergus Falls, MN 56538-0496			Lab Numbers:	
Phone: 218-739-8349				

		Sample In	formation									Bott	le Ty	/pe					A	nalysis
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	1000 HNO3 I	500 None	1000 none	500 HNO3	- / 4	/8	Filter? Y or N.		1000 Amber	500 NaOH	Other: 150 LG	Other 150 M.	Analysis Required	
							-											_		
										ļ										
										 										
INSEA	H12		12Augz4	1212	GW				1	1	N			2					CCR 3&4	4

Comments:

Samples Reline	quished By:	By C	-6	Samples Received By	•		
	ug 24	Time 1532	Tempog T	Date:	Time:		Temp:
Samples Relind			n Cart Othe	£&S			·
Samples Reline	quished By:			Samples Received By	:		·
Date:	-	Time:	Temp:	Date:	Time:	-	Temp:
Delivery:	Samplers	Other:		Seal Number(s) - If Us	sed		
Transport:	Ambient	(G	Other:	Seals Intact?	Yes	No	·

Big Stone

Daily Field Meter Calibration Sheet

pH Calibration: Cal Data: 4.0, 7.0, and 10.0	
Conductivity Calibration: Cal Data: 1.412	
D.O. Calibration: Cal Data: 名.75 @ ネス・フ	mg/L
Temperature Calibration:	
Date: 12 Ry g 24 Signed: 15	>
·	•
pH Calibration: Cal Data: 4.0, 7.0, and 10.0	
Conductivity Calibration: Cal Data: 1.412	
D.O. Calibration: Cal Data:	fmg/L
Temperature Calibration:	
Date:Signed:	
pH Calibration: Cal Data: 4.0, 7.0, and 10.0	<u>/</u>
Conductivity Calibration: Cal Data: 1.412	
D.O. Calibration: Cal Data:	mg/L
Temperature Calibration:	
Date:Signed:	
pH Calibration: Cal Data: 4.0,7.0, and 10.0	
Conductivity Calibration: Cal Data: 1.412	
D.O. Calibration: Cal Data:	mg/L
Temperature Calibration:	
Date:	

CCR - Appendix III Detection Monitoring

Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters

Boron

Calcium

Chloride Fluoride

рН

Sulfate

Dissolved Solids, Total

Method

6010 6010

SM4500 CL E

EPA 300

SM 4500 H+B-96

ASTM D516

SM 2540 C-97

Note: These are non-filtered samples.

CCR - Appendix IV - Assessment Monitoring

Method
SW6020A
SW602A
SW6010C
SW6020A
SW6020A
SW6020A
SW6010C
EPA 300
SW6020A
SW6010C
EPA 245.7
SW6020A
SW6020A
SW6020A

Note: These are non-filtered samples.

Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment		Site: Otter Tail Power Co./ Big Ston				
Sampling Personnel:		Facility ID:				
72		Date:	12. Aug	24		
		Unique Station	on ID:			
		Sample ID:	<u>-</u> .		H12	
Well Condition						
Well Locked? Yes No		Protective Po			No)	
Well Labeled? (Yes No Casing Straight? (Yes No		State ID Tag Grout Seal Ir			No	
		Glout Seal II	ntact? Yes		No)	
Repairs Necessary: Well Information						
		\\\-\\\ \\ \\	F1		A (Ø	
Well Depth: 22.63		Well Casing			/VM	
Constructed Depth: 24.00		Static Water	Elevation:			
Casing Diameter: 2"		Previous Sta	tic:			
Water Level Before Purge: 16.78		Water Level After Sample:/6. %				
Well Volume: 6.95 Gallons		Measuremer	nt Method:	Elec. V	N)I Steel Tape	
Sampling Information						
Weather Conditions: Temp: 15	Wind:	5626	Sky:	Par	Hy Elouly	
Sampling Method: Grundfos Rladder S	Disp. Bailer	Whale	Grab Other:			
Dedicated Equipment: Yes No		Pumping Ra	te: O.	25	gpm	
Well Purged Dry? Yes No		Time Pump	Began:	Zoo	am /pm	
Time Purged Dry?		Time of Sam	npling: /	217	_ am /(pm)	
Duplicate Sample? Yes No ID:		Sample EH:		7.5		
Sample Appearance: General: Class	Color: ~	One Phase	e: Lone	, <u> </u>	Odor: Nove	
	3 0,01. 7	7 - 11100	<i>y y y y y y y y y y</i>		- Cuci. 500 C	
Specific Temp	D. O.	Turbidity	Gallons	SEQ		
Time pH Cond. °C	mg/L	NTU	Removed	#	Comments:	
1204 7.70 291 11.4	3 NA	NA		1		
1208 7.74 290 11.2]]		2	2		
1212 7.80 290 11.14			, 3	3		
1212 1100 210 1111				13		
			<u> </u>	4		
				5	<u> </u>	
Stabilized? (Yes) No	Amount Wa	ater Removed:	3		Gallons	
Comments:						

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

507 354 8517

Groundwater Level Measurements

Sampling Personnel:	Site: OTP Big Stone
<u>DS</u>	Facility ID: Big Stone
	Date: 12 Aug 24

Well Number	Well 10	Well 11	Well 12	Well 1	H1OX	H1INT	H2OX
Unique Station ID	NA						
Date	12 Augz	4					
Time	1148	1145	1138	1/33	1109	1111	1055
Well Casing Elevation	1098.7	1104	1071.89	1090.71	1115.89	1115.81	1103.86
Depth to Water	16.48	97.65	65.74	61.18	ZS.33	25.80	7.95
Static Elevation	1082.22	100832	1006.15	1029.53	1090.56	1090.01	1095.91
Casing Diameter	4"	4"	4"	4"	2"	2"	2"
Well Depth	47.01	127.22	112.40	78,00	32.33	66.15	32.83
Well Volume 19.95	448	19.33	30,50	10.99	1,14	560	4.06
Well Locked	yes (no)	yes (no)	yes(no)	yes/no	ves no	yes no	(yes) no
Well Labeled	(yes) no	yes no	yes(/no)	yes no	(yes) no	yes) no	yes√no
Well Straight	yes) no	(yes) no	ves no	(yes) no	(yes) no	ves) no	(yes) no_
Protective Posts	ves no	yes no	(yes) no	(yes)/no	yes (no)	yes (no	yes /(no)
Grout Seal Intact	yes(no)	yes no	yes (no	yes (no	yes (no)	yes (no)	yes (no)
Dedicated Equipment	yes(/no)	yes/ no	yes no	ves no	yes (no	yes / no	yesyno

Well Number	H2INT	H30X	H3INT	H4OX	H4INT	H5	Н6
Unique Station ID	NA	NA	NA	NA	NA	NA	NA
Date	12A42	(
Time	1057	1104	1102	1045	1047	1153	1115
Well Casing Elevation	1103.91	1095.26	1095.17	1108.25	1108.61	1122.8	1097.76
Depth to Water 61.36	7041	213	27.09	12:38	15.79	8.95	10.71
Static Elevation	1042.55	1090,13	106808	1092.87	1092.82	1113.85	1087.0
Casing Diameter	2"	2"	2"	2"	2"	2"	2"
Well Depth	6245	22.68	54.42	27.48	60.10	44.90	17.92
Well Volume	0.18	2.86	4.46	1.97	7.23	5.86	1.18
Well Locked	yes <i>D</i> no	(yes) no	yes no	(yes 7no	(yes 7710	(yes) no	(yes) no
Well Labeled	yes I no	ves no	yes(/no	yes no	(yes) no	(yes) no	(yes ∮no
Well Straight	(yes /)no	yes) no	(yes)no	yes)no	ves) no	(yes)/ no	yes no
Protective Posts	yes (no	yes (no	yes (no	yes /(no	yes (no	yes/no	(yes) no
Grout Seal Intact	yes) no	yes(no	yes (no	yes no	yes no	yes) no	yes (no)
Dedicated Equipment	yes (no	yes no	yes /(no	yes) no	yes (no)	yes(nð	yes no

Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

507 354 8517

Groundwater Level Measurements

Sampling Personnel:					Site: 07	P- Bio	1 Stone
	25				Facility ID:		(
			•		Date: 17	Aug 24	
			·		<u> </u>	770.	
Well Number	H7	H8	H9				
Unique Station ID	NA	NA	NA				-
Date	12,44524	<					
Time	1130	1120	1123	-			
Well Casing Elevation	1106.06	1081.23	1086.21				
Depth to Water	18.52	18.82	16.93				
Static Elevation	1087.54	1062.38	1069.28				
Casing Diameter	2"	2"	2"				
Well Depth	32.60	22.33	30,71				
Well Volume	2.79	0.57	2.25				
Well Locked	yes)no	yes/)no	(yes 7 no	yes / no	yes / no	yes / no	yes / no
Well Labeled	yes∌no	yes no	(yes) no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes no	(ves) no	yes I no	yes / no	yes / no	yes / no	yes / no
Protective Posts	yes no	(ves I)no	yes no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact	yes (no	yes(no)	yes (no	yes / no	yes / no	yes / no	yes / no
Dedicated Equipment	yes(no	yes) no	yes) no	yes / no	yes / no	yes / no	yes / no
		· · · · · · · · · · · · · · · · · · ·					
Well Number	1						
Unique Station ID			<u> </u>				
Date					 		
Time							
Well Casing Elevation							
Depth to Water							
Static Elevation							-
Casing Diameter							
Well Depth							
Well Volume							
Well Locked	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Labeled	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Well Straight	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Protective Posts	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Grout Seal Intact	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no
Dedicated Equipment	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no	yes / no



