2022 Annual Groundwater Monitoring and Corrective Action Report and Semi-Annual Remedy Selection and Design Progress Report

for Compliance with the Coal Combustion Residuals (CCR) Rule

Valmont Station

Public Service Company of Colorado

January 31, 2023

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Table of Abbreviations and Acronyms

Abbreviation	Definition
BTV	background threshold value
CCR	coal combustion residuals
COI	constituent of interest
EPA	Environmental Protection Agency
LCL	lower confidence limit
LCS	laboratory control samples
MS/MSD	matrix spike/duplicate
PSCo	Public Service Company of Colorado
QC	quality control
RPD	relative percent difference
SOP	standard operating procedure
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
TSS	total suspended solids
UCL	upper confidence limit

Certification

2022 Groundwater Monitoring Annual Report for Valmont Station

I hereby certify to the best of my knowledge that this groundwater monitoring annual report is designed to meet the performance standard in 40 CFR Part 257 of the Federal Coal Combustion Residuals (CCR) Rule.

I am duly licensed Professional Engineer under the laws of the State of Colorado.

Matthew Rohr, PE
Colorado PE License 0053467
License renewal date October 31, 2023

Signed January 31, 2023

Summary of 40 CFR Section § 257.90(e)(6) Groundwater Monitoring System Requirements and Site-Specific Compliance at Valmont Station				
§ 257.90(e)(6) *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*:		**Landfill Status**	**Former Bottom Ash Impoundments Status**	**Former Settling Pond Status**
§257.90(e)(6)(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.*	Assessment Monitoring Program and Evaluation of Potential Remedies	Assessment Monitoring Program and Evaluation of Potential Remedies	Assessment Monitoring Program (Clean Closure Criteria Met in 2021)*
§257.90(e)(6)(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.*	Assessment Monitoring Program and Evaluation of Potential Remedies	Assessment Monitoring Program and Evaluation of Potential Remedies	Clean Closure Complete
§257.90(e)(6)(iii)	*If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):*	Yes	Yes	Yes
§257.90(e)(6)(iii)(A)	*Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase.* (These SSIs are from the original triggering event.)	• MW-1 - calcium, chloride • MW-3 - boron, calcium, sulfate, TDS • MW-4 - calcium, chloride, fluoride, pH, sulfate, TDS • MW-6 - calcium, chloride, TDS • MW-8 - calcium, chloride, sulfate, TDS	• MW-9 – boron, fluoride, sulfate, TDS • MW-10 (since abandoned) - boron, fluoride, sulfate, TDS • MW-11 - boron, fluoride, pH, sulfate, TDS • MW-12 - boron, calcium, pH, TDS	• MW-19B – boron, chloride
§257.90(e)(6)(iii)(B)	*Provide the date when the assessment monitoring program was initiated for the CCR unit.*	February 21-29, 2018	February 22-23, 2018	July 22, 2019
§257.90(e)(6)(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:*	Yes	Yes	No
§257.90(e)(6)(iv)(A)	*Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase.* (These are the 2022 SSLs)	• MW-3 - lithium • MW-4 – lithium • MW-5 – lithium • MW-6 - lithium • MW-8 – lithium • MW-13 - lithium, selenium • MW-14 – lithium, selenium • MW-15 – selenium • MW-16 – selenium • MW-21 – lithium, selenium • MW-28 –lithium, selenium	• MW-9 – cobalt, molybdenum • MW-11 – cobalt • MW-12 - cobalt	N/A
§257.90(e)(6)(iv)(B)	*Provide the date when the assessment of corrective measures was initiated for the CCR unit.*	January 7, 2019	January 7, 2019	N/A
§257.90(e)(6)(iv)(C)	*Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.*	Will be held 30 days prior to remedy selection	Will be held 30 days prior to remedy selection	N/A

§257.90(e)(6)(iv)(D)	*Provide the date when the assessment of corrective measures was completed for the CCR unit.*	June 6, 2019	June 6, 2019	N/A
§257.90(e)(6)(v)	*Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection.*	Evaluation of potential remedies ongoing	Evaluation of potential remedies ongoing	N/A
§257.90(e)(6)(vi)	*(vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.*	Evaluation of potential remedies ongoing	Source removal complete in September 2018 Evaluation of potential remedies ongoing	N/A

*Groundwater results were below groundwater protection standards in 2021 and final clean closure report published in May 2022.

1.0 Introduction

The U.S. Environmental Protection Agency's (EPA) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Valmont Station, located in Boulder County, Colorado (**Figure 1**), is owned and operated by Public Service Company of Colorado (PSCo), an Xcel Energy Company. Valmont Station has four CCR facilities subject to the CCR Rule: the ash landfill, two former incised bottom ash impoundments, and a former ash settling pond (**Figure 2**). The Settling Pond was excavated in 2017 and completion of clean closure was documented in the Valmont Station Inactive Impoundment Closure Certification (HDR 2022). The bottom ash impoundments represent one CCR multi-unit and were excavated in 2018; each were physically closed by removal of CCR, with ongoing groundwater monitoring.

In 2022, groundwater monitoring was conducted at Valmont to collect assessment monitoring samples at the landfill and former Bottom Ash Impoundments as specified under Part 257.95. This Annual Groundwater Monitoring Report presents the sampling and analysis completed in 2022:

- The status of the groundwater monitoring program for the landfill at the end of 2022 is assessment monitoring and evaluation of potential remedies.
- The status of the groundwater monitoring program for the (physically closed) Bottom Ash Impoundments at the end of 2022 is assessment monitoring and evaluation of potential remedies.
- The status of the groundwater monitoring program for the (clean closed) Settling Pond at the end of 2022 is closure complete.

2.0 Facility Description

Valmont Station was a coal-fired, steam turbine electric generating station that burned sub-bituminous, low-sulfur coal supplied by several mines in western Colorado. Valmont Station was retired from operations on September 30, 2017. During the active operations, two incised bottom ash impoundments (3A and 3B) were used for temporary storage of bottom ash prior to final disposition. Fly ash was dry handled and trucked either off site for beneficial use, or to the on-site ash landfill. The landfill is located adjacent to and north of Leggett Reservoir, and the former impoundments are to the southeast of Leggett Reservoir (**Figure 2**). The reservoirs surrounding the impoundments are privately developed, owned, and operated by PSCo, and contain 'water withdrawn for use' for treatment purposes and are not considered Waters of the United States (WOUS) or state waters. During operations, the impoundments were periodically dredged, and the bottom ash disposed in the on-site landfill. Both ash impoundments were physically closed by final removal of all CCR, which was completed in September 2018;

completion of CCR removal was certified by a Professional Engineer. The CCR waste removed during closure was disposed in the on-site landfill.

The former Settling Pond is located on the west side of Leggett Reservoir and was constructed in 1973 with a PVC liner (**Figure 2**). It was used for bottom ash settling from 1973 to 1980. The pond was physically closed by removal of all CCR and liner material, which was completed in July 2017; completion of CCR removal was certified by a Professional Engineer. After the April-May 2021 sampling event, the groundwater monitoring program conducted at the Settling Pond met the requirement for verification that groundwater monitoring concentrations do not exceed the groundwater protection standards (GPS) established pursuant to 257.95(h) for constituents listed in the CCR Rule Appendix IV. Therefore, the Settling Pond met the clean closure requirements of 40 CFR 257.102(c), closure is complete and groundwater sampling is no longer required. The final clean closure certification report was published in May 2022 (HDR, 2022).

The monitoring of all the CCR units are described further in the Valmont Station Groundwater Monitoring System Certification (HDR, 2021).

2.1 Hydrogeology

2.1.1 Landfill

The ash landfill at Valmont Station is located on the flanks of Valmont Butte on weathered shale above the consolidated bedrock Pierre Shale. The Pierre Shale is a claystone with interbeds of siltstone and discontinuous cemented layers of bedrock that is approximately 2,000 feet thick in this area. The thickness of weathered bedrock under the ash fill and over the consolidated bedrock varies from 5 to 15 feet. Due to the Pierre Shale thickness and low permeability, underlying formations do not receive significant recharge from above (Kumar and Associates, Inc., 2011). There is perched water beneath the landfill and coincident with the top of the Pierre Shale and the water surface of Leggett Reservoir. The shallow groundwater flow beneath the landfill follows the topography and is generally to the south-southeast in the eastern portion of the landfill, to the northeast in the northeastern portion of the landfill, and to the southwest under the western portion of the landfill (**Figure 2**), as compared with the regional, deeper water table that flows to the northwest (APEX, 2008; Xcel, 2009).

2.1.2 Impoundments

The groundwater levels in monitoring wells around former impoundments 3A and 3B coincide with the fluctuation of the water levels in Leggett Reservoir. The reservoir and the groundwater surface around the impoundments are perched above the Pierre Shale.

2.2 Monitoring Well Network

2.2.1 Landfill

Groundwater flow is to the northeast in the northeastern portion of the landfill, flow is to the south-southeast within the southeastern portion of the facility and to the south-southwest at the western portion of the facility (**Appendix A**). Generally, groundwater flow is from the topographic high ridge area at the northwestern portion of the landfill and flows radially out

towards topographic lows and towards Leggett Reservoir. Well location MW-7 is on the northwest side of the landfill, is located upgradient of the landfill and serves as the background well. There are 12 downgradient monitoring wells at the waste boundary (MW-1, MW-3, MW-4, MW-6, MW-8, MW-13, MW-14, MW-15, MW-21, MW-25B, MW-27, and MW-28) (**Figure 2**). In addition, there are wells that were installed as nature and extent wells further downgradient as perimeter wells and/or for plume characterization, some of which are off property and required landowner agreements (MW-16, MW-26, MW-29, MW-30, MW-31, MW-32, MW-33A, MW-33B, MW-34, MW-35, MW-36, MW-37, MW-38A, MW-38B, MW-38C, MW-39A, MW-39B, MW-40, MW-41, MW-42, MW-43). Three additional locations (MW-2, MW-24, and PZ-1) are monitored for water levels only (**Figure 2**).

In 2022 the following updates were made to the well monitoring network associated with the landfill:

- new wells installed in April 2022: MW-36, MW-37,
- new wells installed in June 2022: MW-38A, MW-38B, MW-38C,
- new wells installed in August 2022: MW-39A, MW-39B,
- well MW-25B was pulled and reset in the same hole in August 2022 due to casing damage,
- new piezometer installed in November 2022: PZ-1,
- new wells installed in December 2022: MW-40, MW-41, MW-42, and MW-43.

No wells were abandoned in 2022. Well MW-38A-C are located outside of Valmont's property boundary on the adjacent Valmont Butte property owned by the City of Boulder. PSCo notified the City of Boulder in 2021 of the findings that groundwater had the potential to be transporting contaminants under the City of Boulder property from the northeast area of the landfill. Wells MW-39A-B are located on private property north of Valmont Butte Road. Wells on the Valmont Butte property and north were installed to help characterize offsite movement of constituents of concern (those constituents that exceed GPS), particularly to the north from the landfill. Wells MW-34, MW-35, MW-36, and MW-37 are located within the PSCo property boundary and were also installed to assess movement of constituents of concern and groundwater flow direction. Wells MW-40, MW-41, MW-42, and MW-43 on the west side of landfill cell Q and offsite to the west were installed to help characterize the potential for offsite movement of constituents of concern to the west from the western portion of the landfill.

2.2.2 Bottom Ash Impoundments

Four wells are in the monitoring network for CCR compliance of the (closed) bottom ash impoundments. The flow of groundwater in the immediate vicinity of the former impoundments (3A and 3B) appears to be controlled by the water level in Leggett Reservoir. Therefore, three wells (MW-9, MW-11, MW-12) comprising a multi-unit monitoring network for the two impoundments are located along what used to be the perimeter of the impoundments to serve as downgradient wells (**Figure 2**). The well MW-1P is the background well based upon its location approximately 300 feet south of the impoundments and separation from the impoundments by Leggett Reservoir, as described in the Groundwater Monitoring System Certification report (HDR, 2021).

No wells associated with the former ash impoundment monitoring network were installed or abandoned in 2022.

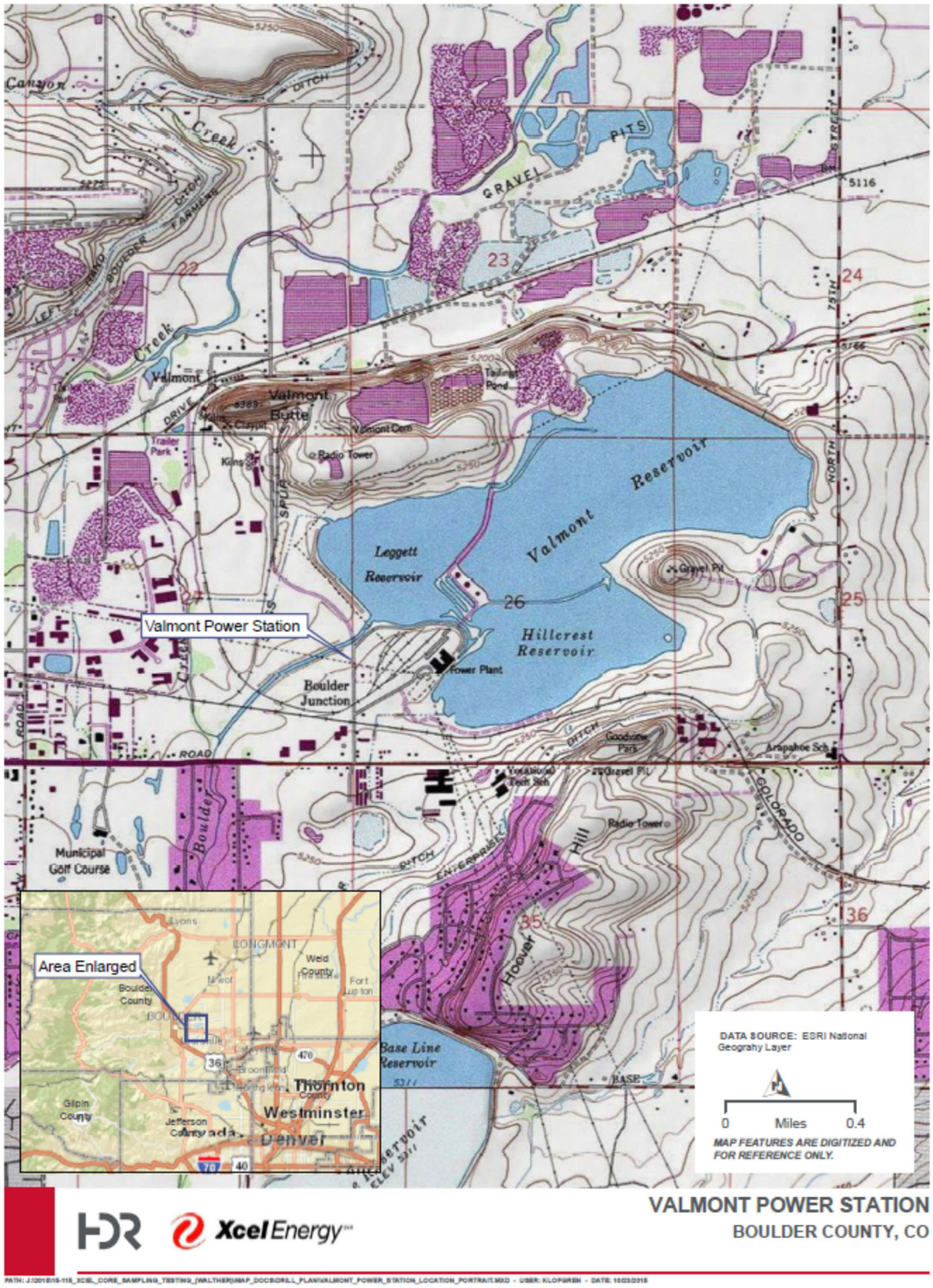


Figure 1. Vicinity Map for Valmont Station

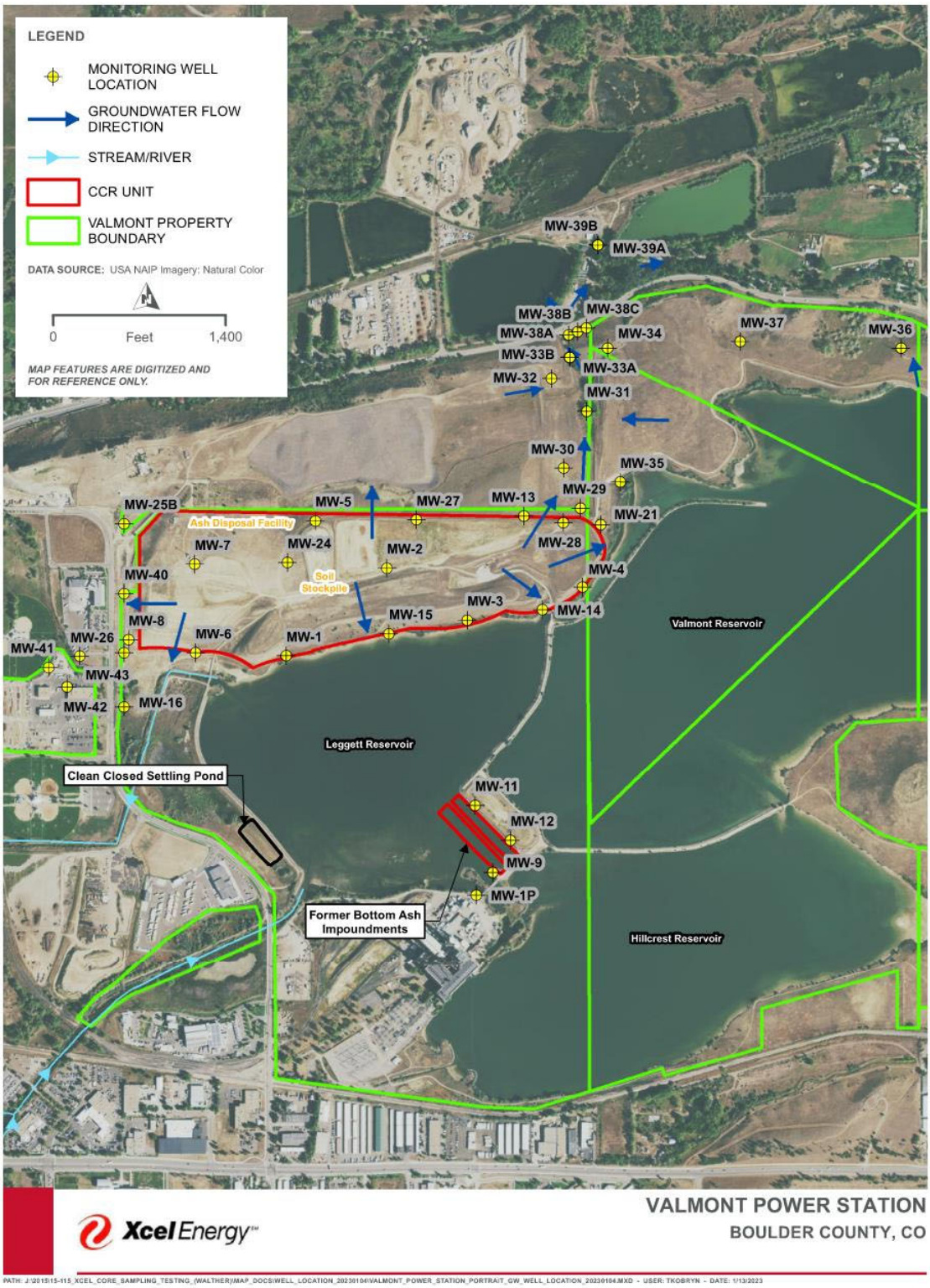


Figure 2. Valmont Station – CCR Units and Monitoring Well Location Map

3.0 Monitoring

3.1 Frequency

3.1.1 Landfill

Assessment monitoring continued in 2022 for the landfill. Assessment monitoring events were completed April and October/November 2022. The assessment monitoring events sample monitoring wells for listed in Appendix III and IV to 40 CFR Part 257, plus TSS (**Table 1**). **Table 2** provides the well identification, number of samples collected, dates samples were collected in 2022, and the CCR Rule monitoring purpose. During release characterization monitoring events (also referred to as background monitoring events), groundwater is also analyzed for the constituents of interest (COIs) in **Table 1**.

Table 1. Groundwater Quality Parameters

Appendix III Constituents	Appendix IV Constituents
Boron	Antimony
Calcium	Arsenic
Chloride	Barium
Fluoride	Beryllium
pH	Cadmium
Sulfate	Chromium
Total Dissolved Solids (TDS)	Cobalt
Additional Parameters	Fluoride
Total Suspended Solids (TSS)	Lead
	Lithium
	Mercury
	Molybdenum
	Selenium
	Thallium
	Radium 226 and 228 combined

Private Well Sampling

In addition to the landfill monitoring well network sampling described in **Table 2**, ten private wells offsite to the north of Valmont Road were sampled between December 2021 and October 2022 after PSCo received approvals from landowners. As soon as an exceedance of GPS was identified in MW-33, PSCo initiated contact with downgradient private well owners to sample their wells and/or taps to evaluate any potential risk to these private well owners downgradient of the landfill. As discussed further in 4.2.1, there were no constituent concentrations above the GPS in private well water at the household tap. The area within which private wells were sampled is displayed in **Figure 3**.

Table 2. Number and dates of groundwater samples collected for each well and the required monitoring programs for the Valmont Landfill (257.90(e)(3))

Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-1	Downgradient	April 20, 2022	Assessment Monitoring
		October 5, 2022	Assessment Monitoring
MW-3	Downgradient	April 25, 2022	Assessment Monitoring
		October 6, 2022	Assessment Monitoring
MW-4	Downgradient	April 29, 2022	Assessment Monitoring
		October 4, 2022	Assessment Monitoring
MW-5	Downgradient	May 9, 2022	Assessment Monitoring
		December 15, 2022	Assessment Monitoring
MW-6	Downgradient	April 25, 2022	Assessment Monitoring
		October 5, 2022	Assessment Monitoring
MW-7	Upgradient / Background	April 21, 2022	Assessment Monitoring
		October 6, 2022	Assessment Monitoring
MW-8	Downgradient	April 25, 2022	Assessment Monitoring
		December 15, 2022	Assessment Monitoring
MW-13	Downgradient	January 7, 2022	Release Characterization Assessment^
		April 21, 2022	Annual Assessment Monitoring
		July 20, 2022	Release Characterization Assessment
		October 4, 2022	Assessment Monitoring
MW-14	Downgradient	April 26, 2022	Assessment Monitoring
		October 14, 2022	Assessment Monitoring
MW-15	Downgradient	April 21, 2022	Assessment Monitoring
		October 13, 2022	Assessment Monitoring
MW-16	Downgradient	April 25, 2022	Assessment Monitoring
		October 14, 2022	Assessment Monitoring
MW-21	Downgradient	January 4, 2022	Release Characterization Assessment
		April 21, 2022	Assessment Monitoring
		July 20, 2022	Release Characterization Assessment
		October 7, 2022	Assessment Monitoring
MW-25B	Downgradient	April 29, 2022	Assessment Monitoring

Table 2. Number and dates of groundwater samples collected for each well and the required monitoring programs for the Valmont Landfill (257.90(e)(3))			
Monitoring Well I.D.	**Well Location**	**Dates Monitored**	**CCR Rule Monitoring Purpose**
		October 15, 2021	Assessment Monitoring
MW-26	Downgradient	April 25, 2022	Assessment Monitoring
		October 17, 2022	Assessment Monitoring
MW-27	Downgradient	January 7, 2022	Release Characterization Assessment
		April 21, 2022	Assessment Monitoring
		July 21, 2022	Release Characterization Assessment
		October 18, 2022	Assessment Monitoring
MW-28	Downgradient	January 7, 2022	Release Characterization Assessment
		April 21, 2022	Assessment Monitoring
		July 22, 2022	Release Characterization Assessment
		October 11, 2022	Assessment Monitoring
MW-29	Downgradient	January 10, 2022	Release Characterization Assessment
		April 28, 2022	Assessment Monitoring
		July 22, 2022	Release Characterization Assessment
		October 28, 2022	Assessment Monitoring
		December 6, 2022	Release Characterization Assessment
MW-30*	Downgradient	January 10, 2022	Release Characterization Assessment
		April 26, 2022	Annual Assessment Monitoring
		July 21, 2022	Release Characterization Assessment
		October 26, 2022	Assessment Monitoring
		December 6, 2022	Release Characterization Assessment
MW-31	Downgradient	January 10, 2022	Release Characterization Assessment
		April 22, 2022	Assessment Monitoring
		July 22, 2022	Release Characterization Assessment
		October 28, 2022	Assessment Monitoring
		December 6, 2022	Release Characterization Assessment
MW-32	Downgradient	January 10, 2022	Release Characterization Assessment
		April 22, 2022	Assessment Monitoring
		July 25, 2022	Release Characterization Assessment

Table 2. Number and dates of groundwater samples collected for each well and the required monitoring programs for the Valmont Landfill (257.90(e)(3))

Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
		October 26, 2022	Assessment Monitoring
		December 5, 2022	Release Characterization Assessment
MW-33A	Downgradient	January 11, 2022	Release Characterization Assessment
		April 28, 2022	Assessment Monitoring
		July 25, 2022	Release Characterization Assessment
		October 27, 2022	Assessment Monitoring
		December 5, 2022	Release Characterization Assessment
MW-33B*	Downgradient	January 11, 2022	Release Characterization Assessment
		April 28, 2022	Assessment Monitoring
		July 26, 2022	Release Characterization Assessment
		December 1, 2022	Assessment Monitoring
		December 9, 2022	Release Characterization Assessment
MW-34*	Downgradient	January 4, 2022	Release Characterization Assessment
		April 26, 2022	Assessment Monitoring
		July 27, 2022	Release Characterization Assessment
		October 27, 2022	Assessment Monitoring
		December 8, 2022	Release Characterization Assessment
MW-35	Downgradient	January 11, 2022	Release Characterization Assessment
		April 26, 2022	Assessment Monitoring
		July 27, 2022	Release Characterization Assessment
		October 27, 2022	Assessment Monitoring
		December 8, 2022	Release Characterization Assessment
MW-36 (installed April 6, 2022)	Downgradient	April 29, 2022	Assessment Monitoring
		July 21, 2022	Release Characterization Assessment
		December 6, 2022	Release Characterization Assessment
MW-37 (installed April 7, 2022)	Downgradient	July 26, 2022	Release Characterization Assessment
		December 7, 2022	Release Characterization Assessment
MW-38A (installed June 17, 2022)	Downgradient	Dry	Dry
	Downgradient	July 28, 2022	Release Characterization Assessment

Table 2. Number and dates of groundwater samples collected for each well and the required monitoring programs for the Valmont Landfill (257.90(e)(3))

Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-38B (installed June 20, 2022)		November 1, 2022	Assessment Monitoring
		December 8, 2022	Release Characterization Assessment
MW-38C (installed June 21, 2022	Downgradient	July 28, 2022	Release Characterization Assessment
		October 31, 2022	Assessment Monitoring
		December 8, 2022	Release Characterization Assessment
MW-39A (installed August 12, 2022)	Downgradient	Not sampled	N/A
MW-39B (installed August 12, 2022)	Downgradient	October 5, 2022	Release Characterization Assessment
		October 13, 2022	Assessment Monitoring
		December 9, 2022	Release Characterization Assessment
PZ-1 (installed November 4, 2022)	Downgradient	Not Sampled	Water Level
MW-40 (installed December 15, 2022)	Downgradient	Not sampled	N/A
MW-41 (installed December 16, 2022)	Downgradient	Not sampled	N/A
MW-42 (installed December 27, 2022)	Downgradient	Not sampled	N/A
MW-43 (installed December 28, 2022)	Downgradient	Not sampled	N/A

* Wells marked with an asterisk are completed in consolidated shale; groundwater elevations are 10-40 feed deeper than the weathered shale wells.
^Release characterization monitoring is equivalent to background monitoring – this is sampling completed after well installation at an increased frequency than semiannual assessment monitoring in effort to expedite 8 rounds of sample results to allow for statistical comparisons.

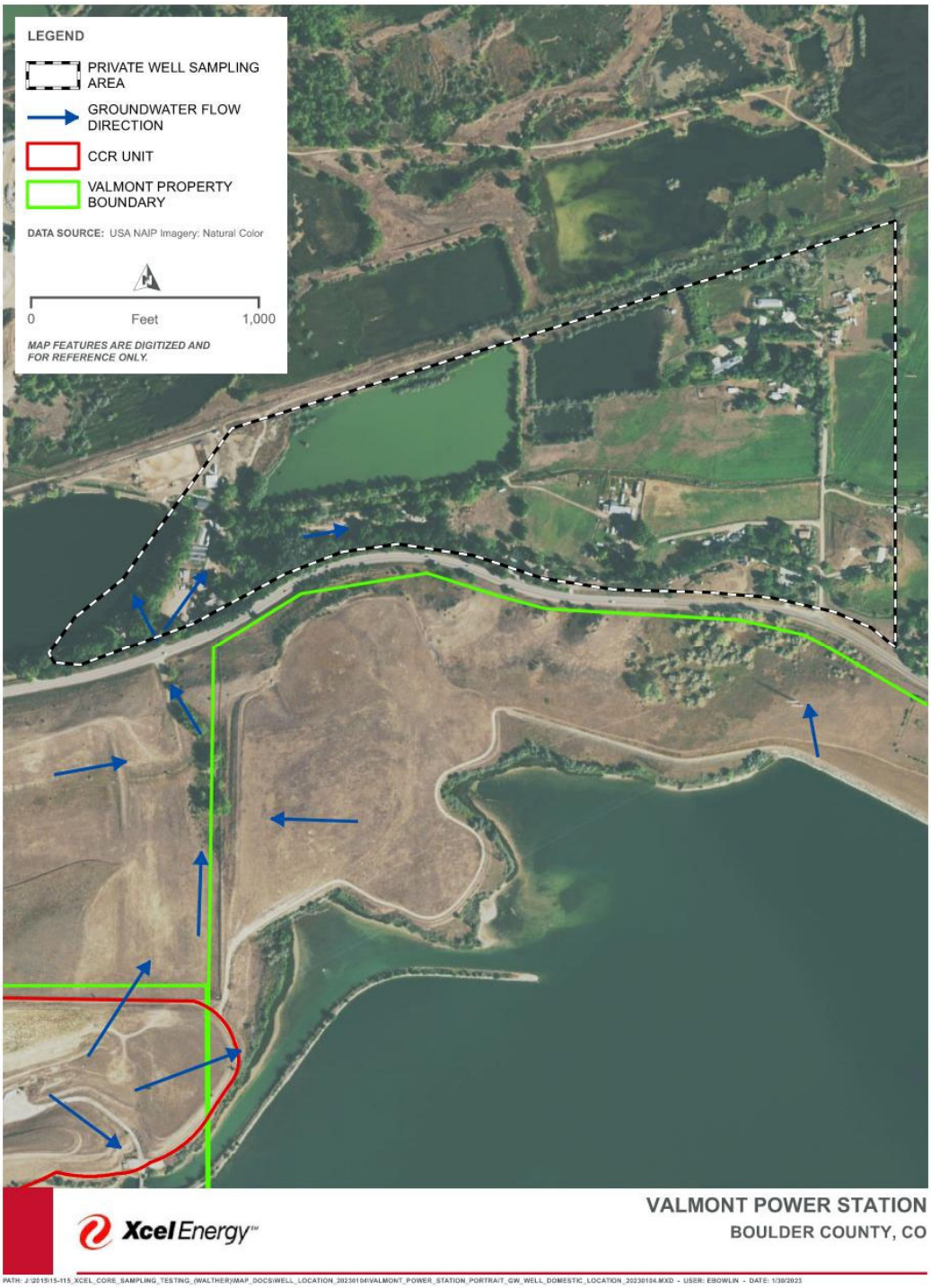


Figure 3. Valmont Station – Area of Private Well Sampling

3.1.2 Bottom Ash Impoundments

Assessment monitoring continued in 2022 for the former bottom ash impoundments, completed April 26-May 13 and October 13-14, 2022. Samples were collected from the monitoring network of wells (MW-1P, MW-9, MW-11, and MW-12). **Table 3** provides the well identification, number of samples collected, dates samples were collected in 2022, and whether the sample was required by the detection monitoring or assessment monitoring programs (per (257.90(e)(3))).

Table 3. Number and dates of groundwater samples collected for each well and the required monitoring programs for the Valmont (Closed) Bottom Ash Impoundments (257.90(e)(3))

Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-1P	Upgradient/ Background	April 25, 2022	Assessment Monitoring (Post-CCR Removal)
		October 19, 2022	Assessment Monitoring (Post-CCR Removal)
MW-9	Downgradient	April 20, 2022	Assessment Monitoring (Post-CCR Removal)
		October 19, 2022	Assessment Monitoring (Post-CCR Removal)
MW-11	Downgradient	April 25, 2022	Assessment Monitoring (Post-CCR Removal)
		October 19, 2022	Assessment Monitoring (Post-CCR Removal)
MW-12	Downgradient	April 26, 2022	Assessment Monitoring (Post-CCR Removal)
		October 20, 2022	Assessment Monitoring (Post-CCR Removal)

3.2 Water Levels and Sample Collection

Water levels were collected in each well prior to sample collection. Groundwater sample collection protocols follow the Groundwater Sample Collection Standard Operating Procedure (SOP) (HDR, 2015). The water samples were collected using a submersible Geotech SS Geosub pump or bailer, and the equipment was decontaminated between wells following protocols outlined in the Sampling SOP. Each well was purged until field parameters stabilized in accordance with the sampling SOP. In accordance with the CCR Rule, groundwater samples were not field filtered. The field parameters of turbidity, pH, and temperature were measured using a YSI Professional Plus (or an equivalent) portable water quality instrument that was calibrated prior to use each day of sampling. The results of field measurements were recorded on a field data form, which is maintained as part of the field sampling records. For quality control, one field duplicate sample and one field equipment blank sample was collected during each sample event. Water samples were delivered under Chain of Custody to Test America in Denver, Colorado.

3.3 Analytical Testing

Groundwater samples for each type of monitoring were analyzed for Appendix III and Appendix IV COIs listed in **Table 1**. In addition, general water quality parameters were also requested, including magnesium, potassium, sodium, and alkalinity. In cases when purging does not result in turbidity below 10 NTU, dissolved metal analysis was also requested from the laboratory. The laboratory analyzed matrix spike/matrix spike duplicates at a rate of 5 percent, per laboratory quality control procedures.

At the landfill, release characterization wells MW-29 through MW-33A/B and MW-38A/B/C are located offsite and required a landowner agreement. Under the terms of that agreement, these wells were analyzed only for the three constituents of concern (COCs) that exceeded GPS in the monitoring wells in the northeastern area of the landfill (arsenic, lithium and selenium), and although not required by the CCR Rule, were also sampled for general water quality parameters alkalinity, calcium, magnesium, potassium, sodium, sulfate, and total dissolved solids (TDS).

3.4 Data Validation and Data Management

Data validation and data management tasks were performed per the Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule (HDR, 2019a). Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for any data quality limitation identified.

All samples and quality control (QC) data for the reporting period were reviewed and evaluated, and no samples were rejected. Most QC analyses were within reportable limits; however, when QC was outside control limits, samples were reported as estimated. Data analyses required minimal qualifications, and all data were usable, even when qualified. A summary of instances in which QC was outside control limits and samples required qualification is provided **Table 4**. Data validation reports 2022 are in **Appendix B**.

Table 4. Data Validation Results for 2022

QC Type	Instances of QC Outside Control Limits in 2022
Field duplicate RPD	January – TSS (2) April – cobalt (2), lead (2), molybdenum (2) July – calcium (2), magnesium (2), sodium (2) October – TSS (6), chromium (2), cobalt (2)
Lab duplicate RPD	October – TSS (2), pH (1)
LCS recoveries	April – Rad-228 (10), combined radium (10) October – fluoride (4)
LCS/LCSD RPD	None
MS recoveries*	January – calcium (2), magnesium (2), potassium (2), selenium (1), sodium (2) July – arsenic (1), calcium (1), cobalt (1), magnesium (1), potassium (1), selenium (1), sodium (1) October – calcium (3), selenium (1), chloride (1), magnesium (1), potassium (1), sodium (1)
MS/MSD RPD	October – fluoride (1)

*In several instances, MS/MSD results for calcium, magnesium, potassium, selenium, and sodium could not be verified and were qualified as estimated due to analyte concentration in the unspiked sample greater than 4x the spike amount.

4.0 Monitoring Results

4.1 Water Levels and Groundwater Flow Direction

4.1.1 Landfill

The water levels at monitoring wells were recorded during monitoring events and are shown in **Table 5**. The water levels and contour map (**Appendix A**) confirm that monitoring well MW-7 is located upgradient of the ash landfill and is appropriate to represent background water quality. Groundwater flow under the landfill was generally to the south, southwest and west in the western portion of the landfill, and to the northeast, east, and southeast in the eastern portion of the landfill.

The following wells are screened in consolidated shale and groundwater elevations are 10 to 40 feet deeper than the other monitoring wells screened in weathered shale and are therefore not included on the potentiometric map: MW-30, MW-33B, MW-34, MW-38A, and MW-38B. Similar to observations from the City of Boulder's Valmont Butte Voluntary Cleanup Plan Implementation, the water levels indicate there is a drainage pathway between MW-29 and MW-38C. This is reflected in the 2022 groundwater contours.

