



2024 Annual Groundwater Monitoring and Corrective Action Report (Rev. 1)

*Milton R. Young Station
Coal Combustion Residuals (CCR) Disposal Facility
Center, ND*

Prepared for
Minnkota Power Cooperative, Inc.



December 2024 (*Amended March 2025*)

2024 Annual Groundwater Monitoring and Corrective Action Report
(Rev. 1)

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Contents

Summary for CCR Unit [§257.90(e)/33.1-20-08-06]..... iii

1.0 Introduction 1

2.0 CCR Unit Groundwater Monitoring and Corrective Action Program 8

2.1 Groundwater Monitoring System..... 8

2.1.1 Documentation of Monitoring System 8

2.1.2 Key Actions Completed/Problems Encountered..... 8

2.1.3 Key Activities for Upcoming Year..... 8

2.2 Analytical Results and Statistical Evaluation 9

2.2.1 Documentation of Results and Evaluation 9

2.2.2 Key Actions Completed/Problems Encountered..... 9

2.2.3 Key Activities for Upcoming Year.....10

3.0 Non-CCR Unit Groundwater Monitoring and Corrective Action Program10

3.1 Groundwater Monitoring System.....10

3.1.1 Documentation of Monitoring System10

3.1.2 Key Actions Completed.....11

3.1.3 Key Activities for Upcoming Year.....11

3.2 Analytical Results and Statistical Evaluation11

3.2.1 Documentation of Results and Evaluations11

3.2.2 Key Actions Completed/Problems Encountered.....11

3.2.3 Key Activities for Upcoming Year.....12

4.0 References13

List of Tables

Table 1	CCR Rule Requirements and Compliance
Table 2	Monitoring Well Construction Details
Table 3	Water Quality Results
Table 4	Field Blank Results
Table 5	Water Level Results

List of Figures

Figure 1	Facility Layout
Figure 2	CCR Monitoring Network
Figure 3	July 2024 Groundwater Elevations
Figure 4	October 2024 Groundwater Elevations

List of Appendices

Appendix A	Statistical Review for SSIs: Event 1
Appendix B	Statistical Review for SSIs: Event 2
Appendix C	Time Series Graphs for Appendix III Constituents
Appendix D	Statistical Review for Non-CCR Unit: Event 1
Appendix E	Statistical Review for Non-CCR Unit: Event 2
Appendix F	Time Series Graphs for Non-CCR Unit
Appendix G	Sampling Field and Laboratory Reports

Summary for CCR Unit [§257.90(e)/33.1-20-08-06]

This report satisfies the annual reporting requirements of Environmental Protection Agency 40 CFR § 257.90 (e) and North Dakota Administrative Code 33.1-20-08-06 for annual groundwater monitoring and corrective action reporting. At the beginning, end, and throughout 2024, the CCR unit was operating under the detection monitoring program outlined in § 257.94/§ 33.1-20-08-06-04. There were no statistically significant increases for any constituent listed in appendix III to the EPA CCR Rule and appendix I to the NDDEQ CCR Rule; therefore, no assessment monitoring program (§ 257.95)/ (§ 33.1-20-08-06-05), or related corrective or remedial measures (§ 257.96, § 257.97, and § 257.98)/ (§ 33.1-20-08-06-06-08)), were necessary.

1.0 Introduction

Minnkota Power Cooperative, Inc. (Minnkota) owns and operates Milton R. Young Station (Facility), which includes the Coal Combustion Residuals (CCR) cells shown on Figure 1. The Facility is located about five miles southeast of the town of Center in Oliver County in west-central North Dakota.

The CCR cells are shown in more detail on Figure 2, which also shows the Facility CCR groundwater monitoring well network. Landfill Cell 1 was closed prior to October 19, 2015; therefore, it is not subject to the CCR Rule requirements for groundwater monitoring. However, as required by North Dakota Administrative Code (NDAC) 33.1-20-13 and the North Dakota Department of Environmental Quality (NDDEQ), groundwater monitoring downgradient of Cell 1 has been conducted since 1992 and will be continued via two Non-CCR unit wells. Cell 1 and these downgradient wells will be referred to as the "Non-CCR unit". Groundwater monitoring of the Non-CCR unit is summarized in Section 3.0. Landfill Cell 2 and Surface Impoundment Cells 3 and 4 are each existing CCR units; therefore, they are required to comply with the provisions of NDAC 33.1-20-08 (Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, referred to herein as the "NDDEQ CCR Rule") and with the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261 Disposal of Coal Combustion Residuals from Electric Utilities, US EPA 2015; 2018; 2020); herein these cells will be referred to as the "CCR unit."

This 2024 Annual Groundwater Monitoring and Corrective Action Report (AGMCAR) is required by NDAC 33.1-20-08 and the CCR Rule. Specific Rule requirements for the AGMCAR and demonstration of compliance are summarized in Table 1 and are described in more detail in Section 2.0.

Table 1 CCR Rule Requirements and Compliance

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)</u>	<u>§33.1-20-08-06-01(e)</u>	<p>Annual groundwater monitoring and corrective action report: For existing CCR landfills and existing CCR surface impoundments, no later than January thirty-first of the year following July 1, 2020, and January thirty-first of each year thereafter, the owner or operator must prepare an annual ground water monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual ground water monitoring and corrective action report no later than January thirty-first of the year following the calendar year a ground water monitoring system has been established, and January thirty-first of each year thereafter. For the preceding calendar year, the annual report must document the status of the ground water monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record. The annual report must be submitted to the department for approval and placed on the facility's publicly accessible internet site by March first of each year. At a minimum, the annual ground water monitoring and corrective action report must contain the following information (subsequent rows in this table), to the extent available:</p>	Yes. See Summary and Section 2.0.
<u>§257.90(e)(1)</u>	<u>§33.1-20-08-06-01(e)(1)</u>	<p>Map/Aerial Image: A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;</p>	Yes. See Section 2.1.1 and Figure 2.
<u>§257.90(e)(2)</u>	<u>§33.1-20-08-06-01(e)(2)</u>	<p>New/Decommissioned Wells: Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;</p>	No wells were installed or decommissioned in 2024.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)(3)</u>	<u>§33.1-20-08-06-01(e)(3)</u>	<u>Sampling Summary:</u> In addition to all the monitoring data obtained under §257.90 - §259.98 and §33.1-20-08-06, a summary including the number of ground water samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;	Yes, all for detection monitoring. See Section 2.2.1, Table 3, Table 4, Table 5, Figure 3, and Figure 4.
<u>§257.90(e)(4)</u>	<u>§33.1-20-08-06-01(e)(4)</u>	<u>Transition Between Programs:</u> A narrative discussion of any transition between monitoring programs (<i>e.g.</i> , the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase (SSI) over background levels; and	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.90(e)(5)</u>	<u>§33.1-20-08-06-01(e)(5)</u>	<u>Other Information:</u> Other information required to be included in the annual report as specified in §257.90 - §259.98 and §33.1-20-08-06	See the responses below for the other information required in §§257.90 through 259.98.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)(6)</u>	<u>NA</u>	<p>Summary: A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:</p> <ul style="list-style-type: none"> • (i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95; • (ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95; • (iii) If it was determined that there was an SSI over background for one or more constituents for one or more constituents listed in appendix III to this part pursuant to §257.94(e): <ul style="list-style-type: none"> ◦ (A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and ◦ (B) Provide the date when the assessment monitoring program was initiated for the CCR unit. • (iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following: <ul style="list-style-type: none"> ◦ (A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase; ◦ (B) Provide the date when the assessment of corrective measures was initiated for the CCR unit; ◦ (C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and ◦ (D) Provide the date when the assessment of corrective measures was completed for the CCR unit. • (v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and • (vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period. 	Yes. See Summary page iii.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(g)(1-3)</u>	<u>§33.1-20-08-06-01(f)(1-2)</u>	<u>Suspension of groundwater monitoring requirements:</u> The department may suspend the ground water monitoring requirements of this section for a CCR unit for up to ten years if the owner or operator provides written documentation that there is no potential for migration of the constituents listed in appendices I and II to this chapter from that CCR unit to the uppermost aquifer during the active life of the CCR unit and the post closure care period. This demonstration must be certified by a qualified professional engineer and approved by the department. . . The owner or operator of the CCR unit may secure an additional ten years for the suspension of the ground water monitoring requirements provided the owner or operator provides written documentation that there continues to be no potential for migration. The documentation must be supported, at a minimum, by the same information required for the initial monitoring suspension and must be certified by a qualified professional engineer and approved by the department. The owner or operator shall submit the documentation of their re- demonstration for the department's review and approval of their extension one year before their ground water monitoring suspension is due to expire. If the existing ground water monitoring extension expires, the owner or operator shall begin ground water detection monitoring according to this section within ninety days. The owner or operator may obtain additional ten-year ground water monitoring suspensions provided the owner or operator continues to make the written demonstration. The owner or operator shall place each completed demonstration, if more than one ten-year suspension period is sought, in the facility's operating record.	No "no migration" demonstration was used.
<u>§257.94(d)(3)</u>	<u>§33.1-20-08-06-04(d)(3)</u>	<u>Detection Monitoring Program:</u> The owner or operator must obtain approval by the department for an alternative ground water sampling and analysis frequency. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency in the annual ground water monitoring and corrective action report required by this section.	No alternative groundwater sampling frequency was used.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.94(e)(2)</u>	<u>§33.1-20-08-06-04(e)(2)</u>	<u>Detection Monitoring Program:</u> The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. The owner or operator shall complete the written demonstration within ninety days of detecting a statistically significant increase over background levels. If a successful demonstration is completed within the ninety-day period, the owner or operator of the CCR unit shall continue with a detection monitoring program under this section, with approval by the department. If a successful demonstration is not completed within the ninety-day period, the owner or operator of the CCR unit shall initiate an assessment monitoring program as required under subsection 5. The owner or operator also shall include the demonstration in the annual ground water monitoring and corrective action report.	There was no SSI over background levels for any appendix III/I constituent. See Section 2.2.2.
<u>§257.95(c)(3)</u>	<u>§33.1-20-08-06-05(c)(3)</u>	<u>Assessment monitoring program:</u> The owner or operator shall obtain approval by the department for an alternative ground water sampling and analysis frequency. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency in the annual ground water monitoring and corrective action report required by this section.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.95(d)(3)</u>	<u>§33.1-20-08-06-05(d)(3)</u>	<u>Assessment monitoring program:</u> Include the recorded concentrations required by the assessment monitoring program, identify the background concentrations established under the detection monitoring program, and identify the ground water protection standards in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.95(g)(3)(ii)</u>	<u>§33.1-20-08-06-05(g)(3)(b)</u>	Assessment monitoring program: Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be approved by the department. If a successful demonstration is made, the owner or operator shall continue monitoring in accordance with the assessment monitoring program pursuant to this subsection and may return to detection monitoring if the constituents in appendices I and II to this chapter are at or below the established background. The owner or operator also shall include the demonstration in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.96(a)</u>	<u>§33.1-20-08-06-06(a)</u>	Assessment of corrective measures: Within ninety days of finding that any constituent listed in appendix III/I or IV/II has been detected at a statistically significant level exceeding the ground water protection standard, or immediately upon detection of a release from a CCR unit, the owner or operator shall initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected areas to original conditions. The assessment of corrective measures must be completed within ninety days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstance and obtains approval by the department. The ninety-day deadline to complete the assessment of corrective measures may be extended for no longer than sixty days. The owner or operator also shall include the demonstration and approval in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.93(c)</u>	<u>§33.1-20-08-06-03(c)</u>	Groundwater sampling and analysis requirements: Ground water elevations must be measured in each well immediately prior to purging, each time ground water is sampled. The owner or operator of the CCR unit shall determine the rate and direction of ground water flow each time ground water is sampled. Ground water elevations in wells which monitor the same CCR management area must be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction.	Yes. See Figure 3, Figure 4, and their attachments.

2.0 CCR Unit Groundwater Monitoring and Corrective Action Program

Section 2.0 documents the status of the groundwater monitoring and corrective action program for the CCR unit for 2024. This section has two major divisions: (2.1) Groundwater Monitoring System and (2.2) Analytical Results and Statistical Evaluation. Documentation for each division is included, as well as summaries of key actions completed/problems encountered, with resolutions, if necessary; and key activities planned for 2025.

2.1 Groundwater Monitoring System

Documentation of the CCR unit groundwater monitoring system and discussion of key actions completed in 2024 and planned for 2025 are discussed below.

2.1.1 Documentation of Monitoring System

Figure 2 shows the three upgradient (2015-1, 2015-2, and 2018-2) and the six downgradient (2015-3, 2015-4, 2015-5, 2016-1, 2018-1, and 2023-1) monitoring wells for the CCR unit groundwater monitoring system. Table 2 provides the construction details, including location coordinates, for each well. Further details on the monitoring system, the water table aquifer, site conceptual model, release conceptual model, geologic cross sections, and boring logs for the CCR unit monitoring wells are included in the *Groundwater Monitoring System Certification Report* (Barr, 2023).

2.1.2 Key Actions Completed/Problems Encountered

The following key actions for the monitoring system were completed in 2024:

- A new, downgradient, monitoring well, 2023-1, was installed in July 2023 to coincide with the addition of Cell 5 to the CCR unit. The new well underwent background sampling and began detection monitoring in 2024.
- Two sets of semiannual detection monitoring groundwater samples were collected from each of the nine monitoring wells and were analyzed for the constituents listed in appendix III of the EPA CCR Rule [§257.94(a-b)] and appendix I of the NDDEQ CCR Rule [§33.1-20-08-06-04(a-b)]

No significant problems were encountered for the CCR unit groundwater monitoring system in 2024.

2.1.3 Key Activities for Upcoming Year

The following key activities for the groundwater monitoring system are planned for 2025:

- Wells in the CCR groundwater monitoring system and dedicated bladder pumps will be operated and maintained so that they perform to their design specifications [§257.91(e)(2)]/[§33.1-20-08-02(e)(2)].

- Sampling events for semiannual detection monitoring are scheduled for April and August of 2025.

2.2 Analytical Results and Statistical Evaluation

Documentation of the analytical results and their associated statistical evaluation for the CCR unit groundwater system are provided below, followed by a discussion of key actions completed in 2024 and planned for 2025.

2.2.1 Documentation of Results and Evaluation

Table 3 provides a summary of the dates and analytical results for the two semiannual sampling events completed in 2024 for the nine wells in the CCR unit groundwater monitoring system. Table 4 shows the field blank results for the same sampling period. All samples were collected under the CCR detection monitoring program.

The CCR Rule requires that groundwater elevations be measured in each well immediately prior to purging, and that the rate and direction of groundwater flow be determined each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)]. All groundwater elevations are shown on Table 5. Figure 3 and Figure 4 show contours of the groundwater elevations for the two semiannual detection monitoring sampling events. Both figures show that the groundwater gradient is generally from west to east beneath the CCR unit and toward the downgradient wells in the monitoring system; there is a local groundwater depression around wells 2015-4 and 2015-5. Attached to each of these figures are calculations for the rate of groundwater flow for each semiannual sampling event. Given the natural variation in hydraulic conductivities at the Facility (Barr, 2023), the estimated average horizontal groundwater flow velocity in the water table aquifer for the groundwater contours shown on these figures is approximately 0.05 feet/year.

2.2.2 Key Actions Completed/Problems Encountered

The following key actions were completed with respect to analytical results and statistical evaluation in 2024:

- Analytical results for the first semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix A), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). No SSIs were identified; therefore, there was no transition to assessment monitoring.
- *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance* (US EPA, 2009) recommends updating the background water quality dataset when at least four to eight new measurements have been collected, approximately every 2-3 years when sampling semi-annually. The appendix III/I constituent backgrounds in the eight wells installed prior to 2023 were last updated in the Spring of 2022, and 5 new measurements had been recorded. As a result, the background data were updated to incorporate measurements collected prior to the Fall 2024 sampling into the background.

- Analytical results for the second semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix B), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). Time-series graphs for the appendix III/I constituents for both upgradient and downgradient wells are provided in Appendix C. No SSIs were identified; therefore, there was no transition to assessment monitoring.

No significant problems were encountered during sampling, analysis, and statistical evaluation of the results for the CCR unit groundwater monitoring system in 2024.

2.2.3 Key Activities for Upcoming Year

The following key activities for analytical results and statistical evaluation are planned for 2025:

- Evaluate analytical results from the 2025 semiannual detection monitoring events for SSIs for appendix III/I constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).
- Evaluate analytical results from the 2023-1 background monitoring well sampling events for appendix III/I and IV/II constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).

3.0 Non-CCR Unit Groundwater Monitoring and Corrective Action Program

Section 3.0 documents the status of the groundwater monitoring and corrective action program for the Non-CCR unit for 2024. The NDDEQ regulates the operation of Minnkota's CCR disposal facility under NDAC §33.1-20, special waste permit SP-0159 located at 3401 24th St SW, Center, ND 58530. This section satisfies the groundwater monitoring requirements for the Non-CCR unit under NDAC §33.1-20-13 and the general performance standards under §33.1-20-04.1 for the calendar year of 2024.

3.1 Groundwater Monitoring System

Documentation of the Non-CCR unit groundwater monitoring system and discussion of key actions completed in 2024 and planned for 2025 are discussed below.

3.1.1 Documentation of Monitoring System

Figure 2 shows the two downgradient (92-3 and 95-4) monitoring wells for the Non-CCR unit. The Non-CCR unit shares upgradient (2015-1 and 2015-2) monitoring wells with the CCR Unit. Table 2 provides construction details and location coordinates for the Non-CCR unit wells. Further information on the monitoring system, the water table aquifer, site conceptual model, release conceptual model, geologic cross sections, and boring logs for the Non-CCR unit are included in the *Groundwater Monitoring System Certification Report* (Barr, 2023).

3.1.2 Key Actions Completed

Two sets of semiannual ground water quality (detection) monitoring groundwater samples were collected from each of the four monitoring wells and were analyzed for the constituents listed in Appendix I of the NDDEQ CCR Rule (§33.1-20-08).

No significant problems were encountered for the Non-CCR unit groundwater monitoring system, and no monitoring wells were installed or decommissioned in 2024.

3.1.3 Key Activities for Upcoming Year

The following key activities for the groundwater monitoring system are planned for 2025:

- Wells in the Non-CCR unit groundwater monitoring system and dedicated bladder pumps will be operated and maintained so that they perform to their design specifications.
- Sampling events for semiannual ground water quality (detection) monitoring are scheduled for April and August of 2025.

3.2 Analytical Results and Statistical Evaluation

Documentation of the analytical results and their associated statistical evaluation for the Non-CCR unit groundwater monitoring system are provided below, followed by a discussion of key actions completed in 2024 and planned for 2025. To be consistent with the CCR unit, the Non-CCR unit is monitored for constituents listed in Appendix I of NDAC 33.1-20-08.

3.2.1 Documentation of Results and Evaluations

Table 6 provides a summary of the dates and analytical results for the two semiannual sampling events completed in 2024 as well as historic sampling events that comprise the background dataset for the two downgradient wells in the Non-CCR unit groundwater monitoring system. Analytical results for the upgradient wells in the Non-CCR unit groundwater monitoring system are shown in Table 3. All samples were collected under the ground water quality (detection) monitoring program.

3.2.2 Key Actions Completed/Problems Encountered

The following key actions were completed with respect to analytical results and statistical evaluation in 2024:

- Analytical results for the first semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix D), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). No SSIs were identified; therefore, there was no transition to assessment monitoring.
- Analytical results for the second semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix E), as described in the *Groundwater*

Statistical Analysis Plan (Barr, 2022). Time-series graphs for the appendix I constituents for upgradient wells and for downgradient wells are provided in Appendix F. No SSIs were identified; therefore, there was no transition to assessment monitoring.

No significant problems were encountered during sampling, analysis, and statistical evaluation of the results for the Non-CCR unit groundwater monitoring system in 2024, and there were no conditions that prevented compliance with the permit.

3.2.3 Key Activities for Upcoming Year

The following key activities for analytical results and statistical evaluation are planned for 2025:

- Evaluate analytical results from the 2025 semiannual ground water quality (detection) monitoring events for SSIs for Appendix I constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).

4.0 References

Barr, 2023, *Groundwater Monitoring System Certification Report*, Revision 4, December 2023.

Barr, 2022, *Groundwater Statistical Analysis Plan*, Revision 2, June 2022.

NDDEQ, 2020, Solid Waste Management and Land Protection Rules, NDAC Article 33.1-20

US EPA, 2020, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; A Holistic Approach to Closure Part A: Deadline To Initiate Closure, Federal Register, Vol. 85, No. 168.

US EPA, 2018, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Amendments to the National Minimum Criteria (Phase one, Part One), Federal Register, Vol. 83, No. 146.

US EPA, 2015, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, Federal Register, Vol. 80, No. 74.

US EPA, 2009, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance*, EPA 530-R-09-007.

Tables

Table 2
Monitoring Well Construction Details
M. R. Young Station
Minnkota Power Cooperative, Inc.

Well Number	Location Coordinates (Latitude/Longitude)*	Orientation to CCR unit	Completion Date (Month/Day/Year)	Ground Surface Elevation (feet, MSL)	TOC Elevation (feet above MSL)	Casing/Screen Size and Material	Screen Slot Size (Inches)	Screen Interval (feet BGS)	Sand Pack Interval (feet BGS)	Sandpack	Borehole Diameter (Inches)	Pump Intake from Top of Screen (feet)
92-3	47.060775/-101.214750	Non-CCR Downgradient	9/8/1992	1991.3	1992.8	2-inch PVC Sch 80	0.010	142.5 to 152.5	137 to 153.5	20-40 silica sand	4.75	8.3
95-4	47.060047/-101.214706	Non-CCR Downgradient	8/1/1995	1992.4	1994.1	2-inch PVC Sch 80	0.010	135 to 145	130 to 151	20-40 silica sand	5.25	7.8
2015-1	47.057713/-101.224316	Upgradient	10/8/2015	2045.6	2047.7	2-inch PVC Sch 80	0.006	183 to 193	181 to 195	35-50 silica sand	6	8.5
2015-2	47.057735/-101.224324	Upgradient	10/9/2015	2045.4	2047.6	2-inch PVC Sch 80	0.006	130 to 150	128 to 150	35-50 silica sand	6	19
2015-3	47.057881/-101.214560	Downgradient	10/31/2015	2010.5	2012.8	2-inch PVC Sch 80	0.006	112 to 132	110 to 132	35-50 silica sand	6	19
2015-4	47.055212/-101.214471	Downgradient	10/20/2015	2014.9	2016.9	2-inch PVC Sch 80	0.006	116 to 136	114 to 136	35-50 silica sand	6	19
2015-5	47.053790/-101.214440	Downgradient	10/13/2015	2048.2	2050.2	2-inch PVC Sch 80	0.006	148 to 168	146 to 170	35-50 silica sand	6	19
2016-1	47.056441/-101.214409	Downgradient	10/6/2016	2026.4	2028.9	2-inch PVC Sch 80	0.006	133 to 153	131 to 153	35-50 silica sand	6	19
2018-1	47.052204/-101.214871	Downgradient	4/9/2018	2072.3	2074.8	2-inch PVC Sch 80	0.006	168 to 188	165 to 191	35-50 silica sand	6	19
2018-2	47.048810/-101.224848	Upgradient	4/6/2018	2050.8	2053.4	2-inch PVC Sch 80	0.006	196 to 216	194 to 216	35-50 silica sand	6	19
2023-1	47.050700/-101.214610	Downgradient	7/29/2023	2104.6	2107.6	2-inch PVC Sch 80	0.006	211 to 231	207.5 to 234	35-50 silica sand	6	19

* WGS84 Datum

BGS - Below ground surface.

MSL - Mean sea level.

PVC - Polyvinyl chloride.

Sch - Schedule.

Table 3

Water Quality Results
Detection Monitoring Program
Minnkota Power Cooperative, Inc.

Parameter	Total or Dissolved	Location Date	Upgradient Background				Downgradient SSI Evaluation																
			2015-1 7/3/24	2015-1 10/22/24	2015-2 7/3/24	2015-2 10/22/24	2015-3 7/3/24	2015-3 10/22/24	2015-4 7/3/24	2015-4 10/22/24	2015-5 7/3/24	2015-5 10/22/24	2016-1 7/8/24	2016-1 9/24/24	2016-1 10/22/24	2018-1 7/3/24	2018-1 10/21/24	2018-2 7/3/24	2018-2 10/22/24	2023-1 7/3/24	2023-1 10/22/24		
			Units																				
Appendix III/I Constituents																							
Boron	Total		0.45	0.47	0.48	0.50	0.5	0.52	0.51	0.51	0.51	0.54	0.51	0.51	0.52	--	0.52	0.53	0.54	0.45	0.48	0.52	0.53
Calcium	Total		2.24	2.69	2.88	3.89	3.44	3.68	3.25	3.64	3.95	4.18	--	2.91	3.07	3.62	3.93	2.83	3.14	2.89	3.13	2.89	3.13
Chloride	NA		2.5	2.3	2.5	2.4	5.3	5.3	5.3	5.6	3.5	5.6	3.5	3.5	3.9	--	4.2	4.5	4.6	7.5	7.9	15.0	16
Fluoride	NA		2.41	2.4	1.77	1.77	1.84	1.93	1.92	1.89	1.93	1.91	2.25	--	2.19	1.87	1.84	1.51	1.50	1.81	1.50	1.81	1.81
pH, field	NA		8.5	8.4	8.3	8.4	8.2	8.3	8.4	8.4	8.4	8.4	8.4	--	8.5	8.4	8.4	8.4	8.5	8.4	8.5	8.4	8.4
Sulfate, as SO4	NA		268	263	249	253	77	80.6	76.9	89.4	1.93	355	104	--	145	358	373	194	188	54.2	188	54.2	80.2
Solids, total dissolved	NA		1220	1240	1310	1280	1460	1400	1400	1380	1600	1590	1170	--	1180	1670	1690	1310	1300	1390	1300	1390	1380
Other Constituents																							
Temperature, field	NA		10.43	9.06	11.01	8.82	12.36	8.86	9.44	8.76	10.07	8.32	9.38	13.27	9.04	17.41	9.60	12.06	8.62	13.50	8.51	13.50	8.51
Turbidity, field	NA		5.01	1.75	1.64	2.03	3.26	1.24	0.40	0.00	1.11	0.00	6.43	1.45	10.04	0.07	0.00	0.00	0.00	0.00	3.89	3.89	2.47
Specific conductance @ 25 °C, field	NA		1910	1810	1973	1929	2201	2037	2153	2036	2409	2296	1792	1800	1754	2561	2436	2031	1713	2186	2031	2186	2029

-- Not analyzed/Not available.

N Sample Type: Normal

FD Sample Type: Field Duplicate

NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

Table 4
Field Blank Results
Detection Monitoring Program
Minnkota Power Cooperative, Inc.

Location Date Sample Type			QC 7/03/2024 Field Blank	QC 10/22/2024 Field Blank
Parameter	Total or Dissolved	Units		
Appendix III/I Constituents				
Boron	Total	mg/l	< 0.1 U	< 0.1 U
Calcium	Total	mg/l	< 1 U	< 1 U
Chloride	NA	mg/l	< 2.0 U	< 2.0 U
Fluoride	NA	mg/l	< 0.1 U	< 0.1 U
pH	NA	pH units	6.7 H	6.0 H
Solids, total dissolved	NA	mg/l	<10 U	< 10 U
Sulfate, as SO ₄	NA	mg/l	< 5 U	< 5 U

H - Recommended sample preservation, extraction or analysis holding time was exceeded.

NA (not applicable) - Indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

QC - Quality Control

U - The analyte was analyzed for, but was not detected.

Table 5
Water Level Results
Detection Monitoring Program
Minnkota Power Cooperative, Inc.

Location		Sample Type	Purge Date	Water Level Before Purge (feet)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
2015-1	Upgradient	Background	8/26/2024	134.12	2047.7	1913.58
2015-1			10/21/2024	134.21	2047.7	1913.49
2015-2	Upgradient	Background	8/26/2024	128.26	2047.6	1919.34
2015-2			10/21/2024	128.38	2047.6	1919.22
2018-2	Upgradient	Background	8/26/2024	152.61	2053.4	1900.79
2018-2			10/22/2024	152.75	2053.4	1900.65
2015-3	Downgradient	SSI Evaluation	8/26/2024	110.11	2012.8	1902.69
2015-3			10/21/2024	109.96	2012.8	1902.84
2015-4	Downgradient	SSI Evaluation	8/26/2024	120.92	2016.9	1895.98
2015-4			10/21/2024	120.98	2016.9	1895.92
2015-5	Downgradient	SSI Evaluation	8/26/2024	150.62	2050.2	1899.58
2015-5			10/21/2024	150.41	2050.2	1899.79
2016-1	Downgradient	SSI Evaluation	8/26/2024	127.72	2028.9	1901.18
2016-1			10/21/2024	127.85	2028.9	1901.05
2018-1	Downgradient	SSI Evaluation	8/26/2024	174.62	2074.8	1900.18
2018-1			10/21/2024	174.19	2074.8	1900.61
2023-1	Downgradient	SSI Evaluation	8/26/2024	207.58	2107.6	1900.02
2023-1			10/21/2024	207.58	2107.6	1900.02
92-3	Downgradient Non CCR	SSI Evaluation	8/26/2024	91.00	1992.8	1901.80
92-3			10/23/2024	91.11	1992.8	1901.69
95-4	Downgradient Non CCR	SSI Evaluation	8/26/2024	92.77	1994.1	1901.33
95-4			10/21/2024	93.02	1994.1	1901.08

Table 6
Historic Water Quality Results
Minnkota Power Cooperative, Inc.

[illegible]

Source: Data has not undergone Standard Barr QA/QC Review.

Validated: Data has undergone Standard Barr QA/QC Review.

-- Not analyzed/Not available.

N Sample Type: Normal

N Sample Type: Field Duplicate

NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

H Recommended sample preservation extraction or analysis holding time was exceeded

11. Recommended sample preservation, extraction or analysis holding time was exceeded.

Estimated detected value. Either certain QC criteria were not met or the concentration is between the laboratory's detection and quantitation limits.

Table 6
Historic Water Quality Results
Minnkota Power Cooperative, Inc.

Parameter	Location Date	Data Status																Total or Dissolved	Units
		Sample Type		Data Status															
		N	S	Source	Source	Source	Source	Source	Source	Source	Source	Source	Source	Source	Source	Source	Source		
		95-4 10/3/16	95-4 5/31/17	95-4 10/11/17	95-4 5/23/18	95-4 9/25/18	95-4 5/28/19	95-4 9/5/19	95-4 4/23/20	95-4 8/5/20	95-4 4/21/21	95-4 8/25/21	95-4 4/7/22	95-4 8/24/22	95-4 5/09/2023	95-4 8/15/2023	95-4 7/8/24		
Appendix III/I Constituents																			
Boron																			
Calcium	Total	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.45	0.48	0.48
Chloride	Total	mg/l	2.1	2	3	<1 U	2.2	1.7	2.2	2.1	2.2	2.3	2.2	2.22	2.05	2.03	2.19	2.38	2.38
Fluoride	NA	mg/l	4	4.1	2.4	6	5.2	4.4	4.4	4.9	6.2	5.8	7.3	6.9	7.0	6.8	5.4	5.7	5.7
pH	NA	mg/l	1.09	1.1	1.53	1.07	1.12	1.15	1.12	1.12	1.13	1.16	1.14	1.1	1.18	1.11 J	1.13	1.08	1.08
pH, field	NA	pH units	8.4	8.6	8.5	8.7	8.6	8.6	8.7	8.6	8.7	8.6	8.4	8.4	8.23	8.6 H	8.23	8.6 H	8.6 H
Sulfate, as SO4	NA	pH units	--	--	--	--	--	--	--	--	--	--	--	--	8.40	8.54	8.8	8.61	8.61
Solids, total dissolved	NA	mg/l	122	109	83.4	132	110	104	113	122	109	119	118	127	132	115	89.6	82	110
Solids, total dissolved, sum of constituents	NA	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1140	1140	1140
Appendix IV/II Constituents																	--	--	--
Lithium	Total	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0404	--	--
Other Constituents																	--	--	--
Boron	Dissolved	mg/l	0.51	0.46	0.53	0.5	0.45	0.47	0.45	0.47	0.46	0.45	0.45	0.48	0.47	0.47	0.47	--	--
Specific conductance @ 25 °C, field	NA	umhos/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1785	1766	1643
Temperature, field	NA	deg C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.26	9.19	9.90
Turbidity, field	NA	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	0.17	1.85	0	0.39

Source: Data has not undergone Standard Barr QA/QC Review.

Validated: Data has undergone Standard Barr QA/QC Review.

-- Not analyzed/Not available.

-- Not analyzed/Not available
N Sample Type: Normal

N Sample Type: Normal
N Sample Type: Field Duplicate

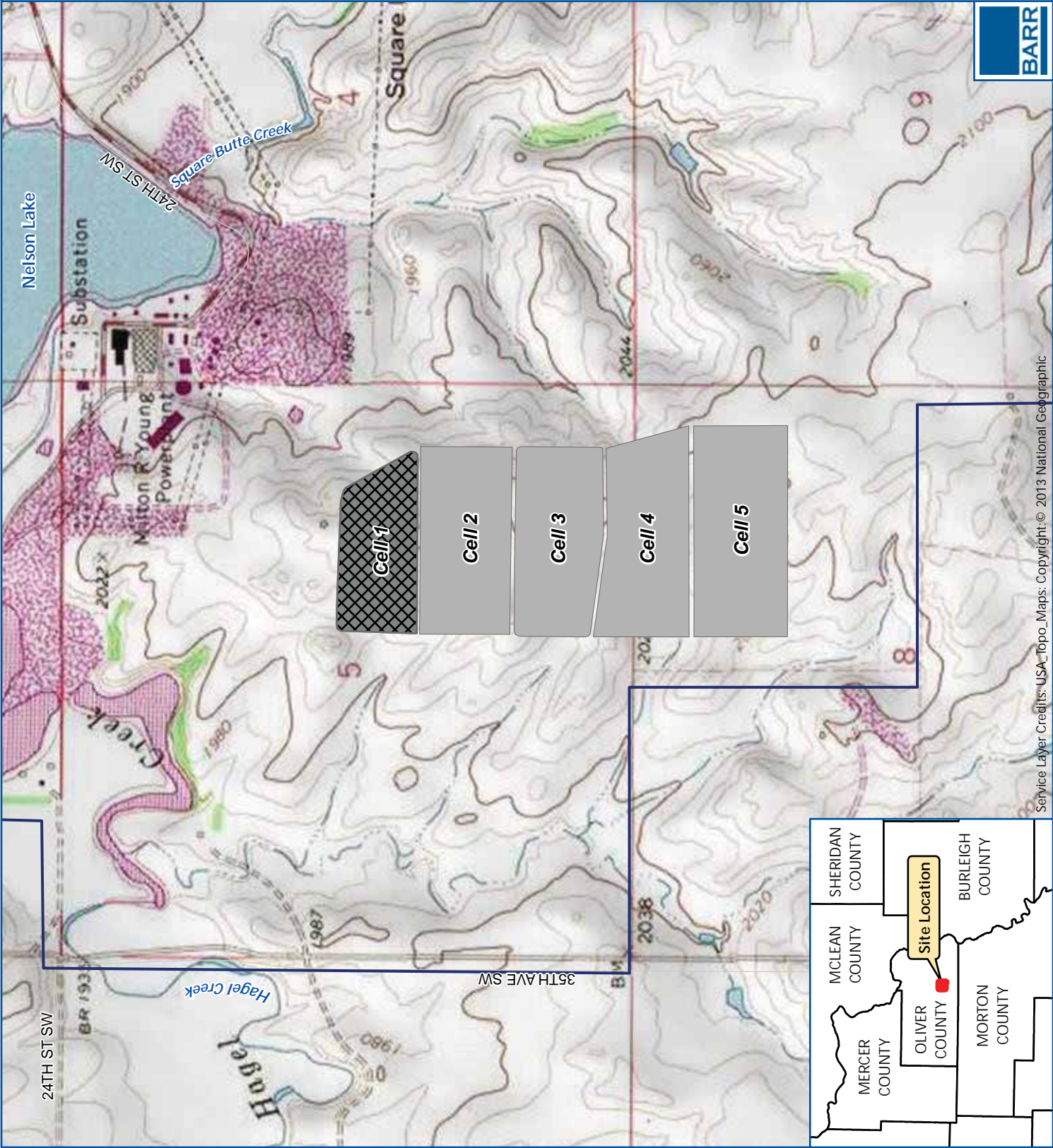
NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

H Recommended sample preservation, extraction or analysis holding time was exceeded.

H. Recommended sample preservation, extraction or analysis holding time was exceeded.

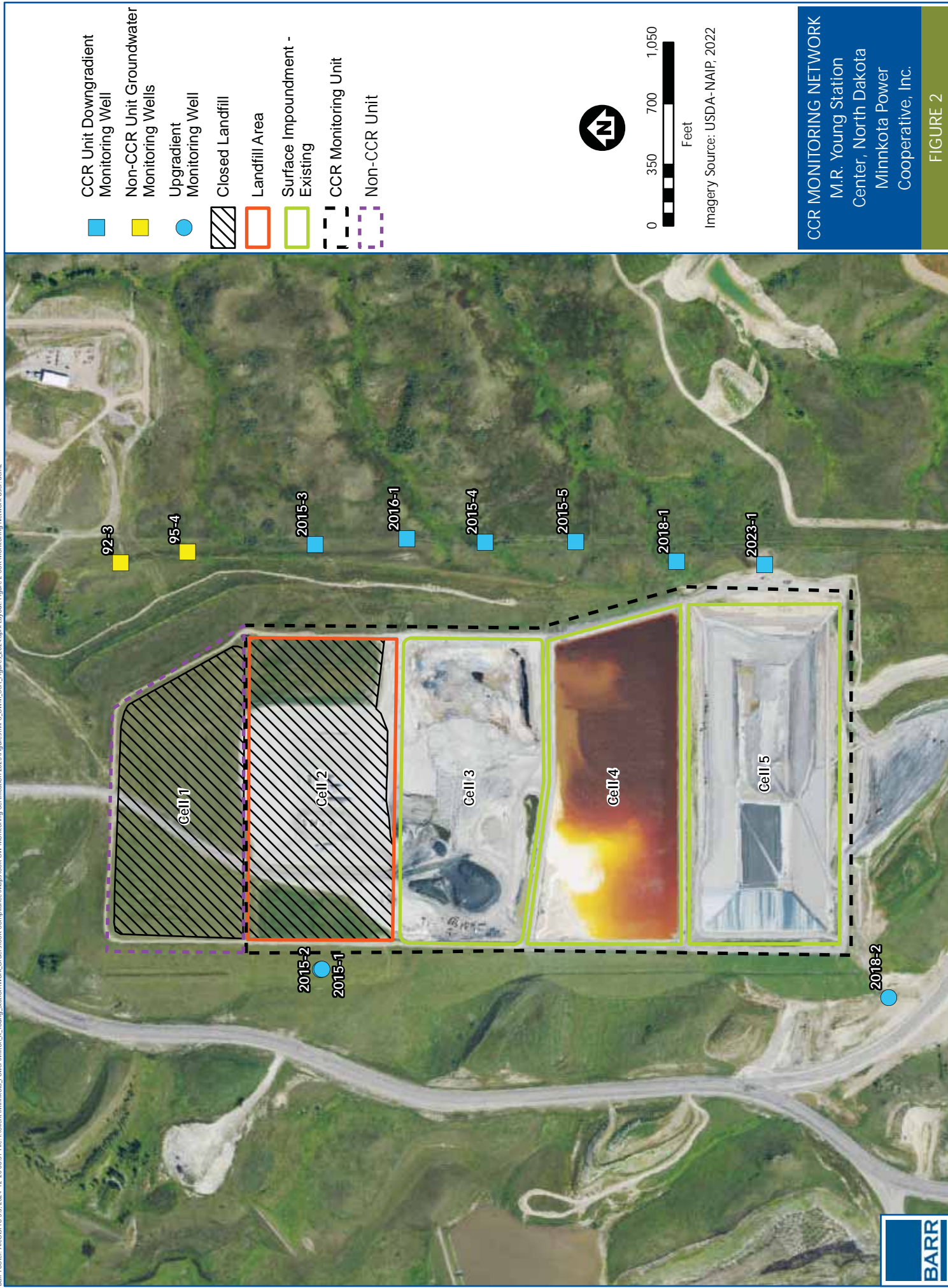
J. Estimated detected value. Either certain QC criteria were not met or the concentration is between the laboratory's detection and quantitation limits.

Figures



SITE LAYOUT
M.R. Young Station
Center, North Dakota
Minnkota Power
Cooperative, Inc.

FIGURE 1





JULY 2024
GROUNDWATER ELEVATIONS
M.R. Young Station
Center, North Dakota
Minnkota Power
Cooperative, Inc.
FIGURE 3

"The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)]."

Figure 3 shows the approximate contour elevations for the water table aquifer based on water level measurements taken in the monitoring wells in July 2024. Flow directions may be estimated as being perpendicular to the contour lines on this figure. The general flow direction is to the southeast toward the groundwater depression near wells 2015-4 and 2015-5. Using well 2015-2 for reference, the perpendicular distance between contour 1915 ft and contour 1905 ft is approximately 1,220 ft.

The horizontal average linear flow velocity (rate) under the CCR unit can be estimated as follows (Barr, 2023):

$$V = K * i/n_e$$

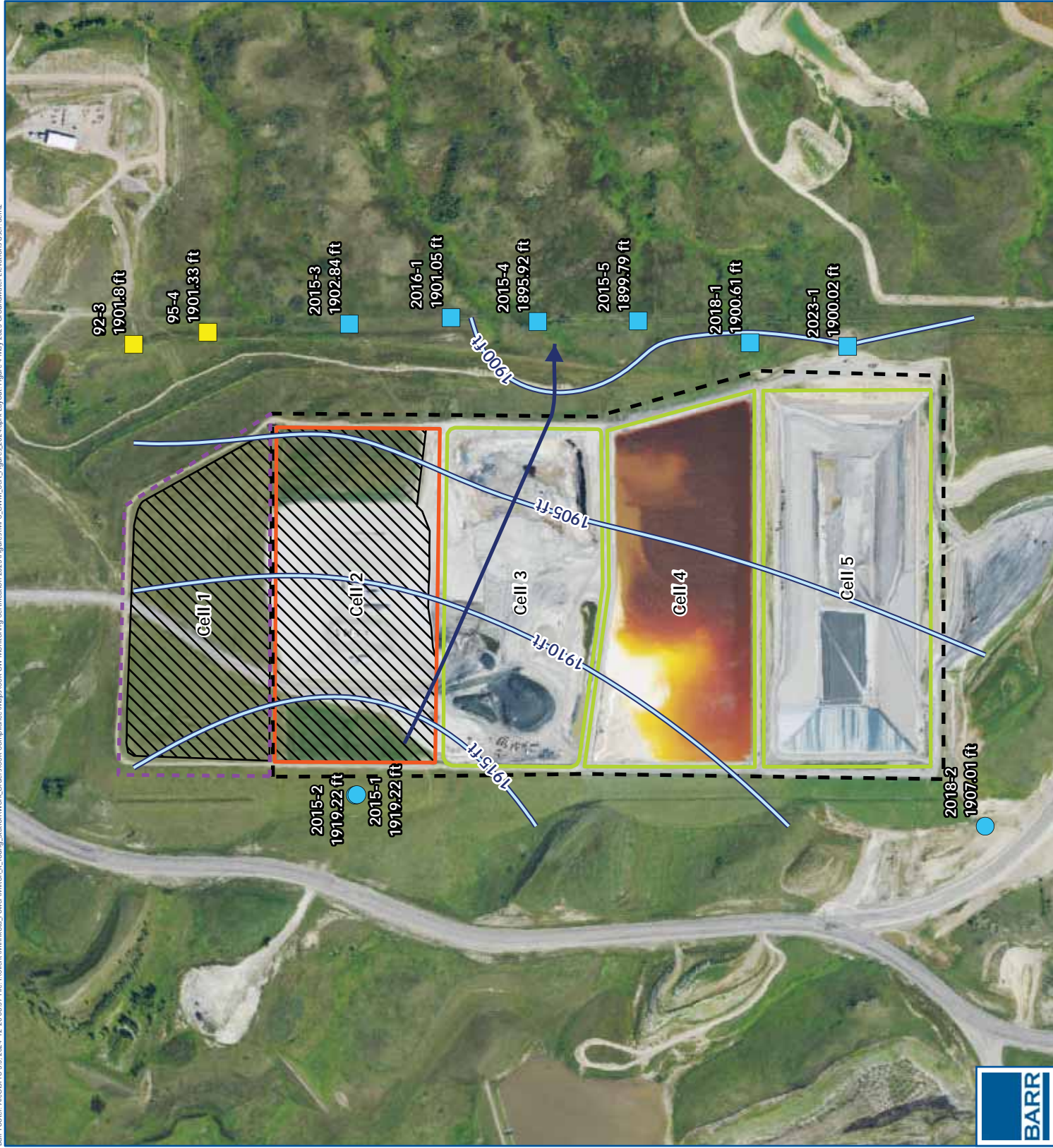
Where: V = horizontal average linear flow velocity

K = hydraulic conductivity

i = gradient = 10 ft/1,220 ft = 0.0082 for July 2024

n_e = effective porosity = 0.15 (estimated for silty-clayey sandstone)

The geometric mean of the K values measured for the monitoring wells at the Facility is 2.5×10^{-3} ft/day (Barr, 2023). Therefore, the groundwater flow rate for July 2024 is estimated to be 1.37×10^{-4} ft/day, or 0.050 ft/year.



OCTOBER 2024
GROUNDWATER ELEVATIONS
M.R. Young Station
Center, North Dakota
Minnkota Power
Cooperative, Inc.

FIGURE 4

"The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)]."

Figure 4 shows the approximate contour elevations for the water table aquifer based on water level measurements taken in the monitoring wells in October 2024. Flow directions may be estimated as being perpendicular to the contour lines on this figure. The general flow direction is to the southeast toward the groundwater depression near wells 2015-4 and 2015-5. Using well 2015-2 for reference, the perpendicular distance between contour 1915 ft and contour 1905 ft is approximately 1,220 ft.

The horizontal average linear flow velocity (rate) under the CCR unit can be estimated as follows (Barr, 2023):

$$V = K * i/n_e$$

Where: V = horizontal average linear flow velocity

K = hydraulic conductivity

i = gradient = 10 ft/1,220 ft = 0.0082 for October 2024

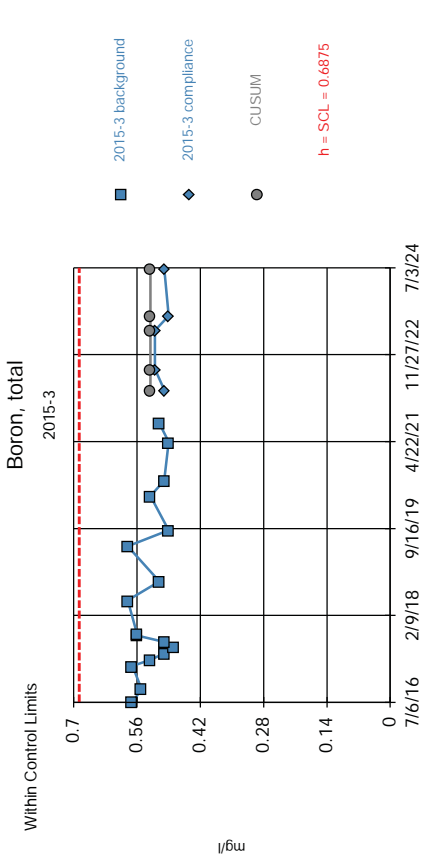
n_e = effective porosity = 0.15 (estimated for silty-clayey sandstone)

The geometric mean of the K values measured for the monitoring wells at the Facility is 2.5×10^{-3} ft/day (Barr, 2023). Therefore, the groundwater flow rate for October 2024 is estimated to be 1.37×10^{-4} ft/day, or 0.050 ft/year.

Appendices

Appendix A

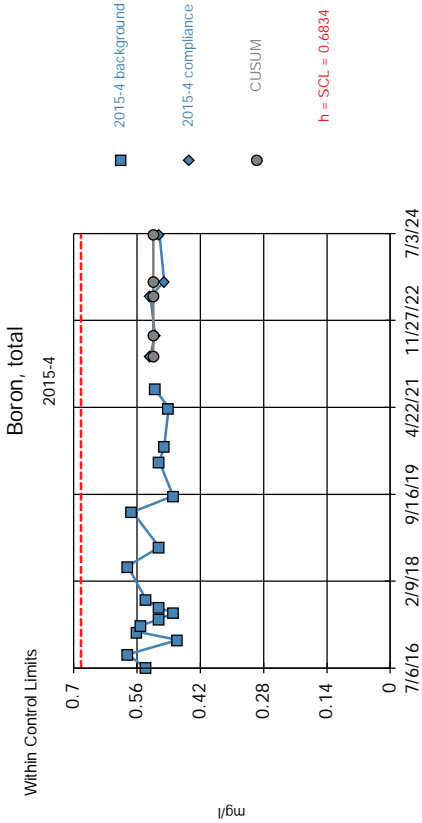
Statistical Review for SSIs: Event 1



Background Data Summary: Mean=0.53, Std. Dev.=0.035, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.896, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

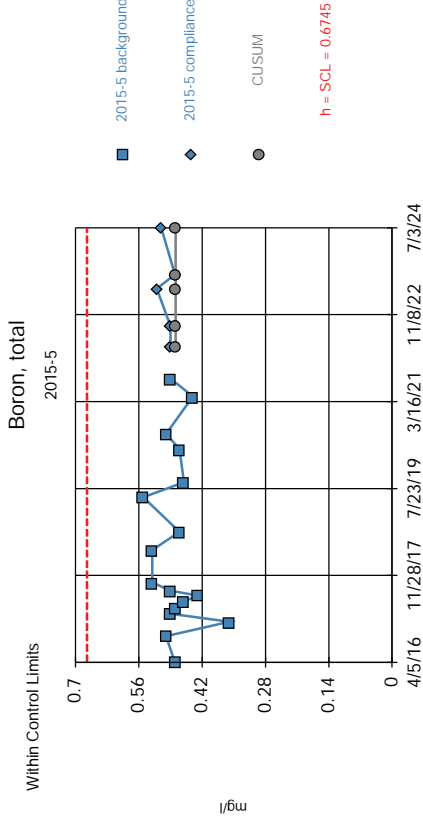
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=0.5235, Std. Dev.=0.03552, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9383, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

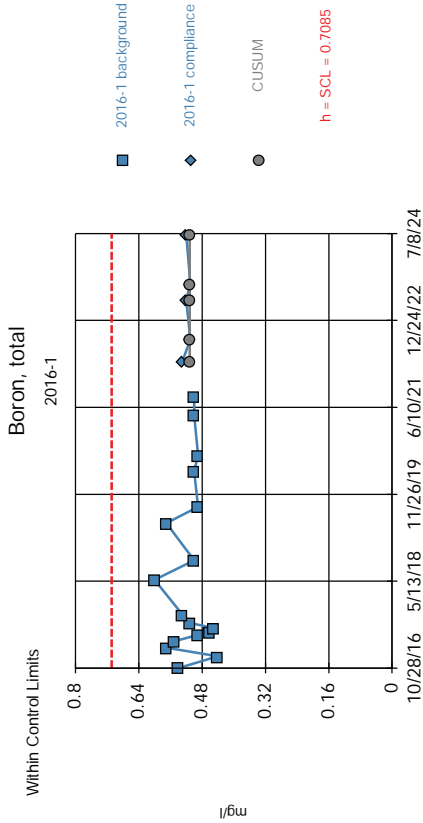
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=0.4782, Std. Dev.=0.04362, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9216, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

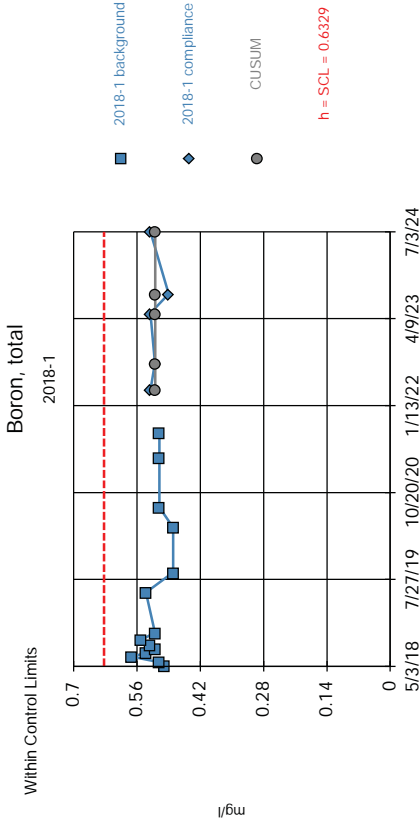
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



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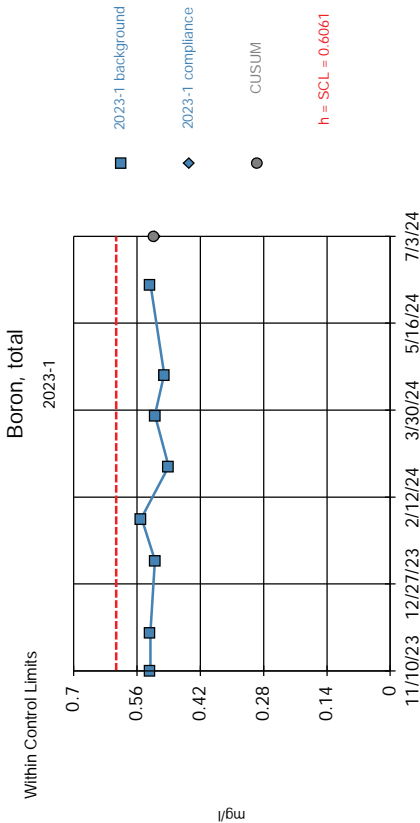
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Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



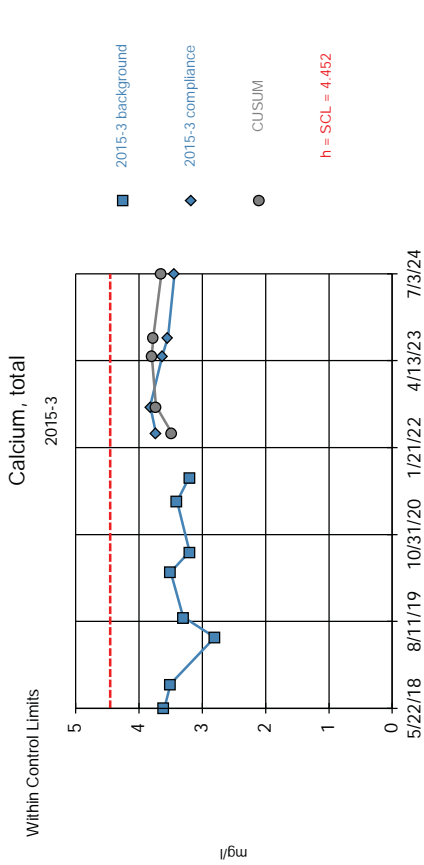
Background Data Summary: Mean=0.5193, Std. Dev.=0.02526, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.959, critical = 0.874. Report alpha = 0.001768. Dates ending 8/24/2021 used for control stats. Standardized n=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



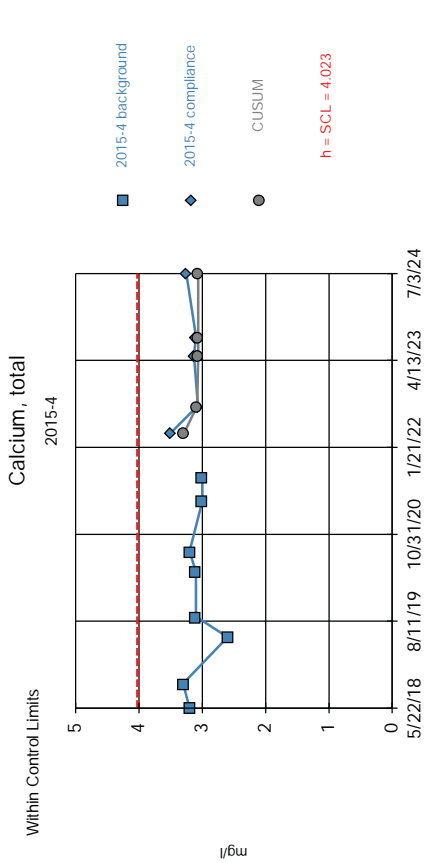
Background Data Summary: Mean=0.5213, Std. Dev.=0.01885, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9304, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized n=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



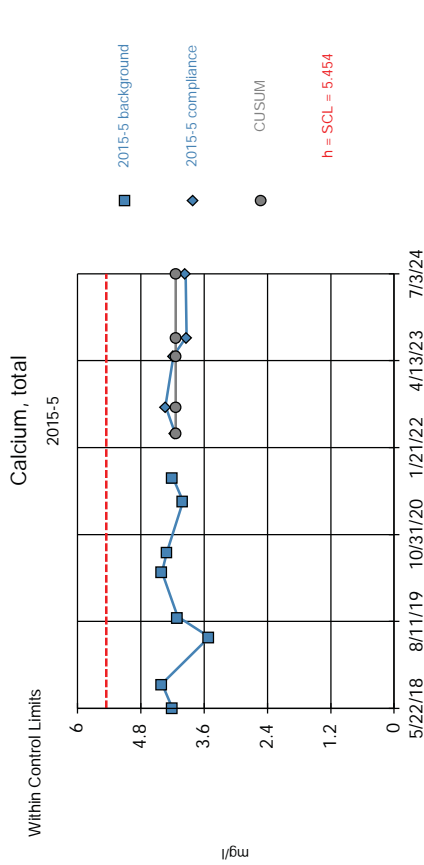
Background Data Summary: Mean=3.313, Std. Dev.=0.2532, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9042, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



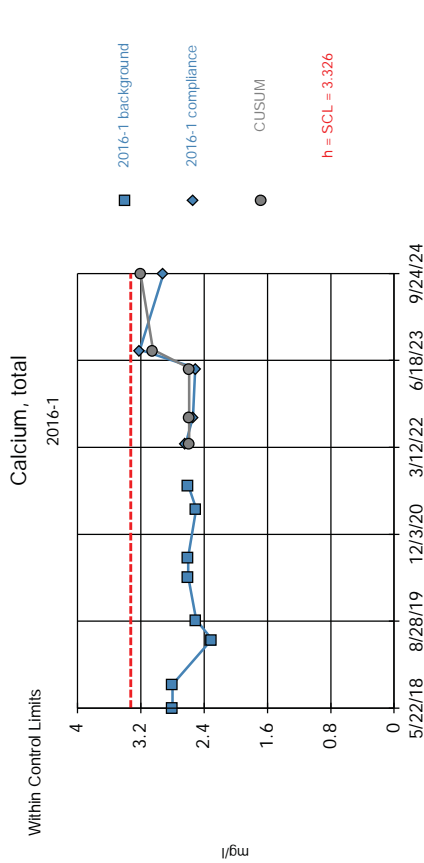
Background Data Summary: Mean=3.063, Std. Dev.=0.2134, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8541, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



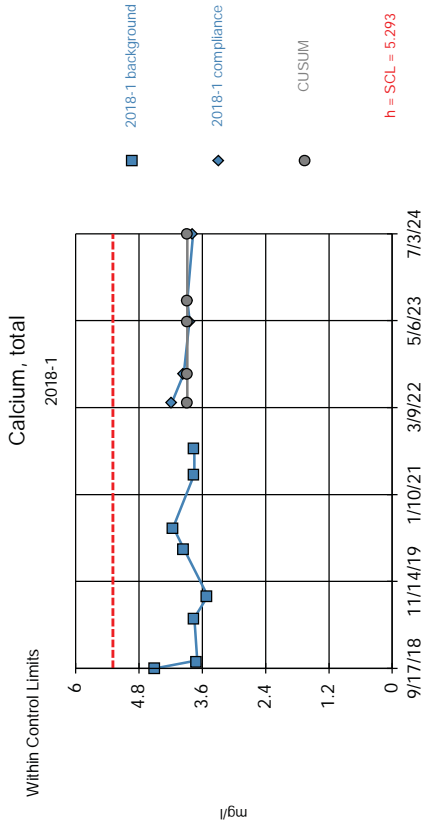
Background Data Summary: Mean=4.138, Std. Dev.=0.2925, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8327, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



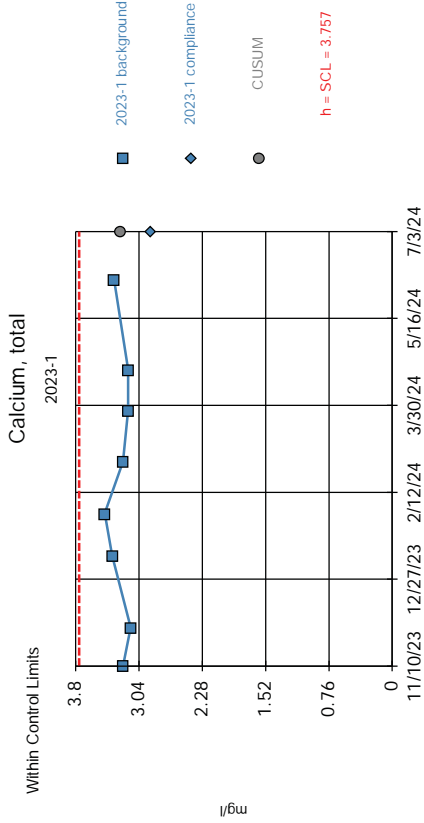
Background Data Summary: Mean=2.588, Std. Dev.=0.1642, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9122, critical = 0.818. Report alpha = 0.00674. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