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Page:

1 of 12

FINAL REPORT COMPLETION DATE: 2 De 24 0 K

Date Reported: 26 Nov 2024

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0147 Account #: 006106

PO #: 108267

Project Name: BIG STONE PLANT CCR

Field Service Manager/Date Reviewe

Chemistry Lab Manager/Date Reviewed

Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 56538-0496 FERGUS FALLS MN

Project Name: BIG STONE PLANT CCR

Sample Description: H20X

2 of 12 Page:

Report Date: 26 Nov 2024 Lab Number: 24-A2716 Work Order #: 31-0147

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 12:14 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					15 Oct 24	NS
pH, Field	6.45	units	1.00	SM4500-H+-2011	14 Oct 24 12:14	BMW
Н	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:37	CC
Sulfate	2040 ~	mg/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	3.5	mq/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	3760	mq/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	500.0 ~	mg/L	0.500	SW6010D	22 Oct 24 12:11	RMV
Boron	0.233	mg/L	0.100	SW6010D	22 Oct 24 12:11	RMV
Fluoride	0.300	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RL = Reporting limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H30X

Page: 3 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2717 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Oct 2024 10:29
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					15 Oct 24	NS
pH, Field	6.40	units	1.00	SM4500-H+-2011	14 Oct 24 10:29	BMW
На	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:37	CC
Sulfate	1190 ~	mg/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	65.4	mg/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	2880	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	383.0 ~	mg/L	0.500	SW6010D	22 Oct 24 12:11	RMV
Boron	6.730 ~	mg/L	0.100	SW6010D	22 Oct 24 12:11	RMV
Fluoride	0.340	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

= Due to sample matrix # = Due to concentration of other analytes

| = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H40X

Page: 4 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2718 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 11:14 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					15 Öct 24	NS
pH, Field	6.51	units	1.00	SM4500-H+-2011	14 Oct 24 11:14	BMW
рН	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Sulfate	922 ~	mq/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	39.6	mg/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	2090	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	272.0	mg/L	0,500	SW6010D	21 Oct 24 14:39	RMV
Boron	0.494	mg/L	0.100	SW6010D	22 Oct 24 12:11	RMV
Fluoride	0.480	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H8

5 of 12 Page:

Report Date: 26 Nov 2024 Lab Number: 24-A2719 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 12:40 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					22 Oct 24	NS
pH, Field	7.16	units	1.00	SM4500-H+-2011	14 Oct 24 12:40	DGF
pH	* 7.3	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Sulfate	276 ~	mq/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	3.4	mg/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	941	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	112.0	mg/L	0.500	SW6010D	21 Oct 24 14:39	RMV
Boron	2.590 @	mg/L	0.100	SW6010D	22 Oct 24 12:11	RMV
Fluoride	0.510	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RLD = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

0 = Due to sample matrix # Due to concentration of other analytes

1 = Due to sample quantity + Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO

PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H9

Page: 6 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2720 Work Order #: 31-0147

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 13:21 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Oct 24	RMV
pH, Field	6.60	units	1.00	SM4500-H+-2011	14 Oct 24 13:21	DGF
рН	* 6.9	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Sulfate	1370 ~	mg/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	80.8	mg/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	2800	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	610.0	mg/L	0.500	SW6010D	22 Oct 24 12:39	RMV
	~See Nar	rative				
Boron	1.290	mg/L	0.100	SW6010D	21 Oct 24 15:19	RMV
Fluoride	0.310	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H10

Page: 7 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2721 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Oct 2024 12:41
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Oct 24	RMV
pH, Field	6.38	units	1.00	SM4500-H+-2011	14 Oct 24 12:41	BMW
рН	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Sulfate	2690 ~	mq/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	6.8	mg/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	4200	mq/L	10	SM 2540 C-97	15 Oct 24 9:30	ÇC
Calcium	356.0	mg/L	0.500	SW6010D	22 Oct 24 12:39	RMV
	See Narr	ative				
Boron	0.273	mq/L	0.100	SW6010D	21 Oct 24 15:19	RMV
Fluoride	0.190	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H11

8 of 12 Page:

Report Date: 26 Nov 2024 Lab Number: 24-A2722 Work Order #: 31-0147

Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 14:12 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Recei [.] Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Oct 24	RMV
pH, Field	6.66	units	1.00	SM4500-H+-2011	14 Oct 24 14:12	DS
pH	* 6.8	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Sulfate	2250 ~	mg/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	4.0	mq/L	3.0	SM 4500 Cl E	17 Oct 24 13:21	AKF
Solids, Total Dissolved	4140	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	607.0	mg/L	0.500	SW6010D	22 Oct 24 12:39	RMV
	~See Nar	rative				
Boron	0.218	mq/L	0.100	SW6010D	21 Oct 24 15:19	RMV
Fluoride	0.150	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

^{*} Holding Time Exceeded

RL = Reporting Limit RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

0 = Due to sample matrix # = Due to concentration of other analytes

1 = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

[~] Sample diluted due to result above calibration of linear range.



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

MN 56538-0496

Project Name: BIG STONE PLANT CCR

Sample Description: H12

FERGUS FALLS

Page: 9 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2723 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 13:42 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

Temp at Receipt: 0.5C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					15 Oct 24	NS
Water Digestions					16 Oct 24	RMV
pH, Field	8.23	units	1.00	SM4500-H+-2011	14 Oct 24 13:42	DS
Hq	* 8.0	units	1.0	SM 4500 H+ B-2000	15 Oct 24 11:56	CC
Radium 226	0.09	pCi/L	0.60		6 Nov 24 18:46	$_{ m OL}$
Radium 228	0.74	pCi/L	3.00	EPA M9320	8 Nov 24 20:00	OL
Sulfate	8.4	mg/L	5.0	ASTM D516-11	17 Oct 24 12:37	KRM
Chloride	< 3	mg/L	3	SM 4500 Cl E	17 Oct 24 13:21	AKF
Mercury	0.009	ug/L	0.005	EPA 245.7	22 Oct 24 11:26	RMB
Solids, Total Dissolved	197	mg/L	10	SM 2540 C-97	15 Oct 24 9:30	CC
Calcium	25.60	mg/L	0.500	SW6010D	22 Oct 24 12:39	RMV
	See Narra	tive				
Lithium	< 0.02	mg/L	0.02	SW6010D	22 Oct 24 12:39	RMV
Barium	0.067	mg/L	0.005	SW6010D	21 Oct 24 15:19	RMV
Beryllium	< 0.005	mg/L	0.005	SW6010D	21 Oct 24 15:19	RMV
Chromium	< 0.01	mg/L	0.01	SW6010D	21 Oct 24 15:19	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Oct 24 15:19	RMV
Molybdenum	0.039	mg/L	0.015	SW6010D	21 Oct 24 15:19	RMV
Boron	0.358	mg/L	0.100	SW6010D	21 Oct 24 15:19	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	17 Oct 24 12:08	SS
Arsenic	2.52	ug/L	0.50	SW6020B	17 Oct 24 10:22	SS
Cadmium	< 0.2 ^	ug/L	0.1	SW6020B	17 Oct 24 12:08	SS
Lead	1.36	ug/L	0.50	SW6020B	17 Oct 24 10:22	SS
Selenium	< 0.5	ug/L	0.5	SW6020B	17 Oct 24 12:08	SS
Thallium	< 0.1	ug/L	0.1	SW6020B	17 Oct 24 10:22	SS
Fluoride	0.310 @	mg/L	0.020	EPA 300.0	19 Oct 24 1:48	MDH

* Holding Time Exceeded

Radium 226 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

Radium 228 subcontracted to: Pace Analytical Services Inc. 1700 Elm Street Suite 200 Minneapolis, MN 55414 1-612-607-1700

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

OL = Analysis performed by an Outside Laboratory.

RL = Reporting Limit



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Page: 10 of 12

Date Reported: 26 Nov 2024

Work Order #: 202431-0147 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INORGANIC AND METALS ANALYSES:

Due to the high concentration of calcium in the spiked sample, the matrix spike duplicate recovery was outside of acceptance range for samples 24-A2720 through 24-A2723. Data was reported based on the acceptable recovery of calcium in the laboratory control spike and the relative percent difference between matrix spikes.

No other problems were encountered with these analyses.