Table 5. Groundwater elevations measured in 2022

Well ID	TOC Elevation (ft amsl)	CCR Unit	Well Location Relative to CCR Units	Groundwater Elevation (ft amsl) Week of 1/3/2022	Groundwater Elevation (ft amsl) Week of 4/19/2022	Groundwater Elevation (ft amsl) Week of 7/20/2022	Groundwater Elevation (ft amsl) Week of 10/3/2022	Groundwater Elevation (ft amsl) Week of 10/18/2022	Groundwater Elevation (ft amsl) Week of 11/3/2022	Groundwater Elevation (ft amsl) Week of 12/8/2022
MW-1	5234.27	Landfill	Downgradient	NM	5222.71	NM	5223.87	NM	NM	NM
MW-1P	5234.38	Bottom Ash Pond	Background/ Upgradient	NM	5222.82	NM	5224.4	5224.54	NM	NM
MW-2	5289.56	Landfill	Water Level	NM	NM	NM	5252.23	NM	NM	NM
MW-3	5233.52	Landfill	Downgradient	NM	5224.15	NM	5225.07	NM	NM	NM
MW-4	5237.21	Landfill	Downgradient	NM	5224.97	NM	5224.89	NM	NM	NM
MW-5	5292.10	Landfill	Downgradient	NM	5245.99	NM	5241.5	NM	NM	NM
MW-6	5235.23	Landfill	Downgradient	NM	5213.53	NM	5213.94	NM	NM	NM
MW-7	5299.46	Landfill	Background/ Upgradient	NM	5260.39	NM	5261.54	NM	NM	NM
MW-8	5234.97	Landfill	Downgradient	NM	5210.97	NM	5203.95	NM	NM	NM
MW-9	5234.25	Bottom Ash Ponds	Downgradient	NM	5222.71	NM	5224.53	5224.97	NM	NM
MW-11	5235.22	Bottom Ash Ponds	Downgradient	NM	5222.68	NM	5224.51	5224.51	NM	NM
MW-12	5235.05	Bottom Ash Ponds	Downgradient	NM	5222.63	NM	5224.49	5224.71	NM	NM
MW-13	5282.00	Landfill	Downgradient	5230.571	5230.651	5230.591	5230.581	NM	NM	NM
MW-14	5233.53	Landfill	Downgradient	NM	5224.105	NM	5224.325	NM	NM	NM
MW-15	5231.90	Landfill	Downgradient	NM	5223.175	NM	5224.615	NM	NM	NM
MW-16	5219.92	Landfill	Characterization	NM	5208.327	NM	5208.527	NM	NM	NM
MW-21	5236.21	Landfill	Downgradient	5224.401	5224.141	5224.041	5224.041	NM	NM	NM
MW-24	5295.50	Landfill	Water Level	NM	NM	NM	5253.034	NM	NM	NM
MW-25B	5248.56	Landfill	Downgradient	NM	5221.924	NM	5215.394	NM	NM	NM
MW-26	5227.74	Landfill	Characterization	NM	5207.735	NM	5208.375	NM	NM	NM
MW-27	5290.37	Landfill	Downgradient	5253.76	5253.04	5252.75	5252.45	5252.45	NM	NM
MW-28	5271.23	Landfill	Downgradient	5220.426	5220.656	5221.036	5221.146	NM	NM	NM
MW-29	5237.31	Landfill	Characterization	5212.36	5212.5	5212.3	NM	5212.34	NM	5212.72
MW-30*	5231.08	Landfill	Characterization	5186.25	5188.51	5188.35	NM	5188.13	NM	5187.53
MW-31	5215.40	Landfill	Characterization	5206.25	5206.29	5203.51	NM	5203.21	NM	5204.93
MW-32	5217.05	Landfill	Characterization	5190.83	5190.32	5189.36	NM	5188.74	NM	5188.82

Table 5. Groundwater elevations measured in 2022

Well ID	TOC Elevation (ft amsl)	CCR Unit	Well Location Relative to CCR Units	Groundwater Elevation (ft amsl) Week of 1/3/2022	Groundwater Elevation (ft amsl) Week of 4/19/2022	Groundwater Elevation (ft amsl) Week of 7/20/2022	Groundwater Elevation (ft amsl) Week of 10/3/2022	Groundwater Elevation (ft amsl) Week of 10/18/2022	Groundwater Elevation (ft amsl) Week of 11/3/2022	Groundwater Elevation (ft amsl) Week of 12/8/2022
MW-33A	5199.27	Landfill	Characterization	5188.67	5188.35	5186.4	NM	5186.27	NM	5187.06
MW-33B*	5199.62	Landfill	Characterization	5146.7	5153.8	5153.58	NM	5151.24	NM	5144.33
MW-34*	5232.27	Landfill	Characterization	5180.89	5195.96	5194.46	5191.48	5192.25	5191.29	5191.52
MW-35	5234.11	Landfill	Characterization	5221.41	5220.4	5220.16	5220.59	5220.29	5220.95	5220.95
MW-36	5209.48	Landfill	Characterization	*Installed April 2022*	5198.186	5198.266	5198.956	5198.606	NM	5199.536
MW-37	5204.74	Landfill	Characterization	*Installed April 2022*		5161.154	5160.804	5161.094	NM	5161.684
MW-38A*	5186.083	Landfill	Characterization	*Installed June 2022*		NM	NM	NM	NM	NM
MW-38B*	5185.59	Landfill	Characterization	*Installed June 2022*		5168.28	NM	NM	NM	5165.86
MW-38C	5185.81	Landfill	Characterization	*Installed June 2022*		5169.35	NM	NM	NM	5165.86
MW-39A	5153.61	Landfill	Characterization	*Installed August 2022*			Slow recharge resulted in well development Jan 2023			
MW-39B	5153.43	Landfill	Characterization	*Installed August 2022*			5148.89	NM	NM	5147.43
MW-40 through MW-43	Not available	Landfill	Characterization	*Installed December 2022*						
PZ-1	5291.30	Landfill	Water Level	*Installed November 2022*					5252.014	NM

NM= not measured, typically because it was not a site-wide sampling event. Note 1: Monitoring at the former Settling Pond met groundwater protection standards/closure criteria in April 2021 and sampling of the associated wells was no longer required in 2022.

* Wells marked with an asterisk are completed in consolidated shale and are included here but not on the contour maps.

4.1.2 Bottom Ash Impoundments

The flow of groundwater in the downgradient wells immediately adjacent to the impoundments (MW-9, MW-11, and MW-12) and the upgradient well MW-1P are controlled by Leggett Reservoir water level, thus the water table is relatively flat at the impoundments. Well MW-1P is also influenced by the Leggett Reservoir, but is located approximately 300 feet south of the impoundments and therefore is located upgradient or at a side gradient but is sufficient to serve as the background well for the impoundments monitoring.

4.2 Water Quality

4.2.1 Landfill

As stipulated in the CCR Rule, eight rounds of background groundwater sampling and the first detection monitoring sampling were completed before October 17, 2017 for the landfill. Background threshold values were calculated, and the detection monitoring results were compared to BTVs. In January 2018, a determination was made that concentrations of several Appendix III COIs statistically significant increases (SSIs) over BTVs at all five downgradient wells (MW-1, MW-3, MW-4, MW-6, and MW-8). Therefore, these SSIs triggered the assessment monitoring program for the landfill, and the first two assessment monitoring sampling events were completed in 2018. In accordance with CCR Rule 257.95(h), GPS were established for each detected Appendix IV COI, and the assessment monitoring results were compared to the respective GPS values. In October 2018, downgradient wells were found to have concentrations of lithium at statistically significant levels (SSLs) above the GPS. This triggered the requirement to conduct an Assessment of Corrective Measures for the landfill, which was completed in June 2019 (HDR, 2019b, HDR, 2019c). In 2022, PSCo updated the background values for the landfill to incorporate additional data into the background data. The background values were updated in June 2022 using data from MW-7 between 2015 and 2022. The updated background values were lower than prior background values for cobalt, lead, and lithium. The background update resulted in UTLs for some constituents decreasing. For those UTLs with lower concentrations, if that value also represented the GPS, then the GPS also lowered. **Table 6** provides the updated UTL and GPS values. For example, the lithium UTL and GPS decreased from 0.083 to 0.051 milligrams per liter (mg/L). This UTL decrease is the result of a larger data set coming from a longer period of record, and since the updated UTL is still higher than the MCL, the UTL is the GPS. The October 28, 2022 memorandum, Valmont Station Landfill Updated Groundwater Protection Standards and Determination of SSLs per 257.95(g), published the updated GPS.

Table 6. Valmont Landfill - Groundwater Protection Standards for Appendix IV constituents

Constituent	Unit	MCL	Background Value (UTL)+	GPS
Antimony	mg/l	0.006	0.0023	0.006
Arsenic	mg/l	0.010	0.0014	0.010
Barium	mg/l	2	0.038	2

Table 6. Valmont Landfill - Groundwater Protection Standards for Appendix IV constituents

Constituent	Unit	MCL	Background Value (UTL)[+]	GPS
Beryllium	mg/l	0.004	0.00072	0.004
Cadmium	mg/l	0.005	0.00060	0.005
Chromium, Total	mg/l	0.1	0.012	0.1
Cobalt	mg/l	0.006*	0.0017	0.006
Fluoride	mg/l	4.0	0.59	4.0
Lead	mg/l	0.015*	0.0028	0.015
Lithium	mg/l	0.0400*	0.051	0.051
Mercury	mg/l	0.002	0.00013	0.002
Molybdenum	mg/l	0.1*	0.0079	0.1
Radium-226-228	pci/l	5.0^	1.65	5.0
Selenium	mg/l	0.05	0.010	0.05
Thallium	mg/l	0.002	0.00025	0.002

[+]UTL values updated/published in October 2022 with data from 2015-2022. *EPA adopted health-based value in place of MCL.
^Colorado Water Quality Regulation.

Assessment monitoring continued in 2022, and in April 2022, annual assessment monitoring samples were collected from the monitoring well network; all samples were analyzed for all Appendix III and Appendix IV COIs. Laboratory reports are provided in **Appendix B**. Statistics are completed after each sample event. Statistical output reports are provided in **Appendix C.** While the April sample event was completed prior to the update to the background values and GPS values, for the purposes of this report, the April 2022 sample event water quality is compared to the updated GPS. In April, there were downgradient wells with concentration exceedances of GPS for arsenic, lithium, and selenium; and there are SSLs in downgradient wells for lithium and selenium (**Table 7**). Downgradient wells MW-4, MW-8, MW-13, MW-14, MW-21, and MW-28 have concentrations of lithium at SSLs above GPS, similar to prior years. The previous arsenic SSL at MW-28 in 2021 is no longer present in 2022.; The SSLs of lithium at MW-3, MW-5, and MW-6 were new SSLs in 2022 after the background value was updated, as was documented in the October 28, 2022 memorandum, *Valmont Station Landfill Updated Groundwater Protection Standards and Determination of SSLs per 257.95(g)* (HDR, 2022a). Downgradient wells MW-4, MW-13, MW-14, MW-21, and MW-28 have concentrations of selenium at SSLs above GPS.

In October 2022 the assessment monitoring samples were collected and all samples were analyzed for Appendix III and Appendix IV COIs. Laboratory reports are provided in **Appendix B**. The results indicate that there are downgradient wells with concentration exceedances of GPS for arsenic, cobalt, fluoride, lead, lithium, and selenium; and there are SSLs in downgradient wells for lithium and selenium **(Table 7)**. Downgradient wells MW-3, MW-4, MW-5, MW-6, MW-8, MW-13, MW-14, MW-21, and MW-28 have concentrations of lithium at SSLs above GPS. Downgradient wells MW-4, MW-13, MW-14, MW-15, MW-21, and MW-28 have concentrations of selenium at SSLs above GPS.

Table 7. Landfill LCL Exceedances of GPS in 2022

Landfill	April 2022		October 2022	
	Lithium (mg/l)	Selenium (mg/l)	Lithium (mg/l)	Selenium (mg/l)
GPS* (mg/l)	**0.051**	**0.05**	**0.051**	**0.05**
MW-3	0.075	-	0.10	-
MW-4	0.20	0.23	0.205	0.23
MW-5	0.053	-	0.054	-
MW-6	0.060	-	0.060	-
MW-8	0.11	-	0.110	-
MW-13	0.098	0.29	0.097	0.28
MW-14	0.14	1.5	0.14	1.5
MW-15	-	0.12	-	0.11
MW-21	0.18	1.2	0.19	1.2
MW-28	0.23	2.7	0.23	2.7

*Both sample events are compared to the updated GPS values that were published in October 2022.

For newer monitoring wells installed beyond the waste boundary to evaluate the nature and extent of the GPS exceedances, PSCo completed monitoring quarterly to expedite completion of eight sample events for statistical evaluations. The quarters that coincide with assessment monitoring are considered assessment monitoring events and the other quarters are considered release characterization events. In assessment monitoring events and in release characterization monitoring events, concentration exceedances of GPS were observed in wells MW-29, MW-30, MW-31, MW-32, MW-33A, MW-33B, MW-34, MW-35, MW-36, MW-37, and MW-38C for one or more of the following constituents: arsenic, cobalt, fluoride, lithium, and/or selenium. GPS concentration exceedances were consistent between the April and October 2022 sampling events. Additional sample events are necessary to calculate the lower confidence limits (LCLs) and determine if the concentration exceedances are statistically significant. Wells MW-30, MW-33B, MW-34, MW-38B are screened in consolidated shale and have groundwater elevations 10 to 40 feet deeper than the wells screened in weathered shale.

Because of the GPS concentration exceedances in the northern-most Valmont Butte offsite monitoring wells north of the landfill, and the potential for migration north of Valmont Road towards private wells, PSCo did not wait for statistical results and immediately notified the landowners and requested access to sample their private wells. Ten private wells offsite to the north of Valmont Road were sampled in December 2021 after PSCo received approvals from landowners (**Figure 3**). Due to homeowner privacy, the laboratory reports for these samples are not provided herein. Although one well had lithium concentrations above the GPS, samples of water taken from the tap used for consumptive purposes after passing through a filtration system inside the residence had no constituent concentrations above the GPS. In addition, PSCo drilled additional multi-level monitoring wells MW-38A/B/C and MW-39A/B at locations further north in 2022 to evaluate the extent of the GPS exceedances of lithium and selenium.

The monitoring well at the western property boundary, MW-26, has concentration exceedances of the updated GPS for lithium; however, there are not eight sample events to perform a statistical comparison. However, in response to the lithium concentration exceedances of GPS at MW-8 and MW-26, PSCO proactively installed MW-40 through MW-43 to the west to evaluate the potential for a GPS exceedance west of the property boundary. These new monitoring wells were drilled in December 2022. There are no drinking water wells west of the landfill toward South Boulder Creek and KOA Lake.

4.2.2 Bottom Ash Impoundments

As stipulated in the CCR Rule, eight rounds of background groundwater sampling and the first detection monitoring sampling were completed before October 17, 2017 for the ash impoundments. Background threshold values were calculated, and the detection monitoring results were compared to BTVs. In January 2018, a determination was made that concentrations of several Appendix III COIs statistically significant increases (SSIs) over BTVs at all four downgradient wells (MW-9, MW-10, MW-11, and MW-12). Therefore, these SSIs triggered the assessment monitoring program for the impoundments, and the first two assessment monitoring sampling events were completed in 2018. In accordance with CCR Rule 257.95(h), GPS were established for each detected Appendix IV COI, and the assessment monitoring results were compared to the respective GPS values (**Table 8**). In October 2018, downgradient wells were found to have concentrations of cobalt and molybdenum at statistically significant levels (SSLs) above the GPS. This triggered the requirement to conduct an Assessment of Corrective Measures for the impoundments, which was completed in June 2019. The CCR was removed from the impoundments in September 2018, completing physical closure with ongoing groundwater monitoring. The semiannual update on progress towards remedy selection is provided in Section 5.0.

Table 8. Groundwater Protection Standards for Detected Appendix IV COIs for the Bottom Ash Impoundments 257.95(d)(3)

Constituent	Unit	MCL	BTV (UTL)	GPS
Fluoride	mg/l	4.00	1.30	4.00
Arsenic	mg/l	0.0100	0.011	0.011
Barium	mg/l	2.00	0.33	2.00
Cobalt	mg/l	0.006*	0.0053	0.006
Lead	mg/l	0.015*	0.0033	0.015
Lithium	mg/l	0.040*	0.018	0.040
Molybdenum	mg/l	0.1*	0.027	0.1
Radium-226-228	pci/l	5.0^	1.1	5.0

*EPA adopted health-based value in place of MCL.
^Colorado Water Quality Regulation.

Assessment monitoring has continued, and in April 2022, assessment monitoring samples were collected from the certified monitoring well network wells; all samples were analyzed for all Appendix III and Appendix IV COIs. Laboratory reports are provided in **Appendix B**. To determine if the impoundments are meeting clean closure criteria, downgradient well

concentration upper confidence limits (UCLs) from the most recent ten assessment monitoring events were compared against GPS (**Table 9**). Downgradient wells MW-9, MW-11, and MW-12 had UCL concentrations of cobalt at SSLs above GPS. Downgradient well MW-9 also had a UCL concentration of molybdenum at SSLs above GPS; however the last three sample events had molybdenum concentrations lower than GPS and trending downward.

In October 2022 the assessment monitoring samples were collected and all samples were analyzed for Appendix III and detected Appendix IV COIs. Laboratory reports are provided in **Appendix B**. MW-9, MW-11, and MW-12 had UCL concentrations of cobalt at SSLs above GPS. Downgradient well MW-9 had a concentration of molybdenum at an SSL above GPS however the last four sample events had molybdenum concentrations lower than GPS and trending downward. The last six sample events for cobalt at MW-9 were just below GPS. The concentrations of cobalt at MW-11 had been increasing consistently through April 2022 but decreased to 0.012 mg/L cobalt in October 2022, lowering the UCL concentration. Values at MW-12 are fairly consistent hovering around the GPS concentration.

Table 9. Impoundment UCLs that Exceed GPS

Impoundments	April 2022		October 2022	
	Cobalt (mg/l)	Molybdenum (mg/l)	Cobalt (mg/l)	Molybdenum (mg/l)
GPS (mg/l)	0.006	0.1	0.00600	0.100
MW-9	0.0075	0.12	0.007	0.11
MW-11	0.032	-	0.027	-
MW-12	0.017	-	0.013	-

In 2023, PSCo will continue to monitor groundwater at the impoundments in accordance with the assessment monitoring program and consistent with 257.93(e). While the source control has been completed through removal of the CCR, PSCo will continue to evaluate whether groundwater meets clean closure criteria. In accordance with 257.97, PSCo will complete semi-annual progress reporting in 2023.

5.0 Remedy Selection Progress Update

The sections below provide the semi-annual progress report describing the progress towards remedy selection and design for the landfill and the ash impoundments in accordance with 257.97(a). Semiannual progress reports will be prepared and posted to the CCR website until a remedy is selected and documented in a final report.

5.1 Landfill

Since the last semiannual selection of remedy update in July 2022, one round of assessment monitoring has been completed and significant progress has been made to:

- update the background values to incorporate a larger dataset,

- further define the conceptual site model,
- further define the groundwater plumes,
- evaluate potential exposure of nearby populations and receptors,
- further progress on the groundwater flow and transport model,
- progress on negotiations with Contractors for beneficial reuse and ash removal for source control remedy,
- the geochemical feasibility study for use of a permeable reactive barrier (PRB) as a remedy continued and was completed with new bench-scale treatability results showing unsuccessful results at meeting GPS concentrations, and
- developed a Work Plan for pre-design investigation and bench-scale testing in support of designing an alternative groundwater extraction and treatment system for the northeast plume.

5.1.1 Nature and Extent Characterization Progress

Several new wells have been installed on both PSCo's property and the adjacent property owner to the north and west of the landfill to further define the plume and to provide lithologic and groundwater data for groundwater flow model expansion. Specifically, the following wells were installed:

- Wells MW-39A and MW-39B offsite to the north to further evaluate the nature and extent of the lithium and selenium GPS exceedances to the north,
- Piezometer PZ-1 on the south side of Landfill Cell D to evaluate the groundwater elevations,
- PSCo advanced ten borings in Cell D to evaluate the elevation of the bottom of ash in Cell D and the ash moisture, which is being updated in the geologic model to refine the
- Well MW-40 through MW-43 on the west side of the landfill to evaluate the nature and extent of the lithium GPS exceedance to the west.

In addition to assessment monitoring, multiple groundwater sampling events have been conducted to help characterize the nature and extent of the plume, including sampling private wells north of the Valmont Station and Valmont Butte properties. Release characterization sampling on a quarterly frequency is in progress at each new well. The data collected from these wells will be incorporated into the groundwater flow and transport model and used to further evaluate alternative remedy scenarios discussed below.

As a result of installation of monitoring wells further north to evaluate if the plume extends north of Valmont Road, additional private well sampling is not anticipated.

5.1.2 Groundwater Model Progress

A groundwater flow and transport model was initially developed for the landfill in Spring 2019 to support the corrective measures assessment. The objectives of the modeling are to simulate the potential extent of the COC plume beyond the monitoring well network, and to evaluate the effectiveness of each potential corrective measure to reduce groundwater concentrations over time with the goal of selecting the best remedy or combination of measures for implementation. For each corrective measure alternative simulated, the model evaluates:

- concentrations of COCs over time, transport directions and potential for movement offsite; and
- the time required for each alternative to "complete the remedy" (per 257.96(c)(2)).

The preliminary model was used to help identify potential plume migration; however, the modeling process is iterative, and given that the simulated plume was close to the preliminary model boundary, it was determined that a model expansion was necessary. The model has been significantly updated in 2021 and 2022 to expand the model boundaries and incorporate additional offsite data including the Valmont Butte property and within the Boulder Creek alluvial valley. With the installation of new monitoring wells north of the landfill and private well water level and water quality data in 2022, the model was updated, and recalibration is underway to match the new data. The model has been successfully calibrated to hydraulic head measurements and the work to calibrate the transport model is in progress.

5.1.3 Source Removal

PSCo continues negotiations with contractors to evaluate ash removal and beneficial reuse and is actively working to move forward with an agreement. This would result in complete CCR removal from landfill cells A, B, C and Q. The ash located in Cells D and E would remain in place and a final cover system will be designed and installed in accordance with 40 CFR 257.102(d) of the CCR Rule. PSCo has developed an ash removal design and phasing of operations. Once a contractor is selected, the planning and permitting process will continue and construction schedules will be developed.

Landfill ash removal is anticipated to result in a decrease of COC concentrations in groundwater over time. Completion of ash removal/source control is anticipated to take 10-12 years. However, areas of ash most likely to be contributing to COC concentrations in groundwater will be removed first, and it is anticipated that groundwater concentrations will begin to decrease as the initial source areas are removed. Additional groundwater modeling scenarios can be used to evaluate the short- and long-term impacts of the source removal.

5.1.4 Remedy Selection Progress

Between July and December 2022 PSCo advanced the engineering and geochemical feasibility study of the PRB as a potential remedy to address groundwater conditions at the landfill. PSCo developed a PRB study designed to evaluate the feasibility of a PRB via conventional trench, injection wells, or funnel and gate in a limited area of the landfill boundary where groundwater concentrations exceeded GPS. The study used a phased approach designed to evaluate

geochemical bench testing of reagents with site-specific substrate and groundwater followed by the geotechnical characteristics of the substrate for hydraulic and construction feasibility.

The intention of the bench test program was to evaluate if geochemical treatment using targeted reagents (or other mechanisms) could be effective in reducing COC concentrations. Three phases of bench-scale laboratory testing were conducted using groundwater and sediment samples collected in 2021 for Phases I and II and groundwater samples collected in 2022 for Phase III. The first phase of testing focused on reductive precipitation and adsorption as a treatability mechanism. Four microcosm reagent treatments were tested and found to be largely ineffective. A second round of testing was then conducted using modified conditions and substantial reduction was observed for selenium. Since reductive precipitation and adsorption was proving to be insufficient as a standalone method, a second phase of treatment was completed employing adsorptive polishing with biochar and activated carbon. Adsorptive polishing with biochar yielded results that indicated significant reduction in some targeted metal concentrations but was unable to reduce all COC concentrations below GPS.

A third round of testing was conducted in the second half of 2022 employing only adsorptive polishing with biochar without initial reductive precipitation and adsorption. The testing yielded results that indicate initial reductions of boron; however, the ability of the biochar to remove boron declined considerably over the course of the testing. The biochar treatments had little to no impact on lithium and selenium and had negative effects on arsenic.

Based on the geochemical bench-scale testing results to date, a PRB no longer appears to be an effective groundwater remedy. Upon that determination, PSCo has been researching alternative ways to treat the groundwater. While the low permeability of the weathered shale can be a limitation to groundwater extraction and treatment, it does not rule it out entirely and PSCo is re-evaluating the potential for an extraction and treatment system for the northeast plume. Such a system would align with the adaptive management strategy at the site and could be adjusted as needed after initial installation. Between July and December 2022 a Work Plan was developed for pre-design investigation activities to support design of an extraction and treatment system for the northeast plume as an adaptive management approach and part of overall remedy selection. The Work Plan includes:

- sampling and analysis from additional wells within the plume for increased spatial concentration data to maximize on extraction effectiveness,
- field testing to evaluate potential pumping rates and zone of capture, and
- bench-scale testing and evaluation of treatment methods.

PSCo anticipates holding a public meeting to present corrective measure alternatives and the preferred alternative in 2023, followed by remedy selection.

5.2 Impoundments

As discussed in the ACM Report, concentrations of CCR constituents that exceeded GPS (cobalt and molybdenum) are relatively low at the impoundment monitoring wells. The former impoundments are completely surrounded by the Leggett, Valmont, and Hillcrest reservoirs,

which represent a constant hydraulic head that is expected to effectively limit the extent of impacts to groundwater immediately adjacent to the impoundments. Closure by CCR removal, completed in 2018, was the most significant corrective action that could be taken to mitigate impacts to groundwater. As discussed in the ACM Report, based on the impoundment site characteristics and space constraints, source removal in combination with natural attenuation may be the most appropriate alternative to address groundwater conditions at this site surrounded by the reservoirs.

PSCo continues assessment monitoring at the former impoundments to evaluate concentration trends of these constituents of concern (COC) since source removal was completed in 2018. The groundwater chemistry from 2019 through the first half of 2022 has shown decreasing concentrations of molybdenum in all three downgradient wells and concentrations of molybdenum are now well below the GPS concentration in all downgradient wells for the last four sample events. The groundwater chemistry from 2019 through the first half of 2022 has also shown decreasing concentrations in cobalt in two of the three downgradient wells. Only one downgradient well has cobalt concentrations that have not appeared to consistently decrease (MW-11); however this well cobalt concentration decreased by 50 percent between April and October 2022.

By continuing assessment monitoring, PSCo will continue to evaluate the potential for groundwater around the impoundments to meet clean closure criteria in groundwater or if additional measures will be needed. In accordance with 40 CFR 257.98(a)(3) no interim measures are necessary to reduce the contaminants leaching from the CCR unit or potential exposures to human or ecological receptors.

6.0 Summary

The following are a summary of the CCR Rule compliance monitoring program actions and observations in 2022:

Landfill

- In April 2022, annual assessment monitoring samples were collected from landfill monitoring wells. Downgradient wells had concentrations of lithium and selenium at SSLs above GPS.
- In October 2022, assessment monitoring samples were collected from all of the landfill monitoring wells. Downgradient wells had concentrations of lithium and selenium at SSLs above GPS.
- In response to GPS exceedances, PSCo continues to evaluate the nature and extent of the lithium and selenium exceedances in groundwater to the northeast of the landfill. The following new wells were installed in 2022 for release characterization and groundwater flow characterization in the northeast: MW-36, MW-37, MW-38A, MW-38B, MW-38C, MW-39A, MW-39B, and PZ-1).
- Ten private wells north of Valmont Road were sampled and tested for lithium, selenium, and general water quality parameters. This was initiated proactively in late 2021 to evaluate the potential for impacts to these wells after results from monitoring well MW-33

showed COC concentrations over the GPS. With one exception, all results from the private wells were below GPS, indicating little to no potential for impact to these wells. Only one private well had concentrations of lithium that exceeded the GPS and that location was also tested at the household tap after filtration with results showing that concentrations were below GPS. Water quality results were reported to the owners.

- In response to GPS exceedances, PSCo is evaluating the nature and extent of the lithium exceedances in groundwater to the west of the landfill. The following new wells were installed in 2022 for characterization and groundwater flow characterization west of the landfill: MW-40, MW-41, MW-42, and MW-43). There are no drinking water wells west of the landfill toward South Boulder Creek and KOA Lake.
- Well MW-25B was redrilled to repair broken casing.
- In addition to the semiannual assessment monitoring events, PSCo sampled the new release characterization wells quarterly and analyzed for COCs and general water quality parameters.
- In response to GPS exceedances, PSCo significantly expanded the groundwater flow and transport model to simulate the transport of constituents of concern and to simulate potential corrective measure alternatives.
- PSCo anticipates holding a public meeting to present corrective measure alternatives and the preferred alternative for the landfill in 2023, followed by remedy selection.
- Valmont Station landfill status at the end of 2022 is assessment monitoring and evaluation of potential remedies.

(Closed) Bottom Ash Impoundments

- CCR waste was removed from the impoundments by September 2018. Groundwater monitoring continued in 2022 to evaluate the post-closure/corrective measures groundwater quality.
- Four wells are in the monitoring network for CCR compliance of the (closed) bottom ash impoundments: MW-1P serves as a background monitoring well and MW-9, MW-11, and MW-12 serve as downgradient wells. No wells associated with the former ash impoundment monitoring network were installed or abandoned in 2022.
- Assessment monitoring data from the bottom ash impoundments were statistically evaluated after each event and compared to background values and GPS.
- An assessment monitoring event was completed April 2022, results indicate that there are UCL SSLs exceeding GPS at downgradient wells for cobalt and molybdenum; however, there are downward concentration trends at all wells for these COCs.
- During the October 2022 assessment monitoring event, samples were collected from all of the impoundment monitoring wells for Appendix III and detected Appendix IV COIs plus TSS. Results in October 2022 show (UCL) concentrations of cobalt and molybdenum at SSLs above GPS.
- Valmont Station ash impoundments status at the end of 2022 is assessment monitoring to evaluate: 1) if clean closure criteria in groundwater have been met, 2) if the data trends indicates that natural attenuation following the previously completed source

removal will be effective at meeting closure requirements (concentration trends are decreasing), or 3) if additional evaluation of enhanced measures is warranted.

7.0 References

APEX Consulting Services, Inc. 2008. Letter to Jennifer McCarter, Xcel Energy. Valmont Station Ash Disposal Facility Additional Monitoring Well Installation. February 11, 2008.

HDR, 2015. Groundwater Sample Collection Standard Operating Procedure. October 28, 2015.

HDR, 2019a. Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule. Updated July 7, 2019.

HDR, 2019b. Conceptual Site Model and Assessment of Corrective Measures - Compliance with the Coal Combustion Residuals Rule Valmont Station. June 6, 2019.

HDR, 2019c. Groundwater Protection Standards and Determination of SSLs per 257.95(g). June 7, 2019.

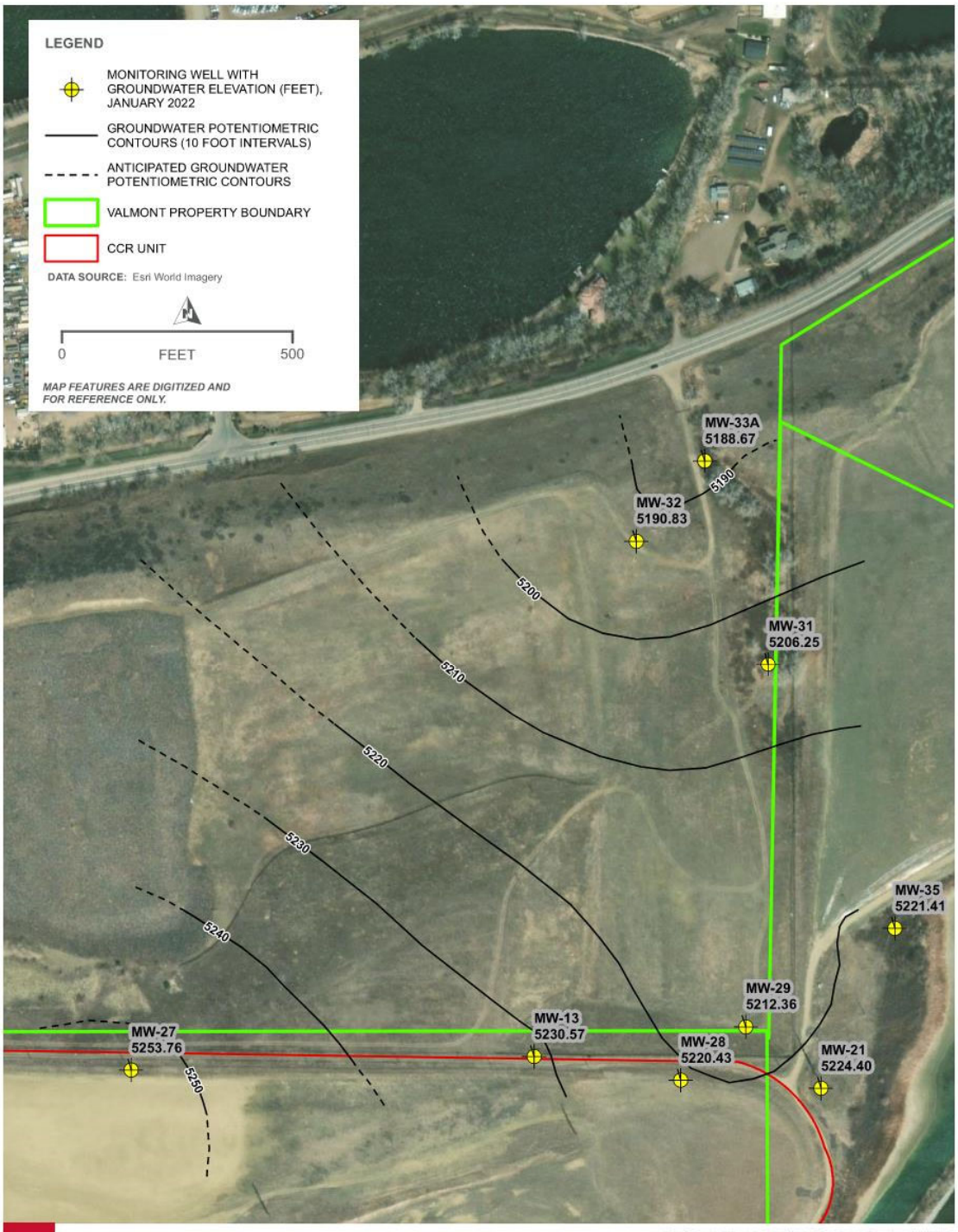
HDR, 2021. Groundwater Monitoring Network Certification, Valmont Station. February 2021.

HDR, 2022. Inactive CCR Impoundment Closure Certification. May 6, 2022.

HDR 2022a. Valmont Station Landfill Updated Groundwater Protection Standards and Determination of SSLs per 257.95(g). October 28, 2022.

Xcel Energy, 2009. Valmont Station Coal Ash Disposal Facility Design and Operations Plan. January 2009.