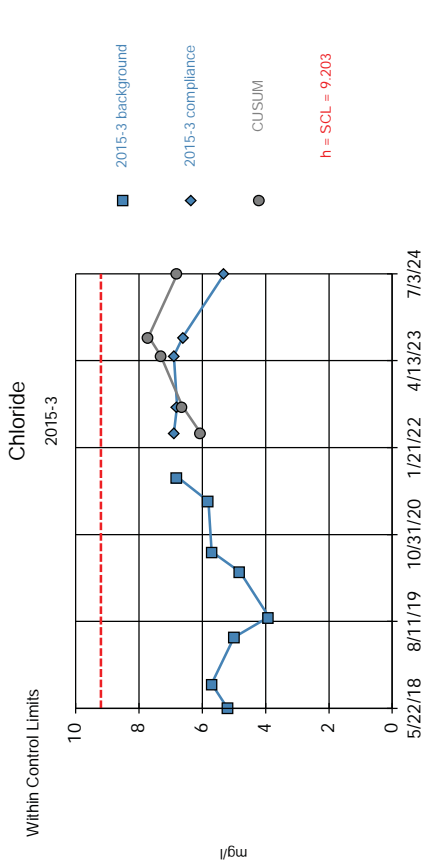
Background Data Summary: Mean=3.881, Std. Dev =0.3138, n=8. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8911, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



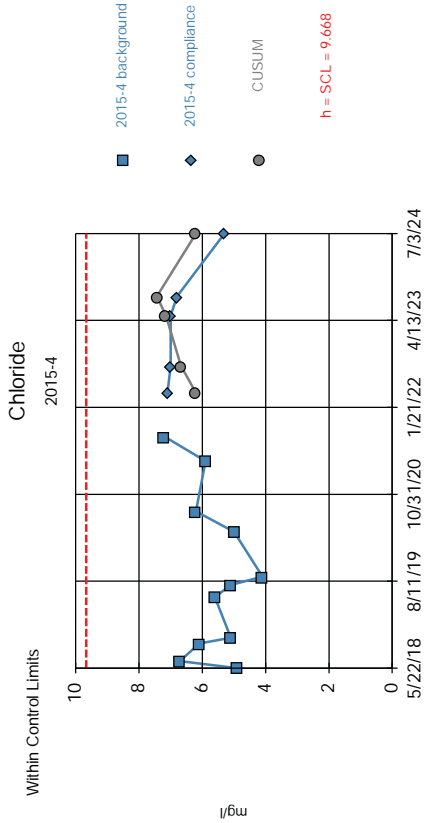
Background Data Summary: Mean=3.261, Std. Dev =0.1101, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9062, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



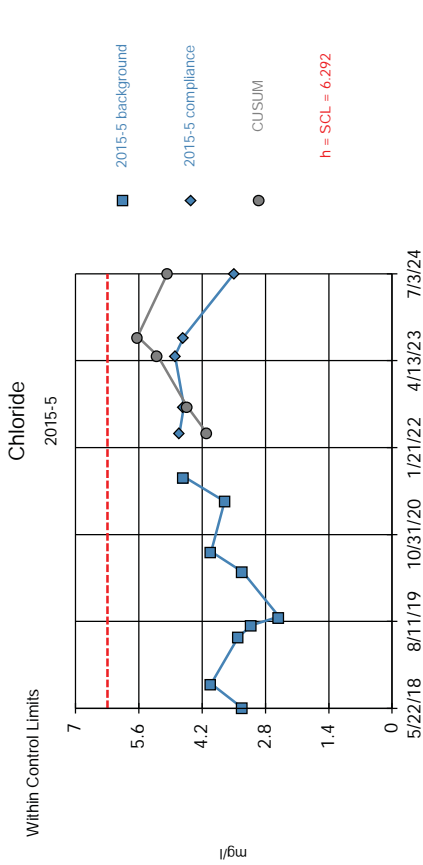
Background Data Summary: Mean=5.363, Std. Dev.=0.8535, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9679, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



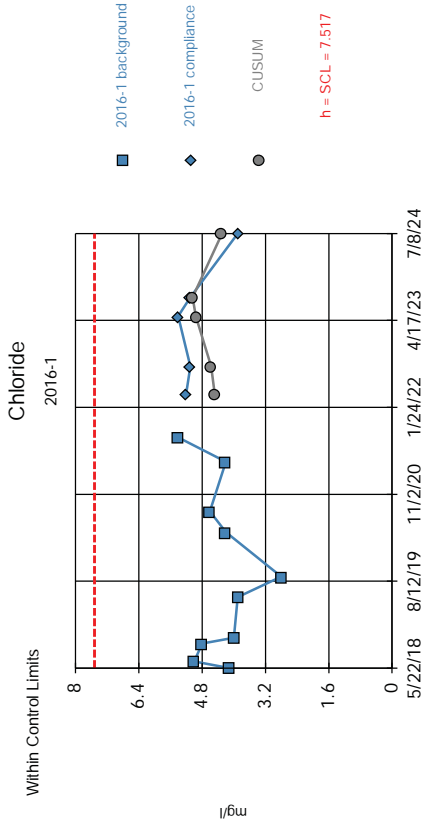
Background Data Summary: Mean=5.627, Std. Dev.=0.8979, n=11. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9744, critical = 0.85. Report alpha = 0.003054. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



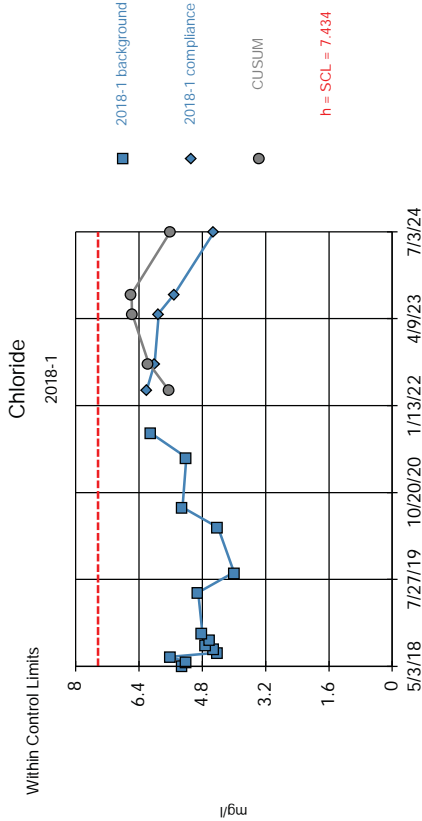
Background Data Summary: Mean=3.544, Std. Dev.=0.6106, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9744, critical = 0.829. Report alpha = 0.005208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=4.3, Std. Dev.=0.7149, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9465, critical = 0.842. Report alpha = 0.003902. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

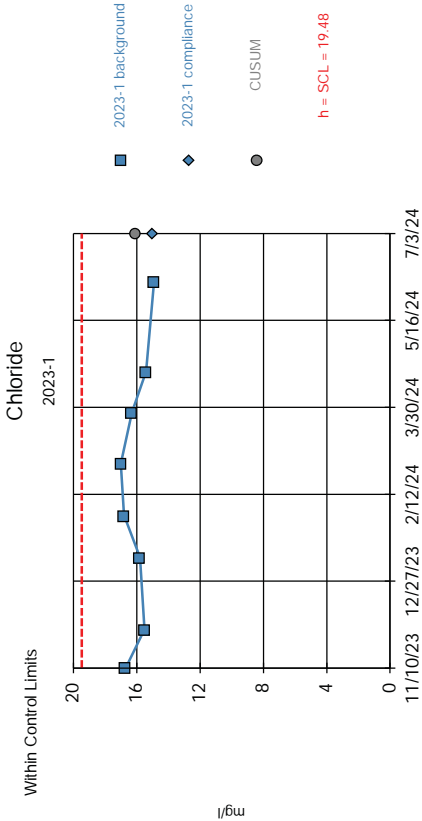
Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=4.929, Std. Dev.=0.5567, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9727, critical = 0.874. Report alpha = 0.001862. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

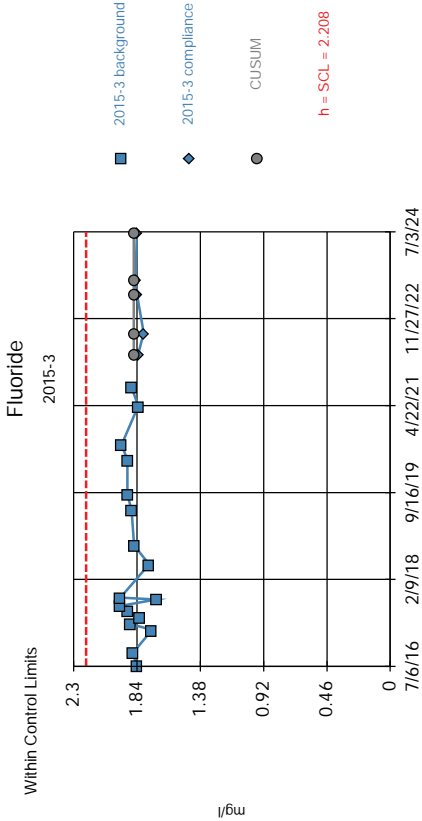
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=16.05, Std. Dev.=0.7616, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9376, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

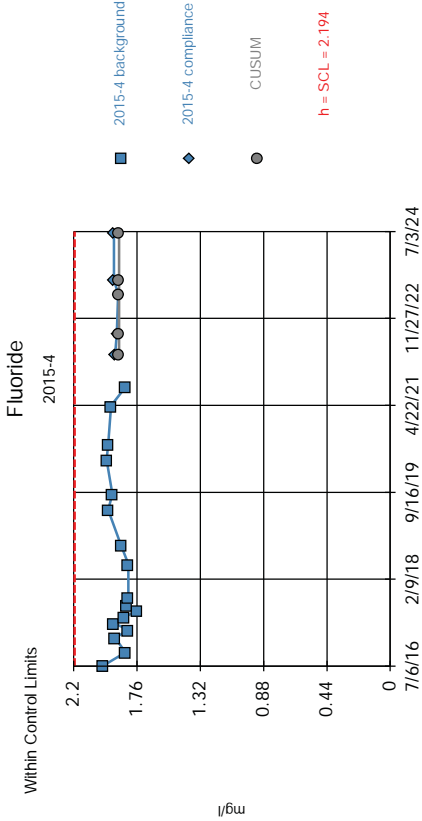
Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



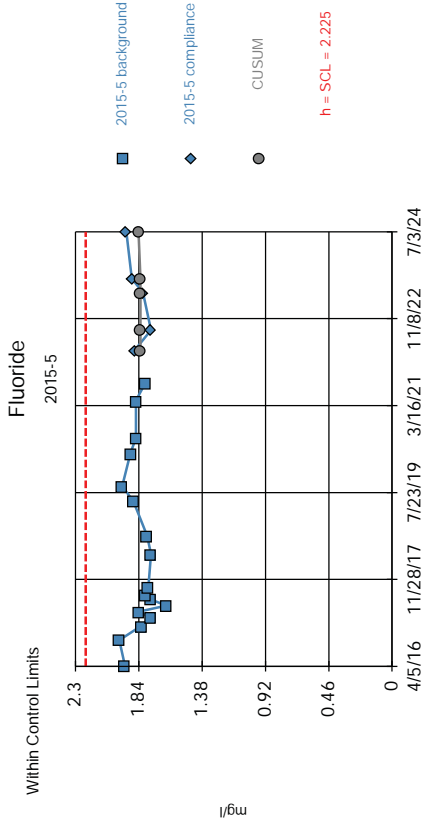
Background Data Summary: Mean=1.862, Std. Dev.=0.07699, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9214, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



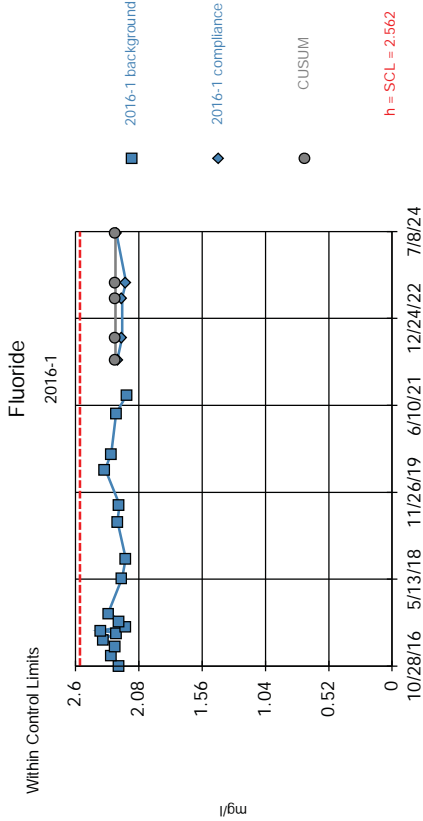
Background Data Summary: Mean=1.885, Std. Dev.=0.06866, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9411, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



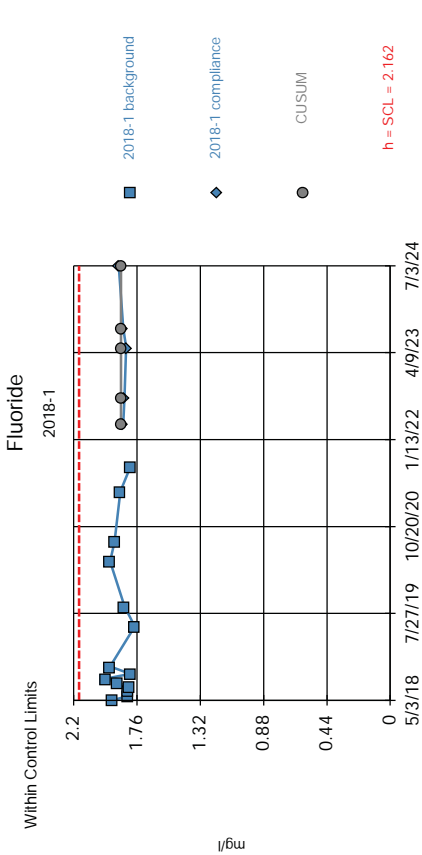
Background Data Summary: Mean=1.827, Std. Dev.=0.08851, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9674, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

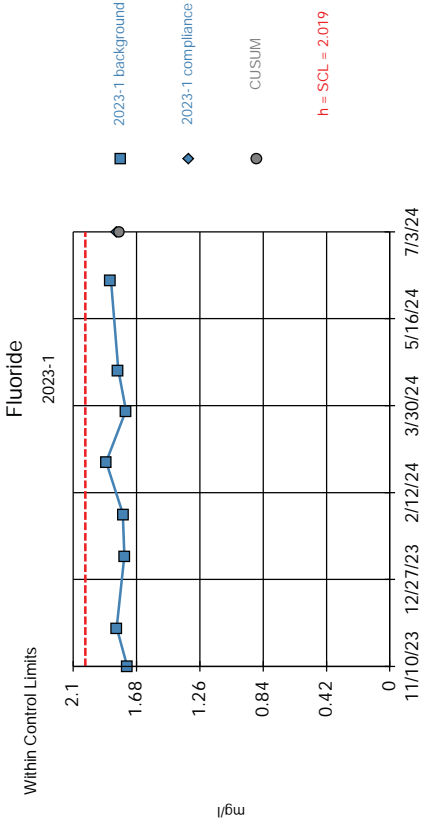


Background Data Summary: Mean=2.27, Std. Dev.=0.06493, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9615, critical = 0.892. Report alpha = 0.00115. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1.871, Std. Dev.=0.06464, n=14. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9286, critical = 0.874. Report alpha = 0.001876. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.



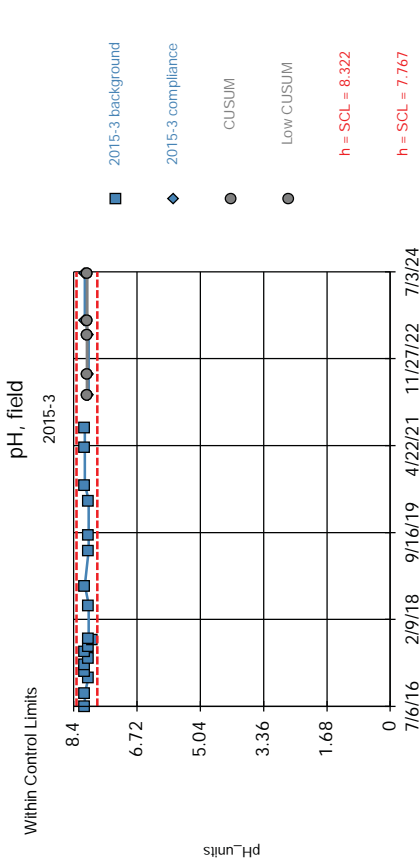
Background Data Summary: Mean=1.795, Std. Dev.=0.04986, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9235, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

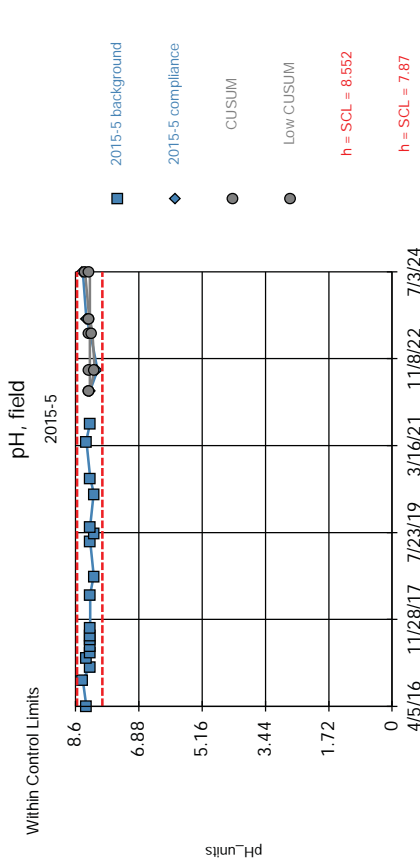
Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



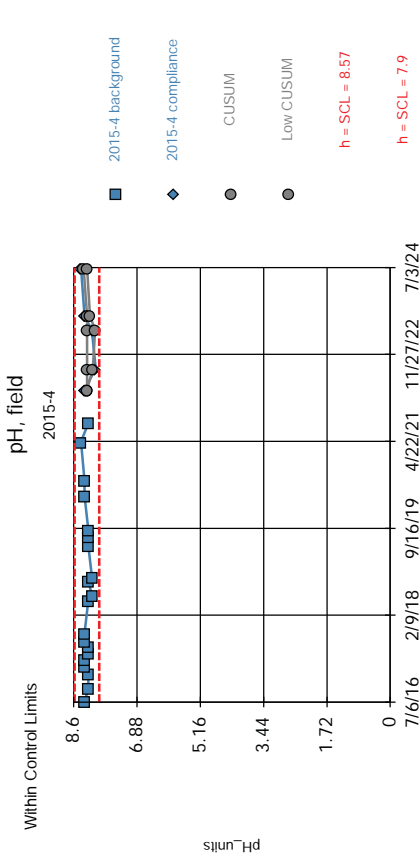
Background Data Summary: Mean=8.044, Std. Dev.=0.06157, n=18. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.743, critical = 0.897 (non-normal: user chose to continue). Report alpha = 0.001046. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



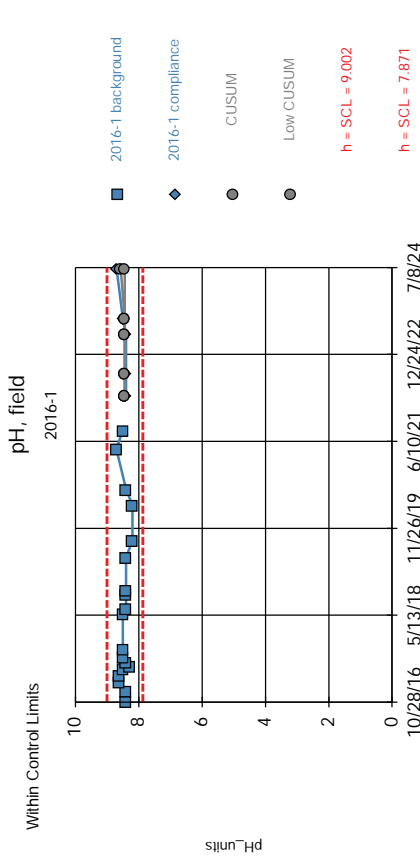
Background Data Summary: Mean=8.211, Std. Dev.=0.07584, n=18. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8123, critical = 0.897 (non-normal: user chose to continue). Report alpha = 0.001016. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



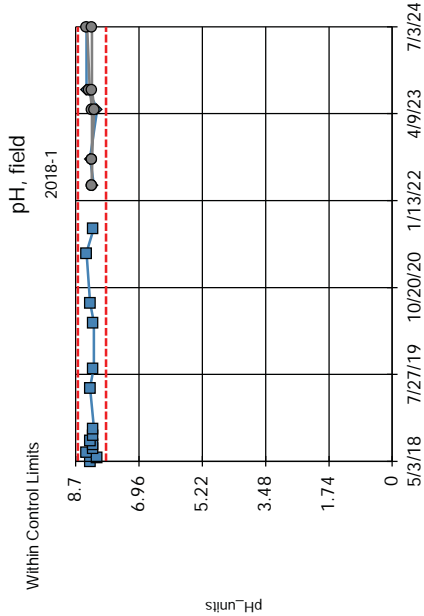
Background Data Summary: Mean=8.235, Std. Dev.=0.07452, n=20. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8526, critical = 0.905 (non-normal: user chose to continue). Report alpha = 0.000818. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.437, Std. Dev.=0.1257, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9211, critical = 0.901. Report alpha = 0.00092. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

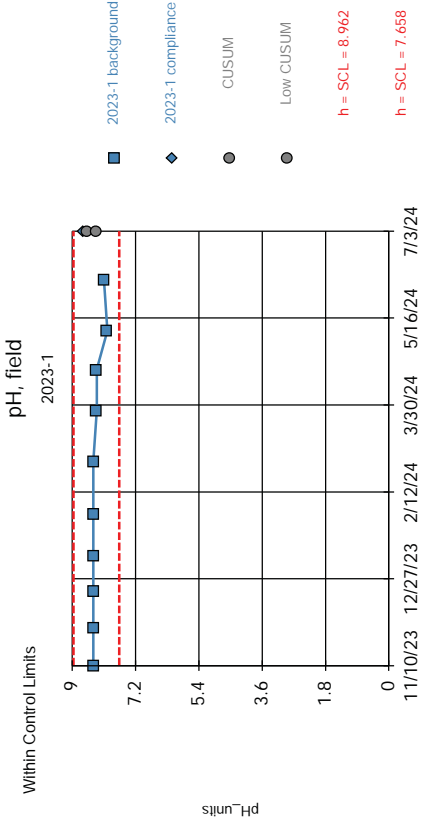
Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.25, Std. Dev.=0.08549, n=14. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8571, critical = 0.874 (non-normal: user chose to continue). Report alpha = 0.001896. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

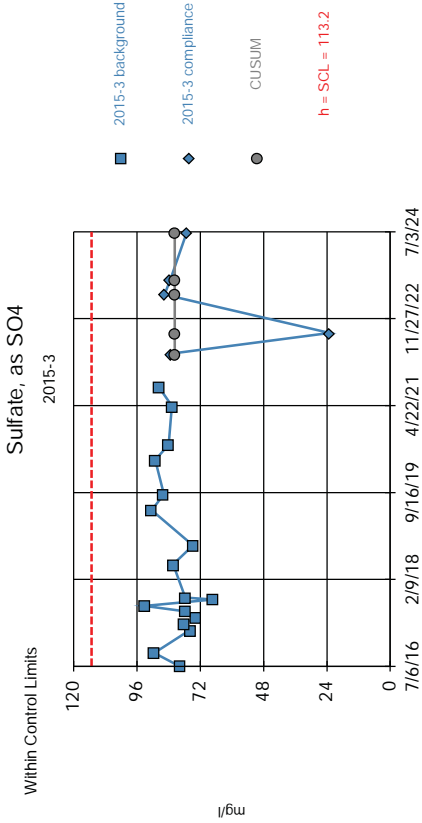
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.31, Std. Dev.=0.1449, n=10. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7006, critical = 0.842 (non-normal: user chose to continue). Report alpha = 0.000944. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

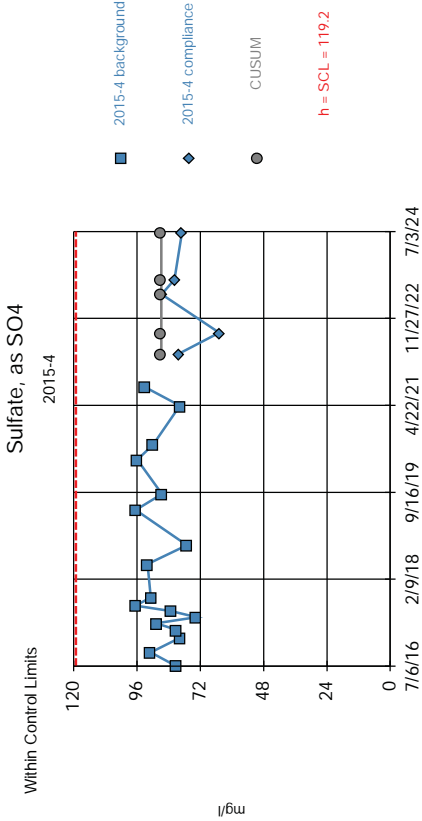
Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



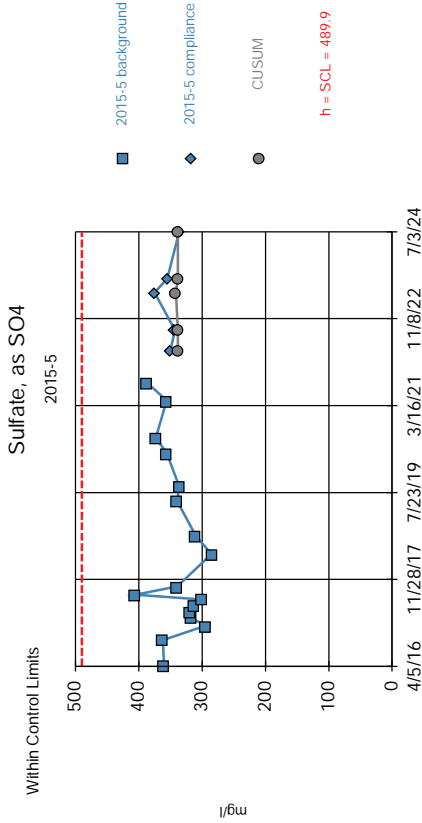
Background Data Summary: Mean=81.71, Std. Dev.=6.998, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9745, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



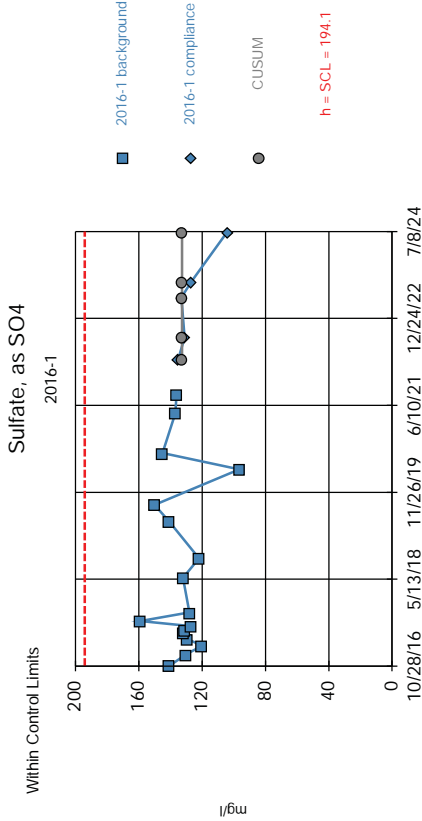
Background Data Summary: Mean=86.78, Std. Dev.=7.193, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9405, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



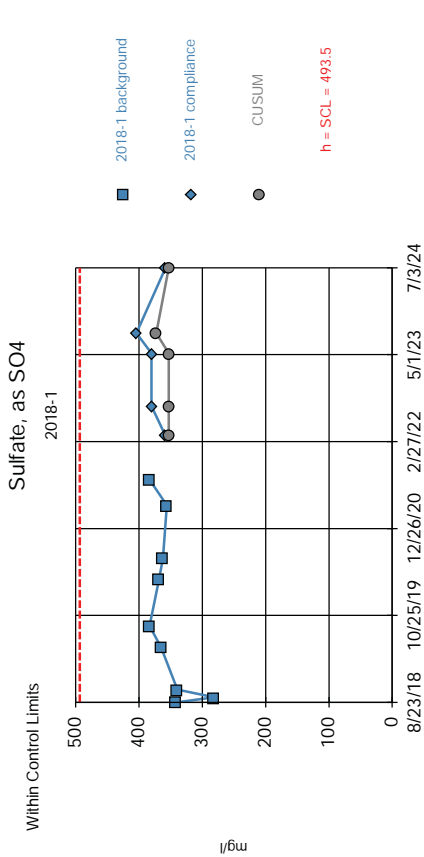
Background Data Summary: Mean=338.4, Std. Dev.=33.68, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9739, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



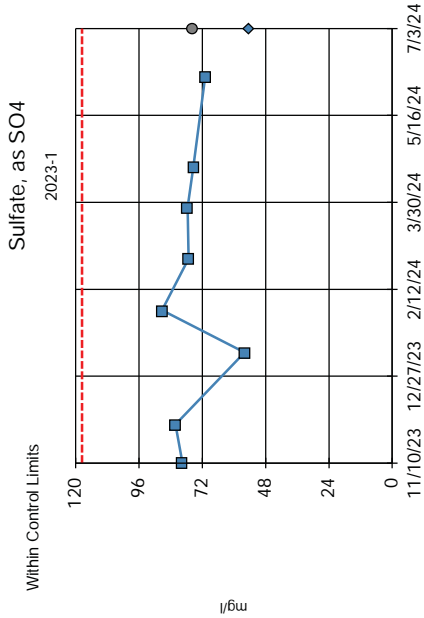
Background Data Summary: Mean=132.7, Std. Dev.=13.64, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9383, critical = 0.892. Report alpha = 0.001108. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



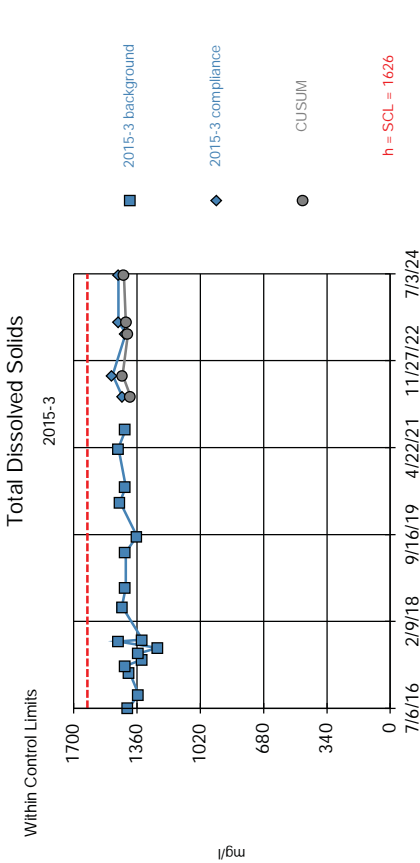
Background Data Summary: Mean=353.1, Std. Dev.=31.19, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.833, critical = 0.829. Report alpha = 0.004856. Dates ending 8/24/2021 used for control Stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

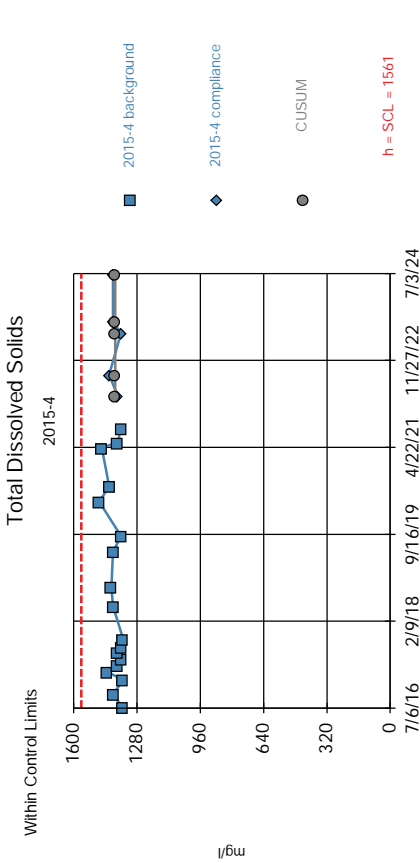


Background Data Summary: Mean=75.71, Std. Dev.=9.292, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8886, critical = 0.818. Report alpha = 0.001882. Dates ending 6/7/2024 used for control Stats. Standardized h=4.5, SCL=4.5.

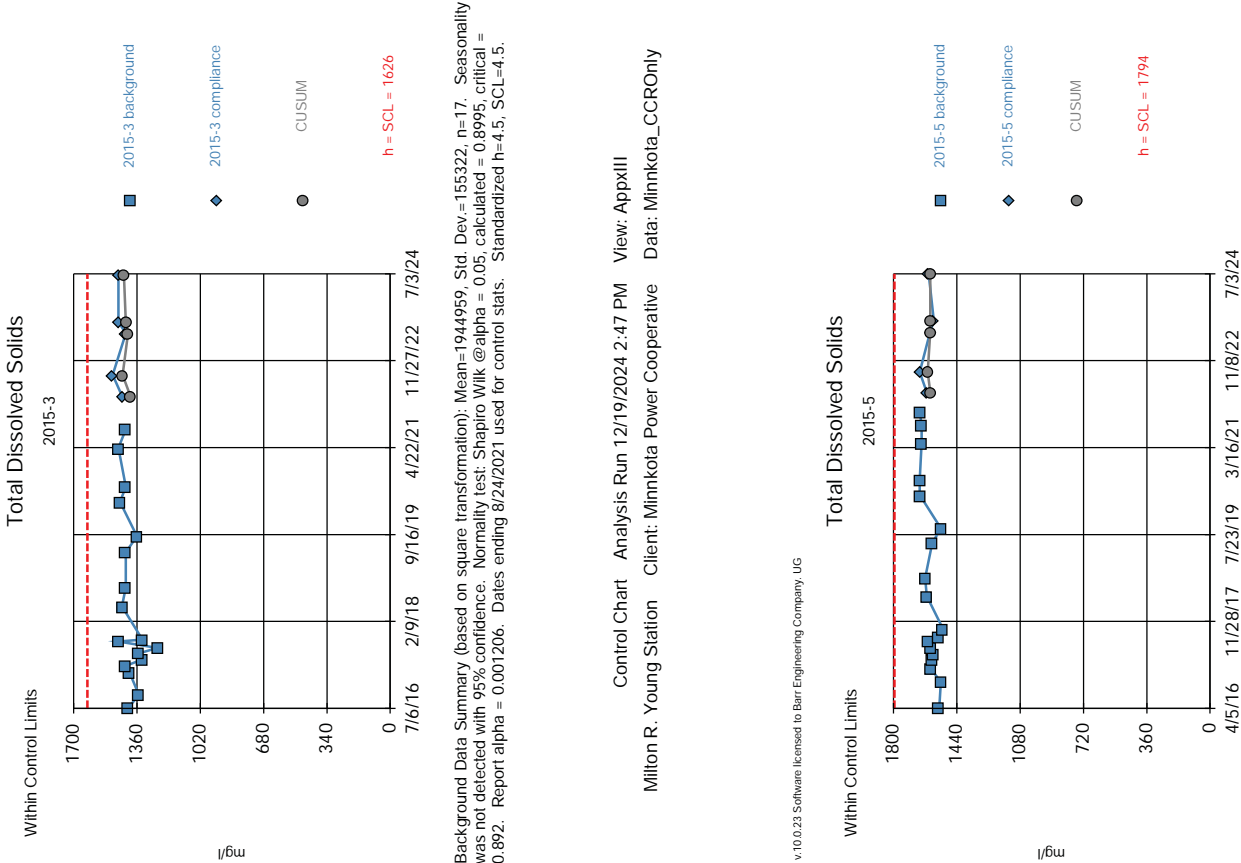
Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



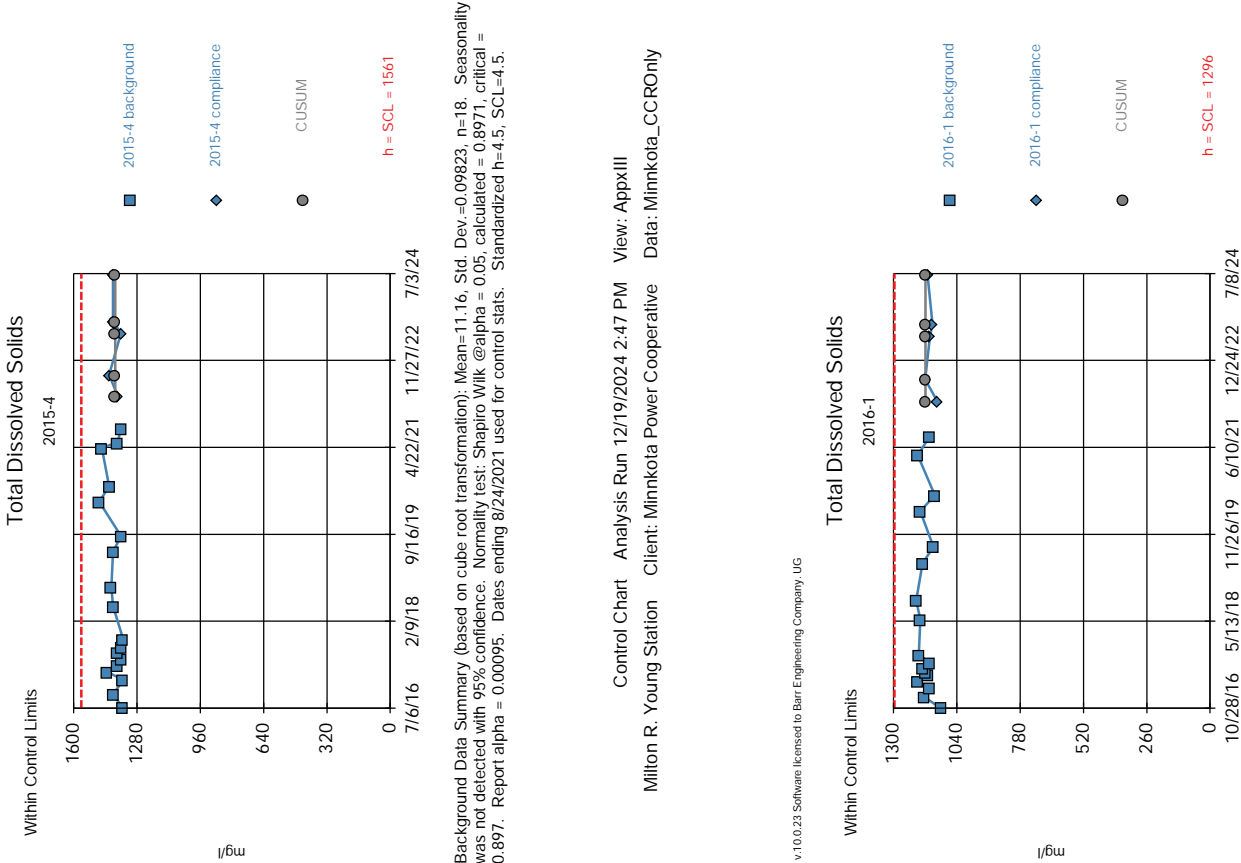
Background Data Summary (based on square transformation): Mean=194959, Std. Dev.=155322, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8995, critical = 0.892. Report alpha = 0.001206. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.



Background Data Summary (based on cube root transformation): Mean=11.16, Std. Dev.=0.09823, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8971, critical = 0.897. Report alpha = 0.00095. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.



Background Data Summary: Mean=1591, Std. Dev.=45.31, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9164, critical = 0.897. Report alpha = 0.00095. Dates ending 11/16/2021 used for control stats. Standardized h=4.5, SCL=4.5.



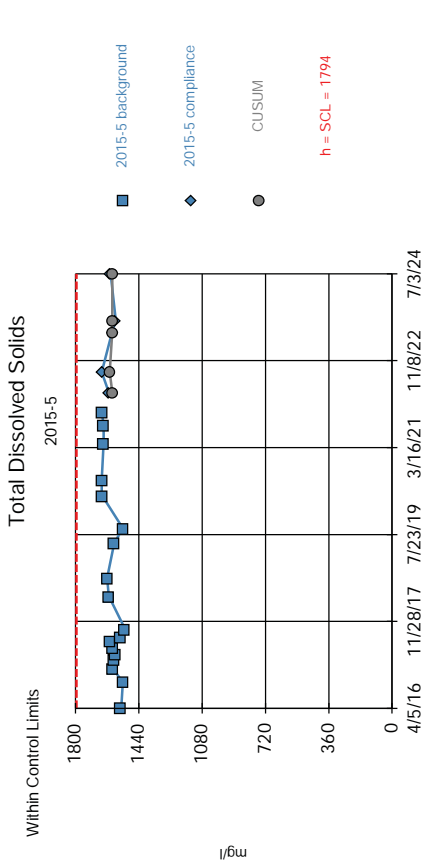
Background Data Summary: Mean=1168, Std. Dev.=28.43, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9413, critical = 0.892. Report alpha = 0.001112. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



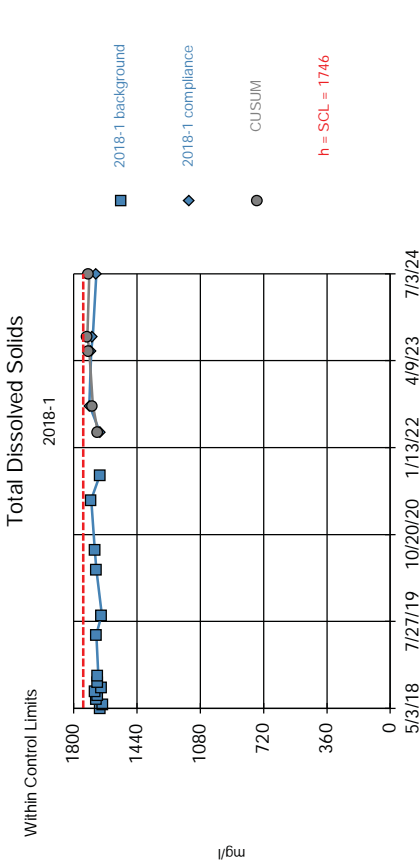
Background Data Summary: Mean=1168, Std. Dev.=28.43, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9413, critical = 0.892. Report alpha = 0.001112. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

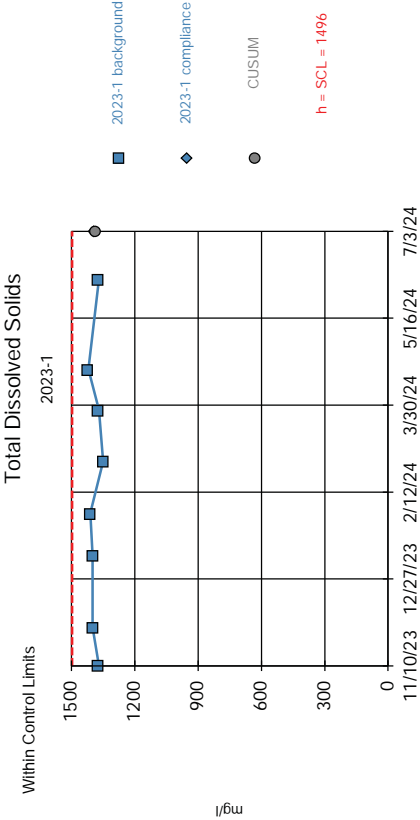
Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1661, Std. Dev.=18.75, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9726, critical = 0.874. Report alpha = 0.0018. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1386, Std. Dev.=24.46, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.916, critical = 0.818. Report alpha = 0.001882. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

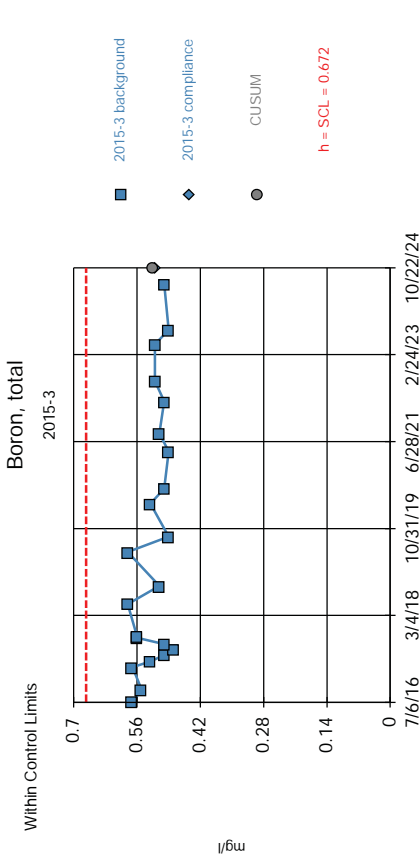
Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/19/2024, 2:49 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDs	ND Adj.	Deseas.	Transform	Method
Boron, total (mg/l)	2015-3	No	0.6875	0.6875	17	0.53	0.035	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-4	No	0.6834	0.6834	17	0.5235	0.03552	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-5	No	0.6745	0.6745	17	0.4782	0.04362	0	None	No	No	Param Intra
Boron, total (mg/l)	2016-1	No	0.7085	0.7085	17	0.5112	0.04386	0	None	No	No	Param Intra
Boron, total (mg/l)	2018-1	No	0.6329	0.6329	14	0.5193	0.02526	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-3	No	4.452	4.452	8	3.313	0.2532	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-4	No	4.023	4.023	8	3.063	0.2134	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-5	No	5.454	5.454	8	4.138	0.2925	0	None	No	No	Param Intra
Calcium, total (mg/l)	2016-1	No	3.326	3.326	8	2.588	0.1642	0	None	No	No	Param Intra
Calcium, total (mg/l)	2018-1	No	5.293	5.293	8	3.881	0.3138	0	None	Yes	No	Param Intra
Chloride (mg/l)	2015-3	No	9.203	9.203	8	5.363	0.8535	0	None	No	No	Param Intra
Chloride (mg/l)	2015-4	No	9.668	9.668	11	5.627	0.8979	0	None	No	No	Param Intra
Chloride (mg/l)	2015-5	No	6.292	6.292	9	3.544	0.6106	0	None	No	No	Param Intra
Chloride (mg/l)	2016-1	No	7.517	7.517	10	4.3	0.7149	0	None	No	No	Param Intra
Chloride (mg/l)	2018-1	No	7.434	7.434	14	4.929	0.5567	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-3	No	2.208	2.208	17	1.862	0.07699	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-4	No	2.194	2.194	17	1.885	0.06866	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-5	No	2.225	2.225	17	1.827	0.08851	0	None	No	No	Param Intra
Fluoride (mg/l)	2016-1	No	2.562	2.562	17	2.27	0.06493	0	None	Yes	No	Param Intra
Fluoride (mg/l)	2018-1	No	2.162	2.162	14	1.871	0.06464	0	None	Yes	No	Param Intra
pH, field (pH_units)	2015-3	No	8.322&7.767	8.322&7.767	18	8.044	0.06157	0	None	No	No	Param Intra
pH, field (pH_units)	2015-4	No	8.57&7.9	8.57&7.9	20	8.235	0.07452	0	None	No	No	Param Intra
pH, field (pH_units)	2015-5	No	8.552&7.87	8.552&7.87	18	8.211	0.07584	0	None	No	No	Param Intra
pH, field (pH_units)	2016-1	No	9.002&7.871	9.002&7.871	19	8.437	0.1257	0	None	No	No	Param Intra
pH, field (pH_units)	2018-1	No	8.635&7.865	8.635&7.865	14	8.25	0.08549	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-3	No	113.2	113.2	17	81.71	6.998	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-4	No	119.2	119.2	17	86.78	7.193	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-5	No	489.9	489.9	17	338.4	33.68	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2016-1	No	194.1	194.1	17	132.7	13.64	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2018-1	No	493.5	493.5	9	353.1	31.19	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2015-3	No	1626	1626	17	1944959	155322	0	None	No	x^2	Param Intra
Total Dissolved Solids (mg/l)	2015-4	No	1561	1561	18	11.16	0.09823	0	None	No	x^(1/3)	Param Intra
Total Dissolved Solids (mg/l)	2015-5	No	1794	1794	18	1591	45.31	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2016-1	No	1296	1296	17	1168	28.43	0	None	Yes	No	Param Intra
Total Dissolved Solids (mg/l)	2018-1	No	1746	1746	14	1661	18.75	0	None	No	No	Param Intra
Boron, total (mg/l)	2023-1	No	0.6061	0.6061	8	0.5213	0.01885	0	None	No	No	Param Intra
Calcium, total (mg/l)	2023-1	No	3.757	3.757	8	3.261	0.1101	0	None	No	No	Param Intra
Chloride (mg/l)	2023-1	No	19.48	19.48	8	16.05	0.7616	0	None	No	No	Param Intra
Fluoride (mg/l)	2023-1	No	2.019	2.019	8	1.795	0.04986	0	None	No	No	Param Intra
pH, field (pH_units)	2023-1	No	8.962&7.658	8.962&7.658	10	8.31	0.1449	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2023-1	No	117.5	117.5	8	75.71	9.292	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2023-1	No	1496	1496	8	1386	24.46	0	None	No	No	Param Intra

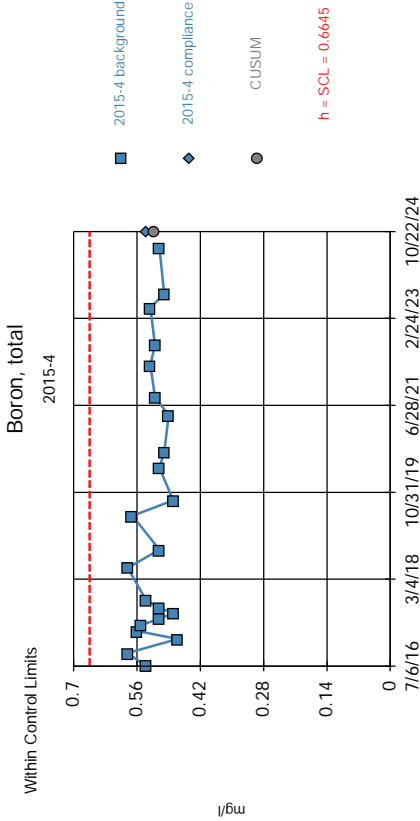
Appendix B

Statistical Review for SSIs: Event 2



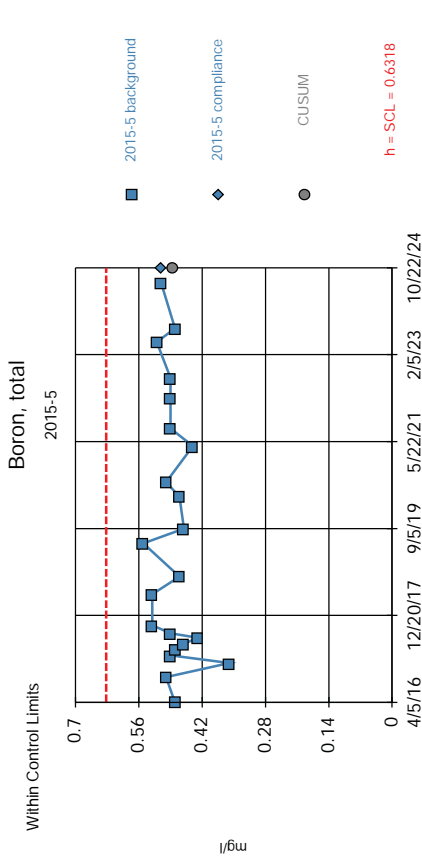
Background Data Summary: Mean=0.5245, Std. Dev.=0.03277, n=22. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8559, critical = 0.911 (non-normal: user chose to continue). Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



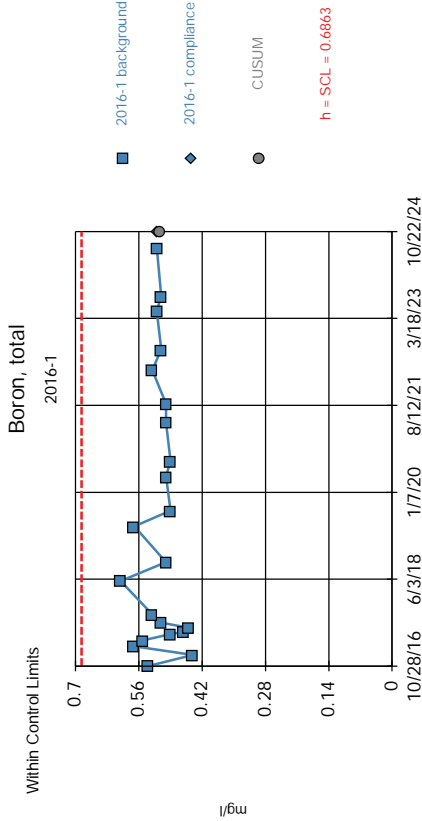
Background Data Summary: Mean=0.5223, Std. Dev.=0.03161, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9558, critical = 0.911. Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



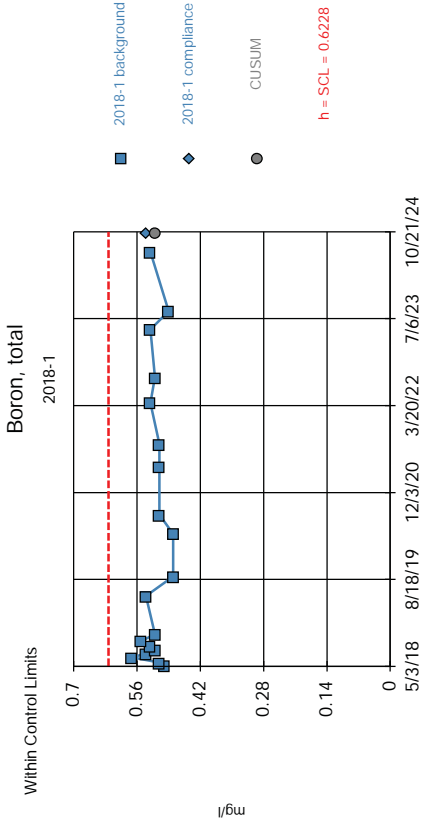
Background Data Summary (based on square transformation): Mean=0.2345, Std. Dev.=0.03659, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9396, critical = 0.911. Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



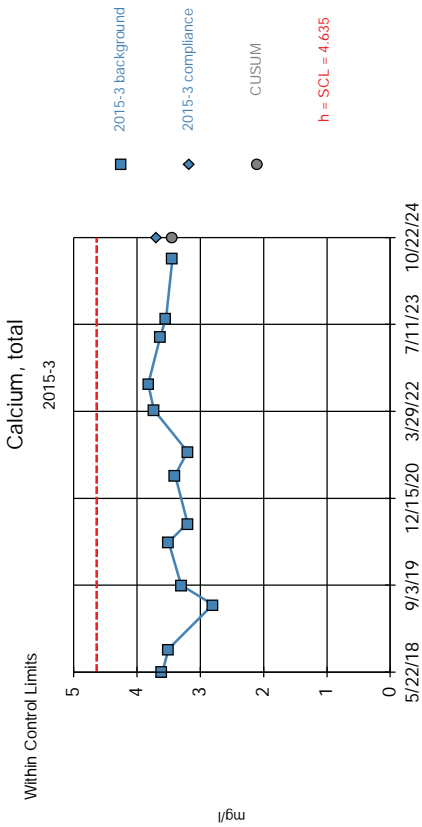
Background Data Summary: Mean=0.5127, Std. Dev.=0.03857, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9668, critical = 0.911. Report alpha = 0.000124. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



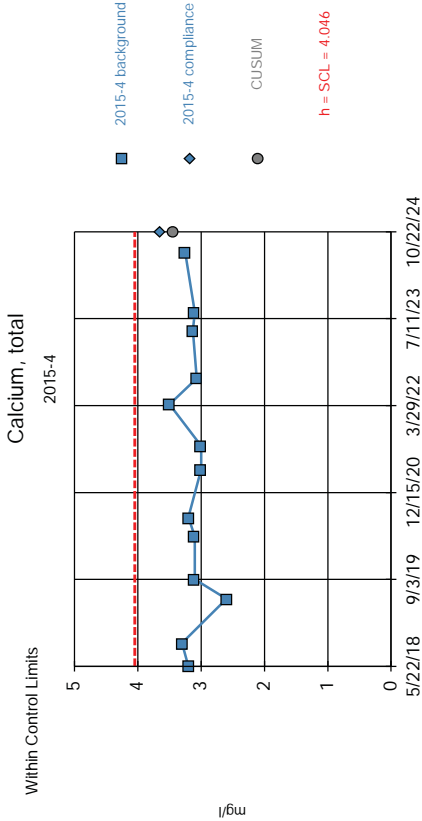
Background Data Summary: Mean=0.5195, Std. Dev.=0.02297, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9676, critical = 0.901. Report alpha = 0.000178. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



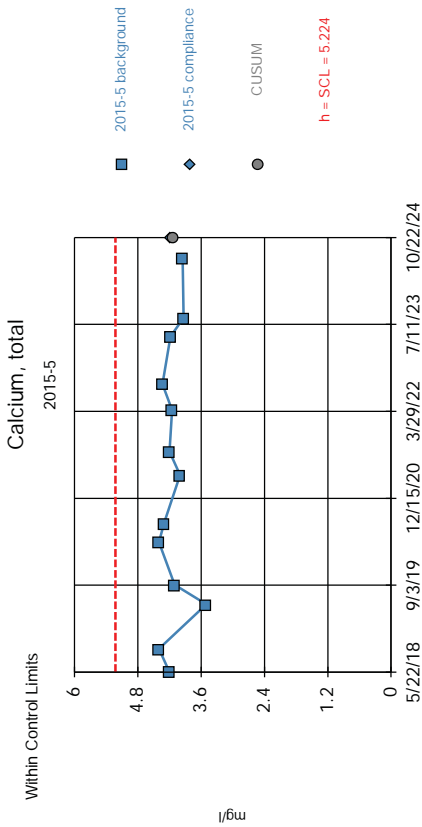
Background Data Summary: Mean=3.435, Std. Dev.=0.2666, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9418, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



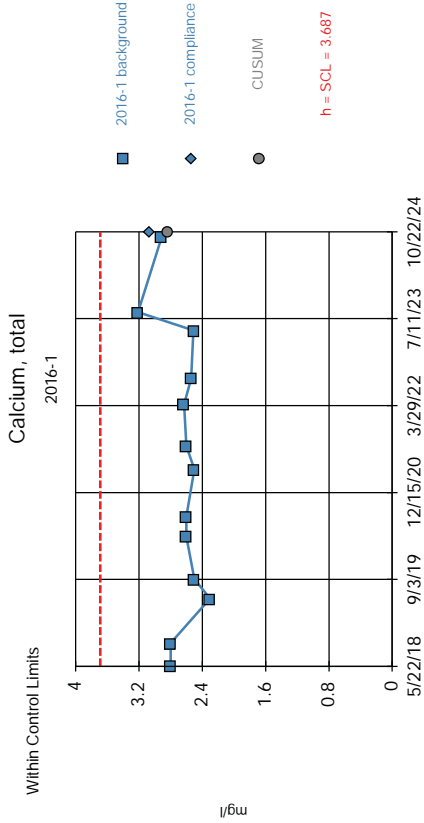
Background Data Summary: Mean=3.119, Std. Dev.=0.2061, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



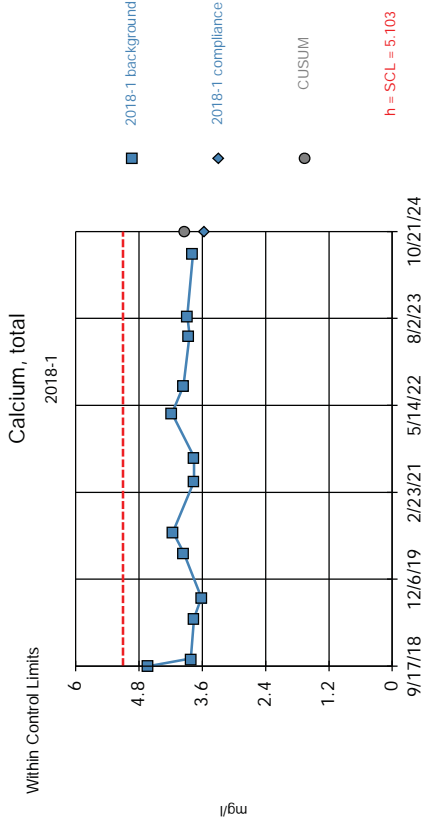
Background Data Summary: Mean=4.126, Std. Dev.=0.244, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8851, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



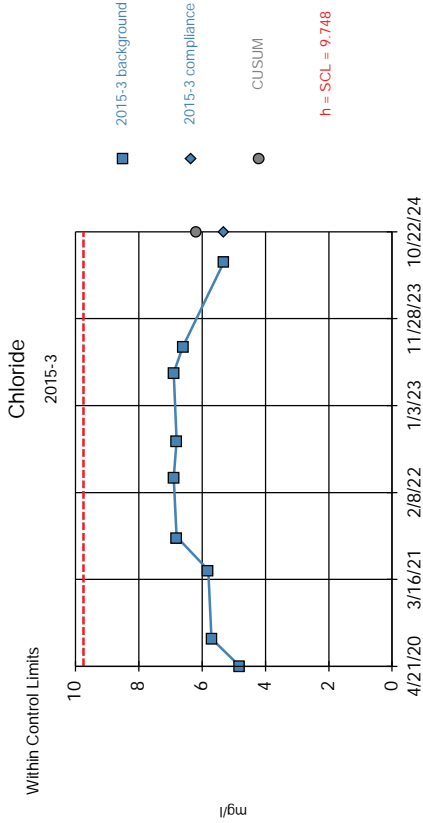
Background Data Summary: Mean=2.654, Std. Dev.=0.2297, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9021, critical = 0.866. Report alpha = 0.000526. Dates ending 9/24/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