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Page: 11 of 12

Report Date: 26 Nov 2024 Lab Number: 24-A2724 Work Order #: 31-0147 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 14 Oct 2024 12:11 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Oct 2024 16:20

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

Project Name: BIG STONE PLANT CCR

FERGUS FALLS MN 56538-0496

Sample Description: H6

As Received Method Method Date Reference Analyzed Analyst Result RL14 Oct 24 12:11 DGF 17.92 NΑ Field Well Depth, Field feet 14 Oct 24 12:11 Water Level Before Purge 16.86 feet NA NA DGF



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page: 12 of 12

Date Reported: 26 Nov 2024

Work Order #: 202431-0147 Account Number: 006106

PO #: 108267

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: BIG STONE PLANT CCR

LABORATORY NARRATIVE

INSUFFICIENT VOLUME TO PURGE/SAMPLE - NO SAMPLE

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 E. Broadway Ave. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com

MEMBER ACIL

Quality Control Report
Lab IDs: 24-A2716 to 24-A2723

Droingt DIC CTONE DI ANT CCD

Lab IDs: 24-A2716 to 24-A2	.723	Pro	ject: BI	3 STONE	E PLANT CCF			Work	Order:)147				Page:	1 of 1	
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony ug/L	25.0	102	85-115	25.0	24A2723q	< 0.5	26.2	105	75-125	26.2	26.2	105	0.0	10	102	90-110	< 0.5
Arsenic ug/L	25.0	105	85-115	25.0	24A2723q	2.52	28.0	102	75-125	28.0	27.4	100	2.2	10	100	90-110	< 0.5
Barium mg/L	1.000	99	85-115	1.00	a2720qc	0.011	1.050	104	75-125	1.050	1.040	103	1.0	10	97	90-110	< 0.005
Beryllium mg/L	1.000	95	85-115	1.00	a2720qc	< 0.005	0.9780	98	75-125	0.9780	0.9640	96	1.4	10	97	90-110	< 0.005
Boron mg/L	1.000 1.000	96 97	85-115 85-115	1.00 1.00	a2720qc 24A2719q	1.290 2.590	2.460 3.450	117 86	75-125 75-125	2.460 3.450	2.420 3.490	113 90	1.6 1.2	10 10	94 94	90-110 90-110	< 0.1 < 0.1
Cadmium ug/L	5.00	106	85-115	5.00	24A2723q	< 0.2	5.39	108	75-125	5.39	5.33	107	1.1	10	100	90-110	< 0.1
Calcium mg/L	50.00 50.00 50.00	86 87 100	85-115 85-115 85-115	50.0 50.0 50.0 50.0	a2719qc 24A2719q 24A2720q 24A2708q	112.0 112.0 610.0 164.0	170.0 157.0 662.0 213.0	116 90 104 98	75-125 75-125 75-125 75-125	170.0 157.0 662.0 213.0	168.0 158.0 614.0 215.0	112 92 8 102	1.2 0.6 7.5 0.9	10 10 10 10	101 101 102	90-110 90-110 90-110	< 0.5 < 0.5 < 0.5
Chloride mg/L	-	-	-	60.0	24-A2721	6.8	67.8	102	80-120	67.8	66.9	100	1.3	` 10	101	90-110	< 3
Chromium mg/L	1.000	92	85-115	1.00	a2720qc	< 0.01	0.959	96	75-125	0.959	0.957	96	0.2	10	96	90-110	< 0.01
Cobalt mg/L	1.000	98	85-115	1.00	a2720qc	< 0.005	0.946	95	75-125	0.946	0.936	94	1.1	10	99	90-110	< 0.005
Fluoride mg/L	-	T -	-	1.00	24-A2723qc	0.310	1.30	99	80-120	1.30	1.32	101	1.5	10	95	90-110	< 0.02
Lead ug/L	25.0	100	85-115	25.0	24A2723q	1.36	26.7	101	75-125	26.7	26.7	101	0.0	10	101	90-110	< 0.5
Lithium mg/L	1.000	101	85-115	1.00	24-A2720qc	0.138	1.240	110	75-125	1.240	1.220	108	1.6	10	98	90-110	< 0.02
Mercury ug/L	-		-	0.10	24-A2822	< 0.005	0.111	111	63-111	0.111	0.102	102	8.5	18	84	76-113	< 0.005
Molybdenum mg/L	1.000	95	85-115	1.00	a2720qc	< 0.015	0.996	100	75-125	0.996	0.993	99	0.3	10	99	90-110	< 0.015
pH units		-	-	-	-	-	-	-	-	7.0 7.0	7.0 7.0	-	0.0 0.0	2.5 2.5	101 101	90-110 90-110	-
Selenium ug/L	25.0	109	85-115	25.0	24A2723q	< 0.5	28.3	113	75-125	28.3	28.0	112	1.1	10	103	90-110	< 0.5
Solids, Total Dissolved mg/L	_	-	-	-	-	-	-	-	-	3760	3720	-	1.1	10	100	85-115	< 10
Sulfate mg/L	-	-	_	5000	24-A2717	1190	6240	101	80-120	6240	6110	98	2.1	10	94	85-115	< 5
Thallium ug/L	5.00	101	85-115	5.00	24A2723q	< 0.1	5.20	104	75-125	5.20	5.23	105	0.6	10	102	90-110	< 0.1

One of the Calcium matrix spike duplicates failed to recover within acceptance limits, see narrative.

Approved by:





November 21, 2024

Todd Rieger **MVTL** Laboratories 1126 North Front Street New Ulm, MN 56073

RE:

Project: 31-0147 Ottertail

Pace Project No.: 10712045

Dear Todd Rieger:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,

Piper Gibbs

piper.gibbs@pacelabs.com

Report Diklos

(612)607-6456

Project Manager

Enclosures

cc: Barb Zins, MVTL







SAMPLE SUMMARY

Project:

31-0147 Ottertail

Pace Project No.:

10712045

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10712045001	24A2723 H-12	Water	10/14/24 13:42	10/16/24 10:53



CHAIN-OF-CUSTODY / Analytical Reques
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be ce

W0#:10712045

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	WATER WASTE WATER PRODUCT SOIL/SOLID OIL SAMPLE ID WIPE		(see valid codes to left)		MPOSITE TART	COMPI END/O	OSITE PAB	COLLECTION	:RS								method161	cina								Chlorine (Y/N)				Z
ITEM#	(A-2, 0-97,-) OTHER	AR OT TS	MATRIX CODE		TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H ₂ SO,	된	NaOH	Na ₂ S ₂ O ₃	Other	J Analysis Test↓	2,3,7,8 TCDD m	PFAs State Pricing	Dioxins/Furans	VOC's by 8260						Residual Chlorir	Pac	e Project	No./ Lab I.D.	
	24A2723 H-12	\	WT			10/14/24	13:42		1					\top			X				_			_	+	N		(S_{C})	/	-
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ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt CLIENT NAME: PROJECT #: WO#: 10712045 Client COURIER: ☐ Commercial ☐ FedEx ☐ Pace □ SpeeDee □ UPS □ USPS Due Date: 11/14/24 CLIENT: MYTL TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142 Custody Seal on Cooler/Box Present: 🗆 YES 😥 NO Seals Intact: 🗆 YES 🔄 NO Biological Tissue Frozen: ☐ YES ☐ NO ☑ N/A Packing Material: 🗆 Bubble Bags 🔲 Bubble Wrap 🗹 None 🗀 Other Temp Blank: 🗹 YES 🗀 NO Type of Ice: 🗆 Blue 🗀 Dry 🗹 Wet Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ Melted ☐ None ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710) Did Samples Originate in West Virginia: YES WNO Were All Container Temps taken: ☐ YES ☐ NO ☑ N/A Correction Factor: -- 0 5 Cooler Temp Read w/Temp Blank: __ Average Corrected Temp (no Temp Blank Only): Cooler Temp Corrected w/Temp Blank: 215 NOTE: Temp should be above freezing to 6°C. ☐ See Exceptions Form ENV-FRM-MIN4-0142 USDA Regulated Soil: M/A - Water Sample/Other (describe): Initials & Date of Person Examining Contents: 10-12-24 Did Samples originate from one of the following states (check maps) ~ AL, AR, AZ, CA, FL, Did samples originate from a foreign source (international, including GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: YES NO Hawaii and Puerto Rico): ☐ YES ☐ NO NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork. LOCATION (check one): DULUTH MINNEAPOLIS VIRGINIA YES N/A COMMENT(S) Chain of Custody Present and Filled Out? Chain of Custody Relinquished? d Sampler Name and/or Signature on COC? Û 3. Samples Arrived within Hold Time? 4. If Fecal: □ <8 hrs □ >8 hr, <24 hr □ No Short Hold Time Analysis (<72 hr)? 5. ☐ BOD / cBOD ☐ Fecal colliform ☐ Hex Chrom · □ HPC □ Nitrate □ Nitrite □ Ortho Phos ☐ Total coliform/E. coll ☐ Other: Rush Turn Around Time Requested? M Sufficient Sample Volume? V 7. 2 Correct Containers Used? Ø - Pace Containers Used? M Containers Intact? M Field Filtered Volume Received for Dissolved Tests? ÎЯ 10. Is sediment visible in the dissolved container: ☐ YES ☐ NO Is sufficient information available to reconcile the samples to the COC? M 11. If NO, write ID/Date/Time of container below: NOTE: If ID/Date/Time don't match fill out section 11. Matrix: Oil Soil Water Other ☐ See Exceptions form ENV-FRM-MIN4-0142 All containers needing acid/base preservation have been checked? N 12. Sample #: 00 | All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 M HNO3 □ H₂SO4 □ NaOH □ Zinc Acetate Cvanide) Positive for Residual Chiorine: ☐ YES ☐ NO Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS pH Paper Lot # 0-6 Roll = -0-6 Strip 0-14 Strip NOTE: If adding preservation to the container, verify with the PM first. Clients may require adding preservative to the field and equipment blanks when this occurs. ☐ See Exceptions form ENV-FRM-MIN4-0142 Headspace in Methyl Mercury Container? П W 13. Extra labels present on soil VOA or WIDRO containers? M Headspace in VOA Vials (greater than 6mm)? 囡 ☐ See Exceptions form ENV-FRM-MIN4-0140 Trip Blanks Present? Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): CLIENT NOTIFICATION / RESOLUTION FIELD DATA REQUIRED: YES NO Person Contacted: Date & Time: Comments / Resolution: 10/17/24 Project Manager Review: NOTE: When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers). Labeled By:



Minnesota Valley Testing Laboratories, Inc. 1126 North Front Street New Ulm, MN 56073 507-233-7131 Fax 507-359-1231

P.O. Number:

CL13299

То:	Ship To (if different address):	
Pace Analytical 1700 Elm Street SE Suite# 200 Minneapolis, MN 55414		

P.O. Date	Placed By	Date Expected	Ship Via	F.O.B.	Terms
15-Oct-24	Todd Rieger	N/A	N/A	N/A	Net 30

QTY.		Description	Uı	nit Price		Total
				-	\$	
	Lab ID#	24A2723			\$	
	WO#	31-0147			\$	
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Authorized Signature

Subtotal \$ Sales Tax Total Due \$

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1 24	A2723 H-12	v.	PS	10/14	1/2024 13:42	10712045001	Water	2					Х							_	<u> </u>		_0/_	
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	D.3+0.3-0.6 .	ample Rece	eipt Checklist	
.	CO Seal Present/Intact: COT Signed/Accurate: Bottles arrive intact: Correct/bottles used: Sufficient volume sent: RAYScreen <0.5 mR/hr:	A N A N A N A N A N A N A N	If Applicable VOA Zerc Headspace: Pres. Correct/Check: Z-10-HAL	X_N X_N

^{***}In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.





Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10712045

(To be completed by sending lab)

Sending Project No:	10712045
Receiving Project No:	
Check Box for Consolidated Involce:	
Date Prepared:	10/17/24
REQUESTED COMPLETION DATE:	11/14/2024

Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Gibbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

All questions si	louid be add	169904 (0 80)	ding proje	or managem			
Requested Reportable Units	_ Report We	et or Dry Weigh	(? Dry We	ight IRW	/O Lab Ne	ed to run?	Cert. Needed
		WORK	REQUEST	ED			
Method Description		Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Radium 226/228	:	BP1N	2	HNO3	1	SI-38RAD	SUB PASI RAD
Special Requirements: Report C, QC				D THIS SECTION	N ALSO		
Return Samples to Sending Region:	Yes X	No					
		DISPOSI	TION of FO	ORM			
Original sent to the receiving lab - Copy kep	t at the sendi	ng lab.	\$ \$ \$				

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.



Pace Analytical ANALYTICAL REPORT

Pace Analytical - Minnesota

Sample Delivery Group:

L1790405

Samples Received:

10/18/2024

Project Number:

10712045

Description:

31-0147 Ottertail

Site:

001

Report To:

Piper Gibbs

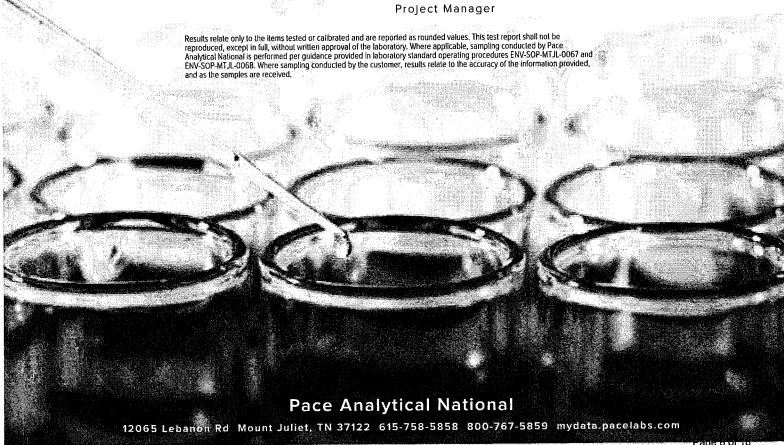
1700 Elm Street Suite 200

Minneapolis, MN 55414

Sc

Entire Report Reviewed By: Maley Torrence

Haley Torrence



ACCOUNT: Pace Analytical - Minnesota PROJECT: 10712045

L1790405

DATE/TIME: 11/21/24 10:16

PAGE: 1 of 11

TABLE OF CONTENTS

Cp: Cover Page	1
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24A2723 H -12 L1790405-01	5
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Radiochemistry by Method 904/9320	6
Radiochemistry by Method SM7500Ra B M	7
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Sc: Sample Chain of Custody	10



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SAMPLE SUMMARY

Batch

WG2389747

WG2394991

Dilution

Collected by

Preparation

11/04/24 22:11

11/04/24 13:29

date/time

Collected date/time

10/14/24 13:42

Analysis

date/time

11/08/24 20:00

11/06/24 18:46

40.60

Received date/time

Location

Mt. Juliet, TN

Mt. Juliet, TN

10/18/24 09:00

Analyst

DDD

ZRG

Cp

















24A2723 H -12 L1790405-01 Non-Potable Water

Method

Radiochemistry by Method 904/9320

Radiochemistry by Method SM7500Ra B M

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Haley Torrence
Project Manager

Ср

















24A2723 H -12 Collected date/time: 10/14/24 13:42

SAMPLE RESULTS - 01

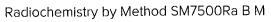
Radiochemistry by Method 904/9320

•	, ,						
	Result Qua	lifier 2 slgma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/l	+/-	+/-	pCi/I	pCi/I	date / time	
RADIUM-228	0.742	0.238	0.436	0.416	0.219	11/08/2024 20:00	WG2389747
(T) Barium	108		Sat thes		30.0-143	11/08/2024 20:00	<u>WG2389747</u>
(T) Yttrium	99.6		43000 0. 0. 00 mm mm		30.0-136	11/08/2024 20:00	WG2389747









	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	<u>Batch</u>
Analyte	pCi/l		+/-	+/-	pCi/l	pCi/l	date / time	
RADIUM-226	0.0912	Ū	0.196	0.305	0.325	0.225	11/06/2024 18:46	WG2394991
(T) Borium-133	101	J. ĒM		neight.		30.0-143	11/06/2024 18:46	WG2394991













WG2389747

QUALITY CONTROL SUMMARY

L1790405-01

Method Blank (MB)

(T) Yttrium

()			- Doc
(MB) R4144729-1	11/08/24	20:0	0

Radiochemistry by Method 904/9320

(IVID) N4144723-1 11/	00/24 20.00				
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/I		+/-	pCi/I	pCi/l
Radium-228	0.0958	<u>U</u>	0.161	0.296	0.156
(T) Rarium	110		118		

89.2



L1790479-03 Original Sample (OS) • Duplicate (DUP)

(OS) 1790/179_03	11/08/24 20:00 •	(DUP) R4144729-5	11/08/24 20:00
(03) [1/304/3-03	11/00/24 20:00	(001) 14-14-723-3	100002120.00

(OS) L1/904/9-03 11/	O8/24 20:00 • (I Original Result	-	9-5 11/08/24 2 Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	+/-	pCi/I	pCi/l	pCi/l	+/-	pCi/l	pCi/l	%		······································	%	
Radium-228	1.77	0.347	0.573	0.303	1.45	0.469	0.823	0.429	20.3	0.560		20	3
(T) Barlum	114				117	117							
(T) Yttrium	<i>85.0</i>				<i>7</i> 7.9	77.9							







Laboratory Control Sample (LCS)

(LCS) R4144729-	2 11/08/24 20:00				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	s <u>LCS Qualifier</u>
Analyte	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.21	104	80.0-120	
(T) Barium			112		
(T) Yttrium			89.2		

Sc

L1788389-31 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	(OS) L1788389-31 11/08/24 20:00 • (MS) R4144729-3 11/08/24 20:00 • (MSD) R4144729-4 11/08/24 20:00											
(03) 21/00303-31 11/0		Original Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER RPD Limits
Analyte	pCi/I	pCi/l	pCi/I	pCi/I	%	%		%			%	%
Radium-228	16.7	2.07	18.3	16.3	97.2	85.1	1	70.0-130			11.7	20
(T) Barium		104			106	91.0						
(T) Yttrium	tot to, i	84.4			85.0	95.0						

WG2394991

QUALITY CONTROL SUMMARY

L1790405-01

Method Blank (MB)

Radiochemistry by Method SM7500Ra B M

(MB) R4143170-1 11/06/2	24 18:46				
	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
Analyte	pCi/l	-	+/-	pCi/I	pCi/l
Radium-226	-0.00712	П	0.0156	0.0554	0.0411
(T) Barium-133	88.3		88.3		







L1790935-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1790935-04 11/	OS) L1790935-04 11/06/24 18:47 • (DUP) R4143170-5 11/06/24 18:46												
	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	<u>DUP Qualifier</u>	Limits	DUP RER Limit
Analyte	pCi/I	+/-	pCi/l	pCi/I	pCi/l	+/-	pCi/l	pCi/l	%			%	
Radium-226	0.245	0.236	0.300	0.204	0.335	0.285	0.351	0.229	31.2	0.244	<u>1</u>	20	3 June 5 5 60 1866
(T) Barium-133	98.7	reik et in redektel Et samfallerini Et samfallerini			103	103							



[†]Cn







Laboratory Control Sample (LCS)

(LCS) R4143170-2 11/0	6/24 18:46				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/I	pCi/I	%	%	
Radium-226	5.00	5.26	105	80.0-120	
(T) Barium-133			88.4		THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE

L1788559-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1788559-01 1	1/06/24 18:46 • (MS) R	4143170-3 11/0	6/24 18:46 • (MSD) R4143170-	4 11/06/24 1	18:46							
(,-	Spike Amount			MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/I	pCi/l	pCi/l	pCi/I	%	%		%			%	**************************************	76
Radium-226	20.0	0.452	17.6	17.5	85.8	85.0	1	75.0-125	parent of the text of the		0.969	ar warn of Tensors	
(T) Barium-133		94.2			99.1	102				Hari Ha			

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The Information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Tc

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.