Appendix A
Potentiometric Surface Maps



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BOULDER COUNTY, CO

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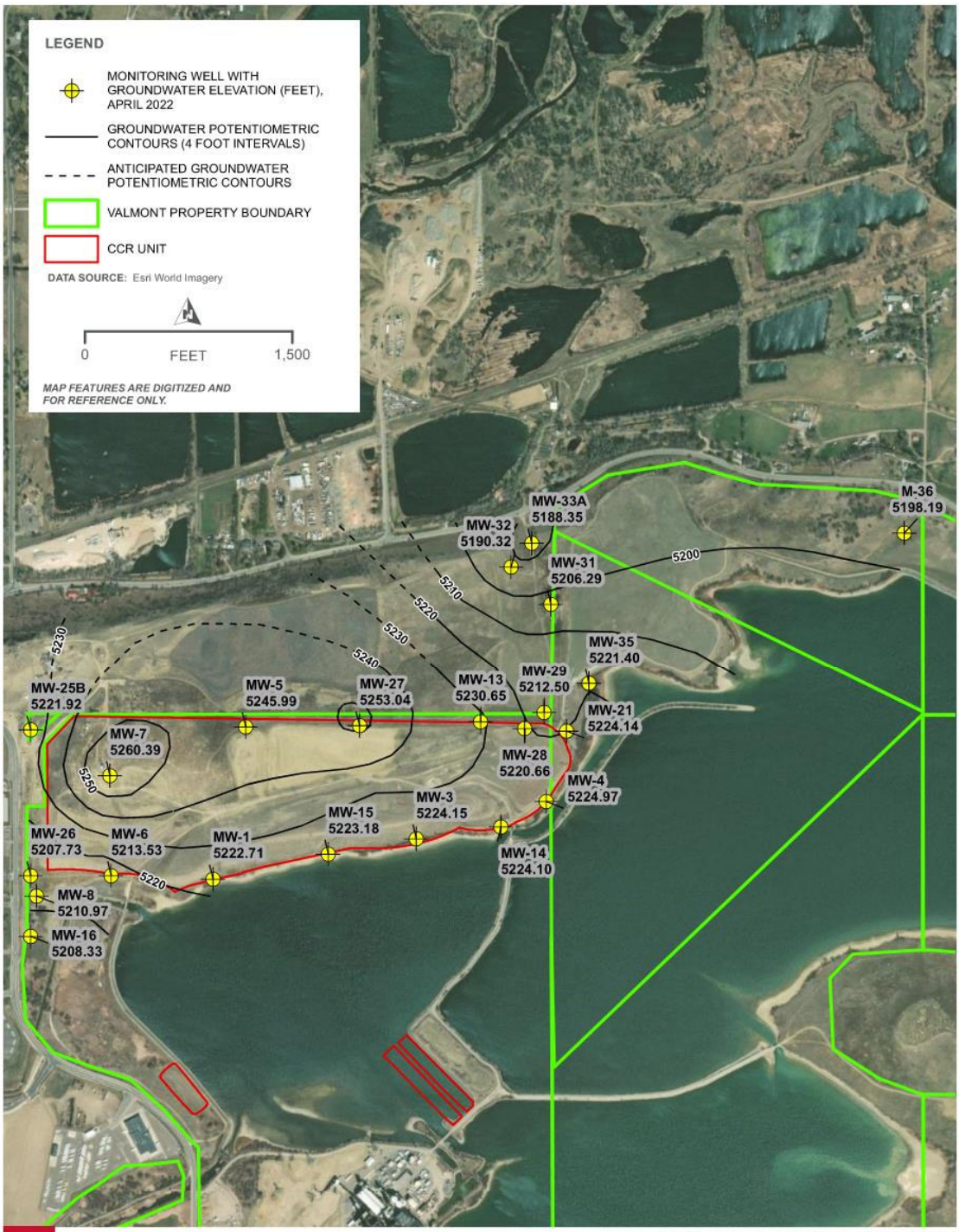

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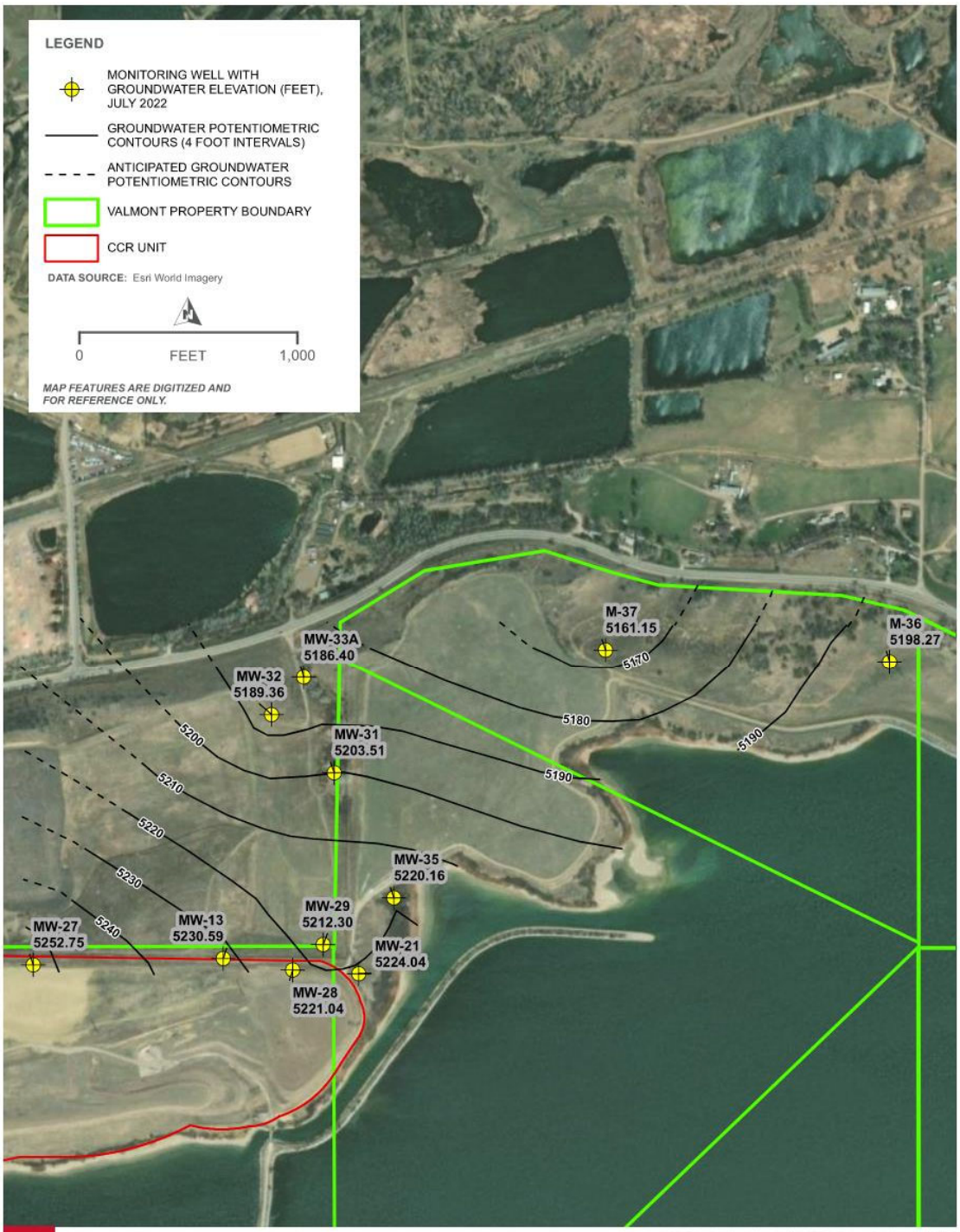

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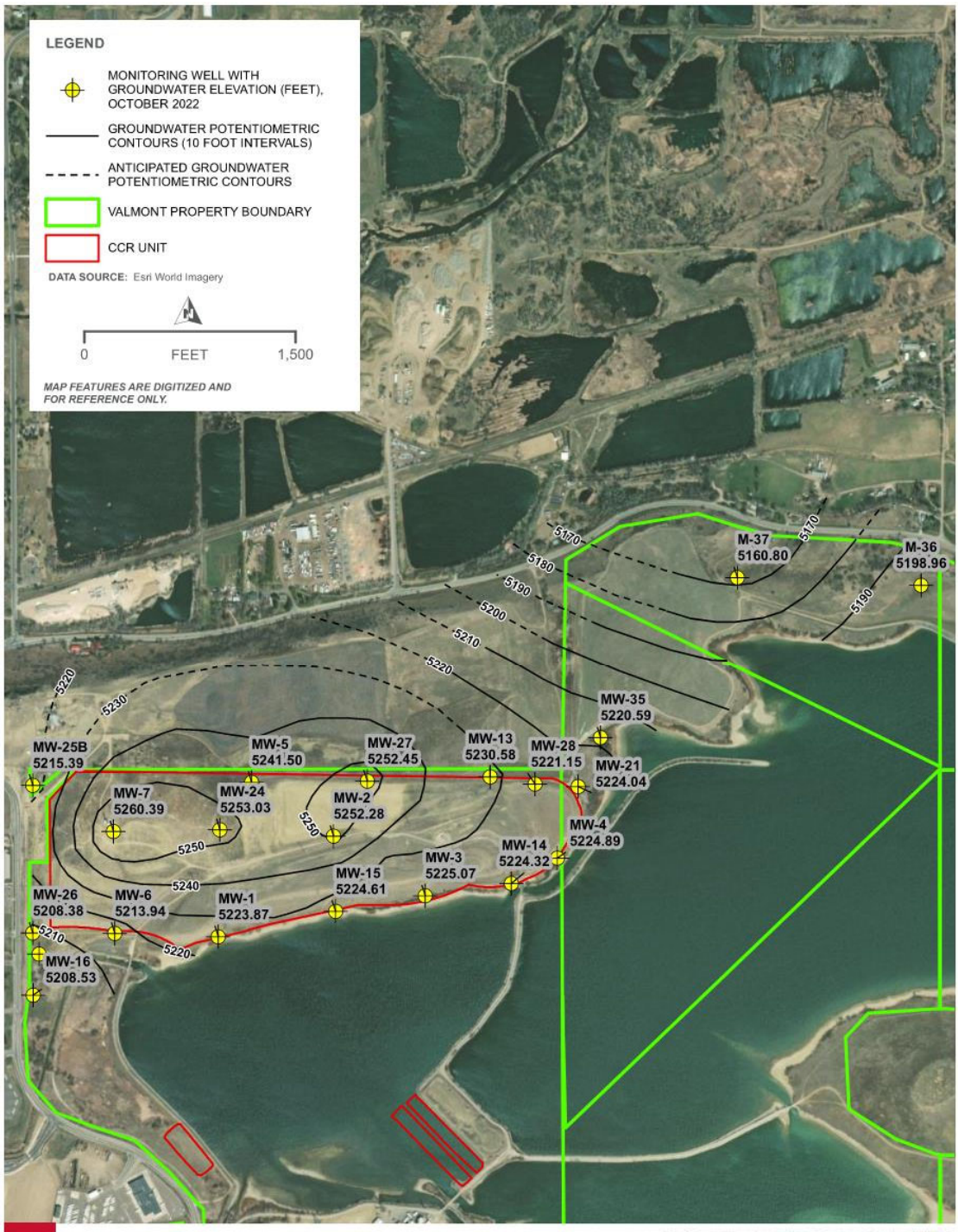

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VALMONT POWER STATION

BOULDER COUNTY, CO

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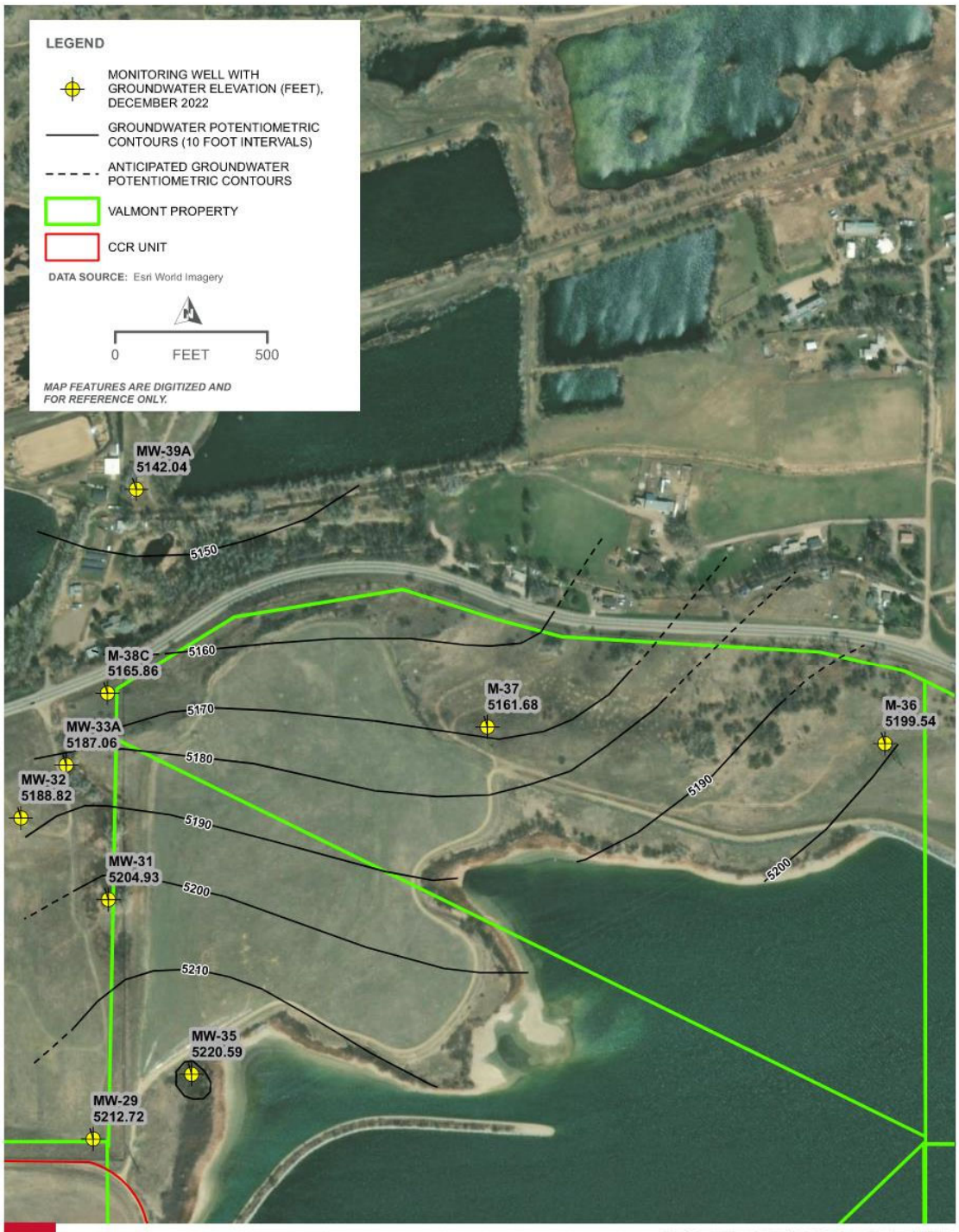

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VALMONT POWER STATION

BOULDER COUNTY, CO

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Appendix B
Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-157589-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont
Revision: 1

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
5/27/2022 7:52:57 PM

Danielle Harrington, Project Manager II
(303)736-0176
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LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-157589-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-157589-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 01/11/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.2°C and 0.4°C.

Please note the following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): MW-29 (280-157589-14). 1 of 4 plastic 250ml unpreserved containers received about half full. Limited volume received for TDS, TSS, Alkalinity, Chloride/Sulfate, and pH for sample MW-33B (280-157589-12)

Samples MW-21 (280-157589-1) and MW-34 (280-157589-2) with less than half the holding time left for Total Dissolved Solids and Total Suspended Solids.

DISSOLVED METALS (ICPMS)- Method 6020A

Several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium, Magnesium, Potassium, Selenium, and Sodium MS/MSD performed on a sample MW-28 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL METALS (ICP-MS) METHOD 6020A

Several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-30 (280-157589-9). The sample(s) was preserved to the appropriate pH in the laboratory.

The accuracy and precision of the Calcium, Magnesium, Potassium, and Sodium MS/MSD performed on a sample MW-21 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Job ID: 280-157589-1 (Continued)

Laboratory: Eurofins Denver (Continued)

GENERAL CHEMISTRY- VARIOUS

Several samples required dilution prior to analysis for various analyses. The reporting limits have been adjusted accordingly.

The analysis for Total Suspended Solids by method 2540D for samples MW-21 (280-157589-1) and MW-34 (280-157589-2) was performed outside of hold due to more than half of the hold time expiring during transit. It is Eurofins TestAmerica's policy to analyze all samples within holding time, but when samples are received with less than half the hold time remaining, this cannot be guaranteed. Please note that the sample results should be considered estimated.

The sample MW-27 (280-157589-4) was performed both in hold and out of hold for Total Suspended Solids by Method 2540D as it was outside historical data. Both results are reported.

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

REVISION

Per client request on 05/20/2022, Samples MW-29, MW-30, MW-31, MW-32, MW-33A, and MW-33B in a separate report. These are now under 280-157589-2.

Detection Summary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-21 — Lab Sample ID: 280-157589-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	380000		1000	190	ug/L	1		6020A	Total/NA
Potassium	9100		500	150	ug/L	1		6020A	Total/NA
Magnesium	220000		3500	700	ug/L	7		6020A	Total/NA
Sodium	640000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	1.2		0.035	0.0067	mg/L	7		6020A	Total/NA
Lithium	0.19		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	460		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	260		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.8	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5400		50	24	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-34 — Lab Sample ID: 280-157589-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0016	J	0.0050	0.00075	mg/L	1		6020A	Total/NA
Calcium	22000		1000	190	ug/L	1		6020A	Total/NA
Potassium	2900		500	150	ug/L	1		6020A	Total/NA
Magnesium	15000		500	100	ug/L	1		6020A	Total/NA
Sodium	220000		1000	610	ug/L	1		6020A	Total/NA
Selenium	0.017		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.050		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	1.3	J	3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	350		25	5.2	mg/L	5		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	280		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	5.2	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	800		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-28 — Lab Sample ID: 280-157589-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	400000		1000	190	ug/L	1		6020A	Total/NA
Potassium	18000		500	150	ug/L	1		6020A	Total/NA
Magnesium	300000		3500	700	ug/L	7		6020A	Total/NA
Sodium	900000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	2.6		0.035	0.0067	mg/L	7		6020A	Total/NA
Lithium	0.23		0.0080	0.0025	mg/L	1		6020A	Total/NA
Calcium	420000		1000	190	ug/L	1		6020A	Dissolved
Potassium	18000		500	150	ug/L	1		6020A	Dissolved
Magnesium	320000		3500	700	ug/L	7		6020A	Dissolved
Sodium	960000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	2.7		0.035	0.0067	mg/L	7		6020A	Dissolved
Lithium	0.22		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3400		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	690		10	3.1	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-28 (Continued) — Lab Sample ID: 280-157589-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	74		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	7600		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 280-157589-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	37000		1000	190	ug/L	1		6020A	Total/NA
Potassium	2100		500	150	ug/L	1		6020A	Total/NA
Magnesium	22000		500	100	ug/L	1		6020A	Total/NA
Sodium	54000		1000	610	ug/L	1		6020A	Total/NA
Selenium	0.0050		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.031		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	25		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	43		5.0	1.0	mg/L	1		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	260		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Suspended Solids	8.0	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	530		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13 — Lab Sample ID: 280-157589-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	400000		1000	190	ug/L	1		6020A	Total/NA
Potassium	10000		500	150	ug/L	1		6020A	Total/NA
Magnesium	150000		3500	700	ug/L	7		6020A	Total/NA
Sodium	380000		1000	610	ug/L	1		6020A	Total/NA
Selenium	0.30		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.10		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	67		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	2100		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	870		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	4100		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-35 — Lab Sample ID: 280-157589-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	380000		1000	190	ug/L	1		6020A	Total/NA
Potassium	11000		500	150	ug/L	1		6020A	Total/NA
Magnesium	240000		3500	700	ug/L	7		6020A	Total/NA
Sodium	780000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	1.5		0.035	0.0067	mg/L	7		6020A	Total/NA
Lithium	0.15		0.0080	0.0025	mg/L	1		6020A	Total/NA
Calcium	370000		1000	190	ug/L	1		6020A	Dissolved
Potassium	10000		500	150	ug/L	1		6020A	Dissolved
Magnesium	240000		3500	700	ug/L	7		6020A	Dissolved
Sodium	780000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	1.5		0.035	0.0067	mg/L	7		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-35 (Continued) — Lab Sample ID: 280-157589-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.15		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	660		60	20	mg/L	20		9056A	Total/NA
Sulfate	3300		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	190		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	12		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6200		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-35-EB — Lab Sample ID: 280-157589-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	310	J	1000	190	ug/L	1		6020A	Total/NA
Magnesium	180	J	500	100	ug/L	1		6020A	Total/NA
Sodium	950	J	1000	610	ug/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
3005A	Preparation, Total Metals	SW846	TAL CF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-157589-1	MW-21	Water	01/04/22 10:20	01/11/22 16:25
280-157589-2	MW-34	Ground Water	01/04/22 15:20	01/11/22 16:25
280-157589-3	MW-28	Water	01/07/22 11:30	01/11/22 16:25
280-157589-4	MW-27	Water	01/07/22 13:15	01/11/22 16:25
280-157589-5	MW-13	Water	01/07/22 15:00	01/11/22 16:25
280-157589-10	MW-35	Water	01/11/22 09:00	01/11/22 16:25
280-157589-11	MW-35-EB	Water	01/11/22 09:20	01/11/22 16:25

Method: 6020A - Metals (ICP/MS)

Client Sample ID: MW-21
Date Collected: 01/04/22 10:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:45	1
Calcium	380000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:45	1
Potassium	9100		500	150	ug/L		01/17/22 09:00	01/18/22 19:45	1
Magnesium	220000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:29	7
Sodium	640000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:29	7
Selenium	1.2		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 14:29	7
Lithium	0.19		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:45	1

Client Sample ID: MW-34
Date Collected: 01/04/22 15:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0016	J	0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:57	1
Calcium	22000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:57	1
Potassium	2900		500	150	ug/L		01/17/22 09:00	01/18/22 19:57	1
Magnesium	15000		500	100	ug/L		01/17/22 09:00	01/18/22 19:57	1
Sodium	220000		1000	610	ug/L		01/17/22 09:00	01/18/22 19:57	1
Selenium	0.017		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:57	1
Lithium	0.050		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:57	1

Client Sample ID: MW-28
Date Collected: 01/07/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:00	1
Calcium	400000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:00	1
Potassium	18000		500	150	ug/L		01/17/22 09:00	01/18/22 20:00	1
Magnesium	300000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:48	7
Sodium	900000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:48	7
Selenium	2.6		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 14:48	7
Lithium	0.23		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:00	1

Client Sample ID: MW-27
Date Collected: 01/07/22 13:15
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:04	1
Calcium	37000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:04	1
Potassium	2100		500	150	ug/L		01/17/22 09:00	01/18/22 20:04	1
Magnesium	22000		500	100	ug/L		01/17/22 09:00	01/18/22 20:04	1
Sodium	54000		1000	610	ug/L		01/17/22 09:00	01/18/22 20:04	1
Selenium	0.0050		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:04	1
Lithium	0.031		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:04	1

Client Sample ID: MW-13
Date Collected: 01/07/22 15:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:07	1
Calcium	400000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:07	1

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

Client Sample ID: MW-13
Date Collected: 01/07/22 15:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	10000		500	150	ug/L		01/17/22 09:00	01/18/22 20:07	1
Magnesium	150000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:51	7
Sodium	380000		1000	610	ug/L		01/17/22 09:00	01/18/22 20:07	1
Selenium	0.30		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:07	1
Lithium	0.10		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:07	1

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:36	1
Calcium	380000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:36	1
Potassium	11000		500	150	ug/L		01/17/22 09:00	01/18/22 20:36	1
Magnesium	240000		3500	700	ug/L		01/17/22 09:00	01/19/22 15:11	7
Sodium	780000		7000	4300	ug/L		01/17/22 09:00	01/19/22 15:11	7
Selenium	1.5		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 15:11	7
Lithium	0.15		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:36	1

Client Sample ID: MW-35-EB
Date Collected: 01/11/22 09:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:39	1
Calcium	310	J	1000	190	ug/L		01/17/22 09:00	01/18/22 20:39	1
Potassium	ND		500	150	ug/L		01/17/22 09:00	01/18/22 20:39	1
Magnesium	180	J	500	100	ug/L		01/17/22 09:00	01/18/22 20:39	1
Sodium	950	J	1000	610	ug/L		01/17/22 09:00	01/18/22 20:39	1
Selenium	ND		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:39	1
Lithium	ND		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:39	1

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

Client Sample ID: MW-28
Date Collected: 01/07/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 18:35	1
Calcium	420000		1000	190	ug/L		01/17/22 09:00	01/18/22 18:35	1
Potassium	18000		500	150	ug/L		01/17/22 09:00	01/18/22 18:35	1
Magnesium	320000		3500	700	ug/L		01/17/22 09:00	01/19/22 13:56	7
Sodium	960000		7000	4300	ug/L		01/17/22 09:00	01/19/22 13:56	7
Selenium	2.7		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 13:56	7
Lithium	0.22		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 18:35	1

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:06	1
Calcium	370000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:06	1
Potassium	10000		500	150	ug/L		01/17/22 09:00	01/18/22 19:06	1

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

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	240000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:12	7
Sodium	780000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:12	7
Selenium	1.5		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 14:12	7
Lithium	0.15		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:06	1

General Chemistry

Client Sample ID: MW-21
Date Collected: 01/04/22 10:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			01/12/22 12:33	1
Temperature	20.4	HF	1.0	1.0	Degrees C			01/12/22 12:33	1
Chloride	460		15	5.1	mg/L			01/13/22 12:51	5
Sulfate	3200		100	21	mg/L			01/13/22 13:06	20
Bicarbonate Alkalinity as CaCO3	260		10	3.1	mg/L			01/12/22 14:30	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 14:30	1
Total Suspended Solids	2.8	J H	4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	5400		50	24	mg/L			01/11/22 18:06	1

Client Sample ID: MW-34
Date Collected: 01/04/22 15:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			01/12/22 12:37	1
Temperature	21.7	HF	1.0	1.0	Degrees C			01/12/22 12:37	1
Chloride	1.3	J	3.0	1.0	mg/L			01/13/22 13:21	1
Sulfate	350		25	5.2	mg/L			01/13/22 13:36	5
Bicarbonate Alkalinity as CaCO3	280		10	3.1	mg/L			01/12/22 14:37	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 14:37	1
Total Suspended Solids	5.2	H	4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	800		40	19	mg/L			01/11/22 18:06	1

Client Sample ID: MW-28
Date Collected: 01/07/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			01/12/22 12:40	1
Temperature	21.7	HF	1.0	1.0	Degrees C			01/12/22 12:40	1
Chloride	65		3.0	1.0	mg/L			01/13/22 14:06	1
Sulfate	3400		100	21	mg/L			01/13/22 14:21	20
Bicarbonate Alkalinity as CaCO3	690		10	3.1	mg/L			01/12/22 14:48	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 14:48	1
Total Suspended Solids	74		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	7600		40	19	mg/L			01/12/22 08:58	1

Client Sample ID: MW-27
Date Collected: 01/07/22 13:15
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			01/12/22 12:44	1

General Chemistry (Continued)

Client Sample ID: MW-27
Date Collected: 01/07/22 13:15
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	21.2	HF	1.0	1.0	Degrees C			01/12/22 12:44	1
Chloride	25		3.0	1.0	mg/L			01/13/22 14:36	1
Sulfate	43		5.0	1.0	mg/L			01/13/22 14:36	1
Bicarbonate Alkalinity as CaCO3	260		10	3.1	mg/L			01/12/22 15:22	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:22	1
Total Suspended Solids	2.4	J	4.0	1.1	mg/L			01/13/22 10:42	1
Total Suspended Solids	8.0	H	4.0	1.1	mg/L			01/18/22 08:09	1
Total Dissolved Solids (TDS)	530		10	4.7	mg/L			01/12/22 08:58	1

Client Sample ID: MW-13
Date Collected: 01/07/22 15:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			01/13/22 14:51	1
Temperature	22.1	HF	1.0	1.0	Degrees C			01/13/22 14:51	1
Chloride	67		3.0	1.0	mg/L			01/13/22 16:06	1
Sulfate	2100		100	21	mg/L			01/13/22 16:21	20
Bicarbonate Alkalinity as CaCO3	870		10	3.1	mg/L			01/13/22 22:20	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 22:20	1
Total Suspended Solids	4.4		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	4100		40	19	mg/L			01/12/22 08:58	1

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			01/12/22 13:06	1
Temperature	21.5	HF	1.0	1.0	Degrees C			01/12/22 13:06	1
Chloride	660		60	20	mg/L			01/13/22 19:06	20
Sulfate	3300		100	21	mg/L			01/13/22 19:06	20
Bicarbonate Alkalinity as CaCO3	190		10	3.1	mg/L			01/12/22 16:19	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:19	1
Total Suspended Solids	12		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	6200		40	19	mg/L			01/13/22 08:25	1

Client Sample ID: MW-35-EB
Date Collected: 01/11/22 09:20
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/13/22 14:59	1
Temperature	23.5	HF	1.0	1.0	Degrees C			01/13/22 14:59	1
Chloride	ND		3.0	1.0	mg/L			01/13/22 19:21	1
Sulfate	ND		5.0	1.0	mg/L			01/13/22 19:21	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:25	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:25	1
Total Suspended Solids	ND		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/12/22 08:58	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-341316/1-A
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 341316

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:26	1
Calcium	ND		1000	190	ug/L		01/17/22 09:00	01/18/22 19:26	1
Potassium	ND		500	150	ug/L		01/17/22 09:00	01/18/22 19:26	1
Magnesium	ND		500	100	ug/L		01/17/22 09:00	01/18/22 19:26	1
Sodium	ND		1000	610	ug/L		01/17/22 09:00	01/18/22 19:26	1
Selenium	ND		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:26	1
Lithium	ND		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:26	1

Lab Sample ID: LCS 310-341316/2-A
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.191		mg/L		95	80 - 120
Calcium	2000	1830		ug/L		92	80 - 120
Potassium	2000	2030		ug/L		102	80 - 120
Magnesium	2000	2100		ug/L		105	80 - 120
Sodium	2000	2250		ug/L		113	80 - 120
Selenium	0.400	0.363		mg/L		91	80 - 120
Lithium	0.200	0.219		mg/L		109	80 - 120

Lab Sample ID: 280-157589-1 MS
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.200	0.214		mg/L		107	75 - 125
Calcium	380000		2000	377000	4	ug/L		-63	75 - 125
Potassium	9100		2000	11000	4	ug/L		96	75 - 125
Lithium	0.19		0.200	0.386		mg/L		97	75 - 125

Lab Sample ID: 280-157589-1 MS
Matrix: Water
Analysis Batch: 341780

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	220000		2000	223000	4	ug/L		-55	75 - 125
Sodium	640000		2000	625000	4	ug/L		-922	75 - 125
Selenium	1.2		0.400	1.53		mg/L		87	75 - 125

Lab Sample ID: 280-157589-1 MSD
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.222		mg/L		111	75 - 125	3	20
Calcium	380000		2000	385000	4	ug/L		355	75 - 125	2	20
Potassium	9100		2000	11400	4	ug/L		113	75 - 125	3	20
Lithium	0.19		0.200	0.395		mg/L		102	75 - 125	2	20

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

Lab Sample ID: 280-157589-1 MSD
Matrix: Water
Analysis Batch: 341780

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	220000		2000	216000	4	ug/L		-383	75 - 125	3	20
Sodium	640000		2000	594000	4	ug/L		-2458	75 - 125	5	20
Selenium	1.2		0.400	1.50		mg/L		79	75 - 125	2	20

Lab Sample ID: 280-157589-11 DU
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-35-EB
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Calcium	310	J	ND		ug/L		NC	20
Potassium	ND		ND		ug/L		NC	20
Magnesium	180	J	ND		ug/L		NC	20
Sodium	950	J	ND		ug/L		NC	20
Selenium	ND		ND		mg/L		NC	20
Lithium	ND		ND		mg/L		NC	20

Lab Sample ID: MB 310-341269/1-B
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 341425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 18:29	1
Calcium	ND		1000	190	ug/L		01/17/22 09:00	01/18/22 18:29	1
Potassium	ND		500	150	ug/L		01/17/22 09:00	01/18/22 18:29	1
Magnesium	ND		500	100	ug/L		01/17/22 09:00	01/18/22 18:29	1
Sodium	ND		1000	610	ug/L		01/17/22 09:00	01/18/22 18:29	1
Selenium	ND		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 18:29	1
Lithium	ND		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 18:29	1

Lab Sample ID: LCS 310-341269/2-B
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.201		mg/L		101	80 - 120
Calcium	2000	1860		ug/L		93	80 - 120
Potassium	2000	2210		ug/L		110	80 - 120
Magnesium	2000	2240		ug/L		112	80 - 120
Sodium	2000	2270		ug/L		113	80 - 120
Selenium	0.400	0.388		mg/L		97	80 - 120
Lithium	0.200	0.225		mg/L		113	80 - 120

Lab Sample ID: 280-157589-3 MS
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-28
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.200	0.223		mg/L		112	75 - 125

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

Lab Sample ID: 280-157589-3 MS
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-28
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	420000		2000	411000	4	ug/L		-214	75 - 125
Potassium	18000		2000	19600	4	ug/L		83	75 - 125
Lithium	0.22		0.200	0.387		mg/L		85	75 - 125

Lab Sample ID: 280-157589-3 MS
Matrix: Water
Analysis Batch: 341780

Client Sample ID: MW-28
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	320000		2000	312000	4	ug/L		-197	75 - 125
Sodium	960000		2000	953000	4	ug/L		-159	75 - 125
Selenium	2.7		0.400	3.09	4	mg/L		107	75 - 125

Lab Sample ID: 280-157589-3 MSD
Matrix: Water
Analysis Batch: 341739

Client Sample ID: MW-28
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.228		mg/L		114	75 - 125	2	20
Calcium	420000		2000	417000	4	ug/L		68	75 - 125	1	20
Potassium	18000		2000	20100	4	ug/L		111	75 - 125	3	20
Lithium	0.22		0.200	0.396		mg/L		90	75 - 125	2	20

Lab Sample ID: 280-157589-3 MSD
Matrix: Water
Analysis Batch: 341780

Client Sample ID: MW-28
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	320000		2000	313000	4	ug/L		-141	75 - 125	0	20
Sodium	960000		2000	912000	4	ug/L		-2194	75 - 125	4	20
Selenium	2.7		0.400	3.06	4	mg/L		101	75 - 125	1	20

Method: 9040B - pH

Lab Sample ID: LCS 280-563210/4
Matrix: Water
Analysis Batch: 563210

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-563381/4
Matrix: Water
Analysis Batch: 563381

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-563299/6
Matrix: Water
Analysis Batch: 563299

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/13/22 12:36	1
Sulfate	ND		5.0	1.0	mg/L			01/13/22 12:36	1

Lab Sample ID: LCS 280-563299/4
Matrix: Water
Analysis Batch: 563299

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	95.4		mg/L		95	90 - 110		
Sulfate			100	95.8		mg/L		96	90 - 110		

Lab Sample ID: LCSD 280-563299/5
Matrix: Water
Analysis Batch: 563299

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	95.8		mg/L		96	90 - 110	0	10
Sulfate			100	96.1		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-563299/3
Matrix: Water
Analysis Batch: 563299

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.39		mg/L		88	50 - 150		
Sulfate			5.00	4.13	J	mg/L		83	50 - 150		

Lab Sample ID: 280-157589-4 MS
Matrix: Water
Analysis Batch: 563299

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	25		50.0	76.4		mg/L		102	80 - 120		
Sulfate	43		50.0	94.6		mg/L		103	80 - 120		

Lab Sample ID: 280-157589-4 MSD
Matrix: Water
Analysis Batch: 563299

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25		50.0	75.8		mg/L		101	80 - 120	1	20
Sulfate	43		50.0	94.0		mg/L		102	80 - 120	1	20

Lab Sample ID: 280-157589-4 DU
Matrix: Water
Analysis Batch: 563299

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	25			25.1		mg/L				0.3	15
Sulfate	43			43.0		mg/L				0.4	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-563275/31
Matrix: Water
Analysis Batch: 563275

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:15	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:15	1

Lab Sample ID: MB 280-563275/5
Matrix: Water
Analysis Batch: 563275

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 11:14	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 11:14	1

Lab Sample ID: 280-157589-4 DU
Matrix: Water
Analysis Batch: 563275

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bicarbonate Alkalinity as CaCO3	260		260		mg/L		0.2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: MB 280-563377/31
Matrix: Water
Analysis Batch: 563377

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 16:50	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 16:50	1

Lab Sample ID: MB 280-563377/57
Matrix: Water
Analysis Batch: 563377

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 21:23	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 21:23	1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-563287/1
Matrix: Water
Analysis Batch: 563287

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			01/13/22 10:42	1

Lab Sample ID: LCS 280-563287/2
Matrix: Water
Analysis Batch: 563287

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	80.4		mg/L		80	79 - 114

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-563589/1
Matrix: Water
Analysis Batch: 563589

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			01/18/22 08:09	1

Lab Sample ID: LCS 280-563589/2
Matrix: Water
Analysis Batch: 563589

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	90.0		mg/L		90	79 - 114		

Lab Sample ID: LCSD 280-563589/3
Matrix: Water
Analysis Batch: 563589

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	87.6		mg/L		88	79 - 114	3	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-563114/2
Matrix: Water
Analysis Batch: 563114

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/11/22 18:06	1

Lab Sample ID: LCS 280-563114/1
Matrix: Water
Analysis Batch: 563114

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			506	482		mg/L		95	88 - 114		

Lab Sample ID: 280-157589-1 DU
Matrix: Water
Analysis Batch: 563114

Client Sample ID: MW-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	5400			5660		mg/L				4	10

Lab Sample ID: MB 280-563155/1
Matrix: Water
Analysis Batch: 563155

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/12/22 08:58	1

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCS 280-563155/2
Matrix: Water
Analysis Batch: 563155

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			506	478		mg/L		94	88 - 114		

Lab Sample ID: 280-157589-11 DU
Matrix: Water
Analysis Batch: 563155

Client Sample ID: MW-35-EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	ND			ND		mg/L				NC	10

Lab Sample ID: MB 280-563261/1
Matrix: Water
Analysis Batch: 563261

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/13/22 08:25	1

Lab Sample ID: LCS 280-563261/2
Matrix: Water
Analysis Batch: 563261

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			500	492		mg/L		98	88 - 114		

Lab Sample ID: LCSD 280-563261/3
Matrix: Water
Analysis Batch: 563261

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			500	469		mg/L		94	88 - 114	5	20

Metals

Filtration Batch: 341269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-3	MW-28	Dissolved	Water	Filtration	
280-157589-10	MW-35	Dissolved	Water	Filtration	
MB 310-341269/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	Filtration	
280-157589-3 MS	MW-28	Dissolved	Water	Filtration	
280-157589-3 MSD	MW-28	Dissolved	Water	Filtration	

Prep Batch: 341316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	3005A	
280-157589-2	MW-34	Total/NA	Ground Water	3005A	
280-157589-3	MW-28	Total/NA	Water	3005A	
280-157589-4	MW-27	Total/NA	Water	3005A	
280-157589-5	MW-13	Total/NA	Water	3005A	
280-157589-10	MW-35	Total/NA	Water	3005A	
280-157589-11	MW-35-EB	Total/NA	Water	3005A	
MB 310-341316/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-341316/2-A	Lab Control Sample	Total/NA	Water	3005A	
280-157589-1 MS	MW-21	Total/NA	Water	3005A	
280-157589-1 MSD	MW-21	Total/NA	Water	3005A	
280-157589-11 DU	MW-35-EB	Total/NA	Water	3005A	

Prep Batch: 341425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-3	MW-28	Dissolved	Water	3005A	341269
280-157589-10	MW-35	Dissolved	Water	3005A	341269
MB 310-341269/1-B	Method Blank	Dissolved	Water	3005A	341269
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	3005A	341269
280-157589-3 MS	MW-28	Dissolved	Water	3005A	341269
280-157589-3 MSD	MW-28	Dissolved	Water	3005A	341269

Analysis Batch: 341739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	6020A	341316
280-157589-2	MW-34	Total/NA	Ground Water	6020A	341316
280-157589-3	MW-28	Dissolved	Water	6020A	341425
280-157589-3	MW-28	Total/NA	Water	6020A	341316
280-157589-4	MW-27	Total/NA	Water	6020A	341316
280-157589-5	MW-13	Total/NA	Water	6020A	341316
280-157589-10	MW-35	Dissolved	Water	6020A	341425
280-157589-10	MW-35	Total/NA	Water	6020A	341316
280-157589-11	MW-35-EB	Total/NA	Water	6020A	341316
MB 310-341269/1-B	Method Blank	Dissolved	Water	6020A	341425
MB 310-341316/1-A	Method Blank	Total/NA	Water	6020A	341316
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	6020A	341425
LCS 310-341316/2-A	Lab Control Sample	Total/NA	Water	6020A	341316
280-157589-1 MS	MW-21	Total/NA	Water	6020A	341316
280-157589-1 MSD	MW-21	Total/NA	Water	6020A	341316
280-157589-3 MS	MW-28	Dissolved	Water	6020A	341425
280-157589-3 MSD	MW-28	Dissolved	Water	6020A	341425
280-157589-11 DU	MW-35-EB	Total/NA	Water	6020A	341316

Metals

Analysis Batch: 341780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	6020A	341316
280-157589-3	MW-28	Dissolved	Water	6020A	341425
280-157589-3	MW-28	Total/NA	Water	6020A	341316
280-157589-5	MW-13	Total/NA	Water	6020A	341316
280-157589-10	MW-35	Dissolved	Water	6020A	341425
280-157589-10	MW-35	Total/NA	Water	6020A	341316
280-157589-1 MS	MW-21	Total/NA	Water	6020A	341316
280-157589-1 MSD	MW-21	Total/NA	Water	6020A	341316
280-157589-3 MS	MW-28	Dissolved	Water	6020A	341425
280-157589-3 MSD	MW-28	Dissolved	Water	6020A	341425

General Chemistry

Analysis Batch: 563114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	SM2540 C	
280-157589-2	MW-34	Total/NA	Ground Water	SM2540 C	
MB 280-563114/2	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-563114/1	Lab Control Sample	Total/NA	Water	SM2540 C	
280-157589-1 DU	MW-21	Total/NA	Water	SM2540 C	

Analysis Batch: 563155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-3	MW-28	Total/NA	Water	SM2540 C	
280-157589-4	MW-27	Total/NA	Water	SM2540 C	
280-157589-5	MW-13	Total/NA	Water	SM2540 C	
280-157589-11	MW-35-EB	Total/NA	Water	SM2540 C	
MB 280-563155/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-563155/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-157589-11 DU	MW-35-EB	Total/NA	Water	SM2540 C	

Analysis Batch: 563210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	9040B	
280-157589-2	MW-34	Total/NA	Ground Water	9040B	
280-157589-3	MW-28	Total/NA	Water	9040B	
280-157589-4	MW-27	Total/NA	Water	9040B	
280-157589-10	MW-35	Total/NA	Water	9040B	
LCS 280-563210/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 563261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-10	MW-35	Total/NA	Water	SM2540 C	
MB 280-563261/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-563261/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-563261/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 563275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	SM 2320B	
280-157589-2	MW-34	Total/NA	Ground Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 563275 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-3	MW-28	Total/NA	Water	SM 2320B	
280-157589-4	MW-27	Total/NA	Water	SM 2320B	
280-157589-10	MW-35	Total/NA	Water	SM 2320B	
280-157589-11	MW-35-EB	Total/NA	Water	SM 2320B	
MB 280-563275/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-563275/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-563275/30	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-563275/4	Lab Control Sample	Total/NA	Water	SM 2320B	
280-157589-4 DU	MW-27	Total/NA	Water	SM 2320B	