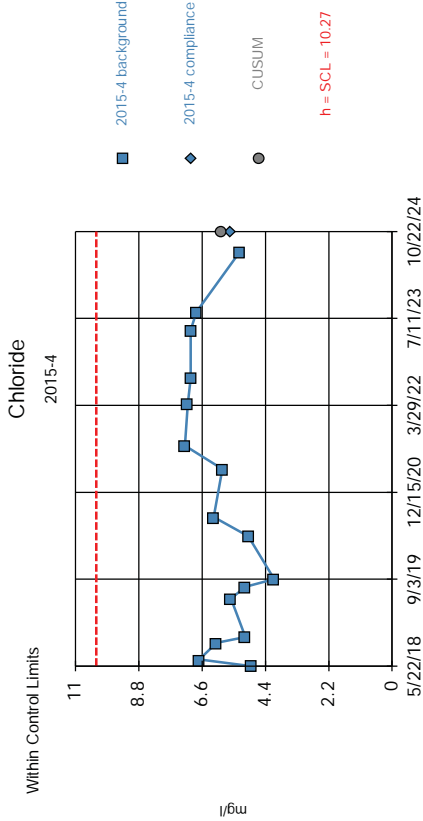
Background Data Summary: Mean=3.926, Std. Dev.=0.2615, n=13. Seasonality was detected with 95% confidence and data were deseasonalized. Analysis run on non-transformed values: Transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7053, critical = 0.866 (non-normal: user chose to continue). Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



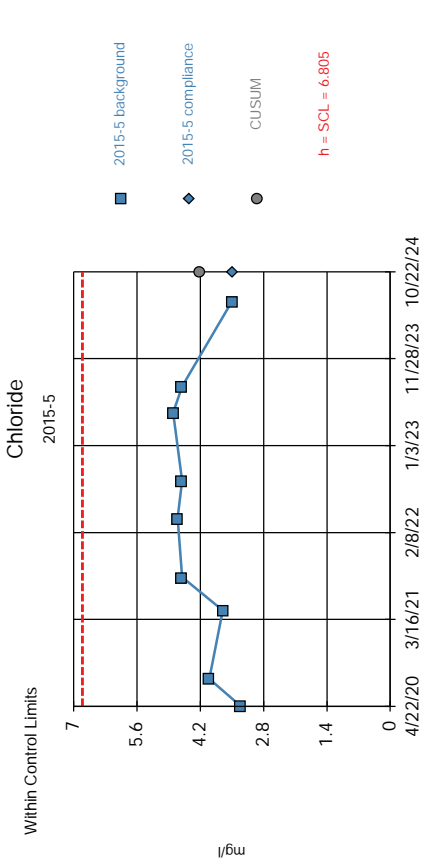
Background Data Summary: Mean=6.178, Std. Dev.=0.7934, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8489, critical = 0.829. Report alpha = 0.001342. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



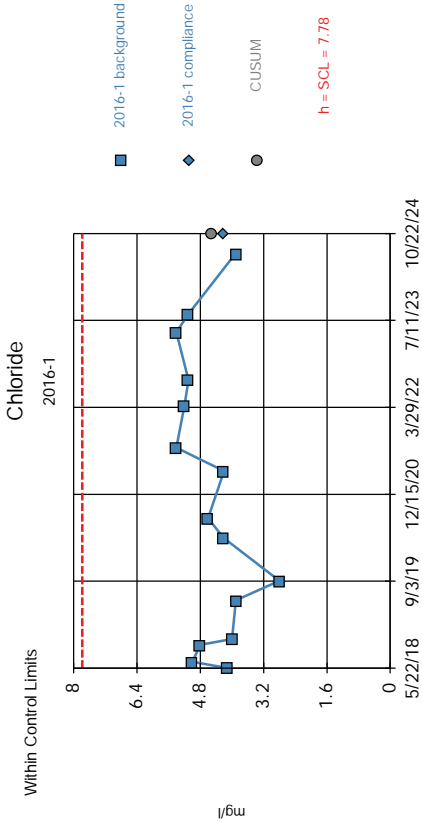
Background Data Summary: Mean=5.944, Std. Dev.=0.9619, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9286, critical = 0.887. Report alpha = 0.000268. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



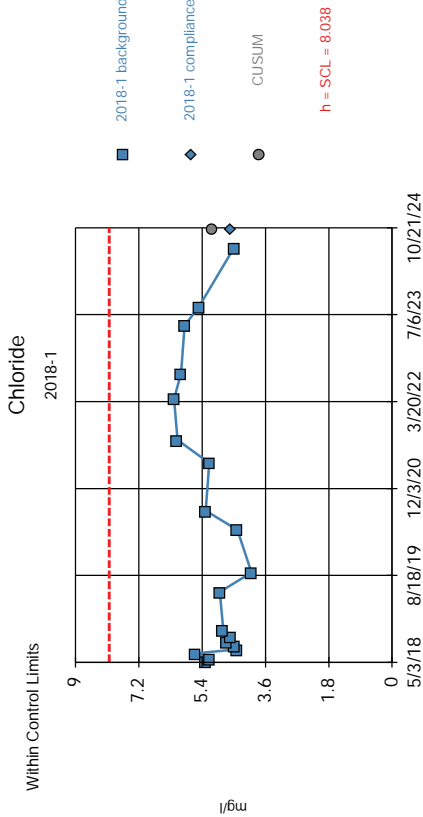
Background Data Summary: Mean=4.2, Std. Dev.=0.5788, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8476, critical = 0.829. Report alpha = 0.00137. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



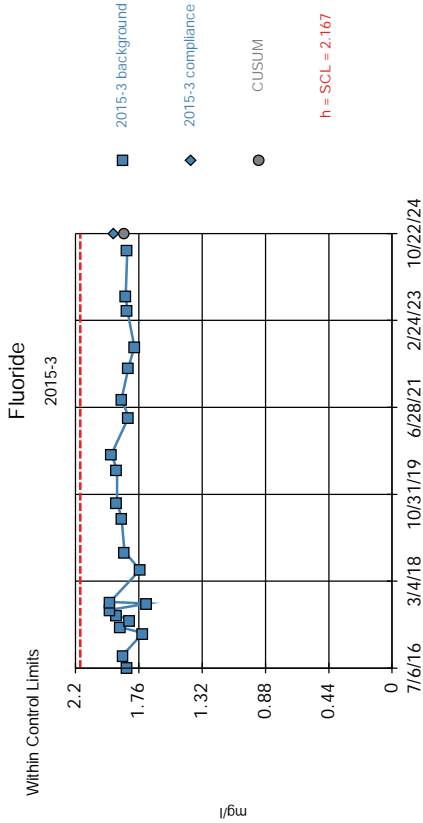
Background Data Summary: Mean=4.513, Std. Dev.=0.7259, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9146, critical = 0.881. Report alpha = 0.000316. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



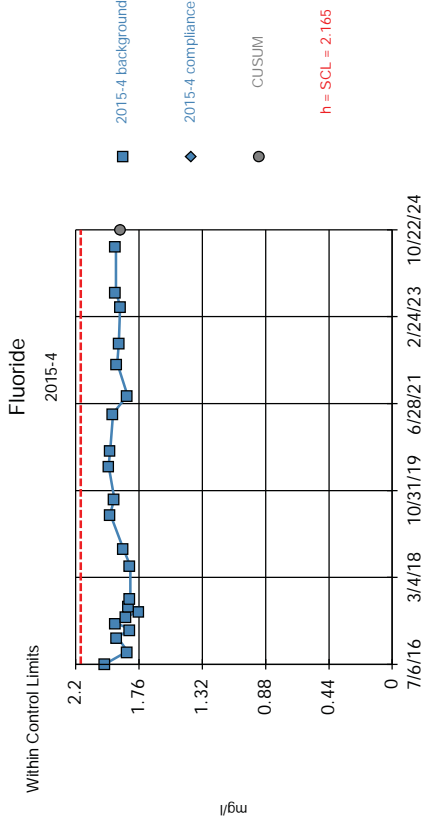
Background Data Summary: Mean=5.111, Std. Dev.=0.6506, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9539, critical = 0.901. Report alpha = 0.000202. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



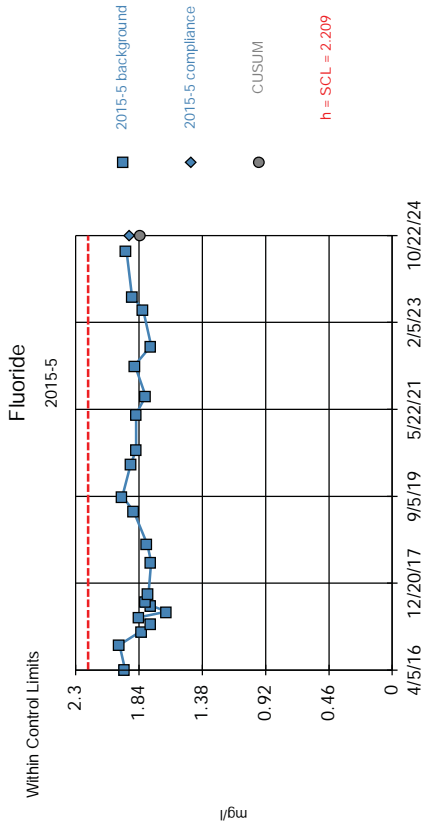
Background Data Summary: Mean=1.855, Std. Dev.=0.06933, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9548, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



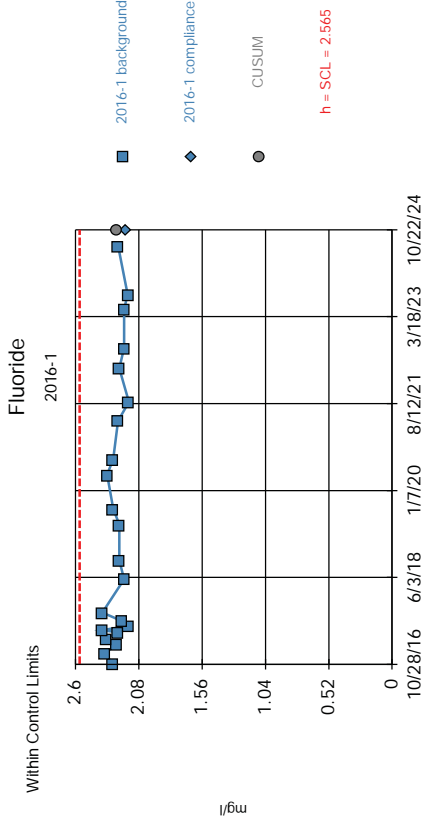
Background Data Summary: Mean=1.89, Std. Dev.=0.06102, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9672, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



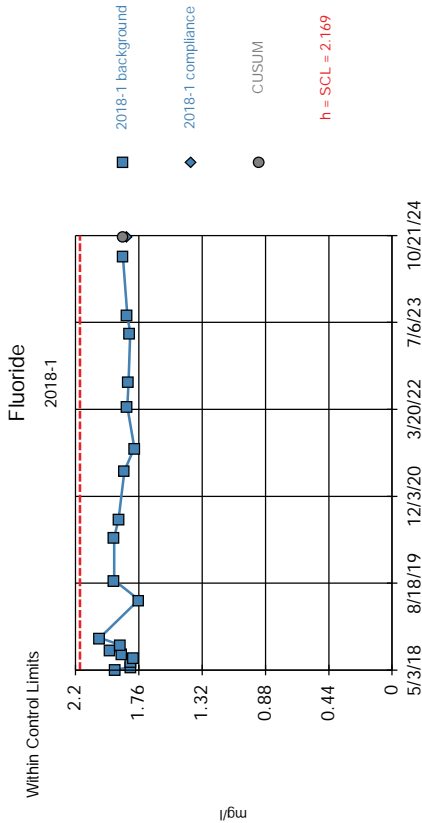
Background Data Summary: Mean=1.832, Std. Dev.=0.08378, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9708, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



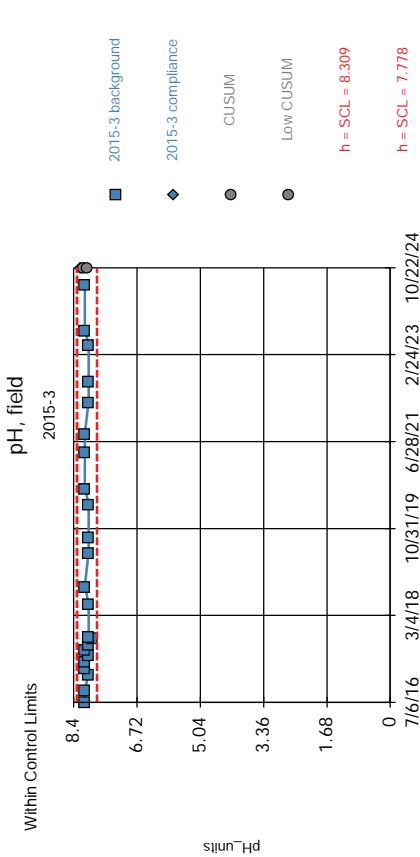
Background Data Summary: Mean=2.26, Std. Dev.=0.06765, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9353, critical = 0.911. Report alpha = 0.000088. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



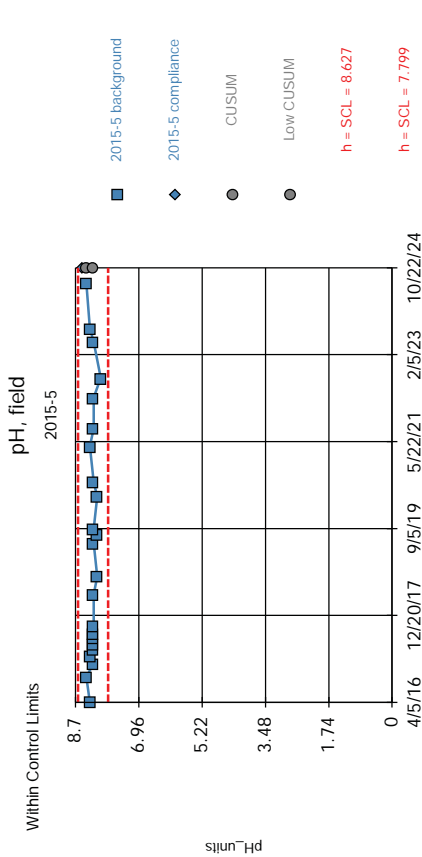
Background Data Summary: Mean=1.867, Std. Dev.=0.06717, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9649, critical = 0.901. Report alpha = 0.000174. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



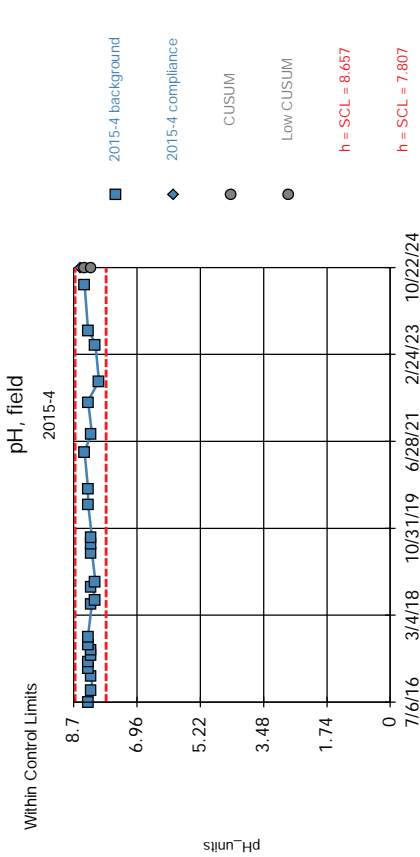
Background Data Summary: Mean=8.043, Std. Dev.=0.05898, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7337, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



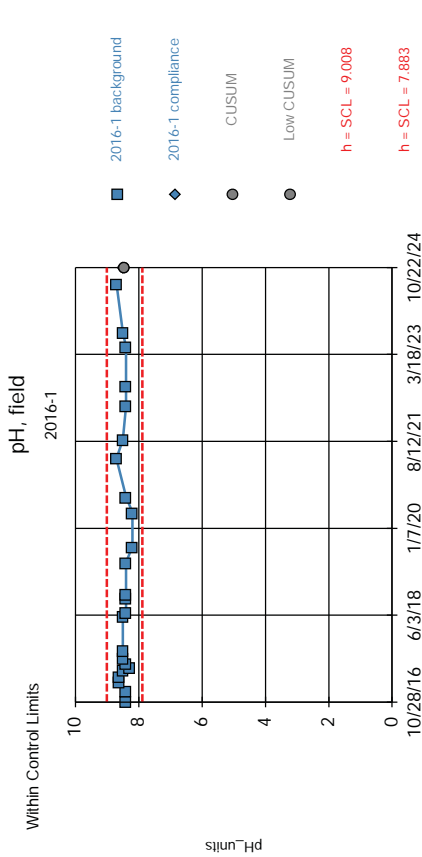
Background Data Summary: Mean=8.213, Std. Dev.=0.09197, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000112. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



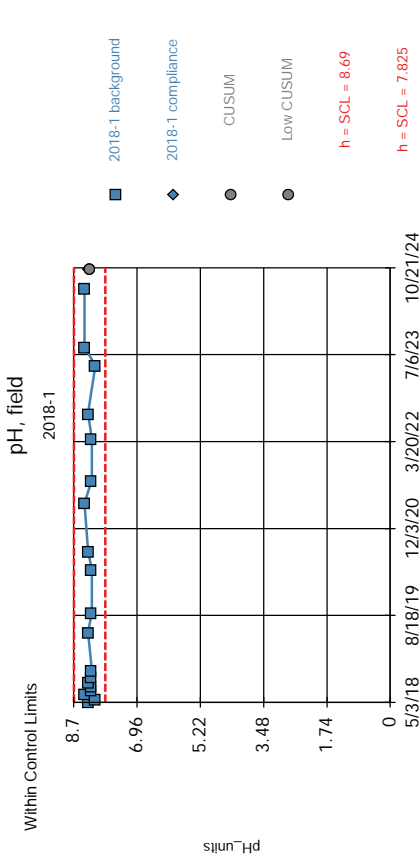
Background Data Summary: Mean=8.232, Std. Dev.=0.09452, n=25. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9029, critical = 0.918 (non-normal: user chose to continue). Report alpha = 0.000074. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

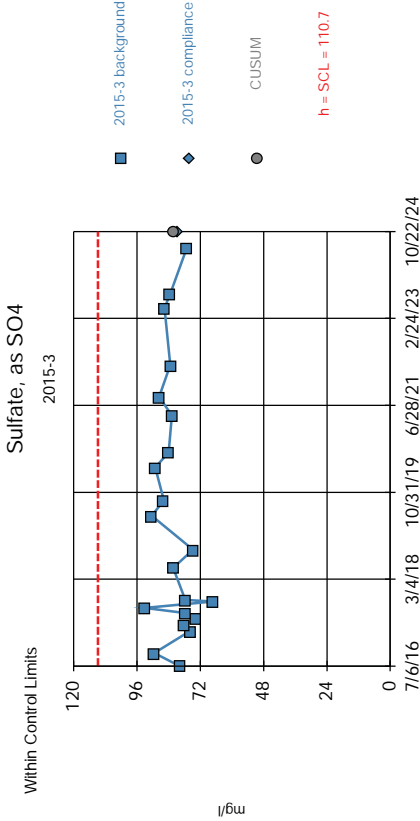


Background Data Summary: Mean=8.446, Std. Dev.=0.125, n=24. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8914, critical = 0.916 (non-normal: user chose to continue). Report alpha = 0.000104. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

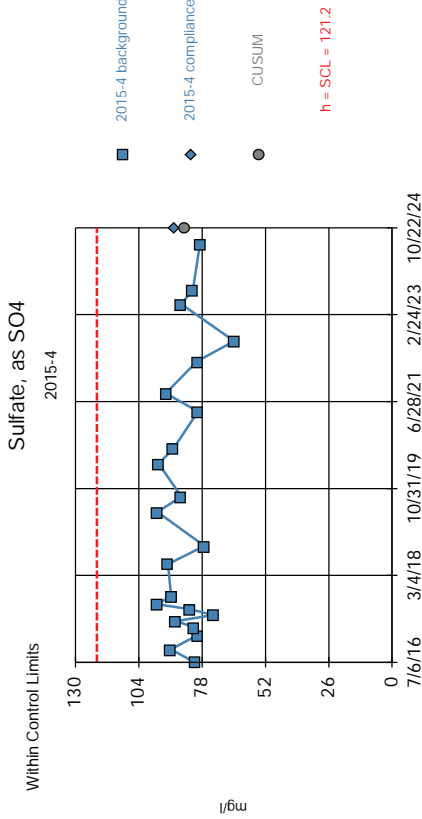
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Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



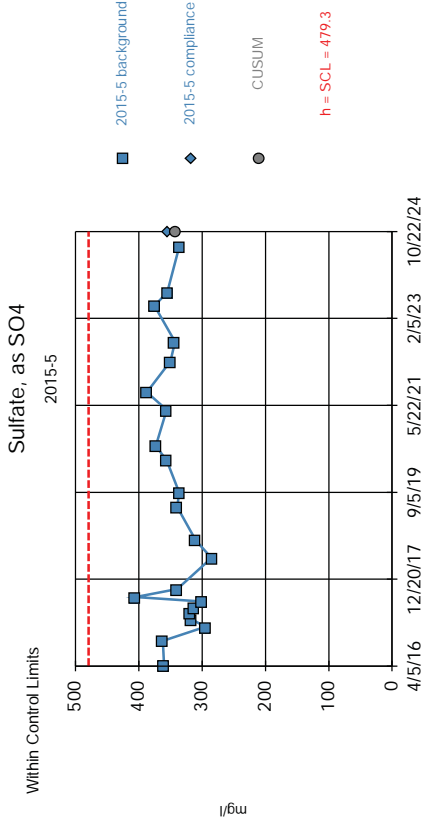
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



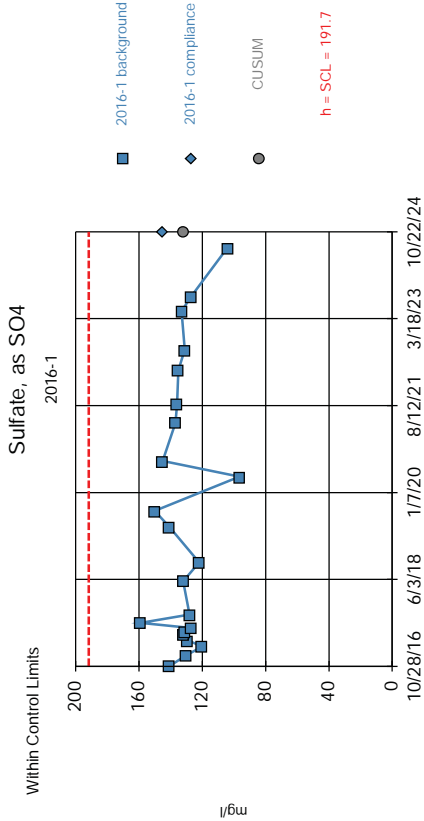
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

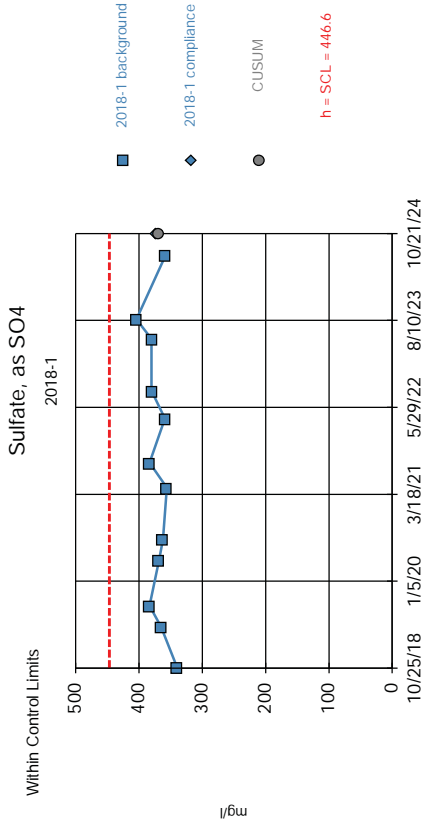


Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



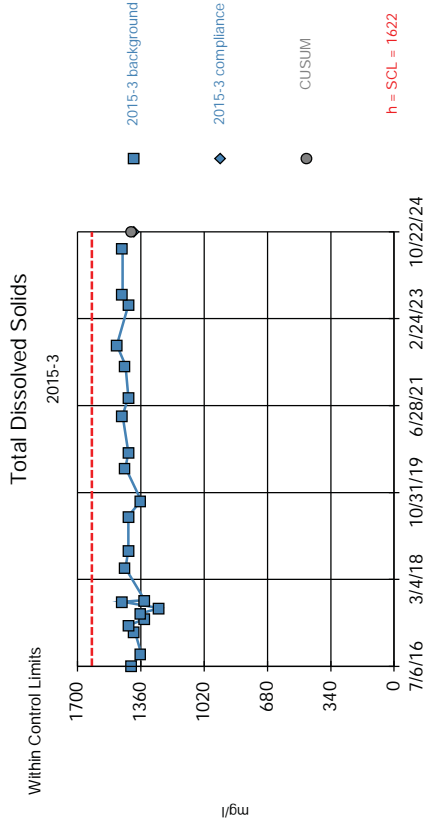
Background Data Summary: Mean=131.2, Std. Dev.=13.43, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.927, critical = 0.911. Report alpha = 0.000108. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



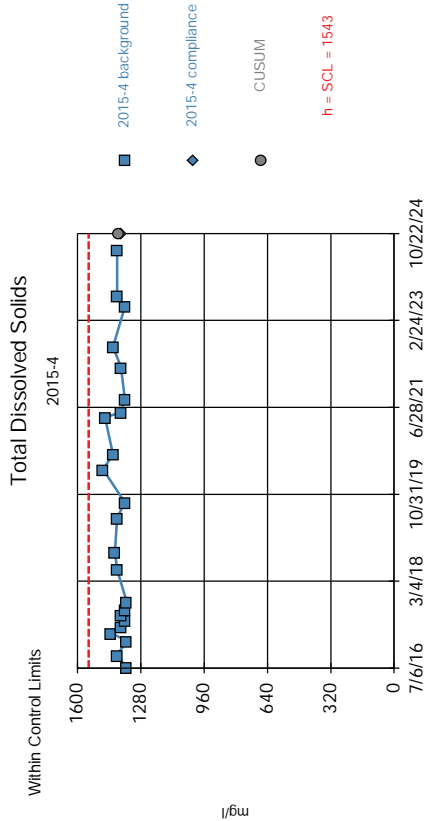
Background Data Summary: Mean=369.8, Std. Dev.=17.08, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9606, critical = 0.859. Report alpha = 0.00058. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



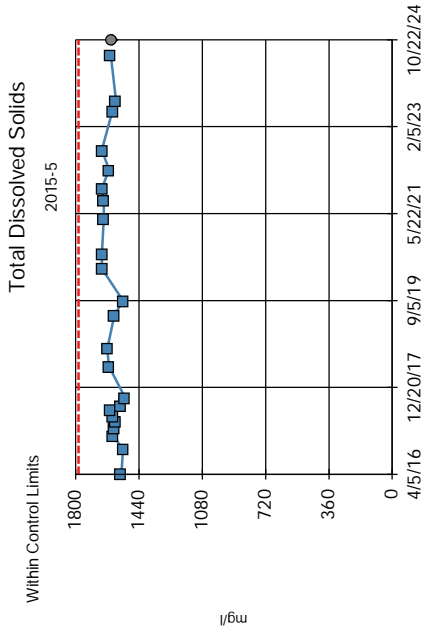
Background Data Summary (based on cube transformation): Mean=2.8e9, Std. Dev.=3.3e8, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9169, critical = 0.911. Report alpha = 0.000114. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



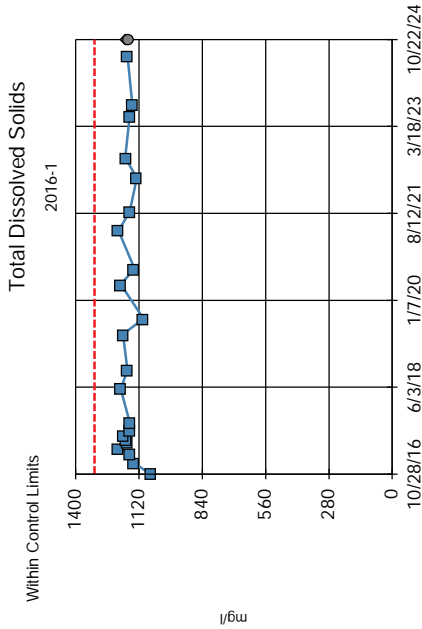
Background Data Summary: Mean=1390, Std. Dev.=33.91, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8865, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



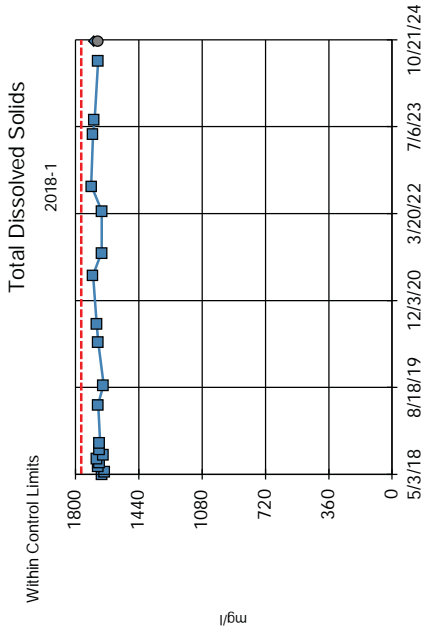
Background Data Summary: Mean=1593, Std. Dev.=42.17, n=23. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9293, critical = 0.914. Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



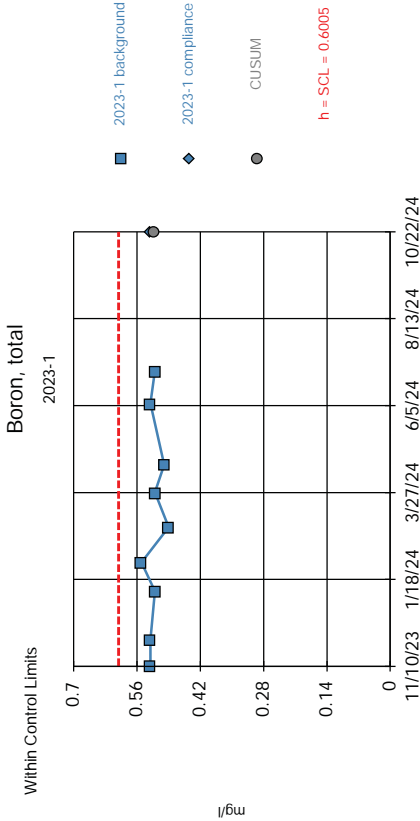
Background Data Summary: Mean=1164, Std. Dev.=34.02, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9196, critical = 0.911. Report alpha = 0.00016. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



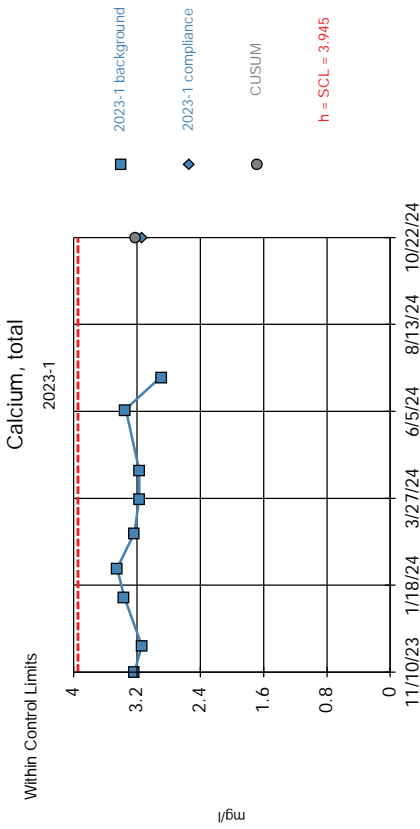
Background Data Summary: Mean=1667, Std. Dev.=22.07, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9661, critical = 0.901. Report alpha = 0.00018. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:43 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



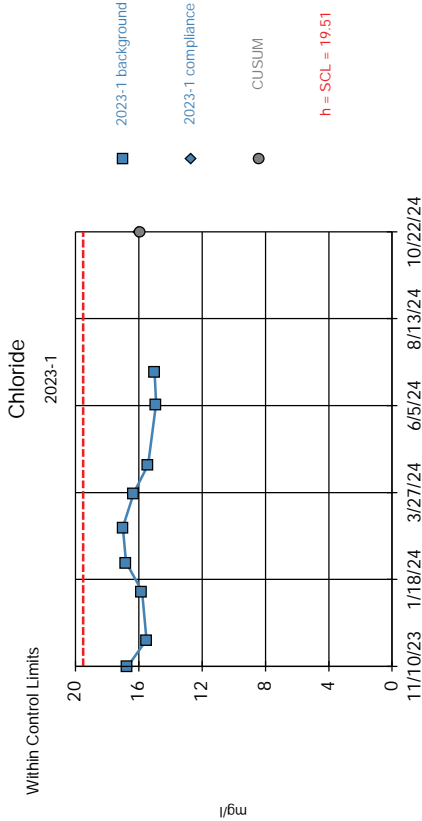
Background Data Summary: Mean=0.5211, Std. Dev.=0.01764, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9251, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



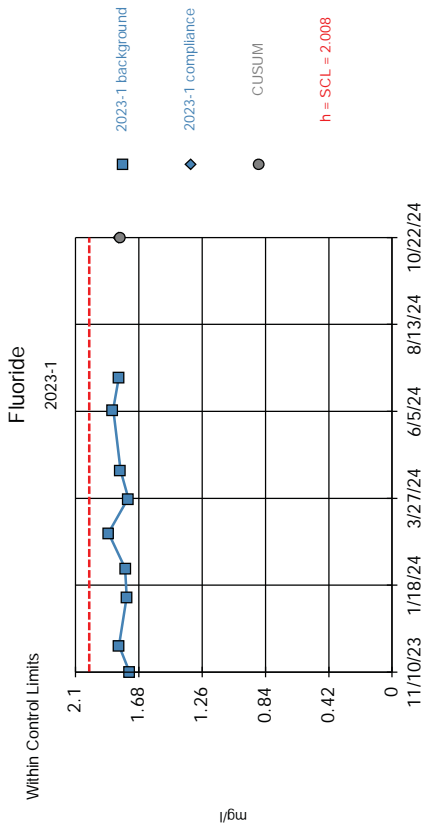
Background Data Summary: Mean=3.22, Std. Dev.=0.161, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.935, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



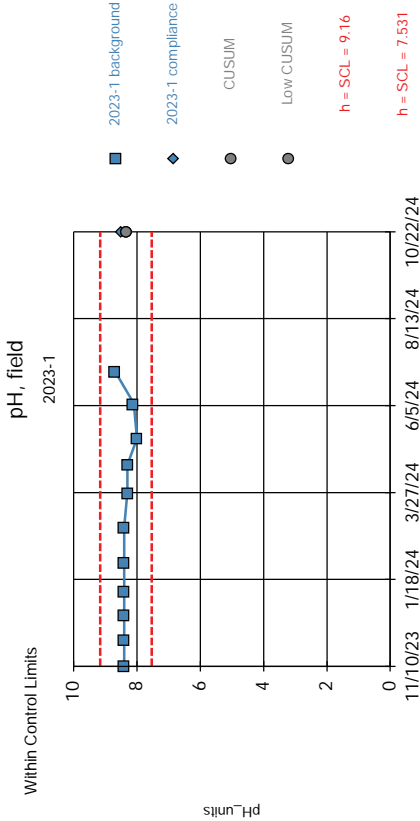
Background Data Summary: Mean=15.93, Std. Dev.=0.7937, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9198, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1.797, Std. Dev.=0.0469, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9388, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

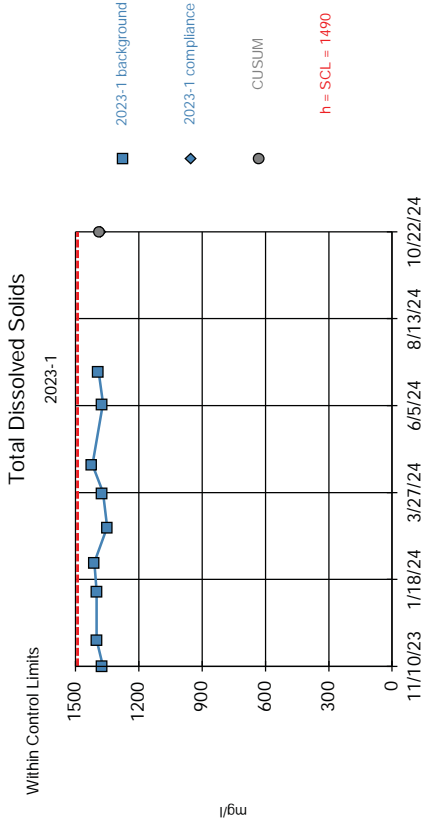
Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.345, Std. Dev.=0.1809, n=11. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8532, critical = 0.85. Report alpha = 0.000808. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII

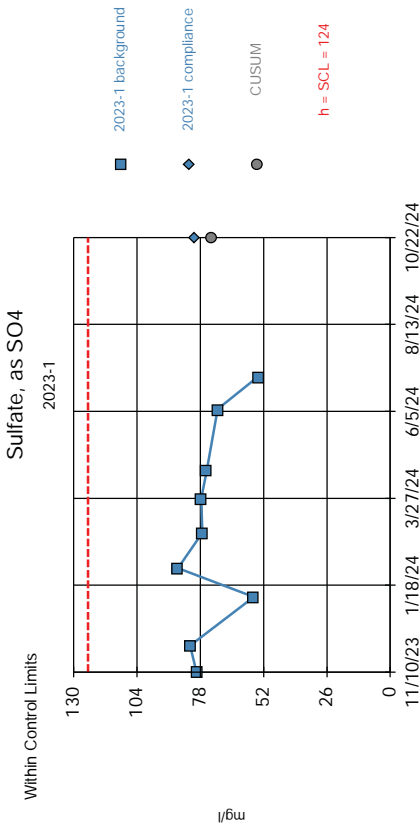
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1387, Std. Dev.=22.91, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9438, critical = 0.829. Report alpha = 0.001336. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=73.32, Std. Dev.=11.27, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8745, critical = 0.829. Report alpha = 0.001336. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/17/2024, 8:43 AM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDs	ND Adj.	Deseas.	Transform	Method
Boron, total (mg/l)	2015-3	No	0.672	0.672	22	0.5245	0.03277	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-4	No	0.6645	0.6645	22	0.5223	0.03161	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-5	No	0.6318	0.6318	22	0.2345	0.03659	0	None	No	x^2	Param Intra
Boron, total (mg/l)	2016-1	No	0.6863	0.6863	22	0.5127	0.03857	0	None	No	No	Param Intra
Boron, total (mg/l)	2018-1	No	0.6228	0.6228	19	0.5195	0.02297	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-3	No	4.635	4.635	13	3.435	0.2666	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-4	No	4.046	4.046	13	3.119	0.2061	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-5	No	5.224	5.224	13	4.126	0.244	0	None	No	No	Param Intra
Calcium, total (mg/l)	2016-1	No	3.687	3.687	13	2.654	0.2297	0	None	No	No	Param Intra
Calcium, total (mg/l)	2018-1	No	5.103	5.103	13	3.926	0.2615	0	None	Yes	No	Param Intra
Chloride (mg/l)	2015-3	No	9.748	9.748	9	6.178	0.7934	0	None	No	No	Param Intra
Chloride (mg/l)	2015-4	No	10.27	10.27	16	5.944	0.9619	0	None	No	No	Param Intra
Chloride (mg/l)	2015-5	No	6.805	6.805	9	4.2	0.5788	0	None	No	No	Param Intra
Chloride (mg/l)	2016-1	No	7.78	7.78	15	4.513	0.7259	0	None	No	No	Param Intra
Chloride (mg/l)	2018-1	No	8.038	8.038	19	5.111	0.6506	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-3	No	2.167	2.167	22	1.855	0.06933	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-4	No	2.165	2.165	22	1.89	0.06102	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-5	No	2.209	2.209	22	1.832	0.08378	0	None	No	No	Param Intra
Fluoride (mg/l)	2016-1	No	2.565	2.565	22	2.26	0.06765	0	None	No	No	Param Intra
Fluoride (mg/l)	2018-1	No	2.169	2.169	19	1.867	0.06717	0	None	No	No	Param Intra
pH, field (pH_units)	2015-3	No	8.309&7.778	8.309&7.778	23	8.043	0.05898	0	None	No	No	Param Intra
pH, field (pH_units)	2015-4	No	8.657&7.807	8.657&7.807	25	8.232	0.09452	0	None	No	No	Param Intra
pH, field (pH_units)	2015-5	No	8.627&7.799	8.627&7.799	23	8.213	0.09197	0	None	No	No	Param Intra
pH, field (pH_units)	2016-1	No	9.008&7.883	9.008&7.883	24	8.446	0.125	0	None	No	No	Param Intra
pH, field (pH_units)	2018-1	No	8.69&7.825	8.69&7.825	19	8.258	0.09612	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-3	No	110.7	110.7	21	81.82	6.424	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-4	No	121.2	121.2	22	84.88	8.061	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-5	No	479.3	479.3	22	341.4	30.65	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2016-1	No	191.7	191.7	22	131.2	13.43	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2018-1	No	446.6	446.6	12	369.8	17.08	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2015-3	No	1622	1622	22	2.8e9	3.3e8	0	None	No	x^3	Param Intra
Total Dissolved Solids (mg/l)	2015-4	No	1543	1543	23	1390	33.91	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2015-5	No	1783	1783	23	1593	42.17	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2016-1	No	1317	1317	22	1164	34.02	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2018-1	No	1767	1767	19	1667	22.07	0	None	No	No	Param Intra

Shewhart-Cusum Control Chart / Rank Sum

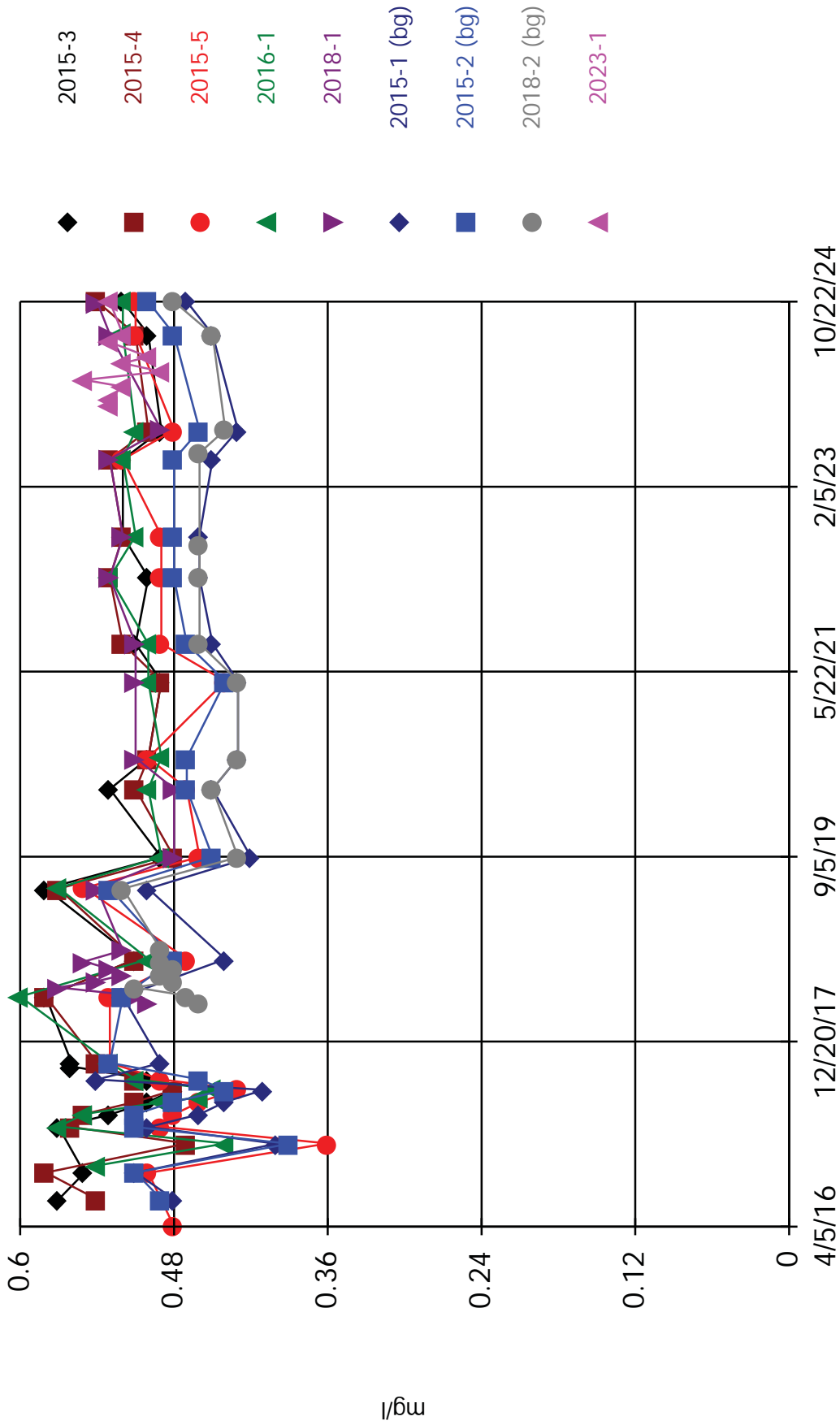
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/16/2024, 5:29 PM

<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Deseas.</u>	<u>Transform</u>	<u>Method</u>
Boron, total (mg/l)	2023-1	No	0.6005	0.6005	9	0.5211	0.01764	0	None	No	No	Param Intra
Calcium, total (mg/l)	2023-1	No	3.945	3.945	9	3.22	0.161	0	None	No	No	Param Intra
Chloride (mg/l)	2023-1	No	19.51	19.51	9	15.93	0.7937	0	None	No	No	Param Intra
Fluoride (mg/l)	2023-1	No	2.008	2.008	9	1.797	0.0469	0	None	No	No	Param Intra
pH, field (pH_units)	2023-1	No	9.16&7.531	9.16&7.531	11	8.345	0.1809	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2023-1	No	124	124	9	73.32	11.27	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2023-1	No	1490	1490	9	1387	22.91	0	None	No	No	Param Intra

Appendix C

Time Series Graphs for Appendix III Constituents

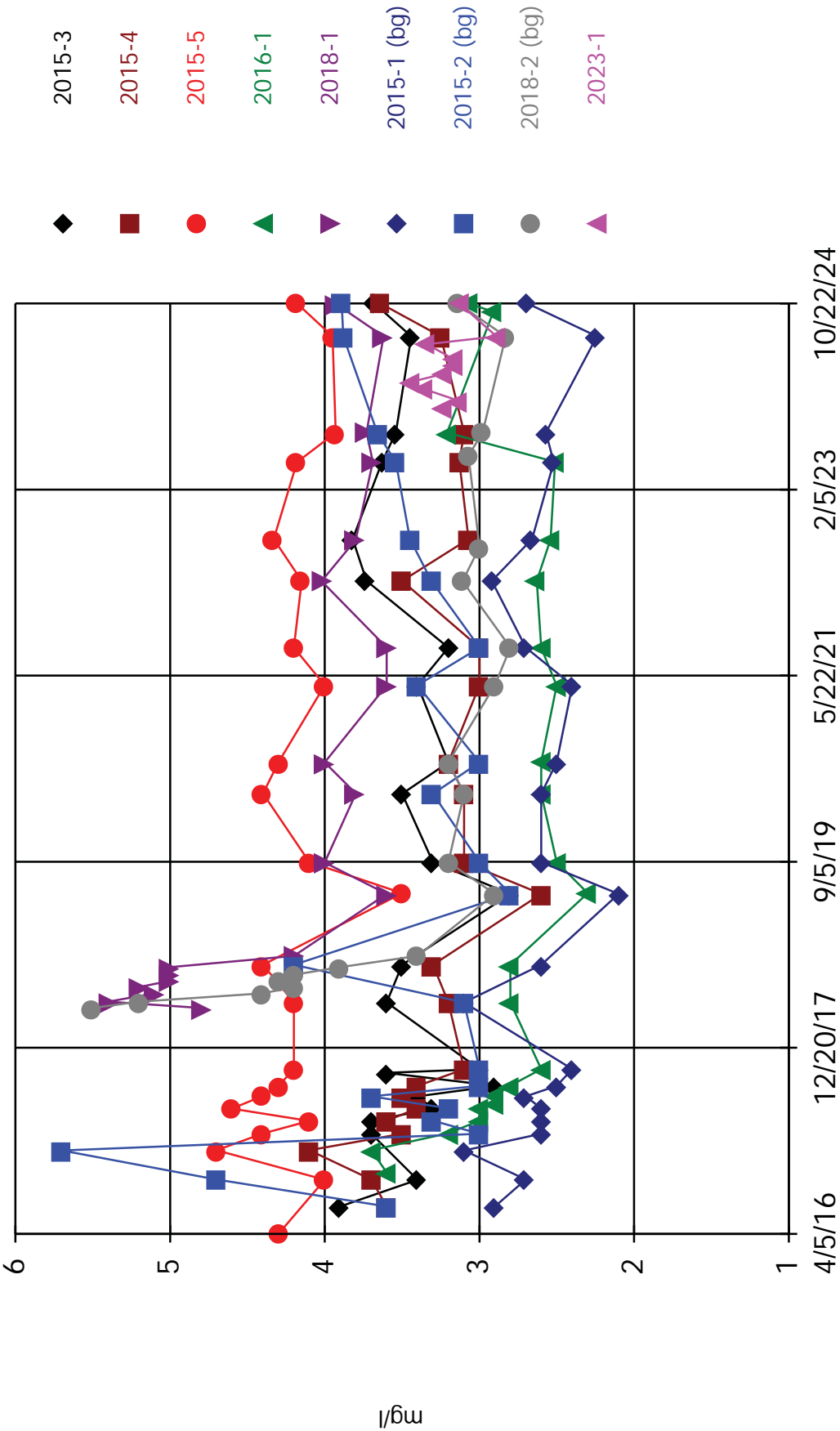
Boron, total



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

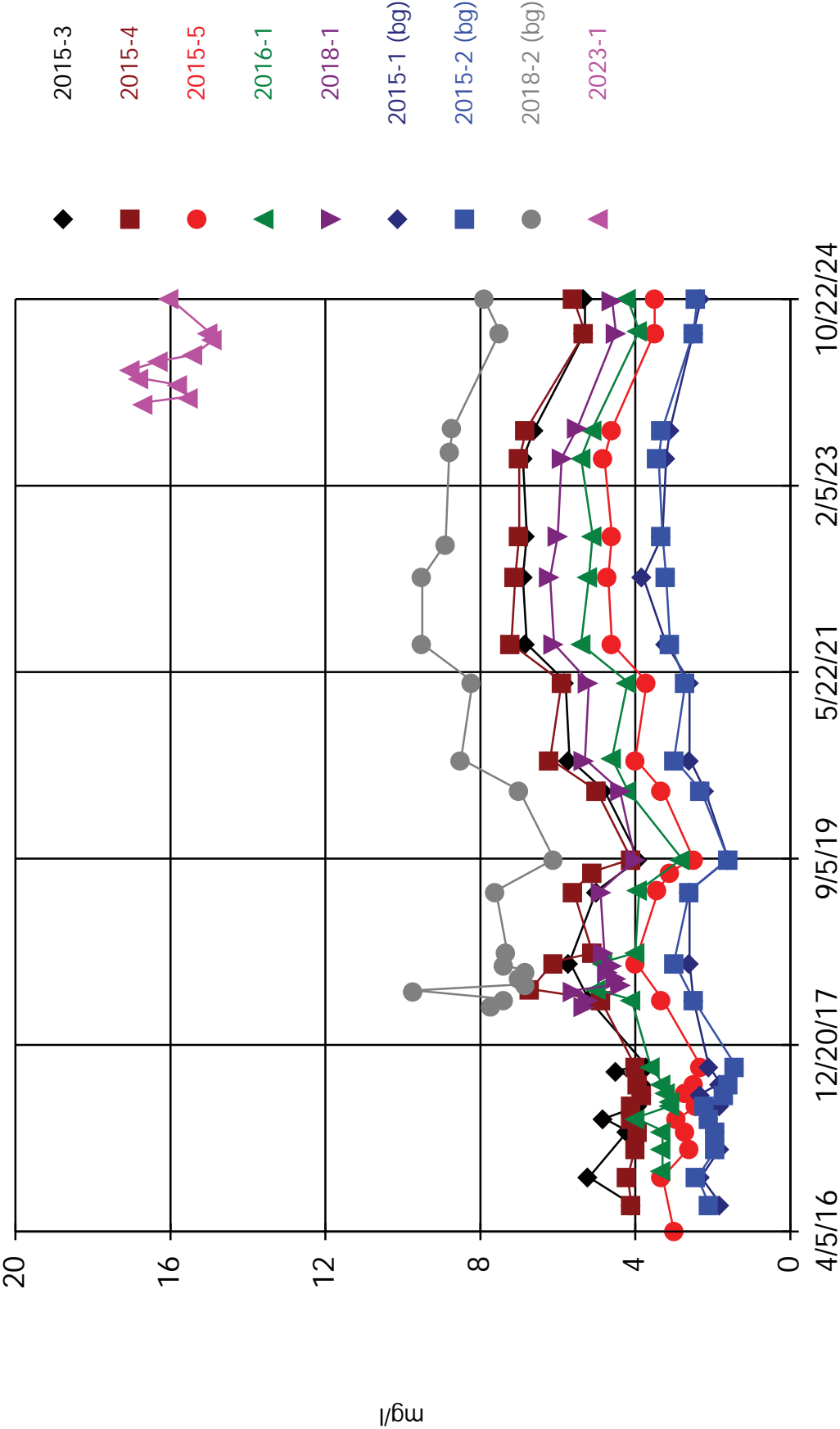
Calcium, total



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

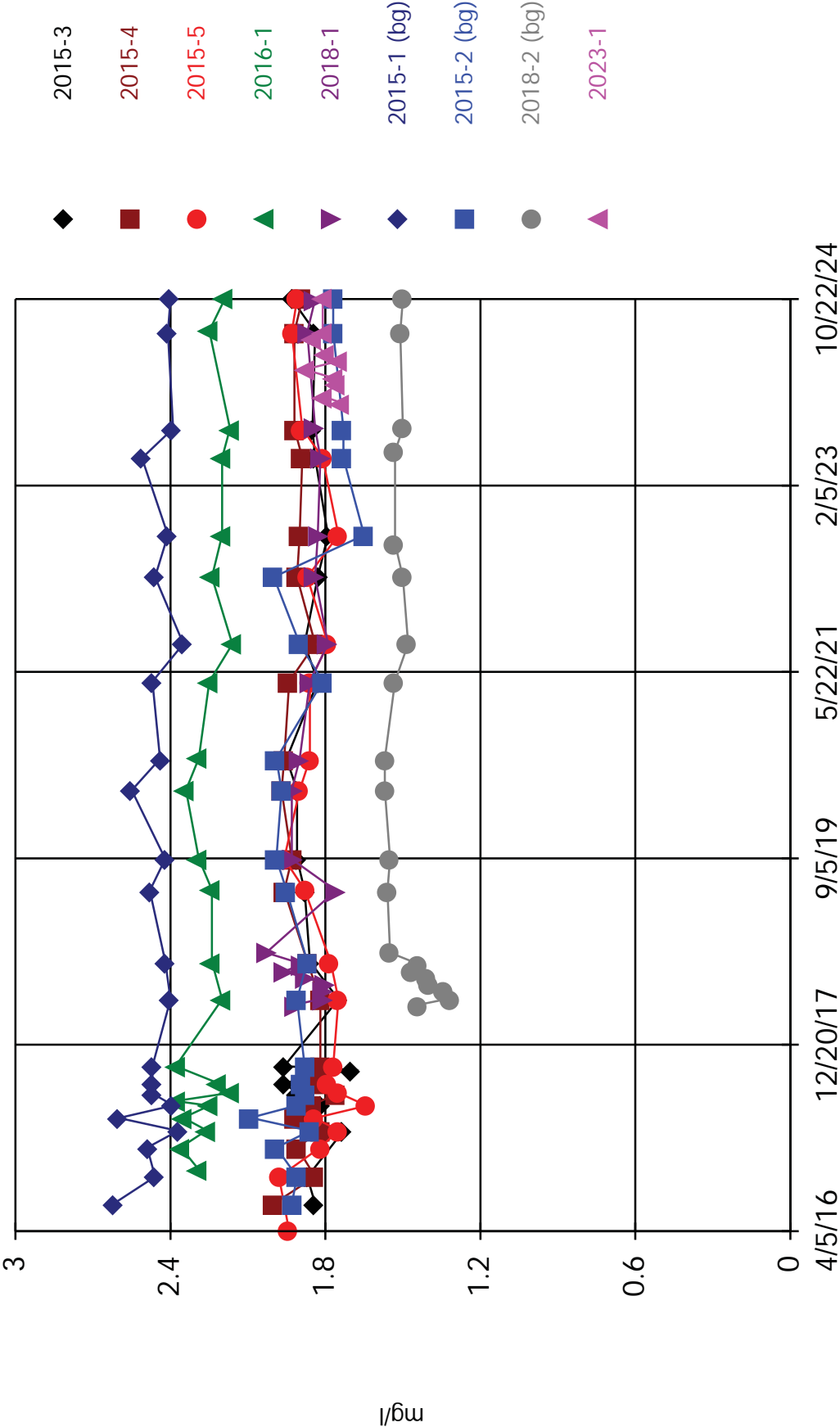
Chloride



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

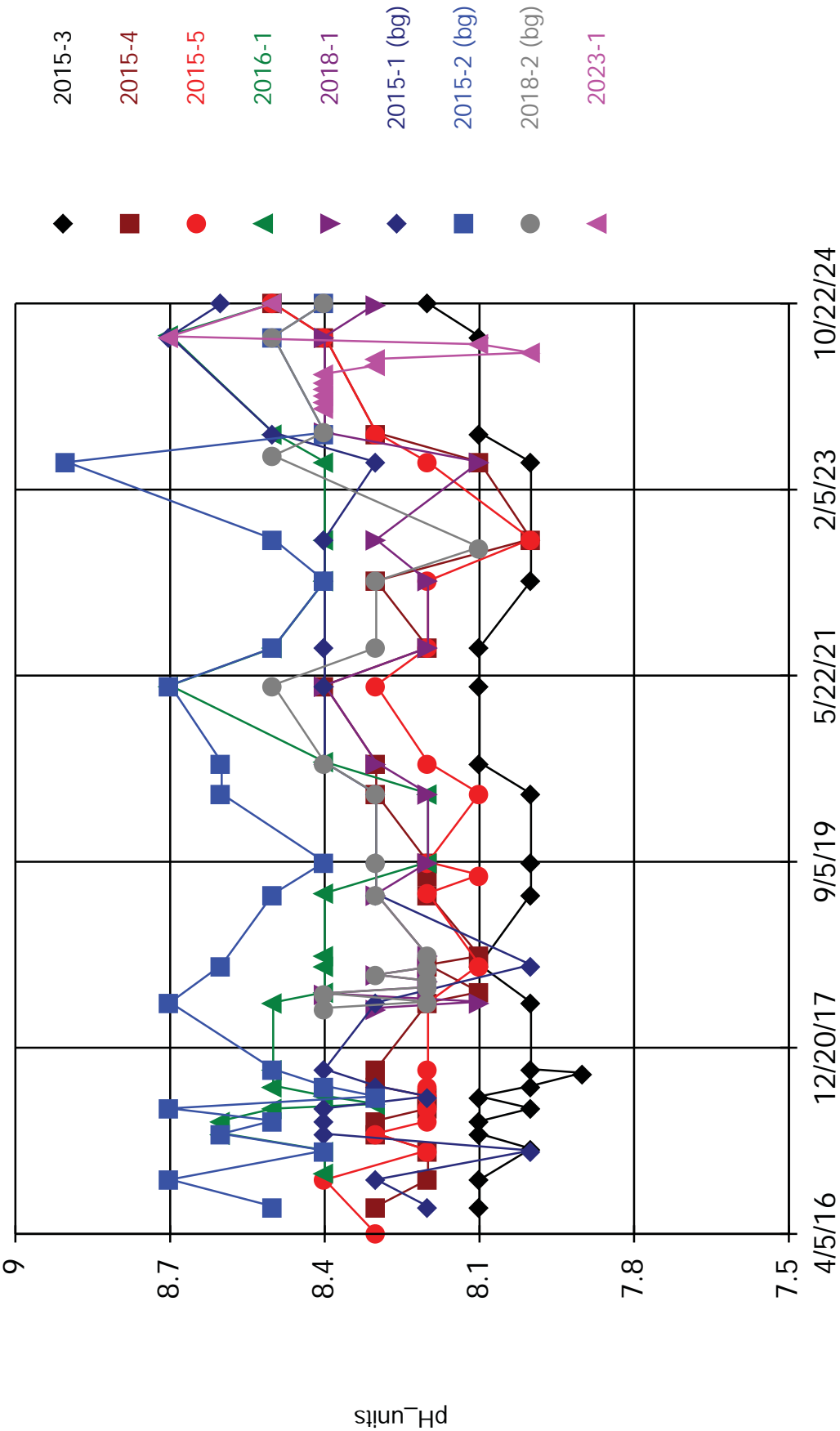
Fluoride



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

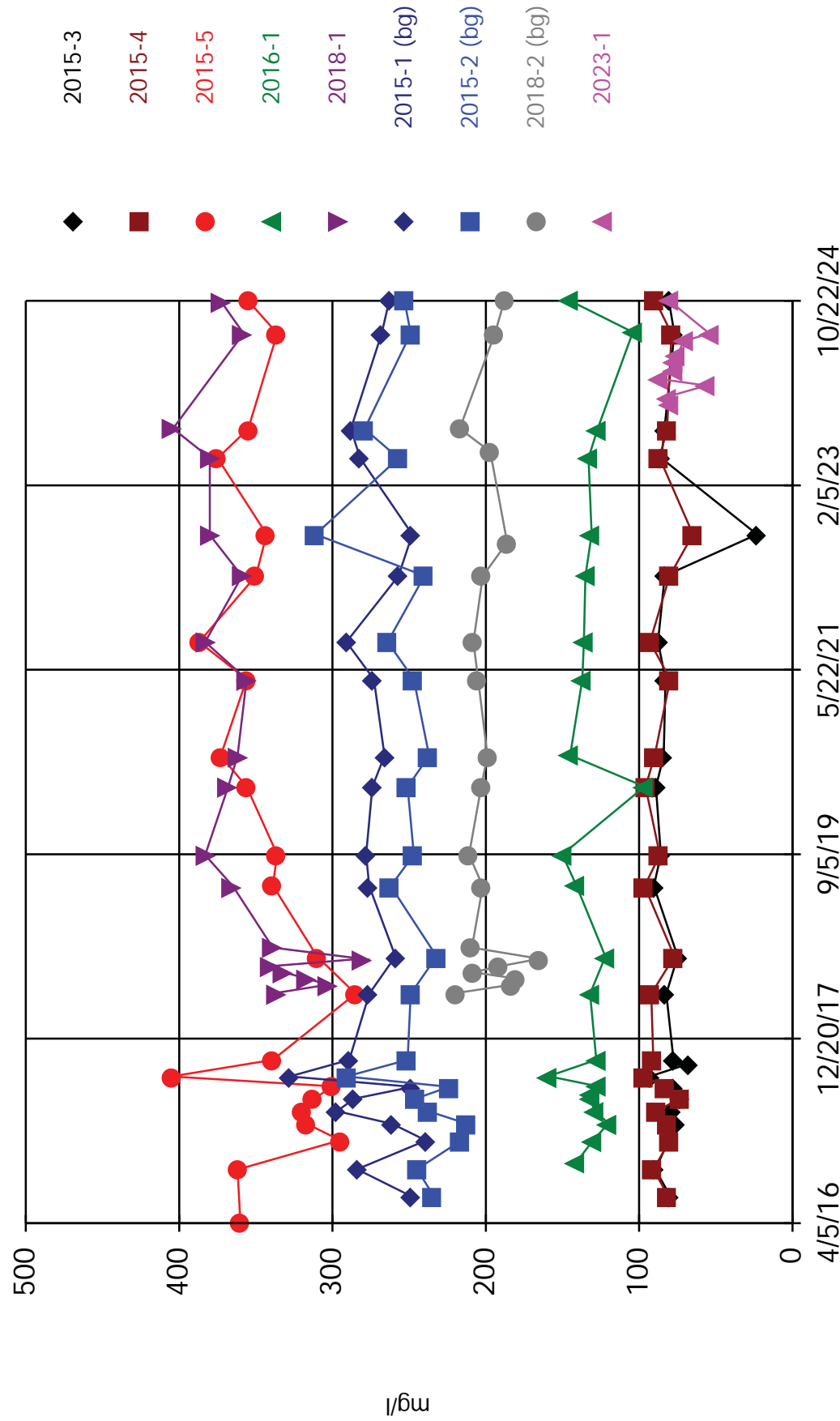
pH, field



Time Series Analysis Run 11/18/2024 12:14 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