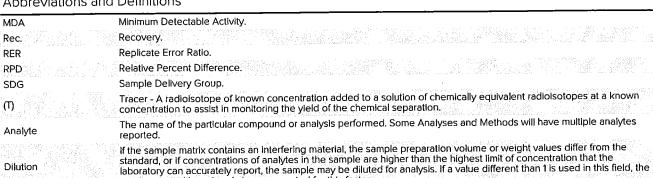
Ss

Cn

Sr

Ср

Abbreviations and Definitions





Qc

laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor. These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal Limits



for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or



The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.

This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable. Qualifier The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was

no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL

(Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte

Uncertainty (Radiochemistry)

Case Narrative (Cn)

Result

Original Sample

Confidence level of 2 sigma.

A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.

Quality Control Summary (Qc)

This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.

Sample Chain of Custody (Sc)

This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.

Sample Results (Sr)

This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.

Sample Summary (Ss)

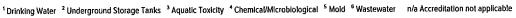
This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
Ü	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd M	Yount Juliet, TN 37122
Tace Analytical Halloria 12000 Ecounor No it	Todite bolled, 111 07 122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia 1	923	North Dakota	R-140
Idaho	TN00003	Ohlo-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
lowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky 1 6	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louislana	Al30792	Tennessee 14	2006
Louislana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginla	110033
Minnesota	047-999-395	Washington	CB47
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		



^{*} Not all certifications held by the laboratory are applicable to the results reported in the attached report.



















^{*} Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Internal Transfer Chain		4.444			F234	Pace		
Workorder: 10712045 Workorder Report To	Samples Pi		Cert.	Of Origin Needed: or Receive	X Yes		Results Requeste	d By: 11/14/2024
Piper Gibbs Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-6456	Mt. Juliet,	banon Rd , TN 37122 15) 758-5858			Radium 226/228			
Samp Item Sample ID Type	CONTRACTOR STATE OF THE STATE O	ab ID Matrix	Preserved Conf	iainers::::	Ra			LAB USE ONLY
1 24A2723 H-12 PS	10/14/2024 13:42 10	0712045001 Water 2			Х			-0/
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					sayas (1885)		Comments	
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2		Christoph & Sel	lein .	voksh40	900			
Cooler Temperature on Receipt		ody Seal Y or N	Rece	eived on	lce Y o			ct Y or N

COC Seal Present/Intact: COT Signed/Accurate: Bottles arrive intact: Correct bottles used: Sufficient volume sent:	Y N Y N Y N Y N Y N Y N	eipt Checklist If Applicable VOA Zero Headspace: Fres. Correct/Check:	
RA Screen <0.5 mR/hr:	€_N		

^{***}In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.





Ship To: Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10712045

(To be completed by sending lab)

Sending Project No:	10712045
Receiving Project No:	
Check Box for Consolidated Involce:	
Date Prepared:	10/17/24
REQUESTED COMPLETION DATE:	11/14/2024

		i	
Sending Region	IR10-Minnesota	Sending Project Mgr.	Piper Glbbs
Receiving Region	IR850-Pace National	External Client	MVTL Laboratories
State of Sample Origin	MN	QC Deliverable	STD REPORT
Citato di Campio Crigini			

All questions should be addressed to sending project manager.

Requested Reportable Units	Report We	t or Dry Weigh	t? Dry We	ight IRW	/O Lab Ne	ed to run?	Cert. Needed
		WORK	REQUEST	ED			
Method Description		Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Radium 226/228	i dagak bapatakat satis	BP1N	2	HNO3	1	SI-38RAD	SUB PASI RAD
Special Requirements: Report C, QC	Links (O)	I IX OILLY ME	1 200 10			······	
	OR ANALYTIC	CAL WORK C	OMPLETE	D THIS SECTIO	N ALSO		
		CAL WORK C	OMPLETE	D THIS SECTIO	n also		
F.		No	OMPLETE		N ALSO		

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

This is an exact copy of the original document

Minnesota Valley Testing Laboratories

1126 North Front Street Phone: 800 782 3557

Comments:

New Ulm, MN 56003 Fax: 507 359 2890

Field Service Chain of Custody Record

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		Power Com		Project T			ne Plant (<u> Nan</u>	ne ot	Sam	nplers:		^ _	0,		. 14.4	
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Phone:	218-739-8	3349							<u></u>									
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\int_{\cdot}^{-}		\overline{I}	1	7	T 0	\overline{I}	1000 HNO3 Inner 500 None	\mathcal{T}	$\overline{}$	7	\int	7.	1000 HNO3 Pace	III	Other: 150 H2C	Š /	<u> </u>	7
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							2				
Samples Relino	quished By:	DF			Samp	les Received By:	N				
Date: 1400	124	Time:	620 Ter	np:0:57551	Date:	140ct 24		Time: 6	26:20	Temp: 0.5	C TM77
Samples Relino		Fffge	Log in Cart	Other:							
Samples Relind	uished By:		<		Samp	les Received By:					
Date:		Time:	Ter	np:	Date:			Time:		Temp:	
Delivery:	Sample	8 Other:		·	Seal I	Number(s) - If Use	ed				
Transport:	Ambie	ce	Oth	er:	Seals	Intact?	Yes	5	No		

Oct 2024

2024 Big Stone Sampling - CCR

Landfill or ADA wells

	Site	Parameter List	Well Depth (constructed)	Diameter (Inches)	Well Elevation (TOC)	Sample Equipment	Dedicated?	Pump Rate (ml/minute)	Goes Dry?	Sampling Seasons**
H2OX		CCR 3	32.20	2	1103.86	Bladder	Yes	100	Yes	April & Oct
H3OX		CCR 3	22.55	2	1095.26	Bladder	Yes	100	Yes	April & Oct
H4OX		CCR 3	27.20	2	1108.25	Bladder	Yes	100	No	April & Oct
H6		CCR 3	15.00	2	1097.76	Bladder	Yes	100	Yes	April & Oct
H8		CCR 3	22.05	· 2	1081.23	Bladder	Yes	100	No	April & Oct
H9		CCR 3	30.20	2	1086.21	Bladder	Yes	100	No	April & Oct
H10		CCR 3 _{gend 4}	35.49	2	1090.83	Bladder	Yes	100		See highlighted note below See highlighted
H11		CCR 3 and 4	42.15	2	1093.24	Bladder	Yes	100		note below
H12		CCR 3 and 4	22.00	2	1127.40	Bladder	Yes	100		See highlighted note below

Note: Wells H10 and H11 need to be sampled in February, April and June for CCR 3 and CCR 4. This will complete CCR Background sampling for these wells. Wells H10 and H11 will then be sampled in October for CCR 3 like a normal, CCR event.

Well H12 will be sampled in February, April, June, August, October, and December for CCR 3 and CCR 4. This will complete CCR Background sampling for this well.

Note: CCR sampling is for total recoverable metals. They are not filtered in the field.

CCR 3 & 4 parameters see the first two tabs labeled CCR 3 and CCR 4

CCR - Appendix III Detection Monitorin	CCR - Append	ix III Detection	on Monitoring
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Field Parameters

рН*

* Field and Laboratory Measurements

Total Concentration Parameters Method

Boron- 6010 Calcium- 6010

Chloride SM4500 CL E
Fluoride EPA 300

 pH^
 SM 4500 H+B-96

 Sulfate
 ASTM D516

 Dissolved Solids, Total
 SM 2540 C-97

Note: These are non-filtered samples.

001 4007

CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
_ Antimony	SW6020A
Arsenic	SW602A
-Barium	SW6010C
-Beryllium	SW6020A
Cadmium	SW6020A
-Chromium, Total	SW6020A
-Cobalt	SW6010C
Fluoride	EPA 300
-Lead	SW6020A
-Lithium	SW6010C
_Mercury	EPA 245.7
-Molybdenum	SW6020A
Selenium	SW6020A
-∓hallium	SW6020A
_Radium 226 + 228	

Note: These are non-filtered samples.

Groundwater Assessment	Site:	Otter Tail Power Co./ Big Stone
Sampling Personnel:	Facility ID:	
Siw	Date: 14 0	CF 24
	Unique Station	·
	Sample ID:	Well H2OX
Well Condition		_
Well Locked? YES No	Protective Po	
Well Labeled? No	State ID Tag	
Casing Straight? Yes No	Grout Seal In	tact? Yes No
Repairs Necessary:		
Well Information		
Well Depth: 32-83	Well Casing I	
Constructed Depth: 32.20	Static Water	
Casing Diameter: 2"	Previous State	tic: 1096-69
Water Level Before Purge: 10.62	Water Level	After Sample: BEICH PUMP
Well Volume: 3.62 Gallons	Measuremen	t Method: Elec WLI Steel Tape
Sampling Information		.5
Weather Conditions: Temp: 47	Wind: LLV	Sky: / C- ^
Sampling Method: Grundfos Bladder SS/	r Disp. Bailer Whale	Grab Other:
Dedicated Equipment: Yes No	Pumping Rat	e: , 25 gpm
Well Purged Dry? Yes? No	Time Pump E	Began: //54 (am) pm
Time Purged Dry? 7209	Time of Sam	pling: 1214 am 1/pm
Duplicate Sample? Yes DD:	Sample EH:	63.8
Sample Appearance: General: C/eq/	Color: パダフレ Phase	() Odor: 101 -
15 Specific Temp	D. O. Turbidity	Gallons SEQ
Time / pH Cond. C	mg/L NTU	Removed # Comments:
1209 6.41 3503 9.27	NA M	3.75 1
		2
1214 6.45 3502 97	4 1	- 3 Rechinge
		4 _
		5
Stabilized? Yes	Amount Water Removed:	3-75 Gallons
Comments:		