Analysis Batch: 563287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	SM 2540D	
280-157589-2	MW-34	Total/NA	Ground Water	SM 2540D	
280-157589-3	MW-28	Total/NA	Water	SM 2540D	
280-157589-4	MW-27	Total/NA	Water	SM 2540D	
280-157589-5	MW-13	Total/NA	Water	SM 2540D	
280-157589-10	MW-35	Total/NA	Water	SM 2540D	
280-157589-11	MW-35-EB	Total/NA	Water	SM 2540D	
MB 280-563287/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-563287/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 563299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-1	MW-21	Total/NA	Water	9056A	
280-157589-1	MW-21	Total/NA	Water	9056A	
280-157589-2	MW-34	Total/NA	Ground Water	9056A	
280-157589-2	MW-34	Total/NA	Ground Water	9056A	
280-157589-3	MW-28	Total/NA	Water	9056A	
280-157589-3	MW-28	Total/NA	Water	9056A	
280-157589-4	MW-27	Total/NA	Water	9056A	
280-157589-5	MW-13	Total/NA	Water	9056A	
280-157589-5	MW-13	Total/NA	Water	9056A	
280-157589-10	MW-35	Total/NA	Water	9056A	
280-157589-11	MW-35-EB	Total/NA	Water	9056A	
MB 280-563299/6	Method Blank	Total/NA	Water	9056A	
LCS 280-563299/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-563299/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-563299/3	Lab Control Sample	Total/NA	Water	9056A	
280-157589-4 MS	MW-27	Total/NA	Water	9056A	
280-157589-4 MSD	MW-27	Total/NA	Water	9056A	
280-157589-4 DU	MW-27	Total/NA	Water	9056A	

Analysis Batch: 563377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-5	MW-13	Total/NA	Water	SM 2320B	
MB 280-563377/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-563377/57	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-563377/56	Lab Control Sample	Total/NA	Water	SM 2320B	

QC Association Summary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 563381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-5	MW-13	Total/NA	Water	9040B	
280-157589-11	MW-35-EB	Total/NA	Water	9040B	
LCS 280-563381/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 563589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-4	MW-27	Total/NA	Water	SM 2540D	
MB 280-563589/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-563589/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-563589/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-21
Date Collected: 01/04/22 10:20
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 19:45	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 14:29	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 12:33	ECC	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	563299	01/13/22 12:51	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 13:06	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 14:30	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	20 mL	100 mL	563114	01/11/22 18:06	SVC	TAL DEN

Client Sample ID: MW-34
Date Collected: 01/04/22 15:20
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 19:57	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 12:37	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 13:21	SPG	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	563299	01/13/22 13:36	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 14:37	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563114	01/11/22 18:06	SVC	TAL DEN

Client Sample ID: MW-28
Date Collected: 01/07/22 11:30
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 18:35	SAP	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 13:56	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:00	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 14:48	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 12:40	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 14:06	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 14:21	SPG	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-28
Date Collected: 01/07/22 11:30
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 14:48	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-27
Date Collected: 01/07/22 13:15
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:04	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 12:44	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 14:36	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 15:22	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563589	01/18/22 08:09	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-13
Date Collected: 01/07/22 15:00
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:07	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 14:51	SAP	TAL CF
Total/NA	Analysis	9040B		1			563381	01/13/22 14:51	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 16:06	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 16:21	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563377	01/13/22 22:20	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 19:06	SAP	TAL CF

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-35
Date Collected: 01/11/22 09:00
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 14:12	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:36	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:11	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:06	ECC	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 19:06	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 16:19	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563261	01/13/22 08:25	ABW	TAL DEN

Client Sample ID: MW-35-EB
Date Collected: 01/11/22 09:20
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:39	SAP	TAL CF
Total/NA	Analysis	9040B		1			563381	01/13/22 14:59	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 19:21	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 16:25	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-157589-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Ground Water	Temperature
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-22
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	04-20-22
Oregon	NELAP	IA100001	09-29-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 720-838-6065	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days): ASAP			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Additional Testing 2021	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Canton	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	Dissolved 6020A - ETA Canton (7 metals only)										Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N	N	D											
MW-21	1/4/22	1020	G	Water			X	X	X	X	X												3	
MW-34	1/4/22	1520	G	Water			X	X	X	X	X												3	
MW-28	1/7/22	1130	G	Water			X	X	X	X	X	X											4	
MW-27	1/7/22	1315	G	Water			X	X	X	X	X												3	
MW-13	1/7/22	1500	G	Water			X	X	X	X	X												3	
MW-31	1/10/22	1130	G	Water			X	X	X	X	X	X											4	
MW-31-FD	1/10/22	1130	G	Water			X	X	X	X	X	X											4	
MW-32	1/10/22	1310	G	Water			X	X	X	X	X												3	
MW-30	1/10/22	1440	G	W			X	X	X	X	X												3	
MW-35	1/11/22	0900	G	W			X	X	X	X	X	X											4	
MW-35-EB	1/11/22	0920	G	W			X	X	X	X	X												3	

280-157589 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		1/11/22 1525	HDR		01/11/2022 1525	EMAIN
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6, 0.8, 1.2, 1.3 -0.2

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 720-838-6065	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days): ASAP			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Additional Testing 2021	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Canton	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	Dissolved 6020A - ETA Canton (7 metals only)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N	N	D		
MW-33B	1/11/22	1050	G	Water			X	X	X	X	X	X	3	Only ~370 mL for TDS/TSS
				Water										
				Water										
MW-33A	1/11/22	1145	G	Water			X	X	X	X	X		6	TSS/TDS in 4x 250 mL bottles
				Water										
				Water										
				Water										
				Water										

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/11/22 1525	MDR		01/11/2022 1525	ETA DEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6, 0.8, IR/3 - 0.2

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-600915.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin: Colorado	Page: Page 1 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-157589-1
Address: 3019 Venture Way, ,	Due Date Requested: 2/9/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A_TOT (MOD) 13 Total Metals (w/collision cell)	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-21 (280-157589-1)	1/4/22	10 20 Mountain		Water			X		1	
MW-34 (280-157589-2)	1/4/22	15:20 Mountain		Water			X		1	
MW-28 (280-157589-3)	1/7/22	11:30 Mountain		Water			X	X	2	
MW-27 (280-157589-4)	1/7/22	13:15 Mountain		Water			X		1	
MW-13 (280-157589-5)	1/7/22	15 00 Mountain		Water			X		1	
MW-31 (280-157589-6)	1/10/22	11 30 Mountain		Water			X	X	2	
MW-31-FD (280-157589-7)	1/10/22	11 30 Mountain		Water			X	X	2	
MW-32 (280-157589-8)	1/10/22	13:10 Mountain		Water			X		1	
MW-30 (280-157589-9)	1/10/22	14.40 Mountain		Water			X		1	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank. 4	Special Instructions/QC Requirements

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

	Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
1		1/12/21 1700			1.13.22 1030	
2	Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
3	Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

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

Ver: 06/08/2021

5/27/2022 (Rev. 1)

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-600915 2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin: Colorado	Page: Page 2 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-157589-1
Address: 3019 Venture Way, ,	Due Date Requested: 2/9/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A_TOT (MOD) 13 Total Metals (w/collision cell)	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-35 (280-157589-10)	1/11/22	09.00 Mountain		Water			X	X	2	
MW-35-EB (280-157589-11)	1/11/22	09.20 Mountain		Water			X		1	
MW-33B (280-157589-12)	1/11/22	10.50 Mountain		Water			X	X	2	
MW-33A (280-157589-13)	1/11/22	11.45 Mountain		Water			X		2	
MW-29 (280-157589-14)	1/10/22	17.30 Mountain		Water			X	X	2	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 4	Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	1/12/21 1700		Received by:	1-13-22 1030	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-157589-1

Login Number: 157589
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-157589-1

Login Number: 157589
List Number: 2
Creator: Kizer, Preston V

List Source: Eurofins Cedar Falls
List Creation: 01/13/22 11:16 AM

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-157589-2
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/1/2022 10:27:15 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-157589-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-157589-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 01/11/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.2°C and 0.4°C.

Please note the following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): MW-29 (280-157589-14). 1 of 4 plastic 250ml unpreserved containers received about half full. Limited volume received for TDS, TSS, Alkalinity, Chloride/Sulfate, and pH for sample MW-33B (280-157589-12)

Samples MW-21 (280-157589-1) and MW-34 (280-157589-2) with less than half the holding time left for Total Dissolved Solids and Total Suspended Solids.
Per client request on 05/20/2022, Samples MW-29, MW-30, MW-31, MW-32, MW-33A, and MW-33B in a separate report. These are now under 280-157589-2. All other samples under 280-157589-1.

DISSOLVED METALS (ICPMS)- Method 6020A

Several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium, Magnesium, Potassium, Selenium, and Sodium MS/MSD performed on a sample MW-28 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL METALS (ICP-MS)_ METHOD 6020A

Several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-30 (280-157589-9). The sample(s) was preserved to the appropriate pH in the laboratory.

The accuracy and precision of the Calcium, Magnesium, Potassium, and Sodium MS/MSD performed on a sample MW-21 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed

Job ID: 280-157589-2 (Continued)

Laboratory: Eurofins Denver (Continued)

unnecessary.

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

GENERAL CHEMISTRY- VARIOUS

Several samples required dilution prior to analysis for various analyses. The reporting limits have been adjusted accordingly.

The analysis for Total Suspended Solids by method 2540D for sample MW-34 (280-157589-2) was performed outside of hold due to more than half of the hold time expiring during transit. It is Eurofins TestAmerica's policy to analyze all samples within holding time, but when samples are received with less than half the hold time remaining, this cannot be guaranteed. Please note that the sample results should be considered estimated.

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

Detection Summary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-31
Lab Sample ID: 280-157589-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	270000		1000	190	ug/L	1		6020A	Total/NA
Potassium	12000		500	150	ug/L	1		6020A	Total/NA
Magnesium	230000		3500	700	ug/L	7		6020A	Total/NA
Sodium	940000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	0.30		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.14		0.0080	0.0025	mg/L	1		6020A	Total/NA
Calcium	270000		1000	190	ug/L	1		6020A	Dissolved
Potassium	12000		500	150	ug/L	1		6020A	Dissolved
Magnesium	250000		3500	700	ug/L	7		6020A	Dissolved
Sodium	1000000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	0.30		0.0050	0.00096	mg/L	1		6020A	Dissolved
Lithium	0.13		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3600		250	52	mg/L	50		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	620		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6700		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-31-FD
Lab Sample ID: 280-157589-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	270000		1000	190	ug/L	1		6020A	Total/NA
Potassium	13000		500	150	ug/L	1		6020A	Total/NA
Magnesium	240000		3500	700	ug/L	7		6020A	Total/NA
Sodium	970000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	0.31		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.14		0.0080	0.0025	mg/L	1		6020A	Total/NA
Calcium	270000		1000	190	ug/L	1		6020A	Dissolved
Potassium	12000		500	150	ug/L	1		6020A	Dissolved
Magnesium	230000		3500	700	ug/L	7		6020A	Dissolved
Sodium	940000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	0.30		0.0050	0.00096	mg/L	1		6020A	Dissolved
Lithium	0.13		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	180		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3800		250	52	mg/L	50		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	640		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6500		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-32
Lab Sample ID: 280-157589-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	370000		1000	190	ug/L	1		6020A	Total/NA
Potassium	11000		500	150	ug/L	1		6020A	Total/NA
Magnesium	130000		3500	700	ug/L	7		6020A	Total/NA
Sodium	340000		1000	610	ug/L	1		6020A	Total/NA
Selenium	0.064		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.053		0.0080	0.0025	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-32 (Continued) — Lab Sample ID: 280-157589-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	42		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	2300		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	410		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	7.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3700		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-30 — Lab Sample ID: 280-157589-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0010	J	0.0050	0.00075	mg/L	1		6020A	Total/NA
Calcium	180000		1000	190	ug/L	1		6020A	Total/NA
Potassium	18000		500	150	ug/L	1		6020A	Total/NA
Magnesium	250000		3500	700	ug/L	7		6020A	Total/NA
Sodium	1900000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	0.0022	J	0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.33		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	150		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	5600		250	52	mg/L	50		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	1100		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	9700		1000	470	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-33B — Lab Sample ID: 280-157589-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0048	J	0.0050	0.00075	mg/L	1		6020A	Total/NA
Calcium	52000		1000	190	ug/L	1		6020A	Total/NA
Potassium	4500		500	150	ug/L	1		6020A	Total/NA
Magnesium	32000		500	100	ug/L	1		6020A	Total/NA
Sodium	630000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	0.019		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.087		0.0080	0.0025	mg/L	1		6020A	Total/NA
Arsenic	0.0020	J	0.0050	0.00075	mg/L	1		6020A	Dissolved
Calcium	34000		1000	190	ug/L	1		6020A	Dissolved
Potassium	4400		500	150	ug/L	1		6020A	Dissolved
Magnesium	23000		500	100	ug/L	1		6020A	Dissolved
Sodium	640000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	0.022		0.0050	0.00096	mg/L	1		6020A	Dissolved
Lithium	0.085		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	1300		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	320		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	3000		23	6.3	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2500		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33A
Lab Sample ID: 280-157589-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	350000		1000	190	ug/L	1		6020A	Total/NA
Potassium	16000		500	150	ug/L	1		6020A	Total/NA
Magnesium	260000		3500	700	ug/L	7		6020A	Total/NA
Sodium	460000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	0.24		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.13		0.0080	0.0025	mg/L	1		6020A	Total/NA
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	64		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3100		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	480		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	5000		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-29
Lab Sample ID: 280-157589-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	400000		1000	190	ug/L	1		6020A	Total/NA
Potassium	16000		500	150	ug/L	1		6020A	Total/NA
Magnesium	270000		3500	700	ug/L	7		6020A	Total/NA
Sodium	840000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	2.1		0.035	0.0067	mg/L	7		6020A	Total/NA
Lithium	0.27		0.0080	0.0025	mg/L	1		6020A	Total/NA
Calcium	400000		1000	190	ug/L	1		6020A	Dissolved
Potassium	15000		500	150	ug/L	1		6020A	Dissolved
Magnesium	270000		3500	700	ug/L	7		6020A	Dissolved
Sodium	870000		7000	4300	ug/L	7		6020A	Dissolved
Selenium	2.1		0.035	0.0067	mg/L	7		6020A	Dissolved
Lithium	0.26		0.0080	0.0025	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	100		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3500		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	830		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	220		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6700		100	47	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
3005A	Preparation, Total Metals	SW846	TAL CF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-157589-6	MW-31	Water	01/10/22 11:30	01/11/22 16:25
280-157589-7	MW-31-FD	Water	01/10/22 11:30	01/11/22 16:25
280-157589-8	MW-32	Water	01/10/22 13:10	01/11/22 16:25
280-157589-9	MW-30	Water	01/10/22 14:40	01/11/22 16:25
280-157589-12	MW-33B	Water	01/11/22 10:50	01/11/22 16:25
280-157589-13	MW-33A	Water	01/11/22 11:45	01/11/22 16:25
280-157589-14	MW-29	Water	01/10/22 17:30	01/11/22 16:25

Method: 6020A - Metals (ICP/MS)

Client Sample ID: MW-31
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:10	1
Calcium	270000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:10	1
Potassium	12000		500	150	ug/L		01/17/22 09:00	01/18/22 20:10	1
Magnesium	230000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:54	7
Sodium	940000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:54	7
Selenium	0.30		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:10	1
Lithium	0.14		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:10	1

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:26	1
Calcium	270000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:26	1
Potassium	13000		500	150	ug/L		01/17/22 09:00	01/18/22 20:26	1
Magnesium	240000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:58	7
Sodium	970000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:58	7
Selenium	0.31		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:26	1
Lithium	0.14		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:26	1

Client Sample ID: MW-32
Date Collected: 01/10/22 13:10
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:29	1
Calcium	370000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:29	1
Potassium	11000		500	150	ug/L		01/17/22 09:00	01/18/22 20:29	1
Magnesium	130000		3500	700	ug/L		01/17/22 09:00	01/19/22 15:01	7
Sodium	340000		1000	610	ug/L		01/17/22 09:00	01/18/22 20:29	1
Selenium	0.064		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:29	1
Lithium	0.053		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:29	1

Client Sample ID: MW-30
Date Collected: 01/10/22 14:40
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0010	J	0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:33	1
Calcium	180000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:33	1
Potassium	18000		500	150	ug/L		01/17/22 09:00	01/18/22 20:33	1
Magnesium	250000		3500	700	ug/L		01/17/22 09:00	01/19/22 15:04	7
Sodium	1900000		7000	4300	ug/L		01/17/22 09:00	01/19/22 15:04	7
Selenium	0.0022	J	0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:33	1
Lithium	0.33		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:33	1

Client Sample ID: MW-33B
Date Collected: 01/11/22 10:50
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0048	J	0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:46	1
Calcium	52000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:46	1

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

Client Sample ID: MW-33B
Date Collected: 01/11/22 10:50
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	4500		500	150	ug/L		01/17/22 09:00	01/18/22 20:46	1
Magnesium	32000		500	100	ug/L		01/17/22 09:00	01/18/22 20:46	1
Sodium	630000		7000	4300	ug/L		01/17/22 09:00	01/19/22 15:14	7
Selenium	0.019		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:46	1
Lithium	0.087		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:46	1

Client Sample ID: MW-33A
Date Collected: 01/11/22 11:45
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:49	1
Calcium	350000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:49	1
Potassium	16000		500	150	ug/L		01/17/22 09:00	01/18/22 20:49	1
Magnesium	260000		3500	700	ug/L		01/17/22 09:00	01/19/22 15:17	7
Sodium	460000		7000	4300	ug/L		01/17/22 09:00	01/19/22 15:17	7
Selenium	0.24		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 20:49	1
Lithium	0.13		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:49	1

Client Sample ID: MW-29
Date Collected: 01/10/22 17:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 20:52	1
Calcium	400000		1000	190	ug/L		01/17/22 09:00	01/18/22 20:52	1
Potassium	16000		500	150	ug/L		01/17/22 09:00	01/18/22 20:52	1
Magnesium	270000		3500	700	ug/L		01/17/22 09:00	01/19/22 15:20	7
Sodium	840000		7000	4300	ug/L		01/17/22 09:00	01/19/22 15:20	7
Selenium	2.1		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 15:20	7
Lithium	0.27		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 20:52	1

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

Client Sample ID: MW-31
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:00	1
Calcium	270000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:00	1
Potassium	12000		500	150	ug/L		01/17/22 09:00	01/18/22 19:00	1
Magnesium	250000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:06	7
Sodium	1000000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:06	7
Selenium	0.30		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:00	1
Lithium	0.13		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:00	1

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:03	1
Calcium	270000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:03	1
Potassium	12000		500	150	ug/L		01/17/22 09:00	01/18/22 19:03	1

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

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	230000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:09	7
Sodium	940000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:09	7
Selenium	0.30		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:03	1
Lithium	0.13		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:03	1

Client Sample ID: MW-33B
Date Collected: 01/11/22 10:50
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020	J	0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:10	1
Calcium	34000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:10	1
Potassium	4400		500	150	ug/L		01/17/22 09:00	01/18/22 19:10	1
Magnesium	23000		500	100	ug/L		01/17/22 09:00	01/18/22 19:10	1
Sodium	640000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:16	7
Selenium	0.022		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:10	1
Lithium	0.085		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:10	1

Client Sample ID: MW-29
Date Collected: 01/10/22 17:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:13	1
Calcium	400000		1000	190	ug/L		01/17/22 09:00	01/18/22 19:13	1
Potassium	15000		500	150	ug/L		01/17/22 09:00	01/18/22 19:13	1
Magnesium	270000		3500	700	ug/L		01/17/22 09:00	01/19/22 14:19	7
Sodium	870000		7000	4300	ug/L		01/17/22 09:00	01/19/22 14:19	7
Selenium	2.1		0.035	0.0067	mg/L		01/17/22 09:00	01/19/22 14:19	7
Lithium	0.26		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:13	1

General Chemistry

Client Sample ID: MW-31
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/12/22 13:17	1
Temperature	22.4	HF	1.0	1.0	Degrees C			01/12/22 13:17	1
Chloride	170		3.0	1.0	mg/L			01/13/22 16:36	1
Sulfate	3600		250	52	mg/L			01/13/22 16:51	50
Bicarbonate Alkalinity as CaCO3	620		10	3.1	mg/L			01/12/22 15:39	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:39	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	6700		100	47	mg/L			01/12/22 08:58	1

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/12/22 13:21	1
Temperature	22.2	HF	1.0	1.0	Degrees C			01/12/22 13:21	1
Chloride	180		3.0	1.0	mg/L			01/13/22 17:06	1

General Chemistry (Continued)

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3800		250	52	mg/L			01/13/22 17:21	50
Bicarbonate Alkalinity as CaCO3	640		10	3.1	mg/L			01/12/22 15:50	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:50	1
Total Suspended Solids	10		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	6500		40	19	mg/L			01/12/22 08:58	1

Client Sample ID: MW-32
Date Collected: 01/10/22 13:10
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			01/12/22 12:54	1
Temperature	20.8	HF	1.0	1.0	Degrees C			01/12/22 12:54	1
Chloride	42		3.0	1.0	mg/L			01/13/22 17:36	1
Sulfate	2300		100	21	mg/L			01/13/22 17:51	20
Bicarbonate Alkalinity as CaCO3	410		10	3.1	mg/L			01/12/22 15:58	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:58	1
Total Suspended Solids	7.6		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	3700		40	19	mg/L			01/12/22 08:58	1

Client Sample ID: MW-30
Date Collected: 01/10/22 14:40
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			01/12/22 13:02	1
Temperature	21.2	HF	1.0	1.0	Degrees C			01/12/22 13:02	1
Chloride	150		3.0	1.0	mg/L			01/13/22 18:06	1
Sulfate	5600		250	52	mg/L			01/13/22 18:51	50
Bicarbonate Alkalinity as CaCO3	1100		10	3.1	mg/L			01/12/22 16:12	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:12	1
Total Suspended Solids	ND		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	9700		1000	470	mg/L			01/12/22 08:58	1

Client Sample ID: MW-33B
Date Collected: 01/11/22 10:50
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			01/12/22 13:25	1
Temperature	22.1	HF	1.0	1.0	Degrees C			01/12/22 13:25	1
Chloride	120		3.0	1.0	mg/L			01/13/22 19:36	1
Sulfate	1300		100	21	mg/L			01/13/22 19:51	20
Bicarbonate Alkalinity as CaCO3	320		10	3.1	mg/L			01/12/22 16:33	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:33	1
Total Suspended Solids	3000		23	6.3	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	2500		40	19	mg/L			01/12/22 14:58	1

Client Sample ID: MW-33A
Date Collected: 01/11/22 11:45
Date Received: 01/11/22 16:25
Lab Sample ID: 280-157589-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			01/12/22 13:29	1

General Chemistry (Continued)

Client Sample ID: MW-33A
Date Collected: 01/11/22 11:45
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	**22.1**	**HF**	1.0	1.0	Degrees C			01/12/22 13:29	1
Chloride	**64**		3.0	1.0	mg/L			01/13/22 20:06	1
Sulfate	**3100**		100	21	mg/L			01/13/22 20:21	20
Bicarbonate Alkalinity as CaCO3	**480**		10	3.1	mg/L			01/12/22 16:42	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 16:42	1
Total Suspended Solids	ND		5.3	1.4	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	**5000**		40	19	mg/L			01/12/22 14:58	1

Client Sample ID: MW-29
Date Collected: 01/10/22 17:30
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	**7.4**	**HF**	0.1	0.1	SU			01/13/22 15:03	1
Temperature	**23.3**	**HF**	1.0	1.0	Degrees C			01/13/22 15:03	1
Chloride	**100**		3.0	1.0	mg/L			01/13/22 20:36	1
Sulfate	**3500**		100	21	mg/L			01/13/22 20:51	20
Bicarbonate Alkalinity as CaCO3	**830**		10	3.1	mg/L			01/13/22 22:38	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 22:38	1
Total Suspended Solids	**220**		4.0	1.1	mg/L			01/13/22 10:42	1
Total Dissolved Solids (TDS)	**6700**		100	47	mg/L			01/12/22 14:58	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-341316/1-A
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 341316

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 19:26	1
Calcium	ND		1000	190	ug/L		01/17/22 09:00	01/18/22 19:26	1
Potassium	ND		500	150	ug/L		01/17/22 09:00	01/18/22 19:26	1
Magnesium	ND		500	100	ug/L		01/17/22 09:00	01/18/22 19:26	1
Sodium	ND		1000	610	ug/L		01/17/22 09:00	01/18/22 19:26	1
Selenium	ND		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 19:26	1
Lithium	ND		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 19:26	1

Lab Sample ID: LCS 310-341316/2-A
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341316

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.191		mg/L		95	80 - 120
Calcium	2000	1830		ug/L		92	80 - 120
Potassium	2000	2030		ug/L		102	80 - 120
Magnesium	2000	2100		ug/L		105	80 - 120
Sodium	2000	2250		ug/L		113	80 - 120
Selenium	0.400	0.363		mg/L		91	80 - 120
Lithium	0.200	0.219		mg/L		109	80 - 120

Lab Sample ID: MB 310-341269/1-B
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 341425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		01/17/22 09:00	01/18/22 18:29	1
Calcium	ND		1000	190	ug/L		01/17/22 09:00	01/18/22 18:29	1
Potassium	ND		500	150	ug/L		01/17/22 09:00	01/18/22 18:29	1
Magnesium	ND		500	100	ug/L		01/17/22 09:00	01/18/22 18:29	1
Sodium	ND		1000	610	ug/L		01/17/22 09:00	01/18/22 18:29	1
Selenium	ND		0.0050	0.00096	mg/L		01/17/22 09:00	01/18/22 18:29	1
Lithium	ND		0.0080	0.0025	mg/L		01/17/22 09:00	01/18/22 18:29	1

Lab Sample ID: LCS 310-341269/2-B
Matrix: Water
Analysis Batch: 341739

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 341425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.201		mg/L		101	80 - 120
Calcium	2000	1860		ug/L		93	80 - 120
Potassium	2000	2210		ug/L		110	80 - 120
Magnesium	2000	2240		ug/L		112	80 - 120
Sodium	2000	2270		ug/L		113	80 - 120
Selenium	0.400	0.388		mg/L		97	80 - 120
Lithium	0.200	0.225		mg/L		113	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-563210/27
Matrix: Water
Analysis Batch: 563210

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: 280-157589-8 DU
Matrix: Water
Analysis Batch: 563210

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.2	HF	7.2		SU		0.1	5
Temperature	20.8	HF	20.9		Degrees C		0.6	10

Lab Sample ID: LCS 280-563381/4
Matrix: Water
Analysis Batch: 563381

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-563299/6
Matrix: Water
Analysis Batch: 563299

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/13/22 12:36	1
Sulfate	ND		5.0	1.0	mg/L			01/13/22 12:36	1

Lab Sample ID: LCS 280-563299/4
Matrix: Water
Analysis Batch: 563299

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	95.4		mg/L		95	90 - 110
Sulfate	100	95.8		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-563299/5
Matrix: Water
Analysis Batch: 563299

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	95.8		mg/L		96	90 - 110	0	10
Sulfate	100	96.1		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-563299/3
Matrix: Water
Analysis Batch: 563299

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.39		mg/L		88	50 - 150
Sulfate	5.00	4.13	J	mg/L		83	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-563275/31
Matrix: Water
Analysis Batch: 563275

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:15	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/12/22 15:15	1

Lab Sample ID: MB 280-563377/57
Matrix: Water
Analysis Batch: 563377

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 21:23	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/13/22 21:23	1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-563287/1
Matrix: Water
Analysis Batch: 563287

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			01/13/22 10:42	1

Lab Sample ID: LCS 280-563287/2
Matrix: Water
Analysis Batch: 563287

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	80.4		mg/L		80	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-563155/1
Matrix: Water
Analysis Batch: 563155

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/12/22 08:58	1

Lab Sample ID: LCS 280-563155/2
Matrix: Water
Analysis Batch: 563155

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	506	478		mg/L		94	88 - 114

Lab Sample ID: MB 280-563219/1
Matrix: Water
Analysis Batch: 563219

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/12/22 14:58	1

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCS 280-563219/2
Matrix: Water
Analysis Batch: 563219

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			506	469		mg/L		93	88 - 114		

Lab Sample ID: LCSD 280-563219/3
Matrix: Water
Analysis Batch: 563219

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			506	474		mg/L		94	88 - 114	1	20

Metals

Filtration Batch: 341269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Dissolved	Water	Filtration	
280-157589-7	MW-31-FD	Dissolved	Water	Filtration	
280-157589-12	MW-33B	Dissolved	Water	Filtration	
280-157589-14	MW-29	Dissolved	Water	Filtration	
MB 310-341269/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 341316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	3005A	
280-157589-7	MW-31-FD	Total/NA	Water	3005A	
280-157589-8	MW-32	Total/NA	Water	3005A	
280-157589-9	MW-30	Total/NA	Water	3005A	
280-157589-12	MW-33B	Total/NA	Water	3005A	
280-157589-13	MW-33A	Total/NA	Water	3005A	
280-157589-14	MW-29	Total/NA	Water	3005A	
MB 310-341316/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-341316/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 341425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Dissolved	Water	3005A	341269
280-157589-7	MW-31-FD	Dissolved	Water	3005A	341269
280-157589-12	MW-33B	Dissolved	Water	3005A	341269
280-157589-14	MW-29	Dissolved	Water	3005A	341269
MB 310-341269/1-B	Method Blank	Dissolved	Water	3005A	341269
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	3005A	341269

Analysis Batch: 341739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Dissolved	Water	6020A	341425
280-157589-6	MW-31	Total/NA	Water	6020A	341316
280-157589-7	MW-31-FD	Dissolved	Water	6020A	341425
280-157589-7	MW-31-FD	Total/NA	Water	6020A	341316
280-157589-8	MW-32	Total/NA	Water	6020A	341316
280-157589-9	MW-30	Total/NA	Water	6020A	341316
280-157589-12	MW-33B	Dissolved	Water	6020A	341425
280-157589-12	MW-33B	Total/NA	Water	6020A	341316
280-157589-13	MW-33A	Total/NA	Water	6020A	341316
280-157589-14	MW-29	Dissolved	Water	6020A	341425
280-157589-14	MW-29	Total/NA	Water	6020A	341316
MB 310-341269/1-B	Method Blank	Dissolved	Water	6020A	341425
MB 310-341316/1-A	Method Blank	Total/NA	Water	6020A	341316
LCS 310-341269/2-B	Lab Control Sample	Dissolved	Water	6020A	341425
LCS 310-341316/2-A	Lab Control Sample	Total/NA	Water	6020A	341316

Analysis Batch: 341780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Dissolved	Water	6020A	341425
280-157589-6	MW-31	Total/NA	Water	6020A	341316
280-157589-7	MW-31-FD	Dissolved	Water	6020A	341425

Metals (Continued)

Analysis Batch: 341780 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-7	MW-31-FD	Total/NA	Water	6020A	341316
280-157589-8	MW-32	Total/NA	Water	6020A	341316
280-157589-9	MW-30	Total/NA	Water	6020A	341316
280-157589-12	MW-33B	Dissolved	Water	6020A	341425
280-157589-12	MW-33B	Total/NA	Water	6020A	341316
280-157589-13	MW-33A	Total/NA	Water	6020A	341316
280-157589-14	MW-29	Dissolved	Water	6020A	341425
280-157589-14	MW-29	Total/NA	Water	6020A	341316

General Chemistry

Analysis Batch: 563155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	SM2540 C	
280-157589-7	MW-31-FD	Total/NA	Water	SM2540 C	
280-157589-8	MW-32	Total/NA	Water	SM2540 C	
280-157589-9	MW-30	Total/NA	Water	SM2540 C	
MB 280-563155/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-563155/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 563210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	9040B	
280-157589-7	MW-31-FD	Total/NA	Water	9040B	
280-157589-8	MW-32	Total/NA	Water	9040B	
280-157589-9	MW-30	Total/NA	Water	9040B	
280-157589-12	MW-33B	Total/NA	Water	9040B	
280-157589-13	MW-33A	Total/NA	Water	9040B	
LCS 280-563210/27	Lab Control Sample	Total/NA	Water	9040B	
280-157589-8 DU	MW-32	Total/NA	Water	9040B	

Analysis Batch: 563219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-12	MW-33B	Total/NA	Water	SM2540 C	
280-157589-13	MW-33A	Total/NA	Water	SM2540 C	
280-157589-14	MW-29	Total/NA	Water	SM2540 C	
MB 280-563219/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-563219/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-563219/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 563275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	SM 2320B	
280-157589-7	MW-31-FD	Total/NA	Water	SM 2320B	
280-157589-8	MW-32	Total/NA	Water	SM 2320B	
280-157589-9	MW-30	Total/NA	Water	SM 2320B	
280-157589-12	MW-33B	Total/NA	Water	SM 2320B	
280-157589-13	MW-33A	Total/NA	Water	SM 2320B	
MB 280-563275/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-563275/30	Lab Control Sample	Total/NA	Water	SM 2320B	

General Chemistry

Analysis Batch: 563287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	SM 2540D	
280-157589-7	MW-31-FD	Total/NA	Water	SM 2540D	
280-157589-8	MW-32	Total/NA	Water	SM 2540D	
280-157589-9	MW-30	Total/NA	Water	SM 2540D	
280-157589-12	MW-33B	Total/NA	Water	SM 2540D	
280-157589-13	MW-33A	Total/NA	Water	SM 2540D	
280-157589-14	MW-29	Total/NA	Water	SM 2540D	
MB 280-563287/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-563287/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 563299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-6	MW-31	Total/NA	Water	9056A	
280-157589-6	MW-31	Total/NA	Water	9056A	
280-157589-7	MW-31-FD	Total/NA	Water	9056A	
280-157589-7	MW-31-FD	Total/NA	Water	9056A	
280-157589-8	MW-32	Total/NA	Water	9056A	
280-157589-8	MW-32	Total/NA	Water	9056A	
280-157589-9	MW-30	Total/NA	Water	9056A	
280-157589-9	MW-30	Total/NA	Water	9056A	
280-157589-12	MW-33B	Total/NA	Water	9056A	
280-157589-12	MW-33B	Total/NA	Water	9056A	
280-157589-13	MW-33A	Total/NA	Water	9056A	
280-157589-13	MW-33A	Total/NA	Water	9056A	
280-157589-14	MW-29	Total/NA	Water	9056A	
280-157589-14	MW-29	Total/NA	Water	9056A	
MB 280-563299/6	Method Blank	Total/NA	Water	9056A	
LCS 280-563299/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-563299/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-563299/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 563377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-14	MW-29	Total/NA	Water	SM 2320B	
MB 280-563377/57	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-563377/56	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 563381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-157589-14	MW-29	Total/NA	Water	9040B	
LCS 280-563381/4	Lab Control Sample	Total/NA	Water	9040B	

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-31
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 19:00	SAP	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 14:06	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:10	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 14:54	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:17	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 16:36	SPG	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	563299	01/13/22 16:51	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 15:39	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-31-FD
Date Collected: 01/10/22 11:30
Date Received: 01/11/22 16:25

Lab Sample ID: 280-157589-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 19:03	SAP	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 14:09	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:26	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 14:58	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:21	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 17:06	SPG	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	563299	01/13/22 17:21	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 15:50	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-32
Lab Sample ID: 280-157589-8
Date Collected: 01/10/22 13:10
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:29	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:01	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 12:54	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 17:36	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 17:51	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 15:58	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-30
Lab Sample ID: 280-157589-9
Date Collected: 01/10/22 14:40
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:33	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:04	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:02	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 18:06	SPG	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	563299	01/13/22 18:51	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 16:12	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	1 mL	100 mL	563155	01/12/22 08:58	ABW	TAL DEN

Client Sample ID: MW-33B
Lab Sample ID: 280-157589-12
Date Collected: 01/11/22 10:50
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 19:10	SAP	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 14:16	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:46	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:14	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:25	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 19:36	SPG	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33B
Lab Sample ID: 280-157589-12
Date Collected: 01/11/22 10:50
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 19:51	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 16:33	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	44 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563219	01/12/22 14:58	ABW	TAL DEN

Client Sample ID: MW-33A
Lab Sample ID: 280-157589-13
Date Collected: 01/11/22 11:45
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:49	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:17	SAP	TAL CF
Total/NA	Analysis	9040B		1			563210	01/12/22 13:29	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 20:06	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 20:21	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563275	01/12/22 16:42	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	190 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	563219	01/12/22 14:58	ABW	TAL DEN

Client Sample ID: MW-29
Lab Sample ID: 280-157589-14
Date Collected: 01/10/22 17:30
Matrix: Water
Date Received: 01/11/22 16:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1			341739	01/18/22 19:13	SAP	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	341269	01/13/22 14:45	ACM2	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	341425	01/17/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		7			341780	01/19/22 14:19	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1			341739	01/18/22 20:52	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	341316	01/17/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		7			341780	01/19/22 15:20	SAP	TAL CF
Total/NA	Analysis	9040B		1			563381	01/13/22 15:03	ECC	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	563299	01/13/22 20:36	SPG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	563299	01/13/22 20:51	SPG	TAL DEN
Total/NA	Analysis	SM 2320B		1			563377	01/13/22 22:38	ECC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	563287	01/13/22 10:42	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	563219	01/12/22 14:58	ABW	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-157589-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-22
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	04-20-22
Oregon	NELAP	IA100001	09-29-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 720-838-6065	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days): ASAP			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Additional Testing 2021	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 6020A - 7 metals ETA Canton | 2320B Alkalinity | 2540D - TSS/ 2540C TDS | pH | 9056A Chloride/Sulfate | Dissolved 6020A - ETA Canton (7 metals only) | | |

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 720-838-6065	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:

Address: 1670 Broadway Suite 3400	Due Date Requested:	Analysis Requested
City: Denver	TAT Requested (days): ASAP	
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No	
Phone: 734-263-7138(Tel)	PO #: 10227700-400	
Email: Molly.Reeves@hdrinc.com	WO #:	
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379	
Site: Colorado Additional Testing 2021	SSOW#:	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Canton	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	Dissolved 6020A - ETA Canton (7 metals only)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N	N	D		
MW-33B	1/11/22	1050	G	Water			X	X	X	X	X	X	3	Only ~370 mL for TDS/TSS
				Water										
				Water										
MW-33A	1/11/22	1145	G	Water			X	X	X	X	X		6	TSS/TDS in 4x 250 mL bottles
				Water										
				Water										
				Water										
				Water										

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/11/22 1525	MDR		01/11/2022 1525	ETATDEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6, 0.8, IR13-0.2

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-157589-2

Login Number: 157589
List Number: 1
Creator: O'Hara, Jake F

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-157589-2

Login Number: 157589
List Number: 2
Creator: Kizer, Preston V

List Source: Eurofins Cedar Falls
List Creation: 01/13/22 11:16 AM

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

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161425-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
5/31/2022 3:14:28 PM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

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

Glossary

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

Job ID: 280-161425-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161425-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/22/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.7°C, 0.9°C, 2.1°C and 5.2°C

Receipt Exceptions

An extra Nitric preserved sample container was received for samples MW-27 (280-161425-7) and MW-28 (280-161425-9).