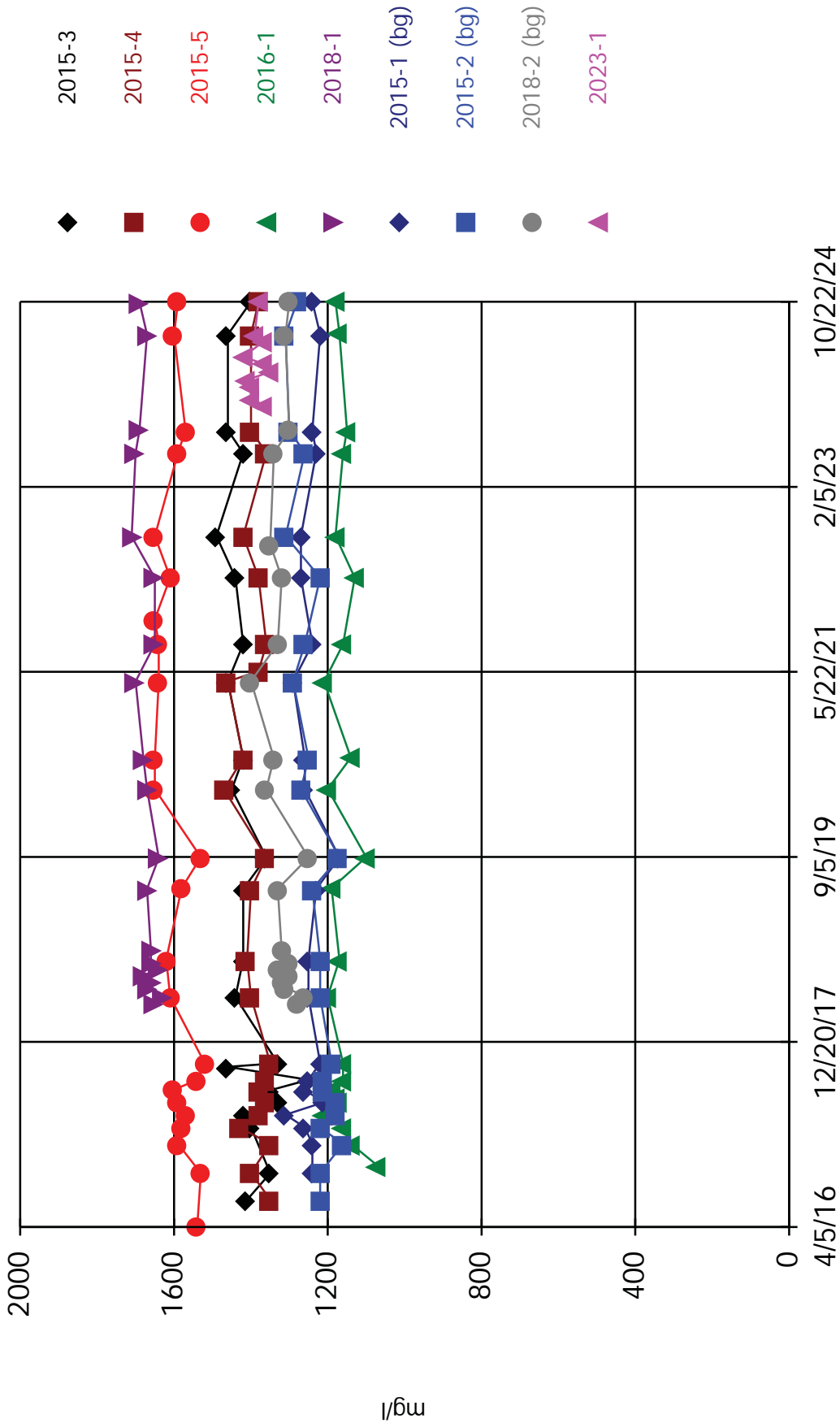
Sulfate, as SO4



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Total Dissolved Solids

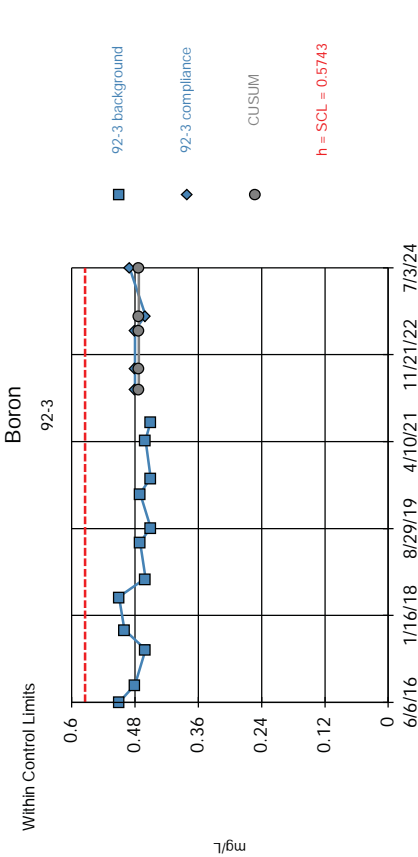


Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

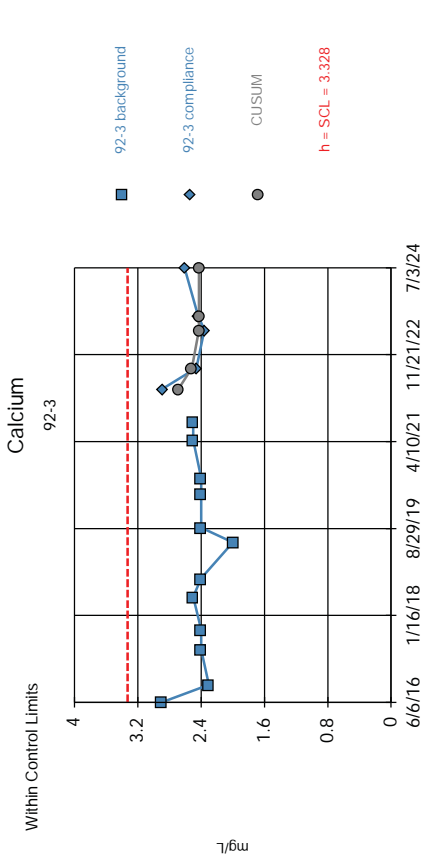
Appendix D

Statistical Review for Non-CCR Unit: Event 1



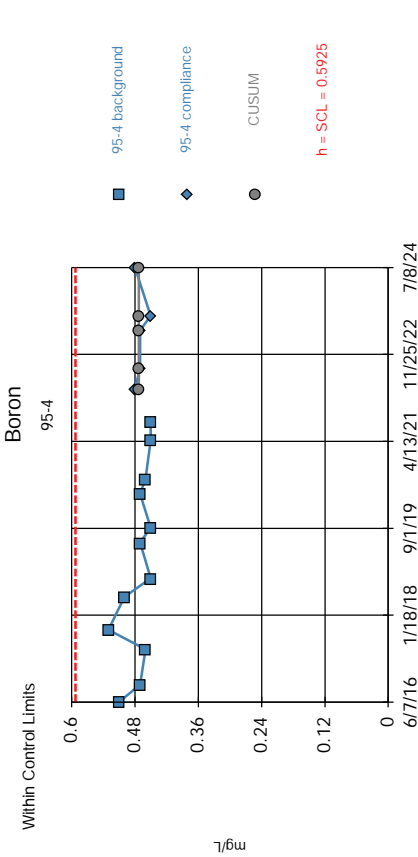
Background Data Summary: Mean=0.4725, Std. Dev.=0.02261, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8103, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



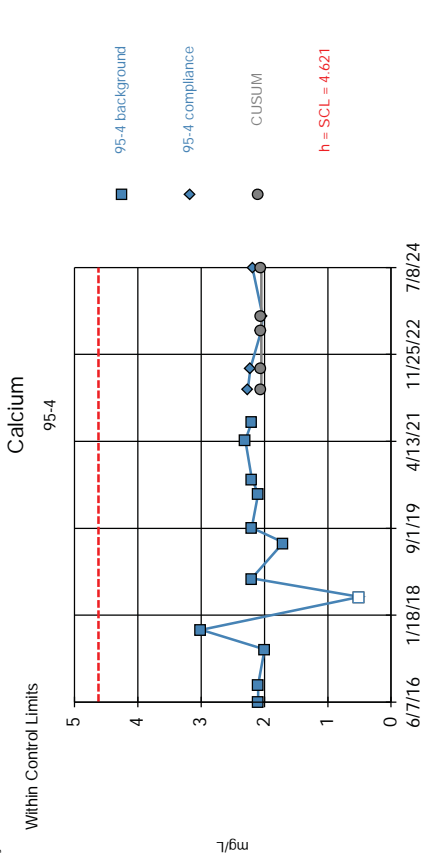
Background Data Summary: Mean=2.425, Std. Dev.=0.2006, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6679, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



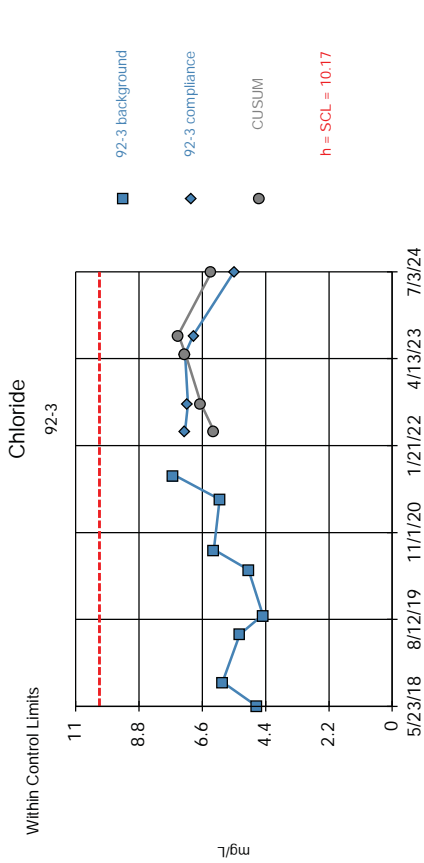
Background Data Summary: Mean=0.4725, Std. Dev.=0.02667, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7683, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



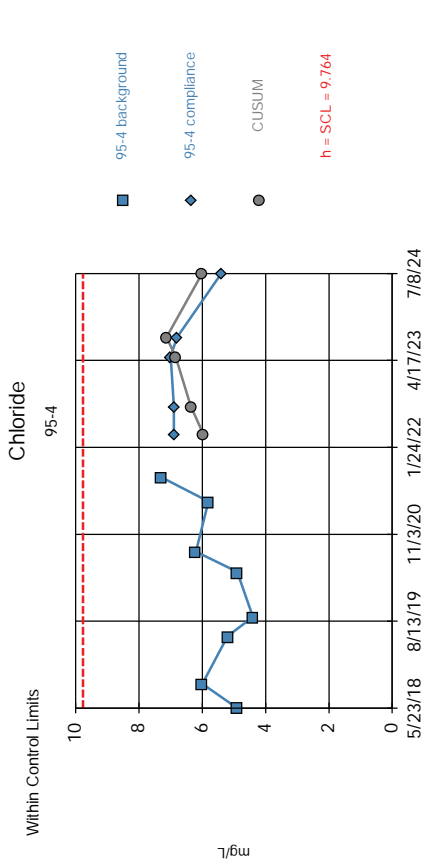
Background Data Summary: Mean=2.05, Std. Dev.=0.5713, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.5316, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



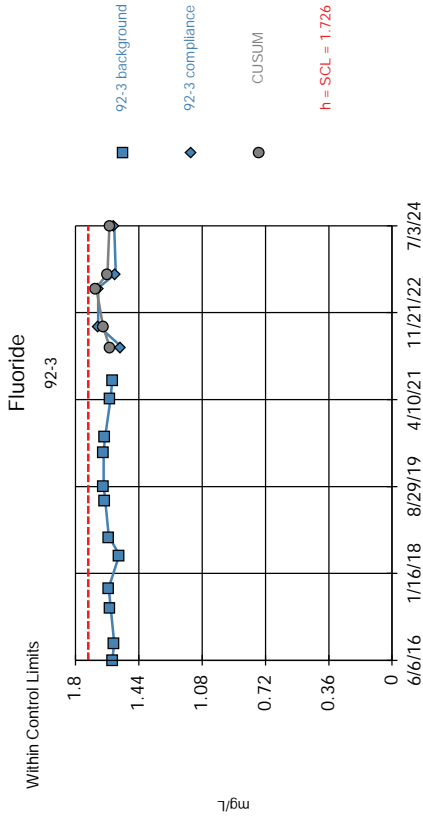
Background Data Summary: Mean=5.65, Std. Dev.=1.004, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9273, critical = 0.818. Report alpha = 0.006676. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



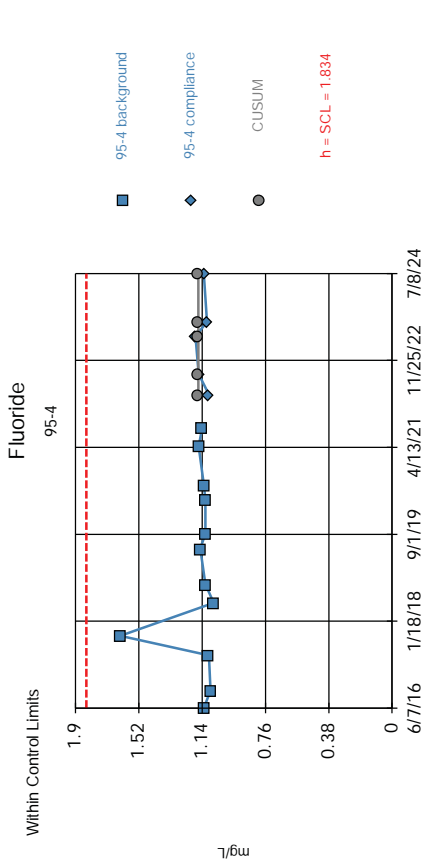
Background Data Summary: Mean=5.588, Std. Dev.=0.928, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9489, critical = 0.818. Report alpha = 0.006676. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



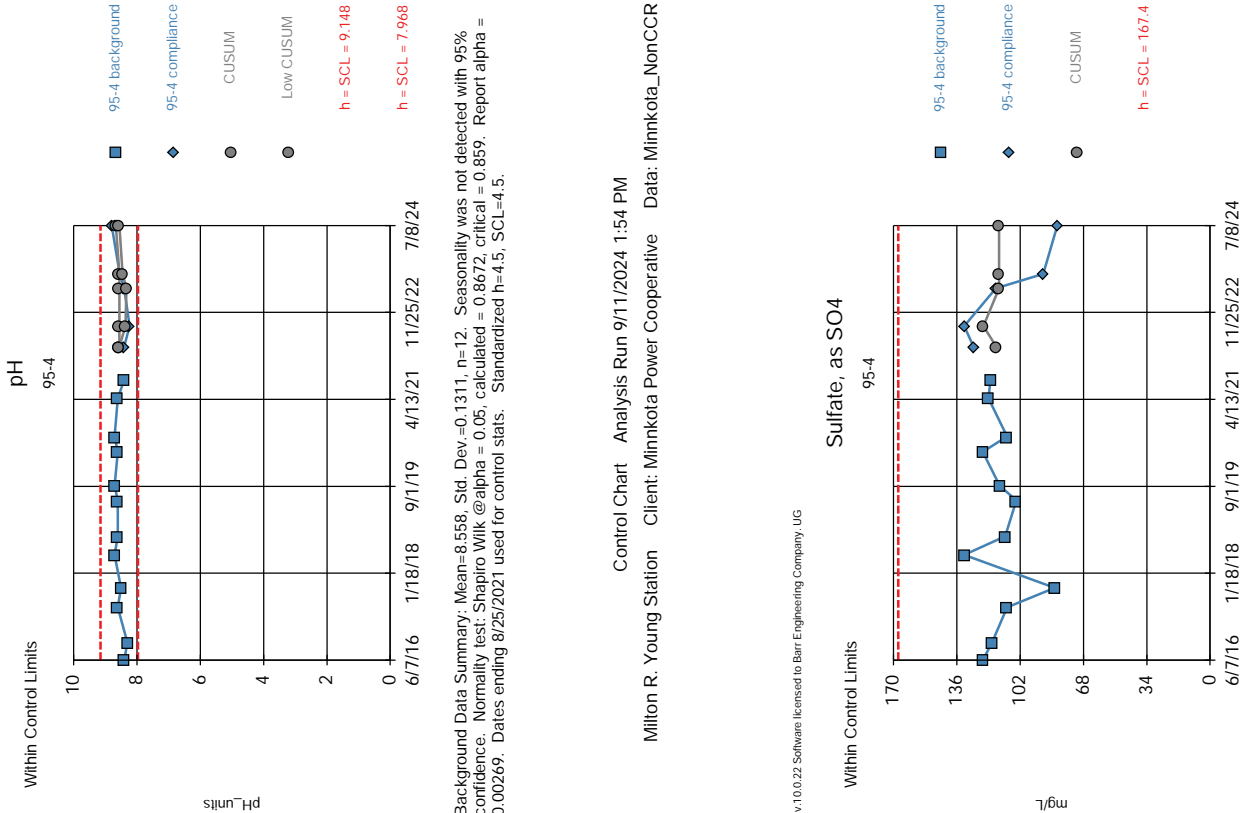
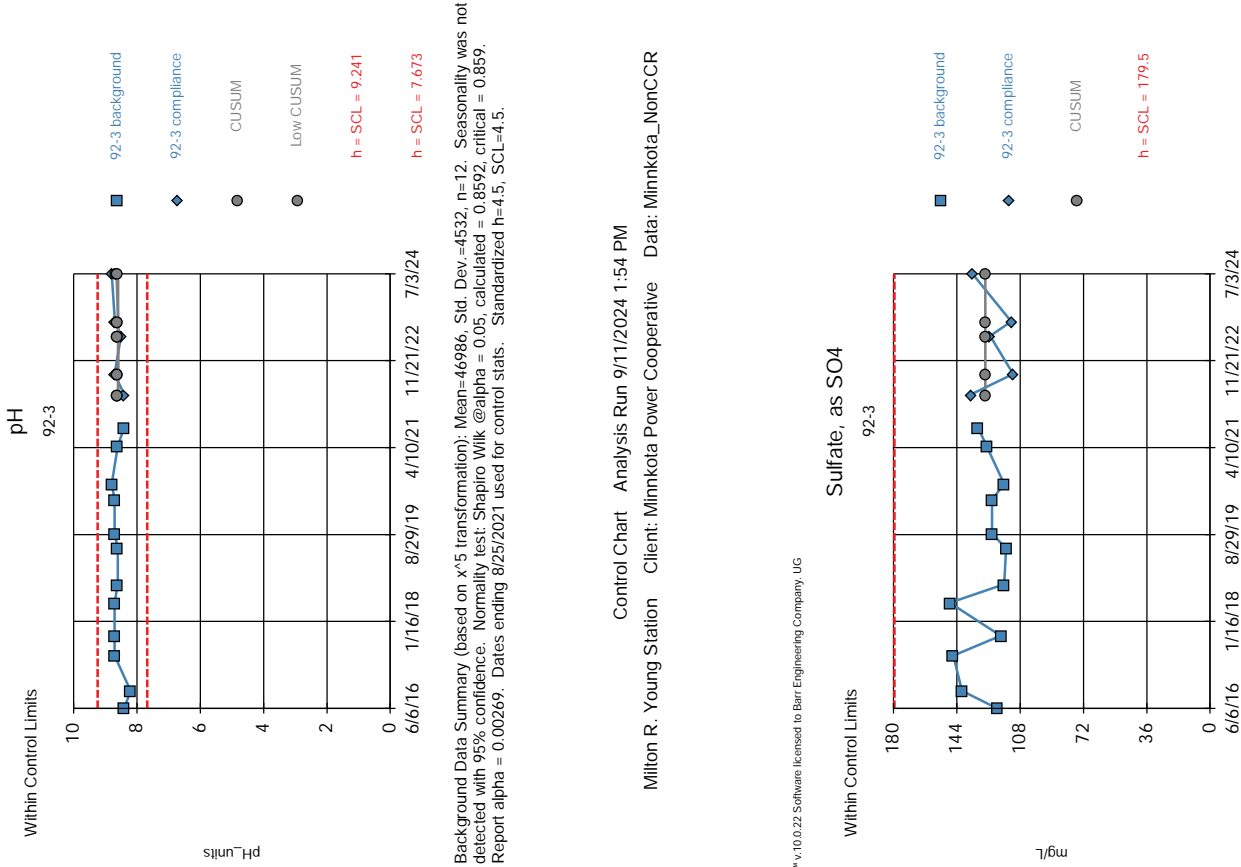
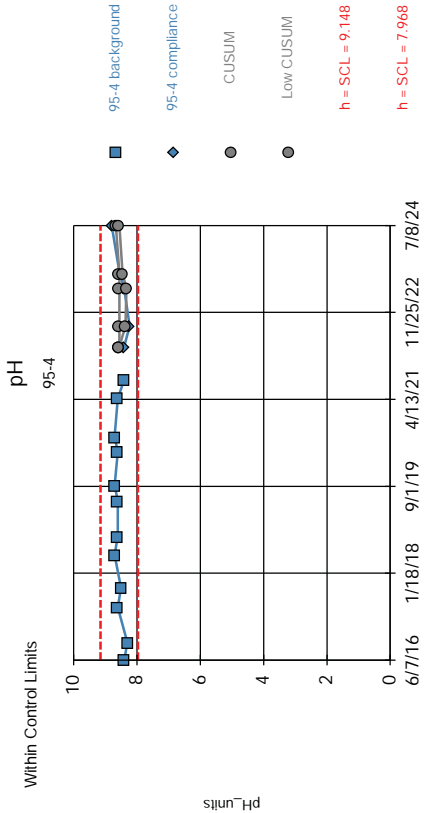
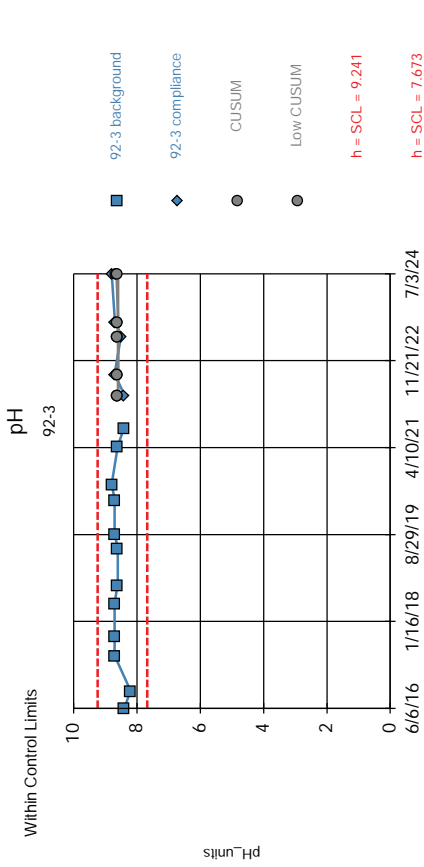
Background Data Summary: Mean=1.606, Std. Dev.=0.02678, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9412, critical = 0.859. Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

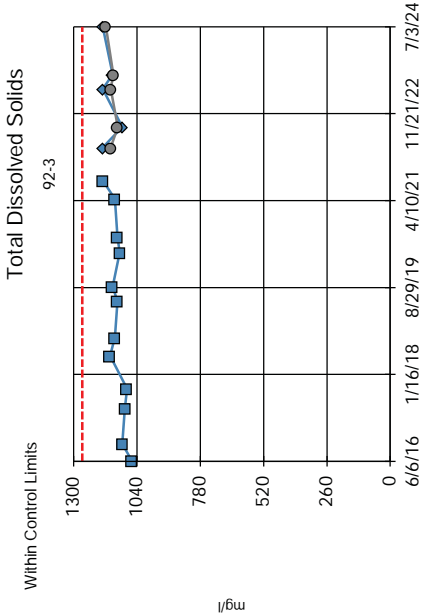
Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1.163, Std. Dev.=0.1491, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.3777, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

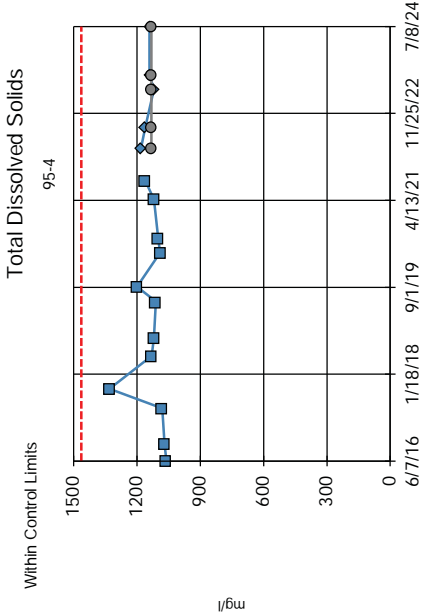




Background Data Summary: Mean=1118, Std. Dev.=32.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9906, critical = 0.859. Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1131, Std. Dev.=73.79, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6599, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

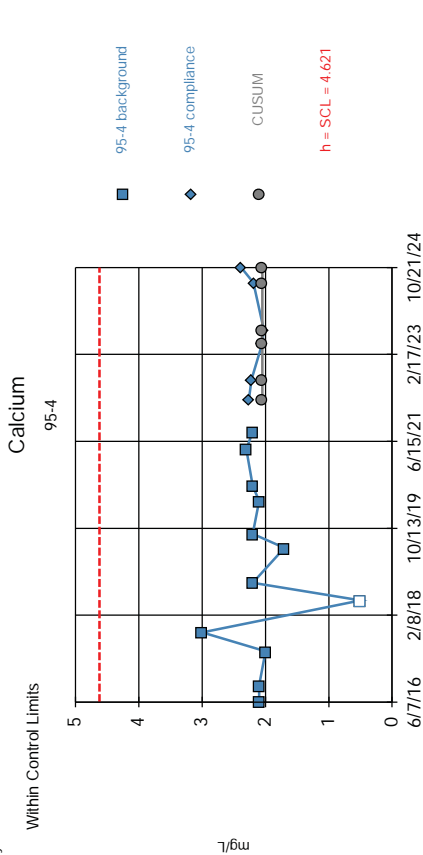
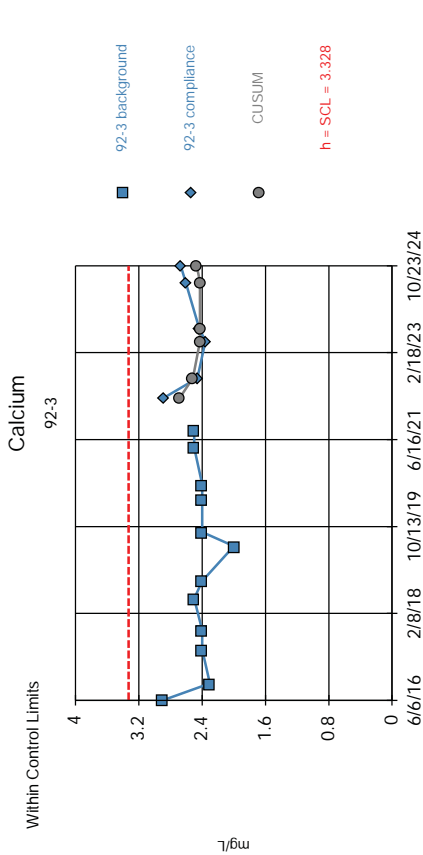
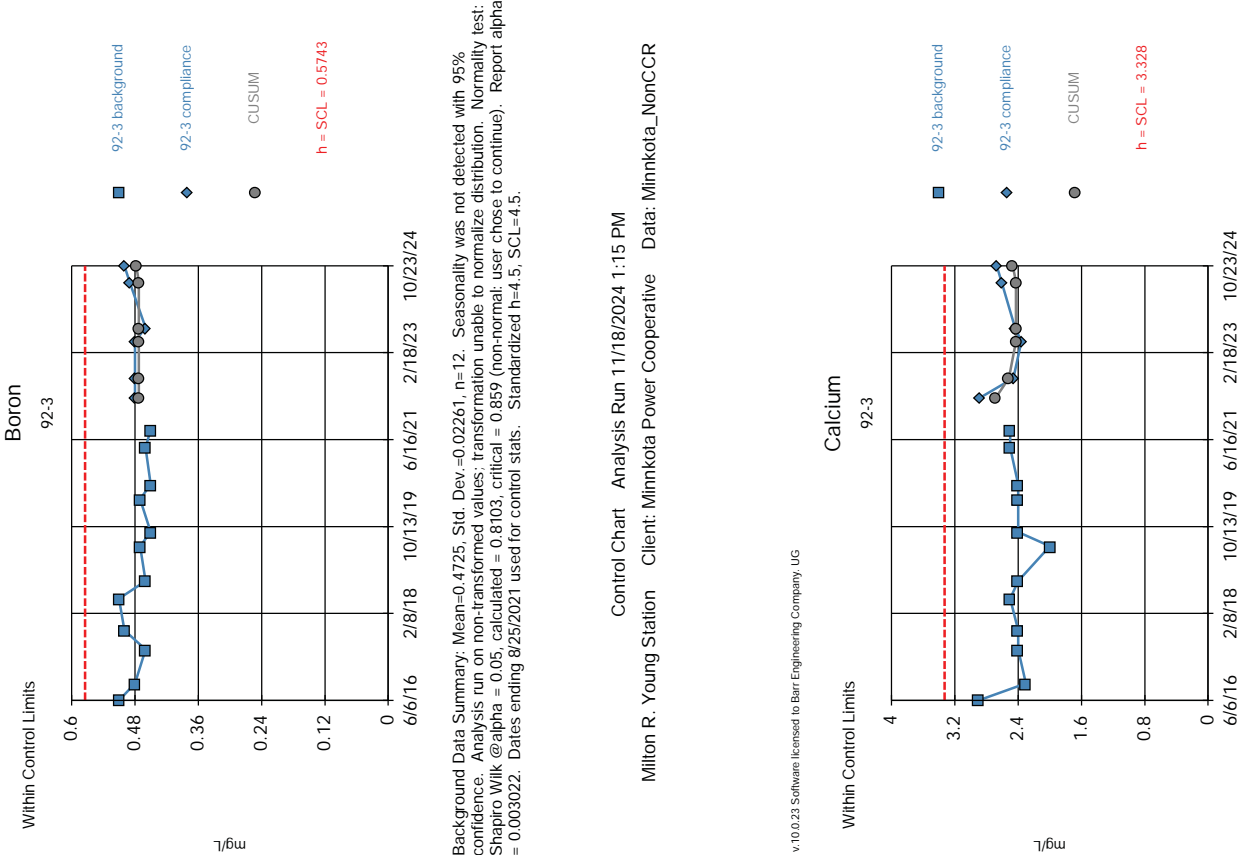
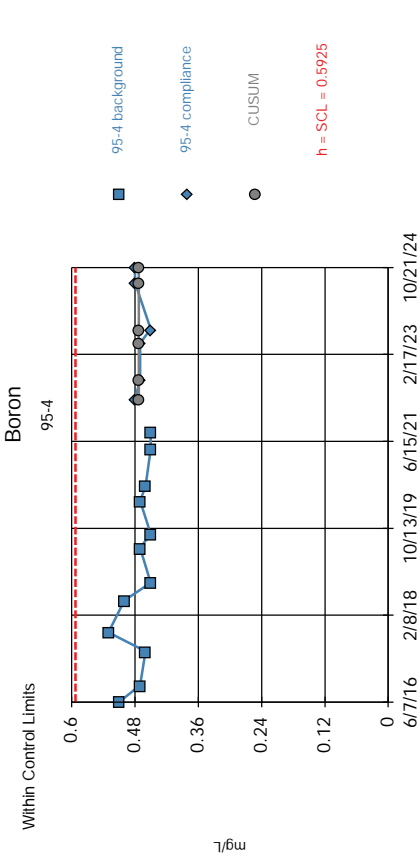
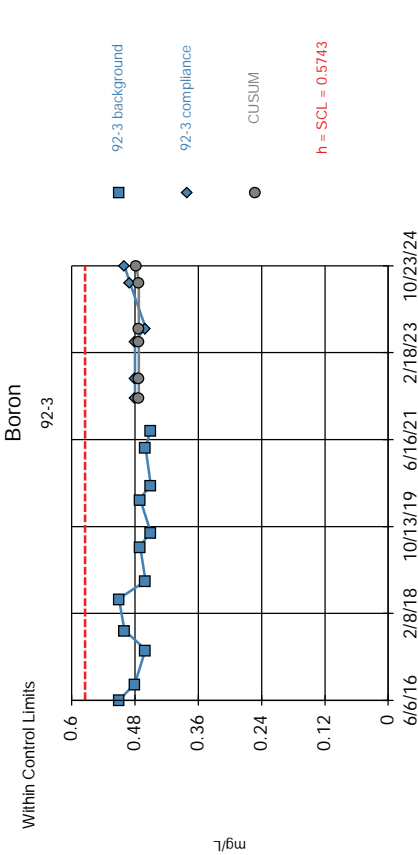
Shewhart-Cusum Control Chart / Rank Sum

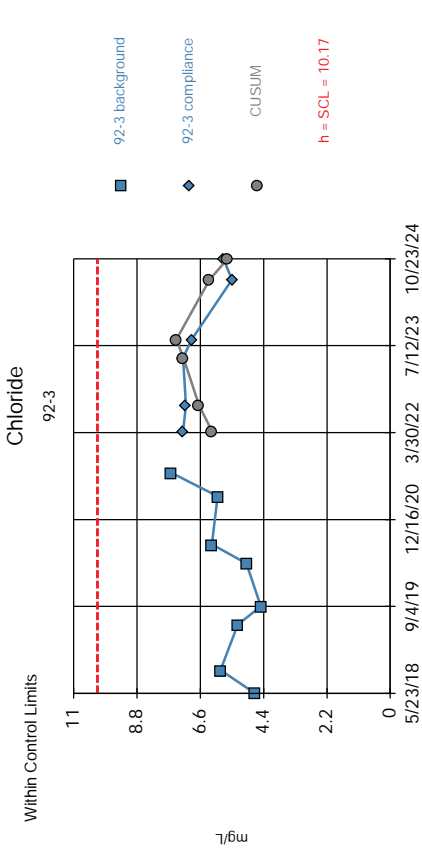
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR Printed 9/11/2024, 1:55 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDs	ND Adj.	Deseas.	Transform	Method
Boron (mg/L)	92-3	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
Boron (mg/L)	95-4	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
Calcium (mg/L)	92-3	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
Calcium (mg/L)	95-4	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
Chloride (mg/L)	92-3	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
Chloride (mg/L)	95-4	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
Fluoride (mg/L)	92-3	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
Fluoride (mg/L)	95-4	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
pH (pH_units)	92-3	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
pH (pH_units)	95-4	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	92-3	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	95-4	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	92-3	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	95-4	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

Appendix E

Statistical Review for Non-CCR Unit: Event 2

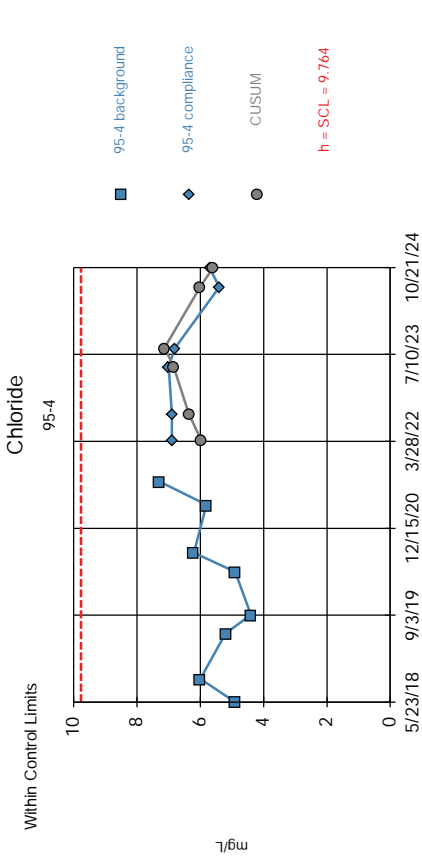




Background Data Summary: Mean=5.65, Std. Dev.=1.004, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9273, critical = 0.818. Report alpha = 0.007618. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

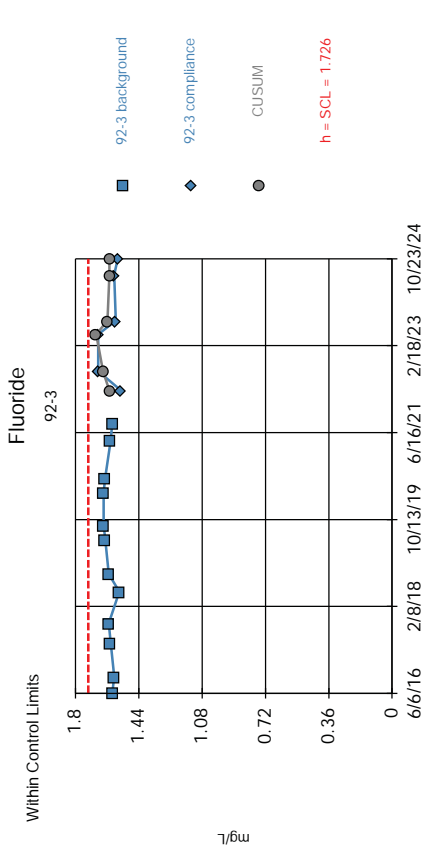
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=5.588, Std. Dev.=0.928, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9489, critical = 0.818. Report alpha = 0.007618. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

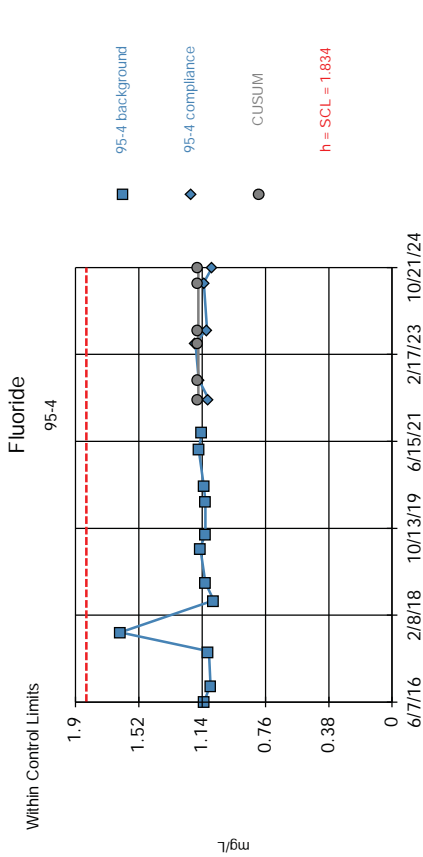
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1.606, Std. Dev.=0.02678, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9412, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

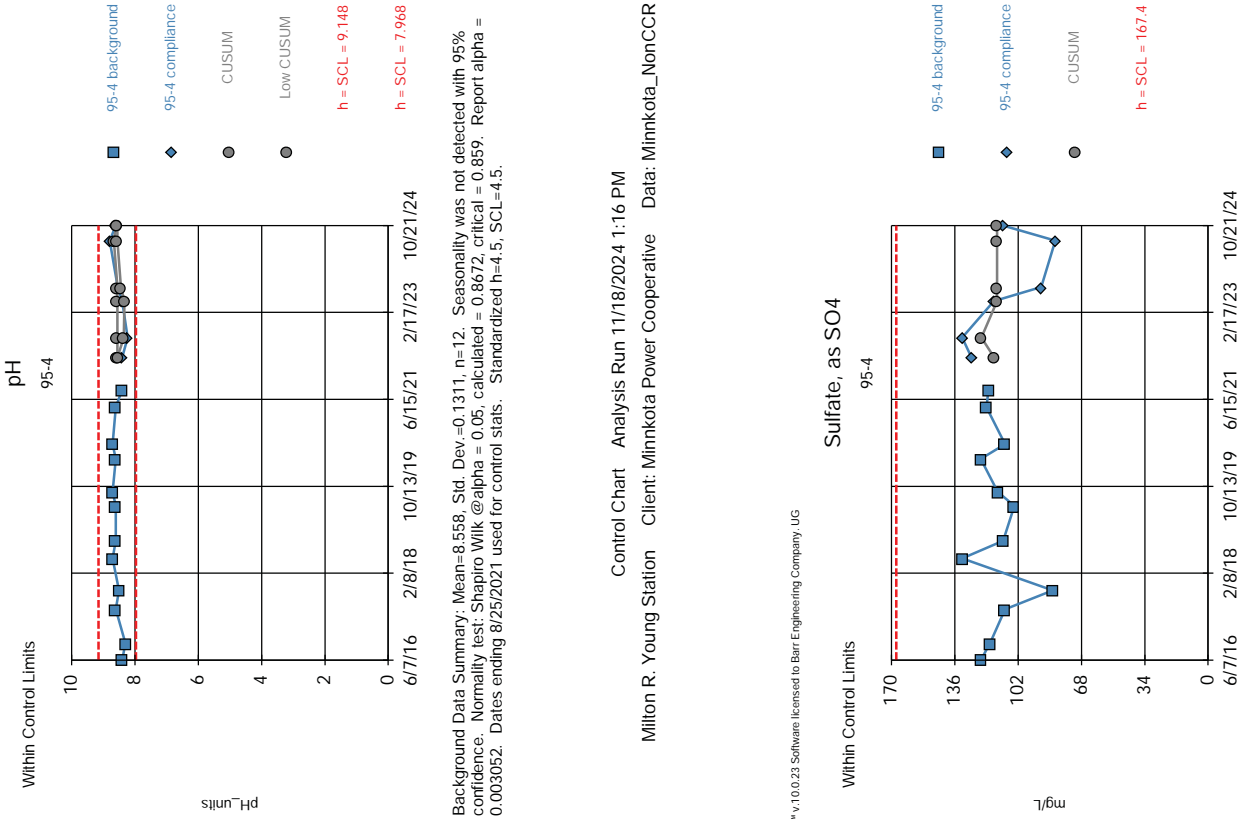
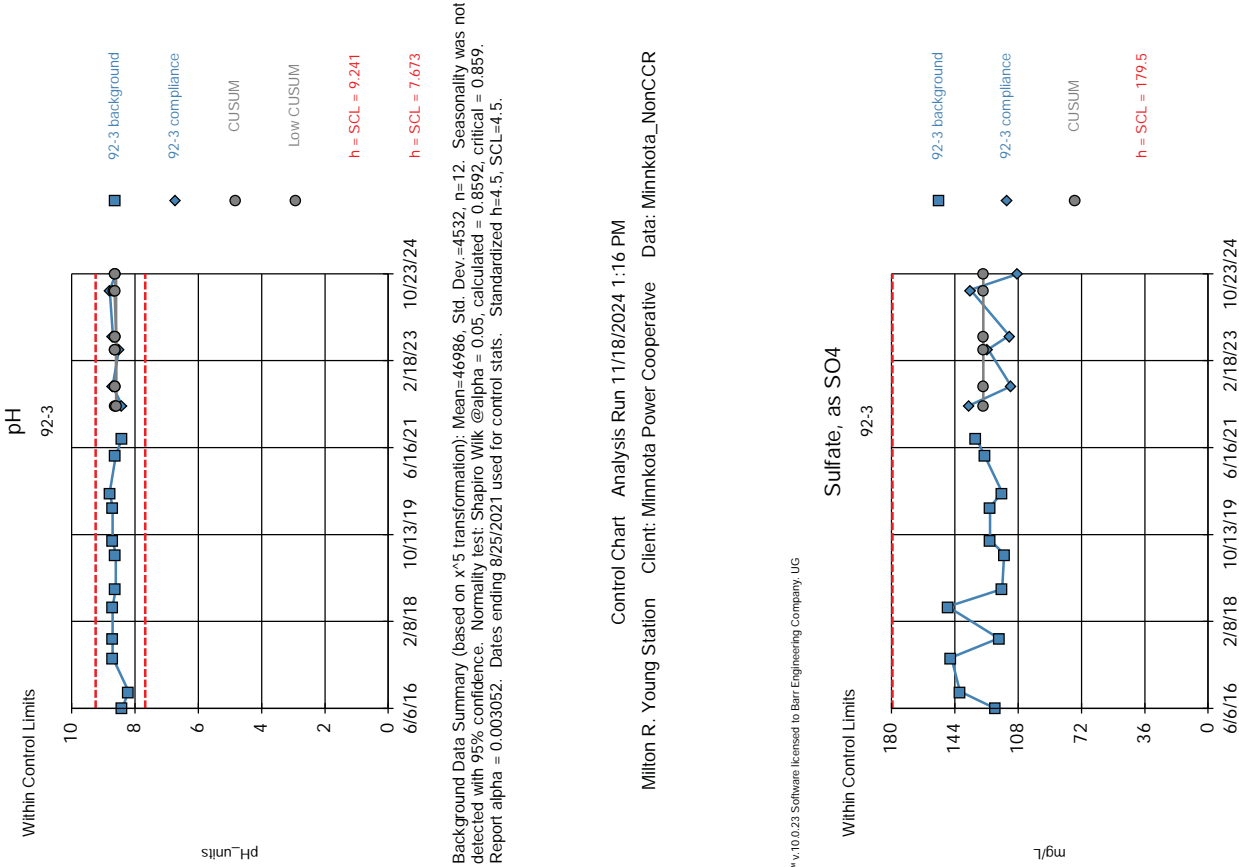
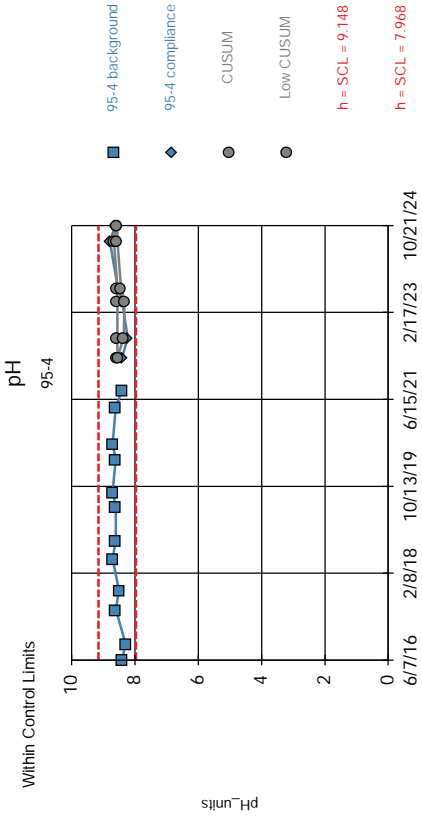
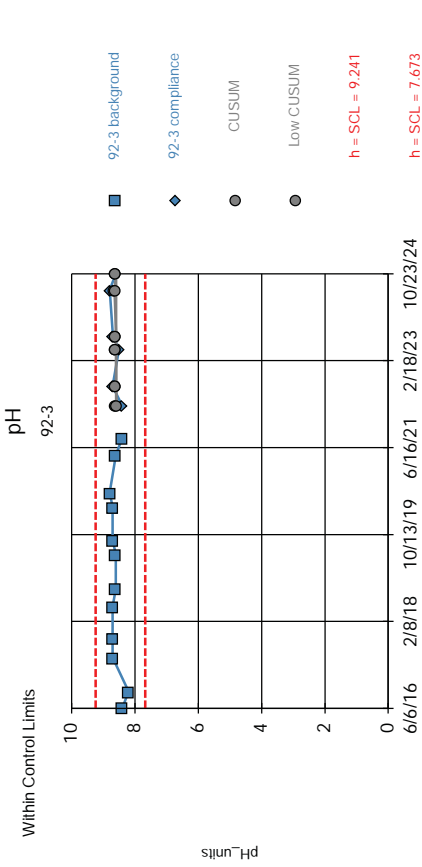
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

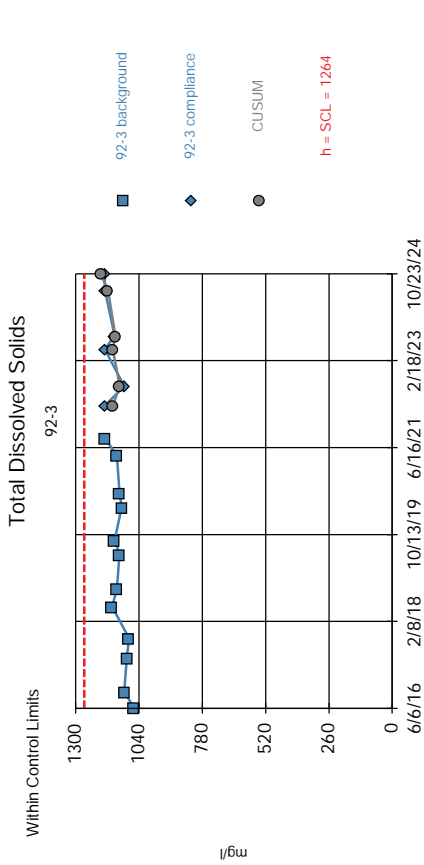


Background Data Summary: Mean=1.163, Std. Dev.=0.1491, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.3777, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

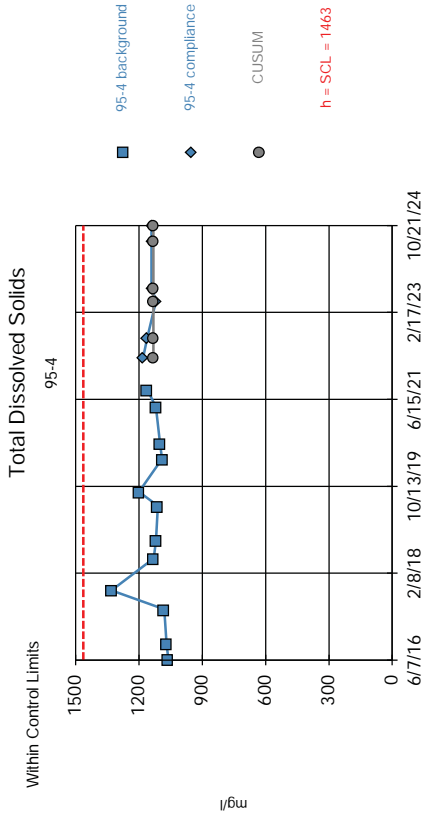




Background Data Summary: Mean=1118, Std. Dev.=32.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9906, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1131, Std. Dev.=73.79, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: Transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6599, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station			Client: Minnkota Power Cooperative			Data: Minnkota_NonCCR			Printed 11/18/2024, 1:21 PM			
Well	Constituent	Sig.	h	SCL	N	Mean	Std. Dev.	%NDs	ND Adj.	Deseas.	Transform	Method
92-3	Boron (mg/L)	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
95-4	Boron (mg/L)	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
92-3	Calcium (mg/L)	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
95-4	Calcium (mg/L)	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
92-3	Chloride (mg/L)	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
95-4	Chloride (mg/L)	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
92-3	Fluoride (mg/L)	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
95-4	Fluoride (mg/L)	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
92-3	pH (pH_units)	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
95-4	pH (pH_units)	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
92-3	Sulfate, as SO4 (mg/L)	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
95-4	Sulfate, as SO4 (mg/L)	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
92-3	Total Dissolved Solids (mg/l)	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
95-4	Total Dissolved Solids (mg/l)	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

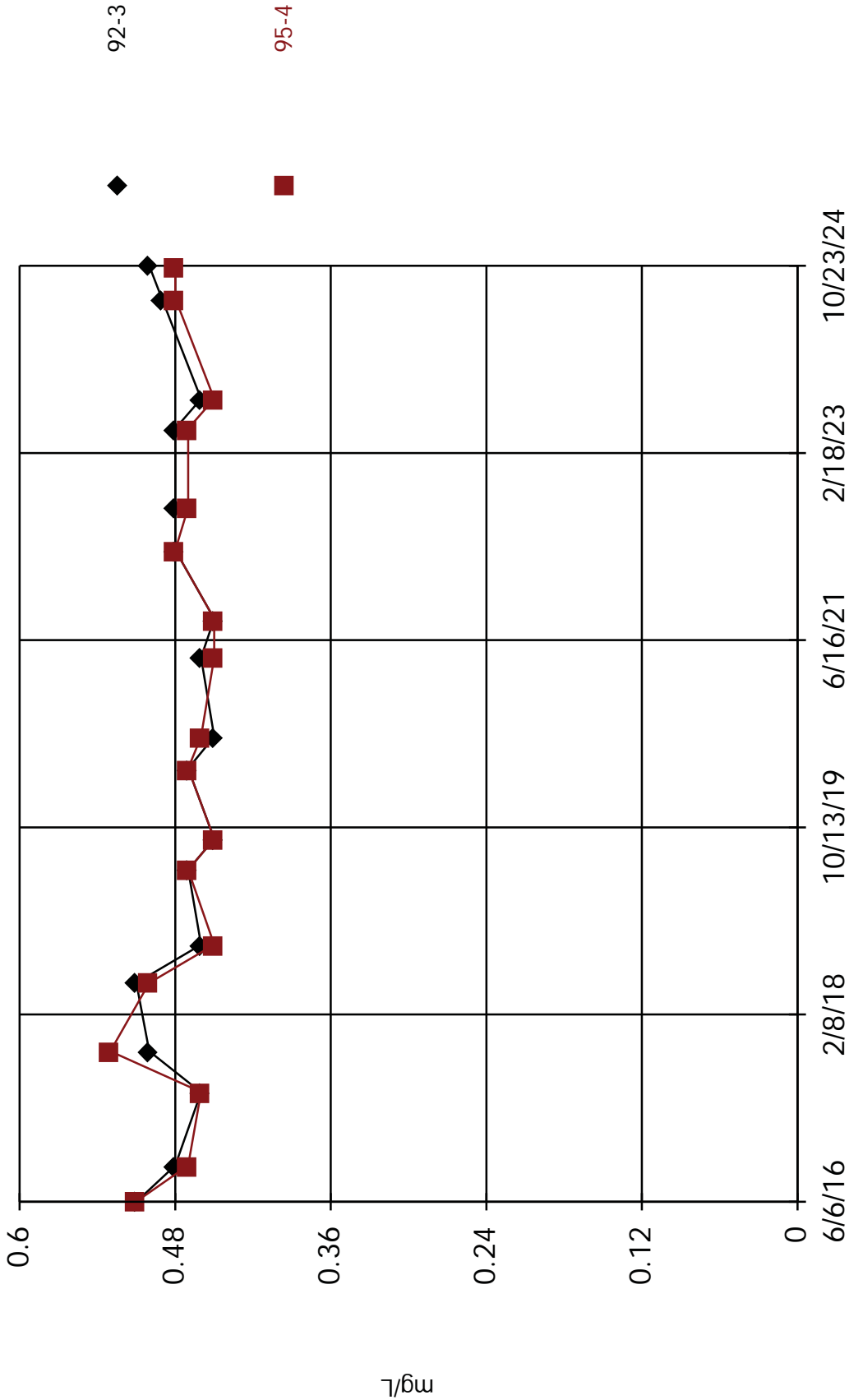
Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station			Client: Minnkota Power Cooperative			Data: Minnkota_NonCCR			Printed 11/18/2024, 1:21 PM			
Well	Constituent	Sig.	h	SCL	N	Mean	Std. Dev.	%NDs	ND Adj.	Deseas.	Transform	Method
92-3	Boron (mg/L)	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
95-4	Boron (mg/L)	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
92-3	Calcium (mg/L)	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
95-4	Calcium (mg/L)	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
92-3	Chloride (mg/L)	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
95-4	Chloride (mg/L)	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
92-3	Fluoride (mg/L)	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
95-4	Fluoride (mg/L)	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
92-3	pH (pH_units)	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
95-4	pH (pH_units)	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
92-3	Sulfate, as SO4 (mg/L)	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
95-4	Sulfate, as SO4 (mg/L)	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
92-3	Total Dissolved Solids (mg/l)	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
95-4	Total Dissolved Solids (mg/l)	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

Appendix F

Time Series Graphs for Non-CCR Unit

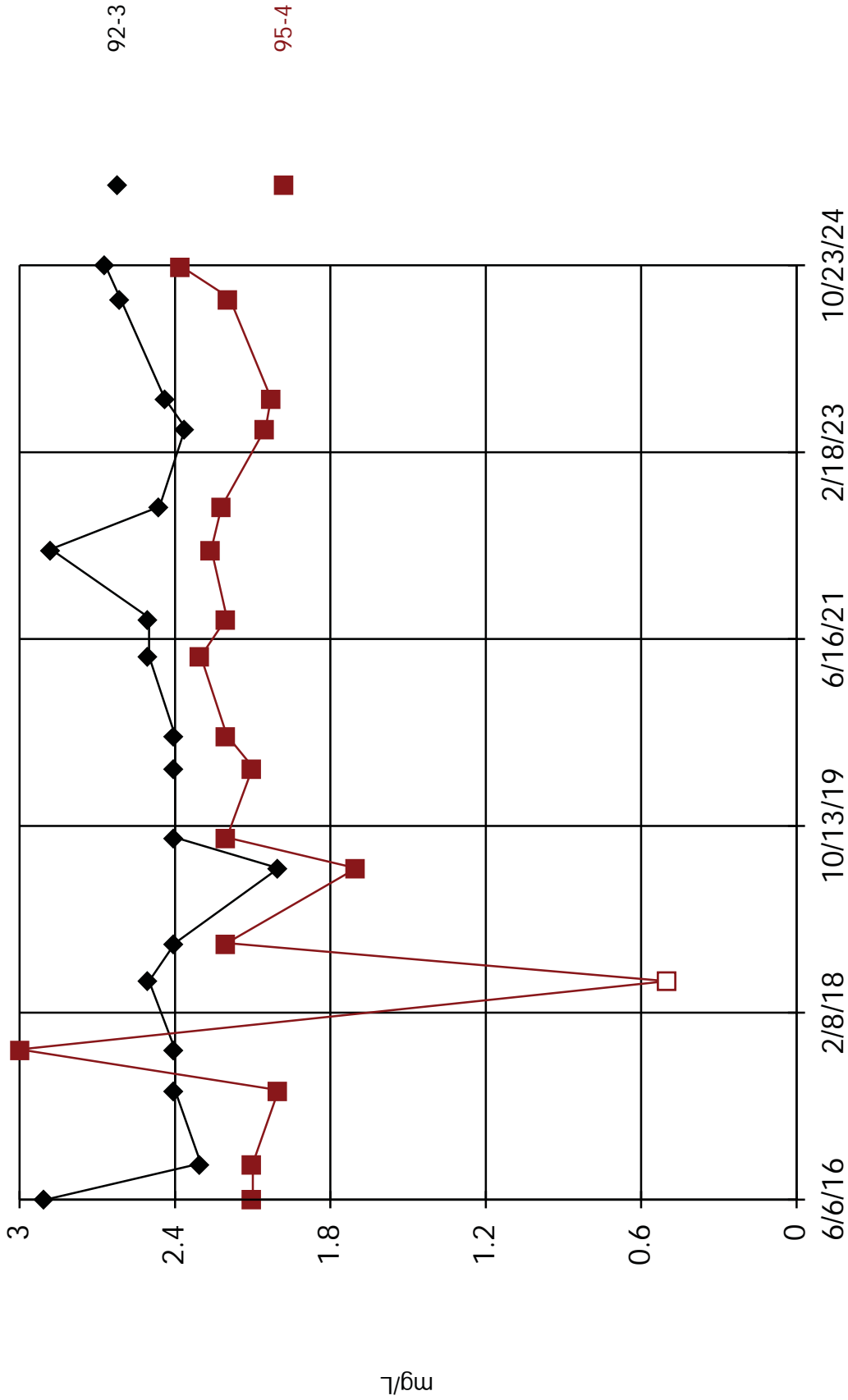
Boron

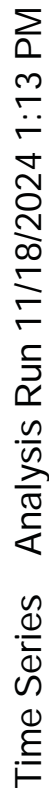


Time Series Analysis Run 11/18/2024 1:13 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