Groundwater Assessment		Site:	Otter 7	ail Powe	r Co./ Big Stone
Sampling Personnel:		Facility ID:			
RW		Date: 14 0	SCY 24		
		Unique Statio	n ID:		
		Sample ID:	<i>f</i>	Well	нзох
Well Condition					2
Well Locked? Yes No		Protective Po State ID Tag?			<u>(で)</u> (10)
Well Labeled? Yes No Casing Straight? Yes No		Grout Seal In			10'
Repairs Necessary:		<u> </u>		·····	
Well Information					
Well Depth: 22.68		Well Casing E			095.19
Constructed Depth: 22.55		Static Water	Elevation:	687.3	24
Casing Diameter: 2"		Previous Stat	tic: 10%)		
Water Level Before Purge: 7.85		Water Level	After Sample	: Bc	Ku Fun
Well Volume: 2.42 Gallons	_	Measurement	t Method:	Elec. W	LI Steel Tape
Sampling Information		/		Fa,'r	
- //6		/ / \		- E	
Weather Conditions: Temp: 45	Wind:	LUV	Sky: i	, 4,	
Weather Conditions: Temp: 90 Sampling Method: Grundfos Bladder SS/T	Wind: Disp. Bailer	Whale	Grab Other:		
) 	Whale Pumping Rate	Grab Other:		gpm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No) 		Grab Other:		
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No) 	Pumping Rat	Grab Other: e: .26 Began: /C	14	gpm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? 10 24) 	Pumping Rat	Grab Other: e: .25 Began: /C pling: /C	14	gpm apr pm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Yes No ID:	Disp. Bailer	Pumping Rat Time Pump E	Grab Other: e: .26 Began: /C pling: /C. 235. 7	14 29	gpm apr pm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car	Disp. Bailer Color:	Pumping Rat Time Pump E Time of Sam Sample EH:	Grab Other: e: .26 Began: /C pling: /C. 235.7 :	14 29	gpm am / pm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car	Disp. Bailer Color:	Pumping Rat Time Pump E Time of Sam Sample EH: Pro Phase Turbidity NTU	Grab Other: e: .26 Began: /C pling: /C. 235. 7	14 2 9	gpm am / pm
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car Time pH Specific Cond.	Disp. Bailer Color: D. O. mg/L	Pumping Rat Time Pump E Time of Sam Sample EH: Pro Phase Turbidity NTU	Grab Other: e: .25 Began: /C pling: /C 235.7 :	14 2 9 (SEQ	gpm am / pm Odor: NO T
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car	Disp. Bailer Color:	Pumping Rat Time Pump E Time of Sam Sample EH: Or Phase Turbidity	Grab Other: e: 25 Gegan: /C pling: /C 235 : /O1 Gallons Removed	14 29 SEQ #	gpm am / pm Odor: NO T
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car Time pH Specific Cond.	Disp. Bailer Color: D. O. mg/L	Pumping Rat Time Pump E Time of Sam Sample EH: Pro Phase Turbidity NTU	Grab Other: e: 25 Gegan: /C pling: /C 235 : /O1 Gallons Removed	SEQ	gpm am / pm Odor: NO T
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car Time pH Specific Cond.	Disp. Bailer Color: D. O. mg/L	Pumping Rat Time Pump E Time of Sam Sample EH: Pro Phase Turbidity NTU	Grab Other: e: 25 Gegan: /C pling: /C 235 : /O1 Gallons Removed	SEQ # 1 2 3	gpm am / pm Odor: NO T
Sampling Method: Grundfos Bladder SS/T Dedicated Equipment: Yes No Well Purged Dry? Yes No Time Purged Dry? Duplicate Sample? Yes No Sample Appearance: General: C/car Time pH Cond. Temp Cond. 13.28	Color: D. O. mg/L	Pumping Rate Time Pump E Time of Sam Sample EH: Phase Turbidity NTU	Grab Other: e: 25 Gegan: /C pling: /C 235 : /O1 Gallons Removed	SEQ # 1 2 3	am / pm am / pm Odor: 🗸 🔾 😙

Comments:

Groundwater Asse	essment			Site:	Otter T	ail Pow	er Co./ Big Stone
Sampling Personnel:	n			Facility ID:			
	BW			Date: 14 C	oct 24_		
				Unique Static	on ID:		
	<u></u>			Sample ID:		Wel	H4OX
Well Condition	~		······································				
Well Locked?	Yes No			Protective Po			40) 10)
Well Labeled?	Yes No			State ID Tag			No
Casing Straight?	<u>(es 140</u>			Stout God. II			
Repairs Necessary: Well Information							
	27.48			Well Casing	Elevation:		1108.22
Well Depth:				Static Water		088	72
Constructed Depth:	27.20			Previous Sta	10.0		
Casing Diameter:	2" Irae: /9-5				, ,	- '/ >	CN PURP
Water Level Before Pu					After Sample:	-	
Well Volume:	1.30	Gallons		Measuremer	nt Method:	Elec. V	VLI Steel Tape
Sampling Informati	on L	17		, 	0 1 4	F. 6	
Weather Conditions:	Temp: 7		Wind: L	iv	Sky: /	4,7	
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Yes No			Pumping Ra	11/		gpm (am) / pm
Well Purged Dry?	¥es No	•		Time Pump		<u> 3</u>	
Time Purged Dry?	1109	_		Time of San	100 11	<u>4</u>	æmil/pm
Duplicate Sample?	Yes 450	ID:		Sample EH:	168.4		
Sample Appearance:	General:	Clear	Color: N	とつし Phase	E NOTE		Odor: NO42
	Specific	Temp	D. O.	Turbidity	Gallons	SEQ	·
Time pH	Cond.	°c	mg/L	NTU	Removed	#	Comments:
1109 6.44	2241	9.17	NA	NA	1.5	1	
						2	
1114 6.51	22/8	9.16				3	Recharge
						4	, , , , , , , , , , , , , , , , , , ,
						5	
	72(0)		Amount Wa		1.5		Gallons

Comments:

Groundwater Assessment		Site:	Otter 7	ail Powe	er Co./ Big Stone
Sampling Personnel:		Facility ID:			
DF		Date:	140072	4	
		Unique Station	on ID:		
	_	Sample ID:		We	ell H8
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:		Protective Po State ID Tag Grout Seal In	? Yes	(No RO De
Well Information					
Well Depth: 22.33		Well Casing	Elevation:		1081.23
Constructed Depth: 22.05		Static Water	Elevation:		70.46
Casing Diameter: 2"		Previous Sta	itic:		
Water Level Before Purge: 10,77		Water Level	After Sample		2.53
Well Volume: 199 Gallons		Measuremer	nt Method:	Elec. V	Steel Tape
Sampling Information			<u> </u>	e 11	
Weather Conditions: Temp: 45	Wind:	LTV_	Sky:	<u>Cldy</u>	<u>/</u>
Sampling Method: Grundfos Bladder \$2/T	Disp. Bailer	Whale	Grab Other:	20-	
Dedicated Equipment: YES No		Pumping Ra			gpm om /
Well Purged Dry? Yes 🌀		Time Pump		216	am / 📆
Time Purged Dry?		Time of San		240	am / 🕅
Duplicate Sample? Yes 10:	<u> </u>	Sample EH:	79.0	·	
Sample Appearance: General: Class	Color: No	re Phase	e: Nac		Odor: Nore
Time pH Specific Temp °C 1224 7.16 1397 10.74		Turbidity NTU	Gallons Removed	SEQ #	Comments:
1232 7.16 1397 10.7:			1	2	
1240 2.16 1397 10.78	7	1 1	<u> </u>	3	
1240 616 1317 10178	^		T	1	
1270 000				4	
			ı: 6	5	

Comments:

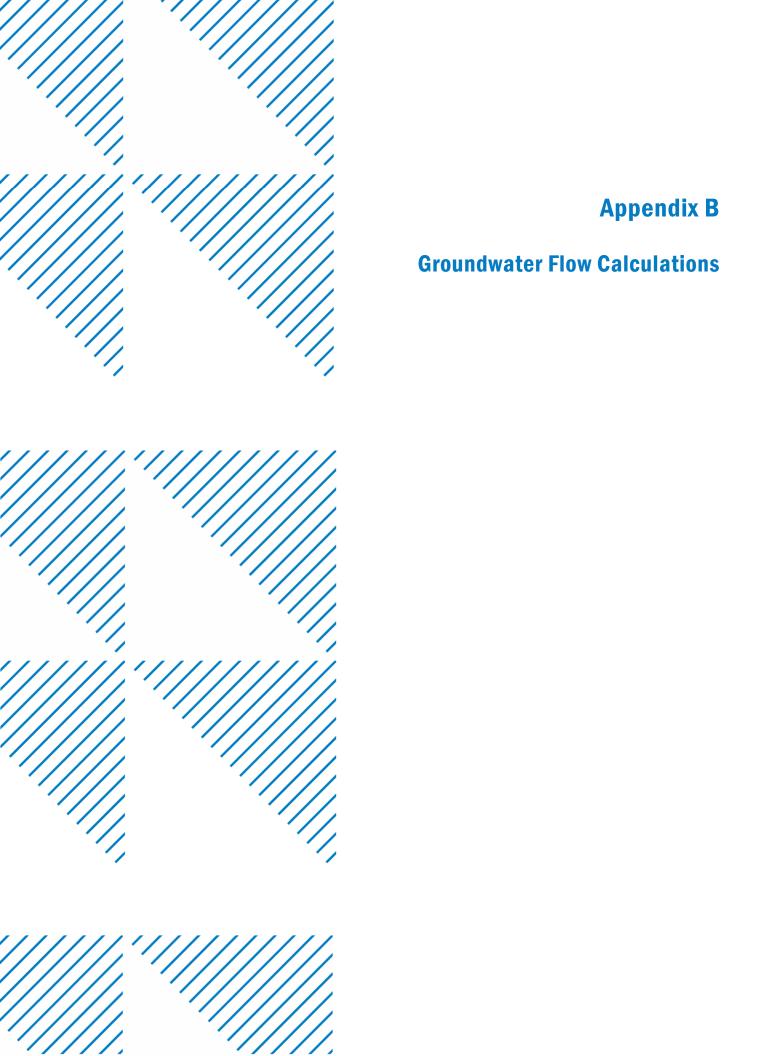
Groundwater Assessment			Site:	Otter	Tail Pov	er Co./ Big Stone
Sampling Personnel:			Facility ID:			
OF .	_	•	Date:	140d	24_	
	_		Unique Stati	on ID:		
	_		Sample ID:		W	ell H9
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	_		Protective Postate ID Tag Grout Seal In	? Yes		No No
Well Information						4000.04
Well Depth: 30.71	_		Well Casing		107	1086.21
Constructed Depth: 30.20	_		Static Water		07	3.11
Casing Diameter: 2"	- .		Previous Sta			
	10		Water Level	After Sample		6.50
Well Volume: 2.87	Gallons	_	Measureme	nt Method:	dec.	XI Steel Tape
Sampling Information Weather Conditions: Temp:	45	Wind: Disp. Bailer	L+V Whale	Sky:	Ud	
Sampling Method: Grundfos Dedicated Equipment: Yes No	Bladder S8/T	Disp. Ballel	Pumping Ra	-	25	gpm
Dedicated Equipment: Yes No Well Purged Dry? Yes Yo	_		Time Pump		245	am / 🚳
Time Purged Dry?	_		Time of San		321	am / 🙌
Duplicate Sample? Yes	– ID: <i>–</i>	_	Sample EH:			
Sample Appearance: General:	Clear	Color: N	Phase	/1		Odor: None
Time PH Specific Cond.	Temp ^O C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1257 6.62 3246	9.89	NA	NA	3	_ 1	
1309 6.60 3249	9.90	1	1	6	2	
1321 6.60 3265				9	3 _	
			1 7		4	
	 		1		5	
Stabilized? Yes No		Amount \\/	ater Removed	9		Gallons
Stabilized? Yes No Comments:		, another views		·	_	

Groundwater Assessment	Site:	Otter Tail Power Co./ Big Stone
Sampling Personnel:	Facility ID:	
BW	Date: 14 d	oct zy
	Unique Station	n ID:
	Sample ID:	H10
Well Condition		
Well Locked?	Protective Pos	sts? Yes
Well Labeled? Yes No	State ID Tag?	
Casing Straight? Yes No	Grout Seal Int	act? Yes No
Repairs Necessary:		
Well Information		
Well Depth: 38-53	Well Casing E	
Constructed Depth: 35.49	Static Water E	Elevation: 1076.17
Casing Diameter: 2"	Previous Stati	
Water Level Before Purge: 14.しん	Water Level A	After Sample: Belowfung
Well Volume: 3.89 Gallons	Measurement	Method: Elec. WLJ Steel Tape
Sampling Information		
Weather Conditions: Temp: 4フ	Wind: LU	sky: Fair
Sampling Method: Grundfos Bladder S	T Disp. Bailer Whale G	Grab Other:
Dedicated Equipment: (es No	Pumping Rate	e: _25 gpm
Well Purged Dry? Yes No	Time Pump B	egan: /220 am /內面)
Time Purged Dry? 1236	Time of Samp	oling: 129/ am / pm
Duplicate Sample? Yes No ID:	Sample EH:	-216.5
Sample Appearance: General: Cle	Color: NO7~Phase:	None, Odor: Scel Fund
Specific Temp	D. O. Turbidity	Gallons SEQ
Time pH Cond. C		Removed # Comments:
1236 6.28 4430 9.0	4 /	4 1
		2
1241 6.38 4396 9.0	6 1 1	- 3 Rechange
		4
		
		[5 I
Stabilized? Yes No	Amount Water Removed:	4 Gallons

		Site:	Ollei	Tall Pow	er Co./ Big Stone
Sampling Personnel:	•	Facility ID:			
DS		Date:	14x	+24	
		Unique Station	n ID:		
		Sample ID:			H11
Well Condition					
Well Locked? Yes No	•	Protective Po			No.)
Well Labeled? Yes No Casing Straight? Yes No		State ID Tag? Grout Seal Int			No No
Repairs Necessary:		Clour Gear Inc	acti (Tes)		110
Well Information					
Well Depth: 44.37		Well Casing E	Elevation:		1093.24
Constructed Depth: 42.15		Static Water E	Elevation:	1	079.28
Casing Diameter: 2"		Previous Stati	ic:	1	278.43
Water Level Before Purge: 13.96		Water Level A	After Sample	: 3	? 8.73
Well Volume: 4.95 Gallons		Measurement		Elec. V	
Sampling Information					
Weather Conditions: Temp: 448	Wind:	CtV	Sky:	<u>0</u>	cest
Sampling Method: Grundfos Bladder SSA	▶ Disp. Bailer	Whale C	Grab Other:		
Dedicated Equipment: Yes No & A5		Pumping Rate	e: O, a	<u> </u>	gpm
Well Purged Dry? Yes He 140CH	24	Time Pump B	egan: /	<u> 347</u>	am / (pm)
Time Purged Dry? (407)	_	Time of Samp	oling: 14	112	am /(pm)
Duplicate Sample? Yes No ID:		Sample EH:	-16	56.5	
Sample Appearance: General: Clear	Color: N	On Phase:	None		Odor: None
Specific Temp	D. O.	Turbidity (Gallons	SEQ	
Time pH Cond. °C	mg/L		Removed	#	Comments:
1407 666 5290 9.01	NA	NA		1	_
	1			2	
				3	
		1 1	·	4	
1417 6.66 5284 9.00	1			5	recharge
		ater Removed:	5		Gallons
Stabilized? Yes No	AITIOUTIL VV	ator Itomoved.			

Groundwater Assessment		Site:	Otter	Tail Po	wer Co./ Big Stone
Sampling Personnel:		Facility ID:			
05		Date:	14	0ct24	1
		Unique Statio	n ID:		
		Sample ID:			H12
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:		Protective Po State ID Tag? Grout Seal In	Yes		(No) (No)
Well Information					. /
Well Depth: 22.63		Well Casing I	Elevation:		NA
Constructed Depth: 24.00		Static Water	Elevation:		
Casing Diameter: 2"		Previous Stat	ic:		
Water Level Before Purge: 17,94		Water Level /	After Sample	e:	18.02
Well Volume: 0.77 Gallons		Measurement	Method:	Elec.	WL) Steel Tape
Sampling Information					
Weather Conditions: Temp: 44	Wind:	L+V	Sky:	Nis	Hy Clardy
Sampling Method: Grundfos Bladder SS	Disp. Bailer	Whale	Grab Other:		/ 0
Dedicated Equipment: Yes No		Pumping Rate	e: <u>O</u>	55	gpm
Well Purged Dry? Yes (No)		Time Pump E	Began:	33	
Time Purged Dry? —		Time of Sam	pling: /	342	am /(pm)
Duplicate Sample? Yes No ID:		Sample EH:	6	<u> 0.9</u>	
Sample Appearance: General: 7 Clouds	Color: No	Phase:	lae	<u> </u>	Odor: None
Specific Temp	D. O.	Turbidity	Gallons	SEQ	
Time pH Cond. OC	mg/L		Removed	#	Comments:
1334 8.22 385 11.20		NA		1	
1338 8.23 382 11.23	3		2	2	
1342 8:23 380 11.18	3 1	-/	3	3	
				4	
				5	
Stabilized? (Yes No	Amount Wa	ater Removed:	3	<u> </u>	Gallons
Comments:					

Groundwater Ass	sessment			Site:	Otter	Tail Pov	ver Co./	Big Stone
Sampling Personnel:				Facility ID:				
\mathcal{L}	R			Date:	14002	1		
V	•	-		Unique Stat	ion ID:			
		_		Sample ID:		V	/ell_H6	
Well Condition			· 					
Well Locked?	Yes No	_		Protective F			No	
Well Labeled? Casing Straight?	Yes No	_		State ID Ta Grout Seal			(40) (40)	
Repairs Necessary:		_						
Well Information							· ·	
Well Depth:	17.92	_		Well Casing	g Elevation:		VA	
Constructed Depth:	17.70			Static Wate	r Elevation:	.		
Casing Diameter:	2"	_		Previous St	atic:	-	<u></u>	
Water Level Before P	urge: 6	86		Water Leve	el After Sample	: be	bw s	DumP_
Well Volume:	2.17	Gallons	_	Measureme	ent Method:	Elec.		Steel Tape
Sampling Informat	ion					ا ا		
Weather Conditions:	Temp:	45	Wind:	<u> </u>	Sky:		bly,	
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:			
Dedicated Equipment	: Yes No	_		Pumping R	·	<u>5</u>	gpm	
Well Purged Dry?	Y ee No			Time Pump				am / 6m)
Time Purged Dry?			,	Time of Sa		211_		am / m
Duplicate Sample?	Yes No			Sample EH	<u>: </u>			
Sample Appearance:	General:		Color:	Phas	se:		Odor:	
Time pH	Specific Cond.	Temp ^o C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comm	ents:
						1		
						2		
	<u> </u>					3		
			+	\leftarrow	-	1.	 	
		<u> </u>		 		4	 	
						5		
Stabilized? Yes	No		Amount W	ater Remove	d:	<u> </u>	Gallon	8
Comments:		-1054	Accient	Volume	to pur	p/59	rple	
Exceptions to Protoco	ol:	- NE	, Sym	ple!				