TOTAL RECOVERABLE METALS- METHOD 6010C/6020A

Due to sample matrix effect on the internal standard (ISTD), several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium and Sodium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Thalium method 6020A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL MERCURY

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

GENERAL CHEMISTRY- VARIOUS

Several samples required dilution prior to analysis for various methods. The reporting limits have been adjusted accordingly.

Method 2540D: Reanalysis of the following sample(s) was performed outside of the analytical holding time due to failure of historical data review parameters in the initial analysis. MW-7 (280-161425-2)

The accuracy and precision of the Chloride and Sulfate MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable

Job ID: 280-161425-1 (Continued)

Laboratory: Eurofins Denver (Continued)

LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Chloride and Sulfate method 9056A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

RADIUM-226 (GFPC)- METHOD 9315

Method 9315_Ra226: Radium-226 Prep Batch 160-562603The following samples were prepared at a reduced aliquot due to Matrix: MW-27-FD (280-161425-8) and MW-28 (280-161425-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

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

RADIUM-228- METHOD 9320

Method 9320_Ra228: Radium-228 Prep Batch 160-562607The following samples were prepared at a reduced aliquot due to Matrix: MW-27-FD (280-161425-8) and MW-28 (280-161425-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 9320_Ra228: Radium-228 batch 562607 The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (61-138%) per method requirements. The LCS passes, no further action is required (LCS 160-562607/1-A)

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

RADIUM-226/RADIUM-228 (GFPC)

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

Detection Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-1
Lab Sample ID: 280-161425-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.43		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.00094	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.032		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	85		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00021	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.034		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	42		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.012		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	4.5		0.50	0.15	mg/L	1		6020A	Total Recoverable
Sodium	190		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.38	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	320		25	5.2	mg/L	5		9056A	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	890		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-7
Lab Sample ID: 280-161425-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.32		0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.020		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Cadmium	0.00013		0.00010	0.000055	mg/L	1		6020A	Total Recoverable
Calcium	56		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00049	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00095		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.040		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	31		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0024		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	3.7		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0041	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	140		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-161425-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	46		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.44	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	110		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	2.8	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	580		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 280-161425-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	9.9		0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.037		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	120		2.0	0.76	mg/L	4		6020A	Total Recoverable
Cobalt	0.0052		0.0020	0.00076	mg/L	4		6020A	Total Recoverable
Lithium	0.030	J	0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	90		2.0	0.60	mg/L	4		6020A	Total Recoverable
Molybdenum	0.066		0.0080	0.0048	mg/L	4		6020A	Total Recoverable
Potassium	0.99	J	2.0	0.60	mg/L	4		6020A	Total Recoverable
Sodium	140		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	70		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	2.0		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	500		25	5.2	mg/L	5		9056A	Total/NA
Total Suspended Solids	3.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13 — Lab Sample ID: 280-161425-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.021		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	560		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.10		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	180		2.0	0.60	mg/L	4		6020A	Total Recoverable
Potassium	9.9		2.0	0.60	mg/L	4		6020A	Total Recoverable
Selenium	0.32		0.020	0.0038	mg/L	4		6020A	Total Recoverable
Sodium	400		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-13 (Continued) — Lab Sample ID: 280-161425-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.82		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2200		100	21	mg/L	20		9056A	Total/NA
Total Suspended Solids	4.0		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3900		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-15 — Lab Sample ID: 280-161425-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.55		0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.016		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	210		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.048		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	120		2.0	0.60	mg/L	4		6020A	Total Recoverable
Potassium	7.1		2.0	0.60	mg/L	4		6020A	Total Recoverable
Selenium	0.13		0.020	0.0038	mg/L	4		6020A	Total Recoverable
Sodium	330		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	76		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.48	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1600		100	21	mg/L	20		9056A	Total/NA
Total Suspended Solids	6.4		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2700		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 280-161425-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.2		0.40	0.11	mg/L	2		6010C	Total Recoverable
Barium	0.013		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	520		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.20		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	250		2.0	0.60	mg/L	4		6020A	Total Recoverable
Molybdenum	0.0051	J	0.0080	0.0048	mg/L	4		6020A	Total Recoverable
Potassium	9.9		2.0	0.60	mg/L	4		6020A	Total Recoverable
Selenium	1.5		0.020	0.0038	mg/L	4		6020A	Total Recoverable
Sodium	710		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-21 (Continued) — Lab Sample ID: 280-161425-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	420		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	0.65		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3000		100	21	mg/L	20		9056A	Total/NA
Total Suspended Solids	2.4		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5400		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 280-161425-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.078	J	0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.083		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	51		0.50	0.19	mg/L	1		6020A	Total Recoverable
Chromium	0.0015	J	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Lithium	0.027		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	22		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0025		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	2.2		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0044	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	56		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	19		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.72		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	47		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	22		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	370		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-27-FD — Lab Sample ID: 280-161425-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.064	J	0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.095		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	53		0.50	0.19	mg/L	1		6020A	Total Recoverable
Chromium	0.0020	J	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Cobalt	0.00027	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00046	J	0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.028		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	22		0.50	0.15	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-27-FD (Continued) — Lab Sample ID: 280-161425-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.0038		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	2.1		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0047	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	51		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	23		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.71		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	43		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	25		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	360		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-28 — Lab Sample ID: 280-161425-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.7		0.40	0.11	mg/L	2		6010C	Total Recoverable
Barium	0.014		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	570		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.25		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	360		2.0	0.60	mg/L	4		6020A	Total Recoverable
Potassium	19		2.0	0.60	mg/L	4		6020A	Total Recoverable
Selenium	3.1		0.050	0.0096	mg/L	10		6020A	Total Recoverable
Sodium	1100		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	62		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.35	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Total Suspended Solids	13		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	7500		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-34-EB — Lab Sample ID: 280-161425-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.58		0.50	0.19	mg/L	1		6020A	Total Recoverable
Magnesium	0.33	J	0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0023	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	0.94	J	1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161425-1	MW-1	Water	04/20/22 14:15	04/22/22 17:45
280-161425-2	MW-7	Water	04/21/22 15:30	04/22/22 17:45
280-161425-3	MW-9	Water	04/20/22 15:45	04/22/22 17:45
280-161425-4	MW-13	Water	04/21/22 12:40	04/22/22 17:45
280-161425-5	MW-15	Water	04/21/22 16:20	04/22/22 17:45
280-161425-6	MW-21	Water	04/21/22 10:24	04/22/22 17:45
280-161425-7	MW-27	Water	04/21/22 12:30	04/22/22 17:45
280-161425-8	MW-27-FD	Water	04/21/22 12:30	04/22/22 17:45
280-161425-9	MW-28	Water	04/21/22 10:45	04/22/22 17:45
280-161425-10	MW-34-EB	Water	04/20/22 12:15	04/22/22 17:45

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.43		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:21	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.32		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:23	1

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	9.9		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:29	1

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:31	1

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.55		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:35	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.40	0.11	mg/L		05/17/22 09:00	05/18/22 11:48	2

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.078	J	0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:39	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.064	J	0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:41	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.40	0.11	mg/L		05/17/22 09:00	05/18/22 11:54	2

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:46	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:50	1
Arsenic	**0.00094**	**J**	0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:50	1
Barium	**0.032**		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:50	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:50	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:50	1
Calcium	**85**		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:50	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:50	1
Cobalt	**0.00021**	**J**	0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:50	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:50	1
Lithium	**0.034**		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:50	1
Magnesium	**42**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:50	1
Molybdenum	**0.012**		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:50	1
Potassium	**4.5**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:50	1
Selenium	ND		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:50	1
Sodium	**190**		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:50	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:50	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:54	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:54	1
Barium	**0.020**		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:54	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:54	1
Cadmium	**0.00013**		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:54	1
Calcium	**56**		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:54	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:54	1
Cobalt	**0.00049**	**J**	0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:54	1
Lead	**0.00095**		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:54	1
Lithium	**0.040**		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:54	1
Magnesium	**31**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:54	1
Molybdenum	**0.0024**		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:54	1
Potassium	**3.7**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:54	1
Selenium	**0.0041**	**J**	0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:54	1
Sodium	**140**		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:54	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:54	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 00:57	4
Arsenic	ND		0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 00:57	4
Barium	**0.037**		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 00:57	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 00:57	4
Cadmium	ND		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 00:57	4
Calcium	**120**		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 00:57	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 00:57	4
Cobalt	**0.0052**		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 00:57	4
Lead	ND		0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 00:57	4
Lithium	**0.030**	**J**	0.040	0.010	mg/L		05/17/22 09:00	05/25/22 00:57	4
Magnesium	**90**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:57	4
Molybdenum	**0.066**		0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 00:57	4
Potassium	**0.99**	**J**	2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:57	4
Selenium	ND		0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 00:57	4
Sodium	**140**		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 00:57	4
Thallium	ND		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 00:57	4

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 01:00	4
Arsenic	ND		0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 01:00	4
Barium	**0.021**		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 01:00	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 01:00	4
Cadmium	ND		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 01:00	4
Calcium	**560**		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 01:00	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 01:00	4
Cobalt	ND		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 01:00	4
Lead	ND		0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 01:00	4
Lithium	**0.10**		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 01:00	4
Magnesium	**180**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:00	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 01:00	4
Potassium	**9.9**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:00	4
Selenium	**0.32**		0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 01:00	4
Sodium	**400**		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 01:00	4
Thallium	ND		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 01:00	4

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 01:07	4
Arsenic	ND		0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 01:07	4
Barium	**0.016**		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 01:07	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 01:07	4
Cadmium	ND		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 01:07	4
Calcium	**210**		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 01:07	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 01:07	4
Cobalt	ND		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 01:07	4

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

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 01:07	4
Lithium	**0.048**		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 01:07	4
Magnesium	**120**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:07	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 01:07	4
Potassium	**7.1**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:07	4
Selenium	**0.13**		0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 01:07	4
Sodium	**330**		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 01:07	4
Thallium	ND		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 01:07	4

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 01:23	4
Arsenic	ND		0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 01:23	4
Barium	**0.013**		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 01:23	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 01:23	4
Cadmium	ND		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 17:58	4
Calcium	**520**		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 01:23	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 01:23	4
Cobalt	ND		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 01:23	4
Lead	ND		0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 01:23	4
Lithium	**0.20**		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 01:23	4
Magnesium	**250**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:23	4
Molybdenum	**0.0051**	**J**	0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 01:23	4
Potassium	**9.9**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 01:23	4
Selenium	**1.5**		0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 01:23	4
Sodium	**710**		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 01:23	4
Thallium	ND		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 01:23	4

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 01:26	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 01:26	1
Barium	**0.083**		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 01:26	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 01:26	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 01:26	1
Calcium	**51**		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 01:26	1
Chromium	**0.0015**	**J**	0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 01:26	1
Cobalt	ND		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 01:26	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 01:26	1
Lithium	**0.027**		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 01:26	1
Magnesium	**22**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:26	1
Molybdenum	**0.0025**		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 01:26	1
Potassium	**2.2**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:26	1
Selenium	**0.0044**	**J**	0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 01:26	1
Sodium	**56**		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 01:26	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 01:26	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 01:30	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 01:30	1
Barium	**0.095**		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 01:30	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 01:30	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 01:30	1
Calcium	**53**		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 01:30	1
Chromium	**0.0020**	**J**	0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 01:30	1
Cobalt	**0.00027**	**J**	0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 18:02	1
Lead	**0.00046**	**J**	0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 18:02	1
Lithium	**0.028**		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 01:30	1
Magnesium	**22**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:30	1
Molybdenum	**0.0038**		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 01:30	1
Potassium	**2.1**		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:30	1
Selenium	**0.0047**	**J**	0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 01:30	1
Sodium	**51**		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 01:30	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 01:30	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 01:33	1
Arsenic	ND		0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 18:05	4
Barium	**0.014**		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 01:33	1
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 18:05	4
Cadmium	ND		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 18:05	4
Calcium	**570**		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 18:05	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 18:05	4
Cobalt	ND		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 18:05	4
Lead	ND		0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 18:05	4
Lithium	**0.25**		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 18:05	4
Magnesium	**360**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 18:05	4
Molybdenum	ND		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 01:33	1
Potassium	**19**		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 18:05	4
Selenium	**3.1**		0.050	0.0096	mg/L		05/17/22 09:00	05/26/22 14:36	10
Sodium	**1100**		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 18:05	4
Thallium	ND		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 18:05	4

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 01:36	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 01:36	1
Barium	ND		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 01:36	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 01:36	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 01:36	1
Calcium	**0.58**		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 01:36	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 01:36	1
Cobalt	ND		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 01:36	1

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

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 01:36	1
Lithium	ND		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 01:36	1
Magnesium	**0.33**	**J**	0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:36	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 01:36	1
Potassium	ND		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 01:36	1
Selenium	**0.0023**	**J**	0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 01:36	1
Sodium	**0.94**	**J**	1.0	0.61	mg/L		05/17/22 09:00	05/25/22 01:36	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 01:36	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:31	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:34	1

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:36	1

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:38	1

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:40	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:42	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:44	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:46	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:49	1

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 17:51	1

General Chemistry

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			05/09/22 21:18	1
Temperature	21.4	HF	1.0	1.0	Degrees C			05/09/22 21:18	1
Chloride	65		3.0	1.0	mg/L			05/18/22 01:32	1
Fluoride	0.38	J	0.50	0.17	mg/L			05/18/22 14:59	1
Sulfate	320		25	5.2	mg/L			05/18/22 00:55	5
Total Suspended Solids	6.4		4.0	1.1	mg/L			04/25/22 12:19	1
Total Dissolved Solids (TDS)	890		10	4.7	mg/L			04/27/22 11:25	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			05/09/22 21:30	1
Temperature	21.7	HF	1.0	1.0	Degrees C			05/09/22 21:30	1
Chloride	46		3.0	1.0	mg/L			05/18/22 02:20	1
Fluoride	0.44	J	0.50	0.17	mg/L			05/18/22 15:15	1
Sulfate	110		5.0	1.0	mg/L			05/18/22 02:20	1
Total Suspended Solids	2.8	J H	4.0	1.1	mg/L			04/29/22 15:08	1
Total Dissolved Solids (TDS)	580		10	4.7	mg/L			04/27/22 11:25	1

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			05/09/22 21:38	1

General Chemistry (Continued)

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	21.2	HF	1.0	1.0	Degrees C			05/09/22 21:38	1
Chloride	70		3.0	1.0	mg/L			05/18/22 02:35	1
Fluoride	2.0		0.50	0.17	mg/L			05/18/22 15:31	1
Sulfate	500		25	5.2	mg/L			05/18/22 01:55	5
Total Suspended Solids	3.6	J	4.0	1.1	mg/L			04/25/22 12:19	1
Total Dissolved Solids (TDS)	1200		20	9.4	mg/L			04/27/22 11:25	1

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/09/22 21:42	1
Temperature	21.1	HF	1.0	1.0	Degrees C			05/09/22 21:42	1
Chloride	65		3.0	1.0	mg/L			05/18/22 03:39	1
Fluoride	0.82		0.50	0.17	mg/L			05/18/22 15:47	1
Sulfate	2200		100	21	mg/L			05/18/22 02:25	20
Total Suspended Solids	4.0		1.6	0.44	mg/L			04/26/22 11:29	1
Total Dissolved Solids (TDS)	3900		40	19	mg/L			04/27/22 11:25	1

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			05/09/22 21:46	1
Temperature	21.1	HF	1.0	1.0	Degrees C			05/09/22 21:46	1
Chloride	76		3.0	1.0	mg/L			05/18/22 04:42	1
Fluoride	0.48	J	0.50	0.17	mg/L			05/18/22 16:03	1
Sulfate	1600		100	21	mg/L			05/18/22 03:25	20
Total Suspended Solids	6.4		1.6	0.44	mg/L			04/26/22 11:29	1
Total Dissolved Solids (TDS)	2700		20	9.4	mg/L			04/27/22 11:28	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			05/09/22 21:50	1
Temperature	21.2	HF	1.0	1.0	Degrees C			05/09/22 21:50	1
Chloride	420		15	5.1	mg/L			05/18/22 03:40	5
Fluoride	0.65		0.50	0.17	mg/L			05/18/22 16:19	1
Sulfate	3000		100	21	mg/L			05/18/22 03:55	20
Total Suspended Solids	2.4		1.6	0.44	mg/L			04/26/22 11:29	1
Total Dissolved Solids (TDS)	5400		40	19	mg/L			04/27/22 11:28	1

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU			05/09/22 21:53	1
Temperature	21.4	HF	1.0	1.0	Degrees C			05/09/22 21:53	1
Chloride	19		3.0	1.0	mg/L			05/18/22 05:45	1

General Chemistry (Continued)

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.72		0.50	0.17	mg/L			05/18/22 16:35	1
Sulfate	47		5.0	1.0	mg/L			05/18/22 05:45	1
Total Suspended Solids	22		1.6	0.44	mg/L			04/27/22 15:19	1
Total Dissolved Solids (TDS)	370		10	4.7	mg/L			04/27/22 11:28	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.1	HF	0.1	0.1	SU			05/09/22 21:57	1
Temperature	21.5	HF	1.0	1.0	Degrees C			05/09/22 21:57	1
Chloride	23		3.0	1.0	mg/L			05/18/22 06:01	1
Fluoride	0.71		0.50	0.17	mg/L			05/18/22 16:51	1
Sulfate	43		5.0	1.0	mg/L			05/18/22 06:01	1
Total Suspended Solids	25		1.6	0.44	mg/L			04/26/22 11:29	1
Total Dissolved Solids (TDS)	360		10	4.7	mg/L			04/27/22 11:28	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			05/09/22 22:01	1
Temperature	21.9	HF	1.0	1.0	Degrees C			05/09/22 22:01	1
Chloride	62		3.0	1.0	mg/L			05/18/22 06:17	1
Fluoride	0.35	J	0.50	0.17	mg/L			05/19/22 12:41	1
Sulfate	3200		100	21	mg/L			05/18/22 04:25	20
Total Suspended Solids	13		1.6	0.44	mg/L			04/26/22 11:29	1
Total Dissolved Solids (TDS)	7500		100	47	mg/L			04/27/22 11:28	1

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.6	HF	0.1	0.1	SU			05/10/22 15:27	1
Temperature	21.3	HF	1.0	1.0	Degrees C			05/10/22 15:27	1
Chloride	ND		3.0	1.0	mg/L			05/18/22 06:33	1
Fluoride	ND		0.50	0.17	mg/L			05/18/22 17:23	1
Sulfate	ND		5.0	1.0	mg/L			05/18/22 06:33	1
Total Suspended Solids	ND		4.0	1.1	mg/L			04/25/22 12:19	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/27/22 11:28	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0882	0.0890	1.00	0.124	pCi/L	04/28/22 09:15	05/24/22 16:16	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110	04/28/22 09:15	05/24/22 16:16	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.188**		0.108	0.109	1.00	0.145	pCi/L	04/28/22 09:15	05/24/22 16:16	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	04/28/22 09:15	05/24/22 16:16	1

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0948	U	0.105	0.105	1.00	0.170	pCi/L	04/28/22 09:15	05/24/22 16:16	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.3		40 - 110	04/28/22 09:15	05/24/22 16:16	1

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.158**		0.0880	0.0891	1.00	0.104	pCi/L	04/28/22 09:15	05/24/22 18:17	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0508	U	0.0612	0.0614	1.00	0.100	pCi/L	04/28/22 09:15	05/24/22 18:17	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.306**		0.102	0.106	1.00	0.0935	pCi/L	04/28/22 09:15	05/24/22 18:17	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.125**		0.0726	0.0734	1.00	0.0890	pCi/L	04/28/22 09:15	05/24/22 18:17	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0735	U	0.0855	0.0858	1.00	0.138	pCi/L	04/28/22 09:15	05/24/22 18:17	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.542**		0.159	0.166	1.00	0.141	pCi/L	04/28/22 09:15	05/24/22 18:17	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.0		40 - 110	04/28/22 09:15	05/24/22 18:17	1

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0789	U	0.0712	0.0716	1.00	0.108	pCi/L	04/28/22 09:15	05/24/22 18:18	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110	04/28/22 09:15	05/24/22 18:18	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.260	U	0.243	0.244	1.00	0.392	pCi/L	04/28/22 09:50	05/16/22 12:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.176	U	0.201	0.201	1.00	0.397	pCi/L	04/28/22 09:50	05/16/22 12:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*
Y Carrier	*81.1*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.122	U	0.200	0.200	1.00	0.386	pCi/L	04/28/22 09:50	05/16/22 12:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*
Y Carrier	*86.7*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.583**		0.260	0.265	1.00	0.371	pCi/L	04/28/22 09:50	05/16/22 12:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:40*	*1*

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.443**		0.270	0.273	1.00	0.411	pCi/L	04/28/22 09:50	05/16/22 12:41	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		40 - 110	04/28/22 09:50	05/16/22 12:41	1
Y Carrier	85.2		40 - 110	04/28/22 09:50	05/16/22 12:41	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.536		0.249	0.254	1.00	0.355	pCi/L	04/28/22 09:50	05/16/22 12:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	04/28/22 09:50	05/16/22 12:41	1
Y Carrier	81.5		40 - 110	04/28/22 09:50	05/16/22 12:41	1

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.849		0.275	0.286	1.00	0.357	pCi/L	04/28/22 09:50	05/16/22 12:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110	04/28/22 09:50	05/16/22 12:41	1
Y Carrier	84.5		40 - 110	04/28/22 09:50	05/16/22 12:41	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.572		0.352	0.356	1.00	0.532	pCi/L	04/28/22 09:50	05/16/22 12:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110	04/28/22 09:50	05/16/22 12:41	1
Y Carrier	86.4		40 - 110	04/28/22 09:50	05/16/22 12:41	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.835		0.324	0.333	1.00	0.443	pCi/L	04/28/22 09:50	05/16/22 12:41	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.0		40 - 110	04/28/22 09:50	05/16/22 12:41	1
Y Carrier	86.7		40 - 110	04/28/22 09:50	05/16/22 12:41	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0226	U	0.210	0.210	1.00	0.384	pCi/L	04/28/22 09:50	05/16/22 12:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:41*	*1*
Y Carrier	*84.1*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:41*	*1*

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

Client Sample ID: MW-1
Date Collected: 04/20/22 14:15
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.389	U	0.259	0.260	5.00	0.392	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-7
Date Collected: 04/21/22 15:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0122	U	0.228	0.229	5.00	0.397	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-9
Date Collected: 04/20/22 15:45
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0272	U	0.226	0.226	5.00	0.386	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.741**		0.274	0.280	5.00	0.371	pCi/L		05/25/22 14:04	1

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

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.494		0.277	0.280	5.00	0.411	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.842		0.269	0.275	5.00	0.355	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.975		0.284	0.295	5.00	0.357	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.646		0.362	0.366	5.00	0.532	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.361	0.372	5.00	0.443	pCi/L		05/25/22 14:04	1

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161425-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0563	U	0.222	0.222	5.00	0.384	pCi/L		05/25/22 14:04	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-353255/1-A
Matrix: Water
Analysis Batch: 353499

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 10:52	1

Lab Sample ID: LCS 310-353255/2-A
Matrix: Water
Analysis Batch: 353499

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.89		mg/L		94	80 - 120

Lab Sample ID: 280-161425-4 DU
Matrix: Water
Analysis Batch: 353499

Client Sample ID: MW-13
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	1.1		1.10		mg/L		0.3	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-353255/1-A
Matrix: Water
Analysis Batch: 354250

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:02	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:02	1
Barium	ND		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:02	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:02	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:02	1
Calcium	ND		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:02	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:02	1
Cobalt	ND		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:02	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:02	1
Lithium	ND		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:02	1
Magnesium	ND		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:02	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:02	1
Potassium	ND		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:02	1
Selenium	ND		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:02	1
Sodium	ND		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:02	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:02	1

Lab Sample ID: LCS 310-353255/2-A ^10
Matrix: Water
Analysis Batch: 354250

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	2.00	1.99		mg/L		99	80 - 120
Arsenic	2.00	1.84		mg/L		92	80 - 120
Barium	1.00	0.986		mg/L		99	80 - 120
Beryllium	1.00	0.900		mg/L		90	80 - 120
Cadmium	1.00	1.00		mg/L		100	80 - 120

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

Lab Sample ID: LCS 310-353255/2-A ^10
Matrix: Water
Analysis Batch: 354250

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	20.0	17.7		mg/L		88	80 - 120
Chromium	1.00	0.912		mg/L		91	80 - 120
Cobalt	1.00	0.978		mg/L		98	80 - 120
Lead	2.00	2.06		mg/L		103	80 - 120
Lithium	2.00	1.81		mg/L		91	80 - 120
Magnesium	20.0	18.5		mg/L		92	80 - 120
Molybdenum	2.00	1.85		mg/L		92	80 - 120
Potassium	20.0	18.3		mg/L		91	80 - 120
Selenium	4.00	3.77		mg/L		94	80 - 120
Sodium	20.0	19.4		mg/L		97	80 - 120

Lab Sample ID: LCS 310-353255/2-A ^10
Matrix: Water
Analysis Batch: 354398

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	2.00	2.06		mg/L		103	80 - 120

Lab Sample ID: 280-161425-4 DU
Matrix: Water
Analysis Batch: 354250

Client Sample ID: MW-13
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	ND		ND		mg/L		NC	20
Arsenic	ND		ND		mg/L		NC	20
Barium	0.021		0.0204		mg/L		3	20
Beryllium	ND		ND		mg/L		NC	20
Cadmium	ND		ND		mg/L		NC	20
Calcium	560		557		mg/L		1	20
Chromium	ND		ND		mg/L		NC	20
Cobalt	ND		ND		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20
Lithium	0.10		0.102		mg/L		0.3	20
Magnesium	180		183		mg/L		1	20
Molybdenum	ND		ND		mg/L		NC	20
Potassium	9.9		9.99		mg/L		1	20
Selenium	0.32		0.323		mg/L		2	20
Sodium	400		397		mg/L		0.3	20
Thallium	ND		ND		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-353357/1-A
Matrix: Water
Analysis Batch: 353386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 353357

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/17/22 13:15	05/17/22 16:53	1

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

Lab Sample ID: LCS 310-353357/2-A
Matrix: Water
Analysis Batch: 353386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 353357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00181		mg/L		108	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-574377/73
Matrix: Water
Analysis Batch: 574377

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 280-574377/96
Matrix: Water
Analysis Batch: 574377

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 280-161425-2 DU
Matrix: Water
Analysis Batch: 574377

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.8	HF	7.9		SU		2	5
Temperature	21.7	HF	21.3		Degrees C		2	10

Lab Sample ID: LCS 280-574470/27
Matrix: Water
Analysis Batch: 574470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-575183/6
Matrix: Water
Analysis Batch: 575183

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/17/22 12:28	1
Fluoride	ND		0.50	0.17	mg/L			05/17/22 12:28	1
Sulfate	ND		5.0	1.0	mg/L			05/17/22 12:28	1

Lab Sample ID: MB 280-575183/60
Matrix: Water
Analysis Batch: 575183

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/18/22 03:23	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-575183/60
Matrix: Water
Analysis Batch: 575183

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			05/18/22 03:23	1

Lab Sample ID: LCS 280-575183/4
Matrix: Water
Analysis Batch: 575183

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	4.99		mg/L		100	90 - 110
Sulfate	100	98.3		mg/L		98	90 - 110

Lab Sample ID: LCS 280-575183/58
Matrix: Water
Analysis Batch: 575183

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Sulfate	100	98.3		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-575183/5
Matrix: Water
Analysis Batch: 575183

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.03		mg/L		101	90 - 110	1	10
Sulfate	100	98.7		mg/L		99	90 - 110	0	10

Lab Sample ID: LCSD 280-575183/59
Matrix: Water
Analysis Batch: 575183

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Sulfate	100	98.2		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-575183/3
Matrix: Water
Analysis Batch: 575183

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.04		mg/L		81	50 - 150
Fluoride	0.500	0.334	J	mg/L		67	50 - 150
Sulfate	5.00	4.20	J	mg/L		84	50 - 150

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-161425-4 MS
Matrix: Water
Analysis Batch: 575183

Client Sample ID: MW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	65		50.0	119		mg/L		107	80 - 120		

Lab Sample ID: 280-161425-4 MSD
Matrix: Water
Analysis Batch: 575183

Client Sample ID: MW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	65		50.0	122		mg/L		113	80 - 120	3	20

Lab Sample ID: 280-161425-4 DU
Matrix: Water
Analysis Batch: 575183

Client Sample ID: MW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	65			65.2		mg/L				0.09	15

Lab Sample ID: MB 280-575241/6
Matrix: Water
Analysis Batch: 575241

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/17/22 15:29	1
Sulfate	ND		5.0	1.0	mg/L			05/17/22 15:29	1

Lab Sample ID: LCS 280-575241/4
Matrix: Water
Analysis Batch: 575241

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	102		mg/L		102	90 - 110		
Sulfate			100	102		mg/L		102	90 - 110		

Lab Sample ID: LCSD 280-575241/5
Matrix: Water
Analysis Batch: 575241

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	102		mg/L		102	90 - 110	0	10
Sulfate			100	102		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-575241/3
Matrix: Water
Analysis Batch: 575241

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	5.03		mg/L		101	50 - 150		
Sulfate			5.00	4.88	J	mg/L		98	50 - 150		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-161425-1 MS
Matrix: Water
Analysis Batch: 575241

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	69		250	342		mg/L		109	80 - 120		
Sulfate	320		250	603		mg/L		112	80 - 120		

Lab Sample ID: 280-161425-1 MSD
Matrix: Water
Analysis Batch: 575241

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	69		250	342		mg/L		109	80 - 120	0	20
Sulfate	320		250	598		mg/L		109	80 - 120	1	20

Lab Sample ID: 280-161425-1 DU
Matrix: Water
Analysis Batch: 575241

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	69		69.8		mg/L		0.4	15
Sulfate	320		317		mg/L		2	15

Lab Sample ID: MB 280-575334/6
Matrix: Water
Analysis Batch: 575334

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/18/22 10:42	1
Fluoride	ND		0.50	0.17	mg/L			05/18/22 10:42	1
Sulfate	ND		5.0	1.0	mg/L			05/18/22 10:42	1

Lab Sample ID: LCS 280-575334/4
Matrix: Water
Analysis Batch: 575334

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	100	101		mg/L		101	90 - 110		
Fluoride	5.00	4.78		mg/L		96	90 - 110		
Sulfate	100	101		mg/L		101	90 - 110		

Lab Sample ID: LCSD 280-575334/5
Matrix: Water
Analysis Batch: 575334

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	102		mg/L		102	90 - 110	0	10
Fluoride	5.00	4.84		mg/L		97	90 - 110	1	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-575334/3
Matrix: Water
Analysis Batch: 575334

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.22		mg/L		84	50 - 150		
Fluoride			0.500	0.384	J	mg/L		77	50 - 150		
Sulfate			5.00	3.99	J	mg/L		80	50 - 150		

Lab Sample ID: MB 280-575484/6
Matrix: Water
Analysis Batch: 575484

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			05/19/22 11:16	1

Lab Sample ID: LCS 280-575484/4
Matrix: Water
Analysis Batch: 575484

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			5.00	4.97		mg/L		99	90 - 110		

Lab Sample ID: LCSD 280-575484/5
Matrix: Water
Analysis Batch: 575484

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			5.00	4.96		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-575484/3
Matrix: Water
Analysis Batch: 575484

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			0.500	0.439	J	mg/L		88	50 - 150		

Lab Sample ID: 280-161425-9 MS
Matrix: Water
Analysis Batch: 575484

Client Sample ID: MW-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.35	J	5.00	5.13		mg/L		96	80 - 120		

Lab Sample ID: 280-161425-9 MSD
Matrix: Water
Analysis Batch: 575484

Client Sample ID: MW-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.35	J	5.00	5.27		mg/L		98	80 - 120	3	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-161425-9 DU
Matrix: Water
Analysis Batch: 575484

Client Sample ID: MW-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fluoride	0.35	J		0.397	J	mg/L				14	15

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-572902/2
Matrix: Water
Analysis Batch: 572902

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			04/25/22 12:19	1

Lab Sample ID: LCS 280-572902/1
Matrix: Water
Analysis Batch: 572902

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	90.8		mg/L		91	79 - 114		

Lab Sample ID: MB 280-573016/2
Matrix: Water
Analysis Batch: 573016

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.6	0.44	mg/L			04/26/22 11:28	1

Lab Sample ID: LCS 280-573016/1
Matrix: Water
Analysis Batch: 573016

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	88.0		mg/L		88	79 - 114		

Lab Sample ID: 280-161425-10 DU
Matrix: Water
Analysis Batch: 573016

Client Sample ID: MW-34-EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	1.6			1.60		mg/L				0	10

Lab Sample ID: MB 280-573189/2
Matrix: Water
Analysis Batch: 573189

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.6	0.44	mg/L			04/27/22 15:19	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 280-573189/1
Matrix: Water
Analysis Batch: 573189

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	84.8		mg/L		85	79 - 114		

Lab Sample ID: 280-161425-7 DU
Matrix: Water
Analysis Batch: 573189

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	22			21.2		mg/L				4	10

Lab Sample ID: MB 280-573436/3
Matrix: Water
Analysis Batch: 573436

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			04/29/22 15:07	1

Lab Sample ID: LCS 280-573436/1
Matrix: Water
Analysis Batch: 573436

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	90.0		mg/L		90	79 - 114		

Lab Sample ID: LCSD 280-573436/2
Matrix: Water
Analysis Batch: 573436

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	90.0		mg/L		90	79 - 114	0	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-573147/1
Matrix: Water
Analysis Batch: 573147

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/27/22 11:25	1

Lab Sample ID: LCS 280-573147/2
Matrix: Water
Analysis Batch: 573147

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			502	496		mg/L		99	88 - 114		

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCSD 280-573147/3
Matrix: Water
Analysis Batch: 573147

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			502	496		mg/L		99	88 - 114	0	20

Lab Sample ID: MB 280-573148/1
Matrix: Water
Analysis Batch: 573148

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/27/22 11:27	1

Lab Sample ID: LCS 280-573148/2
Matrix: Water
Analysis Batch: 573148

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			502	500		mg/L		100	88 - 114		

Lab Sample ID: LCSD 280-573148/3
Matrix: Water
Analysis Batch: 573148

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			502	493		mg/L		98	88 - 114	1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-562603/20-A
Matrix: Water
Analysis Batch: 567117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562603

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006622	U	0.0533	0.0533	1.00	0.107	pCi/L	04/28/22 09:15	05/24/22 18:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*04/28/22 09:15*	*05/24/22 18:46*	*1*

Lab Sample ID: LCS 160-562603/1-A
Matrix: Water
Analysis Batch: 566897

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562603

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	8.967		0.968	1.00	0.131	pCi/L	79	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.3*		*40 - 110*

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

Lab Sample ID: LCSD 160-562603/2-A
Matrix: Water
Analysis Batch: 566897

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 562603

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.57		1.12	1.00	0.144	pCi/L	93	75 - 125	0.77	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*97.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-562607/20-A
Matrix: Water
Analysis Batch: 565964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562607

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2477	U	0.220	0.221	1.00	0.351	pCi/L	04/28/22 09:50	05/16/22 12:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:42*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/28/22 09:50*	*05/16/22 12:42*	*1*

Lab Sample ID: LCS 160-562607/1-A
Matrix: Water
Analysis Batch: 565963

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562607

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.62	10.82		1.22	1.00	0.368	pCi/L	126	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.3*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: LCSD 160-562607/2-A
Matrix: Water
Analysis Batch: 565963

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 562607

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.62	9.419		1.09	1.00	0.379	pCi/L	109	75 - 125	0.61	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*97.0*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Metals

Prep Batch: 353255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total Recoverable	Water	3005A	
280-161425-2	MW-7	Total Recoverable	Water	3005A	
280-161425-3	MW-9	Total Recoverable	Water	3005A	
280-161425-4	MW-13	Total Recoverable	Water	3005A	
280-161425-5	MW-15	Total Recoverable	Water	3005A	
280-161425-6	MW-21	Total Recoverable	Water	3005A	
280-161425-7	MW-27	Total Recoverable	Water	3005A	
280-161425-8	MW-27-FD	Total Recoverable	Water	3005A	
280-161425-9	MW-28	Total Recoverable	Water	3005A	
280-161425-10	MW-34-EB	Total Recoverable	Water	3005A	
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-353255/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	3005A	
280-161425-4 DU	MW-13	Total Recoverable	Water	3005A	

Prep Batch: 353357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	7470A	
280-161425-2	MW-7	Total/NA	Water	7470A	
280-161425-3	MW-9	Total/NA	Water	7470A	
280-161425-4	MW-13	Total/NA	Water	7470A	
280-161425-5	MW-15	Total/NA	Water	7470A	
280-161425-6	MW-21	Total/NA	Water	7470A	
280-161425-7	MW-27	Total/NA	Water	7470A	
280-161425-8	MW-27-FD	Total/NA	Water	7470A	
280-161425-9	MW-28	Total/NA	Water	7470A	
280-161425-10	MW-34-EB	Total/NA	Water	7470A	
MB 310-353357/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-353357/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 353386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	7470A	353357
280-161425-2	MW-7	Total/NA	Water	7470A	353357
280-161425-3	MW-9	Total/NA	Water	7470A	353357
280-161425-4	MW-13	Total/NA	Water	7470A	353357
280-161425-5	MW-15	Total/NA	Water	7470A	353357
280-161425-6	MW-21	Total/NA	Water	7470A	353357
280-161425-7	MW-27	Total/NA	Water	7470A	353357
280-161425-8	MW-27-FD	Total/NA	Water	7470A	353357
280-161425-9	MW-28	Total/NA	Water	7470A	353357
280-161425-10	MW-34-EB	Total/NA	Water	7470A	353357
MB 310-353357/1-A	Method Blank	Total/NA	Water	7470A	353357
LCS 310-353357/2-A	Lab Control Sample	Total/NA	Water	7470A	353357

Analysis Batch: 353499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total Recoverable	Water	6010C	353255
280-161425-2	MW-7	Total Recoverable	Water	6010C	353255
280-161425-3	MW-9	Total Recoverable	Water	6010C	353255
280-161425-4	MW-13	Total Recoverable	Water	6010C	353255