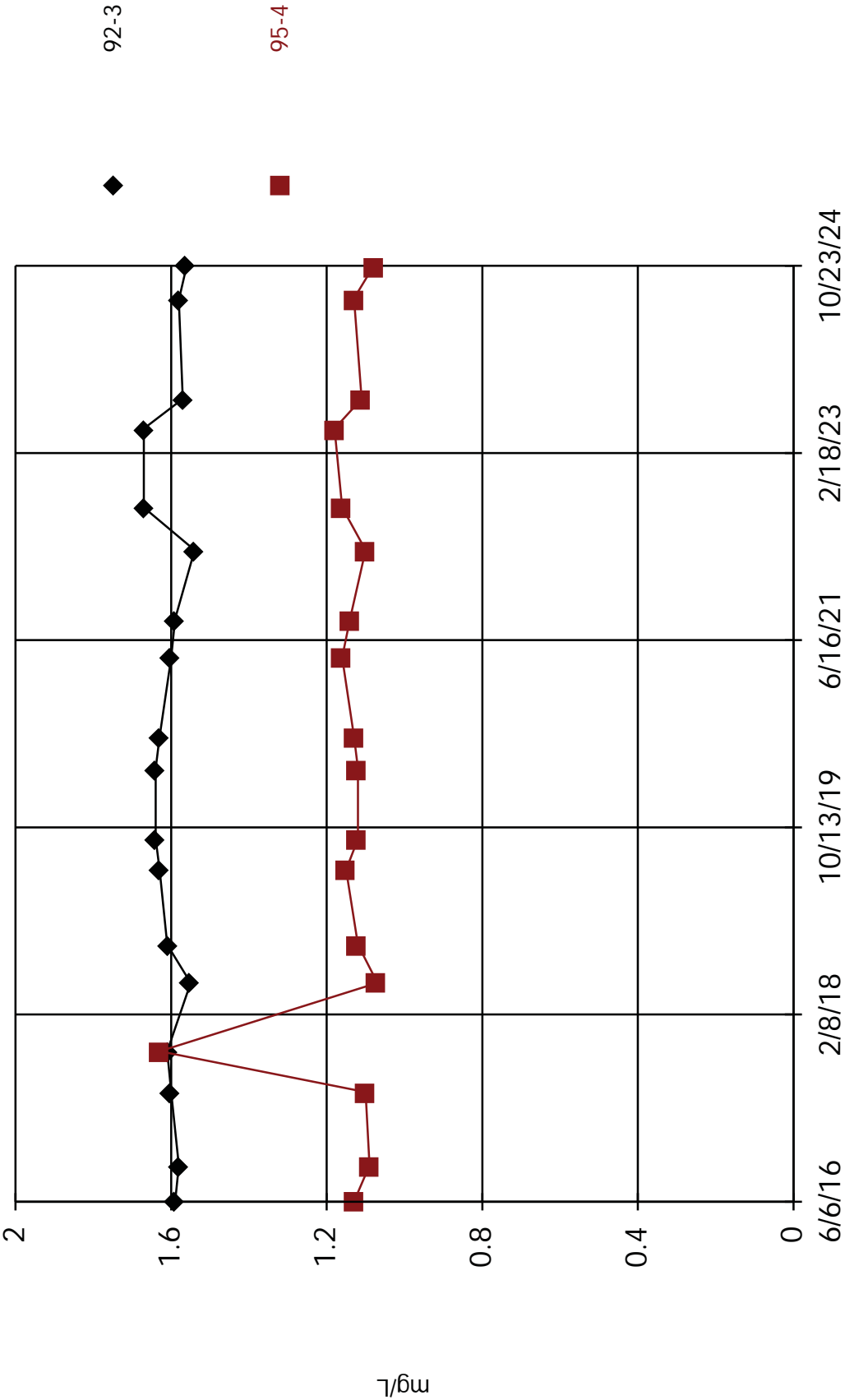
Calcium





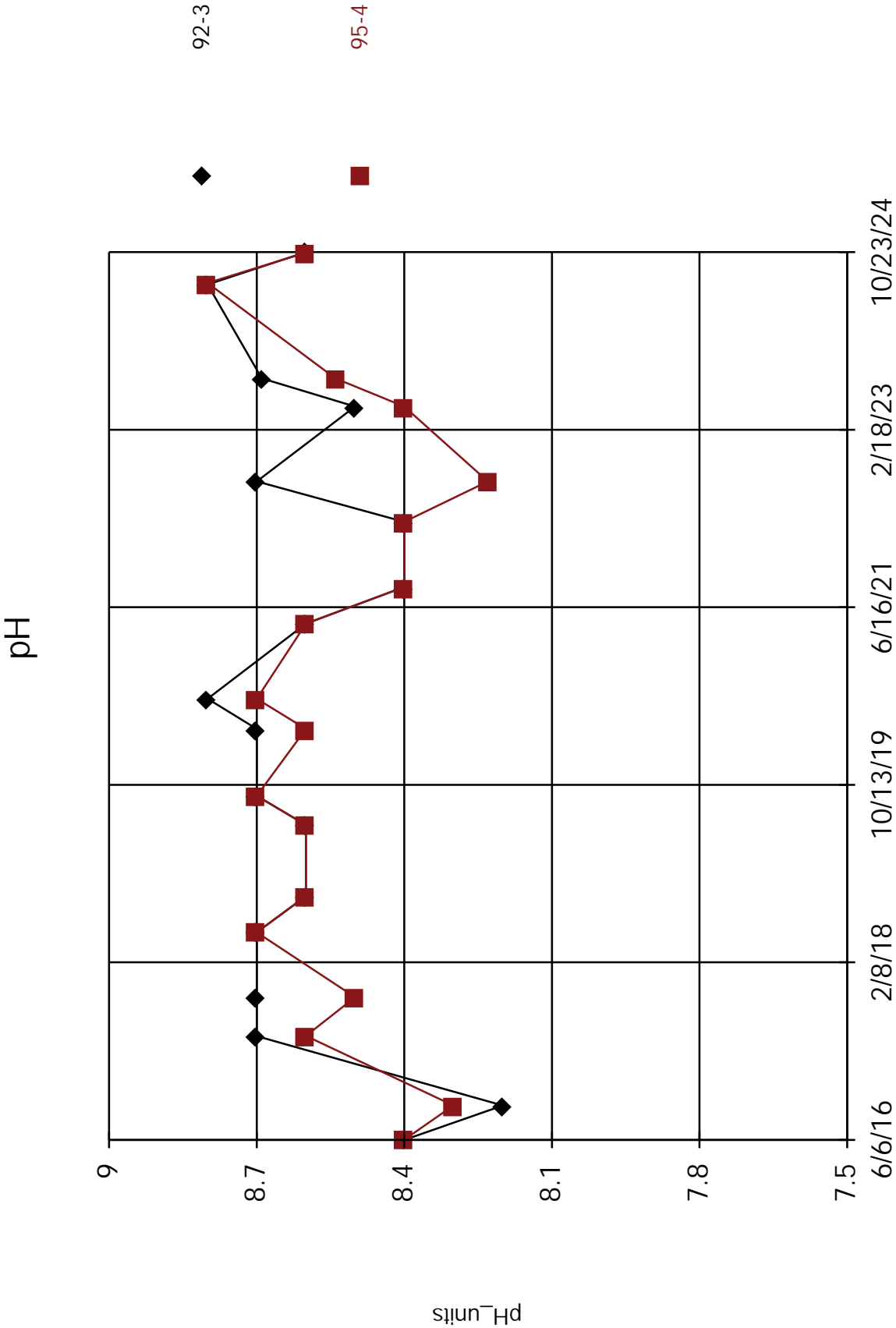
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Fluoride



Time Series Analysis Run 11/18/2024 1:13 PM

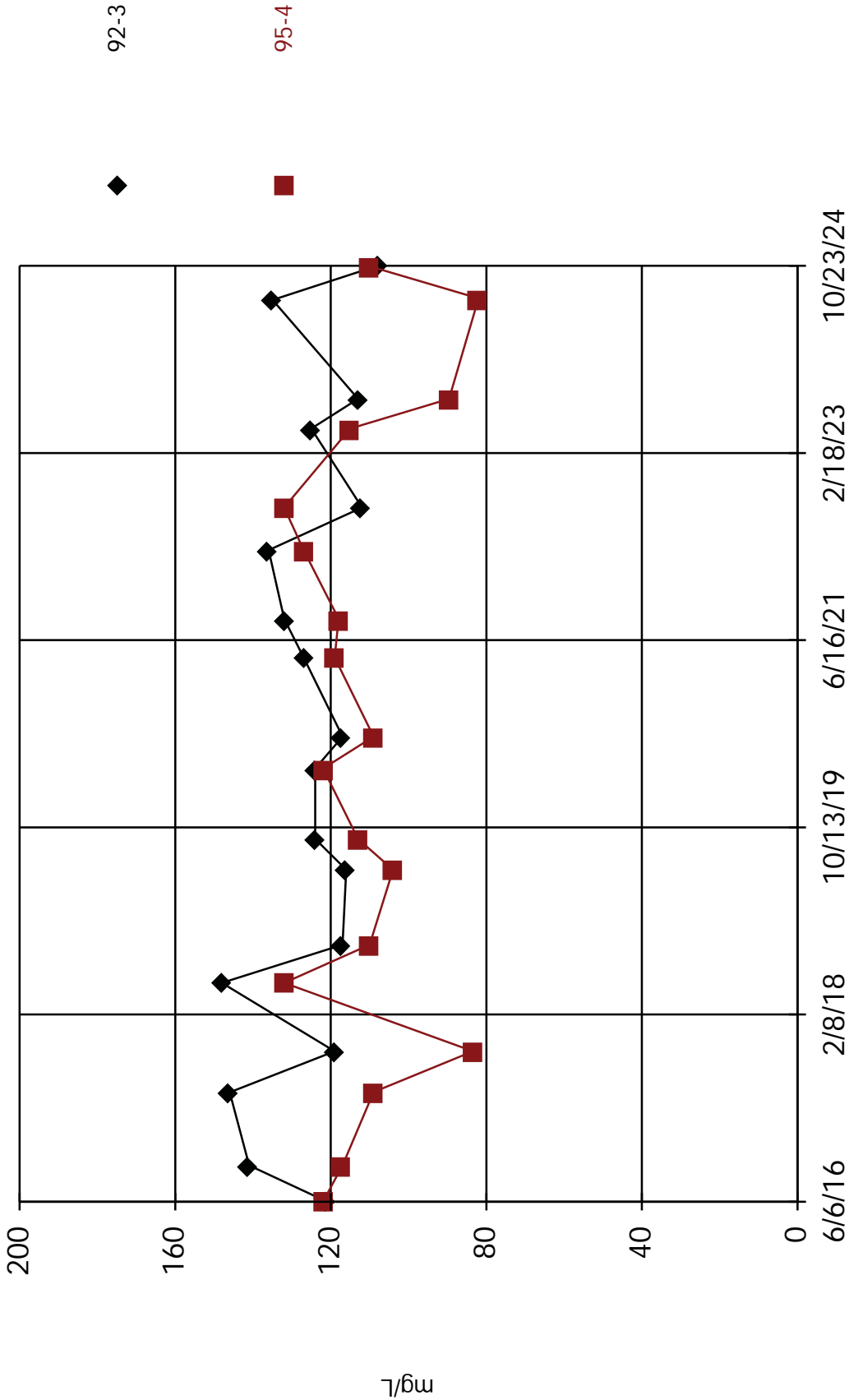
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



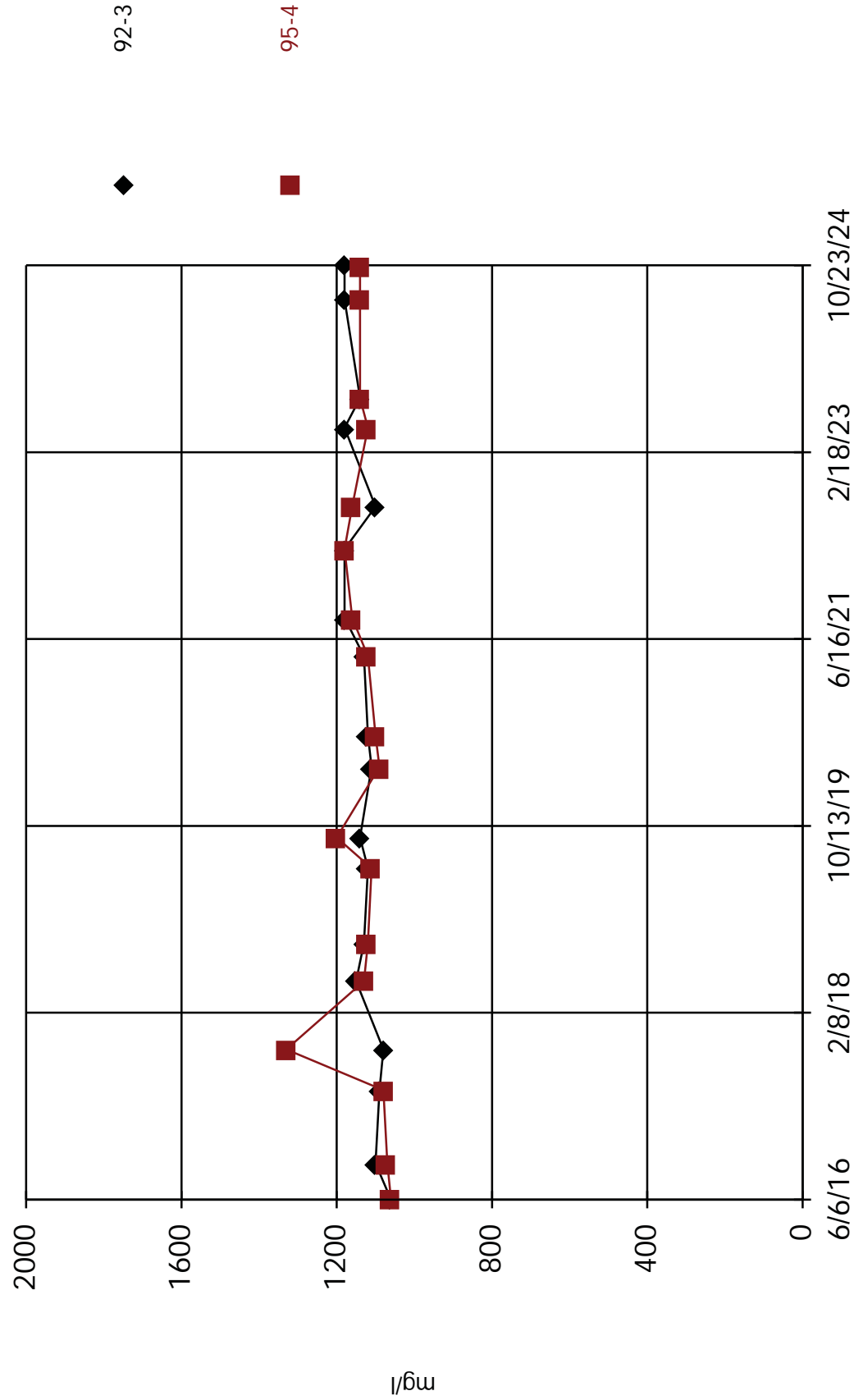
Time Series Analysis Run 11/18/2024 1:13 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Sulfate, as SO4



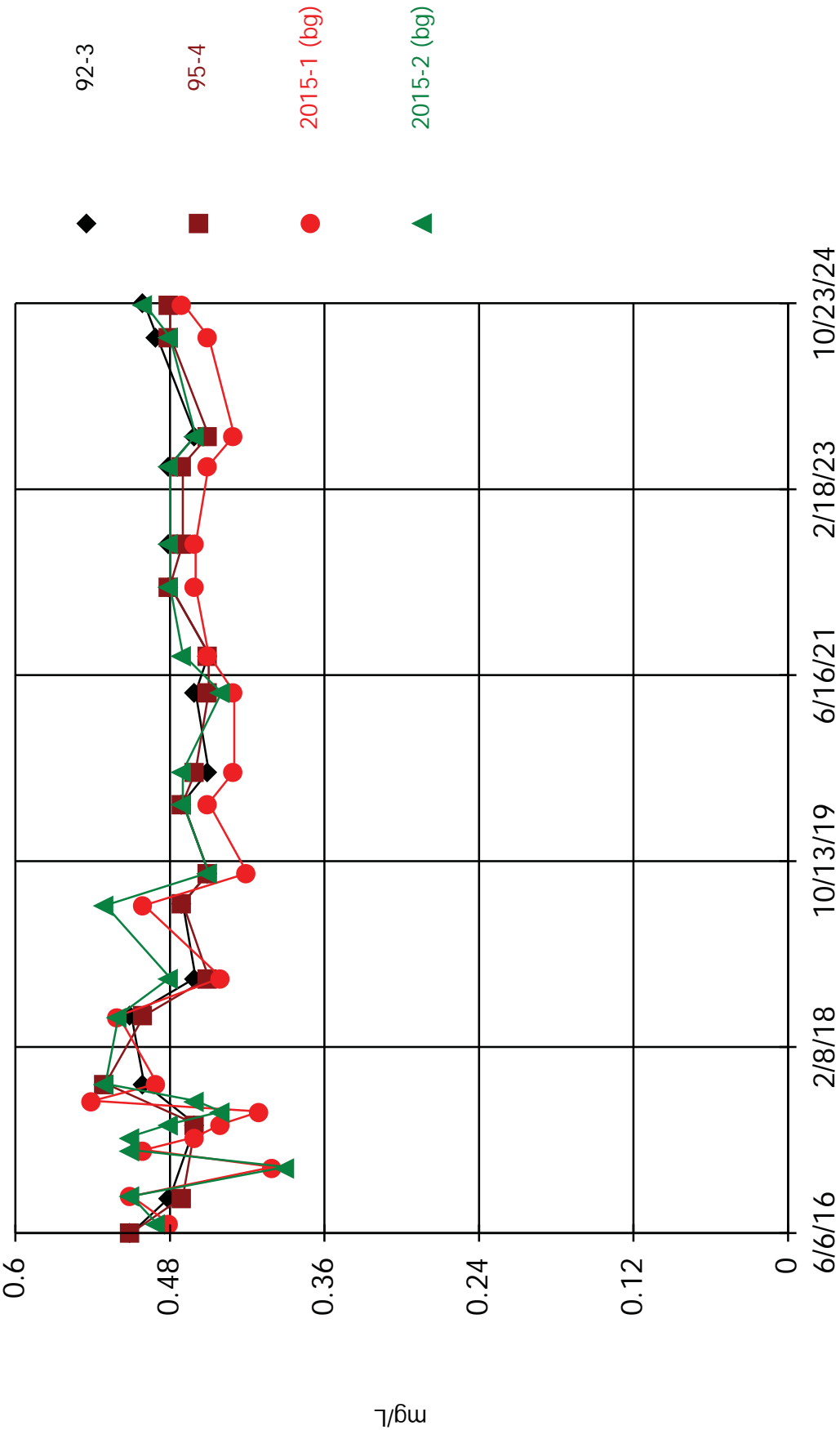
Total Dissolved Solids



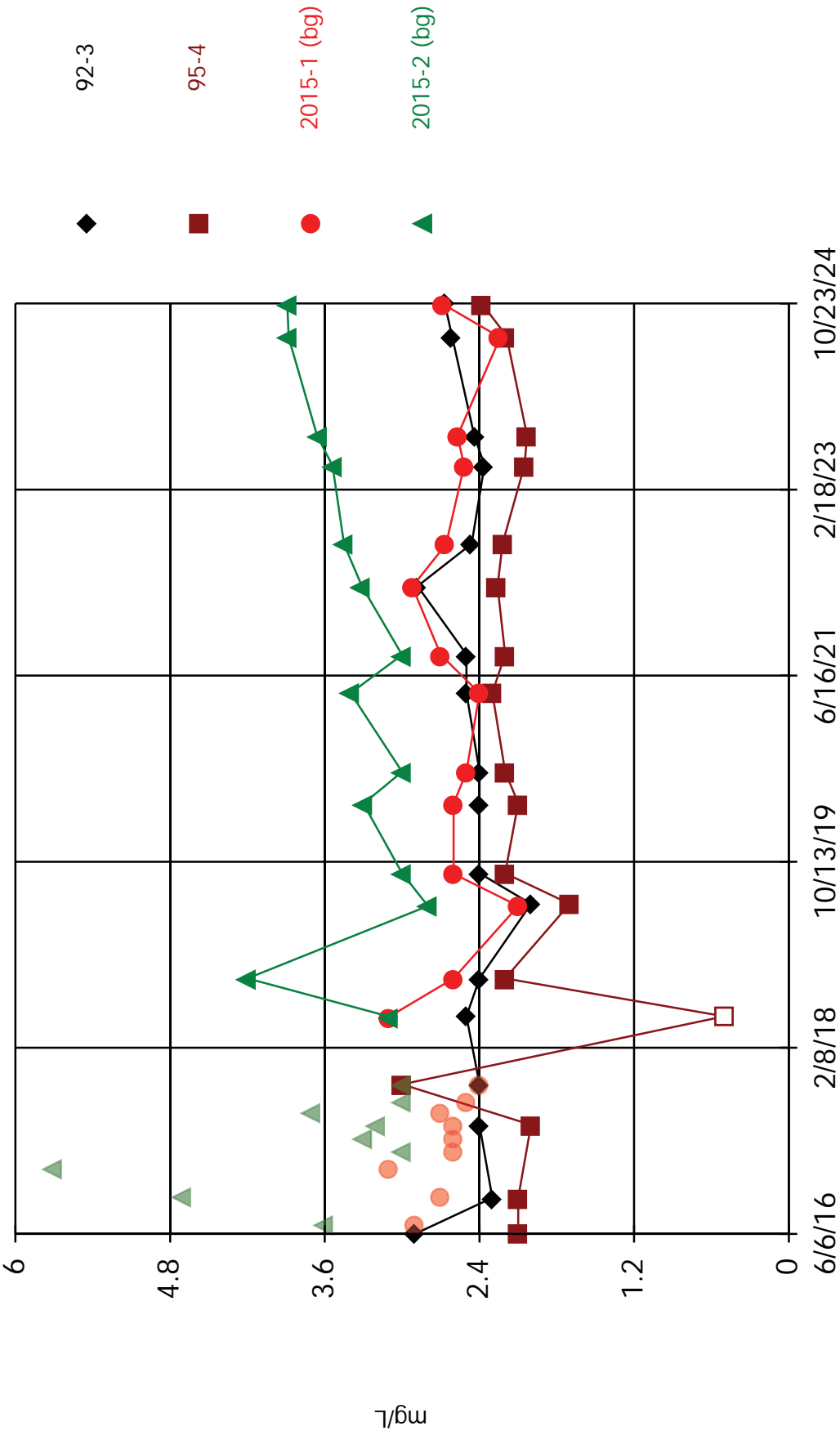
Time Series Analysis Run 11/18/2024 1:14 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Boron



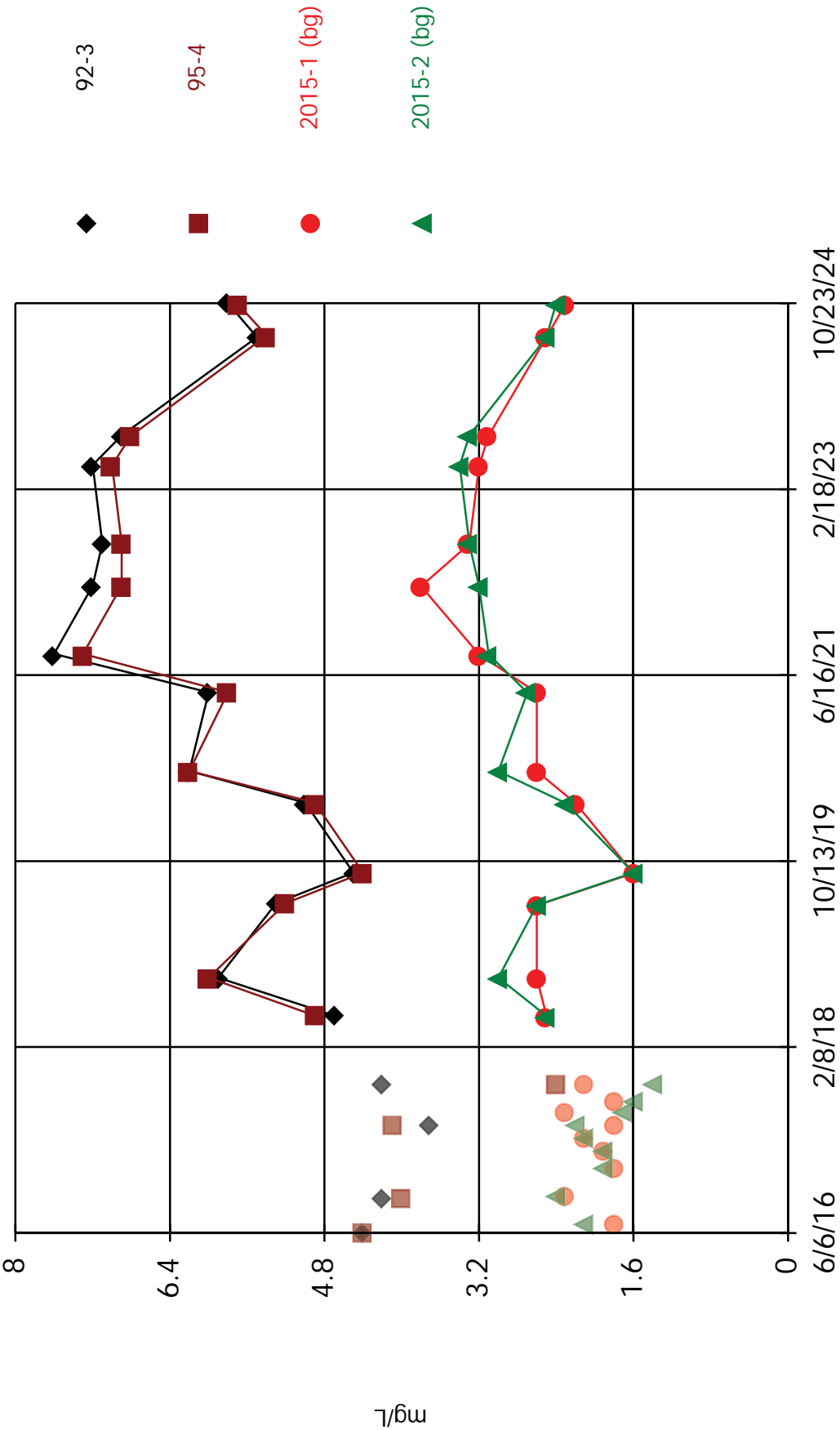
Calcium



Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

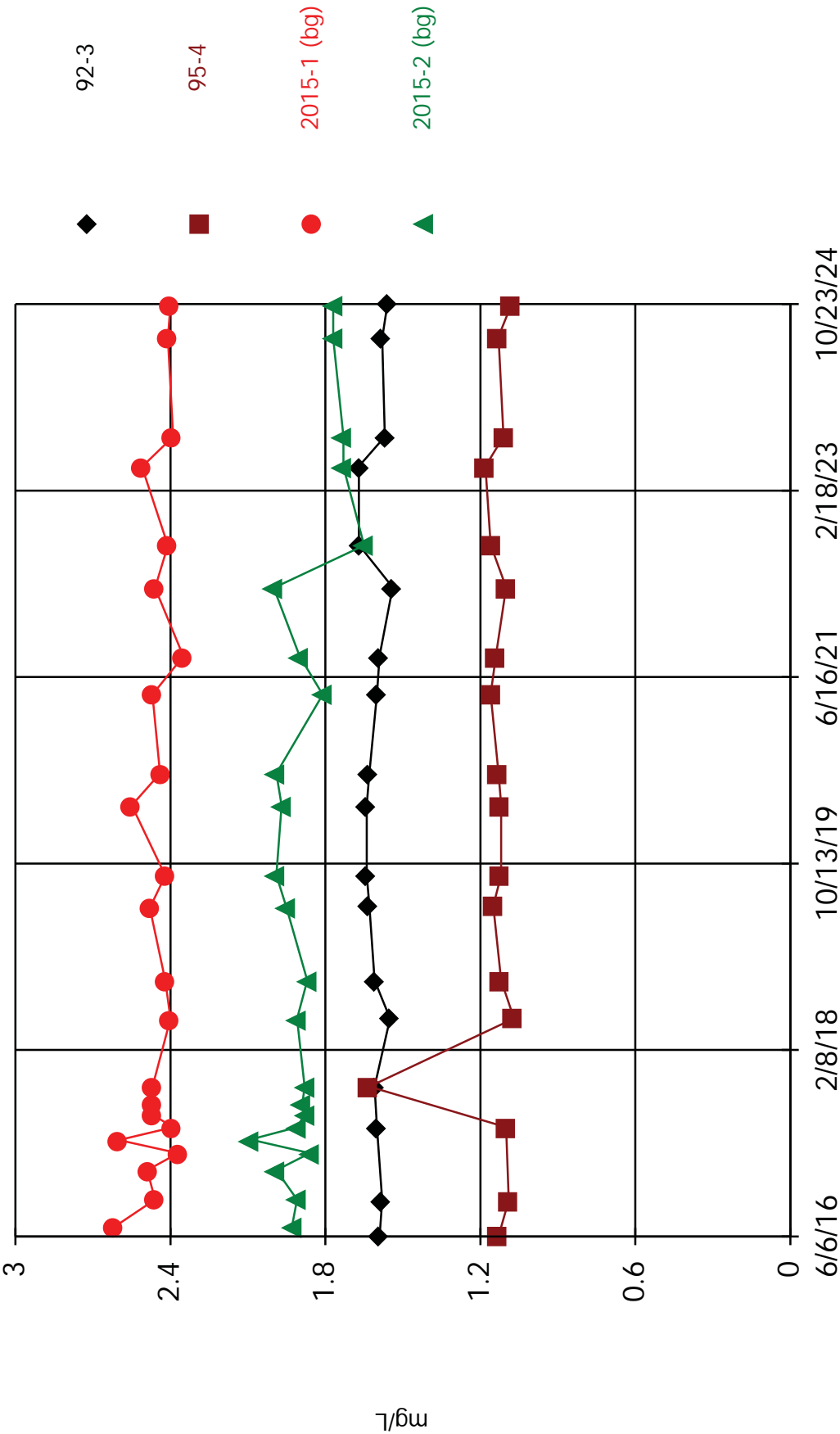
Chloride

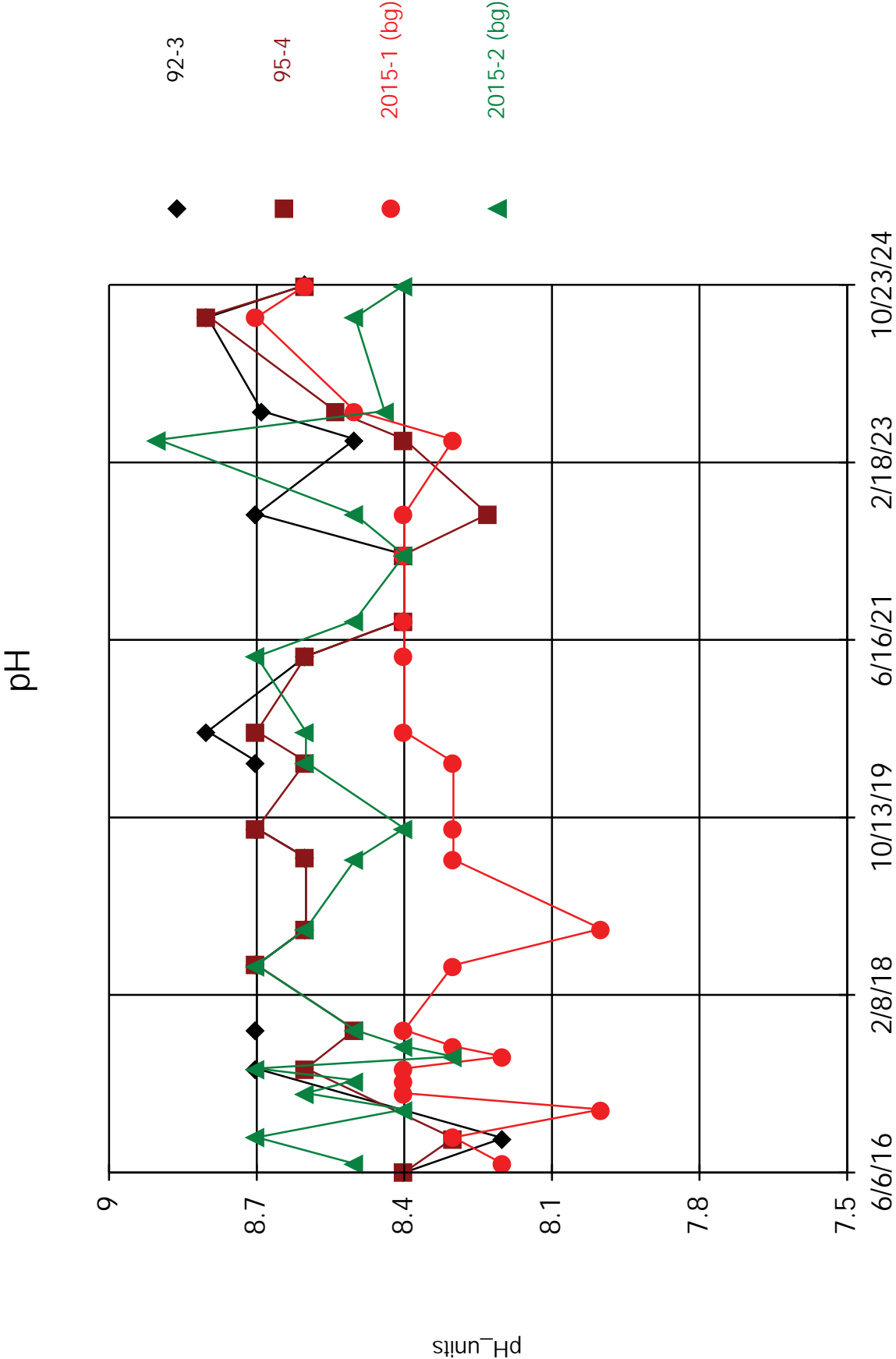


Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Fluoride

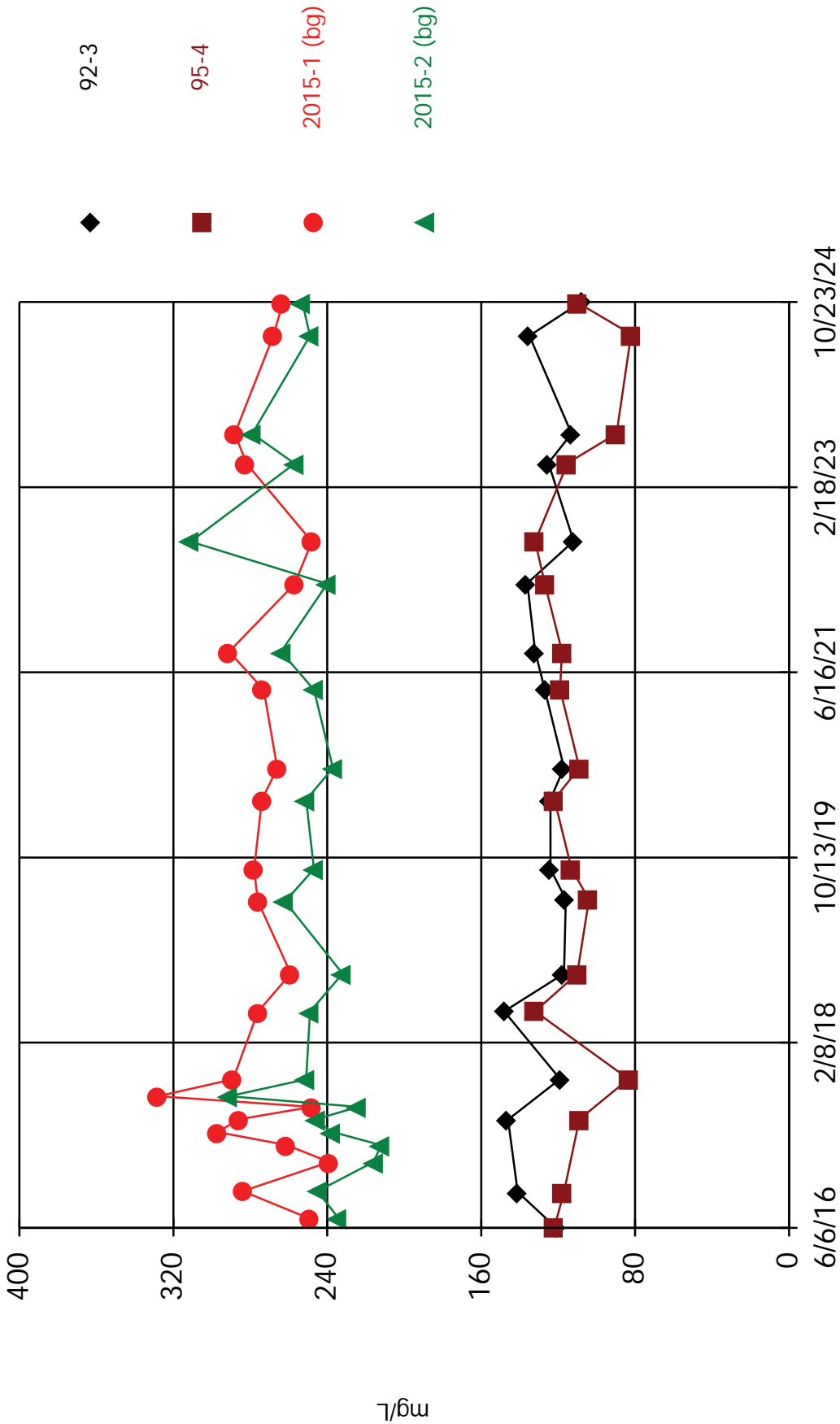




Time Series Analysis Run 11/18/2024 1:12 PM

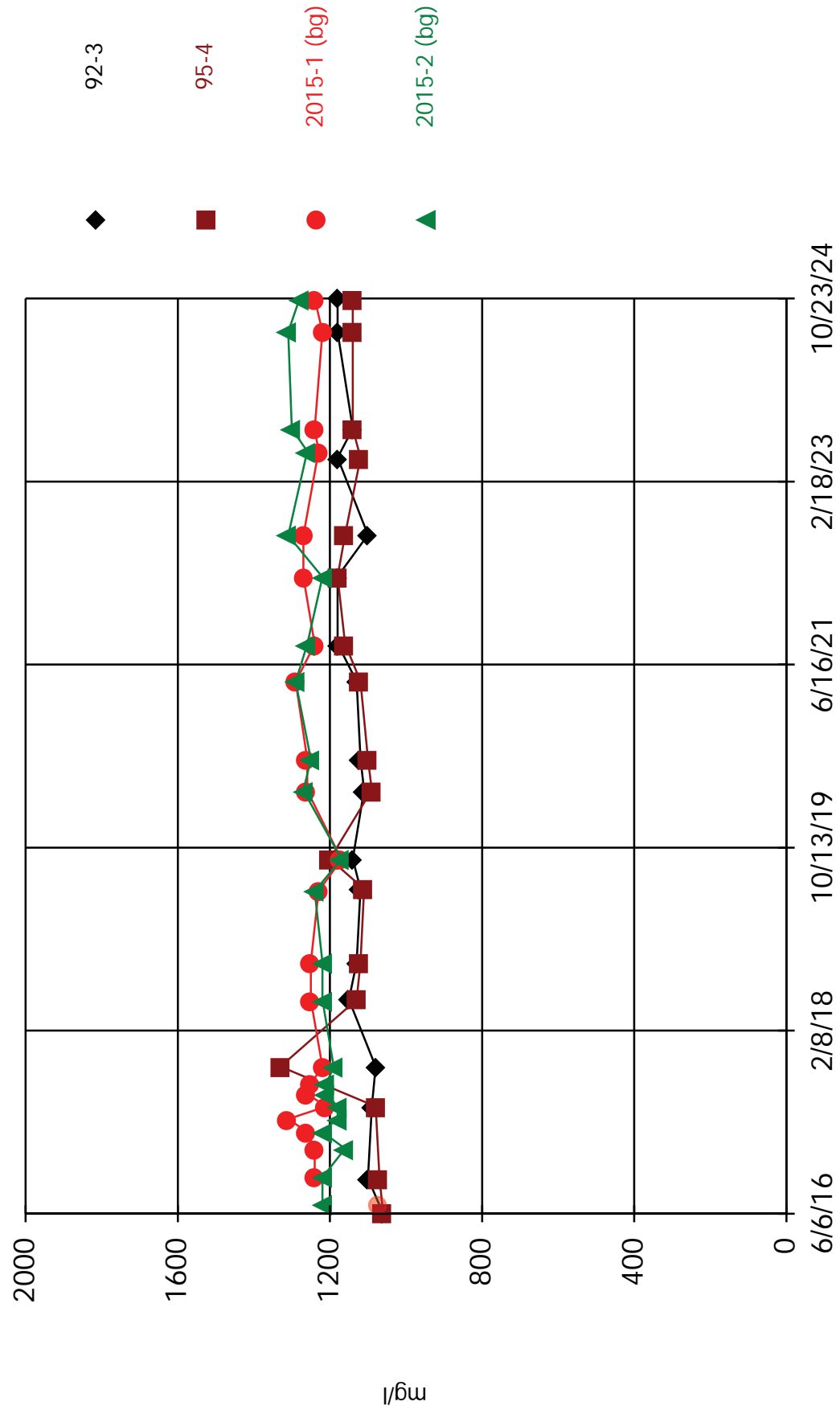
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Sulfate, as SO4



Time Series Analysis Run 11/18/2024 1:11 PM

Total Dissolved Solids



Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Appendix G

Sampling Field and Laboratory Reports

MW-2023-1 Background Sampling

**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



Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (33692) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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.

Report Date: Tuesday, December 19, 2023 5:02:29 PM

Page 1 of 18



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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative

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.

Report Date: Tuesday, December 19, 2023 5:02:29 PM

Page 2 of 18

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	33692001	Date Collected:	11/10/2023 09:05		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	11/10/2023 13:05		Collector:	MVTL Field Service	
Temp @ Receipt (C):	5.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	79.5	mg/L	5	1	11/15/2023 09:50	11/15/2023 09:50	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	11/10/2023 17:00	11/27/2023 10:39	
Calcium	3.23	mg/L	1	1	11/10/2023 17:00	11/16/2023 12:39	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1	11/10/2023 20:25	11/10/2023 20:25	*
Method: SM4500-Cl-E 2011							
Chloride	16.7	mg/L	2.0	1	11/14/2023 11:14	11/14/2023 11:14	
Method: SM4500-F-C-2011							
Fluoride	1.74	mg/L	0.1	1	11/10/2023 20:25	11/10/2023 20:25	
Method: USGS I-1750-85							
Total Dissolved Solids	1370	mg/L	10	1	11/10/2023 15:34	11/10/2023 15:34	

Analysis Results Comments**Beryllium**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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.

Report Date: Tuesday, December 19, 2023 5:02:29 PM

Page 3 of 18

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #:		33692	
Sulfate		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	95.6		85	115		
LFB			100	96.5		85	115		
LFB			100	96.3		85	115		
LFB			100	98.8		85	115		
LFB			100	96.1		85	115		
MFB		<5							
MFB		<5							
MFB		<5							
MFB		<5							
MFB		<5							
M/L/M/D	11040006		1000	98.5	98.1	85	115	0.6	20
M/L/M/D	11040004		500	94.2	94.1	85	115	0.6	20
M/L/M/D	11080011		100	106.4	106.7	85	115	0.9	20
M/L/M/D	11017001		5000	100.1	99.8	85	115	0.4	20
Chloride		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	94.4		30	110		
LFB			30	98.1		30	110		
LFB			30	95.5		30	110		
LFB			30	95.3		30	110		
LFB			30	95.2		30	110		
LFB			30	95.0		30	110		
MFB		<2.0							
MFB		<2.0							
MFB		<2.0							
MFB		<2.0							
MFB		<2.0							
M/L/M/D	11100001		30	111.5	111.7	30	120	0.0	20

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Page 4 of 18

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	23057004		30	98.0	98.9	80	120	0.0	20
MS/MSD	23044007		30	100.5	99.0	80	120	5.4	20

Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
FDU/PSD	23057001		100	96.2	99.0	75	125	0.9	20
FDU/PSD	23044005		100	96.7	96.5	75	125	9.8	20
FDU/PSD	23044003		100	93.8	92.7	75	125	0.7	20
FDU/PSD	23044011		100	99.4	99.3	75	125	0.2	20
FDU/PSD	23044013		100	93.8	92.5	75	125	0.8	20
FDU/PSD	23037000		100	107.0	106.8	75	125	0.9	20

Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UP/CE			0.4	104.0		85	115		
MS		<0.1							
MS/MSD	23037003		0.4	97.9	91.3	75	125	7.0	20

Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UP/MS			100	111.0		85	115		
UP/MS			100	110.0		85	115		
MS		<1							
MS		<1							
DUP	23044003							4.1	20
DUP	23037000							3.4	20
DUP	23044007							1.4	20

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
DUP	23044003							0.8	20
DUP	23037004							0.1	20

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			0	100.7		98.55	101.67		
CRM-PH			0	99.3		98.55	101.67		
CRM-PH			0	98.3		98.55	101.67		

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Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			3.06	104.0		83.98	111.13		
1PB-F			0.5	104.0		90	110		
1PB-F			0.5	104.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	38492003		0.5	96.0	91.0	80	120	4.5	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			730	103.0		90.35	110.33		
MB		<30							
DUK	38492000							1.8	20

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ANALYTICAL SUMMARY REPORT

December 15, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23110558 Quote ID: C15480
Project Name: 33692

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 11/15/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23110558-001	33692001; 2023-1	11/10/23 9:05	11/15/23	Groundwater	Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 7 of 18



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 33692
Lab ID: C23110558-001
Client Sample ID: 33692001; 2023-1

Report Date: 12/15/23
Collection Date: 11/10/23 09:05
Date Received: 11/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.5	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 228	2.3	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 precision (±)	1	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	12/04/23 14:21 / trs

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 8 of 18



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11140										
Lab ID: LCS-RA226-11140	3	Laboratory Control Sample		Run: G542M-2_231121B			12/11/23 10:51			
Radium 226		10	pCi/L	100		70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.15	pCi/L							
Lab ID: MB-RA226-11140	3	Method Blank		Run: G542M-2_231121B			12/11/23 10:51			
Radium 226		-0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate		Run: G542M-2_231121B			12/11/23 10:50			
Radium 226		2.1	pCi/L					6.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.21.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 9 of 18



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7271										
Lab ID: LCS-228-RA228-11140	3	Laboratory Control Sample		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		7.3	pCi/L	111		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: MB-RA228-11140	3	Method Blank		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		1.5	pCi/L					63	30	R
Radium 228 precision (±)		0.69	pCi/L							
Radium 228 MDC		0.95	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.77.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23110558

Login completed by: Chrystal N. Sheaff

Date Received: 11/15/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 11/17/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.4°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

Page 5 of 6

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Page 11 of 18



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Chain of Custody Record									
LABORATORIES, Inc.					Work Order # 33692				
2616 E Broadway Ave Bismarck, ND 58501					Phone #: 701-258-9720				
Toll Free: (800) 279-6885 Fax: (701) 258-9724					Fax #: 701-258-9720				
Company Name and Address:					Contact: Claudette				
MVTL					For faxed report check box				
2616 E Broadway					E-mail: cclaudette@mvtl.com				
Bismarck, ND 58501					For e-mail report check box				
Billing Address (indicate if different from above):					Date Submitted: 13-Nov-23				
PO Box 249					Purchase Order #: BL6785				
New Ulm, MN 56073									
Sample Information					Bottle Type				
Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Other	Analysis Required		
	33692001	2023-1	GW	10-Nov-23	0905	Untreated	Ra226 & Ra228		
						Unpreserved			
						VOC Vials			
						Glass Jar			
						Other			

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	13-Nov-23	1700		DeTavonny 11/23/23	11/23/23	13.4

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Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 33692 	Chain of Custody Record
Report To:	Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF
Attn:	Joseph Grosz		Event:
Address:	3401 24 th St SW Center, ND 58530		Sampled By: <i>J. Grosz</i>
Phone:			
Email:	jgrosz@minnkota.com		

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	10/12/23	09:05	GW	X	X	X	X	X			5.79	211	8.40	6.02	App 1 & 2 + 546 L/H
																See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. Grosz</i>	10 Nov 23 13:05	Log In Walk In #2	50.5 TMS62 / TMS805	<i>Tina</i>	10 Nov 23 13:05

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium - - Dissolved	mg/l	6020

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Company: Minnkota - CCWDF							
2616 E. Broadway Ave, Bismarck, ND		Groundwater Assessment		Event:							
Phone: (701) 258-9720				Sample ID: 2023-1							
				Sampling Personal: JG							
Weather Conditions:		Temp: 53 °F	Wind: 5-15 @ out of NW	Precip: Sunny / Partly Cloudy / Cloudy							
WELL INFORMATION											
Well Locked?	YES	NO									
Well Labeled?	YES	NO									
Casing Strait?	YES	NO									
Grout Seal Intact?	YES	NO	Not Visible								
Repairs Necessary?	1644										
Casing Diameter:	2"										
Water Level Before Purge:	207.45 ft										
Total Depth of Well:	ft										
Well Volume:	12.8 liters										
Depth to Top of Pump:	228.10 ft										
Water Level After Sample:	ft										
Measurement Method:	Electric Water Level Indicator										
SAMPLING INFORMATION											
Purging Method:	Bladder										
Sampling Method:	Bladder										
Dedicated Equipment?	YES NO										
Duplicate Sample?	YES NO										
Duplicate Sample ID:											
Bottle List:											
1 Liter Raw											
500ml Nitric											
500ml Nitric (Filtered)											
250ml Sulfuric											
Control Settings:											
Purge:	7 Sec.										
Recover:	7 Sec.										
PSI:	120										
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
11/9/23	13:42	Start of Well Purge									
	13:57						2.46	215.05	467	7	Clear
	14:12						5.20	217.60	267	7	
	14:27						6.41	219.80	183	2	
	14:42						9.11	219.80	100	1.5	
	14:57	944	14.4	14.4	7.02	1020	Shut Pumping	218.00			
	15:12						2.0	220.0	133	2	
	15:27						4.77	220.65	133	2	
	15:42						9.89	221.25	67	1	
	15:57	1123	14.4	14.4	11.57	Shut Pumping	221.00				
Well Stabilized?		YES NO		Total Volume Purged: 3 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
											Clarity, Color, Odor, Ect.
Comments:											

10+3

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Company: Minnkota - CCWDF						
2616 E. Broadway Ave, Bismarck, ND		Groundwater Assessment		Event:						
Phone: (701) 258-9720				Sample ID: 2023-1						
Weather Conditions:		Temp: °F Wind: @		Precip: Sunny / Partly Cloudy / Cloudy						
WELL INFORMATION				SAMPLING INFORMATION						
Well Locked?	YES NO	Purging Method:	Bladder	Control Settings:						
Well Labeled?	YES NO	Sampling Method:	Bladder	Purge:	Sec.					
Casing Strait?	YES NO	Dedicated Equipment?	YES NO	Recover:	Sec.					
Grout Seal Intact?	YES NO			PSI:						
Repairs Necessary?		Duplicate Sample?	YES NO							
Casing Diameter:	2"	Duplicate Sample ID:								
Water Level Before Purge:	ft	Bottle List:								
Total Depth of Well:	ft	1 Liter Raw								
Well Volume:	liters	500ml Nitric								
Depth to Top of Pump:	ft	500ml Nitric (filtered)								
Water Level After Sample:	ft	250ml Sulfuric								
Measurement Method:	Electric Water Level Indicator									
FIELD READINGS										
Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (mL/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid
	12:37					16.0	228.25	1.00	1.5	Clear
	12:42					17.2	222.48	0.7	1	Clear
	1:50					29.6	222.90	0.02	0.1	Clear Pump is noisy
									29.6	Bitubed Pumping 1/2" Considered OK
Well Stabilized? YES NO Total Volume Purged: _____ Liters										
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)				Appearance or Comment
										Clarity, Color, Odor, Ect.
Comments:										

2 of 3

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: 50 °F Wind: S @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	212.72	ft	
Total Depth of Well:		ft	
Well Volume:		liters	
Depth to Top of Pump:		ft	
Water Level After Sample:		ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		
Sampling Method:	Bladder		
Dedicated Equipment?	YES	NO	
Duplicate Sample?	YES	NO	
Duplicate Sample ID:			
Bottle List:			
1 Liter Raw 16.1 Nitric			
500ml Nitric			
500ml Nitric (Filtered)			
250ml Sulfuric			

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
10 Nov 23	0825	Start of Well Purge									
	0830	4.27	212.7	8.42	0.00	-206.2	3.62	214.54	100.0	0.5	Clear
	0835	4.67	212.7	8.40	0.03	-190.1	0.90	214.63	100.0	0.5	Clear
	0840	5.24	212.6	8.38	0.20	-122.2	0.05	214.92	100.0	0.5	Clear
	0845	5.09	212.3	8.38	0.49	-76.7	0.59	215.05	100.0	0.5	Clear
	0850	5.30	212.1	8.38	0.79	-36.4	0.54	215.20	100.0	0.5	Clear
	0855	5.47	211.8	8.39	0.96	-13.4	0.42	215.40	100.0	0.5	Clear
	0900	5.56	211.5	8.39	1.00	-0.5	0.00	215.71	100.0	0.5	Clear
	0905	5.79	211.1	8.40	1.05	1.1	1.02	215.95	100.0	0.5	Clear

Well Stabilized? YES NO Total Volume Purged: 4.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
10 Nov 23	0905	5.79	211.1	8.40	1.02	Clear

Comments: Well purged by Minnkota staff previous day

3 of 3

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (33692) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 18

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	33692001	Date Collected:	11/10/2023 09:05	Matrix:	Groundwater
Sample ID:	2023-1	Date Received:	11/10/2023 13:05	Collector:	MVTL Field Service
Temp @ Receipt (C):	5.5	Received on Ice:	Yes		

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	11/14/2023 13:57	11/15/2023 09:30	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	11/10/2023 17:00	11/27/2023 10:39	
Cobalt	<0.1	mg/L	0.1	1	11/10/2023 17:00	11/13/2023 10:42	
Lithium	0.0541	mg/L	0.02	1	11/10/2023 17:00	11/29/2023 14:59	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	11/10/2023 17:00	11/22/2023 10:44	
Arsenic	<0.002	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Barium	0.1056	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Beryllium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 16:06	*
Cadmium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	
Chromium	<0.002	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Lead	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	
Molybdenum	0.0038	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Selenium	<0.005	mg/L	0.005	5	11/10/2023 17:00	11/22/2023 10:44	
Thallium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	

Analysis Results Comments**Beryllium**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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Page 2 of 18



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary									
WO #: 33692									
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	107.0		81	111		
Mn									
-0.1									
Mn/MQ	33645001		0.4	95.2	95.9	70	120	0.8	20
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	108.0		81	111		
Mn/MQ	33650001		0.4	100.0	95.6	70	130	4.5	20
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000004		100	91.0					
SPR	34000001		100	95.4		75	125		
SPR	34000001		100	102.0		75	125		
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.1	113.0		75	125		
SPR	34000001		0.4	100.0		75	125		
Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.4	98.4		75	125		
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.1	123.0		75	125		
SPR	34000001		0.4	110.0		75	125		
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.4	103.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.4	112.0		75	125		
SPR	34000001		0.1	94.5		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPR	34000001		0.4	98.8		75	125		

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Account #: 7048

Client: Minnkota Power Cooperative

Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	34006001		0.1	93.3		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	34006001		0.4	114.0		75	125		
SPK	34006001		0.1	100.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	34006001		0.4	105.0		75	125		
SPK	34006001		0.1	98.3		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	34006001		0.1	94.4		75	125		
SPK	34006001		0.4	99.9		75	125		
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-DB			0.8	104.0		85	115		
MB		<0.1							
MS/MSD	23693001		0.4	97.9	91.3	75	125	7.0	20
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	107.0		85	115		
MB		<0.1							
MS/MSD	23693001		0.4	93.9	90.1	75	125	4.1	20
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.04							
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MD			0.1	106.0		80	120		
MB		<0.001							
MS/MSD	23693001		0.4	109.0	103.0	75	125	5.7	20
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MD			0.1	101.0		80	120		

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Account #: 7048

Client: Minnkota Power Cooperative

Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.003							
MS/MSD	23692001		0.4	107.0	104.0	75	125	3.8	20
Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	101.0		80	120		
MB		<0.003							
MS/MSD	23692002		0.4	105.0	101.0	75	125	3.9	20
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	103.0		80	120		
MB		<0.0005							
MS/MSD	23692003		0.4	103.0	98.0	75	125	3.4	20
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	106.0		80	120		
MB		<0.0005							
MS/MSD	23692004		0.4	109.0	105.0	75	125	3.7	20
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	112.0		80	120		
MB		<0.003							
MS/MSD	23692005		0.4	111.0	105.0	75	125	3.6	20
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	104.0		80	120		
MB		<0.0005							
MS/MSD	23692006		0.4	104.0	100.0	75	125	3.8	20
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	110.0		80	120		
MB		<0.003							
MS/MSD	23692007		0.4	114.0	110.0	75	125	3.6	20

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Selenium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB MS			0.1	99.9		80	120		
N/A									
MS/MSD	23092002		0.4	108.0	103.0	75	125	4.7	20
Thallium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB MS			0.1	105.0		80	120		
N/A									
MS/MSD	23092004		0.4	106.0	102.0	75	125	2.9	20
Mercury									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			0.002	105.0		80	115		
N/A									
MS/MSD	23148002		0.002	99.4	100.0	70	130	4.9	20
MS/MSD	23149003		0.002	98.7	96.6	70	130	5.1	20
MS/MSD	23092005		0.002	97.2	95.0	70	130	1.2	20

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ANALYTICAL SUMMARY REPORT

December 15, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23110558 Quote ID: C15480
Project Name: 33692

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 11/15/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23110558-001	33692001; 2023-1	11/10/23 9:05	11/15/23	Groundwater	Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 7 of 18



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 33692
Lab ID: C23110558-001
Client Sample ID: 33692001; 2023-1

Report Date: 12/15/23
Collection Date: 11/10/23 09:05
Date Received: 11/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.5	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 228	2.3	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 precision (±)	1	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	12/04/23 14:21 / trs

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 8 of 18



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11140										
Lab ID: LCS-RA226-11140	3	Laboratory Control Sample		Run: G542M-2_231121B			12/11/23 10:51			
Radium 226		10	pCi/L	100		70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.15	pCi/L							
Lab ID: MB-RA226-11140	3	Method Blank		Run: G542M-2_231121B			12/11/23 10:51			
Radium 226		-0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate		Run: G542M-2_231121B			12/11/23 10:50			
Radium 226		2.1	pCi/L					6.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.21.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 9 of 18



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7271										
Lab ID: LCS-228-RA228-11140	3	Laboratory Control Sample		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		7.3	pCi/L	111		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: MB-RA228-11140	3	Method Blank		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate		Run: TENNELEC-4_231121C			12/04/23 12:48			
Radium 228		1.5	pCi/L					63	30	R
Radium 228 precision (±)		0.69	pCi/L							
Radium 228 MDC		0.95	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.77.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23110558

Login completed by: Chrystal N. Sheaff

Date Received: 11/15/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 11/17/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.4°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

Page 5 of 6

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Page 11 of 18

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**Account #:** 7048**Client:** Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 33692		Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com		CC:	Project Name: Minnkota - CCWDF	
			Event:	
			Sampled By: J. M.	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	10/12/23	09:05	GW	X	X	X	X	X			5.79	211	8.40	6.02	App 1 & 2 + 546 L/H
																See Attachment

Comments:

Relinquished By		Sample Condition			Received By	
Name	Date/Time	Location	Temp (°C)		Name	Date/Time
J. M.	10 Nov 23	Log In	5.5		Tina	10 Nov 23
	13:05	Walk In #2	TMS62 / TMS805			13:05
2						