Date 2/19/2024

Kh	2.10E-04	cm/s	Groundwater Monitoring System Report (Barr, 2016)
KII	5.95E-01	ft/day	
n	0.25		Groundwater Monitoring System Report (Barr, 2016)

	Top of Casing	Depth to	Water Level
	Elevation (1)	Water	Elevation
	ft amsl	ft below TOC	ft amsl
Н3ОХ	1095.26	5.74	1089.52
H9	1086.21	8.55	1077.66

⁽¹⁾ Groundwater Monitoring System Report (Barr, 2016)

horizontal distance, ft

	НЗОХ
H9	2272.3

difference in WL elevation, ft

	НЗОХ
H9	11.86

horizontal gradient, ft/ft

	НЗОХ	
H9		0.00522

V, ft/d

	НЗОХ
H9	0.01243

V, ft/yr

	НЗОХ
H9	4.5

Date 4/15/2024

Kh	2.10E-04	cm/s	Groundwater Monitoring System Report (Barr, 2016)
KII	5.95E-01	ft/day	
n	0.25		Groundwater Monitoring System Report (Barr, 2016)

	Top of Casing	Depth to	Water Level
	Elevation (1)	Water	Elevation
	ft amsl	ft below TOC	ft amsl
Н3ОХ	1095.26	6.68	1088.58
H9	1086.21	8.02	1078.19

⁽¹⁾ Groundwater Monitoring System Report (Barr, 2016)

horizontal distance, ft

	НЗОХ
H9	2272.3

difference in WL elevation, ft

	НЗОХ
H9	10.39

horizontal gradient, ft/ft

	НЗОХ	
H9		0.00457

V, ft/d

	НЗОХ
H9	0.01089

V, ft/yr

	НЗОХ
H9	4.0

Date 6/10/2024

Kh	2.10E-04	cm/s	Groundwater Monitoring System Report (Barr, 2016)
KII	5.95E-01	ft/day	
n	0.25		Groundwater Monitoring System Report (Barr, 2016)

	Top of Casing	Depth to	Water Level
	Elevation (1)	Water	Elevation
	ft amsl	ft below TOC	ft amsl
Н3ОХ	1095.26	2.71	1092.55
H9	1086.21	12.73	1073.48

⁽¹⁾ Groundwater Monitoring System Report (Barr, 2016)

horizontal distance, ft

	НЗОХ
H9	2272.3

difference in WL elevation, ft

	НЗОХ
H9	19.07

horizontal gradient, ft/ft

	НЗОХ	
H9		0.00839

V, ft/d

	H3OX
H9	0.01998

V, ft/yr

	H3OX
H9	7.3

Date 8/12/2024

Kh	2.10E-04	cm/s	Groundwater Monitoring System Report (Barr, 2016)
KII	5.95E-01	ft/day	
n	0.25		Groundwater Monitoring System Report (Barr, 2016)

	Top of Casing	Depth to	Water Level
	Elevation (1)	Water	Elevation
	ft amsl	ft below TOC	ft amsl
НЗОХ	1095.26	5.13	1090.13
H9	1086.21	16.93	1069.28

⁽¹⁾ Groundwater Monitoring System Report (Barr, 2016)

horizontal distance, ft

	H3OX
H9	2272.3

difference in WL elevation, ft

	НЗОХ
H9	20.85

horizontal gradient, ft/ft

	НЗОХ
H9	0.00918

V, ft/d

	H3OX
H9	0.02185

V, ft/yr

	H3OX
H9	8.0

Date 10/14/2024

Kh	2.10E-04	cm/s	Groundwater Monitoring System Report (Barr, 2016)
KII	5.95E-01	ft/day	
n	0.25		Groundwater Monitoring System Report (Barr, 2016)

	Top of Casing	Depth to	Water Level Elevation	
	Elevation (1)	Water		
ft amsl		ft below TOC	ft amsl	
Н3ОХ	1095.26	7.85	1087.41	
H9	1086.21	13.10	1073.11	

⁽¹⁾ Groundwater Monitoring System Report (Barr, 2016)

horizontal distance, ft

H3OX				
H9	2272.3			

difference in WL elevation, ft

	НЗОХ
H9	14.30

horizontal gradient, ft/ft

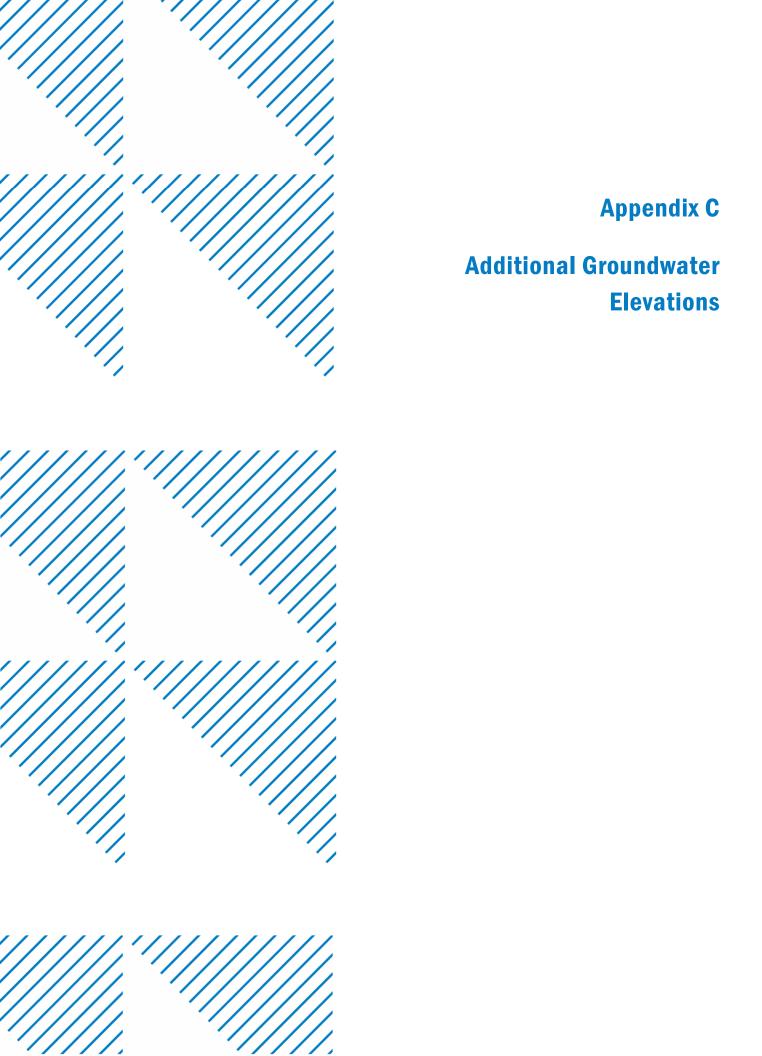
	НЗОХ	
H9		0.00629

V, ft/d

	H3OX
H9	0.01498

V, ft/yr

	H3OX
H9	5.5



Appendix C Additional 2024 Water Elevations Big Stone Plant Otter Tail Power Company

Location	Well Casing Elevation	2/19/2024	4/15/2024	6/10/2024	8/12/2024	10/14/2024
	ft AMSL	ft AMSL	ft AMSL	ft AMSL	ft AMSL	ft AMSL
H10	1090.83	1075.85	1080.06	1085		1076.17
H11	1093.24	1082.61	1083.12	1086.69		1079.28
H1INT	1115.81	1090.27	1090.61	1094.04	1090.01	1087.23
H1OX	1115.89	1090.88	1091.01	1094.83	1090.56	1088.19
H2I	1103.91	1042.47	1042.8	1048.7	1042.55	1042.14
H2OX	1103.86	1094.97	1097.96	1098.99	1095.91	1093.24
H3I	1095.17	1068.98	1066.93	1073.12	1068.08	1067.17
НЗОХ	1095.26	1089.52	1088.58	1092.55	1090.13	1087.41
H4I	1108.61	1092.51	1092.89	1095.36	1092.82	1088.47
H4OX	1108.25	1091.59	1092.27	1095.46	1092.87	1088.75
H5	1122.8	1112.17	1111.04	1116.59	1113.85	1110.59
H6	1097.76	1085.62	1087.13	1090.17	1087.05	1080.9
H7	1106.06	1084.34	1084.35	1087.35	1087.54	1082.68
H8	1081.23	1076.25	1075.76	1066.57	1062.38	1070.46
H9	1086.21	1077.66	1078.19	1073.48	1069.28	1073.11
WELL 1	1090.71	1026.06	1026.69	1030.06	1029.53	1025.26
WELL 10	1098.7	1082.36	1082.82	1083.91	1082.22	1082.59
WELL 11	1104	1007.88	1008.6	1008.67	1006.35	1008.1
WELL 12	1071.89	1006.78	1007	1009.76	1006.15	1006.01

Notes:

-- Not Measured