Metals (Continued)

Analysis Batch: 353499 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-5	MW-15	Total Recoverable	Water	6010C	353255
280-161425-6	MW-21	Total Recoverable	Water	6010C	353255
280-161425-7	MW-27	Total Recoverable	Water	6010C	353255
280-161425-8	MW-27-FD	Total Recoverable	Water	6010C	353255
280-161425-9	MW-28	Total Recoverable	Water	6010C	353255
280-161425-10	MW-34-EB	Total Recoverable	Water	6010C	353255
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	6010C	353255
LCS 310-353255/2-A	Lab Control Sample	Total Recoverable	Water	6010C	353255
280-161425-4 DU	MW-13	Total Recoverable	Water	6010C	353255

Analysis Batch: 354250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total Recoverable	Water	6020A	353255
280-161425-2	MW-7	Total Recoverable	Water	6020A	353255
280-161425-3	MW-9	Total Recoverable	Water	6020A	353255
280-161425-4	MW-13	Total Recoverable	Water	6020A	353255
280-161425-5	MW-15	Total Recoverable	Water	6020A	353255
280-161425-6	MW-21	Total Recoverable	Water	6020A	353255
280-161425-7	MW-27	Total Recoverable	Water	6020A	353255
280-161425-8	MW-27-FD	Total Recoverable	Water	6020A	353255
280-161425-9	MW-28	Total Recoverable	Water	6020A	353255
280-161425-10	MW-34-EB	Total Recoverable	Water	6020A	353255
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	6020A	353255
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	353255
280-161425-4 DU	MW-13	Total Recoverable	Water	6020A	353255

Analysis Batch: 354398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-6	MW-21	Total Recoverable	Water	6020A	353255
280-161425-8	MW-27-FD	Total Recoverable	Water	6020A	353255
280-161425-9	MW-28	Total Recoverable	Water	6020A	353255
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	353255

Analysis Batch: 354516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-9	MW-28	Total Recoverable	Water	6020A	353255

General Chemistry

Analysis Batch: 572902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	SM 2540D	
280-161425-3	MW-9	Total/NA	Water	SM 2540D	
280-161425-10	MW-34-EB	Total/NA	Water	SM 2540D	
MB 280-572902/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-572902/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 573016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-4	MW-13	Total/NA	Water	SM 2540D	
280-161425-5	MW-15	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 573016 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-6	MW-21	Total/NA	Water	SM 2540D	
280-161425-8	MW-27-FD	Total/NA	Water	SM 2540D	
280-161425-9	MW-28	Total/NA	Water	SM 2540D	
MB 280-573016/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573016/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-161425-10 DU	MW-34-EB	Total/NA	Water	SM 2540D	

Analysis Batch: 573147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	SM2540 C	
280-161425-2	MW-7	Total/NA	Water	SM2540 C	
280-161425-3	MW-9	Total/NA	Water	SM2540 C	
280-161425-4	MW-13	Total/NA	Water	SM2540 C	
MB 280-573147/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573147/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573147/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 573148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-5	MW-15	Total/NA	Water	SM2540 C	
280-161425-6	MW-21	Total/NA	Water	SM2540 C	
280-161425-7	MW-27	Total/NA	Water	SM2540 C	
280-161425-8	MW-27-FD	Total/NA	Water	SM2540 C	
280-161425-9	MW-28	Total/NA	Water	SM2540 C	
280-161425-10	MW-34-EB	Total/NA	Water	SM2540 C	
MB 280-573148/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573148/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573148/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 573189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-7	MW-27	Total/NA	Water	SM 2540D	
MB 280-573189/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573189/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-161425-7 DU	MW-27	Total/NA	Water	SM 2540D	

Analysis Batch: 573436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-2	MW-7	Total/NA	Water	SM 2540D	
MB 280-573436/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573436/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-573436/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 574377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	9040B	
280-161425-2	MW-7	Total/NA	Water	9040B	
280-161425-3	MW-9	Total/NA	Water	9040B	
280-161425-4	MW-13	Total/NA	Water	9040B	
280-161425-5	MW-15	Total/NA	Water	9040B	
280-161425-6	MW-21	Total/NA	Water	9040B	

General Chemistry (Continued)

Analysis Batch: 574377 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-7	MW-27	Total/NA	Water	9040B	
280-161425-8	MW-27-FD	Total/NA	Water	9040B	
280-161425-9	MW-28	Total/NA	Water	9040B	
LCS 280-574377/73	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-574377/96	Lab Control Sample	Total/NA	Water	9040B	
280-161425-2 DU	MW-7	Total/NA	Water	9040B	

Analysis Batch: 574470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-10	MW-34-EB	Total/NA	Water	9040B	
LCS 280-574470/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 575183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	9056A	
280-161425-2	MW-7	Total/NA	Water	9056A	
280-161425-3	MW-9	Total/NA	Water	9056A	
280-161425-4	MW-13	Total/NA	Water	9056A	
280-161425-5	MW-15	Total/NA	Water	9056A	
280-161425-7	MW-27	Total/NA	Water	9056A	
280-161425-8	MW-27-FD	Total/NA	Water	9056A	
280-161425-9	MW-28	Total/NA	Water	9056A	
280-161425-10	MW-34-EB	Total/NA	Water	9056A	
MB 280-575183/6	Method Blank	Total/NA	Water	9056A	
MB 280-575183/60	Method Blank	Total/NA	Water	9056A	
LCS 280-575183/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-575183/58	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575183/5	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-575183/59	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575183/3	Lab Control Sample	Total/NA	Water	9056A	
280-161425-4 MS	MW-13	Total/NA	Water	9056A	
280-161425-4 MSD	MW-13	Total/NA	Water	9056A	
280-161425-4 DU	MW-13	Total/NA	Water	9056A	

Analysis Batch: 575241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	9056A	
280-161425-3	MW-9	Total/NA	Water	9056A	
280-161425-4	MW-13	Total/NA	Water	9056A	
280-161425-5	MW-15	Total/NA	Water	9056A	
280-161425-6	MW-21	Total/NA	Water	9056A	
280-161425-6	MW-21	Total/NA	Water	9056A	
280-161425-9	MW-28	Total/NA	Water	9056A	
MB 280-575241/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575241/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575241/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575241/3	Lab Control Sample	Total/NA	Water	9056A	
280-161425-1 MS	MW-1	Total/NA	Water	9056A	
280-161425-1 MSD	MW-1	Total/NA	Water	9056A	
280-161425-1 DU	MW-1	Total/NA	Water	9056A	

General Chemistry

Analysis Batch: 575334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	9056A	
280-161425-2	MW-7	Total/NA	Water	9056A	
280-161425-3	MW-9	Total/NA	Water	9056A	
280-161425-4	MW-13	Total/NA	Water	9056A	
280-161425-5	MW-15	Total/NA	Water	9056A	
280-161425-6	MW-21	Total/NA	Water	9056A	
280-161425-7	MW-27	Total/NA	Water	9056A	
280-161425-8	MW-27-FD	Total/NA	Water	9056A	
280-161425-10	MW-34-EB	Total/NA	Water	9056A	
MB 280-575334/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575334/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575334/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575334/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 575484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-9	MW-28	Total/NA	Water	9056A	
MB 280-575484/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575484/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575484/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575484/3	Lab Control Sample	Total/NA	Water	9056A	
280-161425-9 MS	MW-28	Total/NA	Water	9056A	
280-161425-9 MSD	MW-28	Total/NA	Water	9056A	
280-161425-9 DU	MW-28	Total/NA	Water	9056A	

Rad

Prep Batch: 562603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	PrecSep-21	
280-161425-2	MW-7	Total/NA	Water	PrecSep-21	
280-161425-3	MW-9	Total/NA	Water	PrecSep-21	
280-161425-4	MW-13	Total/NA	Water	PrecSep-21	
280-161425-5	MW-15	Total/NA	Water	PrecSep-21	
280-161425-6	MW-21	Total/NA	Water	PrecSep-21	
280-161425-7	MW-27	Total/NA	Water	PrecSep-21	
280-161425-8	MW-27-FD	Total/NA	Water	PrecSep-21	
280-161425-9	MW-28	Total/NA	Water	PrecSep-21	
280-161425-10	MW-34-EB	Total/NA	Water	PrecSep-21	
MB 160-562603/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-562603/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-562603/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 562607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-1	MW-1	Total/NA	Water	PrecSep_0	
280-161425-2	MW-7	Total/NA	Water	PrecSep_0	
280-161425-3	MW-9	Total/NA	Water	PrecSep_0	
280-161425-4	MW-13	Total/NA	Water	PrecSep_0	
280-161425-5	MW-15	Total/NA	Water	PrecSep_0	
280-161425-6	MW-21	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 562607 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161425-7	MW-27	Total/NA	Water	PrecSep_0	
280-161425-8	MW-27-FD	Total/NA	Water	PrecSep_0	
280-161425-9	MW-28	Total/NA	Water	PrecSep_0	
280-161425-10	MW-34-EB	Total/NA	Water	PrecSep_0	
MB 160-562607/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-562607/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-562607/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-1
Lab Sample ID: 280-161425-1
Date Collected: 04/20/22 14:15
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:21	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:50	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:31	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:18	KEG	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575241	05/18/22 00:55	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 01:32	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 14:59	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572902	04/25/22 12:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573147	04/27/22 11:25	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			997.55 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567047	05/24/22 16:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			997.55 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:40	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-7
Lab Sample ID: 280-161425-2
Date Collected: 04/21/22 15:30
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:23	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:54	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:34	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:30	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 02:20	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 15:15	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	573436	04/29/22 15:08	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573147	04/27/22 11:25	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			999.30 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567047	05/24/22 16:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			999.30 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:40	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-9
Lab Sample ID: 280-161425-3

Date Collected: 04/20/22 15:45
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:29	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 00:57	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:36	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:38	KEG	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575241	05/18/22 01:55	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 02:35	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 15:31	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572902	04/25/22 12:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573147	04/27/22 11:25	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			997.78 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567047	05/24/22 16:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			997.78 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:40	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-13
Lab Sample ID: 280-161425-4

Date Collected: 04/21/22 12:40
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:31	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 01:00	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:38	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:42	KEG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575241	05/18/22 02:25	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 03:39	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 15:47	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573016	04/26/22 11:29	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573147	04/27/22 11:25	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			1003.82 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1003.82 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:40	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-15
Date Collected: 04/21/22 16:20
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:35	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 01:07	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:40	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:46	KEG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575241	05/18/22 03:25	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 04:42	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 16:03	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573016	04/26/22 11:29	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			1001.76 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1001.76 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		2			353499	05/18/22 11:48	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 01:23	A6US	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354398	05/25/22 17:58	SAP	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:42	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:50	KEG	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575241	05/18/22 03:40	CJ	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575241	05/18/22 03:55	CJ	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 16:19	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573016	04/26/22 11:29	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			998.86 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			998.86 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:39	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 01:26	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:44	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:53	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 05:45	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 16:35	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573189	04/27/22 15:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			1000.11 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1000.11 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-27-FD
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:41	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 01:30	A6US	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354398	05/25/22 18:02	SAP	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:46	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 21:57	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 06:01	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 16:51	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573016	04/26/22 11:29	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			745.65 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			745.65 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		2			353499	05/18/22 11:54	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 01:33	A6US	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354398	05/25/22 18:05	SAP	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		10			354516	05/26/22 14:36	SAP	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:49	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 22:01	KEG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575241	05/18/22 04:25	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 06:17	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575484	05/19/22 12:41	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573016	04/26/22 11:29	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			747.84 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:17	SCB	TAL SL
Total/NA	Prep	PrecSep_0			747.84 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Client Sample ID: MW-34-EB
Date Collected: 04/20/22 12:15
Date Received: 04/22/22 17:45

Lab Sample ID: 280-161425-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:46	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 01:36	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353357	05/17/22 13:15	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 17:51	EAM	TAL CF
Total/NA	Analysis	9040B		1			574470	05/10/22 15:27	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	575183	05/18/22 06:33	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575334	05/18/22 17:23	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572902	04/25/22 12:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573148	04/27/22 11:28	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			997.49 mL	1.0 g	562603	04/28/22 09:15	MS	TAL SL
Total/NA	Analysis	9315		1			567117	05/24/22 18:18	SCB	TAL SL
Total/NA	Prep	PrecSep_0			997.49 mL	1.0 g	562607	04/28/22 09:50	MS	TAL SL
Total/NA	Analysis	9320		1			565964	05/16/22 12:41	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567265	05/25/22 14:04	EMH	TAL SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder / A. Binder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: 720-338-6065	E-Mail: Danielle.Harrington@Eurofinset.com		Page: Page 3 of 3
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): ASAP			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals - ETA Cedar Falls	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-1	4/20/22	1415	G	WATER			X	X	X	5	
MW-7	4/21/22	1530	G	WATER			X	X	X	5	
MW-9	4/20/22	1545	G	WATER			X	X	X	5	
MW-13	4/21/22	1240	G	WATER			X	X	X	5	
MW-15	4/21/22	1620	G	WATER			X	X	X	5	
MW-21	4/21/22	1024	G	WATER			X	X	X	5	
MW-27	4/21/22	1230	G	WATER			X	X	X	5	
MW-27-FD	4/21/22	1230	G	WATER			X	X	X	5	
MW-28	4/21/22	1045	G	WATER			X	X	X	5	
MW-34-EB	4/20/22	1215	G	WATER			X	X	X	5	
				WATER							

280-161425 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	4/22/22 1645	HDR	Received by: PJ Mayh	4/22/2022 1745	Stl.
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-611875.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161425-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/23/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (280-161425-1)	4/20/22	14:15 Mountain		Water			X	X	X	2	
MW-7 (280-161425-2)	4/21/22	15:30 Mountain		Water			X	X	X	2	
MW-9 (280-161425-3)	4/20/22	15:45 Mountain		Water			X	X	X	2	
MW-13 (280-161425-4)	4/21/22	12:40 Mountain		Water			X	X	X	2	
MW-15 (280-161425-5)	4/21/22	16:20 Mountain		Water			X	X	X	2	
MW-21 (280-161425-6)	4/21/22	10:24 Mountain		Water			X	X	X	2	
MW-27 (280-161425-7)	4/21/22	12:30 Mountain		Water			X	X	X	2	
MW-27-FD (280-161425-8)	4/21/22	12:30 Mountain		Water			X	X	X	2	
MW-28 (280-161425-9)	4/21/22	10:45 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/26/22 1500	ETADEN	FED EX		
2	FED EX			Sierra Worthington	APR 27 2022 1310	EMSR
3						

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

Ver: 06/08/2021

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-611875.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161425-1
Address: 13715 Rider Trail North,	Due Date Requested: 5/23/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-34-EB (280-161425-10)	4/20/22	12:15 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/21/22 1500	EAEN	FED EX		
2	Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: APR 27 2022 1310	Company GRS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

eurofins | Environment Testing America

280-161425 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Denver

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 4-27-22 | TIME 920 | Received By: PL

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

Condition of Cooler/Containers

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

Temperature Record

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

Thermometer ID: R | Correction Factor (°C): +0.2

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

Uncorrected Temp (°C): — | Corrected Temp (°C): —

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	P1 250mL	
Uncorrected Temp (°C):	13.9	
Corrected Temp (°C):	14.1	

Exceptions Noted

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

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

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

Additional Comments

* NO COC, all Nitric Containers

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161425-1

Login Number: 161425
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161425-1

Login Number: 161425
List Number: 2
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls
List Creation: 04/27/22 02:00 PM

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161425-1

Login Number: 161425
List Number: 3
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 04/27/22 03:29 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-161425-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-161425-1	MW-1	91.8
280-161425-2	MW-7	92.0
280-161425-3	MW-9	87.3
280-161425-4	MW-13	96.5
280-161425-5	MW-15	88.6
280-161425-6	MW-21	98.8
280-161425-7	MW-27	96.0
280-161425-8	MW-27-FD	82.6
280-161425-9	MW-28	99.0
280-161425-10	MW-34-EB	91.8
LCS 160-562603/1-A	Lab Control Sample	97.3
LCSD 160-562603/2-A	Lab Control Sample Dup	97.0
MB 160-562603/20-A	Method Blank	95.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-161425-1	MW-1	91.8	84.5
280-161425-2	MW-7	92.0	81.1
280-161425-3	MW-9	87.3	86.7
280-161425-4	MW-13	96.5	84.5
280-161425-5	MW-15	88.6	85.2
280-161425-6	MW-21	98.8	81.5
280-161425-7	MW-27	96.0	84.5
280-161425-8	MW-27-FD	82.6	86.4
280-161425-9	MW-28	99.0	86.7
280-161425-10	MW-34-EB	91.8	84.1
LCS 160-562607/1-A	Lab Control Sample	97.3	86.4
LCSD 160-562607/2-A	Lab Control Sample Dup	97.0	86.4
MB 160-562607/20-A	Method Blank	95.8	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161428-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/1/2022 1:02:01 PM

Danielle Harrington, Project Manager II
(303)736-0176
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LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-161428-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161428-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/22/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.7°C, 0.9°C, 2.1°C and 5.2°C.

6020 ICP-MS

Samples MW-13 (280-161428-1), MW-21 (280-161428-2), and MW-28 (280-161428-4) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium, Potassium, Sodium and Magnesium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Detection Summary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-13 — Lab Sample ID: 280-161428-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	600000		4000	760	ug/L	4		6020A	Total/NA
Potassium	12000		500	150	ug/L	1		6020A	Total/NA
Magnesium	190000		2000	600	ug/L	4		6020A	Total/NA
Sodium	430000		4000	2400	ug/L	4		6020A	Total/NA
Selenium	0.38		0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.11		0.0080	0.0025	mg/L	1		6020A	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 280-161428-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	610000		4000	760	ug/L	4		6020A	Total/NA
Potassium	11000		500	150	ug/L	1		6020A	Total/NA
Magnesium	290000		2000	600	ug/L	4		6020A	Total/NA
Sodium	850000		4000	2400	ug/L	4		6020A	Total/NA
Selenium	1.5		0.020	0.0038	mg/L	4		6020A	Total/NA
Lithium	0.21		0.0080	0.0025	mg/L	1		6020A	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 280-161428-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	53000		1000	190	ug/L	1		6020A	Total/NA
Potassium	2100		500	150	ug/L	1		6020A	Total/NA
Magnesium	21000		500	150	ug/L	1		6020A	Total/NA
Sodium	52000		1000	610	ug/L	1		6020A	Total/NA
Selenium	0.0049	J	0.0050	0.00096	mg/L	1		6020A	Total/NA
Lithium	0.025		0.0080	0.0025	mg/L	1		6020A	Total/NA

Client Sample ID: MW-28 — Lab Sample ID: 280-161428-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	610000		7000	1300	ug/L	7		6020A	Total/NA
Potassium	23000		500	150	ug/L	1		6020A	Total/NA
Magnesium	380000		3500	1100	ug/L	7		6020A	Total/NA
Sodium	1100000		7000	4300	ug/L	7		6020A	Total/NA
Selenium	3.0		0.035	0.0067	mg/L	7		6020A	Total/NA
Lithium	0.27		0.0080	0.0025	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
3005A	Preparation, Total Metals	SW846	TAL CF

Protocol References:

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

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Sample Summary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161428-1	MW-13	Water	04/21/22 12:40	04/22/22 17:45
280-161428-2	MW-21	Water	04/21/22 10:24	04/22/22 17:45
280-161428-3	MW-27	Water	04/21/22 12:30	04/22/22 17:45
280-161428-4	MW-28	Water	04/21/22 10:45	04/22/22 17:45

Method: 6020A - Metals (ICP/MS)

Client Sample ID: MW-13
Date Collected: 04/21/22 12:40
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161428-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	600000		4000	760	ug/L		05/25/22 09:15	05/28/22 16:01	4
Potassium	12000		500	150	ug/L		05/25/22 09:15	05/27/22 23:18	1
Magnesium	190000		2000	600	ug/L		05/25/22 09:15	05/28/22 16:01	4
Sodium	430000		4000	2400	ug/L		05/25/22 09:15	05/28/22 16:01	4
Selenium	0.38		0.0050	0.00096	mg/L		05/25/22 09:15	05/27/22 23:18	1
Lithium	0.11		0.0080	0.0025	mg/L		05/25/22 09:15	05/27/22 23:18	1

Client Sample ID: MW-21
Date Collected: 04/21/22 10:24
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161428-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	610000		4000	760	ug/L		05/25/22 09:15	05/28/22 16:20	4
Potassium	11000		500	150	ug/L		05/25/22 09:15	05/27/22 23:21	1
Magnesium	290000		2000	600	ug/L		05/25/22 09:15	05/28/22 16:20	4
Sodium	850000		4000	2400	ug/L		05/25/22 09:15	05/28/22 16:20	4
Selenium	1.5		0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 16:20	4
Lithium	0.21		0.0080	0.0025	mg/L		05/25/22 09:15	05/27/22 23:21	1

Client Sample ID: MW-27
Date Collected: 04/21/22 12:30
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161428-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	53000		1000	190	ug/L		05/25/22 09:15	05/27/22 23:25	1
Potassium	2100		500	150	ug/L		05/25/22 09:15	05/27/22 23:25	1
Magnesium	21000		500	150	ug/L		05/25/22 09:15	05/27/22 23:25	1
Sodium	52000		1000	610	ug/L		05/25/22 09:15	05/27/22 23:25	1
Selenium	0.0049	J	0.0050	0.00096	mg/L		05/25/22 09:15	05/27/22 23:25	1
Lithium	0.025		0.0080	0.0025	mg/L		05/25/22 09:15	05/27/22 23:25	1

Client Sample ID: MW-28
Date Collected: 04/21/22 10:45
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161428-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	610000		7000	1300	ug/L		05/25/22 09:15	05/28/22 16:24	7
Potassium	23000		500	150	ug/L		05/25/22 09:15	05/27/22 23:29	1
Magnesium	380000		3500	1100	ug/L		05/25/22 09:15	05/28/22 16:24	7
Sodium	1100000		7000	4300	ug/L		05/25/22 09:15	05/28/22 16:24	7
Selenium	3.0		0.035	0.0067	mg/L		05/25/22 09:15	05/28/22 16:24	7
Lithium	0.27		0.0080	0.0025	mg/L		05/25/22 09:15	05/27/22 23:29	1

QC Sample Results

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354220/1-A
Matrix: Water
Analysis Batch: 354608

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1000	190	ug/L		05/25/22 09:15	05/27/22 13:38	1
Potassium	ND		500	150	ug/L		05/25/22 09:15	05/27/22 13:38	1
Magnesium	ND		500	150	ug/L		05/25/22 09:15	05/27/22 13:38	1
Sodium	ND		1000	610	ug/L		05/25/22 09:15	05/27/22 13:38	1
Selenium	ND		0.0050	0.00096	mg/L		05/25/22 09:15	05/27/22 13:38	1
Lithium	ND		0.0080	0.0025	mg/L		05/25/22 09:15	05/27/22 13:38	1

Lab Sample ID: LCS 310-354220/2-A
Matrix: Water
Analysis Batch: 354608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2000	2180		ug/L		109	80 - 120
Potassium	2000	2180		ug/L		109	80 - 120
Magnesium	2000	2220		ug/L		111	80 - 120
Sodium	2000	2200		ug/L		110	80 - 120
Selenium	0.400	0.396		mg/L		99	80 - 120
Lithium	0.200	0.221		mg/L		110	80 - 120

QC Association Summary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Prep Batch: 354220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161428-1	MW-13	Total/NA	Water	3005A	
280-161428-2	MW-21	Total/NA	Water	3005A	
280-161428-3	MW-27	Total/NA	Water	3005A	
280-161428-4	MW-28	Total/NA	Water	3005A	
MB 310-354220/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-354220/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 354608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-354220/1-A	Method Blank	Total/NA	Water	6020A	354220
LCS 310-354220/2-A	Lab Control Sample	Total/NA	Water	6020A	354220

Analysis Batch: 354628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161428-1	MW-13	Total/NA	Water	6020A	354220
280-161428-2	MW-21	Total/NA	Water	6020A	354220
280-161428-3	MW-27	Total/NA	Water	6020A	354220
280-161428-4	MW-28	Total/NA	Water	6020A	354220

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161428-1	MW-13	Total/NA	Water	6020A	354220
280-161428-2	MW-21	Total/NA	Water	6020A	354220
280-161428-4	MW-28	Total/NA	Water	6020A	354220

Lab Chronicle

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-13
Lab Sample ID: 280-161428-1
Date Collected: 04/21/22 12:40
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1			354628	05/27/22 23:18	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		4			354712	05/28/22 16:01	SAP	TAL CF

Client Sample ID: MW-21
Lab Sample ID: 280-161428-2
Date Collected: 04/21/22 10:24
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1			354628	05/27/22 23:21	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		4			354712	05/28/22 16:20	SAP	TAL CF

Client Sample ID: MW-27
Lab Sample ID: 280-161428-3
Date Collected: 04/21/22 12:30
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1			354628	05/27/22 23:25	SAP	TAL CF

Client Sample ID: MW-28
Lab Sample ID: 280-161428-4
Date Collected: 04/21/22 10:45
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1			354628	05/27/22 23:29	SAP	TAL CF
Total/NA	Prep	3005A			50 mL	50 mL	354220	05/25/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		7			354712	05/28/22 16:24	SAP	TAL CF

Laboratory References:
TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161428-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

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Client Information	Sampler: L. Snyder/A. Binder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: 720-538-6065	E-Mail: Danielle.Harrington@Eurofinset.com		Page: Page 3 of 3
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): ASAP			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Landfill Wells	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A Total Metals - ETA Cedar Falls	2540C Calcd TDS, IC Chloride, Fluoride, Sulfate, pH	9315, Ra226, 9320, Ra228, Ra226+Ra228 - ETA St Louis	Ca, K, Mg, Na, Se, Li 6020A-Tl metals ETA Cedar Falls	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	N		
MW-13	4/21/22	1240	G	WATER						X	1	Disregard extra
MW-21	4/21/22	1024	G	WATER						X	1	TDS/TSS/pH/
MW-27	4/21/22	1230	G	WATER						X	1	anions bottles
MW-28	4/21/22	1045	G	WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								

280-161428 Chain of Custody

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 4/22/22 1645	Company: HDR	Received by: P Flores	Date/Time: 4/22/2022 1745	Company: Eto DH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.5-0.0+0.6=5.1 IR 12 (270.1)

Ver: 01/16/2019

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280-161428 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Eurofins Denver

City/State: CITY | STATE CO | Project:

Receipt Information

Date/Time Received: DATE 4/28/22 | TIME 945 | Received By: LR

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

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: N | Correction Factor (°C): 0

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

Uncorrected Temp (°C): 0-8 | Corrected Temp (°C): 0-8

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM: Harrington, Danielle M	Carrier Tracking No(s).	COC No: 280-611877 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle Harrington@et.eurofinsus com	State of Origin: Colorado	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-161428-1
Address: 3019 Venture Way, ,	Due Date Requested: 5/23/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Preservation Codes

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/30065A_TOT (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13 (280-161428-1)	4/21/22	12.40 Mountain		Water			X	2	
MW-21 (280-161428-2)	4/21/22	10:24 Mountain		Water			X	2	
MW-27 (280-161428-3)	4/21/22	12.30 Mountain		Water			X	2	
MW-28 (280-161428-4)	4/21/22	10:45 Mountain		Water			X	2	

Note: Since laboratory accreditations are subject to change Eurofins TestAmerica places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	4/26/22 1400	ETADEN			
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by [signature]	Date/Time: 4/28/22 945	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161428-1

Login Number: 161428
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161428-1

Login Number: 161428
List Number: 2
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls
List Creation: 04/28/22 01:36 PM

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161429-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/7/2022 7:32:57 PM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-161429-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161429-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/22/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.7°C, 0.9°C, 2.1°C and 5.2°C

Receipt Exceptions

The sample collection times for the samples were switched on the sample containers received. Samples were logged per information on the chain of custody. MW-31 (280-161429-1) and MW-32 (280-161429-2)

DISSOLVED METALS- 6010C/6020A

Sample MW-32 (280-161429-2) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Calcium, Magnesium, Sodium and Potassium were detected in method blank MB 280-576668/1-C at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The accuracy and precision of the Calcium, Magnesium, Sodium and Potassium MS/MSD performed on a sample MW-32 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL RECOVERABLE METALS (ICPMS)- METHOD 6020A

Samples MW-31 (280-161429-1) and MW-32 (280-161429-2) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium, Magnesium, Sodium and Potassium MS/MSD performed on a sample MW-32 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Job ID: 280-161429-1 (Continued)

Laboratory: Eurofins Denver (Continued)

GENERAL CHEMISTRY- VARIOUS

Samples MW-31 (280-161429-1) and MW-32 (280-161429-2) required dilution prior to analysis for Method 9056A. The reporting limits have been adjusted accordingly.

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

Detection Summary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-31 — Lab Sample ID: 280-161429-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	400		0.50	0.19	mg/L	1		6020A	Total Recoverable
Lithium	0.15		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Selenium	0.33		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Potassium	14		0.50	0.15	mg/L	1		6020A	Total Recoverable
Magnesium	300		5.0	1.5	mg/L	10		6020A	Total Recoverable
Sodium	1200		10	6.1	mg/L	10		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	190		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	4000		250	52	mg/L	50		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	580		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	22		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6300		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-32 — Lab Sample ID: 280-161429-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	54		20	9.1	ug/L	1		6010C	Dissolved
Calcium	550		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.051		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Selenium	0.083		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Potassium	12		0.50	0.15	mg/L	1		6020A	Total Recoverable
Magnesium	160		2.0	0.60	mg/L	4		6020A	Total Recoverable
Sodium	390		1.0	0.61	mg/L	1		6020A	Total Recoverable
Calcium	520000	B	50000	450	ug/L	50		6020A	Dissolved
Magnesium	170000	B	50000	450	ug/L	50		6020A	Dissolved
Potassium	12000	J B	50000	450	ug/L	50		6020A	Dissolved
Selenium	0.065		0.0050	0.00037	mg/L	1		6020A	Dissolved
Sodium	380000	B	50000	450	ug/L	50		6020A	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	50		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	2400		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	370		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1.6		1.6	0.44	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3500		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
FILTRATION	Sample Filtration	None	TAL DEN

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161429-1	MW-31	Water	04/22/22 13:35	04/22/22 17:45
280-161429-2	MW-32	Water	04/22/22 15:25	04/22/22 17:45

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-32
Date Collected: 04/22/22 15:25
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	54		20	9.1	ug/L		06/01/22 18:11	06/03/22 11:06	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-31
Date Collected: 04/22/22 13:35
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 19:56	1
Calcium	400		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 19:56	1
Lithium	0.15		0.010	0.0025	mg/L		05/24/22 09:30	05/27/22 19:56	1
Selenium	0.33		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 19:56	1
Potassium	14		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 19:56	1
Magnesium	300		5.0	1.5	mg/L		05/24/22 09:30	05/28/22 21:54	10
Sodium	1200		10	6.1	mg/L		05/24/22 09:30	05/28/22 21:54	10

Client Sample ID: MW-32
Date Collected: 04/22/22 15:25
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:00	1
Calcium	550		2.0	0.76	mg/L		05/24/22 09:30	05/28/22 22:14	4
Lithium	0.051		0.010	0.0025	mg/L		05/24/22 09:30	05/27/22 20:00	1
Selenium	0.083		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:00	1
Potassium	12		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:00	1
Magnesium	160		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 22:14	4
Sodium	390		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 20:00	1

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

Client Sample ID: MW-32
Date Collected: 04/22/22 15:25
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		06/02/22 08:45	06/02/22 17:51	1
Calcium	520000	B	50000	450	ug/L		06/02/22 08:45	06/02/22 17:23	50
Magnesium	170000	B	50000	450	ug/L		06/02/22 08:45	06/02/22 17:23	50
Potassium	12000	J B	50000	450	ug/L		06/02/22 08:45	06/03/22 14:30	50
Selenium	0.065		0.0050	0.00037	mg/L		06/02/22 08:45	06/03/22 09:46	1
Sodium	380000	B	50000	450	ug/L		06/02/22 08:45	06/02/22 17:23	50

General Chemistry

Client Sample ID: MW-31
Date Collected: 04/22/22 13:35
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			05/09/22 22:15	1
Temperature	21.4	HF	1.0	1.0	Degrees C			05/09/22 22:15	1
Chloride	190		3.0	1.0	mg/L			05/18/22 05:55	1
Sulfate	4000		250	52	mg/L			05/18/22 06:10	50

General Chemistry (Continued)

Client Sample ID: MW-31
Date Collected: 04/22/22 13:35
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	580		10	3.1	mg/L			05/03/22 19:21	1
Total Suspended Solids	22		1.6	0.44	mg/L			04/27/22 15:19	1
Total Dissolved Solids (TDS)	6300		40	19	mg/L			04/28/22 11:53	1

Client Sample ID: MW-32
Date Collected: 04/22/22 15:25
Date Received: 04/22/22 17:45
Lab Sample ID: 280-161429-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			05/09/22 22:19	1
Temperature	21.3	HF	1.0	1.0	Degrees C			05/09/22 22:19	1
Chloride	50		3.0	1.0	mg/L			05/18/22 06:25	1
Sulfate	2400		100	21	mg/L			05/18/22 06:40	20
Bicarbonate Alkalinity as CaCO3	370		10	3.1	mg/L			05/03/22 19:29	1
Total Suspended Solids	1.6		1.6	0.44	mg/L			04/27/22 15:19	1
Total Dissolved Solids (TDS)	3500		40	19	mg/L			04/28/22 11:53	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-576668/1-B
Matrix: Water
Analysis Batch: 577069

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 576722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		06/01/22 18:11	06/03/22 10:58	1

Lab Sample ID: LCS 280-576668/2-B
Matrix: Water
Analysis Batch: 577069

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 576722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	1020		ug/L		102	90 - 112

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354089/1-A
Matrix: Water
Analysis Batch: 354631

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 19:50	1
Calcium	ND		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 19:50	1
Lithium	ND		0.010	0.0025	mg/L		05/24/22 09:30	05/27/22 19:50	1
Selenium	ND		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 19:50	1
Potassium	ND		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 19:50	1
Magnesium	ND		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 19:50	1
Sodium	ND		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 19:50	1

Lab Sample ID: LCS 310-354089/2-A
Matrix: Water
Analysis Batch: 354631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.201		mg/L		101	80 - 120
Calcium	2.00	1.74		mg/L		87	80 - 120
Lithium	0.200	0.204		mg/L		102	80 - 120
Selenium	0.400	0.398		mg/L		100	80 - 120
Potassium	2.00	2.02		mg/L		101	80 - 120
Magnesium	2.00	2.05		mg/L		102	80 - 120
Sodium	2.00	2.09		mg/L		104	80 - 120

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 354631

Client Sample ID: MW-32
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.200	0.224		mg/L		112	75 - 125
Lithium	0.051		0.200	0.243		mg/L		96	75 - 125
Selenium	0.083		0.400	0.559	E	mg/L		119	75 - 125
Potassium	12		2.00	14.1	4	mg/L		101	75 - 125
Sodium	390		2.00	380	4	mg/L		-504	75 - 125

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

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 354712

Client Sample ID: MW-32
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	550		2.00	543	4	mg/L		-201	75 - 125
Magnesium	160		2.00	151	4	mg/L		-250	75 - 125

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 354631

Client Sample ID: MW-32
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.225		mg/L		112	75 - 125	0	20
Lithium	0.051		0.200	0.239		mg/L		94	75 - 125	2	20
Selenium	0.083		0.400	0.567	E	mg/L		121	75 - 125	1	20
Potassium	12		2.00	13.9	4	mg/L		90	75 - 125	2	20
Sodium	390		2.00	372	4	mg/L		-923	75 - 125	2	20

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 354712

Client Sample ID: MW-32
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	550		2.00	582	4	mg/L		1760	75 - 125	7	20
Magnesium	160		2.00	166	4	mg/L		490	75 - 125	9	20

Lab Sample ID: MB 280-576668/1-C
Matrix: Water
Analysis Batch: 577002

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 576723

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		06/02/22 08:45	06/02/22 17:16	1
Calcium	28.7	J	1000	9.0	ug/L		06/02/22 08:45	06/02/22 17:16	1
Magnesium	14.1	J	1000	9.0	ug/L		06/02/22 08:45	06/02/22 17:16	1
Selenium	ND		0.0050	0.00037	mg/L		06/02/22 08:45	06/02/22 17:16	1
Sodium	25.5	J	1000	9.0	ug/L		06/02/22 08:45	06/02/22 17:16	1

Lab Sample ID: MB 280-576668/1-C
Matrix: Water
Analysis Batch: 577082

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 576723

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.00037	mg/L		06/02/22 08:45	06/03/22 09:38	1

Lab Sample ID: MB 280-576668/1-C
Matrix: Water
Analysis Batch: 577105

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 576723

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	9.69	J	1000	9.0	ug/L		06/02/22 08:45	06/03/22 14:19	1

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

Lab Sample ID: LCS 280-576668/2-C
Matrix: Water
Analysis Batch: 577002

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0377		mg/L		94	85 - 117
Calcium	800	849	J	ug/L		106	80 - 120
Magnesium	800	861	J	ug/L		108	80 - 120
Selenium	0.0400	0.0368		mg/L		92	77 - 122
Sodium	800	854	J	ug/L		107	80 - 120

Lab Sample ID: LCS 280-576668/2-C
Matrix: Water
Analysis Batch: 577082

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	0.0400	0.0404		mg/L		101	77 - 122

Lab Sample ID: LCS 280-576668/2-C
Matrix: Water
Analysis Batch: 577105

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	800	888	J	ug/L		111	80 - 120

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 577002

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	520000	B	800	549000	4	ug/L		3359	80 - 120
Magnesium	170000	B	800	169000	4	ug/L		488	80 - 120
Sodium	380000	B	800	403000	4	ug/L		2479	80 - 120

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 577002

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.0400	0.0388		mg/L		97	85 - 117

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 577082

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	0.065		0.0400	0.111		mg/L		115	77 - 122

Lab Sample ID: 280-161429-2 MS
Matrix: Water
Analysis Batch: 577105

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	12000	J B	800	14300	J 4	ug/L		330	80 - 120

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

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 577002

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	520000	B	800	564000	4	ug/L		5235	80 - 120	3	20
Magnesium	170000	B	800	173000	4	ug/L		941	80 - 120	2	20
Sodium	380000	B	800	415000	4	ug/L		3997	80 - 120	3	20

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 577002

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		0.0400	0.0421		mg/L		105	85 - 117	8	20

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 577082

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium	0.065		0.0400	0.109		mg/L		111	77 - 122	2	20

Lab Sample ID: 280-161429-2 MSD
Matrix: Water
Analysis Batch: 577105

Client Sample ID: MW-32
Prep Type: Dissolved
Prep Batch: 576723

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	12000	J B	800	13800	J 4	ug/L		261	80 - 120	4	20