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium - - Dissolved	mg/l	6020

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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
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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Company: Minnkota - CCWDF							
2616 E. Broadway Ave, Bismarck, ND		Groundwater Assessment		Event:							
Phone: (701) 258-9720				Sample ID: 2023-1							
				Sampling Personal: JG							
Weather Conditions:		Temp: 53 °F	Wind: 5-15 @ out of NW	Precip: Sunny / Partly Cloudy / Cloudy							
WELL INFORMATION											
Well Locked?	YES	NO									
Well Labeled?	YES	NO									
Casing Strait?	YES	NO									
Grout Seal Intact?	YES	NO	Not Visible								
Repairs Necessary?	1644										
Casing Diameter:	2"										
Water Level Before Purge:	209.45 ft										
Total Depth of Well:	ft										
Well Volume:	12.8 liters										
Depth to Top of Pump:	228.10 ft										
Water Level After Sample:	ft										
Measurement Method:	Electric Water Level Indicator										
SAMPLING INFORMATION											
Purging Method:	Bladder										
Sampling Method:	Bladder										
Dedicated Equipment?	YES NO										
Duplicate Sample?	YES NO										
Duplicate Sample ID:											
Bottle List:											
1 Liter Raw											
500ml Nitric											
500ml Nitric (Filtered)											
250ml Sulfuric											
Control Settings:											
Purge:	7 Sec.										
Recover:	7 Sec.										
PSI:	120										
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
11/9/23	13:42	Start of Well Purge									
	13:57						2.46	215.05	467	7	Clear
	14:12						5.20	217.60	267	7	
	14:27						6.41	219.80	183	2	
	14:42						9.11	219.80	100	1.5	
	14:57	944	194.4	7.02	1020	56.4	219.80	218.80			
	15:12						7.0	220.0	133	2	
	15:27						9.77	220.65	133	2	
	15:42						9.89	221.25	67	1	
	15:57	1123	194.4	11.57	1157	56.4	221.0				
	16:12						16.1	220.0	200	3	
Well Stabilized?		YES NO		Total Volume Purged: Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
											Clarity, Color, Odor, Ect.
Comments:											

10+3

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Report Date: Tuesday, December 19, 2023 5:00:13 PM

Page 17 of 18



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Account #: 7048

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2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: 50 °F Wind: S @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	212.72	ft	
Total Depth of Well:		ft	
Well Volume:		liters	
Depth to Top of Pump:		ft	
Water Level After Sample:		ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		Control Settings:
Sampling Method:	Bladder		Purge: 5 Sec
Dedicated Equipment?	YES	NO	Recover: 55 Sec
Duplicate Sample?	YES	NO	PSI: 120
Duplicate Sample ID:	—		
Bottle List:			
1 Liter Raw 16.1 Nitric			
500ml Nitric			
500ml Nitric (filtered)			
250ml Sulfuric			

FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				
10 Nov 23	0825	Start of Well Purge									
	0830	4.27	212.7	8.42	0.00	-206.2	3.62	214.54	100.0	0.5	Clear
	0835	4.67	212.7	8.40	0.03	-190.1	0.90	214.63	100.0	0.5	Clear
	0840	5.24	212.6	8.38	0.20	-122.2	0.00	214.92	100.0	0.5	Clear
	0845	5.09	212.3	8.38	0.49	-76.7	0.59	215.05	100.0	0.5	Clear
	0850	5.30	212.1	8.38	0.79	-36.4	0.54	215.20	100.0	0.5	Clear
	0855	5.47	211.8	8.39	0.96	-13.4	0.42	215.40	100.0	0.5	Clear
	0900	5.56	211.5	8.39	1.00	-0.5	0.00	215.71	100.0	0.5	Clear
	0905	5.79	211.1	8.40	1.05	1.1	1.02	215.95	100.0	0.5	Clear
Well Stabilized?		YES		NO		Total Volume Purged: 40 Liters					

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
10 Nov 23	0905	5.79	211.1	8.40	1.02	Clear

Comments: Well purged by Minnkota staff previous day

3 of 3

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota-CCWDF (35469) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Monday, January 8, 2024 11:18:05 AM

Page 1 of 14



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Page 2 of 14

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	35469001	Date Collected:	12/01/2023 08:00		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	12/01/2023 14:08		Collector:	MVTL Field Service	
Temp @ Receipt (C):	1.9	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	82.1	mg/L	5	1	12/06/2023 13:01	12/06/2023 13:01	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	12/04/2023 09:24	12/06/2023 15:16	
Calcium	3.14	mg/L	1	1	12/04/2023 09:24	12/04/2023 12:30	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1	12/05/2023 19:30	12/05/2023 19:30	*
Method: SM4500-Cl-E 2011							
Chloride	15.5	mg/L	2.0	1	12/05/2023 11:38	12/05/2023 11:38	
Method: SM4500-F-C-2011							
Fluoride	1.81	mg/L	0.1	1	12/05/2023 19:30	12/05/2023 19:30	
Method: USGS I-1750-85							
Total Dissolved Solids	1400	mg/L	10	1	12/01/2023 18:00	12/01/2023 18:00	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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Page 3 of 14



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #: 35469		
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	100.0		85	115		
LFB			100	99.3		85	115		
LFB			100	98.6		85	115		
LFB			100	97.6		85	115		
LFB			100	96.8		85	115		
LFB			100	101.0		85	115		
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
MS/MSD	25233003		200	101.9	102.8	85	115	0.4	20
MS/MSD	25299004		200	93.8	91.9	85	115	0.0	20
MS/MSD	25387006		200	95.5	95.3	85	115	0.0	20
MS/MSD	25488007		500	72.5	77.5	85	115	2.0	20
MS/MSD	25497008		500	85.5	85.6	85	115	0.0	20

Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	93.2		85	115		
LFB			30	91.7		85	115		
LFB			30	93.7		85	115		
LFB			30	94.7		85	115		
LFB			30	91.4		85	115		
LFB			30	90.5		85	115		
LFB			30	90.4		85	115		
LFB			30	94.7		85	115		
NB		<2.0							
NB		<2.0							

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Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
ML/MSD	2523003		30	108.7	108.8	90	120	0.0	20
ML/MSD	25361006		60	103.7	103.0	90	120	0.0	20
ML/MSD	25388007		30	96.1	96.4	90	120	0.0	20
ML/MSD	25491005		30	97.2	97.3	90	120	0.0	20
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	108.0		85	110		
MB		<0.1							
ML/MSD	25388007		0.4	93.2	97.6	75	125	1.7	20
POU/POSD	25498003		2	95.0	93.7	75	125	1.5	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AH			100	113.0		85	115		
UPB-AH			100	114.0		85	115		
MB		<1							
MB		<1							
DUP	25388003							1.7	20
POU/POSD	25387003		500	92.1	91.4	75	125	0.7	20
DUP	25387004							1.7	20
POU/POSD	25388006		100	94.8	94.7	75	125	0.1	20
DUP	25388007							0.4	20
DUP	25498002							1.0	20
POU/POSD	25498004		100	93.0	93.0	75	125	0.0	20

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pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	99.5		98.33	101.67		
CRM-PH			6	99.3		98.33	101.67		
CRM-PH			6	99.2		98.33	101.67		
CRM-PH			6	99.8		98.33	101.67		
DUP	25489001							0.5	20
DUP	31566002							0.3	20
DUP	31562001							0.4	20
DUP	31562004							1.8	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			0.06	94.8		91.98	111.11		
UPB-F			0.5	98.6		90	110		
UPB-F			0.5	102.0		90	110		
UPB-F			0.5	104.0		90	110		
UPB-F			0.5	94.0		90	110		
NB-F		<0.1							
NB-F		<0.1							
NB-F		<0.1							
NB-F		<0.1							
ML/MSD-F	35478001		0.5	98.8	102.8	90	120	1.8	20
ML/MSD-F	31562001		0.5	99.0	98.0	90	120	4.7	20
ML/MSD-F	31562005		0.5	100.0	108.0	90	120	5.7	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	102.0		90.35	110.35		
CRM			736	102.0		90.35	110.35		
NB		<10							
NB		<10							
DUP	35234001							3.2	20
DUP	31566007							3.5	20
DUP	35489003							0.7	20

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ANALYTICAL SUMMARY REPORT

December 29, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23120219 Quote ID: C15480
Project Name: 35469

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 12/6/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23120219-001	35469001; 2023-1	12/01/23 8:00	12/06/23	Groundwater	Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 7 of 14



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 35469
Lab ID: C23120219-001
Client Sample ID: 35469001; 2023-1

Report Date: 12/29/23
Collection Date: 12/01/23 08:00
Date Received: 12/06/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	12/18/23 12:19 / kdk
Radium 226 precision (s)	0.1	pCi/L				E903.0	12/18/23 12:19 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	12/18/23 12:19 / kdk
Radium 228	0.4	pCi/L	U			RA-05	12/12/23 15:07 / kdk
Radium 228 precision (s)	0.6	pCi/L				RA-05	12/12/23 15:07 / kdk
Radium 228 MDC	0.9	pCi/L				RA-05	12/12/23 15:07 / kdk

Report Definitions:	RL - Analyte Reporting Limit	MCL - Maximum Contaminant Level
	QCL - Quality Control Limit	ND - Not detected at the Reporting Limit (RL)
	U - Not detected at Minimum Detectable Concentration (MDC)	

Page 2 of 6

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Page 8 of 14



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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



Account #: 7048

Client: Minnkota Power Cooperative



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Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11158										
Lab ID: LCS-RA226-11158	3	Laboratory Control Sample		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		11	pCi/L	107		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.26	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		0.75	pCi/L					6.5	30	
Radium 226 precision (±)		0.18	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.18.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 3 of 6

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Report Date: Monday, January 8, 2024 11:18:05 AM

Page 9 of 14



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7285										
Lab ID: LCS-228-RA226-11158	3	Laboratory Control Sample		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		7.8	pCi/L	119		70	130			
Radium 228 precision (\pm)		1.7	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		-0.3	pCi/L							U
Radium 228 precision (\pm)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		0.84	pCi/L					56	30	UR
Radium 228 precision (\pm)		0.62	pCi/L							
Radium 228 MDC		0.96	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.42.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 4 of 6

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Page 10 of 14



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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23120219

Login completed by: Hannah R. Johnson

Date Received: 12/6/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 12/9/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	14.9°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4")	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 11.7°C, Cooler 2: 14.9°C, Cooler 3: 12.1°C, and Cooler 4 12.1°C.

Page 5 of 6

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Page 11 of 14

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Account #: 7048

Client: Minnkota Power Cooperative

[illegible]

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 35469 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>James May</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric		Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	1 Dec 23	0800	GW	X	X	X	X	X		6.10	2141	8.41	0.01	Analysis Required
															See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J Grosz</i>	1 Dec 23 1400	Log In Walk In #2	25.1 TM562 / TM805	<i>James May</i>	1 Dec 23 1408
1					
2					

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: Jeth

Weather Conditions: Temp: 70 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION		
Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	Not Visible	
Casing Diameter:	2"	
Water Level Before Purge:	211.34 ft	
Total Depth of Well:	— ft	
Well Volume:	— liters	
Depth to Top of Pump:	— ft	
Water Level After Sample:	216.25 ft	
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION		
Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
1 Dec 23	0735	Start of Well Purge									
	0735	6.09	212.1	8.44	0.02	-182.3	4.66	213.44	100.0	1.0	Clear
	0740	6.03	212.7	8.44	0.00	-195.4	2.36	213.83	100.0	0.5	Clear
	0745	6.01	213.7	8.43	0.00	-178.1	0.39	213.93	100.0	0.5	Clear
	0750	6.02	214.0	8.42	0.00	-199.0	0.01	214.02	100.0	0.5	Clear
	0755	6.12	214.1	8.42	0.00	-202.3	0.01	214.35	100.0	0.5	Clear
	0800	6.10	214.1	8.41	0.00	-202.2	0.01	214.45	100.0	0.5	Clear
Well Stabilized?		YES	NO								
Total Volume Purged:										3.5	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
1 Dec 23	0800	6.10	214.1	8.41	0.01	Clear

Comments: Well purged by Minnkota Staff previous day

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota-CCWDF (35469) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Monday, January 8, 2024 11:28:35 AM

Page 1 of 13

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 35469001 **Date Collected:** 12/01/2023 08:00 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 12/01/2023 14:08 **Collector:** MVTL Field Service

Temp @ Receipt (C): 1.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	12/13/2023 09:30	12/06/2023 13:39	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	12/04/2023 09:24	12/05/2023 10:53	
Lithium	0.0543	mg/L	0.02	1	12/04/2023 09:24	12/06/2023 10:58	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	12/04/2023 09:24	12/07/2023 14:22	
Arsenic	<0.002	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Barium	0.1022	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Beryllium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 17:21	
Cadmium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 14:22	
Chromium	<0.002	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Lead	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 14:22	
Molybdenum	0.0033	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Selenium	<0.005	mg/L	0.005	5	12/04/2023 09:24	12/07/2023 14:22	
Thallium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 17:21	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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Page 2 of 13

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**Account #:** 7048**Client:** Minnkota Power Cooperative

QC Results Summary						WO #: 35469			
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-CE			0.4	108.0		85	115		
1PB-CE			0.4	113.0		85	115		
MB		<0.1							
MB		<0.1							
PDS	3440001		25	90.3		75	125		
PDS	3440003		2500	115.0		75	125		
PDS/PDS0	3120003		2	106.0	102.0	75	125	3.9	20
PDS/PDS0	3120006		2	95.7	96.5	75	125	0.3	20
MS/MS0	3100007		0.4	93.4	92.1	75	125	1.5	20
PDS/PDS0	3100007		2	96.8	99.0	75	125	0.3	20
MS/MS0	3100009							1.2	20
PDS/PDS0	3100009							0.5	20
PDS/PDS0	3100009							0.5	20
MS/MS0	2540004		0.4	96.4	96.9	75	125	0.3	20
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-CE			0.4	113.0		85	115		
MB		<0.04							
MS/MS0	3100007		0.4	101.0	102.0	75	125	0.6	20
PDS/PDS0	2540003		2	91.0	90.5	75	125	0.6	20
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	100.0		85	115		
MB		<0.001							
MS/MS0	3100007		0.4	104.0	103.8	75	125	2.9	20
SPN/SPN0	2540003		0.1	107.0	107.0	75	125	0.4	20
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	101.0		85	115		
MB		<0.002							

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Account #: 7048

Client: Minnkota Power Cooperative

Arsenic									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
ML/VIS	25488007		0.4	100.0	100.0	75	125	0.0	20
SPN/SPD	25489000		0.1	102.0	114.0	75	125	9.9	20
Barium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			0.1	99.6		80	120		
ML		<0.001							
ML/VIS	25488007		0.4	97.6	97.1	75	125	0.4	20
SPN/SPD	25489000							1.9	20
Beryllium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			0.1	107.0		80	120		
ML		<0.0005							
ML/VIS	25488007		0.4	106.0	107.0	75	125	0.3	20
SPN/SPD	25489000		0.1	110.0	106.0	75	126	0.9	20
SPN/SPD	25489000		0.1	114.0	117.0	75	125	1.9	20
Cadmium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			0.1	104.0		80	120		
ML		<0.0005							
ML/VIS	25488007		0.4	100.0	103.0	75	125	1.9	20
SPN/SPD	25489000		0.1	101.0	101.0	75	125	1.2	20
Chromium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			0.1	106.0		80	120		
ML		<0.001							
ML/VIS	25488007		0.4	104.0	104.0	75	125	0.2	20
SPN/SPD	25489000		0.1	96.7	90.5	75	125	9.8	20
Lead									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			0.1	103.0		80	120		
ML		<0.0005							
ML/VIS	25488007		0.4	97.4	96.7	75	125	0.5	20
SPN/SPD	25489000		0.1	95.4	98.6	75	125	1.2	20

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Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MO			0.1	106.0		80	120		
N/A									
<0.000									
ML/MSD	35388007		0.4	103.0	105.0	75	125	1.8	20
SPK/SPD	35435003		0.1	101.0	104.0	75	125	3.8	20
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MO			0.1	98.5		80	120		
N/A									
<0.000									
ML/MSD	35388000		0.4	103.0	103.0	75	125	0.7	20
SPK/SPD	35435000		0.1	102.0	105.0	75	125	3.9	20
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MO			0.1	107.0		80	120		
N/A									
<0.0005									
ML/MSD	35388007		0.4	108.0	108.0	75	125	0.2	20
SPK/SPD	35435000		0.1	90.4	88.8	75	125	3.3	20
SPK/SPD	35485004		0.1	110.0	111.0	75	125	0.3	20
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			0.002	103.0		80	120		
N/A									
<0.0002									
ML/MSD	35485004		0.002	92.7	86.4	70	130	3.7	20

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ANALYTICAL SUMMARY REPORT

December 29, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23120219 Quote ID: C15480
Project Name: 35469

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 12/6/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23120219-001	35469001; 2023-1	12/01/23 8:00	12/06/23	Groundwater	Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 6 of 13



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 35469
Lab ID: C23120219-001
Client Sample ID: 35469001; 2023-1

Report Date: 12/29/23
Collection Date: 12/01/23 08:00
Date Received: 12/06/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	12/18/23 12:19 / kdk
Radium 226 precision (s)	0.1	pCi/L				E903.0	12/18/23 12:19 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	12/18/23 12:19 / kdk
Radium 228	0.4	pCi/L	U			RA-05	12/12/23 15:07 / kdk
Radium 228 precision (s)	0.6	pCi/L				RA-05	12/12/23 15:07 / kdk
Radium 228 MDC	0.9	pCi/L				RA-05	12/12/23 15:07 / kdk

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 7 of 13



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11158										
Lab ID: LCS-RA226-11158	3	Laboratory Control Sample		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		11	pCi/L	107		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.26	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate		Run: TENNELEC-3_231207B			12/18/23 09:25			
Radium 226		0.75	pCi/L					6.5	30	
Radium 226 precision (±)		0.18	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.18.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7285										
Lab ID: LCS-228-RA226-11158	3	Laboratory Control Sample		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		7.8	pCi/L	119		70	130			
Radium 228 precision (±)		1.7	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		-0.3	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate		Run: TENNELEC-4_231207A			12/12/23 15:07			
Radium 228		0.84	pCi/L					56	30	UR
Radium 228 precision (±)		0.62	pCi/L							
Radium 228 MDC		0.96	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.42.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 9 of 13



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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23120219

Login completed by: Hannah R. Johnson

Date Received: 12/6/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 12/9/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	14.9°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 11.7°C, Cooler 2: 14.9°C, Cooler 3: 12.1°C, and Cooler 4 12.1°C.

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Page 10 of 13

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[illegible]

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 35469 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>James May</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric		Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	1 Dec 23	0800	GW	X	X	X	X	X		6.10	2141	8.41	0.01	Analysis Required
															See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. May</i>	1 Dec 23 1405	Log In Walk In #2	25.1 TM562 / TM805	<i>Joseph Grosz</i>	1 Dec 23 1408

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Account #: 7048

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Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: Jeth

Weather Conditions: Temp: 70 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	211.34	ft	
Total Depth of Well:		ft	
Well Volume:		liters	
Depth to Top of Pump:		ft	
Water Level After Sample:	216.25	ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		
Sampling Method:	Bladder		
Dedicated Equipment?	YES	NO	
Duplicate Sample?	YES	NO	
Duplicate Sample ID:			
Bottle List:			
1 Liter Raw			
500ml Nitric			
500ml Nitric (filtered)			
250ml Sulfuric			

Control Settings:	
Purge:	3 Sec.
Recover:	53 Sec.
PSI:	120

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
1 Dec 23	0735	Start of Well Purge									
	0735	6.09	212.1	8.44	0.02	-182.3	4.66	213.44	100.0	1.0	Clear
	0740	6.03	212.7	8.44	0.00	-195.4	2.36	213.83	100.0	0.5	Clear
	0745	6.01	213.7	8.43	0.00	-178.1	0.39	213.93	100.0	0.5	Clear
	0750	6.02	214.0	8.42	0.00	-199.0	0.01	214.02	100.0	0.5	Clear
	0755	6.12	214.1	8.42	0.00	-202.3	0.01	214.35	100.0	0.5	Clear
	0800	6.10	214.1	8.41	0.00	-202.2	0.01	214.45	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 3.5 Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
1 Dec 23	0800	6.10	214.1	8.41	0.01	Clear

Comments: Well purged by Minnkota Staff previous day

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (38296) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Friday, February 9, 2024 2:54:19 PM

Page 1 of 9



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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
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Account #: 7048

Client: Minnkota Power Cooperative

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Report Date: Friday, February 9, 2024 2:54:19 PM

Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	38296001	Date Collected:	01/09/2024 10:00		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	01/09/2024 11:50		Collector:	MVTL Field Service		
Temp @ Receipt (C):	0.8	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	56.0	mg/L	25	5	01/10/2024 11:23	01/10/2024 11:23		
Method: EPA 6010D								
Boron	0.52	mg/L	0.1	1	01/11/2024 08:45	01/19/2024 16:14		
Calcium	3.36	mg/L	1	1	01/11/2024 08:45	01/15/2024 15:22		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1	01/09/2024 14:20	01/09/2024 14:20	*	
Method: SM4500-Cl-E 2011								
Chloride	15.8	mg/L	2.0	1	01/09/2024 16:12	01/09/2024 16:12		
Method: SM4500-F-C-2011								
Fluoride	1.76	mg/L	0.1	1	01/15/2024 16:54	01/15/2024 16:54	*	
Method: USGS I-1750-85								
Total Dissolved Solids	1400	mg/L	10	1	01/15/2024 16:56	01/15/2024 16:56		

Analysis Results Comments**Cadmium, Dissolved**

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Fluoride

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.

Molybdenum, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Silver, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

pH

Sample analyzed beyond holding time.

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Page 3 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative

QC Results Summary										WO #: 38296	
Sulfate											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB			100		100.0		85	115			
LFB			100		96.3		85	115			
LFB			100		95.8		85	115			
MB		<5									
MB		<5									
MB		<5									
MS/MSD	38101001		500		91.4	93.6	85	115	1.4	20	
MS/MSD	38296001		500		95.3	95.3	85	115	0.0	20	
Chloride											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB			30		95.2		90	110			
LFB			30		91.2		90	110			
LFB			30		95.4		90	110			
MB		<3.0									
MB		<3.0									
MB		<3.0									
MS/MSD	38146001		30		125.9	123.8	80	120	0.7	20	
Boron											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-CE			0.4		101.0		85	115			
MB		<0.1									
MS/MSD	38296001		0.4		96.0	96.6	70	130	30.3	20	
Calcium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-M			100		110.0		85	115			
MB		<5									
DUP	38296001								1.2	20	
POU/POD	38412001		100		94.6	96.9	75	125	1.4	20	
pH											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: units	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
CRM-PH		8			100.7		98.33	101.67			

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Account #: 7048

Client: Minnkota Power Cooperative

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	100.2		98.33	101.67		
CRM-PH			6	100.7		98.33	101.67		
DUP	38213070							0.1	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			0.06	100.0		81.98	111.11		
LFB-F			0.5	108.0		90	110		
LFB-F			0.5	108.0		90	110		
LFB-F			0.5	100.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
ML/MSD-F	38296011		0.5	120.0	126.0	80	120	4.9	20
ML/MSD-F	38494010		0.5	106.0	94.0	80	120	4.2	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	101.0		90.35	110.35		
CRM			736	98.0		90.35	110.35		
CRM			736	101.0		90.35	110.35		
CRM			736	101.0		90.35	110.35		
MB		<10							
DUP	38296010							1.4	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 38296 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	9 Jan 24	1000	GW	X	X	X	X				7.17	2103	8.45	4.97	See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	9 Jan 24 1150	Walk In #2	201 202 TMS62 / TMS805	<i>[Signature]</i>	9 Jan 24 1150

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: JH

Weather Conditions: Temp: 0 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	207.53	ft
Total Depth of Well:		ft
Well Volume:	12.7	liters
Depth to Top of Pump:	228.112	ft
Water Level After Sample:	217.10	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES
Duplicate Sample?	YES
Duplicate Sample ID:	

Control Settings:
Purge: 0 / 8 Sec.
Recover: 27 / 52 Sec.
PSI: 120 / 130

Bottle List:

1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid	
8 Jan 24	0825	Start of Well Purge										
	0830	4.99	2115	8.48	0.10	-171.3	6.15	209.62	300.0	1.5	Clear	
	0915	5.63	2103	8.49	0.00	-267.4	1.86	218.00	300.0	13.5	Clear	
	1000	3.98	2109	8.53	0.00	-230.3	1.86	Below Pump	300.0	13.5	Clear	
		Purged Done										
9 Jan 24	0730	Subst. of Sample										
	0935	10.03	2084	8.50	1.96	-57.4	6.97	210.66	100.0	0.5	Clear	
	0950	7.15	2110	8.45	0.00	-216.4	7.87	213.52	100.0	1.5	Clear	
	0955	7.36	2104	8.45	0.00	-211.3	6.72	213.95	100.0	0.5	Clear	
	1000	7.17	2103	8.45	0.00	-211.4	4.77	214.74	100.0	0.5	Clear	
Well Stabilized?		YES	NO	Total Volume Purged: 31.5								Liters
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.	
9 Jan 24	1000	7.17	2103	8.45			4.77				Clear	
Comments:												

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14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium- - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (38296) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	38296001	Date Collected:	01/09/2024 10:00		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	01/09/2024 11:50		Collector:	MVTL Field Service	
Temp @ Receipt (C):	0.8	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	01/17/2024 08:25	01/17/2024 11:36	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	01/11/2024 08:45	01/16/2024 11:23	
Lithium	0.0534	mg/L	0.02	1	01/11/2024 08:45	01/19/2024 09:31	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	01/11/2024 08:45	01/12/2024 16:31	
Arsenic	<0.002	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Barium	0.1099	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 16:31	
Beryllium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/12/2024 13:56	
Cadmium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/12/2024 13:56	
Chromium	<0.002	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Lead	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/15/2024 12:08	
Molybdenum	0.0037	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Selenium	<0.005	mg/L	0.005	5	01/11/2024 08:45	01/12/2024 13:56	
Thallium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/15/2024 12:08	

Analysis Results Comments**Cadmium, Dissolved**

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Fluoride

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.

Molybdenum, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Silver, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

pH

Sample analyzed beyond holding time.

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Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #: 38296			
Cobalt						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE		100	0.4	106.0		81	111		
MB									
<0.1									
MS/MSD	38296001	88.9	0.4	90.2	88.9	70	130	1.5	20
Lithium						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	107.0		81	110		
MB									
<0.04									
Antimony						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	104.0		80	120		
MB									
<0.001									
MS/MSD	38296001		0.4	106.0	104.0	71	129	1.8	20
SPR	38296001		0.1	98.9		71	129		
Arsenic						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	94.2		80	120		
MB									
<0.001									
MS/MSD	38296001		0.4	93.4	94.9	70	120	1.9	20
SPR	38296001		0.1	97.1		70	120		
Barium						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	102.0		80	120		
MB									
<0.001									
MS/MSD	38296001		0.4	100.0	96.7	70	120	1.4	20
SPR	38296001		0.1	98.0		70	120		
Beryllium						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	101.0		80	120		
MB									
<0.0005									
MS/MSD	38296001		0.4	98.6	98.7	70	120	0.1	20
SPR	38296001		0.1	108.0		70	120		

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	103.0		80	120		
N/A									
<0.0005									
ML/VSD	38296000		0.4	103.0	100.0	75	125	1.0	20
SP6	38296000		0.1	99.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	108.0		80	120		
N/A									
<0.003									
ML/VSD	38296000		0.4	109.0	106.0	75	125	3.8	20
SP6	38296000		0.1	113.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	111.0		80	120		
UPB-M5			0.1	103.0		80	120		
N/A									
<0.0005									
N/A									
ML/VSD	38296000		0.4	99.0	102.0	75	125	1.0	20
SP6	38296000		0.1	113.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	109.0		80	120		
N/A									
<0.003									
ML/VSD	38296000		0.4	110.0	110.0	75	125	0.0	20
SP6	38296000		0.1	113.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	91.9		80	120		
N/A									
<0.001									
ML/VSD	38296000		0.4	95.0	95.9	75	125	1.2	20
SP6	38296000		0.1	96.4		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-M5			0.1	104.0		80	120		

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Account #: 7048

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Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB/MS			0.1	117.0		80	120		
MS		<0.0001							
MS		<0.0001							
MS/MSD	28296001		0.4	100.0	103.0	75	125	3.0	20

Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			0.002	91.6		85	115		
UPB		<0.0001							
MS/MSD	28296001		0.002	87.2	81.8	70	130	3.7	20
MS/MSD	28494001		0.002	83.8	84.1	70	130	0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 38296 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	1/24/24	1000	GW	X	X	X	X				7.17	2103	8.45	4.97	See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	1/24/24 1150	Walk In #2	201 202 TMS62 / TMS805	<i>[Signature]</i>	1/24/24 1150

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: JH

Weather Conditions: Temp: 0 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	207.53	ft
Total Depth of Well:		ft
Well Volume:	12.7	liters
Depth to Top of Pump:	228.112	ft
Water Level After Sample:	217.10	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES
Duplicate Sample?	YES
Duplicate Sample ID:	

Control Settings:
Purge: 0 / 8 Sec.
Recover: 27 / 52 Sec.
PSI: 120 / 130

Bottle List:

1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Etc.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
8 Jan 24	0825	Start of Well Purge									
	0830	4.99	2115	8.40	0.10	-171.3	6.15	209.02	300.0	1.5	Clear
	0915	5.63	2103	8.49	0.00	-267.4	1.86	210.00	300.0	13.5	Clear
	1000	3.98	2109	8.53	0.00	-230.3	1.86	Below Pump	300.0	13.5	Clear
9 Jan 24		Purged Done									
	0730	Start of Sample						209.15	Added		
	0935	10.03	2084	8.50	1.96	-57.4	6.97	210.66	100.0	0.5	Clear
	0950	7.15	2110	8.45	0.00	-216.4	7.07	213.52	100.0	1.5	Clear
	0955	7.36	2104	8.45	0.00	-211.3	6.72	213.95	100.0	0.5	Clear
	1000	7.17	2103	8.45	0.00	-211.4	4.77	214.74	100.0	0.5	Clear

Well Stabilized? YES NO

Total Volume Purged: 31.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment
9 Jan 24	1000	7.17	2103	8.45			4.77				Clear

Comments:

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Page 7 of 9



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14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO ₃	SM2320-B
Phenolphthalein Alk	mg/l CaCO ₃	SM2320-B
Bicarbonate	mg/l CaCO ₃	SM2320-B
Carbonate	mg/l CaCO ₃	SM2320-B
Hydroxide	mg/l CaCO ₃	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO ₃	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium- - Dissolved	mg/l	6020

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (37229) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 37229001 **Date Collected:** 12/21/2023 09:05 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 12/21/2023 11:05 **Collector:** MVTL Field Service
Temp @ Receipt (C): 3.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1	01/29/2024 14:39	01/29/2024 14:39	
Radium 228	See Attached			1	01/29/2024 14:39	01/29/2024 14:39	

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ANALYTICAL SUMMARY REPORT

January 23, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24010041 Quote ID: C15480

Project Name: 37229

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 1/2/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24010041-001	37229001, 2023-1	12/21/23 9:05	01/02/24	Groundwater	Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 37229
Lab ID: C24010041-001
Client Sample ID: 37229001, 2023-1

Report Date: 01/23/24
Collection Date: 12/21/23 09:05
Date Received: 01/02/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	01/15/24 14:45 / alb
Radium 226 precision (s)	0.1	pCi/L				E903.0	01/15/24 14:45 / alb
Radium 226 MDC	0.2	pCi/L				E903.0	01/15/24 14:45 / alb
Radium 228	0.8	pCi/L	U			RA-05	01/10/24 11:26 / kdk
Radium 228 precision (s)	0.6	pCi/L				RA-05	01/10/24 11:26 / kdk
Radium 228 MDC	1	pCi/L				RA-05	01/10/24 11:26 / kdk

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Report Date: Thursday, February 8, 2024 12:37:30 PM

Page 4 of 10



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www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative



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Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24010041

Report Date: 01/19/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11185										
Lab ID: LCS-RA226-11185	3	Laboratory Control Sample		Run: TENNELEC-4_240104B			01/15/24 14:45			
Radium 226		11	pCi/L	111		70	130			
Radium 226 precision (±)		2.2	pCi/L							
Radium 226 MDC		0.19	pCi/L							
Lab ID: MB-RA226-11185	3	Method Blank		Run: TENNELEC-4_240104B			01/15/24 14:45			
Radium 226		0.03	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24010011-001FDUP	3	Sample Duplicate		Run: TENNELEC-4_240104B			01/15/24 14:45			
Radium 226		43	pCi/L					8.3	30	
Radium 226 precision (±)		8.1	pCi/L							
Radium 226 MDC		0.17	pCi/L							
- The RER result is 0.31.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 3 of 6

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Page 5 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24010041

Report Date: 01/19/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7303										
Lab ID: LCS-228-RA228-11185	3	Laboratory Control Sample		Run: TENNELEC-4_240104A			01/10/24 11:26			
Radium 228		7.2	pCi/L	112		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA228-11185	3	Method Blank		Run: TENNELEC-4_240104A			01/10/24 11:26			
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.5	pCi/L							
Radium 228 MDC		0.9	pCi/L							
Lab ID: C24010011-001FDUP	3	Sample Duplicate		Run: TENNELEC-4_240104A			01/10/24 11:26			
Radium 228		4.0	pCi/L					4.2	30	
Radium 228 precision (±)		1.1	pCi/L							
Radium 228 MDC		0.98	pCi/L							
- The RER result is 0.11.										

Qualifiers:

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ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 6 of 10



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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24010041

Login completed by: Dallas W. Smith

Date Received: 1/2/2024

Reviewed by: cindy

Received by: slr

Reviewed Date: 1/8/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.1°C Melted Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

Page 5 of 6

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Page 7 of 10

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Page 8 of 10



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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: J. K. K.

Weather Conditions: Temp: 25°F Wind: W 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	201.58	ft
Total Depth of Well:		ft
Well Volume:	12.6	liters
Depth to Top of Pump:	276.10	ft
Water Level After Sample:	219.10	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES
Duplicate Sample?	YES
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	1 Gal Nitric
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	

Control Settings:	
Purge:	10 / 10 Sec
Recover:	20 / 50 Sec
PSI:	120 / 120

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			
20 Dec 23	0825	Start of Well Purge								
	0830	6.45	2128	8.40	1.21	-7.5	0.11	211.0	700.0	1.5
	0835	6.91	2106	8.46	0.00	-220.0	9.14	211.05	320.0	18.0
	0840	4.06	2110	8.58	0.00	-226.5	9.78	Below Pump	300.0	9.0
21 Dec 23	0815	Start of Sample Purge								
	0820	5.45	2108	8.43	0.18	-152.7	64.98	212.45	100.0	0.5
	0830	5.21	2138	8.42	0.00	-211.0	8.28	215.05	100.0	3.0
	0855	5.35	2126	8.43	0.00	-210.6	6.60	215.53	100.0	0.5
	0900	5.67	2124	8.43	0.00	-212.7	5.38	215.68	100.0	0.5
	0905	5.45	2123	8.44	0.00	-214.0	5.60	216.10	100.0	0.5
Well Stabilized?	YES	NO								
Total Volume Purged:								33.5	Liters	

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
21 Dec 23	0905	5.45	2123	8.44	5.60	Clear

Comments:

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (39863) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Thursday, February 22, 2024 10:21:50 AM

Page 1 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	39863001	Date Collected:	02/01/2024 09:10		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	02/01/2024 11:20		Collector:	MVTL Field Service	
Temp @ Receipt (C):	3.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	87.2	mg/L	5	1	02/07/2024 09:37	02/07/2024 09:37	
Method: EPA 6010D							
Boron	0.55	mg/L	0.1	1	02/01/2024 16:43	02/19/2024 15:54	
Calcium	3.45	mg/L	1	1	02/01/2024 16:43	02/05/2024 12:08	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1	02/02/2024 16:03	02/02/2024 16:03	*
Method: SM4500-Cl-E 2011							
Chloride	16.8	mg/L	2.0	1	02/06/2024 09:30	02/06/2024 09:30	
Method: SM4500-F-C-2011							
Fluoride	1.77	mg/L	0.1	1	02/02/2024 16:03	02/02/2024 16:03	
Method: USGS I-1750-85							
Total Dissolved Solids	1410	mg/L	10	1	02/05/2024 10:51	02/05/2024 10:51	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary									
WO #: 39863									
Sulfate									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	101.0		85	115		
LFB			100	101.0		85	115		
LFB			100	104.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MS/MSD	40012001		500	91.8	92.1	85	115	0.3	20
MS/MSD	40014001		1000	95.7	96.5	85	115	0.8	20
Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	97.3		90	110		
LFB			30	96.7		90	110		
LFB			30	96.4		90	110		
MB		<3.0							
MB		<3.0							
MB		<3.0							
MS/MSD	39812001		30	105.3	105.4	80	120	0.0	20
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-CE			0.4	101.0		85	115		
MB		<0.1							
MS/MSD	39863001		0.4	109.0	105.0	70	130	1.5	20
PDU/PDSB	41029001		20	98.2	98.7	75	125	0.4	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-AB			100	111.0		85	115		
MB		<5							
DUP	39824001							1.7	20
PDU/PDSB	39863001		100	116.0	115.0	75	125	0.1	20

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Client: Minnkota Power Cooperative

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			8	100.8		98.33	101.67		
CRM-PH			9	101.0		98.33	101.67		
DUP	SR000001							0.9	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			0.06	100.0		81.98	111.11		
LFB-F			0.5	104.0		90	110		
LFB-F			0.5	106.0		90	110		
NB-F		<0.1							
NB-F		<0.1							
MS/MSD	SR000001		1	100.0	93.0	80	120	1.4	20
MS/MSD	SR000002		0.5	106.0	108.0	80	120	0.8	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
CRM			736	101.0		90.35	110.33		
NB		<10							
DUP	SR000001							1.5	20

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: J. H.

Weather Conditions: Temp: 30°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	207.50	ft
Total Depth of Well:		ft
Well Volume:	12.7	liters
Depth to Top of Pump:	228.1	ft
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES
Duplicate Sample?	YES
Duplicate Sample ID:	

Control Settings:		
Purge:	10 / 10	Sec.
Recover:	10 / 10	Sec.
PSI:	120 / 120	

Bottle List:	
1 Liter Raw	1 Gal Nitric
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
31 Jan 24	1052	Start of Well Purge									
	1057	8.45	2015	8.39	0.35	-45.7	7.59	210.65	300.0	1.5	Clear
	1142	8.61	2014	8.41	0.00	-269.9	101.34	214.85	300.0	13.5	Clear
	1227	11.75	2012	8.40	0.00	-239.4	167.71	66.00	300.0	18.5	Clear
1 Feb 24		Purged by									
	0820	5.41	at Sampling					214.83			
	0855	6.01	2014	8.43	0.00	-194.0	134.20	213.85	100.0	0.5	Clear
	0855	6.30	2026	8.39	0.00	-217.3	13.33	216.12	100.0	3.0	Clear
	0900	6.25	2010	8.40	0.00	-220.6	14.05	216.95	100.0	0.5	Clear
	0905	6.24	2008	8.40	0.00	-227.7	9.51	217.37	100.0	0.5	Clear
	0910	6.33	2026	8.39	0.00	-226.1	16.84	218.05	100.0	0.5	Clear
Well Stabilized? (YES) NO											
Total Volume Purged:										32.5	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
1 Feb 24	0910	6.33	2026	8.39	16.84	Clear

Comments:

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www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury- - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron- - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron- - Dissolved	mg/l	6010
✓ Arsenic- - Dissolved	mg/l	6020
✓ Barium- - Dissolved	mg/l	6020
✓ Cadmium- - Dissolved	mg/l	6020
✓ Chromium- - Dissolved	mg/l	6020
✓ Lead- - Dissolved	mg/l	6020
✓ Molybdenum- - Dissolved	mg/l	6020
✓ Selenium- - Dissolved	mg/l	6020
✓ Silver- - Dissolved	mg/l	6020
✓ Beryllium- - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (39863) **PO:** 231156 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	39863001	Date Collected:	02/01/2024 09:10		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	02/01/2024 11:20		Collector:	MVTL Field Service	
Temp @ Receipt (C):	3.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	0.0002	mg/L	0.0002	1	02/07/2024 10:50	02/07/2024 14:05	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	02/01/2024 16:43	02/05/2024 10:01	
Lithium	0.0519	mg/L	0.02	1	02/01/2024 16:43	02/02/2024 14:34	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	02/01/2024 16:43	02/06/2024 11:20	
Arsenic	<0.002	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Barium	0.1087	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Beryllium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	
Cadmium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	
Chromium	0.0024	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Lead	<0.001	mg/L	0.001	5	02/01/2024 16:43	02/06/2024 11:20	
Molybdenum	0.0034	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Selenium	<0.005	mg/L	0.005	5	02/01/2024 16:43	02/06/2024 11:20	
Thallium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary									
WO #: 39863									
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	103.0		85	115		
N/A									
N/A									
ML/VSD	28421001							0.0	20
ML/VSD	28863001		0.4	89.1	86.4	75	125	0.7	20
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	100.0		85	115		
N/A									
N/A									
ML/VSD	28863001		0.4	91.7	89.3	75	125	2.9	20
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AVS			0.1	104.0		80	120		
N/A									
N/A									
ML/VSD	28421001							0.0	20
ML/VSD	28863001		0.4	104.0	105.0	75	125	9.2	20
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AVS			0.1	95.7		80	120		
N/A									
N/A									
ML/VSD	28421001		1	107.0	105.0	75	125	1.9	20
SPB	28421001		2	105.0		75	125		
ML/VSD	28863001		0.4	102.0	102.0	75	125	1.0	20
Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AVS			0.1	103.0		80	120		
N/A									
N/A									
ML/VSD	28421001							1.0	20
ML/VSD	28863001		0.4	99.6	97.1	75	125	3.0	20
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AVS			0.1	104.0		80	120		

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Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.0005							
ML/MSD	29421001							0.0	20
ML/MSD	29863001		0.4	101.0	102.0	75	125	1.0	20
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	105.0		80	120		
MB		<0.0005							
ML/MSD	29421001							1.1	20
ML/MSD	29863001		0.4	101.0	105.0	75	125	1.0	20
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	104.0		80	120		
MB		<0.001							
ML/MSD	29421001							2.2	20
ML/MSD	29863001		0.4	104.0	103.0	75	125	0.2	20
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	103.0		80	120		
MB		<0.001							
ML/MSD	29421001							0.7	20
ML/MSD	29863001		0.4	98.2	97.5	75	125	1.0	20
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	108.0		80	120		
MB		<0.001							
ML/MSD	29421001							0.0	20
ML/MSD	29863001		0.4	100.0	106.0	75	125	1.0	20
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	95.4		80	120		
MB		<0.001							
ML/MSD	29421001		1	100.0	103.0	75	125	1.0	20
SPR	29421001		2	99.2		75	125		

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Selenium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	2886J002		0.4	103.0	98.3	75	125	3.0	20
Thallium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-4B			0.1	87.9		80	120		
N/A									
<0.0005									
MS/MSD	2842J001							0.0	20
MS/MSD	2886J002		0.4	95.3	94.5	75	125	0.8	20
Mercury									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB			0.002	98.1		80	110		
1PB									
<0.0005									
MS/MSD	4000H000		0.002	99.8	104.0	70	130	4.9	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 39863 	Chain of Custody Record
Report To:	Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF
Attn:	Joseph Grosz		Event:
Address:	3401 24 th St SW Center, ND 58530		Sampled By: <i>[Signature]</i>
Phone:			
Email:	jgrosz@minnkota.com		

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	X 1 Liter Raw	X 500 mL HNO3	X 500 mL HNO3 (filtered)	X 250 mL H2SO4						Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	1 Feb 24	0910	GW	X	X	X	X										CCWDF NDDH Parameter List, App I and App II (See Attachments)

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	1 Feb 24 1120	Logan Walk In #2	23.1 TMS62 / TMS05	<i>[Signature]</i>	1 Feb 24 1120
1					
2					

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JH

Weather Conditions: Temp: 30°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Casing Strait?	YES NO
Grout Seal Intact?	YES NO Not Visible
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	207.50 ft
Total Depth of Well:	ft
Well Volume:	12.7 liters
Depth to Top of Pump:	226.1 ft
Water Level After Sample:	ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Control Settings:	
Purge:	10 10 Sec.
Recover:	10 10 Sec.
PSI:	120 120

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
31 Jan 24	1052	Start of Well Purge									
	1057	8.45	2015	8.39	0.35	-45.7	7.59	210.65	300.0	1.5	Clear
	1142	8.61	2014	8.41	0.00	-269.9	101.34	214.85	300.0	13.5	Clear
	1227	11.75	2012	8.40	0.00	-239.4	167.71	66.00	300.0	18.5	Clear
		Purged Day									
1 Feb 24	0620	6.01	2019	8.43	0.00	-194.0	134.20	213.85	100.0	0.5	Clear
	0855	6.30	2026	8.39	0.00	-217.3	13.33	216.12	100.0	3.0	Clear
	0900	6.25	2010	8.40	0.00	-220.6	14.05	216.95	100.0	0.5	Clear
	0905	6.27	2008	8.40	0.00	-227.7	9.51	217.37	100.0	0.5	Clear
	0910	6.33	2026	8.39	0.00	-226.1	16.84	218.05	100.0	0.5	Clear
Well Stabilized?		YES NO	Total Volume Purged: 32.5 Liters								
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
											Clarity, Color, Odor, Ect.
1 Feb 24	0910	6.33	2026	8.39			16.84				Clear
Comments:											

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Report Date: Thursday, February 22, 2024 10:28:34 AM



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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron - Dissolved	mg/l	6010
✓ Arsenic - Dissolved	mg/l	6020
✓ Barium - Dissolved	mg/l	6020
✓ Cadmium - Dissolved	mg/l	6020
✓ Chromium - Dissolved	mg/l	6020
✓ Lead - Dissolved	mg/l	6020
✓ Molybdenum - Dissolved	mg/l	6020
✓ Selenium - Dissolved	mg/l	6020
✓ Silver - Dissolved	mg/l	6020
✓ Beryllium - Dissolved	mg/l	6020

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota-CCWDF (39866) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	39866001	Date Collected:	02/01/2024 09:10	Matrix:	Groundwater
Sample ID:	2023-1	Date Received:	02/01/2024 11:20	Collector:	MVTL Field Service
Temp @ Receipt (C):	3.5	Received on Ice:	Yes		

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		04/09/2024 10:56	
Radium 228	See Attached			1		04/09/2024 10:56	

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ANALYTICAL SUMMARY REPORT

April 01, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24020299 Quote ID: C15480
Project Name: 39866

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 2/9/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24020299-001	39866001, 2023-1	02/01/24 9:10	02/09/24	Groundwater	Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 39866
Lab ID: C24020299-001
Client Sample ID: 39866001, 2023-1

Report Date: 04/01/24
Collection Date: 02/01/24 09:10
Date Received: 02/09/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	03/27/24 12:38 / alb
Radium 226 precision (s)	0.1	pCi/L				E903.0	03/27/24 12:38 / alb
Radium 226 MDC	0.2	pCi/L				E903.0	03/27/24 12:38 / alb
Radium 228	0.4	pCi/L	U			RA-05	03/22/24 13:04 / kdk
Radium 228 precision (s)	0.6	pCi/L				RA-05	03/22/24 13:04 / kdk
Radium 228 MDC	1	pCi/L				RA-05	03/22/24 13:04 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U			A7500-RA	03/30/24 12:53 / dmf
Radium 226 + Radium 228 precision (s)	0.6	pCi/L				A7500-RA	03/30/24 12:53 / dmf
Radium 226 + Radium 228 MDC	1	pCi/L				A7500-RA	03/30/24 12:53 / dmf

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 4 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24020299

Report Date: 03/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11257										
Lab ID: LCS-RA226-11257	3	Laboratory Control Sample		Run: TENNELEC-3_240319C			03/27/24 12:38			
Radium 226		9.2	pCi/L	92		70	130			
Radium 226 precision (±)		1.8	pCi/L							
Radium 226 MDC		0.18	pCi/L							
Lab ID: MB-RA226-11257	3	Method Blank		Run: TENNELEC-3_240319C			03/27/24 12:38			
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24030387-001FDUP	3	Sample Duplicate		Run: TENNELEC-3_240319C			03/27/24 12:38			
Radium 226		28	pCi/L					0.2	30	
Radium 226 precision (±)		5.3	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.01.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 3 of 6

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Page 5 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24020299

Report Date: 03/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7353
Lab ID: LCS-228-RA226-11257	3	Laboratory Control Sample			Run: TENNELEC-4_240319A			03/22/24 13:04		
Radium 228		6.9	pCi/L	109	70	130				
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11257	3	Method Blank			Run: TENNELEC-4_240319A			03/22/24 13:04		
Radium 228		0.3	pCi/L	U						
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24030387-001FDUP	3	Sample Duplicate			Run: TENNELEC-4_240319A			03/22/24 13:04		
Radium 228		1.4	pCi/L				60	30	R	
Radium 228 precision (±)		0.74	pCi/L							
Radium 228 MDC		1.0	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.63.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 6 of 10



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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24020299

Login completed by: Dallas W. Smith

Date Received: 2/9/2024

Reviewed by: Icadreau

Received by: DRS

Reviewed Date: 2/15/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	11.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

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Page 7 of 10



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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: J. H.

Weather Conditions: Temp: 30°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	207.50	ft
Total Depth of Well:		ft
Well Volume:	12.7	liters
Depth to Top of Pump:	226.1	ft
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES
Duplicate Sample?	YES
Duplicate Sample ID:	

Control Settings:
Purge: 10 / 10 Sec.
Recover: 20 / 50 Sec.
PSI: 120 / 120

Bottle List:

1 Liter Raw	1 Gal 23446
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	

FIELD READINGS

Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (mL/Min)	Liters Removed	Appearance or Comment
(3 Consecutive)		±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				Clarity, Color, Odor, Ect.
Purge Date	Time										clear, slightly turbid, turbid
31 Jan 24	1057	Start of Well Purge									
	1057	6.45	2013	8.39	0.35	-95.2	7.59	210.65	300.0	1.5	Clear
	1142	6.61	2014	8.41	0.40	-269.9	106.34	219.85	300.0	13.5	Clear
	1227	11.75	2012	8.40	0.00	-239.4	167.71	Below Fm	300.0	13.5	Clear
1 Feb 24		Purged - Dry									
	0820	5.21	at sampling Purge					24.67			
	0825	6.01	2019	8.43	0.00	-154.0	139.28	213.75	100.0	0.5	Clear
	0855	6.30	2026	8.39	0.00	-217.3	13.33	216.12	100.0	3.0	Clear
	0900	6.25	2010	8.40	0.00	-220.6	14.05	216.95	100.0	0.5	Clear
	0905	6.27	2006	8.40	0.00	-227.7	9.51	217.37	100.0	0.5	Clear
	0910	6.33	2026	8.39	0.00	-226.1	14.84	218.05	100.0	0.5	Clear

Well Stabilized?

YES

Total Volume Purged: 33.5

Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
1 Feb 24	0910	6.33	2026	8.39	16.84	Clear

Comments:

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (41856) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Dave Smahel, Inorganic Chemistry/Feed Lab Manager New Ulm, MN

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9



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Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	41856001	Date Collected:	02/29/2024 09:10		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	03/01/2024 08:30		Collector:	MVTL Field Service	
Temp @ Receipt (C):	2.9	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	77.2	mg/L	5	1	03/06/2024 11:01	03/06/2024 11:01	
Method: EPA 6010D							
Boron	0.49	mg/L	0.1	1	03/01/2024 14:01	03/04/2024 14:55	
Calcium	3.23	mg/L	1	1	03/01/2024 14:01	03/04/2024 11:30	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1	03/01/2024 19:32	03/01/2024 19:32	*
Method: SM4500-Cl-E 2011							
Chloride	17.0	mg/L	3.0	1	03/21/2024 08:06	03/21/2024 12:40	
Method: SM4500-F-C-2011							
Fluoride	1.88	mg/L	0.1	1	03/01/2024 19:32	03/01/2024 19:32	
Method: USGS I-1750-85							
Total Dissolved Solids	1350	mg/L	10	1	03/01/2024 16:38	03/01/2024 16:38	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

Nitrate + Nitrite as N

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 41856	
Sulfate			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB			100	95.3		85	115				
LFB			100	95.7		85	115				
LFB			100	101.0		85	115				
MB		<5									
MB		<5									
MB		<5									
ML/MSD	4181001		1000	91.2	91.7	85	115	0.9	20		
ML/MSD	4181006		1000	72.3	74.9	85	115	1.1	20		
Boron			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-CE			0.4	101.0		85	115				
MB		<0.1									
ML/MSD	4181001		0.4	101.0	106.0	75	125	1.3	20		
Calcium			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-AL			100	113.0		85	115				
MB		<1									
ML/MSD	4181001		100	125.0	124.0	75	125	0.3	20		
pH			Units: units								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
CRM-PH			9	100.0		98.33	101.67				
CRM-PH			9	100.0		98.33	101.67				
CRM-PH			9	100.0		98.33	101.67				
DUP	4151001										
DUP	4190004							0.4	20		
Fluoride			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
CRM-F			0.06	95.7		81.99	111.11				
LFB-F			0.5	100.0		90	110				
LFB-F			0.5	98.0		90	110				
MB-F		<0.1									

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Account #: 7048

Client: Minnkota Power Cooperative

Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
NB		<0.1							
Units: mg/L									
NB/MSD	41575002		0.5	94.0	90.0	90	120	3.9	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	101.0		90.01	110.33		
NB		<10							
SLUP	41748003							0.4	20
Units: mg/L									
Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			60	101.0		90	110		
NB		<3							
NB/MSD	41819003		300	111.9	112.4	90	120	0.8	20

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**Account #:** 7048**Client:** Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Chain of Custody Record	
		Project Name: Minnkota - CCWDF	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com		CC:	Event:
			Sampled By: <i>J. Grosz</i>

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric		Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	29 Feb 24	09:10	GW	X	X	X	X			24.5	2416	6.75	4.05	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. Grosz</i>	29 Feb 24	Log #2	20.1	<i>Michael Horne</i>	1 Mar 24
	1 Mar 24	Walk In #2	TM562 / <i>HTAGS</i>		0830
2					

M. Horne

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: 20 °F Wind: 40 @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	(NO)
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	207.48	ft
Total Depth of Well:	274.18	ft
Well Volume:		liters
Depth to Top of Pump:	228.10	ft
Water Level After Sample:	217.95	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	(YES) NO
Duplicate Sample?	YES (NO)
Duplicate Sample ID:	

Control Settings:	
Purge: 10	Sec.
Recover: 20	Sec.
PSI: 120	

Bottle List:

1 Liter Raw
500ml, Nitric
500ml, Nitric (filtered)
250ml, Sulfuric

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			
28 Feb 24	1000	Start of Well Purge								
	1005	5.59	2126	8.45	0.46	-116.1	6.27	211.75	300.0	1.5
	1050	7.86	2112	8.42	0.00	-246.1	2.64	220.10	300.0	13.5
	1130	4.87	2086	8.48	0.00	-240.5	86.80	86.80	300.0	12.0
29 Feb 24	0830	Start of Stabilization								
	0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0
	0905	7.55	2119	8.37	0.00	-229.0	4.12	216.61	100.0	0.5
	0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5

Well Stabilized? YES NO

Total Volume Purged: 31.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
29 Feb 24	0910	7.45	2118	8.38	4.83	Clear

Comments:

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Page 7 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron - Dissolved	mg/l	6010
Arsenic - Dissolved	mg/l	6020
Barium - Dissolved	mg/l	6020
Cadmium - Dissolved	mg/l	6020
Chromium - Dissolved	mg/l	6020
Lead - Dissolved	mg/l	6020
Molybdenum - Dissolved	mg/l	6020
Selenium - Dissolved	mg/l	6020
Silver - Dissolved	mg/l	6020
Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (41856) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Dave Smahel, Inorganic Chemistry/Feed Lab Manager New Ulm, MN

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 41856001 **Date Collected:** 02/29/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/01/2024 08:30 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	03/07/2024 09:15	03/07/2024 11:25	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	03/01/2024 14:01	03/06/2024 10:01	
Lithium	0.0500	mg/L	0.02	1	03/01/2024 14:01	03/06/2024 15:39	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	03/01/2024 14:01	03/05/2024 14:20	
Arsenic	<0.002	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Barium	0.1093	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Beryllium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 16:05	
Cadmium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	
Chromium	<0.002	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Lead	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	
Molybdenum	0.0031	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Selenium	<0.005	mg/L	0.005	5	03/01/2024 14:01	03/05/2024 14:20	
Thallium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

Nitrate + Nitrite as N

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.

pH

Sample analyzed beyond holding time.

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Report Date: Tuesday, March 26, 2024 3:54:52 PM

Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #: 41856			
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	107.0		80	115		
N/A									
N/A									
ML/VSD	41816001		0.4	96.4	96.0	75	125	1.6	20
POS/POSD	41818001		1	94.3	93.9	75	125	0.9	20
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			0.4	103.0		80	130		
N/A									
N/A									
ML/VSD	41816001		0.4	93.1	96.6	75	125	3.2	20
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	105.0		80	120		
N/A									
N/A									
ML/VSD	41816001		0.4	113.0	118.0	75	125	3.8	20
SPB	41818001		0.1	109.0		75	125		
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	102.0		80	120		
N/A									
N/A									
ML/VSD	41816001		0.4	115.0	114.0	75	125	1.9	20
SPB	41818001		0.1	112.0		75	125		
Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	104.0		80	120		
N/A									
N/A									
ML/VSD	41816001		0.4	109.0	112.0	75	125	2.2	20
SPB	41818001		0.1	104.0		75	125		
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	104.0		80	120		
N/A									
N/A									

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	41816001		0.8	118.0	110.0	75	125	0.0	20
SPK	41816001		0.8	108.0		75	125		
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-MS			0.1	113.0		80	120		
MS		<0.0005							
MS/MSD	41816001		0.4	112.0	118.0	75	125	4.8	20
SPK	41816001		0.4	117.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-MS			0.1	107.0		80	120		
MS		<0.001							
MS/MSD	41816001		0.4	116.0	116.0	75	125	0.2	20
SPK	41816001		0.1	110.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-MS			0.1	106.0		80	120		
MS		<0.0005							
MS/MSD	41816001		0.4	108.0	108.0	75	125	1.0	20
SPK	41816001		0.1	106.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-MS			0.1	113.0		80	120		
MS		<0.001							
MS/MSD	41816001		0.4	120.0	124.0	75	125	5.2	20
SPK	41816001		0.1	118.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-MS			0.1	101.0		80	120		
MS		<0.005							
MS/MSD	41816001		0.4	109.0	114.0	75	125	4.3	20
SPK	41816001		0.1	112.0		75	125		

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Page 4 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB/MS			0.1	108.0		80	120		
N/A									
<0.0005									
MS/MSD	42814000		0.4	110.0	111.0	75	125	5.4	20
SPK	42814000		0.1	108.0		75	125		
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			0.002	89.0		85	115		
N/A									
<0.0005									
MS/MSD	42141000		0.002	89.2	82.2	70	130	11.8	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 41856 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>J. Grosz</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO ₃	500 mL HNO ₃ (filtered)	250 mL H ₂ SO ₄	1 Gal Nitric		Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	29 Feb 24	0910	GW	X	X	X	X			24.5	2416	6.75	4.05	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. Grosz</i>	29 Feb 24	Log 50	20.1	<i>Michael Horne</i>	1 Mar 24
	1 Mar 24	Walk In #2	TM562 / <i>11.0</i>		0830
2					

M. Horne

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: 20 °F Wind: 40 @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	(NO)
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	(YES)	NO
Repairs Necessary?		Not Visible
Casing Diameter:	2"	
Water Level Before Purge:	207.48	ft
Total Depth of Well:	274.18	ft
Well Volume:		liters
Depth to Top of Pump:	228.10	ft
Water Level After Sample:	217.95	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	(YES) NO
Duplicate Sample?	YES (NO)
Duplicate Sample ID:	

Control Settings:	
Purge:	10 Sec.
Recover:	20 Sec.
PSI:	120

Bottle List:

1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

1 Gal Nitric

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
28 Feb 24	1000	Start of Well Purge									
	1005	5.59	2126	8.45	0.46	-116.1	6.27	211.75	300.0	1.5	Clear
	1050	7.86	2112	8.42	0.00	-246.1	2.64	220.10	300.0	13.5	Clear
	1130	4.87	2086	8.48	0.00	-240.5	86.80	86.80	300.0	12.0	Clear
29 Feb 24	0830	5.22	2119	8.36	0.00	-237.4	3.97	211.01	100.0	0.5	Clear
	0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0	Clear
	0905	7.55	2119	8.37	0.00	-229.0	4.12	216.61	100.0	0.5	Clear
	0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5	Clear

Well Stabilized? YES NO

Total Volume Purged: 31.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
29 Feb 24	0910	7.45	2118	8.38	4.83	Clear

Comments:

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Page 7 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron - Dissolved	mg/l	6010
Arsenic - Dissolved	mg/l	6020
Barium - Dissolved	mg/l	6020
Cadmium - Dissolved	mg/l	6020
Chromium - Dissolved	mg/l	6020
Lead - Dissolved	mg/l	6020
Molybdenum - Dissolved	mg/l	6020
Selenium - Dissolved	mg/l	6020
Silver - Dissolved	mg/l	6020
Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048
Workorder: Minnkota (41857)

Client: Minnkota Power Cooperative
PO: 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Monday, April 15, 2024 11:22:54 AM

Page 1 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	41857001	Date Collected:	02/29/2024 09:10	Matrix:	Groundwater
Sample ID:	2023-1	Date Received:	03/01/2024 08:30	Collector:	MVTL Field Service
Temp @ Receipt (C):	2.9	Received on Ice:	Yes		

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		04/15/2024 10:54	
Radium 228	See Attached			1		04/15/2024 10:54	

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Account #: 7048

Client: Minnkota Power Cooperative



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ANALYTICAL SUMMARY REPORT

April 11, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24030172 Quote ID: C15480
Project Name: 41857

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 3/6/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24030172-001	41857001, 2023-1	02/29/24 9:10	03/06/24	Groundwater	pH Check for Nitric Radiochem FIRST Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 41857
Lab ID: C24030172-001
Client Sample ID: 41857001, 2023-1

Report Date: 04/11/24
Collection Date: 02/29/24 09:10
Date Received: 03/06/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	03/18/24 12:16 / alb
Radium 226 precision (s)	0.1	pCi/L				E903.0	03/18/24 12:16 / alb
Radium 226 MDC	0.2	pCi/L				E903.0	03/18/24 12:16 / alb
Radium 228	3.5	pCi/L				RA-05	03/19/24 13:56 / kdk
Radium 228 precision (s)	1.3	pCi/L				RA-05	03/19/24 13:56 / kdk
Radium 228 MDC	1.7	pCi/L				RA-05	03/19/24 13:56 / kdk
Radium 226 + Radium 228	3.6	pCi/L				A7500-RA	03/20/24 15:05 / dmf
Radium 226 + Radium 228 precision (s)	1.3	pCi/L				A7500-RA	03/20/24 15:05 / dmf
Radium 226 + Radium 228 MDC	1.7	pCi/L				A7500-RA	03/20/24 15:05 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Report Date: Monday, April 15, 2024 11:22:54 AM

Page 4 of 10



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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24030172

Report Date: 04/08/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11250										
Lab ID: LCS-RA226-11250	3	Laboratory Control Sample		Run: TENNELEC-4_240307D			03/18/24 10:21			
Radium 226		11	pCi/L	108		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11250	3	Method Blank		Run: TENNELEC-4_240307D			03/18/24 10:21			
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24030138-001ADUP	3	Sample Duplicate		Run: TENNELEC-4_240307D			03/18/24 12:16			
Radium 226		0.59	pCi/L					15	30	
Radium 226 precision (±)		0.21	pCi/L							
Radium 226 MDC		0.27	pCi/L							
- The RER result is 0.33.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 5 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24030172

Report Date: 04/08/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Lab ID: LCS-228-RA226-11250 3 Laboratory Control Sample										
				Run: TENNELEC-3_240307B			Batch: RA226-7347R			
Radium 228		6.3	pCi/L	99	70	130				03/19/24 12:19
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.3	pCi/L							
Lab ID: MB-RA226-11250 3 Method Blank										
				Run: TENNELEC-3_240307B			03/19/24 12:19			
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24030138-001ADUP 3 Sample Duplicate										
				Run: TENNELEC-3_240307B			03/19/24 12:19			
Radium 228		3.4	pCi/L					110	30	R
Radium 228 precision (±)		1.2	pCi/L							
Radium 228 MDC		1.5	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 1.54.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24030172

Login completed by: Dallas W. Smith

Date Received: 3/6/2024

Reviewed by: darcy

Received by: DF

Reviewed Date: 3/13/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	8.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

The temperature of the samples for shipping container 1 was 7.8°C and shipping container 2 was 8.8°C.

Page 5 of 6

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Page 7 of 10

Page 9 of 10



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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND				Event:							
Phone: (701) 258-9720				Sample ID: 2023-1							
				Sampling Personal: J. H.							
Weather Conditions:		Temp: 20 °F		Wind: 40 @ 5-10		Precip: Sunny / Partly Cloudy / Cloudy					
WELL INFORMATION		SAMPLING INFORMATION									
Well Locked?	YES (NO)	Purging Method:	Bladder	Control Settings:							
Well Labeled?	YES NO	Sampling Method:	Bladder	Purge:	10	Sec.					
Casing Strait?	YES NO	Dedicated Equipment?	(YES) NO	Recover:	20	Sec.					
Grout Seal Intact?	(YES) NO Not Visible			PSI:	120						
Repairs Necessary?		Duplicate Sample?	YES (NO)								
Casing Diameter:	2"	Duplicate Sample ID:									
Water Level Before Purge:	207.46 ft	Bottle List:									
Total Depth of Well:	229.10 ft	1 Liter Raw									
Well Volume:	liters	500ml Nitric									
Depth to Top of Pump:	228.10 ft	500ml Nitric (filtered)									
Water Level After Sample:	217.05 ft	250ml Sulfuric									
Measurement Method:	Electric Water Level Indicator										
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				Clarity, Color, Odor, Ect.
28 Feb 24	1000	Start of Well Purge									
	1005	5.59	2126	8.43	0.46	-114.6	6.27	211.75	300.0	1.5	Clear
	1050	7.66	2112	8.42	0.00	-246.1	2.64	210.10	300.0	13.5	Clear
	1130	4.87	2086	8.46	0.00	-240.5	86.60	Below Pump	300.0	12.0	Clear
	0830	Purge End Dry									
29 Feb 24	0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0	Clear
	0905	7.55	2117	8.37	0.00	-229.0	4.12	216.61	100.0	0.5	Clear
	0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5	Clear
Well Stabilized?		(YES) NO		Total Volume Purged: 31.0 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
29 Feb 24	0910	7.45	2118	8.38			4.83				Clear
Comments:											

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (44114) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Tuesday, April 16, 2024 12:06:38 PM



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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	44114001	Date Collected:	03/28/2024 15:40		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	03/29/2024 12:40		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.3	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	77.5	mg/L	5	1		04/03/2024 15:05		
Method: EPA 6010D								
Boron	0.52	mg/L	0.1	1	03/29/2024 16:10	04/10/2024 10:45		
Calcium	3.17	mg/L	1	1	03/29/2024 16:10	04/05/2024 14:33		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		03/29/2024 15:25	*	
Method: SM4500-Cl-E 2011								
Chloride	16.3	mg/L	2.0	1		04/02/2024 11:21		
Method: SM4500-F-C-2011								
Fluoride	1.75	mg/L	0.1	1		03/29/2024 15:25		
Method: USGS I-1750-85								
Total Dissolved Solids	1370	mg/L	10	1		03/29/2024 16:20		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 3 of 10



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #: 44114		
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			100	95.2		85	115		
UPB			100	96.0		85	115		
UPB			100	91.5		85	115		
MB		<5							
MB		<5							
MB		<5							
MS/MSD	44307001		500	96.6	96.2	85	115	0.1	20
MS/MSD	44310002		500	79.8	84.4	85	115	3.9	20
Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB			30	95.4		90	110		
UPB			30	95.0		90	110		
UPB			30	96.8		90	110		
UPB			30	96.0		90	110		
UPB			30	97.0		90	110		
UPB			30	95.8		90	110		
UPB			30	95.1		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	43188001		30	96.7	96.3	80	120	0.0	20
MS/MSD	43810001		30	93.2	93.2	80	120	0.0	20
MS/MSD	43940001		30	104.9	103.4	80	120	0.7	20

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-C6			0.8	105.0		80	115		
N/A									
M/LMSD	44114001		0.4	99.4	91.2	70	130	2.1	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-A6			100	107.0		85	115		
N/A									
DUP	44048001							0.9	20
POU/POSD	44187001		100	98.1	97.6	75	125	0.2	20
POU/POSD	44127000		100	113.0	115.8	75	125	3.4	20
pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	100.5		98.33	101.67		
CRM-PH			6	100.5		98.33	101.67		
CRM-PH			6	100.3		98.33	101.67		
CRM-PH			6	100.2		98.33	101.67		
DUP	44048001							1.7	20
DUP	44049000							2.1	20
DUP	44050006							3.0	20
DUP	44118001							3.6	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			15.0	104.0		83.09	111.31		
UPB-F			0.5	98.0		90	110		
UPB-F			0.5	100.0		90	110		
UPB-F			0.5	98.0		90	110		
UPB-F			0.5	100.0		90	110		
N/A-F		<0.5							
N/A-F		<0.1							
N/A-F		<0.1							
N/A-F		<0.1							

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Account #: 7048

Client: Minnkota Power Cooperative

Fluoride		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD-F	4404000		0.0	98.0	96.0	80	120	1.1	20
MS/MSD-F	4405000		0.0	96.0	94.0	80	120	1.7	20
MS/MSD-F	4411000		0.0	90.0	90.0	80	120	0.0	20
Total Dissolved Solids		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	99.0		90.95	110.05		
MS		< 0.5							
QUP	44114000							0.7	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com		Project Name: Minnkota - CCWDF Event: Sampled By: <i>Joseph Grosz</i>
Minnkota Power Cooperative WO: 44114 		

Sample Information				Sample Containers								Field Readings				Analysis Required
Lab Number	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	29 May 24	1540	GW	X	X	X	X				7.37	2151	8.27	453	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Joseph Grosz</i>	29 May 24 1540	Log In Walk In #2	20.1 1.3 TM562 / TM805	<i>Andrew Hant</i>	29 May 24 1540

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Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H. H.

Weather Conditions: Temp: °F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	203.56 ft
Depth to Top of Pump:	228.10 ft
Well Volume:	12.7 liters
Water Level After Sample:	ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	1 Gal Nitric
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				
27 Mar 24	1525	Start of Well Purge									
	1530	7.82	2147	8.52	1.60	226	10.97	209.45	300.0	1.5	Clear
	1615	7.60	2145	8.29	0.00	~226.5	9.47	221.64	300.0	13.5	Clear
	1650	7.71	2141	8.35	0.00	~229.7	28.60	Below Pump	300.0	10.5	Clear
		Purged Done									
28 Mar 24	1450	7.67	2136	8.36	0.17	161.2	51.87	210.62	100.0	0.5	Clear
	1455	7.61	2136	8.36	0.17	161.2	51.87	212.05	100.0	0.5	Clear
	1530	7.39	2153	8.36	0.00	~221.4	4.35	216.05	100.0	3.5	Clear
	1535	7.33	2152	8.27	0.00	~223.5	4.44	216.57	100.0	0.5	Clear
	1540	7.39	2151	8.27	0.00	~225.6	4.53	217.03	100.0	0.5	Clear
Well Stabilized?		(YES) NO	Total Volume Purged: 30.5 Liters								
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.
28 Mar 24	1540	7.39	2151	8.27			4.53				Clear
Comments:											

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14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury- Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron- Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron- Dissolved	mg/l	6010
✓ Arsenic- Dissolved	mg/l	6020
✓ Barium- Dissolved	mg/l	6020
✓ Cadmium- Dissolved	mg/l	6020
✓ Chromium- Dissolved	mg/l	6020
✓ Lead- Dissolved	mg/l	6020
✓ Molybdenum- Dissolved	mg/l	6020
✓ Selenium- Dissolved	mg/l	6020
✓ Silver- Dissolved	mg/l	6020
✓ Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (44114) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 44114001 **Date Collected:** 03/28/2024 15:40 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/29/2024 12:40 **Collector:** MVTL Field Service

Temp @ Receipt (C): 1.3 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	04/01/2024 10:05	04/01/2024 12:18	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	03/29/2024 16:10	04/01/2024 11:33	
Lithium	0.0551	mg/L	0.02	1	03/29/2024 16:10	04/02/2024 12:34	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	03/29/2024 16:10	04/02/2024 17:24	
Arsenic	<0.002	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Barium	0.1122	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Beryllium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Cadmium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Chromium	<0.002	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Lead	0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Molybdenum	0.0021	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Selenium	<0.005	mg/L	0.005	5	03/29/2024 16:10	04/02/2024 17:24	
Thallium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #:		44114	
Cobalt						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFB-CE			0.4	106.0		80	115		
N/A		+0.1							
POU/POD	43914001		30	109.0	110.0	75	125	1.2	20
POU/POD	43914002		10	110.0	111.0	75	125	1.3	20
POU/POD	44050002		30	108.0	108.0	75	125	0.1	20
POU/POD	44052004		0.4	95.7	87.3	75	125	8.9	20
MS/MSD	44114003		0.4	91.5	96.6	70	130	5.5	20
Lithium						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFB-CE			0.4	106.0		80	115		
N/A		+0.04							
MS/MSD	44114002		0.4	91.7	91.4	70	130	0.2	20
Antimony						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFB-MS			0.1	101.0		80	120		
UFB-MS			0.1	97.4		80	120		
N/A		+0.000							
N/A		+0.000							
MS/MSD	44114001		0.4	102.0	100.0	75	125	1.2	20
SPK	44114001		0.1	106.0		75	125		
Arsenic						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFB-MS			0.1	94.9		80	120		
UFB-MS			0.1	95.3		80	120		
N/A		+0.000							
N/A		+0.000							
MS/MSD	44114001		0.4	96.6	99.2	75	125	2.8	20
SPK	44114001		0.1	106.0		75	125		
Barium						Units: mg/L			
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFB-MS			0.1	99.6		80	120		

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Account #: 7048

Client: Minnkota Power Cooperative

Barium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-M5			0.1	96.7		80	120		
NAB									
<0.002									
NAB									
<0.002									
MS/MSD	44114001		0.4	85.5	90.9	75	125	1.4	20
SP6	44114001		0.1	103.0		75	125		
Beryllium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-M5			0.1	94.0		80	120		
UFA-M5			0.1	97.0		80	120		
NAB									
<0.0005									
NAB									
<0.0005									
MS/MSD	44114001		0.4	91.4	90.7	75	125	8.8	20
SP6	44114001		0.1	101.0		75	125		
Cadmium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-M5			0.1	101.0		80	120		
UFA-M5			0.1	96.8		80	120		
NAB									
<0.0005									
NAB									
<0.0005									
MS/MSD	44114001		0.4	98.5	98.2	75	125	10.3	20
SP6	44114001		0.1	99.1		75	125		
Chromium									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-M5			0.1	101.0		80	120		
UFA-M5			0.1	102.0		80	120		
NAB									
<0.002									
NAB									
<0.002									
MS/MSD	44114001		0.4	98.0	101.0	75	125	1.6	20
SP6	44114001		0.1	110.0		75	125		
Lead									
Units: mg/L									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA-M5			0.1	98.0		80	120		

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Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
17B-M5			0.1	95.9		80	120		
N/A									
N/A									
MS/MSD	44114001		0.4	95.2	95.9	75	125	0.8	20
SP6	44114001		0.1	96.5		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
17B-M5			0.1	105.0		80	120		
17B-M5			0.1	100.0		80	120		
N/A									
N/A									
MS/MSD	44114001		0.4	100.0	104.0	75	125	3.4	20
SP6	44114001		0.1	113.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
17B-M5			0.1	98.0		80	120		
17B-M5			0.1	95.8		80	120		
N/A									
N/A									
MS/MSD	44114001		0.4	96.4	95.5	75	125	0.5	20
SP6	44114001		0.1	97.3		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
17B-M5			0.1	98.0		80	120		
17B-M5			0.1	99.9		80	120		
N/A									
N/A									
MS/MSD	44114001		0.4	95.9	95.6	75	125	0.8	20
SP6	44114001		0.1	96.4		75	125		
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
17B			0.002	100.0		85	115		

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Report Date: Tuesday, April 16, 2024 12:12:26 PM



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Account #: 7048

Client: Minnkota Power Cooperative

Mercury		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	95.6		80	115		
LFB		<0.0001							
SAB		<0.0001							
MS/MSD	43803001		0.002	103.0	103.0	70	130	4.9	20
MS/MSD	43803007		0.002	96.0	97.4	70	130	9.9	20
MS/MSD	43814012		0.002	99.8	99.8	70	130	0.0	20
MS/MSD	43814013		0.002	96.7	101.0	70	130	9.1	20
MS/MSD	44040000		0.002	103.0	103.0	70	130	0.0	20
MS/MSD	44114001		0.002	98.4	99.0	70	130	9.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 44114 	Chain of Custody Record
Report To: Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF	
Attn: Joseph Grosz		Event:	
Address: 3401 24th St SW Center, ND 58530		Sampled By: <i>Joseph Grosz</i>	
Phone:			
Email: jgrosz@minnkota.com			

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gall Nitric				Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	29 May 24	1540	GW	X	X	X	X					7.37	2151	8.27	453	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Joseph Grosz</i>	29 May 24 1540	Log In	20.1	<i>Andrew Hant</i>	29 May 24 1540
		Walk In #2	TM562 / TM805		

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2023-1

Sampling Personal: J. H. H.

Weather Conditions: Temp: °F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	203.56	ft
Depth to Top of Pump:	228.10	ft
Well Volume:	12.7	liters
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		

Control Settings:
Purge: 0 / 0 Sec.
Recover: 22 / 52 Sec.
PSI: 120 / 120

Bottle List:

1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid
27 Mar 24	1525	Start of Well Purge								
	1530	7.82	2147	8.52	1.60	226	10.97	209.45	300.0	1.5 Clear
	1615	7.60	2145	8.29	0.00	221.5	9.47	221.64	300.0	13.5 Clear
	1650	7.71	2141	8.35	0.00	229.7	28.60	Below Pump	300.0	10.5 Clear
		Purged Done								
28 Mar 24	1450	7.67	2154	8.27	0.00	226.2	210.62			
	1455	7.61	2136	8.36	0.17	161.2	51.67	212.05	100.0	0.5 Clear
	1530	7.39	2153	8.36	0.00	221.4	4.35	216.05	100.0	3.5 Clear
	1535	7.33	2152	8.27	0.00	225.5	4.44	216.57	100.0	0.5 Clear
	1540	7.39	2151	8.27	0.00	225.6	4.53	217.03	100.0	0.5 Clear

Well Stabilized? (YES) NO

Total Volume Purged: 300.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment Clarity, Color, Odor, Ect.
28 Mar 24	1540	7.39	2151	8.27		4.53			Clear

Comments:

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Page 8 of 10



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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury- Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron- Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron- Dissolved	mg/l	6010
✓ Arsenic- Dissolved	mg/l	6020
✓ Barium- Dissolved	mg/l	6020
✓ Cadmium- Dissolved	mg/l	6020
✓ Chromium- Dissolved	mg/l	6020
✓ Lead- Dissolved	mg/l	6020
✓ Molybdenum- Dissolved	mg/l	6020
✓ Selenium- Dissolved	mg/l	6020
✓ Silver- Dissolved	mg/l	6020
✓ Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota-CCWDF (44120) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Thursday, May 2, 2024 5:47:05 PM

Page 1 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 44120001 **Date Collected:** 03/28/2024 15:40 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/29/2024 12:40 **Collector:** MVTL Field Service

Temp @ Receipt (C): 7.7

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		05/02/2024 08:13	
Radium 228	See Attached			1		05/02/2024 08:13	

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Account #: 7048

Client: Minnkota Power Cooperative



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ANALYTICAL SUMMARY REPORT

May 01, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24040089 Quote ID: C15480
Project Name: 44120

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 4/2/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24040089-001	44120001, 2023-1	03/28/24 15:40	04/02/24	Groundwater	Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 44120
Lab ID: C24040089-001
Client Sample ID: 44120001, 2023-1

Report Date: 05/01/24
Collection Date: 03/28/24 15:40
Date Received: 04/02/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.08	pCi/L	U			E903.0	04/29/24 10:03 / alb
Radium 226 precision (s)	0.1	pCi/L				E903.0	04/29/24 10:03 / alb
Radium 226 MDC	0.2	pCi/L				E903.0	04/29/24 10:03 / alb
Radium 228	0.5	pCi/L	U			RA-05	04/17/24 14:19 / kdk
Radium 228 precision (s)	0.7	pCi/L				RA-05	04/17/24 14:19 / kdk
Radium 228 MDC	1.1	pCi/L				RA-05	04/17/24 14:19 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U			A7500-RA	04/30/24 14:52 / dmf
Radium 226 + Radium 228 precision (s)	0.7	pCi/L				A7500-RA	04/30/24 14:52 / dmf
Radium 226 + Radium 228 MDC	1.1	pCi/L				A7500-RA	04/30/24 14:52 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 4 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040089

Report Date: 04/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11292										
Lab ID: LCS-RA226-11292	3	Laboratory Control Sample					Run: TENNELEC-4_240423E			04/29/24 10:03
Radium 226		9.4	pCi/L	94		70	130			
Radium 226 precision (±)		1.8	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11292	3	Method Blank					Run: TENNELEC-4_240423E			04/29/24 10:03
Radium 226		0.02	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24040089-001ADUP	3	Sample Duplicate					Run: TENNELEC-4_240423E			04/29/24 10:03
Radium 226		0.090	pCi/L					12	30	U
Radium 226 precision (±)		0.12	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.06										
Lab ID: C24040640-001DDUP	3	Sample Duplicate					Run: TENNELEC-4_240423E			04/29/24 11:10
Radium 226		9.9	pCi/L					15	30	
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.56										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 3 of 6

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Page 5 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040089

Report Date: 04/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7372										
Lab ID: LCS-228-RA228-11280	3	Laboratory Control Sample		Run: TENNELEC-4_240410A			04/17/24 14:18			
Radium 228		6.2	pCi/L	98		70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA228-11280	3	Method Blank		Run: TENNELEC-4_240410A			04/17/24 14:18			
Radium 228		0.4	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24040091-002AMS	3	Sample Matrix Spike		Run: TENNELEC-4_240410A			04/17/24 14:19			
Radium 228		5.9	pCi/L	93		70	130			
Radium 228 precision (±)		1.3	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: C24040091-002AMSD	3	Sample Matrix Spike Duplicate		Run: TENNELEC-4_240410A			04/17/24 14:19			
Radium 228		6.2	pCi/L	99		70	130	5.6	30	
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.0	pCi/L							
- The RER result is 0.17.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Page 4 of 6

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Page 6 of 10



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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24040089

Login completed by: Dakota R. Sawyer

Date Received: 4/2/2024

Reviewed by: lleprosse

Received by: LEL

Reviewed Date: 4/4/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.0°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

The temperature of the samples for shipping container 1 was 10.4°C, shipping container 2 was 12.6°C, shipping container 3 was 13.0°C, shipping container 4 was 12.7°C and shipping container 5 was 12.3°C.

Page 5 of 6

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Page 7 of 10



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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 44120 	Chain of Custody Record
Report To:	Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF
Attn:	Joseph Grosz		Event:
Address:	3401 24 th St SW Center, ND 58530		Sampled By:
Phone:			
Email:	jgrosz@minnkota.com		

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gall Nitric						
001	2023-1	28 Mar 24	1540	GW					X						Radium 226 and 228 Combined

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
	29 Mar 24 1240	Log-in Walk in #2	7.9 TMS62 / TMS805	Heather Horne	28 Mar 24 1540
1					
2					

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: °F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	202.56	ft
Depth to Top of Pump:	228.10	ft
Well Volume:	12.7	liters
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: 8 / 0 Sec.
Dedicated Equipment?	YES	Recover: 22 / 52 Sec.
Duplicate Sample?	YES	PSI: 120 / 120
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	1 Gal Nitric	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±20	Turbidity (NTU) ≤5.0 or 10%	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time										
27 Mar 24	1525	Start of Well Purge									
	1530	7.82	2147	8.52	1.80	73.6	10.92	209.45	300.0	1.5	Clear
	1605	7.80	2145	8.29	0.00	-221.5	9.42	221.64	300.0	3.5	Clear
	1650	7.71	2141	8.35	0.00	-229.7	28.60	Below Pump	300.0	10.5	Clear
28 Mar 24		Purged Down									
	1450	Start of 5 min 112 ft run									
	1455	7.61	2136	8.30	0.17	16.2	5.87	210.62	100.0	0.5	Clear
	1530	7.39	2153	8.26	0.00	-221.4	4.35	216.05	100.0	3.5	Clear
	1535	7.37	2152	8.22	0.00	-222.5	4.44	216.57	100.0	0.5	Clear
	1540	7.39	2151	8.27	0.00	-222.6	4.53	217.03	100.0	0.5	Clear
Well Stabilized?		(YES)	NO	Total Volume Purged: 30.5 Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment Clarity, Color, Odor, Ect.
28 Mar 24	1540	7.39	2151	8.27		4.53			Clear

Comments:

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (46020) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9



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Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	46020001	Date Collected:	04/19/2024 10:30		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	04/19/2024 12:37		Collector:	MVTL Field Service		
Temp @ Receipt (C):	2.7	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	75.3	mg/L	5	1		04/24/2024 15:49	*	
Method: EPA 6010D								
Boron	0.50	mg/L	0.1	1	04/19/2024 16:51	04/23/2024 14:49		
Calcium	3.17	mg/L	1	1	04/19/2024 16:51	04/23/2024 10:22		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		04/19/2024 15:21	*	
Method: SM4500-Cl-E 2011								
Chloride	15.4	mg/L	2.0	1		04/23/2024 15:09		
Method: SM4500-F-C-2011								
Fluoride	1.80	mg/L	0.1	1		04/19/2024 15:21		
Method: USGS I-1750-85								
Total Dissolved Solids	1420	mg/L	10	1		04/19/2024 14:00		

Analysis Results Comments**Alkalinity, Total**

Target analyte detected in method blank at one half or greater of reporting limit. Reporting limit has been elevated.

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

Sulfate

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #: 46020		
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	97.7		85	115		
LFB			100	94.1		85	115		
LFB			100	103.0		85	115		
LFB			100	107.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	41791000		100	93.6	94.2	85	115	0.8	20
MS/MSD	41570001		100	94.9	87.9	85	115	1.3	20
MS/MSD	49019001		100	79.0	77.9	85	115	0.7	20

Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	91.9		90	110		
LFB			30	91.1		90	110		
LFB			30	93.4		90	110		
LFB			30	92.7		90	110		
LFB			30	94.4		90	110		
LFB			30	93.8		90	110		
LFB			30	95.2		90	110		
MB		<3.0							
MB		<3.0							
MB		<3.0							
MB		<3.0							
MB		<3.0							
MB		<3.0							
MS/MSD	41700001		30	92.0	89.9	90	110	0.0	20
MS/MSD	41090001		30	79.2	72.4	90	110	0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	4160001		30	93.5	91.9	88	120	0.8	20
Units: mg/L									
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPB-CE			0.4	104.0		89	115		
Units: mg/L									
MS		<0.1							
POU/POD	4563001		0.4	87.0	86.5	75	125	0.2	20
MS/MSD	4602001		0.4	97.0	95.4	70	130	0.7	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPB-M			100	100.0		85	115		
Units: mg/L									
MS		<1							
DUP	4468200							0.9	20
POU/POD	4468201		100	105.0	106.0	75	125	0.9	20
POU/POD	4566101		100	101.0	103.0	75	125	0.7	20
POU/POD	4619101		100	100.0	101.0	75	125	0.2	20
pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	100.2		96.22	103.67		
CRM-PH			6	99.8		96.33	103.67		
DUP	4602001							0.4	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			3.06	104.0		83.99	111.11		
SPB-F			0.3	104.0		90	110		
SPB-F			0.3	102.0		90	110		
MS-F		<0.1							
MS-F		<0.1							
MS/MSD	4602001		0.5	94.0	114.0	80	120	6.0	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			150	101.0		90.33	110.33		
MS		<30							
DUP	4602001							1.4	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 46020 	Chain of Custody Record
Report To:	Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF
Attn:	Joseph Grosz		Event:
Address:	3401 24 th St SW Center, ND 58530		Sampled By:
Phone:			
Email:	agrosz@minnkota.com		

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric				Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	17 Apr 24	10:30	GW	X	X	X	X					6.27	1853	8.26	0.85	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
	19 Apr 24 12:37	Walk In #2	2.7 TM562 (TR805)	Heather House	19 Apr 24 12:37

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: *[Signature]*

Weather Conditions: Temp: 25°F Wind: NW @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	203.46	ft
Depth to Top of Pump:	220.10	ft
Well Volume:	12.4	liters
Water Level After Sample:	219.95	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	1 Gal Nitric	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

Control Settings:
Purge: 6 / 6 Sec.
Recover: 24 / 54 Sec.
PSI: 120 / 120

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
18 Apr 24	1225	Start of Well Purge									
	1310	8.14	1839	8.31	0.00	-223.4	6.01	222.12	300.0	13.5	Clear
	1350	8.26	1847	8.20	0.00	-227.6	2.9.89	Rel. Pump	300.0	12.0	Clear
19 Apr 24	Purged	8.24									
	0945	Start of Stabilization Purge									
	0950	9.63	1842	8.25	2.91	67.5	87.52	212.15	100.0	0.5	Clear
	1010	5.95	1842	8.27	0.33	-123.0	1.40	213.10	100.0	2.0	Clear
	1015	6.03	1844	8.27	0.20	-117.7	0.51	214.12	100.0	0.5	Clear
	1020	6.15	1838	8.26	0.15	-154.0	0.22	215.12	100.0	0.5	Clear
	1025	6.29	1851	8.27	0.12	-170.1	0.74	216.05	100.0	1.5	Clear
	1030	6.22	1853	8.26	0.11	-173.4	0.35	217.00	100.0	0.5	Clear
	Well Stabilized?		YES	NO							
	Total Volume Purged: 30.0										Liters
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.
19 Apr 24	1030	6.27	1853	8.26			0.35				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury - Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron - Dissolved	mg/l	6010
x Arsenic - Dissolved	mg/l	6020
x Barium - Dissolved	mg/l	6020
x Cadmium - Dissolved	mg/l	6020
x Chromium - Dissolved	mg/l	6020
x Lead - Dissolved	mg/l	6020
x Molybdenum - Dissolved	mg/l	6020
x Selenium - Dissolved	mg/l	6020
x Silver - Dissolved	mg/l	6020
x Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (46020) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	46020001	Date Collected:	04/19/2024 10:30		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	04/19/2024 12:37		Collector:	MVTL Field Service	
Temp @ Receipt (C):	2.7	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	04/24/2024 09:45	04/24/2024 11:50	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	04/19/2024 16:51	04/22/2024 14:00	
Lithium	0.0522	mg/L	0.02	1	04/19/2024 16:51	04/24/2024 10:27	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	04/19/2024 16:51	04/29/2024 12:27	
Arsenic	<0.002	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Barium	0.1044	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Beryllium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Cadmium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Chromium	<0.002	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Lead	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Molybdenum	0.0021	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Selenium	<0.005	mg/L	0.005	5	04/19/2024 16:51	04/29/2024 12:27	
Thallium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	

Analysis Results Comments**Alkalinity, Total**

Target analyte detected in method blank at one half or greater of reporting limit. Reporting limit has been elevated.

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

Sulfate

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.

pH

Sample analyzed beyond holding time.

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Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #: 46020			
Cobalt										
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-CE			0.4	106.0			85	115		
NIR										
<0.1										
ML/MSD	46020001		0.4	89.0	89.4		70	130	0.4	20
PD/PSD	46020001		0.4	89.2	88.6		75	125	0.5	20
Lithium										
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-CE			0.4	105.0			85	115		
NIR										
<0.04										
ML/MSD	46020001		0.4	95.0	95.4		70	130	0.4	20
Antimony										
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	102.0			85	115		
NIR										
<0.003										
ML/MSD	46020001		0.4	103.0	103.0		75	125	1.7	20
SP6	46020002		0.1	106.0			75	125		
SP6	46020005		0.1	106.0			75	125		
SP6	46410002		0.2	100.0			75	125		
Arsenic										
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	98.7			85	115		
NIR										
<0.005										
ML/MSD	46020001		0.4	99.9	102.0		75	125	1.0	20
SP6	46020002		0.1	106.0			75	125		
SP6	46020005		0.1	103.0			75	125		
SP6	46410002		0.2	104.0			75	125		
Barium										
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-MS			0.1	97.0			85	115		
NIR										
<0.002										
ML/MSD	46020001		0.4	93.1	93.9		75	125	0.2	20
SP6	46020002		0.1	91.6			75	125		

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Account #: 7048

Client: Minnkota Power Cooperative

Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	46074000		0.1	96.9		75	125		
SPK	46418000		0.2	96.4		75	125		
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	46074000		0.1	100.0		85	115		
SPK	46418000	<0.0005							
MS/MSD	46020000		0.4	103.0	104.0	75	125	3.9	20
SPK	46020000		0.1	106.0		75	125		
SPK	46074000		0.1	104.0		75	125		
SPK	46418000		0.2	113.0		75	125		
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	46074000		0.1	102.0		85	115		
SPK	46418000	<0.0005							
MS/MSD	46020000		0.4	94.5	97.8	75	125	3.4	20
SPK	46020000		0.1	95.4		75	125		
SPK	46074000		0.1	94.2		75	125		
SPK	46418000		0.2	101.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	46074000		0.1	104.0		85	115		
SPK	46418000	<0.002							
MS/MSD	46020000		0.4	105.0	104.0	75	125	0.2	20
SPK	46020000		0.1	104.0		75	125		
SPK	46074000		0.1	94.9		75	125		
SPK	46418000		0.2	104.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	46074000		0.1	99.2		85	115		
SPK	46418000	<0.0025							
MS/MSD	46020000		0.4	95.2	96.4	75	125	3.3	20
SPK	46020000		0.1	94.3		75	125		

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Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	96.6		75	125		
SPK	44418000		0.2	101.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	107.0		85	115		
SPK	44418000	<0.001							
MS/MSD	44020000		0.4	106.0	105.0	75	125	0.7	20
SPK	44020000		0.1	109.0		75	125		
SPK	44074000		0.1	105.0		75	125		
SPK	44418000		0.2	103.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	101.0		85	115		
SPK	44418000	<0.01							
MS/MSD	44020000		0.4	100.0	103.0	75	125	1.0	20
SPK	44020000		0.1	95.0		75	125		
SPK	44074000		0.1	95.8		75	125		
SPK	44418000		0.2	100.0		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	100.0		85	115		
SPK	44418000	<0.0005							
MS/MSD	44020000		0.4	95.0	95.0	75	125	0.8	20
SPK	44020000		0.1	93.1		75	125		
SPK	44074000		0.1	97.1		75	125		
SPK	44418000		0.2	98.1		75	125		
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.002	101.0		85	115		
SPK	44418000	<0.0002							
MS/MSD	44020000		0.002	89.0	105.0	75	130	13.4	20

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Page 5 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 46020 	Chain of Custody Record
Report To: Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF	
Attn: Joseph Grosz		Event:	
Address: 3401 24 th St SW Center, ND 58530		Sampled By:	
Phone:			
Email: kgrosz@minnkota.com			

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric				Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	17 Apr 24	10:30	GW	X	X	X	X					6.27	1853	8.26	0.85	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
	17 Apr 24 12:37	Walk In #2	2.7 TM562 (TR805)	Heather House	17 Apr 24 12:37

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: *[Signature]*

Weather Conditions: Temp: 25°F Wind: NW @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	203.46	ft
Depth to Top of Pump:	220.10	ft
Well Volume:	12.4	liters
Water Level After Sample:	219.95	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw 1 Gal Nitric		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

Control Settings:
Purge: 6 / 6 Sec.
Recover: 24 / 54 Sec.
PSI: 120 / 120

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
18 Apr 24	1225	Start of Well Purge									
	1310	8.14	1839	8.31	0.00	-223.4	6.01	222.12	300.0	13.5	Clear
	1350	8.26	1847	8.20	0.00	-227.6	2.9.89	Rel. Pump	300.0	12.0	Clear
19 Apr 24	Purged	8.24									
	0945	Start of Stabilization Purge									
	0950	9.63	1842	8.25	2.91	67.5	87.52	212.15	100.0	0.5	Clear
	1010	5.95	1842	8.27	0.33	-123.0	1.40	213.10	100.0	2.0	Clear
	1015	6.03	1844	8.27	0.20	-117.7	0.51	214.12	100.0	0.5	Clear
	1020	6.15	1838	8.26	0.15	-154.0	0.22	215.12	100.0	0.5	Clear
	1025	6.29	1851	8.27	0.12	-170.1	0.74	216.05	100.0	1.5	Clear
	1030	6.22	1853	8.26	0.11	-173.4	0.35	217.00	100.0	0.5	Clear
	Well Stabilized?		YES	NO							
	Total Volume Purged: 30.0										Liters
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.
19 Apr 24	1030	6.27	1853	8.26			0.35				Clear
Comments:											

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Report Date: Thursday, May 9, 2024 1:34:36 PM



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Account #: 7048

Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury - Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron - Dissolved	mg/l	6010
x Arsenic - Dissolved	mg/l	6020
x Barium - Dissolved	mg/l	6020
x Cadmium - Dissolved	mg/l	6020
x Chromium - Dissolved	mg/l	6020
x Lead - Dissolved	mg/l	6020
x Molybdenum - Dissolved	mg/l	6020
x Selenium - Dissolved	mg/l	6020
x Silver - Dissolved	mg/l	6020
x Beryllium - Dissolved	mg/l	6020

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Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048
Workorder: Minnkota (46023)

Client: Minnkota Power Cooperative
PO: 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 46023001 **Date Collected:** 04/19/2024 10:30 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 04/19/2024 12:37 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.7 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		05/24/2024 14:10	
Radium 228	See Attached			1		05/24/2024 14:10	

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ANALYTICAL SUMMARY REPORT

May 24, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24040825 Quote ID: C15480
Project Name: 46023

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 4/25/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24040825-001	46023001, 2023-1	04/19/24 10:30	04/25/24	Groundwater	Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 46023
Lab ID: C24040825-001
Client Sample ID: 46023001, 2023-1

Report Date: 05/24/24
Collection Date: 04/19/24 10:30
Date Received: 04/25/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L				E903.0	05/06/24 12:44 / alb
Radium 226 precision (s)	0.1	pCi/L				E903.0	05/06/24 12:44 / alb
Radium 226 MDC	0.1	pCi/L				E903.0	05/06/24 12:44 / alb
Radium 228	0.3	pCi/L	U			RA-05	05/01/24 12:13 / kdk
Radium 228 precision (s)	0.5	pCi/L				RA-05	05/01/24 12:13 / kdk
Radium 228 MDC	0.8	pCi/L				RA-05	05/01/24 12:13 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U			A7500-RA	05/07/24 12:13 / dmf
Radium 226 + Radium 228 precision (s)	0.5	pCi/L				A7500-RA	05/07/24 12:13 / dmf
Radium 226 + Radium 228 MDC	0.8	pCi/L				A7500-RA	05/07/24 12:13 / dmf

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Page 4 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040825

Report Date: 05/10/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11296										
Lab ID: LCS-RA226-11296	3	Laboratory Control Sample		Run: TENNELEC-3_240426B			05/06/24 10:37			
Radium 226		10	pCi/L	102		70	130			
Radium 226 precision (±)		2.0	pCi/L							
Radium 226 MDC		0.20	pCi/L							
Lab ID: MB-RA226-11296	3	Method Blank		Run: TENNELEC-3_240426B			05/06/24 10:37			
Radium 226		0.2	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24040696-001ADUP	3	Sample Duplicate		Run: TENNELEC-3_240426B			05/06/24 12:44			
Radium 226		0.19	pCi/L					43	30	UR
Radium 226 precision (±)		0.15	pCi/L							
Radium 226 MDC		0.22	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.48.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 5 of 10



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040825

Report Date: 05/10/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7380										
Lab ID: LCS-228-RA226-11296	3	Laboratory Control Sample		Run: TENNELEC-4_240426A			05/01/24 12:13			
Radium 228		6.4	pCi/L	102		70	130			
Radium 228 precision (\pm)		1.4	pCi/L							
Radium 228 MDC		0.90	pCi/L							
Lab ID: MB-RA226-11296	3	Method Blank		Run: TENNELEC-4_240426A			05/01/24 12:13			
Radium 228		0.3	pCi/L							U
Radium 228 precision (\pm)		0.5	pCi/L							
Radium 228 MDC		0.8	pCi/L							
Lab ID: C24040696-001ADUP	3	Sample Duplicate		Run: TENNELEC-4_240426A			05/01/24 12:13			
Radium 228		0.91	pCi/L					120	30	R
Radium 228 precision (\pm)		0.57	pCi/L							
Radium 228 MDC		0.88	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.92.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24040825

Login completed by: Lisa X. Quezada

Date Received: 4/25/2024

Reviewed by: lleprosse

Received by: AJS

Reviewed Date: 4/30/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	18.5°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

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Client: Minnkota Power Cooperative

LABORATORIES, Inc.
2616 E Broadway Ave
Bismarck, ND 58501

Phone: (800) 279-6885
Fax: (701) 258-9724

Company Name and Address:

MVTL
2616 E Broadway
Bismarck, ND 58501
Billing Address (indicate if different from above):
PO Box 249
New Ulm, MN 56073

Chain of Custody Record

Page 1 of 1

Work Order #	46023	Phone #	701-258-9720
Account #		Fax #	
Contact:	Claudette	For faxed report check box	<input type="checkbox"/>
Name of Sampler:		E-mail:	ccarroll@mvtl.com
Quote Number	C15480 v5	For e-mail report check box	<input type="checkbox"/>
Project Name/Number:		Date Submitted:	23-Apr-24
		Purchase Order #:	BL6868

Sample Information				Bottle Type				Analysis Required
Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Untreated	VOC Vials	
	46023001	2023-1	GW	19-Apr-24	10:30	1	Unpreserved	Ra226 & Ra228
							Quartz Jar	
							Other	

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	23-Apr-24	1700		Aaron Smith	4/25/24	69.5

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (50936) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 9



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Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	50936001	Date Collected:	06/07/2024 10:20		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	06/07/2024 12:13		Collector:	MVTL Field Service		
Temp @ Receipt (C):	2.0	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	70.9	mg/L	5	1		06/12/2024 10:09		
Method: EPA 6010D								
Boron	0.53	mg/L	0.1	1	06/09/2024 11:52	06/14/2024 14:48		
Calcium	3.34	mg/L	1	1	06/09/2024 11:52	06/11/2024 14:15		
Method: SM4500 H+ B-2011								
pH	8.5	units	0.1	1		06/07/2024 22:54	*	
Method: SM4500-Cl-E 2011								
Chloride	14.9	mg/L	2.0	1		06/11/2024 12:23		
Method: SM4500-F-C-2011								
Fluoride	1.85	mg/L	0.1	1		06/07/2024 22:54		
Method: USGS I-1750-85								
Total Dissolved Solids	1370	mg/L	10	1		06/07/2024 14:00		

Analysis Results Comments**Silver, Dissolved**

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

pH

Sample analyzed beyond holding time.

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Page 3 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #:		50936	
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	99.6		85	115		
LFB			100	99.7		85	115		
LFB			100	102.0		85	115		
LFB			100	98.6		85	115		
LFB			100	97.4		85	115		
LFB			100	103.0		85	115		
LFB			100	104.0		85	115		
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
NB		<5							
MS/MSD	30779002		100	99.7	98.7	85	115	3.0	20
MS/MSD	30879012		2000	99.6	90.6	85	115	0.6	20
MS/MSD	30879017		100	92.0	94.5	85	115	2.7	20
MS/MSD	30880004		100	92.0	85.9	85	115	4.0	20
MS/MSD	510295003		1000	76.9	80.5	85	115	2.8	20
MS/MSD	51175000		100	99.6	98.3	85	115	0.3	20
Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	95.3		90	110		
LFB			30	94.3		90	110		
LFB			30	94.0		90	110		
LFB			30	94.3		90	110		
LFB			30	94.5		90	110		
LFB			30	95.0		90	110		
LFB			30	94.0		90	110		

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Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.8	105.0		80	115		
N/A									
POU/POSD	50513001		8	111.0	114.0	75	125	2.9	20
MS/MSD	50516001		0.6	98.2	94.6	70	130	1.0	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AE			100	115.0		80	135		
N/A									
POU/POSD	50513001		100	101.0	108.0	75	125	0.5	20
POU/POSD	50618001		100	106.0	108.0	75	125	0.3	20
POU/POSD	50618006		100	106.0	105.0	75	125	0.6	20
POU/POSD	50716004		100	101.0	108.0	75	125	0.5	20
POU/POSD	50716008		100	111.0	111.0	75	125	0.2	20
POU/POSD	50816014		100	109.0	108.0	75	125	0.6	20
POU/POSD	50816014		100	111.0	111.0	75	125	0.6	20
POU/POSD	50816018		100	106.0	105.0	75	125	0.7	20
DUF	50936001							1.7	20
POU/POSD	50965000		100	106.0	107.0	75	125	0.5	20
pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CNM-PH			6	100.5		98.33	101.67		
CNM-PH			6	100.8		98.33	101.67		
DUF	50916001							0.5	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CNM-F			0.06	103.0		81.98	111.18		
UPB-F			0.5	100.0		90	110		
UPB-F			0.5	98.0		90	110		
UPB-F			0.5	93.0		90	110		
UPB-F			0.5	92.0		90	110		
N/A									

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Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
MS/MSD-F	30870203		0.5	94.0	94.0	80	120	0.0	20
MS/MSD-F	30870211		0.5	102.0	96.0	80	120	5.0	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	100.0		90.35	110.35		
MS		<30							
DUP	30704000							0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

		Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720		Minnkota Power Cooperative WO: 50936 		Chain of Custody Record	
Report To: Minnkota Power Cooperative		CC:		Project Name: Minnkota - CCWDF			
Attn: Joseph Grosz				Event:			
Address: 3401 24 th St SW				Sampled By: <i>Dakota Kotticik</i>			
Center, ND 58530							
Phone:							
Email: jgrosz@minnkota.com							

Lab Number	Sample ID	Date	Time	Sample Type	Sample Containers				Field Readings				Analysis Required	
					1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gal Nitric	Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	7/20/24	1020	GW	X	X	X	X		11.08	196.7	8.13	5.47	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Dakota Kotticik</i>	7/20/24	Log In	RUI 2.0	<i>Dakota Kotticik</i>	7/20/24
	1213	Walk In #2	TMS62 / TM805		AB

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND		Event:		Sample ID: 2023-1		Sampling Personal: Dakota Kutzall					
Phone: (701) 258-9720		Weather Conditions:		Temp: 71 °F		Wind: W @ 20-25					
Precip: Sunny / Partly Cloudy / Cloudy		WELL INFORMATION		SAMPLING INFORMATION		Control Settings:					
Well Locked? YES NO		Purging Method: Bladder		Sampling Method: Bladder		Purge: 7 / 16 Sec.					
Well Labeled? YES NO		Dedicated Equipment? YES NO		Duplicate Sample? YES NO		Recover: 23 / 54 Sec.					
Repairs Necessary?		Duplicate Sample ID:		Bottle List:		PSI: 120 / 120					
Casing Diameter: 2"		1 Liter Raw		1 Gal Nitric							
Water Level Before Purge: 26.724 ft		500ml Nitric		500ml Nitric (Filtered)							
Depth to Top of Pump: 228.10 ft		250ml Sulfuric									
Well Volume: 12.8 liters											
Water Level After Sample: 216.50 ft											
Measurement Method: Electric Water Level Indicator											
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
6 June 24	1248	Start of Well Purge									
	1333	4.51	214.4	8.11	0.03	-177.4	0.30	221.63	300.0	13.5	Clear
	1413	18.02	216.1	8.11	1.37	-138.0	1.00	Below head	300.0	12.0	Clear
7 June 24	0935	12.03	196.7	8.13	0.17	-96.2	2.85	210.47	100.0	0.5	Clear
	0940	17.03	182.7	8.13	0.96	-174.7	5.80	211.53	100.0	1.0	Clear
	0950	11.13	196.7	8.13	0.23	-105.3	18.88	213.71	100.0	2.0	Clear
	1010	11.26	196.6	8.13	0.17	-100.7	2.11	214.27	100.0	2.0	Clear
	1015	11.10	196.7	8.13	0.18	-96.2	2.85	214.65	100.0	0.5	Clear
	1020	11.09	196.7	8.13	0.18	-89.3	5.42	214.92	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 120.0 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
7 June 24	1020	11.08	196.7	8.13			5.42	2			Clear
Comments: XDBE											

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (50936) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
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Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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Workorder Comments

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Page 1 of 8

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	50936001	Date Collected:	06/07/2024 10:20		Matrix:	Groundwater	
Sample ID:	2023-1	Date Received:	06/07/2024 12:13		Collector:	MVTL Field Service	
Temp @ Receipt (C):	2.0	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	06/19/2024 12:25	06/20/2024 09:26	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	06/09/2024 11:52	06/12/2024 12:59	
Lithium	0.0528	mg/L	0.02	1	06/09/2024 11:52	06/20/2024 14:11	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	06/09/2024 11:52	07/01/2024 18:54	
Arsenic	<0.002	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Barium	0.1158	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Beryllium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	
Cadmium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/03/2024 09:47	
Chromium	<0.002	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Lead	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	
Molybdenum	0.0020	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Selenium	<0.005	mg/L	0.005	5	06/09/2024 11:52	07/01/2024 18:54	
Thallium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	

Analysis Results Comments**Silver, Dissolved**

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

pH

Sample analyzed beyond holding time.

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Page 2 of 8



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #:			50936	
Cobalt			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-CE			0.4	100.0		85	115				
MIB		<0.1									
POS/POS	50967000		2	98.2	98.4	75	125	0.1	20		
POS/POS	50979000		5	92.7	94.2	75	125	1.8	20		
POS/POS	50979003		20	103.0	103.0	75	125	0.2	20		
MU/MU	50990000		0.4	95.9	90.4	70	130	0.6	20		
Lithium			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-CE			0.4	100.0		85	115				
MIB		<0.04									
MU/MU	50990000		0.4	94.1	92.5	70	130	1.4	20		
Antimony			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-MI			0.1	98.4		85	120				
MIB		<0.001									
SPE	50979000		0.1	108.0		75	125				
SPE	50979003		0.1	113.0		75	125				
SPE	50979001		0.1	100.0		75	125				
MU/MU	50990000		0.4	105.0	105.0	75	125	0.2	20		
SPE	50979001		0.1	106.0		75	125				
Arsenic			Units: mg/L								
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-MI			0.1	97.8		80	120				
MIB		<0.002									
SPE	50979000		0.1	110.0		75	125				
SPE	50979003		0.1	108.0		75	125				
SPE	50979001		0.1	100.0		75	125				
MU/MU	50990000		0.4	105.0	105.0	75	125	0.7	20		
SPE	50979001		0.1	108.0		75	125				

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Account #: 7048

Client: Minnkota Power Cooperative

Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	98.8		80	120		
N/A									
<0.000									
SPE	30876000		0.1	102.0		75	125		
SPE	30876013		0.1	101.0		75	125		
SPE	30876021		0.1	102.0		75	125		
MS/MSD	30916000		0.4	102.0	102.0	75	125	0.4	20
SPE	30916001		0.1	110.0		75	125		
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	97.2		80	120		
N/A									
<0.0005									
SPE	30876000		0.1	119.0		75	125		
SPE	30876013		0.1	123.0		75	125		
SPE	30876021		0.1	106.0		75	125		
MS/MSD	30916000		0.4	113.0	113.0	75	125	0.9	20
SPE	30916001		0.1	117.0		75	125		
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	95.3		80	120		
N/A									
<0.0005									
SPE	30876000		0.1	97.4		75	125		
SPE	30876013		0.1	100.0		75	125		
SPE	30876021		0.1	96.8		75	125		
MS/MSD	30916000		0.4	101.0	101.0	75	125	0.9	20
SPE	30916001		0.1	101.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-AIS			0.1	96.4		80	120		
N/A									
<0.002									
SPE	30876000		0.1	110.0		75	125		
SPE	30876013		0.1	106.0		75	125		

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	50976021		0.1	104.0		75	125		
Units: mg/L									
MS/MSD	50976000		0.4	110.0	110.0	75	125	0.5	20
SPK	50976001		0.1	100.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	101.0		80	120		
MS		<0.0005							
SPK	50876002		0.1	96.0		75	125		
SPK	50876003		0.1	96.8		75	125		
SPK	50876001		0.1	98.4		75	125		
MS/MSD	50976000		0.4	96.2	97.7	75	125	1.8	20
SPK	50976001		0.1	101.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	98.0		80	120		
MS		<0.001							
SPK	50876002		0.1	113.0		75	125		
SPK	50876001		0.1	109.0		75	125		
MS/MSD	50976000		0.4	113.0	111.0	75	125	0.0	20
SPK	50976001		0.1	111.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	94.6		80	120		
MS		<0.001							
SPK	50876002		0.1	107.0		75	125		
SPK	50876003		0.1	100.0		75	125		
SPK	50876001		0.1	98.2		75	125		
MS/MSD	50976000		0.4	99.8	100.0	75	125	0.5	20
SPK	50976001		0.1	104.0		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	101.0		80	120		

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Account #: 7048

Client: Minnkota Power Cooperative

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.0005							
SPK	30876002		0.1	95.8		75	125		
SPK	30876003		0.1	95.1		75	125		
SPK	30876004		0.1	96.8		75	125		
MS/MSD	30876005		0.4	90.9	92.6	75	125	1.9	20
SPK	30876006		0.1	99.6		75	125		

Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	102.0		85	115		
LFB			0.002	100.0		85	115		
LFB		<0.0002							
MB		<0.0002							
MS/MSD	30876009		0.002	96.6	97.2	70	130	5.1	20
MS/MSD	30876010		0.002	101.0	100.8	70	130	0.0	20
MS/MSD	30876011		0.002	105.0	104.8	70	130	0.0	20
MS/MSD	30876012		0.002	103.8	96.4	70	130	0.0	20

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		Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720		Minnkota Power Cooperative WO: 50936 		Chain of Custody Record																																																																																																																					
Report To: Minnkota Power Cooperative		CC:		Project Name: Minnkota - CCWDF																																																																																																																							
Attn: Joseph Grosz				Event:																																																																																																																							
Address: 3401 24 th St SW				Sampled By: <i>Dakota Kotsick</i>																																																																																																																							
Phone:																																																																																																																											
Email: jgrosz@minnkota.com																																																																																																																											
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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND		Event:		Sample ID: 2023-1		Sampling Personal: Dakota Kutzall					
Phone: (701) 258-9720		Weather Conditions:		Temp: 71 °F		Wind: W @ 20-25					
Precip: Sunny / Partly Cloudy / Cloudy		WELL INFORMATION		SAMPLING INFORMATION		Control Settings:					
Well Locked? YES NO		Purging Method: Bladder		Sampling Method: Bladder		Purge: 7 / 16 Sec.					
Well Labeled? YES NO		Dedicated Equipment? YES NO		Duplicate Sample? YES NO		Recover: 23 / 54 Sec.					
Repairs Necessary?		Duplicate Sample ID:		Bottle List:		PSI: 120 / 120					
Casing Diameter: 2"		1 Liter Raw		1 Gal Nitric							
Water Level Before Purge: 26.724 ft		500ml Nitric		500ml Nitric (Filtered)							
Depth to Top of Pump: 228.10 ft		250ml Sulfuric									
Well Volume: 12.8 liters											
Water Level After Sample: 216.50 ft											
Measurement Method: Electric Water Level Indicator											
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
6 June 24	1248	Start of Well Purge									
	1333	4.51	2144	8.13	0.03	-177.4	0.30	221.63	300.0	13.5	Clear
	1413	18.02	2161	8.11	1.37	-138.0	1.00	Below hole	300.0	12.0	Clear
7 June 24	0935	12.03	1827	8.13	0.96	-174.7	5.80	210.47	100.0	0.5	Clear
	0940	11.63	1827	8.13	0.96	-174.7	5.80	211.53	100.0	1.0	Clear
	0950	11.73	1967	8.13	0.23	-105.3	18.88	213.71	100.0	2.0	Clear
	1010	11.26	1968	8.13	0.17	-100.7	2.11	214.27	100.0	2.0	Clear
	1015	11.10	1967	8.13	0.18	-96.2	24.85	214.65	100.0	0.5	Clear
	1020	11.09	1967	8.13	0.18	-89.3	5.42	214.92	100.0	0.5	Clear
Well Stabilized? YES NO		Total Volume Purged: 120.0 Liters									
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
7 June 24	1020	11.08	1967	8.13			5.42	2			Clear
Comments: XDBE											

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Account #: 7048
Workorder: Minnkota (50937)

Client: Minnkota Power Cooperative
PO: 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 10

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	50937001	Date Collected:	06/07/2024 10:20	Matrix:	Groundwater
Sample ID:	2023-1	Date Received:	06/07/2024 12:13	Collector:	MVTL Field Service
Temp @ Receipt (C):	2.0	Received on Ice:	Yes		

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		07/16/2024 11:26	
Radium 228	See Attached			1		07/16/2024 11:26	

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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

July 11, 2024

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C24060434 Quote ID: C15480

Project Name: 50937

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 6/12/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24060434-001	50937001, 2023-1	06/07/24 9:20	06/12/24	Groundwater	Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy, Casper, WY 82601-9601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

If you have any questions regarding these test results, please contact your Project Manager.