Method: 9040B - pH

Lab Sample ID: LCS 280-574377/96
Matrix: Water
Analysis Batch: 574377

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.0		SU		100	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-575241/53
Matrix: Water
Analysis Batch: 575241

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/18/22 05:40	1
Sulfate	ND		5.0	1.0	mg/L			05/18/22 05:40	1

Lab Sample ID: LCS 280-575241/51
Matrix: Water
Analysis Batch: 575241

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	103		mg/L		103	90 - 110		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-575241/51
Matrix: Water
Analysis Batch: 575241

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	102		mg/L		102	90 - 110

Lab Sample ID: LCSD 280-575241/52
Matrix: Water
Analysis Batch: 575241

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	103		mg/L		103	90 - 110	0	10
Sulfate	100	102		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-575241/3
Matrix: Water
Analysis Batch: 575241

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.03		mg/L		101	50 - 150
Sulfate	5.00	4.88	J	mg/L		98	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-573792/58
Matrix: Water
Analysis Batch: 573792

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			05/03/22 18:49	1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-573189/2
Matrix: Water
Analysis Batch: 573189

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.6	0.44	mg/L			04/27/22 15:19	1

Lab Sample ID: LCS 280-573189/1
Matrix: Water
Analysis Batch: 573189

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	84.8		mg/L		85	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-573280/1
Matrix: Water
Analysis Batch: 573280

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/28/22 11:53	1

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: LCS 280-573280/2
Matrix: Water
Analysis Batch: 573280

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			505	493		mg/L		98	88 - 114		

Metals

Prep Batch: 354089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total Recoverable	Water	3005A	
280-161429-2	MW-32	Total Recoverable	Water	3005A	
MB 310-354089/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-354089/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-161429-2 MS	MW-32	Total Recoverable	Water	3005A	
280-161429-2 MSD	MW-32	Total Recoverable	Water	3005A	

Analysis Batch: 354631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total Recoverable	Water	6020A	354089
280-161429-2	MW-32	Total Recoverable	Water	6020A	354089
MB 310-354089/1-A	Method Blank	Total Recoverable	Water	6020A	354089
LCS 310-354089/2-A	Lab Control Sample	Total Recoverable	Water	6020A	354089
280-161429-2 MS	MW-32	Total Recoverable	Water	6020A	354089
280-161429-2 MSD	MW-32	Total Recoverable	Water	6020A	354089

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total Recoverable	Water	6020A	354089
280-161429-2	MW-32	Total Recoverable	Water	6020A	354089
280-161429-2 MS	MW-32	Total Recoverable	Water	6020A	354089
280-161429-2 MSD	MW-32	Total Recoverable	Water	6020A	354089

Filtration Batch: 576668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	FILTRATION	
MB 280-576668/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-576668/1-C	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-576668/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-576668/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
280-161429-2 MS	MW-32	Dissolved	Water	FILTRATION	
280-161429-2 MSD	MW-32	Dissolved	Water	FILTRATION	

Prep Batch: 576722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	3005A	576668
MB 280-576668/1-B	Method Blank	Dissolved	Water	3005A	576668
LCS 280-576668/2-B	Lab Control Sample	Dissolved	Water	3005A	576668

Prep Batch: 576723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	3005A	576668
MB 280-576668/1-C	Method Blank	Dissolved	Water	3005A	576668
LCS 280-576668/2-C	Lab Control Sample	Dissolved	Water	3005A	576668
280-161429-2 MS	MW-32	Dissolved	Water	3005A	576668
280-161429-2 MSD	MW-32	Dissolved	Water	3005A	576668

Analysis Batch: 577002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	6020A	576723
280-161429-2	MW-32	Dissolved	Water	6020A	576723

Metals (Continued)

Analysis Batch: 577002 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-576668/1-C	Method Blank	Dissolved	Water	6020A	576723
LCS 280-576668/2-C	Lab Control Sample	Dissolved	Water	6020A	576723
280-161429-2 MS	MW-32	Dissolved	Water	6020A	576723
280-161429-2 MS	MW-32	Dissolved	Water	6020A	576723
280-161429-2 MSD	MW-32	Dissolved	Water	6020A	576723
280-161429-2 MSD	MW-32	Dissolved	Water	6020A	576723

Analysis Batch: 577069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	6010C	576722
MB 280-576668/1-B	Method Blank	Dissolved	Water	6010C	576722
LCS 280-576668/2-B	Lab Control Sample	Dissolved	Water	6010C	576722

Analysis Batch: 577082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	6020A	576723
MB 280-576668/1-C	Method Blank	Dissolved	Water	6020A	576723
LCS 280-576668/2-C	Lab Control Sample	Dissolved	Water	6020A	576723
280-161429-2 MS	MW-32	Dissolved	Water	6020A	576723
280-161429-2 MSD	MW-32	Dissolved	Water	6020A	576723

Analysis Batch: 577105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-2	MW-32	Dissolved	Water	6020A	576723
MB 280-576668/1-C	Method Blank	Dissolved	Water	6020A	576723
LCS 280-576668/2-C	Lab Control Sample	Dissolved	Water	6020A	576723
280-161429-2 MS	MW-32	Dissolved	Water	6020A	576723
280-161429-2 MSD	MW-32	Dissolved	Water	6020A	576723

General Chemistry

Analysis Batch: 573189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total/NA	Water	SM 2540D	
280-161429-2	MW-32	Total/NA	Water	SM 2540D	
MB 280-573189/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573189/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 573280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total/NA	Water	SM2540 C	
280-161429-2	MW-32	Total/NA	Water	SM2540 C	
MB 280-573280/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573280/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 573792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total/NA	Water	SM 2320B	
280-161429-2	MW-32	Total/NA	Water	SM 2320B	
MB 280-573792/58	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-573792/57	Lab Control Sample	Total/NA	Water	SM 2320B	

QC Association Summary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 574377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total/NA	Water	9040B	
280-161429-2	MW-32	Total/NA	Water	9040B	
LCS 280-574377/96	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 575241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161429-1	MW-31	Total/NA	Water	9056A	
280-161429-1	MW-31	Total/NA	Water	9056A	
280-161429-2	MW-32	Total/NA	Water	9056A	
280-161429-2	MW-32	Total/NA	Water	9056A	
MB 280-575241/53	Method Blank	Total/NA	Water	9056A	
LCS 280-575241/51	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575241/52	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575241/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-31
Lab Sample ID: 280-161429-1
Date Collected: 04/22/22 13:35
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		10			354712	05/28/22 21:54	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 19:56	DHM5	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 22:15	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575241	05/18/22 05:55	CJ	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	575241	05/18/22 06:10	CJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			573792	05/03/22 19:21	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573189	04/27/22 15:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573280	04/28/22 11:53	ABW	TAL DEN

Client Sample ID: MW-32
Lab Sample ID: 280-161429-2
Date Collected: 04/22/22 15:25
Matrix: Water
Date Received: 04/22/22 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	576668	05/31/22 17:20	MCR	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	576722	06/01/22 18:11	KMS	TAL DEN
Dissolved	Analysis	6010C		1			577069	06/03/22 11:06	MAB	TAL DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	576668	05/31/22 17:20	MCR	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	576723	06/02/22 08:45	PFM	TAL DEN
Dissolved	Analysis	6020A		1			577082	06/03/22 09:46	LMT	TAL DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	576668	05/31/22 17:20	MCR	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	576723	06/02/22 08:45	PFM	TAL DEN
Dissolved	Analysis	6020A		50			577002	06/02/22 17:23	LMT	TAL DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	576668	05/31/22 17:20	MCR	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	576723	06/02/22 08:45	PFM	TAL DEN
Dissolved	Analysis	6020A		1			577002	06/02/22 17:51	LMT	TAL DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	576668	05/31/22 17:20	MCR	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	576723	06/02/22 08:45	PFM	TAL DEN
Dissolved	Analysis	6020A		50			577105	06/03/22 14:30	LMT	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 22:14	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:00	DHM5	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 22:19	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575241	05/18/22 06:25	CJ	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575241	05/18/22 06:40	CJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			573792	05/03/22 19:29	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	100 mL	573189	04/27/22 15:19	LRB	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573280	04/28/22 11:53	ABW	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161429-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Calcium
6020A	3005A	Water	Magnesium
6020A	3005A	Water	Potassium
6020A	3005A	Water	Sodium
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

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Client Information	Sampler: A. Binder / D. Ray	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 720 838-6065	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days): ASAP			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Cedar Falls	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	6020A- 6 metals ETA Cedar Falls	App III and App IV 6020A/6010C/7470A metals- Cedard Falls	9315 Rad 226 and 9320 Rad 228 - ETA St. Louis	N Dissolved Metals (lab filter)					Total Number of containers	Special Instructions/Note:
Preservation Code:							D	N	N	N	N	D	D	D	N						
MW-31	4/22/22	1335	G	Water			X	X	X	X	X									3	Used 1L as
MW-32	4/22/22	1525	G	Water			X	X	X	X	X				X					4	sub for 250 mL
				Water																	(Not Supplied)
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	

280-161429 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4/22/22 1645	Company HDR	Received by:	Date/Time: 4/22/2022 1745	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.6+0.8+0.0+5.1 IR12 CF+0.1

Ver: 01/16/2019

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280-161429 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Denver

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 4-27-22 | TIME 920 | Received By: PL

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

Condition of Cooler/Containers

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

Temperature Record

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

Thermometer ID: R | Correction Factor (°C): +0.2

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

Uncorrected Temp (°C): – | Corrected Temp (°C): –

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	P1 250mL	
Uncorrected Temp (°C):	13.9	
Corrected Temp (°C):	14.1	

Exceptions Noted

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

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

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

Additional Comments

* NO COC, all Nitric Containers

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280-161429 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Eurofins Denver

City/State: CITY | STATE CO | Project:

Receipt Information

Date/Time Received: DATE 9/28/22 | TIME 915 | Received By: LR

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

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: N | Correction Factor (°C): 0

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

Uncorrected Temp (°C): 0-8 | Corrected Temp (°C): 0-8

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Missing 2nd Sample

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002
Phone. 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-611878 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus com	State of Origin: Colorado	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-161429-1
Address: 3019 Venture Way, ,	Due Date Requested: 5/23/2022			
City: Cedar Falls	TAT Requested (days):			
State Zip: IA, 50613	PO #:			
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	WO #:			
Email:	Project #: 28014379			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	SSOW#:			
Site: Xcel Energy CCR - Valmont Station				

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6020A/Filtration, ME (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-31 (280-161429-1)	4/22/22	13 35 Mountain		Water			X		1	
MW-32 (280-161429-2)	4/22/22	15 25 Mountain		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements.

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Nadia Davis	4/22/22 1400	ETADED			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/25/22 945	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161429-1

Login Number: 161429
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161429-1

Login Number: 161429
List Number: 2
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls
List Creation: 04/27/22 02:00 PM

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161698-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/9/2022 2:27:20 PM

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Job ID: 280-161698-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161698-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/29/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.2°C, 1.5°C, 4.5°C, 5.6°C, 5.9°C and 5.9°C

Receipt Exceptions

No sample volume was received for sample MW-14 (280-161698-10) on 04/29/2022. This volume was received on 05/03/2022 at 1.5C

One out of two of the 1 Liter Plastic Nitric acid preserved sample containers only has about 700 mL of volume for sample MW-4 (280-161698-4)

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-8 (280-161698-6). The container labels list 04/25/2022, while the COC lists 04/28/2022. Logged per the COC.

DISSOLVED METALS - Method 6010C/6020A

Samples MW-4 (280-161698-4) and MW-8 (280-161698-6) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Sodium, Calcium, Potassium and Magnesium MS/MSD performed on sample MW-7 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL RECOVERABLE METALS

Several samples required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Sodium, Calcium, Potassium and Magnesium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Job ID: 280-161698-1 (Continued)

Laboratory: Eurofins Denver (Continued)

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

DISSOLVED MERCURY
Due to laboratory error, several samples were prepared outside of preparation holding time for Mercury Method 7470A.

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

TOTAL MERCURY
Due to laboratory error, several samples were prepared outside of preparation holding time for Dissolved Mercury Method 7470A.

MS/MSD analyses were performed on sample MW-11-FD. The MS/MSD for Mercury method 7470A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

GENERAL CHEMISTRY- VARIOUS
Due to laboratory error, the following samples were prepared outside of preparation holding time for Total Suspended Solids Method 2540D: MW-7 (280-161698-1), MW-1P (280-161698-2), MW-3 (280-161698-3), MW-4 (280-161698-4), MW-6 (280-161698-5), MW-8 (280-161698-6), MW-11 (280-161698-7), MW-11-FD (280-161698-8), MW-12 (280-161698-9), MW-14 (280-161698-10) and MW-16 (280-161698-11).

Several samples required dilution prior to analysis for Method 9056A. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)- Method 9315
Method 9315_Ra226: Radium-226 Prep Batch 160-564074The following sample was prepared at a reduced aliquot due to Matrix: MW-4 (280-161698-4).

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

RADIUM-228- Method 9320
Method 9320_Ra228: Radium-228 Prep Batch 160-564074The following sample was prepared at a reduced aliquot due to Matrix: MW-4 (280-161698-4).

Method 9320_Ra228: Radium-228 batch 564074The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: MW-4 (280-161698-4). Analytical results are reported with the detection limit achieved.

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

RADIUM-226/RADIUM-228 (GFPC)
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-7
Lab Sample ID: 280-161698-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.38		0.20	0.056	mg/L	1		6010C	Total Recoverable
Boron	0.34		0.20	0.056	mg/L	1		6010C	Dissolved
Antimony	0.00080	J	0.0020	0.00069	mg/L	1		6020A	Total Recoverable
Barium	0.017		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Cadmium	0.00012		0.00010	0.000055	mg/L	1		6020A	Total Recoverable
Calcium	49		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00044	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00046	J	0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.040		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	26		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0025		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	3.2		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0053		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	140		1.0	0.61	mg/L	1		6020A	Total Recoverable
Barium	0.016		0.0020	0.00088	mg/L	1		6020A	Dissolved
Calcium	53		0.50	0.19	mg/L	1		6020A	Dissolved
Lithium	0.042		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.0029		0.0020	0.0012	mg/L	1		6020A	Dissolved
Selenium	0.0049	J	0.0050	0.00096	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	52		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.38	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	140		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	3.6	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	640		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-1P
Lab Sample ID: 280-161698-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.0		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.0015	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.10		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	130		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00021	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.012		0.010	0.0025	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-1P (Continued) — Lab Sample ID: 280-161698-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	27		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.010		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	4.1		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0017	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	68		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	64		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.66		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	140		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	2.0	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	670		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 280-161698-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.20	0.056	mg/L	1		6010C	Total Recoverable
Barium	0.011		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	560		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.071		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	130		2.0	0.60	mg/L	4		6020A	Total Recoverable
Potassium	9.9		2.0	0.60	mg/L	4		6020A	Total Recoverable
Sodium	450		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	48		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.18	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2500		100	21	mg/L	20		9056A	Total/NA
Total Suspended Solids	7.2	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 280-161698-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.60	0.17	mg/L	3		6010C	Total Recoverable
Boron	0.94		0.60	0.17	mg/L	3		6010C	Dissolved
Arsenic	0.00078	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.011		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Cadmium	0.000055	J	0.00010	0.000055	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4 (Continued)
Lab Sample ID: 280-161698-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	410		0.50	0.19	mg/L	1		6020A	Total Recoverable
Chromium	0.0013	J	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Cobalt	0.00095		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.0030		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.19		0.070	0.018	mg/L	7		6020A	Total Recoverable
Magnesium	760		5.0	1.5	mg/L	10		6020A	Total Recoverable
Molybdenum	0.014		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	9.8		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.27		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	1100		7.0	4.3	mg/L	7		6020A	Total Recoverable
Arsenic	0.00079	J	0.0020	0.00075	mg/L	1		6020A	Dissolved
Barium	0.0089		0.0020	0.00088	mg/L	1		6020A	Dissolved
Cadmium	0.000086	J	0.00010	0.000055	mg/L	1		6020A	Dissolved
Calcium	430		0.50	0.19	mg/L	1		6020A	Dissolved
Cobalt	0.00050		0.00050	0.00019	mg/L	1		6020A	Dissolved
Lithium	0.20		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.016		0.0020	0.0012	mg/L	1		6020A	Dissolved
Selenium	0.27		0.0050	0.00096	mg/L	1		6020A	Dissolved
Thallium	0.00027	J	0.0010	0.00026	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	490		150	51	mg/L	50		9056A	Total/NA
Sulfate	6100		250	52	mg/L	50		9056A	Total/NA
Total Suspended Solids	17	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	9300		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-6
Lab Sample ID: 280-161698-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.39		0.20	0.056	mg/L	1		6010C	Total Recoverable
Boron	0.34		0.20	0.056	mg/L	1		6010C	Dissolved
Barium	0.036		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Cadmium	0.000081	J	0.00010	0.000055	mg/L	1		6020A	Total Recoverable
Calcium	370		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00060		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00076		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.054		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	93		2.0	0.60	mg/L	4		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 280-161698-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	9.0		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.017		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	180		1.0	0.61	mg/L	1		6020A	Total Recoverable
Barium	0.032		0.0020	0.00088	mg/L	1		6020A	Dissolved
Cadmium	0.000086	J	0.00010	0.000055	mg/L	1		6020A	Dissolved
Calcium	380		0.50	0.19	mg/L	1		6020A	Dissolved
Cobalt	0.00029	J	0.00050	0.00019	mg/L	1		6020A	Dissolved
Lithium	0.056		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.0016	J	0.0020	0.0012	mg/L	1		6020A	Dissolved
Selenium	0.014		0.0050	0.00096	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	690		30	10	mg/L	10		9056A	Total/NA
Fluoride	0.19	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	600		50	10	mg/L	10		9056A	Total/NA
Total Suspended Solids	2.4	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2100		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 280-161698-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.79		0.40	0.11	mg/L	2		6010C	Total Recoverable
Boron	0.70		0.40	0.11	mg/L	2		6010C	Dissolved
Barium	0.016		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	520		2.0	0.76	mg/L	4		6020A	Total Recoverable
Cobalt	0.00099	J	0.0020	0.00076	mg/L	4		6020A	Total Recoverable
Lead	0.00056		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.12		0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	280		2.0	0.60	mg/L	4		6020A	Total Recoverable
Potassium	11		2.0	0.60	mg/L	4		6020A	Total Recoverable
Selenium	0.0094	J	0.020	0.0038	mg/L	4		6020A	Total Recoverable
Sodium	330		4.0	2.4	mg/L	4		6020A	Total Recoverable
Barium	0.013		0.0080	0.0035	mg/L	4		6020A	Dissolved
Calcium	520		2.0	0.76	mg/L	4		6020A	Dissolved
Lithium	0.11		0.040	0.010	mg/L	4		6020A	Dissolved
Selenium	0.0094	J	0.020	0.0038	mg/L	4		6020A	Dissolved
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	240		150	51	mg/L	50		9056A	Total/NA
Sulfate	2800		250	52	mg/L	50		9056A	Total/NA
Total Suspended Solids	21	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	4200		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-11
Lab Sample ID: 280-161698-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.9		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.0060		0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.12		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	190		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.024		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00072		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.022	J	0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	110		2.0	0.60	mg/L	4		6020A	Total Recoverable
Molybdenum	0.019		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	1.5		0.50	0.15	mg/L	1		6020A	Total Recoverable
Sodium	160		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	72		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	2.0		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	530		25	5.2	mg/L	5		9056A	Total/NA
Total Suspended Solids	6.0	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1400		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-11-FD
Lab Sample ID: 280-161698-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.9		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.0050	J	0.0080	0.0030	mg/L	4		6020A	Total Recoverable
Barium	0.12		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	180		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.022		0.0020	0.00076	mg/L	4		6020A	Total Recoverable
Lead	0.00073		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.019	J	0.040	0.010	mg/L	4		6020A	Total Recoverable
Magnesium	100		2.0	0.60	mg/L	4		6020A	Total Recoverable
Molybdenum	0.019		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	1.2	J	2.0	0.60	mg/L	4		6020A	Total Recoverable
Sodium	150		4.0	2.4	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-11-FD (Continued)
Lab Sample ID: 280-161698-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	73		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	2.0		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	540		25	5.2	mg/L	5		9056A	Total/NA
Total Suspended Solids	4.8	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1500		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-12
Lab Sample ID: 280-161698-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	6.5		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.0070		0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.21		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	100		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.0059		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.0046	J	0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	43		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0065		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	1.1		0.50	0.15	mg/L	1		6020A	Total Recoverable
Sodium	75		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	35		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.87		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	64		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	3.6	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	670		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-14
Lab Sample ID: 280-161698-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.3		0.60	0.17	mg/L	3		6010C	Total Recoverable
Barium	0.016		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	500		3.5	1.3	mg/L	7		6020A	Total Recoverable
Lithium	0.14		0.070	0.018	mg/L	7		6020A	Total Recoverable
Magnesium	300		3.5	1.1	mg/L	7		6020A	Total Recoverable
Molybdenum	0.0016	J	0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	10		3.5	1.1	mg/L	7		6020A	Total Recoverable
Selenium	1.7		0.035	0.0067	mg/L	7		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-14 (Continued)
Lab Sample ID: 280-161698-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	550		7.0	4.3	mg/L	7		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	200		60	20	mg/L	20		9056A	Total/NA
Sulfate	3300		100	21	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	5400		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-16
Lab Sample ID: 280-161698-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.53		0.20	0.056	mg/L	1		6010C	Total Recoverable
Antimony	0.0017	J	0.0020	0.00069	mg/L	1		6020A	Total Recoverable
Arsenic	0.0012	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.047		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	48		0.50	0.19	mg/L	1		6020A	Total Recoverable
Lithium	0.048		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	34		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.024		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	3.9		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0025	J	0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	150		1.0	0.61	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	66		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.2		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	200		5.0	1.0	mg/L	1		9056A	Total/NA
Total Suspended Solids	1.6	J H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	690		10	4.7	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161698-1	MW-7	Water	04/29/22 14:45	04/29/22 16:55
280-161698-2	MW-1P	Water	04/25/22 13:15	04/29/22 16:55
280-161698-3	MW-3	Water	04/25/22 11:00	04/29/22 16:55
280-161698-4	MW-4	Water	04/29/22 13:00	04/29/22 16:55
280-161698-5	MW-6	Water	04/25/22 15:00	04/29/22 16:55
280-161698-6	MW-8	Water	04/28/22 13:45	04/29/22 16:55
280-161698-7	MW-11	Water	04/25/22 15:30	04/29/22 16:55
280-161698-8	MW-11-FD	Water	04/25/22 15:30	04/29/22 16:55
280-161698-9	MW-12	Water	04/26/22 11:45	04/29/22 16:55
280-161698-10	MW-14	Water	04/29/22 14:30	04/29/22 16:55
280-161698-11	MW-16	Water	04/25/22 12:30	04/29/22 16:55

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.38		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 12:39	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.0		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 12:48	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 12:50	1

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.60	0.17	mg/L		05/18/22 09:00	05/19/22 13:34	3

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.39		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 12:58	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.79		0.40	0.11	mg/L		05/18/22 09:00	05/19/22 13:36	2

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 13:02	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 13:04	1

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6.5		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 13:06	1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.60	0.17	mg/L		05/18/22 09:00	05/19/22 13:38	3

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.53		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 13:10	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.20	0.056	mg/L			06/01/22 11:37	1

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.94		0.60	0.17	mg/L			06/01/22 12:42	3

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.20	0.056	mg/L			06/01/22 11:49	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.70		0.40	0.11	mg/L			06/01/22 12:44	2

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00080	J	0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:32	1
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:32	1
Barium	0.017		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:32	1
Beryllium	ND		0.0010	0.00027	mg/L		05/24/22 09:30	05/28/22 22:33	1
Cadmium	0.00012		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 20:32	1
Calcium	49		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:32	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 20:32	1
Cobalt	0.00044	J	0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 20:32	1
Lead	0.00046	J	0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:32	1
Lithium	0.040		0.010	0.0025	mg/L		05/24/22 09:30	05/28/22 22:33	1
Magnesium	26		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:32	1

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

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	**0.0025**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:32	1
Potassium	**3.2**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:32	1
Selenium	**0.0053**		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:32	1
Sodium	**140**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 20:32	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:32	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:36	1
Arsenic	**0.0015**	**J**	0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:36	1
Barium	**0.10**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:36	1
Beryllium	ND		0.0010	0.00027	mg/L		05/24/22 09:30	05/28/22 22:37	1
Cadmium	ND		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 20:36	1
Calcium	**130**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:36	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 20:36	1
Cobalt	**0.00021**	**J**	0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 20:36	1
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:36	1
Lithium	**0.012**		0.010	0.0025	mg/L		05/24/22 09:30	05/28/22 22:37	1
Magnesium	**27**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:36	1
Molybdenum	**0.010**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:36	1
Potassium	**4.1**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:36	1
Selenium	**0.0017**	**J**	0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:36	1
Sodium	**68**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 20:36	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:36	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:39	1
Arsenic	ND		0.0080	0.0030	mg/L		05/24/22 09:30	05/28/22 22:41	4
Barium	**0.011**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:39	1
Beryllium	ND		0.0040	0.0011	mg/L		05/24/22 09:30	05/28/22 22:41	4
Cadmium	ND		0.00040	0.00022	mg/L		05/24/22 09:30	05/28/22 22:41	4
Calcium	**560**		2.0	0.76	mg/L		05/24/22 09:30	05/28/22 22:41	4
Chromium	ND		0.020	0.0044	mg/L		05/24/22 09:30	05/28/22 22:41	4
Cobalt	ND		0.0020	0.00076	mg/L		05/24/22 09:30	05/28/22 22:41	4
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:39	1
Lithium	**0.071**		0.040	0.010	mg/L		05/24/22 09:30	05/28/22 22:41	4
Magnesium	**130**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 22:41	4
Molybdenum	ND		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:39	1
Potassium	**9.9**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 22:41	4
Selenium	ND		0.020	0.0038	mg/L		05/24/22 09:30	05/28/22 22:41	4
Sodium	**450**		4.0	2.4	mg/L		05/24/22 09:30	05/28/22 22:41	4
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:39	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:42	1
Arsenic	**0.00078**	**J**	0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:42	1
Barium	**0.011**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:42	1
Beryllium	ND		0.0070	0.0019	mg/L		05/24/22 09:30	05/28/22 22:44	7
Cadmium	**0.000055**	**J**	0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 20:42	1
Calcium	**410**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:42	1
Chromium	**0.0013**	**J**	0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 20:42	1
Cobalt	**0.00095**		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 20:42	1
Lead	**0.0030**		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:42	1
Lithium	**0.19**		0.070	0.018	mg/L		05/24/22 09:30	05/28/22 22:44	7
Magnesium	**760**		5.0	1.5	mg/L		05/24/22 09:30	06/03/22 15:56	10
Molybdenum	**0.014**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:42	1
Potassium	**9.8**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:42	1
Selenium	**0.27**		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:42	1
Sodium	**1100**		7.0	4.3	mg/L		05/24/22 09:30	05/28/22 22:44	7
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:42	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:46	1
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:46	1
Barium	**0.036**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:46	1
Beryllium	ND		0.0040	0.0011	mg/L		05/24/22 09:30	05/28/22 22:48	4
Cadmium	**0.000081**	**J**	0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 20:46	1
Calcium	**370**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:46	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 20:46	1
Cobalt	**0.00060**		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 20:46	1
Lead	**0.00076**		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:46	1
Lithium	**0.054**		0.040	0.010	mg/L		05/24/22 09:30	05/28/22 22:48	4
Magnesium	**93**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 22:48	4
Molybdenum	ND		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:46	1
Potassium	**9.0**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:46	1
Selenium	**0.017**		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:46	1
Sodium	**180**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 20:46	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:46	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:49	1
Arsenic	ND		0.0080	0.0030	mg/L		05/24/22 09:30	05/28/22 23:08	4
Barium	**0.016**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:49	1
Beryllium	ND		0.0040	0.0011	mg/L		05/24/22 09:30	05/28/22 23:08	4
Cadmium	ND		0.00040	0.00022	mg/L		05/24/22 09:30	05/28/22 23:08	4
Calcium	**520**		2.0	0.76	mg/L		05/24/22 09:30	05/28/22 23:08	4
Chromium	ND		0.020	0.0044	mg/L		05/24/22 09:30	05/28/22 23:08	4
Cobalt	**0.00099**	**J**	0.0020	0.00076	mg/L		05/24/22 09:30	05/28/22 23:08	4

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

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00056**		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:49	1
Lithium	**0.12**		0.040	0.010	mg/L		05/24/22 09:30	05/28/22 23:08	4
Magnesium	**280**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 23:08	4
Molybdenum	ND		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:49	1
Potassium	**11**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 23:08	4
Selenium	**0.0094**	**J**	0.020	0.0038	mg/L		05/24/22 09:30	05/28/22 23:08	4
Sodium	**330**		4.0	2.4	mg/L		05/24/22 09:30	05/28/22 23:08	4
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:49	1

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:52	1
Arsenic	**0.0060**		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 20:52	1
Barium	**0.12**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:52	1
Beryllium	ND		0.0040	0.0011	mg/L		05/24/22 09:30	05/28/22 23:11	4
Cadmium	ND		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 20:52	1
Calcium	**190**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:52	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 20:52	1
Cobalt	**0.024**		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 20:52	1
Lead	**0.00072**		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:52	1
Lithium	**0.022**	**J**	0.040	0.010	mg/L		05/24/22 09:30	05/28/22 23:11	4
Magnesium	**110**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 23:11	4
Molybdenum	**0.019**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:52	1
Potassium	**1.5**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 20:52	1
Selenium	ND		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 20:52	1
Sodium	**160**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 20:52	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:52	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 20:59	1
Arsenic	**0.0050**	**J**	0.0080	0.0030	mg/L		05/24/22 09:30	05/28/22 23:19	4
Barium	**0.12**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 20:59	1
Beryllium	ND		0.0040	0.0011	mg/L		05/24/22 09:30	05/28/22 23:19	4
Cadmium	ND		0.00040	0.00022	mg/L		05/24/22 09:30	05/28/22 23:19	4
Calcium	**180**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 20:59	1
Chromium	ND		0.020	0.0044	mg/L		05/24/22 09:30	05/28/22 23:19	4
Cobalt	**0.022**		0.0020	0.00076	mg/L		05/24/22 09:30	05/28/22 23:19	4
Lead	**0.00073**		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 20:59	1
Lithium	**0.019**	**J**	0.040	0.010	mg/L		05/24/22 09:30	05/28/22 23:19	4
Magnesium	**100**		2.0	0.60	mg/L		05/24/22 09:30	05/28/22 23:19	4
Molybdenum	**0.019**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 20:59	1
Potassium	**1.2**	**J**	2.0	0.60	mg/L		05/24/22 09:30	05/28/22 23:19	4
Selenium	ND		0.020	0.0038	mg/L		05/24/22 09:30	05/28/22 23:19	4
Sodium	**150**		4.0	2.4	mg/L		05/24/22 09:30	05/28/22 23:19	4
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 20:59	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 21:02	1
Arsenic	**0.0070**		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 21:02	1
Barium	**0.21**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 21:02	1
Beryllium	ND		0.0010	0.00027	mg/L		05/24/22 09:30	05/28/22 23:23	1
Cadmium	ND		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 21:02	1
Calcium	**100**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 21:02	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 21:02	1
Cobalt	**0.0059**		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 21:02	1
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 21:02	1
Lithium	**0.0046**	**J**	0.010	0.0025	mg/L		05/24/22 09:30	05/28/22 23:23	1
Magnesium	**43**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 21:02	1
Molybdenum	**0.0065**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 21:02	1
Potassium	**1.1**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 21:02	1
Selenium	ND		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 21:02	1
Sodium	**75**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 21:02	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 21:02	1

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 21:18	1
Arsenic	ND		0.014	0.0053	mg/L		05/24/22 09:30	05/28/22 23:27	7
Barium	**0.016**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 21:18	1
Beryllium	ND		0.0070	0.0019	mg/L		05/24/22 09:30	05/28/22 23:27	7
Cadmium	ND		0.00070	0.00039	mg/L		05/24/22 09:30	05/28/22 23:27	7
Calcium	**500**		3.5	1.3	mg/L		05/24/22 09:30	05/28/22 23:27	7
Chromium	ND		0.035	0.0077	mg/L		05/24/22 09:30	05/28/22 23:27	7
Cobalt	ND		0.0035	0.0013	mg/L		05/24/22 09:30	05/28/22 23:27	7
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 21:18	1
Lithium	**0.14**		0.070	0.018	mg/L		05/24/22 09:30	05/28/22 23:27	7
Magnesium	**300**		3.5	1.1	mg/L		05/24/22 09:30	05/28/22 23:27	7
Molybdenum	**0.0016**	**J**	0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 21:18	1
Potassium	**10**		3.5	1.1	mg/L		05/24/22 09:30	05/28/22 23:27	7
Selenium	**1.7**		0.035	0.0067	mg/L		05/24/22 09:30	05/28/22 23:27	7
Sodium	**550**		7.0	4.3	mg/L		05/24/22 09:30	05/28/22 23:27	7
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 21:18	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0017**	**J**	0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 21:22	1
Arsenic	**0.0012**	**J**	0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 21:22	1
Barium	**0.047**		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 21:22	1
Beryllium	ND		0.0010	0.00027	mg/L		05/24/22 09:30	05/28/22 23:31	1
Cadmium	ND		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 21:22	1
Calcium	**48**		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 21:22	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 21:22	1
Cobalt	ND		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 21:22	1

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

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 21:22	1
Lithium	**0.048**		0.010	0.0025	mg/L		05/24/22 09:30	05/28/22 23:31	1
Magnesium	**34**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 21:22	1
Molybdenum	**0.024**		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 21:22	1
Potassium	**3.9**		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 21:22	1
Selenium	**0.0025**	**J**	0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 21:22	1
Sodium	**150**		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 21:22	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 21:22	1

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

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:31	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:31	1
Barium	**0.016**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:31	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:31	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:31	1
Calcium	**53**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:31	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:31	1
Cobalt	ND		0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:31	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:31	1
Lithium	**0.042**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:31	1
Molybdenum	**0.0029**		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:31	1
Selenium	**0.0049**	**J**	0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:31	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:31	1

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:41	1
Arsenic	**0.00079**	**J**	0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:41	1
Barium	**0.0089**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:41	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:41	1
Cadmium	**0.000086**	**J**	0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:41	1
Calcium	**430**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:41	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:41	1
Cobalt	**0.00050**		0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:41	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:41	1
Lithium	**0.20**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:41	1
Molybdenum	**0.016**		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:41	1
Selenium	**0.27**		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:41	1
Thallium	**0.00027**	**J**	0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:41	1

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

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:44	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:44	1
Barium	**0.032**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:44	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:44	1
Cadmium	**0.000086**	**J**	0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:44	1
Calcium	**380**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:44	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:44	1
Cobalt	**0.00029**	**J**	0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:44	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:44	1
Lithium	**0.056**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:44	1
Molybdenum	**0.0016**	**J**	0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:44	1
Selenium	**0.014**		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:44	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:44	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/31/22 09:45	06/07/22 15:48	4
Arsenic	ND		0.0080	0.0030	mg/L		05/31/22 09:45	06/07/22 15:48	4
Barium	**0.013**		0.0080	0.0035	mg/L		05/31/22 09:45	06/07/22 15:48	4
Beryllium	ND		0.0040	0.0011	mg/L		05/31/22 09:45	06/07/22 15:48	4
Cadmium	ND		0.00040	0.00022	mg/L		05/31/22 09:45	06/07/22 15:48	4
Calcium	**520**		2.0	0.76	mg/L		05/31/22 09:45	06/07/22 15:48	4
Chromium	ND		0.020	0.0044	mg/L		05/31/22 09:45	06/07/22 15:48	4
Cobalt	ND		0.0020	0.00076	mg/L		05/31/22 09:45	06/07/22 15:48	4
Lead	ND		0.0020	0.00096	mg/L		05/31/22 09:45	06/07/22 15:48	4
Lithium	**0.11**		0.040	0.010	mg/L		05/31/22 09:45	06/07/22 15:48	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/31/22 09:45	06/07/22 15:48	4
Selenium	**0.0094**	**J**	0.020	0.0038	mg/L		05/31/22 09:45	06/07/22 15:48	4
Thallium	ND		0.0040	0.0010	mg/L		05/31/22 09:45	06/07/22 15:48	4

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:37	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/23/22 15:32	05/24/22 13:33	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/23/22 15:32	05/24/22 13:36	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:43	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:45	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:52	1

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/23/22 15:32	05/24/22 13:38	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H F1	0.00020	0.00011	mg/L		05/23/22 15:36	05/24/22 14:19	1

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/23/22 15:36	05/24/22 14:25	1

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/23/22 15:36	05/24/22 14:27	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/23/22 15:36	05/24/22 14:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:45	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:48	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:50	1

General Chemistry

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			05/19/22 17:14	1
Temperature	20.8	HF	1.0	1.0	Degrees C			05/19/22 17:14	1
Chloride	52		3.0	1.0	mg/L			05/24/22 14:29	1
Fluoride	0.38	J	0.50	0.17	mg/L			05/24/22 14:29	1
Sulfate	140		5.0	1.0	mg/L			05/24/22 14:29	1
Total Suspended Solids	3.6	J H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	640		10	4.7	mg/L			05/02/22 10:58	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			05/19/22 17:17	1
Temperature	20.1	HF	1.0	1.0	Degrees C			05/19/22 17:17	1
Chloride	64		3.0	1.0	mg/L			05/21/22 00:04	1
Fluoride	0.66		0.50	0.17	mg/L			05/21/22 00:04	1
Sulfate	140		5.0	1.0	mg/L			05/21/22 00:04	1
Total Suspended Solids	2.0	J H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	670		10	4.7	mg/L			05/02/22 10:58	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.0	HF	0.1	0.1	SU			05/19/22 17:27	1
Temperature	19.3	HF	1.0	1.0	Degrees C			05/19/22 17:27	1
Chloride	48		3.0	1.0	mg/L			05/21/22 01:08	1
Fluoride	0.18	J	0.50	0.17	mg/L			05/21/22 01:08	1
Sulfate	2500		100	21	mg/L			05/21/22 01:24	20
Total Suspended Solids	7.2	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	3800		40	19	mg/L			05/02/22 10:58	1