Page 1 of 6

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Page 3 of 10



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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 50937
Lab ID: C24060434-001
Client Sample ID: 50937001, 2023-1

Report Date: 07/11/24
Collection Date: 06/07/24 09:20
Date Received: 06/12/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U		E903.0		06/24/24 14:06 / alb
Radium 226 precision (s)	0.1	pCi/L			E903.0		06/24/24 14:06 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		06/24/24 14:06 / alb
Radium 228	-0.3	pCi/L	U		RA-05		06/18/24 13:01 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		06/18/24 13:01 / kdk
Radium 228 MDC	1.1	pCi/L			RA-05		06/18/24 13:01 / kdk
Radium 226 + Radium 228	0.7	pCi/L	U		A7500-RA		06/25/24 16:50 / dmf
Radium 226 + Radium 228 precision (s)	0.7	pCi/L			A7500-RA		06/25/24 16:50 / dmf
Radium 226 + Radium 228 MDC	1.1	pCi/L			A7500-RA		06/25/24 16:50 / dmf

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Page 2 of 6

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Report Date: Tuesday, July 23, 2024 11:06:51 AM

Page 4 of 10



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Account #: 7048

Client: Minnkota Power Cooperative



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24060434

Report Date: 06/27/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11346R										
Lab ID: LCS-RA226-11346	3	Laboratory Control Sample		Run: TENNELEC-3_240613C			06/24/24 14:06			
Radium 226		11	pCi/L	110		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11346	3	Method Blank		Run: TENNELEC-3_240613C			06/24/24 14:06			
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24060434-001ADUP	3	Sample Duplicate		Run: TENNELEC-3_240613C			06/24/24 14:06			
Radium 226		0.20	pCi/L					9.5	30	
Radium 226 precision (±)		0.14	pCi/L							
Radium 226 MDC		0.20	pCi/L							
- The RER result is 0.09.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24060434

Report Date: 06/27/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										
Batch: RA228-7417										
Lab ID: LCS-228-RA226-11346	3	Laboratory Control Sample		Run: TENNELEC-4_240613A			06/18/24 13:01			
Radium 228		10	pCi/L	97		70	130			
Radium 228 precision (±)		2.1	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA226-11346	3	Method Blank		Run: TENNELEC-4_240613A			06/18/24 13:01			
Radium 228		-0.2	pCi/L							U
Radium 228 precision (±)		0.7	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24060434-001ADUP	3	Sample Duplicate		Run: TENNELEC-4_240613A			06/18/24 13:01			
Radium 228		-0.78	pCi/L					91	30	UR
Radium 228 precision (±)		0.63	pCi/L							
Radium 228 MDC		1.1	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.55.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Page 6 of 10



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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24060434

Login completed by: Cristen C. Smith

Date Received: 6/12/2024

Reviewed by: Icadreau

Received by: AJS

Reviewed Date: 6/19/2024

Carrier name: UPS Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	16.9°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The collection time indicated on the container is 10:20 and on the chain of custody it is 9:20. Proceeded with the collection time as indicated on the chain of custody. CS 6/12/24

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Page 7 of 10

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Account #: 7048

Client: Minnkota Power Cooperative

[illegible]

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WD: 50937 	Chain of Custody Record
Report To:	Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF
Attn:	Joseph Grosz		Event:
Address:	3401 24 th St SW Center, ND 58530		Sampled By: <i>Dakota Kottwitz</i>
Phone:			
Email:	jgrosz@minnkota.com		

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric								
001	2023-1	7/24/24	10:20	GW					X								Radium 226 and 228 Combined

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Dakota Kottwitz</i>	7/24/24 12:13	Log In Walk In #2	ROF 2.0 TM562 / TM805	<i>H. House</i>	7/24/24 12:13

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND				Event:							
Phone: (701) 258-9720				Sample ID: 2023-1							
Weather Conditions:		Temp: 41 °F		Wind: W @ 10-15		Precip: Sunny / Partly Cloudy / Cloudy					
WELL INFORMATION				SAMPLING INFORMATION							
Well Locked? <input checked="" type="checkbox"/> YES NO				Purging Method: Bladder							
Well Labeled? <input checked="" type="checkbox"/> YES NO				Sampling Method: Bladder							
Repairs Necessary? —				Dedicated Equipment? <input checked="" type="checkbox"/> YES NO							
Casing Diameter: 2"				Duplicate Sample? YES NO							
Water Level Before Purge: 267.24 ft				Duplicate Sample ID: —							
Depth to Top of Pump: 228.10 ft				Bottle List:							
Well Volume: 17.8 liters				1 Liter Raw							
Water Level After Sample: 215.5 ft				1 Gal Nitric							
Measurement Method: Electric Water Level Indicator				500ml Nitric							
				500ml Nitric (filtered)							
				250ml Sulfuric							
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				clear, slightly turbid, turbid
6 June 24	1248										
	1333	4.51	214.4	8.21	0.03	-177.4	0.30	221.62	300.0	13.5	Clear
	1413	13.02	216.1	8.11	1.33	-138.0	1.00	219.44	300.0	12.0	Clear
7 June 24	0933	12.03	196.7	8.13	0.18	-95.2	5.42	214.92	100.0	.5	Clear
	0940	17.03	182.7	8.13	0.96	-174.7	5.80	211.53	100.0	.5	Clear
	0850	11.73	196.7	8.13	0.23	-103.3	18.58	212.71	100.0	1.0	Clear
	1010	11.26	196.7	8.13	0.17	-100.7	2.11	214.27	100.0	2.0	Clear
	1015	11.10	196.7	8.13	0.18	-95.2	5.42	214.65	100.0	.5	Clear
	1020	11.09	196.7	8.13	0.18	-89.3	5.42	214.92	100.0	.5	Clear
Well Stabilized? <input checked="" type="checkbox"/> YES NO											
Total Volume Purged: 10.0 Liters											
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
7 June 24	1020	11.08	196.7	8.13			5.42	2			Clear
Comments: XDBE											

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1st Detection Sampling

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF Spring 2024 **PO:** 241323 Line 6
(53782)

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Thursday, August 1, 2024 11:13:12 AM

Page 1 of 31



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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782001	Date Collected:	07/03/2024		Matrix:	Groundwater		
Sample ID:	Field Blank 1 (FB1)	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	<5	mg/L	5	1		07/10/2024 10:09		
Method: EPA 6010D								
Boron	<0.1	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:41		
Calcium	<1	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:00		
Method: SM4500 H+ B-2011								
pH	6.7	units	0.1	1		07/05/2024 16:03	*	
Method: SM4500-Cl-E 2011								
Chloride	<2.0	mg/L	2.0	1		07/09/2024 09:38		
Method: SM4500-F-C-2011								
Fluoride	<0.1	mg/L	0.1	1		07/08/2024 13:53		
Method: USGS I-1750-85								
Total Dissolved Solids	<10	mg/L	10	1		07/05/2024 13:37		

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 3 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782002	Date Collected:	07/03/2024		Matrix:	Groundwater		
Sample ID:	Dup1	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	188	mg/L	25	5		07/10/2024 10:10		
Method: EPA 6010D								
Boron	0.46	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:43		
Calcium	2.94	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:01		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		07/05/2024 16:18	*	
Method: SM4500-Cl-E 2011								
Chloride	7.6	mg/L	2.0	1		07/09/2024 09:39		
Method: SM4500-F-C-2011								
Fluoride	1.52	mg/L	0.1	1		07/08/2024 14:02		
Method: USGS I-1750-85								
Total Dissolved Solids	1360	mg/L	10	1		07/05/2024 13:37		

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 4 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782003 **Date Collected:** 07/03/2024 06:45 **Matrix:** Groundwater
Sample ID: 15-01 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service

Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	268	mg/L	25	5		07/10/2024 10:12	
Method: EPA 6010D							
Boron	0.45	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:44	
Calcium	2.24	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:04	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1		07/05/2024 16:36	*
Method: SM4500-Cl-E 2011							
Chloride	2.5	mg/L	2.0	1		07/09/2024 09:40	
Method: SM4500-F-C-2011							
Fluoride	2.41	mg/L	0.1	1		07/08/2024 14:15	
Method: USGS I-1750-85							
Total Dissolved Solids	1220	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782004 **Date Collected:** 07/03/2024 07:38 **Matrix:** Groundwater
Sample ID: 15-02 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service

Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	249	mg/L	25	5		07/10/2024 10:22	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:44	
Calcium	3.88	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:06	
Method: SM4500 H+ B-2011							
pH	8.3	units	0.1	1		07/05/2024 16:55	*
Method: SM4500-Cl-E 2011							
Chloride	2.5	mg/L	2.0	1		07/09/2024 09:41	
Method: SM4500-F-C-2011							
Fluoride	1.77	mg/L	0.1	1		07/08/2024 14:28	
Method: USGS I-1750-85							
Total Dissolved Solids	1310	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 6 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782005	Date Collected:	07/03/2024 13:41		Matrix:	Groundwater		
Sample ID:	15-03	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	77.0	mg/L	5	1		07/10/2024 10:35		
Method: EPA 6010D								
Boron	0.50	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:45		
Calcium	3.44	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:07		
Method: SM4500 H+ B-2011								
pH	8.2	units	0.1	1		07/05/2024 17:14	*	
Method: SM4500-Cl-E 2011								
Chloride	5.3	mg/L	2.0	1		07/09/2024 09:43		
Method: SM4500-F-C-2011								
Fluoride	1.84	mg/L	0.1	1		07/08/2024 14:41		
Method: USGS I-1750-85								
Total Dissolved Solids	1460	mg/L	10	1		07/05/2024 13:37		

Analysis Results Comments**Arsenic, Dissolved**

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782006 **Date Collected:** 07/03/2024 11:59 **Matrix:** Groundwater
Sample ID: 15-04 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service

Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	78.9	mg/L	5	1		07/10/2024 10:36	
Method: EPA 6010D							
Boron	0.51	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:46	
Calcium	3.25	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:08	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 17:31	*
Method: SM4500-Cl-E 2011							
Chloride	5.3	mg/L	2.0	1		07/09/2024 09:44	
Method: SM4500-F-C-2011							
Fluoride	1.92	mg/L	0.1	1		07/08/2024 14:52	
Method: USGS I-1750-85							
Total Dissolved Solids	1400	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 8 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782007	Date Collected:	07/03/2024 10:58		Matrix:	Groundwater		
Sample ID:	15-05	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	336	mg/L	25	5		07/10/2024 10:25		
Method: EPA 6010D								
Boron	0.51	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:47		
Calcium	3.95	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:09		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		07/05/2024 17:50	*	
Method: SM4500-Cl-E 2011								
Chloride	3.5	mg/L	2.0	1		07/09/2024 09:53		
Method: SM4500-F-C-2011								
Fluoride	1.93	mg/L	0.1	1		07/08/2024 15:05		
Method: USGS I-1750-85								
Total Dissolved Solids	1600	mg/L	10	1		07/05/2024 13:37		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782008	Date Collected:	07/03/2024 12:12		Matrix:	Groundwater		
Sample ID:	18-01	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	358	mg/L	25	5		07/10/2024 10:26		
Method: EPA 6010D								
Boron	0.53	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:47		
Calcium	3.62	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:10		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		07/05/2024 18:09	*	
Method: SM4500-Cl-E 2011								
Chloride	4.5	mg/L	2.0	1		07/09/2024 09:54		
Method: SM4500-F-C-2011								
Fluoride	1.87	mg/L	0.1	1		07/08/2024 15:19		
Method: USGS I-1750-85								
Total Dissolved Solids	1670	mg/L	10	1		07/05/2024 13:37		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 10 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782009	Date Collected:	07/03/2024 10:01		Matrix:	Groundwater	
Sample ID:	18-02	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service	
Temp @ Receipt (C):	6.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	194	mg/L	25	5		07/10/2024 10:27	
Method: EPA 6010D							
Boron	0.45	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:48	
Calcium	2.83	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:14	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 18:28	*
Method: SM4500-Cl-E 2011							
Chloride	7.5	mg/L	2.0	1		07/09/2024 09:56	
Method: SM4500-F-C-2011							
Fluoride	1.51	mg/L	0.1	1		07/08/2024 17:10	
Method: USGS I-1750-85							
Total Dissolved Solids	1310	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782010	Date Collected:	07/03/2024 15:06		Matrix:	Groundwater	
Sample ID:	92-3	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service	
Temp @ Receipt (C):	6.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	135	mg/L	5	1		07/31/2024 09:40	
Method: EPA 6010D							
Boron	0.49	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:50	
Calcium	2.61	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:16	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		07/05/2024 20:49	*
Method: SM4500-Cl-E 2011							
Chloride	5.5	mg/L	2.0	1		07/09/2024 09:57	
Method: SM4500-F-C-2011							
Fluoride	1.58	mg/L	0.1	1		07/08/2024 17:23	
Method: USGS I-1750-85							
Total Dissolved Solids	1180	mg/L	10	1		07/05/2024 13:37	

Sample Comments

All analyses were rechecked and we were unable to determine the cause of the high percent error.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 12 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	53782011	Date Collected:	07/03/2024 11:01		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	07/03/2024 16:44		Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	54.2	mg/L	25	5		07/10/2024 10:29		
Method: EPA 6010D								
Boron	0.52	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:53		
Calcium	2.89	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:20		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		07/05/2024 21:08	*	
Method: SM4500-Cl-E 2011								
Chloride	15.0	mg/L	2.0	1		07/09/2024 09:58		
Method: SM4500-F-C-2011								
Fluoride	1.81	mg/L	0.1	1		07/08/2024 17:36		
Method: USGS I-1750-85								
Total Dissolved Solids	1390	mg/L	10	1		07/05/2024 13:37		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 13 of 31



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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #:		53782	
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB			100	96.6		85	115		
1PB			100	99.9		85	115		
1PB			100	97.2		85	115		
1PB			100	96.7		85	115		
1PB			100	90.9		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	52150001		1000	91.7	92.5	85	115	1.1	20
MS/MSD	53782011		500	96.1	91.5	95	115	2.4	20
MS/MSD	54080011		1000	77.6	77.2	85	115	0.3	20
MS/MSD	54074001		100000	96.7	89.2	85	115	1.6	20
Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB			30	94.3		90	110		
1PB			30	91.1		90	110		
1PB			30	92.0		90	110		
1PB			30	92.9		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	53780006		30	91.8	91.1	80	120	3.7	20
MS/MSD	53797001		30	96.5	93.9	80	120	0.8	20
Boron			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-CE			0.8	103.0		85	115		

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Account #: 7048

Client: Minnkota Power Cooperative

Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.1							
ML/MSD	13762001		0.4	99.9	100.0	70	130	0.3	20
ML/MSD	13762002		0.4	99.9	99.9	70	130	0.3	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1PB-A1			100	110.0		85	115		
MB		<1							
FDU/POSD	53614001		100	96.1	95.1	75	125	0.8	20
FDU/POSD	53603004		100	100.0	100.0	75	125	0.8	20
FDU/POSD	53613001		100	101.0	101.0	75	125	0.1	20
FDU/POSD	53613003		100	99.8	100.0	75	125	1.4	20
FDU/POSD	53699001		100	96.1	92.0	75	125	1.3	20
FDU/POSD	53686002		100	81.0	88.7	75	125	2.0	20
DUP	13762003							4.5	20
FDU/POSD	13762005		100	95.7	95.8	75	125	0.2	20
DUP	13762011							1.0	20
pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CMA-PH			6	99.1		98.33	101.67		
CMA-PH			6	99.1		98.33	101.67		
CMA-PH			6	100.2		98.33	101.67		
DUP	13779001							0.8	20
DUP	13762002							0.2	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CMA-F			0.06	100.0		81.98	111.11		
1PB-F			0.5	98.0		90	110		
1PB-F			0.5	98.0		90	110		
1PB-F			0.5	98.0		90	110		
MB-F		<0.1							
MB-F		<0.1							

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Account #: 7048

Client: Minnkota Power Cooperative

Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS-F		<0.1							
MS/MSD-F	11762000		0.5	102.0	100.0	90	120	0.4	20
MS/MSD-F	11762000		0.5	102.0	98.0	90	120	1.0	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	100.0		90.95	110.05		
MS		<10							
DUP	11762001							0.0	20
DUP	11762011							0.7	20

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 53782 	Chain of Custody Record
Report To: Minnkota Power Cooperative	CC:	Project Name: Minnkota - CCWDF	
Attn: Joseph Grosz		Event: Spring 2024	
Address: 3401 24th St SW Center, ND 58530		Sampled By: <i>Jeremy Mayan</i>	
Phone:			
Email: jgrosz@minnkota.com			

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	Field Blank 1 (FB1)	3 July 24	NA	GW	X	X	X	X	NA	NA	NA	NA	CCWDF CCR Appendix I + CCWDF NDDEQ Parameter List (see attachment)
002	Dup1	3 July 24	NA	GW	X	X	X	X	NA	NA	NA	NA	
003	15-01	3 July 24	0645	GW	X	X	X	X	10.43	1910	8.71	5.01	
004	15-02	3 July 24	0730	GW	X	X	X	X	11.01	1973	8.54	1.64	
005	15-03	3 July 24	1341	GW	X	X	X	X	12.36	2201	8.06	3.26	
006	15-04	3 July 24	1159	GW	X	X	X	X	9.44	2153	8.44	0.40	
007	15-05	3 July 24	1058	GW	X	X	X	X	10.07	2409	8.36	1.11	
—	16-01	3 July 24	1236	GW	X	X	X	X	did not stabilize	Stabilize	12	SAMPLE	

Comments: * 3 July 24 *

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
<i>[Signature]</i>	3 July 24 1644	Log In Walk In #2	6.5°C/TM 8.0°C ROCK/N	<i>[Signature]</i>	3 July 24 1644

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Account #: 7048

Client: Minnkota Power Cooperative

[illegible]

Comments: μ 3 July 24 \pm

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
1	3 Jul 24 1644	Log In	65 °C/TM B05	-H. H. H.	3 Jul 24 1644
2		Walk In #2	ROKYN		

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Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron <input checked="" type="checkbox"/>
Calcium <input checked="" type="checkbox"/>
Chloride <input checked="" type="checkbox"/>
Fluoride <input checked="" type="checkbox"/>
pH <input checked="" type="checkbox"/>
Sulfate <input checked="" type="checkbox"/>
Total Dissolved Solids (TDS) <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium <input checked="" type="checkbox"/>
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Client: Minnkota Power Cooperative

14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO ₃	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO ₃	SM2320-B
✓ Bicarbonate	mg/l CaCO ₃	SM2320-B
✓ Carbonate	mg/l CaCO ₃	SM2320-B
✓ Hydroxide	mg/l CaCO ₃	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO ₃	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron - Dissolved	mg/l	6010
✓ Arsenic - Dissolved	mg/l	6020
✓ Barium - Dissolved	mg/l	6020
✓ Cadmium - Dissolved	mg/l	6020
✓ Chromium - Dissolved	mg/l	6020
✓ Lead - Dissolved	mg/l	6020
✓ Molybdenum - Dissolved	mg/l	6020
✓ Selenium - Dissolved	mg/l	6020
✓ Silver - Dissolved	mg/l	6020
✓ Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND				Event: Spring 2024							
Phone: (701) 258-9720				Sample ID: 2015-1							
				Sampling Personal: Jeremy May							
Weather Conditions:		Temp: 55 °F	Wind: N @ 5-10	Precip: Sunny / Partly Cloudy / Cloudy							
WELL INFORMATION		SAMPLING INFORMATION		Control Settings:							
Well Locked?	YES NO	Purging Method:	Bladder	Purge: 0 / 24 Sec.							
Well Labeled?	YES NO	Sampling Method:	Bladder	Recover: 52 / 36 Sec.							
Repairs Necessary?		Dedicated Equipment?	YES NO	PSI: 120 / -							
Casing Diameter:	2"	Bottle List:		Duplicate Sample?							
Water Level Before Purge:	145.82 ft	1 Liter Raw		YES / NO							
Total Depth of Well:	ft	500ml Nitric		Duplicate Sample ID:							
Well Volume:	283 liters	500ml Nitric (Filtered)									
Depth to Top of Pump:	91.75 ft	250ml Sulfuric									
Water Level After Sample:	69.05 ft										
Measurement Method:	Electric Water Level Indicator										
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
2 July 24	0715	Start of Well Purge									
	0845	9.89	1937	8.57	4.49	163.5	0.27	190.65	300.0	27.0	Clear
	0855	10.24	1959	8.56	5.41	174.0	1.89	Relocating	300.0	3.0	Clear
		Purged Dry									
3 July 24	0625	Start of Stabilization purge									
	0630	10.42	1949	8.36	4.65	108.8	1.17	185.72	100.0	0.5	Clear
	0635	10.57	1954	8.70	3.16	95.8	1.13	187.32	100.0	0.5	Clear
	0640	10.45	1926	8.70	2.59	91.6	0.45	187.68	100.0	0.5	Clear
	0645	10.43	1910	8.71	2.89	89.7	5.01	187.92	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 32.0 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	0645	10.43	1910	8.71			5.01				Clear
Comments:		Well was purged on June 25, 2024, but due to a vehicle fire that data was destroyed so the water level may vary from historical data.									

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-2
Sampling Personal: J. R. H.

Weather Conditions: Temp: 55°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	132.25 ft
Total Depth of Well:	
Well Volume:	42.75 6.4 liters
Depth to Top of Pump:	142.35 ft
Water Level After Sample:	140.40 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	0 17 Sec.
Recover:	52 43 Sec.
PSI:	120
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (Filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Etc.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				
2 July 24	0700	Start of Well Purge									
	0730	11.19	1912	8.56	2.05	151.3	6.46	138.05	300.0	6.0	Clear
	0730	11.15	1966	8.56	2.45	158.1	5.49	Below Pump	300.0	3.0	Clear
		Purged	Dry								
	0713	Start of Stabilization Purge									
3 July 24	0718	10.50	1976	8.50	3.71	123.6	2.07	137.79	100.0	0.5	Clear
	0723	10.63	1976	8.52	2.48	114.3	0.62	138.16	100.0	0.5	Clear
	0728	10.84	1957	8.54	1.86	103.0	0.07	138.76	100.0	0.5	Clear
	0733	10.98	1959	8.54	1.95	104.9	0.31	139.05	100.0	0.5	Clear
	0738	11.01	1973	8.54	2.01	105.5	1.64	139.70	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 11.5 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Etc.
3 July 24	0738	11.01	1973	8.54			1.64				Clear
Comments: Well was purged on June 25, 2024, but due to a vehicle fire that data was destroyed so the water level was very from historical data.											

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Account #: 7048

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2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-3
Sampling Personal: [Signature]

Weather Conditions: Temp: 82 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	113.22 ft
Total Depth of Well:	
Well Volume:	10.4 liters
Depth to Top of Pump:	130.10 ft
Water Level After Sample:	126.87 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	6 Sec.
Recover:	54 Sec.
PSI:	120
Bottle List:	
1 Liter Raw	
500mL Nitric	
500mL Nitric (filtered)	
250mL Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
Start of Well Purge											
2 July 24	0944										
	1014	9.48	2232	8.23	4.80	194.4	0.02	124.90	300.0	9.0	Clear
	1024	9.33	2234	8.20	5.51	184.6	1.21	Below Pump	300.0	5.0	Clear
Purged at 1024											
Start of Stabilization Pump											
35 July 24	1311							121.43			
	1321	12.16	2256	8.04	3.75	221.2	18.73	122.92	100.0	5	Clear
	1326	11.68	2222	8.04	2.64	228.9	76.43	123.41	100.0	5	Clear
	1335	12.04	2205	8.06	2.51	233.0	0.88	123.89	100.0	5	Clear
	1354	12.24	2206	8.06	2.48	239.4	1.05	124.61	100.0	5	Clear
	1511	12.36	2201	8.06	2.71	245.0	3.26	124.96	100.0	5	Clear
Well Stabilized? YES NO											
Total Volume Purged: 121.5 Liters											

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
3 July 24	1511	12.36	2201	8.06	3.26	Clear

Comments: Well was purged on Jan 25, 2014, but due to a vehicle fire that date was destroyed. The water level was very brown historical data.

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-4
Sampling Personal: J. H.

Weather Conditions: Temp: 70 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	120.76 ft
Total Depth of Well:	ft
Well Volume:	7.4 liters
Depth to Top of Pump:	132.80 ft
Water Level After Sample:	132.80 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	5 Sec.
Recover:	55 Sec.
PST:	120
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (mL/Min)	Liters Removed	Appearance or Comment
(3 Consecutive) 5 min		±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
Purge Date	Time										
2 July 24	1207	Start of Well Purge									
	1230	11.21	2131	8.97	0.00	-270.9	0.00	120.76	320.0	7.5	Clear
	1129	9.55	2156	8.49	0.01	-144.4	1.93	129.88	100.0	1.0	Clear
3 July 24	1139	9.45	2157	8.49	0.02	-165.5	1.17	128.95	100.0	1.5	Clear
	1141	9.52	2156	8.51	0.02	-188.5	2.11	129.06	100.0	1.5	Clear
	1154	9.39	2142	8.56	0.01	-187.3	0.66	129.09	100.0	1.5	Clear
	1159	9.46	2153	8.44	0.00	-195.5	0.40	131.23	100.0	1.5	Clear
Well Stabilized?		YES NO	Total Volume Purged: 10.5 Liters								
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	1159	9.44	2153	8.44			0.40				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-5
Sampling Personal: J. H.

Weather Conditions: Temp: 70 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	150.26	ft
Total Depth of Well:		ft
Well Volume:	9.7	liters
Depth to Top of Pump:	166.05	ft
Water Level After Sample:	159.55	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: 7 Sec.
Dedicated Equipment?	YES	Recover: 3 Sec.
		PSI: 120
Bottle List:		Duplicate Sample?
1 Liter Raw		YES / NO
500ml Nitric		Duplicate Sample ID:
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment	
Purge Date		Time	±0.5°	±5%	±0.1	±10%	±10	<5.0			Clarity, Color, Odor, Ect. clear, slightly turbid, turbid	
2 July 24		1240	Start of Well Purge									
		1315	9.87	2522	8.40	0.23	3.4	0.05	156.60	300.0	10.5	Clear
		1350	9.76	2442	8.42	0.22	-14.3	0.53	165.21	300.0	10.5	Clear
		1400	9.60	2499	8.41	0.21	-24.5	0.00	Adaptive	300.0	3.0	Clear
			Purged	Dry								
3 July 24		0933	Start of Stabilization Purge									
		0943	11.98	2466	8.26	1.62	250.9	7.23	151.83	100.0	1.0	Clear
		0948	12.12	2469	8.27	1.05	249.9	10.51	152.27	100.0	1.0	Clear
		1048	10.62	2395	8.36	0.81	176.5	4.37	157.26	100.0	6.0	Clear
		1053	10.11	2422	8.36	0.63	170.4	1.41	167.83	100.0	5.0	Clear
		1058	10.07	2409	8.36	0.63	170.4	1.11	158.35	100.0	3.5	Clear
			Well Stabilized?	YES	NO					Total Volume Purged:	33.0	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
3 July 24	1058	10.07	2409	8.36			1.11				Clear

Comments: Air tank ran out after 0948 reading, resulting in improper pump rate + readings
"restored" 3 purge @ 0.1 sec.

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Report Date: Thursday, August 1, 2024 11:13:12 AM

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave., Bismarck, ND

Phone: (201) 258-8720

Company: **Minnkota - CCWDF**

Events: Spring 2024

Sample ID: 706-1

Sampling Personal: 1-10

Weather Conditions: Temp: 73 °F Wind: 1 @ 0-5 Precip: (Sunny) / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?		YES	NO
Well Labeled?		YES	NO
Repairs Necessary?			
Casing Diameter:		2"	
Water Level Before Purge:		127.56	ft
Total Depth of Well:		—	ft
Well Volume:		12.7	liters
Depth to Top of Pump:		149.18	ft
Water Level After Sample:			ft
Measurement Method:		Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:	
Sampling Method:	Bladder	Purge:	5 Sec
Dedicated Equipment?	YES NO	Recover:	55 Sec
		PSI:	1200

Control Settings:	
Purge:	5 Sec
Recover:	55 Sec
PSI:	12.5

Bottle List:

1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

Duplicate Sample?
YES / NO
Duplicate Sample ID:
—

FIELD READINGS

[illegible]

Well Stabilized?	YES	NO			Total Volume Purged:	Liters
------------------	-----	----	--	--	----------------------	--------

[illegible]

Comments:

Turbidity didn't stabilize, try again at a later time

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Page 26 of 31



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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2018-2
Sampling Personal: J. H.

Weather Conditions: Temp: 55°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	152.42 ft
Total Depth of Well:	
Well Volume:	28.9 liters
Depth to Top of Pump:	149.40 ft
Water Level After Sample:	152.40 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	B / B Sec.
Recover:	S2 / S2 Sec.
PSI:	120 / 110
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	
Dye 1	

FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				Clarity, Color, Odor, Ect.
3 July 24	08:06	Start of Well Purge									
	09:46	9.45	2035	8.56	0.00	-190.4	0.00	154.90	300.0	30.0	Clear
	09:51	11.86	2032	8.51	0.00	-173.5	0.00	153.82	100.0	0.5	Clear
	09:56	11.92	2031	8.52	0.00	-171.3	0.00	153.52	100.0	0.5	Clear
	10:01	12.06	2031	8.53	0.01	-168.3	0.00	153.36	100.0	0.5	Clear
Well Stabilized? YES NO Total Volume Purged: 31.5 Liters											
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	10:01	12.06	2031	8.53			0.00				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 92-3
Sampling Personal: J. H.

Weather Conditions: Temp: 75°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	90.92 ft
Total Depth of Well:	
Well Volume:	36.1 liters
Depth to Top of Pump:	149.50 ft
Water Level After Sample:	102.95 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	B / Sec.
Recover:	S2 / Sec.
PSI:	100 /
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

FIELD READINGS											
Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				Clarity, Color, Odor, Ect.
3 July 24	1250	Start of Well Purge									
	1451	9.34	182.4	8.85	0.03	-128.9	0.00	101.80	300.0	36.3	Clear
	1456	9.35	182.6	8.84	0.02	-130.1	0.00	102.03	120.0	0.5	Clear
	1501	9.45	183.2	8.84	0.01	-134.8	0.00	102.56	100.0	0.5	Clear
	1506	9.51	182.2	8.82	0.04	-132.1	0.00	102.90	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 37.0 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	1506	9.51	182.2	8.82			0.00				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND				Event: Spring 2024							
Phone: (701) 258-9720				Sample ID: 95-4							
				Sampling Personal: Dakota Kottick							
Weather Conditions:		Temp: 74 °F	Wind: W @ 0-5	Precip: Sunny / Partly Cloudy / Cloudy							
WELL INFORMATION		SAMPLING INFORMATION		Control Settings:							
Well Locked?	YES NO	Purging Method:	Bladder	Purge:	7	Sec.					
Well Labeled?	YES NO	Sampling Method:	Bladder	Recover:	93	Sec.					
Repairs Necessary?		Dedicated Equipment?	YES NO	PSI:	120						
Casing Diameter:	2"	Bottle List:		Duplicate Sample?							
Water Level Before Purge:	97.83 ft	1 Liter Raw		YES / (NO)							
Total Depth of Well:	141.83 ft	500ml, Nitric		Duplicate Sample ID:							
Well Volume:	30.52 liters	500ml, Nitric (filtered)									
Depth to Top of Pump:		250ml, Sulfuric									
Water Level After Sample:											
Measurement Method:	Electric Water Level Indicator										
FIELD READINGS											
Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
(3 Consecutive)		±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
Purge Date	Time										
2 July 24	1425	Start of Well Purge									
	1403	9.16	1832	8.68	2.18	-87	13.75	105.79	300.0	30.0	clear
	1612	10.54	1938	8.67	4.9	-85	22.29	104.83	100.0	5	clear
Well Stabilized?		YES	NO	Total Volume Purged: _____ Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
											Clarity, Color, Odor, Ect.
Comments: Turbidity too high, no sample at this time											

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Account #: 7048

Client: Minnkota Power Cooperative

MVTL		Field Datasheet		Groundwater Assessment		Company: Minnkota - CCWDF					
2616 E. Broadway Ave, Bismarck, ND		Temp: 65°F		Wind: N @ 5-10		Event: Spring 2024					
Phone: (701) 258-9720		Precip: Sunny / Partly Cloudy / Cloudy		Sample ID: 2023-1		Sampling Personal: [Signature]					
Weather Conditions:		Temp: 65°F		Wind: N @ 5-10		Precip: Sunny / Partly Cloudy / Cloudy					
WELL INFORMATION		SAMPLING INFORMATION		Control Settings:							
Well Locked? YES NO		Purging Method: Bladder		Purge: 10 / 8 Sec.							
Well Labeled? YES NO		Sampling Method: Bladder		Recover: 50 / 42 Sec.							
Repairs Necessary?		Dedicated Equipment? YES NO		PSI: 120 / 120							
Casing Diameter: 2"		Bottle List:		Duplicate Sample?							
Water Level Before Purge: 207.30 ft		1 Liter Raw		YES NO							
Total Depth of Well:		500ml Nitric		Duplicate Sample ID:							
Well Volume: 12.6 liters		500ml Nitric (Filtered)									
Depth to Top of Pump: 228.10 ft		250ml Sulfuric									
Water Level After Sample: 214.95 ft											
Measurement Method: Electric Water Level Indicator											
FIELD READINGS											
Stabilization Parameters (3 Consecutive) 45 min		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)			Clarity, Color, Odor, Etc.
2 July 24	1410	Start of Well Purge									
	1503	9.13	2134	8.46	0.00	-242.1	2.67	220.92	300.0	13.5	Clear
	1548	9.54	2131	8.41	0.03	-179.4	9.13	86.50	300.0	12.0	Clear
		Purged Done									
3 July 24	1046	Start of Stabilization Purge									
	1051	14.21	2135	8.59	1.06	42.7	6.94	210.95	100.0	0.5	Clear
	1056	13.62	2138	8.66	0.54	30.8	5.51	211.65	100.0	0.5	Clear
	1101	13.56	2143	8.71	0.27	-92.2	7.65	212.49	100.0	0.5	Clear
	1106	13.62	2157	8.74	0.16	-98.3	6.02	213.32	100.0	0.5	
	1131	13.50	2186	8.74	0.15	-100.7	3.89	214.20	100.0	0.5	
Well Stabilized? YES NO		Total Volume Purged: 28.0 Liters									
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	1101	13.50	2186	8.74			3.89				Clear
Comments:											

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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF (65432) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Report Date: Tuesday, October 8, 2024 4:09:45 PM

Page 1 of 6



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Client: Minnkota Power Cooperative

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	65432001	Date Collected:	09/24/2024 12:42	Matrix:	Groundwater
Sample ID:	2016-1	Date Received:	09/24/2024 18:13	Collector:	MVTL Field Service
Temp @ Receipt (C):	4.3	Received on Ice:	Yes		

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
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Method: EPA 6010D

Calcium	2.91	mg/L	1	1	09/25/2024 14:50	09/26/2024 11:29	
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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary					WO #: 65432				
Calcium			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPRAB			100	100.0		95	105		
ARB		+5							
POU/POB	6543000		100	96.6	96.6	75	125	9.2	20
POU/POB	6543000		100	93.4	93.9	75	125	9.3	20
DUP	6543001							9.4	20
POU/POB	6543004		100	90.9	92.6	75	125	9.6	20
POU/POB	6543008		100	92.2	92.5	75	125	9.3	20
POU/POB	6543006		100	93.8	97.9	75	125	1.1	20
POU/POB	6540000		100	100.0	99.3	75	125	0.8	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 65432 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Paul Warden</i>	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	TOC (set of 3)			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2016-1	24/10/24	12:46	GW	X	X	X					13.2	160	9.52	1.5	Calcium Total & Dissolved

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
<i>Paul Warden</i>	24/10/24 18:13	Log In Walk In #2	4.3 °C/TM 80° ROCKY	<i>C. Gustaf</i>	24/10/24 07:30

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Report Date: Tuesday, October 8, 2024 4:09:45 PM



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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2016-1

Sampling Personal: J. J. J.

Weather Conditions: Temp: 72 °F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	12.60	ft
Depth to Top of Pump:	148.18	ft
Well Volume:	12.7	liters
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: 7 / 3 Sec.
Dedicated Equipment?	YES	Recover: 13 / 57 Sec.
		PSI: 102 / 100
Bottle List:		Duplicate Sample?
1 Liter Raw		YES / NO
500ml Nitric		Duplicate Sample ID:
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment
(3 Consecutive)	45 min										Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
23 Sept 24	0835	Start of Well Purge									
	0923	9.20	1792	8.63	0.30	-192.0	3.22	142.30	300.0	13.5	Clear
	1005	9.30		8.62	0.34	-127.0	19.46	Below Pump	300.0	13.5	Clear
		Purged	Purge		127.4			127.4			
12/14 24 Sept 24	1227	Start of stabilization Purge									
	1227	13.57	1200	8.50	0.28	-22.7	6.58	134.11	100.0	0.5	Clear
	1232	13.32	1403	8.51	0.26	-24.0	3.73	134.06	100.0	0.5	Clear
	1237	13.37	1404	8.51	0.23	-23.8	3.11	134.07	100.0	0.5	Clear
	1242	13.27	1400	8.52	0.18	-31.4	1.45	134.10	100.0	0.5	Clear

Well Stabilized? YES NO

Total Volume Purged: 24.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
24 Sept 24	12:42	13.27	1400	8.52	0		1.45				Clear

Comments:

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2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Water Level Assessment

Company: Minnkota

Event:

Sampling Personal: *Long Pige*

Weather Conditions:

Temp:

65 °F

Wind:

N @ 5-10

Precip:

Sunny / Partly Cloudy / Cloudy

Well ID	Date	Time	Casing Diameter	Water Level (ft)	Comments
15-01	26 Aug 24	1022	2"	134.12	
15-02		1024	2"	128.26	
15-03		1100	2"	110.11	
15-04		1054	2"	120.92	
15-05		1051	2"	150.62	
16-01		1057	2"	127.72	
18-01		1048	2"	174.62	
18-02		1034	2"	152.61	
92-3		1105	2"	91.00	
95-4		1103	2"	92.77	
2023-1		1045	2"	207.56	

All wells were found to be Locked, Labeled, and in good condition unless noted.

2nd Detection Sampling



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Account #: 7048 **Client:** Minnkota Power Cooperative
Workorder: Minnkota - CCWDF Fall 2024 (68733) **PO:** 241323 Line 6

Joe Grosz
Minnkota Power Cooperative
Milton R. Young Station
3401 24th St. SW
Center, ND 58530

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Page 1 of 35



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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733001	Date Collected:	10/22/2024		Matrix:	Groundwater		
Sample ID:	Field Blank 1 (FB1)	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.6	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	<5	mg/L	5	1		10/30/2024 11:57		
Method: EPA 6010D								
Boron	<0.1	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:39		
Calcium	<1	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:20		
Method: SM4500 H+ B-2011								
pH	6.0	units	0.1	1		10/24/2024 17:07	*	
Method: SM4500-Cl-E 2011								
Chloride	<2.0	mg/L	2.0	1		10/29/2024 09:45		
Method: SM4500-F-C-2011								
Fluoride	<0.1	mg/L	0.1	1		10/25/2024 15:08		
Method: USGS I-1750-85								
Total Dissolved Solids	<10	mg/L	10	1		10/24/2024 15:22		

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**Selenium, Dissolved**

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.

Total Suspended Solids

Initial analysis within holding time. Reanalysis for confirmation was past holding time.

pH

Sample analyzed beyond holding time.

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Page 3 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733002	Date Collected:	10/21/2024		Matrix:	Groundwater		
Sample ID:	Dup 1	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.6	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	114	mg/L	10	2		10/30/2024 11:58		
Method: EPA 6010D								
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:45		
Calcium	2.38	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:21		
Method: SM4500 H+ B-2011								
pH	8.6	units	0.1	1		10/24/2024 17:17	*	
Method: SM4500-Cl-E 2011								
Chloride	5.6	mg/L	2.0	1		10/29/2024 09:47		
Method: SM4500-F-C-2011								
Fluoride	1.08	mg/L	0.1	1		10/25/2024 15:15		
Method: USGS I-1750-85								
Total Dissolved Solids	1150	mg/L	10	1		10/24/2024 15:22		

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 4 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733003	Date Collected:	10/22/2024 09:08		Matrix:	Groundwater	
Sample ID:	15-01	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service	
Temp @ Receipt (C):	1.6	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	263	mg/L	25	5		10/30/2024 11:59	
Method: EPA 6010D							
Boron	0.47	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:47	
Calcium	2.69	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:25	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 17:36	*
Method: SM4500-Cl-E 2011							
Chloride	2.3	mg/L	2.0	1		10/29/2024 09:48	
Method: SM4500-F-C-2011							
Fluoride	2.40	mg/L	0.1	1		10/25/2024 15:21	
Method: USGS I-1750-85							
Total Dissolved Solids	1240	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 5 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733004 **Date Collected:** 10/22/2024 09:06 **Matrix:** Groundwater
Sample ID: 15-02 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	253	mg/L	25	5		10/30/2024 12:00	
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:49	
Calcium	3.89	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:27	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 17:55	*
Method: SM4500-Cl-E 2011							
Chloride	2.4	mg/L	2.0	1		10/29/2024 09:57	
Method: SM4500-F-C-2011							
Fluoride	1.77	mg/L	0.1	1		10/25/2024 15:27	
Method: USGS I-1750-85							
Total Dissolved Solids	1280	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 6 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733005	Date Collected:	10/22/2024 14:30		Matrix:	Groundwater		
Sample ID:	15-03	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.6	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	80.6	mg/L	5	1		10/30/2024 12:06		
Method: EPA 6010D								
Boron	0.52	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:51		
Calcium	3.68	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:29		
Method: SM4500 H+ B-2011								
pH	8.3	units	0.1	1		10/24/2024 18:14	*	
Method: SM4500-Cl-E 2011								
Chloride	5.3	mg/L	2.0	1		10/29/2024 09:58		
Method: SM4500-F-C-2011								
Fluoride	1.93	mg/L	0.1	1		10/25/2024 15:33		
Method: USGS I-1750-85								
Total Dissolved Solids	1400	mg/L	10	1		10/24/2024 15:22		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733006	Date Collected:	10/22/2024 12:30		Matrix:	Groundwater		
Sample ID:	15-04	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.6	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	89.4	mg/L	5	1		10/30/2024 12:34		
Method: EPA 6010D								
Boron	0.54	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:53		
Calcium	3.64	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:30		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		10/24/2024 20:32	*	
Method: SM4500-Cl-E 2011								
Chloride	5.6	mg/L	2.0	1		10/29/2024 10:00		
Method: SM4500-F-C-2011								
Fluoride	1.89	mg/L	0.1	1		10/25/2024 15:38		
Method: USGS I-1750-85								
Total Dissolved Solids	1380	mg/L	10	1		10/24/2024 15:22		

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 8 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733007 **Date Collected:** 10/22/2024 11:45 **Matrix:** Groundwater
Sample ID: 15-05 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	355	mg/L	25	5		10/30/2024 12:14	
Method: EPA 6010D							
Boron	0.51	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:55	
Calcium	4.18	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:32	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 20:51	*
Method: SM4500-Cl-E 2011							
Chloride	3.5	mg/L	2.0	1		10/29/2024 10:01	
Method: SM4500-F-C-2011							
Fluoride	1.91	mg/L	0.1	1		10/25/2024 15:44	
Method: USGS I-1750-85							
Total Dissolved Solids	1590	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733008	Date Collected:	10/22/2024 13:30		Matrix:	Groundwater		
Sample ID:	16-01	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	1.6	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	145	mg/L	10	2		10/30/2024 12:28		
Method: EPA 6010D								
Boron	0.52	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:57		
Calcium	3.07	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:34		
Method: SM4500 H+ B-2011								
pH	8.5	units	0.1	1		10/24/2024 21:10	*	
Method: SM4500-Cl-E 2011								
Chloride	4.2	mg/L	2.0	1		10/29/2024 10:02		
Method: SM4500-F-C-2011								
Fluoride	2.19	mg/L	0.1	1		10/25/2024 15:50		
Method: USGS I-1750-85								
Total Dissolved Solids	1180	mg/L	10	1		10/24/2024 15:22		

Task Comments**3472569 - METb/3011**

Post digestion spike recovery for sodium was low; the associated laboratory control sample recovery was acceptable.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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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

**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733009 **Date Collected:** 10/21/2024 15:32 **Matrix:** Groundwater
Sample ID: 18-01 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	373	mg/L	25	5		10/30/2024 12:17	
Method: EPA 6010D							
Boron	0.54	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:59	
Calcium	3.93	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:39	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 21:30	*
Method: SM4500-Cl-E 2011							
Chloride	4.6	mg/L	2.0	1		10/29/2024 10:03	
Method: SM4500-F-C-2011							
Fluoride	1.84	mg/L	0.1	1		10/25/2024 15:56	
Method: USGS I-1750-85							
Total Dissolved Solids	1690	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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.

Report Date: Monday, November 11, 2024 9:00:31 AM

Page 11 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733010 **Date Collected:** 10/22/2024 13:35 **Matrix:** Groundwater
Sample ID: 18-02 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	188	mg/L	25	5		10/30/2024 12:18	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:00	
Calcium	3.14	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:40	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1		10/24/2024 21:49	*
Method: SM4500-Cl-E 2011							
Chloride	7.9	mg/L	2.0	1		10/29/2024 10:04	
Method: SM4500-F-C-2011							
Fluoride	1.50	mg/L	0.1	1		10/25/2024 16:02	
Method: USGS I-1750-85							
Total Dissolved Solids	1300	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 12 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733011	Date Collected:	10/23/2024 15:50		Matrix:	Groundwater	
Sample ID:	92-3	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service	
Temp @ Receipt (C):	2.0	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	108	mg/L	25	5		10/30/2024 12:19	
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:06	
Calcium	2.67	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:44	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		10/24/2024 22:07	*
Method: SM4500-Cl-E 2011							
Chloride	5.8	mg/L	2.0	1		10/29/2024 10:06	
Method: SM4500-F-C-2011							
Fluoride	1.56	mg/L	0.1	1		10/25/2024 16:56	
Method: USGS I-1750-85							
Total Dissolved Solids	1180	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733012 **Date Collected:** 10/21/2024 15:56 **Matrix:** Groundwater
Sample ID: 95-4 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	110	mg/L	10	2		10/30/2024 12:20	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:18	
Calcium	2.38	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:49	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		10/24/2024 22:27	*
Method: SM4500-Cl-E 2011							
Chloride	5.7	mg/L	2.0	1		10/29/2024 10:07	
Method: SM4500-F-C-2011							
Fluoride	1.08	mg/L	0.1	1		10/25/2024 17:02	
Method: USGS I-1750-85							
Total Dissolved Solids	1140	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Page 14 of 35

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID:	68733013	Date Collected:	10/22/2024 10:45		Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	10/24/2024 07:29		Collector:	MVTL Field Service		
Temp @ Receipt (C):	2.0	Received on Ice:	Yes					
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual	
Method: ASTM D516-16								
Sulfate	80.2	mg/L	5	1		10/30/2024 12:29		
Method: EPA 6010D								
Boron	0.53	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:20		
Calcium	3.13	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:52		
Method: SM4500 H+ B-2011								
pH	8.4	units	0.1	1		10/24/2024 22:45	*	
Method: SM4500-Cl-E 2011								
Chloride	16.0	mg/L	2.0	1		10/29/2024 10:08		
Method: SM4500-F-C-2011								
Fluoride	1.81	mg/L	0.1	1		10/25/2024 17:08		
Method: USGS I-1750-85								
Total Dissolved Solids	1380	mg/L	10	1		10/24/2024 15:22		

Analysis Results Comments**Nitrate + Nitrite as N**

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary						WO #: 68733			
Sulfate			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPB			100	100.0		85	115		
SPB			100	100.0		85	115		
SPB			100	96.6		85	115		
SPB			100	102.0		85	115		
SPB			100	101.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	6870201		100	94.0	87.3	85	115	1.8	20
MS/MSD	6873305		100	96.6	87.5	85	115	0.6	20
MS/MSD	6878401		100	93.1	89.6	85	115	1.8	20
MS/MSD	6881304		1000	100.0	97.4	85	115	0.9	20
MS/MSD	6881502		1000	94.0	96.3	85	115	1.9	20

Chloride			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPB			30	96.7		90	110		
SPB			30	96.8		90	110		
SPB			30	96.6		90	110		
SPB			30	96.3		90	110		
SPB			30	96.2		90	110		
SPB			30	96.6		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<3.0							
MB		<2.0							
MB		<2.0							

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Account #: 7048

Client: Minnkota Power Cooperative

Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
ML/MSD	68703001		30	98.4	97.4	80	120	0.7	20
ML/MSD	68733003		30	99.9	100.3	80	120	3.2	20
ML/MSD	68843004		30	94.4	95.5	80	120	0.9	20
ML/MSD	68863005		30	101.2	101.6	80	120	0.8	20
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-CE			0.4	100.0		85	115		
LFB-CE			0.4	100.0		85	115		
MB		<0.1							
MB		<0.1							
POU/MSD	67723005		4	90.0	89.4	75	125	0.4	20
POB	67803001		20	104.0		75	125		
ML/MSD	68733001		0.4	100.0	100.0	70	130	2.8	20
ML/MSD	68733011		0.4	98.6	96.0	70	130	1.2	20
ML/MSD	68733013		0.4	93.7	96.4	70	130	2.0	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MB			100	113.0		85	115		
LFB-MB			100	112.0		85	115		
MB		<1							
MB		<1							
DUP	68703001							0.1	20
POU/MSD	68703002		100	105.0	98.5	75	125	3.8	20
DUP	68733001							1.9	20
POU/MSD	68733008		100	108.0	108.0	75	125	0.6	20
DUP	68733012							1.7	20
POU/MSD	68813001		100	107.0	108.0	75	125	1.6	20
pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH		0		98.5		98.59	101.67		
CRM-PH		0		98.7		98.55	101.67		

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Account #: 7048

Client: Minnkota Power Cooperative

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			9	98.9		98.33	101.67		
CRM-PH			9	99.3		98.33	101.67		
CRM-PH			9	99.7		98.33	101.67		
DUP	68702001							13.6	20
DUP	68733003							9.6	20
DUP	68733006							9.7	20
DUP	68851001							9.3	20
Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			1.06	103.0		93.99	111.11		
UFB-F			0.5	94.0		90	110		
UFB-F			0.5	98.0		90	110		
UFB-F			0.5	100.0		90	110		
UFB-F			0.5	100.0		90	110		
NBS-F		<0.1							
NBS-F		<0.1							
NBS-F		<0.1							
NBS-F		<0.1							
MS/MSD	68733008		0.5	100.0	101.0	90	120	16.4	20
MS/MSD	68733012		0.5	98.0	98.0	90	120	0.0	20
MS/MSD	68861005		0.5	91.0	94.0	90	120	6.5	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	99.0		90.35	108.33		
NB		<10							
DUP	68408001							0.7	20
DUP	68702001							0.5	20
DUP	68733012							0.7	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 68733 	Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Fall 2024 Sampled By: <i>Ethan Grosz, Jeremy Meyer</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4			Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	Field Blank 1 (FB1)	22 Oct 24	NA	GW	X	X	X	X			NA	NA	NA	NA	CCWDF CCR Appendix I + CCWDF NDDEQ Parameter List (see attachment)
002	Dup1	21 Oct 24	NA	GW	X	X	X	X			NA	NA	NA	NA	
003	15-01	22 Oct 24	0908	GW	X	X	X	X			7.06	1810	8.58	1.75	
004	15-02	22 Oct 24	0906	GW	X	X	X	X			8.82	1929	8.37	2.03	
005	15-03	22 Oct 24	1430	GW	X	X	X	X			8.86	2037	8.24	1.24	
006	15-04	22 Oct 24	1230	GW	X	X	X	X			8.76	2036	8.47	0.00	
007	15-05	22 Oct 24	1145	GW	X	X	X	X			8.22	2296	8.47	0.00	
008	16-01	22 Oct 24	1330	GW	X	X	X	X			9.04	1754	8.53	10.04	
0															

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
<i>Ethan Grosz</i>	24 Oct 24 0729	Log In Walk In #2	1-6 °C/TM 80- ROI 8/N	<i>Ethan Grosz</i>	24 Oct 24 0805
1					
2					

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Account #: 7048

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720		Chain of Custody Record
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Fall 2024 Sampled By:	

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4					Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
009	18-01	21 Oct 24	1532	GW	X	X	X	X					7.60	243.6	8.33	0.00	CCWDF CCR Appendix I + CCWDF NDDEQ Parameter List (see attachment)
010	18-02	22 Oct 24	1335	GW	X	X	X	X					8.62	171.3	8.42	0.00	
011	92-3	23 Oct 24	1550	GW	X	X	X	X					10.40	163.5	8.54	0.00	
012	95-4	21 Oct 24	1556	GW	X	X	X	X					9.90	164.3	8.61	0.39	
013	2023-1	22 Oct 24	1045	GW	X	X	X	X					8.51	202.9	8.49	2.97	

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
1	24 Oct 24 0729	Log In Walk In #2	2.0 °C/TM 60.5 RO(Y/N)		24 Oct 24 0800
2					

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Account #: 7048

Client: Minnkota Power Cooperative

Minnkota – CCR Detection - 2024

CCWDF CCR DETECTION MONITORING PARAMETER LIST A		
Laboratory pH		SM4500 H+ B
Total Dissolved Solids	mg/l	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Calcium-Total	mg/l	6010
Boron - Total	mg/l	6010
Radium 226/Radium 228	pCi/L	SM7500 Ra-B

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Report Date: Monday, November 11, 2024 9:00:31 AM



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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative

Minnkota – NDDEQ - 2024

CWDF NDDEQ PARAMETER LIST		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium - - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-1
Sampling Personal: Ethan Gress

Weather Conditions: Temp: 50 °F Wind: W @ 15 Precip: Sunny / Partly Cloudy / (Cloudy)

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	134.21 ft
Depth to Top of Pump:	192.43 ft
Well Volume:	45.9 ft
Water Level After Sample:	199.75 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	(YES) NO
Control Settings:	
Purge:	12/18 Sec
Recover:	18/42 Sec
PSI:	
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	YES / NO
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
21 Oct 24	0857	Start of Well Purge									
	0917	8.31	1830	8.46	2.00	123.6	2.11	147.97	300.0	6.0	clear
	0924	8.35	1790	8.53	1.22	133.5	9.26	191.75	300.0	15.0	clear
	0938	Purging Over									
	0943	9.14	1828	8.53	5.11	129.5	3.80	187.18	100.0	500.0	clear
	0848	9.11	1855	8.54	2.31	127.8	6.71	197.46	100.0	500.0	clear
	0853	9.05	1864	8.58	1.55	111.4	9.27	187.75	100.0	500.0	clear
	0858	9.02	1820	8.59	1.39	109.9	6.10	187.46	100.0	500.0	clear
	0903	9.03	1825	8.59	1.57	113.1	3.87	188.29	100.0	500.0	clear
	0908	9.06	1810	8.58	1.64	112.6	1.75	186.51	100.0	500.0	clear
Well Stabilized?		(YES) NO									
									Total Volume Purged: 241 Liters		

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	0908	9.06	1810	8.58		1.75			clear

Comments:	
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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-2
Sampling Personal: J. H.

Weather Conditions: Temp: 50 °F Wind: N @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	126.38 ft
Depth to Top of Pump:	147.90 ft
Well Volume:	12.0 liters
Water Level After Sample:	142.55 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	6 15 Sec.
Recover:	22 45 Sec.
PSI:	100
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
21 Oct 24	0853	Start of Well Purge									
	0913	8.45	1872	8.99	1.34	26.5	7.16	139.10	300.0	6.0	Clear
	0933	8.32	1865	8.56	0.72	81.4	1.15	Below Pump	300.0	6.0	Clear
22 Oct 24		Purged Dry									
	0836	Start of Stabilization Purge									
	0841	9.21	1670	8.43	3.35	173.7	1.45	138.32			
	0846	9.03	1681	8.45	2.06	164.0	4.21	139.40	100.0	0.5	Clear
	0851	8.86	1673	8.42	0.89	145.4	1.91	140.05	100.0	0.5	Clear
	0856	8.70	1920	8.35	0.61	132.0	1.39	140.85	100.0	0.5	Clear
	0901	8.70	1915	8.37	0.75	125.7	1.82	141.32	100.0	0.5	Clear
	0906	8.82	1929	8.37	0.91	122.9	2.03	141.46	100.0	0.5	Clear
Well Stabilized?		YES	NO								
Total Volume Purged:										15.0	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	0906	8.82	1929	8.37		2.03			Clear

Comments:	
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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-3
Sampling Personal: Ethan Gress

Weather Conditions: Temp: 50 °F Wind: NW @ 15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	(YES) NO
Well Labeled?	(YES) NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	109.76 ft
Depth to Top of Pump:	130.10 ft
Well Volume:	12.4 liters
Water Level After Sample:	127.45 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	(YES) NO
Control Settings:	
Purge:	2 / 10 Sec
Recover:	52 / 50 Sec
PSI:	120
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
(YES) / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
21 Oct 24	1212	Start of Well Purge									
	1242	10.67	2103	8.10	0.10	84.2	0.00	118.62	300.0	9.0	Clear
	1252	10.01	2099	8.05	2.04	158.7	0.00	120.89	300.0	3.0	Clear
	1332	10.15	2144	8.11	0.31	108.3	0.01	129.45	300.0	12.0	Clear
	1337	10.04	2076	8.18	0.25	100.2	0.26	126.21	300.0	1.5	Clear
22 Oct 24		Purge dry									
	1400	Stochastic Stabilization									
	1405	9.69	2007	8.30	3.13	114.0	1.78	124.59	100.0	0.5	Clear
	1410	9.07	2001	8.27	3.22	124.0	0.98	125.01	100.0	0.5	Clear
	1415	8.82	2015	8.28	2.33	122.6	0.23	125.29	100.0	0.5	Clear
	1420	8.81	2028	8.28	1.83	114.5	1.45	125.55	100.0	0.5	Clear
Well Stabilized?		(YES)	NO	Total Volume Purged: 28.5 Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	1430	8.88	2037	8.24			1.24				Clear

Comments: FB collected at 1418

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF

Event:

Sample ID: 2015-4

Sampling Personal: JH

Weather Conditions: Temp: 50 °F Wind: W @ 15-20 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	120.96	ft
Depth to Top of Pump:	132.60	ft
Well Volume:	7.3	liters
Water Level After Sample:	130.22	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO

Control Settings:
Purge: 10 / 12 Sec
Recover: 20 / 45 Sec
PSI: 90

Bottle List:
1 Liter Raw
500ml Nitric
500ml Nitric (filtered)
250ml Sulfuric

Duplicate Sample?
YES / NO
Duplicate Sample ID:

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0			clear, slightly turbid, turbid
21 Oct 24	1040	Start of Well Purge								
	1108	9.52	1971	8.54	0.04	-243.4	1.18	126.25	300.0	6.0 Clear
	1115	9.57	1977	8.49	0.08	-241.5	0.37	Below	300.0	3.0 Clear
		Purged Dry								
22 Oct 24	1210	Start of 6 Stroke 120 Stroke Purge								
	1215	9.48	2033	8.45	1.61	94.5	0.00	127.6	100.0	0.5 Clear
	1220	8.87	2036	8.48	0.26	-5.0	0.00	127.44	100.0	0.5 Clear
	1225	8.79	2039	8.47	2.32	3.9	0.00	128.29	100.0	0.5 Clear
	1230	8.76	2036	8.46	1.36	-2.1	0.00	128.78	100.0	0.5 Clear

Well Stabilized? YES NO

Total Volume Purged: 11.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	1236	8.76	2036	8.47	0.00	

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-5
Sampling Personal: Ethan Greiss

Weather Conditions: Temp: 50 °F Wind: W @ 15-20 Precip: Sunny / Partly Cloudy / (Cloudy)

WELL INFORMATION	
Well Locked?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	150.41 ft
Depth to Top of Pump:	166.05 ft
Well Volume:	9.6 ft
Water Level After Sample:	154.42 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Control Settings:	
Purge:	7 / 15 Sec
Recover:	53 / 45 Sec
PSI:	120
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)	ml/min	Removed	clear, slightly turbid, turbid
20 Oct 24											
Start of Well Purge											
1035	9:21	24.26	8.28	0.25	57.4	0.19	160.07	300.0	12.0	Clear	
1135	9:33	24.14	8.27	0.27	60.5	0.07	163.80	300.0	6.0	Clear	
1155	9:43	23.86	8.50	0.11	2.8	0.00	160.00	300.0	5.0	Clear	
Purged dry											
22 Oct 24											
1120	Start of Sample	23.29	8.37	1.79	73.6	0.10	150.11	100.0	1.0	Clear	
1130	8:32	23.14	8.45	0.76	62.9	0.00	152.54	100.0	0.5	Clear	
1140	8:32	23.13	8.47	0.62	52.7	0.00	152.89	100.0	0.5	Clear	
1155	8:32	22.96	8.47	0.36	55.0	0.00	153.51	100.0	0.5	Clear	
Well Stabilized? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO											
Total Volume Purged: 26.5 Liters											
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
22 Oct 24	1145	8.32	22.96	8.47			0.00				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2016-1
Sampling Personal: JH

Weather Conditions: Temp: 50 °F Wind: NW @ 15-20 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	127.85 ft
Depth to Top of Pump:	146.10 ft
Well Volume:	12.5 liters
Water Level After Sample:	152.24 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	10 / 10 Sec.
Recover:	20 / 50 Sec.
PSI:	90
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
24 Oct 24	1132	Start of Well Purge									
	1152	9.32	1716	8.54	0.35	-153.2	2.32	147.30	300.0	9.0	Clear
	1212	9.30	1776	8.40	0.49	-113.5	9.12	Below Pump	300.0	9.0	Clear
		Purged - Done									
	1255	Start of Chlorine Disinfection									
	1305	9.37	1762	8.49	2.59	110.3	9.05	129.49	100.0	1.0	Clear
	1310	9.29	1759	8.49	2.11	117.1	7.16	129.95	100.0	0.5	Clear
	1315	9.23	1759	8.49	1.98	115.2	9.03	130.33	100.0	0.5	Clear
	1320	9.19	1756	8.50	1.92	116.9	10.90	130.62	100.0	0.5	Clear
	1325	9.08	1758	8.50	1.63	106.7	13.82	130.89	100.0	0.5	Clear
	1330	9.04	1754	8.53	1.54	89.0	10.01	131.02	100.0	0.5	Clear
Well Stabilized?		YES NO	Total Volume Purged: 21.5 Liters								

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	1330	9.04	1754	8.53		10.04			Clear

Comments:

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Report Date: Monday, November 11, 2024 9:00:31 AM



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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



Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2018-1
Sampling Personal: Ethan Gross

Weather Conditions: Temp: 55 °F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	174.17 ft
Depth to Top of Pump:	186.35 ft
Well Volume:	7.5 liters
Water Level After Sample:	186.35 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	8 / 7 Sec.
Recover:	52 / 53 Sec.
PSI:	120 / 100
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
210224	1407	Start of Well Purge									
	1432	7.57	2437	8.37	0.08	-165.8	0.34	178.91	300.0	7.5	Clear
	1457	9.54	2424	8.36	0.11	-172.4	2.52	180.65	300.0	7.5	Clear
	1522	9.69	2434	8.36	0.07	-174.3	1.84	182.03	300.0	7.5	Clear
	1527	9.58	2440	8.35	0.06	-174.4	0.00	182.44	300.0	1.5	
	1532	9.60	2436	8.33	0.06	-177.5	0.00	182.86	300.0	1.5	
Well Stabilized?		YES	NO	Total Volume Purged: 25.5 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
210224	1532	9.60	2436	8.33			0.00				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2018-2
Sampling Personal: JH

Weather Conditions: Temp: 45 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	152.75 ft
Depth to Top of Pump:	149.40 ft
Well Volume:	28.7 liters
Water Level After Sample:	155.00 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	10 Sec.
Recover:	20 Sec.
PSI:	100
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	
—	

Stabilization Parameters		Temp.	Spec.	pH	DO	ORP	Turbidity	Water Level	Pumping	Liters	Appearance or Comment
(3 Consecutive)		(°C)	Cond.		(mg/L)	(mV)	(NTU)	(ft)	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0		ml/Min		clear, slightly turbid, turbid
22 Oct 23	0930	Start of Well Purge									
	1140	8.65	1659	8.43	0.45	-113.6	0.00	154.75	300.0	30.0	Clear
	1320	8.62	1739	8.42	0.41	-123.0	0.40	154.90	300.0	30.0	Clear
	1335	8.59	1724	8.42	0.42	-123.6	0.00	154.92	100.0	0.5	Clear
	1330	8.61	1741	8.42	0.45	-121.5	0.15	154.95	100.0	0.5	Clear
	1335	8.62	1713	8.42	0.45	-121.6	0.00	154.96	100.0	0.5	Clear
Well Stabilized?		YES	NO								
		Total Volume Purged: 61.5									Liters

Sample Date	Time	Temp.	Spec.	pH		Turbidity		Appearance or Comment
		(°C)	Cond.			(NTU)		Clarity, Color, Odor, Ect.
22 Oct 24	1335	8.62	1713	8.42		0.00		Clear

Comments:	
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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: 1-9/1 2024
Sample ID: 92-3
Sampling Personal: Char Gross

Weather Conditions: Temp: 60 °F Wind: NW @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	91.11 ft
Depth to Top of Pump:	149.5 ft
Well Volume:	36.0 liters
Water Level After Sample:	92.74 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	8/5/8 Sec
Recover:	52/55/52 Sec
PSI:	100psi / 90
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / (NO)	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
Start of Well Purge											
210x24	0930										
230x24	1130	9.00	1638	8.63	0.00	-267.0	0.00	103.02	500.0	36.0	Clear
	1330	9.10	1629	8.60	0.00	-252.1	0.07	104.60	300.0	36.0	Clear
	1530	9.18	1627	8.62	0.00	-249.2	0.00	102.85	300.0	36.0	Clear
	1535	9.04	1624	8.62	0.04	-245.2	0.00	103.18	100.0	0.5	Clear
	1540	10.68	1622	8.61	0.31	-207.8	0.00	102.39	100.0	0.5	Clear
	1545	10.31	1626	8.59	0.32	-204.6	0.00	101.11	100.0	0.5	Clear
	1550	10.10	1633	8.59	0.35	-200.2	0.00	100.56	100.0	0.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 110.0 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
230x24	1550	10.40	1635	8.59			0.00				Clear
Comments: Original start was supposed to be 0210x24. Due to time it would take we moved it to 230x24											

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave., Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2023-1
Sampling Personal: J. H.

Weather Conditions: Temp: 40 °F Wind: 15-20 @ W Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	207.56 ft
Depth to Top of Pump:	228.10 ft
Well Volume:	12.6 liters
Water Level After Sample:	214.65 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	10 / 30 Sec
Recover:	20 / 30 Sec
PSI:	110
Bottle List:	
1 Liter Raw 500ml Nitric 500ml Nitric (filtered) 250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
21 Oct 24	0946	Start of Well Purge									
	1016	9.26	1496	8.42	0.25	-153.0	3.18	210.00	300.0	9.0	Clear
	1036	9.34	1496	8.40	0.23	-157.7	3.19	Below Pump	300.0	9.0	Clear
22 Oct 24		Purged Dry									
	1000	Start of Stabilization Purge									
	1005	9.13	2013	8.42	1.93	124.9	2.25	209.62	100.0	0.5	Clear
	1010	8.66	2021	8.45	1.14	106.0	2.62	210.61	100.0	0.5	Clear
	1015	8.65	2020	8.46	0.79	84.0	4.36	211.64	100.0	0.5	Clear
	1020	8.58	2030	8.47	0.74	-14.6	4.39	211.75	100.0	0.5	Clear
	1025	8.45	2028	8.48	0.08	-66.7	3.20	212.09	100.0	0.5	Clear
	1030	8.62	2035	8.48	0.49	-88.4	2.78	212.58	100.0	0.5	Clear
		Well Stabilized? (YES) NO									
		Total Volume Purged: 22.5 Liters									

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)		Appearance or Comment Clarity, Color, Odor, Ect.
22 Oct 24	1045	8.51	2029	8.49		2.47		Clear

Comments:

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Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				
22 Oct 24	10:25	8.65	2032	8.48	0.40	-107.6	3.67	213.01	100.0	0.5	Clear
	10:40	8.63	2035	8.48	0.40	-114.9	2.52	213.42	100.0	0.5	Clear
	10:45	8.51	2029	8.49	0.33	-117.4	2.97	213.71	100.0	0.5	Clear
Comments:		Continued from 1st Field Datasheet									