General Chemistry

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			05/19/22 17:34	1
Temperature	19.5	HF	1.0	1.0	Degrees C			05/19/22 17:34	1
Chloride	490		150	51	mg/L			05/24/22 19:33	50
Fluoride	ND		25	8.3	mg/L			05/24/22 19:33	50
Sulfate	6100		250	52	mg/L			05/24/22 19:33	50
Total Suspended Solids	17	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	9300		100	47	mg/L			05/02/22 10:58	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			05/19/22 17:38	1
Temperature	19.5	HF	1.0	1.0	Degrees C			05/19/22 17:38	1
Chloride	690		30	10	mg/L			05/21/22 01:56	10
Fluoride	0.19	J	0.50	0.17	mg/L			05/21/22 01:40	1
Sulfate	600		50	10	mg/L			05/21/22 01:56	10
Total Suspended Solids	2.4	J H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	2100		20	9.4	mg/L			05/02/22 10:58	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			05/19/22 17:41	1
Temperature	20.4	HF	1.0	1.0	Degrees C			05/19/22 17:41	1
Chloride	240		150	51	mg/L			05/24/22 19:49	50
Fluoride	ND		25	8.3	mg/L			05/24/22 19:49	50
Sulfate	2800		250	52	mg/L			05/24/22 19:49	50
Total Suspended Solids	21	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	4200		40	19	mg/L			05/02/22 11:03	1

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/19/22 17:46	1
Temperature	20.3	HF	1.0	1.0	Degrees C			05/19/22 17:46	1
Chloride	72		3.0	1.0	mg/L			05/21/22 02:12	1
Fluoride	2.0		0.50	0.17	mg/L			05/21/22 02:12	1
Sulfate	530		25	5.2	mg/L			05/21/22 02:28	5
Total Suspended Solids	6.0	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	1400		20	9.4	mg/L			05/02/22 11:03	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			05/19/22 17:49	1
Temperature	19.8	HF	1.0	1.0	Degrees C			05/19/22 17:49	1

General Chemistry (Continued)

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73		3.0	1.0	mg/L			05/21/22 03:16	1
Fluoride	2.0		0.50	0.17	mg/L			05/21/22 03:16	1
Sulfate	540		25	5.2	mg/L			05/21/22 03:32	5
Total Suspended Solids	4.8	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	1500		20	9.4	mg/L			05/02/22 11:03	1

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/19/22 17:53	1
Temperature	19.5	HF	1.0	1.0	Degrees C			05/19/22 17:53	1
Chloride	35		3.0	1.0	mg/L			05/21/22 03:48	1
Fluoride	0.87		0.50	0.17	mg/L			05/21/22 03:48	1
Sulfate	64		5.0	1.0	mg/L			05/21/22 03:48	1
Total Suspended Solids	3.6	J H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	670		10	4.7	mg/L			05/02/22 11:03	1

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			05/19/22 17:57	1
Temperature	19.5	HF	1.0	1.0	Degrees C			05/19/22 17:57	1
Chloride	200		60	20	mg/L			05/24/22 17:09	20
Fluoride	ND		10	3.3	mg/L			05/24/22 17:09	20
Sulfate	3300		100	21	mg/L			05/24/22 17:09	20
Total Suspended Solids	ND	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	5400		40	19	mg/L			05/05/22 10:49	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			05/19/22 18:01	1
Temperature	19.5	HF	1.0	1.0	Degrees C			05/19/22 18:01	1
Chloride	66		3.0	1.0	mg/L			05/21/22 04:05	1
Fluoride	1.2		0.50	0.17	mg/L			05/21/22 04:05	1
Sulfate	200		5.0	1.0	mg/L			05/21/22 04:05	1
Total Suspended Solids	1.6	J H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	690		10	4.7	mg/L			05/02/22 11:03	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.383		0.194	0.197	1.00	0.224	pCi/L	05/06/22 09:17	06/01/22 09:08	1

Method: 9315 - Radium-226 (GFPC)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110	05/06/22 09:17	06/01/22 09:08	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0895	U	0.121	0.121	1.00	0.203	pCi/L	05/06/22 09:17	06/01/22 09:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		40 - 110	05/06/22 09:17	06/01/22 09:09	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.293**		0.174	0.176	1.00	0.218	pCi/L	05/06/22 09:17	06/01/22 09:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	05/06/22 09:17	06/01/22 09:09	1

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.150	U	0.377	0.377	1.00	0.687	pCi/L	05/06/22 09:17	06/01/22 09:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	46.9		40 - 110	05/06/22 09:17	06/01/22 09:09	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0880	U	0.144	0.144	1.00	0.251	pCi/L	05/06/22 09:17	06/01/22 09:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		40 - 110	05/06/22 09:17	06/01/22 09:09	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.715**		0.237	0.245	1.00	0.197	pCi/L	05/06/22 09:17	06/01/22 09:09	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	05/06/22 09:17	06/01/22 09:09	1

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.333**		0.193	0.195	1.00	0.243	pCi/L	05/06/22 09:17	06/01/22 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		40 - 110	05/06/22 09:17	06/01/22 10:59	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.164	U	0.150	0.151	1.00	0.226	pCi/L	05/06/22 09:17	06/01/22 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110	05/06/22 09:17	06/01/22 10:59	1

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.170	U	0.161	0.161	1.00	0.247	pCi/L	05/06/22 09:17	06/01/22 11:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110	05/06/22 09:17	06/01/22 11:00	1

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.537**		0.213	0.219	1.00	0.217	pCi/L	05/06/22 09:17	06/01/22 11:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110	05/06/22 09:17	06/01/22 11:00	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0346	U	0.175	0.175	1.00	0.327	pCi/L	05/06/22 09:17	06/01/22 11:00	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	05/06/22 09:17	06/01/22 11:00	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.690**		0.355	0.360	1.00	0.498	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110	05/06/22 09:58	05/31/22 12:13	1
Y Carrier	84.1		40 - 110	05/06/22 09:58	05/31/22 12:13	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.463	U	0.328	0.330	1.00	0.500	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		40 - 110	05/06/22 09:58	05/31/22 12:13	1
Y Carrier	86.7		40 - 110	05/06/22 09:58	05/31/22 12:13	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.835**		0.355	0.363	1.00	0.470	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	05/06/22 09:58	05/31/22 12:13	1
Y Carrier	88.6		40 - 110	05/06/22 09:58	05/31/22 12:13	1

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.58**	**G**	0.867	0.879	1.00	1.23	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	46.9		40 - 110	05/06/22 09:58	05/31/22 12:13	1
Y Carrier	87.5		40 - 110	05/06/22 09:58	05/31/22 12:13	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.00		0.401	0.411	1.00	0.523	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:13*	*1*
Y Carrier	*87.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:13*	*1*

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.922		0.355	0.365	1.00	0.455	pCi/L	05/06/22 09:58	05/31/22 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:13*	*1*
Y Carrier	*89.0*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:13*	*1*

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.888		0.379	0.388	1.00	0.497	pCi/L	05/06/22 09:58	05/31/22 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:14*	*1*
Y Carrier	*89.0*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:14*	*1*

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.794		0.347	0.355	1.00	0.449	pCi/L	05/06/22 09:58	05/31/22 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:14*	*1*
Y Carrier	*90.8*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:14*	*1*

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.357	U	0.294	0.296	1.00	0.457	pCi/L	05/06/22 09:58	05/31/22 12:15	1

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110	05/06/22 09:58	05/31/22 12:15	1
Y Carrier	90.1		40 - 110	05/06/22 09:58	05/31/22 12:15	1

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.815**		0.326	0.335	1.00	0.415	pCi/L	05/06/22 09:58	05/31/22 12:15	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110	05/06/22 09:58	05/31/22 12:15	1
Y Carrier	91.6		40 - 110	05/06/22 09:58	05/31/22 12:15	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0186	U	0.244	0.244	1.00	0.462	pCi/L	05/06/22 09:58	05/31/22 12:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	05/06/22 09:58	05/31/22 12:24	1
Y Carrier	88.6		40 - 110	05/06/22 09:58	05/31/22 12:24	1

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

Client Sample ID: MW-7
Date Collected: 04/29/22 14:45
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.07**		0.405	0.410	5.00	0.498	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-1P
Date Collected: 04/25/22 13:15
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.552**		0.350	0.351	5.00	0.500	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-3
Date Collected: 04/25/22 11:00
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.13**		0.395	0.403	5.00	0.470	pCi/L		06/02/22 15:39	1

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

Client Sample ID: MW-4
Date Collected: 04/29/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.73		0.945	0.956	5.00	1.23	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-6
Date Collected: 04/25/22 15:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.09		0.426	0.435	5.00	0.523	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-8
Date Collected: 04/28/22 13:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.64		0.427	0.440	5.00	0.455	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.22		0.425	0.434	5.00	0.497	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.958		0.378	0.386	5.00	0.449	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-12
Date Collected: 04/26/22 11:45
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161698-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.527		0.335	0.337	5.00	0.457	pCi/L		06/02/22 15:39	1

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Client Sample ID: MW-14
Date Collected: 04/29/22 14:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.35**		0.389	0.400	5.00	0.415	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0159	U	0.300	0.300	5.00	0.462	pCi/L		06/02/22 15:39	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-353422/1-A
Matrix: Water
Analysis Batch: 353694
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353422

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/18/22 09:00	05/19/22 12:35	1

Lab Sample ID: LCS 310-353422/2-A
Matrix: Water
Analysis Batch: 353694
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353422

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.92		mg/L		96	80 - 120

Lab Sample ID: 280-161698-1 MS
Matrix: Water
Analysis Batch: 353694
Client Sample ID: MW-7
Prep Type: Total Recoverable
Prep Batch: 353422

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.38		2.00	2.39		mg/L		101	75 - 125

Lab Sample ID: 280-161698-1 MSD
Matrix: Water
Analysis Batch: 353694
Client Sample ID: MW-7
Prep Type: Total Recoverable
Prep Batch: 353422

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.38		2.00	2.38		mg/L		100	75 - 125	1	20

Lab Sample ID: 280-161698-11 DU
Matrix: Water
Analysis Batch: 353694
Client Sample ID: MW-16
Prep Type: Total Recoverable
Prep Batch: 353422

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.53		0.535		mg/L		0.4	20

Lab Sample ID: MB 310-354545/1-A
Matrix: Water
Analysis Batch: 354906
Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L			06/01/22 11:33	1

Lab Sample ID: LCS 310-354545/2-A
Matrix: Water
Analysis Batch: 354906
Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.63		mg/L		81	80 - 120

Lab Sample ID: 280-161698-1 DU
Matrix: Water
Analysis Batch: 354906
Client Sample ID: MW-7
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.34		0.334		mg/L		0.5	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354089/1-A
Matrix: Water
Analysis Batch: 354631

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/24/22 09:30	05/27/22 19:50	1
Arsenic	ND		0.0020	0.00075	mg/L		05/24/22 09:30	05/27/22 19:50	1
Barium	ND		0.0020	0.00088	mg/L		05/24/22 09:30	05/27/22 19:50	1
Cadmium	ND		0.00010	0.000055	mg/L		05/24/22 09:30	05/27/22 19:50	1
Calcium	ND		0.50	0.19	mg/L		05/24/22 09:30	05/27/22 19:50	1
Chromium	ND		0.0050	0.0011	mg/L		05/24/22 09:30	05/27/22 19:50	1
Cobalt	ND		0.00050	0.00019	mg/L		05/24/22 09:30	05/27/22 19:50	1
Lead	ND		0.00050	0.00024	mg/L		05/24/22 09:30	05/27/22 19:50	1
Lithium	ND		0.010	0.0025	mg/L		05/24/22 09:30	05/27/22 19:50	1
Magnesium	ND		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 19:50	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/24/22 09:30	05/27/22 19:50	1
Potassium	ND		0.50	0.15	mg/L		05/24/22 09:30	05/27/22 19:50	1
Selenium	ND		0.0050	0.00096	mg/L		05/24/22 09:30	05/27/22 19:50	1
Sodium	ND		1.0	0.61	mg/L		05/24/22 09:30	05/27/22 19:50	1
Thallium	ND		0.0010	0.00026	mg/L		05/24/22 09:30	05/27/22 19:50	1

Lab Sample ID: MB 310-354089/1-A
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00027	mg/L		05/24/22 09:30	05/28/22 21:47	1

Lab Sample ID: LCS 310-354089/2-A
Matrix: Water
Analysis Batch: 354631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.217		mg/L		108	80 - 120
Arsenic	0.200	0.201		mg/L		101	80 - 120
Barium	0.100	0.108		mg/L		108	80 - 120
Cadmium	0.100	0.106		mg/L		106	80 - 120
Calcium	2.00	1.74		mg/L		87	80 - 120
Chromium	0.100	0.103		mg/L		103	80 - 120
Cobalt	0.100	0.101		mg/L		101	80 - 120
Lead	0.200	0.220		mg/L		110	80 - 120
Lithium	0.200	0.204		mg/L		102	80 - 120
Magnesium	2.00	2.05		mg/L		102	80 - 120
Molybdenum	0.200	0.206		mg/L		103	80 - 120
Potassium	2.00	2.02		mg/L		101	80 - 120
Selenium	0.400	0.398		mg/L		100	80 - 120
Sodium	2.00	2.09		mg/L		104	80 - 120
Thallium	0.200	0.224		mg/L		112	80 - 120

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

Lab Sample ID: LCS 310-354089/2-A
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.100	0.0953		mg/L		95	80 - 120

Lab Sample ID: 280-161698-7 DU
Matrix: Water
Analysis Batch: 354631

Client Sample ID: MW-11
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	ND		ND		mg/L		NC	20
Barium	0.12		0.117		mg/L		2	20
Calcium	190		180		mg/L		4	20
Lead	0.00072		0.000679		mg/L		6	20
Molybdenum	0.019		0.0184		mg/L		3	20
Thallium	ND		ND		mg/L		NC	20

Lab Sample ID: 280-161698-7 DU
Matrix: Water
Analysis Batch: 354712

Client Sample ID: MW-11
Prep Type: Total Recoverable
Prep Batch: 354089

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Beryllium	ND		ND		mg/L		NC	20
Lithium	0.022	J	0.0191	J	mg/L		13	20
Magnesium	110		103		mg/L		7	20

Lab Sample ID: MB 310-354543/1-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:25	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:25	1
Barium	ND		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:25	1
Calcium	ND		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:25	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cobalt	ND		0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lithium	ND		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:25	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:25	1
Selenium	ND		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:25	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:25	1

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.212		mg/L		106	80 - 120
Arsenic	0.200	0.197		mg/L		99	80 - 120

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

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.106		mg/L		106	80 - 120
Beryllium	0.100	0.105		mg/L		105	80 - 120
Cadmium	0.100	0.101		mg/L		101	80 - 120
Calcium	2.00	1.74		mg/L		87	80 - 120
Chromium	0.100	0.103		mg/L		103	80 - 120
Cobalt	0.100	0.101		mg/L		101	80 - 120
Lead	0.200	0.212		mg/L		106	80 - 120
Lithium	0.200	0.212		mg/L		106	80 - 120
Molybdenum	0.200	0.206		mg/L		103	80 - 120
Selenium	0.400	0.393		mg/L		98	80 - 120
Thallium	0.200	0.212		mg/L		106	80 - 120

Lab Sample ID: 280-161698-1 MS
Matrix: Water
Analysis Batch: 355639

Client Sample ID: MW-7
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.200	0.220		mg/L		110	75 - 125
Arsenic	ND		0.200	0.215		mg/L		108	75 - 125
Barium	0.016		0.100	0.123		mg/L		107	75 - 125
Beryllium	ND		0.100	0.102		mg/L		102	75 - 125
Cadmium	ND		0.100	0.105		mg/L		105	75 - 125
Calcium	53		2.00	53.6	4	mg/L		52	75 - 125
Chromium	ND		0.100	0.104		mg/L		104	75 - 125
Cobalt	ND		0.100	0.105		mg/L		105	75 - 125
Lead	ND		0.200	0.209		mg/L		104	75 - 125
Lithium	0.042		0.200	0.240		mg/L		99	75 - 125
Molybdenum	0.0029		0.200	0.215		mg/L		106	75 - 125
Selenium	0.0049	J	0.400	0.416		mg/L		103	75 - 125
Thallium	ND		0.200	0.222		mg/L		111	75 - 125

Lab Sample ID: 280-161698-1 MSD
Matrix: Water
Analysis Batch: 355639

Client Sample ID: MW-7
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.200	0.212		mg/L		106	75 - 125	3	20
Arsenic	ND		0.200	0.213		mg/L		107	75 - 125	1	20
Barium	0.016		0.100	0.122		mg/L		106	75 - 125	1	20
Beryllium	ND		0.100	0.102		mg/L		102	75 - 125	0	20
Cadmium	ND		0.100	0.104		mg/L		104	75 - 125	1	20
Calcium	53		2.00	54.1	4	mg/L		75	75 - 125	1	20
Chromium	ND		0.100	0.102		mg/L		102	75 - 125	2	20
Cobalt	ND		0.100	0.104		mg/L		104	75 - 125	1	20
Lead	ND		0.200	0.203		mg/L		102	75 - 125	3	20
Lithium	0.042		0.200	0.240		mg/L		99	75 - 125	0	20
Molybdenum	0.0029		0.200	0.213		mg/L		105	75 - 125	1	20
Selenium	0.0049	J	0.400	0.397		mg/L		98	75 - 125	5	20
Thallium	ND		0.200	0.220		mg/L		110	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-354021/1-A
Matrix: Water
Analysis Batch: 354190

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354021

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/23/22 15:32	05/24/22 13:10	1

Lab Sample ID: LCS 310-354021/2-A
Matrix: Water
Analysis Batch: 354190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354021

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00166		mg/L		100	80 - 120

Lab Sample ID: MB 310-354022/1-A
Matrix: Water
Analysis Batch: 354190

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/23/22 15:36	05/24/22 14:15	1

Lab Sample ID: LCS 310-354022/2-A
Matrix: Water
Analysis Batch: 354190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00160		mg/L		96	80 - 120

Lab Sample ID: 280-161698-8 MS
Matrix: Water
Analysis Batch: 354190

Client Sample ID: MW-11-FD
Prep Type: Total/NA
Prep Batch: 354022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	H F1	0.00167	0.000912	F1	mg/L		55	80 - 120

Lab Sample ID: 280-161698-8 MSD
Matrix: Water
Analysis Batch: 354190

Client Sample ID: MW-11-FD
Prep Type: Total/NA
Prep Batch: 354022

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H F1	0.00167	0.000925	F1	mg/L		55	80 - 120	1	20

Lab Sample ID: MB 310-354467/1-A
Matrix: Water
Analysis Batch: 354618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:30	1

Lab Sample ID: LCS 310-354467/2-A
Matrix: Water
Analysis Batch: 354618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00161		mg/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 280-161698-1 MS
Matrix: Water
Analysis Batch: 354618
Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 354467

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00167	0.00149		mg/L		90	80 - 120

Lab Sample ID: 280-161698-1 MSD
Matrix: Water
Analysis Batch: 354618
Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 354467

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00167	0.00152		mg/L		91	80 - 120	2	20

Lab Sample ID: MB 310-354546/1-B
Matrix: Water
Analysis Batch: 355097
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:31	1

Lab Sample ID: LCS 310-354546/2-B
Matrix: Water
Analysis Batch: 355097
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00164		mg/L		98	80 - 120

Lab Sample ID: 280-161698-1 MS
Matrix: Water
Analysis Batch: 355097
Client Sample ID: MW-7
Prep Type: Dissolved
Prep Batch: 354862

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	H	0.00167	0.00161		mg/L		97	80 - 120

Lab Sample ID: 280-161698-1 MSD
Matrix: Water
Analysis Batch: 355097
Client Sample ID: MW-7
Prep Type: Dissolved
Prep Batch: 354862

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H	0.00167	0.00158		mg/L		95	80 - 120	2	20

Method: 9040B - pH

Lab Sample ID: LCS 280-575633/27
Matrix: Water
Analysis Batch: 575633
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Method: 9040B - pH (Continued)

Lab Sample ID: LCS 280-575633/4
Matrix: Water
Analysis Batch: 575633

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.0		SU		101	99 - 101		

Lab Sample ID: 280-161698-3 DU
Matrix: Water
Analysis Batch: 575633

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.0	HF		7.0		SU				0.1	5
Temperature	19.3	HF		18.3		Degrees C				5	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-575689/6
Matrix: Water
Analysis Batch: 575689

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/20/22 17:24	1
Fluoride	ND		0.50	0.17	mg/L			05/20/22 17:24	1
Sulfate	ND		5.0	1.0	mg/L			05/20/22 17:24	1

Lab Sample ID: LCS 280-575689/4
Matrix: Water
Analysis Batch: 575689

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	101		mg/L		101	90 - 110		
Fluoride			5.00	4.78		mg/L		96	90 - 110		
Sulfate			100	101		mg/L		101	90 - 110		

Lab Sample ID: LCSD 280-575689/5
Matrix: Water
Analysis Batch: 575689

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	101		mg/L		101	90 - 110	0	10
Fluoride			5.00	4.85		mg/L		97	90 - 110	1	10
Sulfate			100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-575689/3
Matrix: Water
Analysis Batch: 575689

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.73		mg/L		95	50 - 150		
Fluoride			0.500	0.427	J	mg/L		85	50 - 150		
Sulfate			5.00	4.52	J	mg/L		90	50 - 150		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-161698-2 MS
Matrix: Water
Analysis Batch: 575689

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	64		50.0	116		mg/L		104	80 - 120
Fluoride	0.66		5.00	5.54		mg/L		98	80 - 120
Sulfate	140		50.0	189		mg/L		94	80 - 120

Lab Sample ID: 280-161698-2 MSD
Matrix: Water
Analysis Batch: 575689

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	64		50.0	118		mg/L		107	80 - 120	1	20
Fluoride	0.66		5.00	5.68		mg/L		100	80 - 120	3	20
Sulfate	140		50.0	191		mg/L		96	80 - 120	1	20

Lab Sample ID: 280-161698-2 DU
Matrix: Water
Analysis Batch: 575689

Client Sample ID: MW-1P
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	64		64.2		mg/L		0.1	15
Fluoride	0.66		0.650		mg/L		2	15
Sulfate	140		142		mg/L		0.2	15

Lab Sample ID: MB 280-575827/49
Matrix: Water
Analysis Batch: 575827

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/24/22 14:13	1
Fluoride	ND		0.50	0.17	mg/L			05/24/22 14:13	1
Sulfate	ND		5.0	1.0	mg/L			05/24/22 14:13	1

Lab Sample ID: LCS 280-575827/47
Matrix: Water
Analysis Batch: 575827

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	4.61		mg/L		92	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-575827/48
Matrix: Water
Analysis Batch: 575827

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	4.83		mg/L		97	90 - 110	5	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-575827/3
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.59		mg/L		92	50 - 150		
Fluoride			0.500	0.405	J	mg/L		81	50 - 150		
Sulfate			5.00	4.36	J	mg/L		87	50 - 150		

Lab Sample ID: 280-161698-1 MS
Matrix: Water
Analysis Batch: 575827

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	52		50.0	108		mg/L		112	80 - 120		
Fluoride	0.38	J	5.00	5.24		mg/L		97	80 - 120		
Sulfate	140		50.0	193		mg/L		104	80 - 120		

Lab Sample ID: 280-161698-1 MSD
Matrix: Water
Analysis Batch: 575827

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	52		50.0	108		mg/L		112	80 - 120	0	20
Fluoride	0.38	J	5.00	5.28		mg/L		98	80 - 120	1	20
Sulfate	140		50.0	193		mg/L		105	80 - 120	0	20

Lab Sample ID: 280-161698-1 DU
Matrix: Water
Analysis Batch: 575827

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	52		52.0		mg/L		0.1	15
Fluoride	0.38	J	0.383	J	mg/L		0	15
Sulfate	140		141		mg/L		0.2	15

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-576031/2
Matrix: Water
Analysis Batch: 576031

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/24/22 13:26	1

Lab Sample ID: LCS 280-576031/1
Matrix: Water
Analysis Batch: 576031

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	94.8		mg/L		95	79 - 114		

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-573549/1
Matrix: Water
Analysis Batch: 573549

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/02/22 10:58	1

Lab Sample ID: LCS 280-573549/2
Matrix: Water
Analysis Batch: 573549

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	505	495		mg/L		98	88 - 114

Lab Sample ID: LCSD 280-573549/3
Matrix: Water
Analysis Batch: 573549

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	505	497		mg/L		98	88 - 114	0	20

Lab Sample ID: MB 280-573550/1
Matrix: Water
Analysis Batch: 573550

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/02/22 11:02	1

Lab Sample ID: LCS 280-573550/2
Matrix: Water
Analysis Batch: 573550

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	505	503		mg/L		100	88 - 114

Lab Sample ID: LCSD 280-573550/3
Matrix: Water
Analysis Batch: 573550

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	503	530		mg/L		105	88 - 114	5	20

Lab Sample ID: MB 280-573966/1
Matrix: Water
Analysis Batch: 573966

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/05/22 10:48	1

Lab Sample ID: LCS 280-573966/2
Matrix: Water
Analysis Batch: 573966

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	503	519		mg/L		103	88 - 114

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-564071/23-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564071

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04129	U	0.134	0.134	1.00	0.254	pCi/L	05/06/22 09:17	06/01/22 11:01	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*05/06/22 09:17*	*06/01/22 11:01*	*1*

Lab Sample ID: LCS 160-564071/1-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564071

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.596		1.18	1.00	0.215	pCi/L	85	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*

Lab Sample ID: LCSD 160-564071/2-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564071

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.02		1.24	1.00	0.258	pCi/L	88	75 - 125	0.18	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-564074/23-A
Matrix: Water
Analysis Batch: 567671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564074

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01395	U	0.258	0.258	1.00	0.480	pCi/L	05/06/22 09:58	05/31/22 12:25	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:25*	*1*
Y Carrier	*89.3*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:25*	*1*

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

Lab Sample ID: LCS 160-564074/1-A
Matrix: Water
Analysis Batch: 567672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564074

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.57	9.599		1.25	1.00	0.445	pCi/L	112	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: LCSD 160-564074/2-A
Matrix: Water
Analysis Batch: 567672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564074

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.57	9.223		1.23	1.00	0.432	pCi/L	108	75 - 125	0.15	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.5*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Metals

Prep Batch: 353422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total Recoverable	Water	3005A	
280-161698-2	MW-1P	Total Recoverable	Water	3005A	
280-161698-3	MW-3	Total Recoverable	Water	3005A	
280-161698-4	MW-4	Total Recoverable	Water	3005A	
280-161698-5	MW-6	Total Recoverable	Water	3005A	
280-161698-6	MW-8	Total Recoverable	Water	3005A	
280-161698-7	MW-11	Total Recoverable	Water	3005A	
280-161698-8	MW-11-FD	Total Recoverable	Water	3005A	
280-161698-9	MW-12	Total Recoverable	Water	3005A	
280-161698-10	MW-14	Total Recoverable	Water	3005A	
280-161698-11	MW-16	Total Recoverable	Water	3005A	
MB 310-353422/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-353422/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-161698-1 MS	MW-7	Total Recoverable	Water	3005A	
280-161698-1 MSD	MW-7	Total Recoverable	Water	3005A	
280-161698-11 DU	MW-16	Total Recoverable	Water	3005A	

Analysis Batch: 353694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total Recoverable	Water	6010C	353422
280-161698-2	MW-1P	Total Recoverable	Water	6010C	353422
280-161698-3	MW-3	Total Recoverable	Water	6010C	353422
280-161698-4	MW-4	Total Recoverable	Water	6010C	353422
280-161698-5	MW-6	Total Recoverable	Water	6010C	353422
280-161698-6	MW-8	Total Recoverable	Water	6010C	353422
280-161698-7	MW-11	Total Recoverable	Water	6010C	353422
280-161698-8	MW-11-FD	Total Recoverable	Water	6010C	353422
280-161698-9	MW-12	Total Recoverable	Water	6010C	353422
280-161698-10	MW-14	Total Recoverable	Water	6010C	353422
280-161698-11	MW-16	Total Recoverable	Water	6010C	353422
MB 310-353422/1-A	Method Blank	Total Recoverable	Water	6010C	353422
LCS 310-353422/2-A	Lab Control Sample	Total Recoverable	Water	6010C	353422
280-161698-1 MS	MW-7	Total Recoverable	Water	6010C	353422
280-161698-1 MSD	MW-7	Total Recoverable	Water	6010C	353422
280-161698-11 DU	MW-16	Total Recoverable	Water	6010C	353422

Prep Batch: 354021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-2	MW-1P	Total/NA	Water	7470A	
280-161698-3	MW-3	Total/NA	Water	7470A	
280-161698-7	MW-11	Total/NA	Water	7470A	
MB 310-354021/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-354021/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 354022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-8	MW-11-FD	Total/NA	Water	7470A	
280-161698-9	MW-12	Total/NA	Water	7470A	
280-161698-10	MW-14	Total/NA	Water	7470A	
280-161698-11	MW-16	Total/NA	Water	7470A	
MB 310-354022/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 354022 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-354022/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-161698-8 MS	MW-11-FD	Total/NA	Water	7470A	
280-161698-8 MSD	MW-11-FD	Total/NA	Water	7470A	

Prep Batch: 354089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total Recoverable	Water	3005A	
280-161698-2	MW-1P	Total Recoverable	Water	3005A	
280-161698-3	MW-3	Total Recoverable	Water	3005A	
280-161698-4	MW-4	Total Recoverable	Water	3005A	
280-161698-5	MW-6	Total Recoverable	Water	3005A	
280-161698-6	MW-8	Total Recoverable	Water	3005A	
280-161698-7	MW-11	Total Recoverable	Water	3005A	
280-161698-8	MW-11-FD	Total Recoverable	Water	3005A	
280-161698-9	MW-12	Total Recoverable	Water	3005A	
280-161698-10	MW-14	Total Recoverable	Water	3005A	
280-161698-11	MW-16	Total Recoverable	Water	3005A	
MB 310-354089/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-354089/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-161698-7 DU	MW-11	Total Recoverable	Water	3005A	

Analysis Batch: 354190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-2	MW-1P	Total/NA	Water	7470A	354021
280-161698-3	MW-3	Total/NA	Water	7470A	354021
280-161698-7	MW-11	Total/NA	Water	7470A	354021
280-161698-8	MW-11-FD	Total/NA	Water	7470A	354022
280-161698-9	MW-12	Total/NA	Water	7470A	354022
280-161698-10	MW-14	Total/NA	Water	7470A	354022
280-161698-11	MW-16	Total/NA	Water	7470A	354022
MB 310-354021/1-A	Method Blank	Total/NA	Water	7470A	354021
MB 310-354022/1-A	Method Blank	Total/NA	Water	7470A	354022
LCS 310-354021/2-A	Lab Control Sample	Total/NA	Water	7470A	354021
LCS 310-354022/2-A	Lab Control Sample	Total/NA	Water	7470A	354022
280-161698-8 MS	MW-11-FD	Total/NA	Water	7470A	354022
280-161698-8 MSD	MW-11-FD	Total/NA	Water	7470A	354022

Prep Batch: 354467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	7470A	
280-161698-4	MW-4	Total/NA	Water	7470A	
280-161698-5	MW-6	Total/NA	Water	7470A	
280-161698-6	MW-8	Total/NA	Water	7470A	
MB 310-354467/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-354467/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-161698-1 MS	MW-7	Total/NA	Water	7470A	
280-161698-1 MSD	MW-7	Total/NA	Water	7470A	

Filtration Batch: 354543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 354543 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-4	MW-4	Dissolved	Water	Filtration	
280-161698-5	MW-6	Dissolved	Water	Filtration	
280-161698-6	MW-8	Dissolved	Water	Filtration	
MB 310-354543/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	Filtration	
280-161698-1 MS	MW-7	Dissolved	Water	Filtration	
280-161698-1 MSD	MW-7	Dissolved	Water	Filtration	

Filtration Batch: 354545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	Filtration	
280-161698-4	MW-4	Dissolved	Water	Filtration	
280-161698-5	MW-6	Dissolved	Water	Filtration	
280-161698-6	MW-8	Dissolved	Water	Filtration	
MB 310-354545/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	Filtration	
280-161698-1 DU	MW-7	Dissolved	Water	Filtration	

Filtration Batch: 354546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	Filtration	
280-161698-4	MW-4	Dissolved	Water	Filtration	
280-161698-5	MW-6	Dissolved	Water	Filtration	
280-161698-6	MW-8	Dissolved	Water	Filtration	
MB 310-354546/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	Filtration	
280-161698-1 MS	MW-7	Dissolved	Water	Filtration	
280-161698-1 MSD	MW-7	Dissolved	Water	Filtration	

Analysis Batch: 354618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	7470A	354467
280-161698-4	MW-4	Total/NA	Water	7470A	354467
280-161698-5	MW-6	Total/NA	Water	7470A	354467
280-161698-6	MW-8	Total/NA	Water	7470A	354467
MB 310-354467/1-A	Method Blank	Total/NA	Water	7470A	354467
LCS 310-354467/2-A	Lab Control Sample	Total/NA	Water	7470A	354467
280-161698-1 MS	MW-7	Total/NA	Water	7470A	354467
280-161698-1 MSD	MW-7	Total/NA	Water	7470A	354467

Analysis Batch: 354631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total Recoverable	Water	6020A	354089
280-161698-2	MW-1P	Total Recoverable	Water	6020A	354089
280-161698-3	MW-3	Total Recoverable	Water	6020A	354089
280-161698-4	MW-4	Total Recoverable	Water	6020A	354089
280-161698-5	MW-6	Total Recoverable	Water	6020A	354089
280-161698-6	MW-8	Total Recoverable	Water	6020A	354089
280-161698-7	MW-11	Total Recoverable	Water	6020A	354089
280-161698-8	MW-11-FD	Total Recoverable	Water	6020A	354089
280-161698-9	MW-12	Total Recoverable	Water	6020A	354089

Metals (Continued)

Analysis Batch: 354631 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-10	MW-14	Total Recoverable	Water	6020A	354089
280-161698-11	MW-16	Total Recoverable	Water	6020A	354089
MB 310-354089/1-A	Method Blank	Total Recoverable	Water	6020A	354089
LCS 310-354089/2-A	Lab Control Sample	Total Recoverable	Water	6020A	354089
280-161698-7 DU	MW-11	Total Recoverable	Water	6020A	354089

Prep Batch: 354691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	3005A	354543
280-161698-4	MW-4	Dissolved	Water	3005A	354543
280-161698-5	MW-6	Dissolved	Water	3005A	354543
280-161698-6	MW-8	Dissolved	Water	3005A	354543
MB 310-354543/1-B	Method Blank	Dissolved	Water	3005A	354543
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	3005A	354543
280-161698-1 MS	MW-7	Dissolved	Water	3005A	354543
280-161698-1 MSD	MW-7	Dissolved	Water	3005A	354543

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total Recoverable	Water	6020A	354089
280-161698-2	MW-1P	Total Recoverable	Water	6020A	354089
280-161698-3	MW-3	Total Recoverable	Water	6020A	354089
280-161698-4	MW-4	Total Recoverable	Water	6020A	354089
280-161698-5	MW-6	Total Recoverable	Water	6020A	354089
280-161698-6	MW-8	Total Recoverable	Water	6020A	354089
280-161698-7	MW-11	Total Recoverable	Water	6020A	354089
280-161698-8	MW-11-FD	Total Recoverable	Water	6020A	354089
280-161698-9	MW-12	Total Recoverable	Water	6020A	354089
280-161698-10	MW-14	Total Recoverable	Water	6020A	354089
280-161698-11	MW-16	Total Recoverable	Water	6020A	354089
MB 310-354089/1-A	Method Blank	Total Recoverable	Water	6020A	354089
LCS 310-354089/2-A	Lab Control Sample	Total Recoverable	Water	6020A	354089
280-161698-7 DU	MW-11	Total Recoverable	Water	6020A	354089

Prep Batch: 354862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	7470A	354546
280-161698-4	MW-4	Dissolved	Water	7470A	354546
280-161698-5	MW-6	Dissolved	Water	7470A	354546
280-161698-6	MW-8	Dissolved	Water	7470A	354546
MB 310-354546/1-B	Method Blank	Dissolved	Water	7470A	354546
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	7470A	354546
280-161698-1 MS	MW-7	Dissolved	Water	7470A	354546
280-161698-1 MSD	MW-7	Dissolved	Water	7470A	354546

Analysis Batch: 354906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	6010C	354545
280-161698-4	MW-4	Dissolved	Water	6010C	354545
280-161698-5	MW-6	Dissolved	Water	6010C	354545
280-161698-6	MW-8	Dissolved	Water	6010C	354545

Metals (Continued)

Analysis Batch: 354906 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-354545/1-A	Method Blank	Dissolved	Water	6010C	354545
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	6010C	354545
280-161698-1 DU	MW-7	Dissolved	Water	6010C	354545

Analysis Batch: 355097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	7470A	354862
280-161698-4	MW-4	Dissolved	Water	7470A	354862
280-161698-5	MW-6	Dissolved	Water	7470A	354862
280-161698-6	MW-8	Dissolved	Water	7470A	354862
MB 310-354546/1-B	Method Blank	Dissolved	Water	7470A	354862
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	7470A	354862
280-161698-1 MS	MW-7	Dissolved	Water	7470A	354862
280-161698-1 MSD	MW-7	Dissolved	Water	7470A	354862

Analysis Batch: 355362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-4	MW-4	Total Recoverable	Water	6020A	354089

Analysis Batch: 355639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Dissolved	Water	6020A	354691
280-161698-4	MW-4	Dissolved	Water	6020A	354691
280-161698-5	MW-6	Dissolved	Water	6020A	354691
280-161698-6	MW-8	Dissolved	Water	6020A	354691
MB 310-354543/1-B	Method Blank	Dissolved	Water	6020A	354691
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	6020A	354691
280-161698-1 MS	MW-7	Dissolved	Water	6020A	354691
280-161698-1 MSD	MW-7	Dissolved	Water	6020A	354691

General Chemistry

Analysis Batch: 573549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	SM2540 C	
280-161698-2	MW-1P	Total/NA	Water	SM2540 C	
280-161698-3	MW-3	Total/NA	Water	SM2540 C	
280-161698-4	MW-4	Total/NA	Water	SM2540 C	
280-161698-5	MW-6	Total/NA	Water	SM2540 C	
MB 280-573549/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573549/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573549/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 573550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-6	MW-8	Total/NA	Water	SM2540 C	
280-161698-7	MW-11	Total/NA	Water	SM2540 C	
280-161698-8	MW-11-FD	Total/NA	Water	SM2540 C	
280-161698-9	MW-12	Total/NA	Water	SM2540 C	
280-161698-11	MW-16	Total/NA	Water	SM2540 C	
MB 280-573550/1	Method Blank	Total/NA	Water	SM2540 C	

General Chemistry (Continued)

Analysis Batch: 573550 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-573550/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573550/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 573966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-10	MW-14	Total/NA	Water	SM2540 C	
MB 280-573966/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573966/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 575633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	9040B	
280-161698-2	MW-1P	Total/NA	Water	9040B	
280-161698-3	MW-3	Total/NA	Water	9040B	
280-161698-4	MW-4	Total/NA	Water	9040B	
280-161698-5	MW-6	Total/NA	Water	9040B	
280-161698-6	MW-8	Total/NA	Water	9040B	
280-161698-7	MW-11	Total/NA	Water	9040B	
280-161698-8	MW-11-FD	Total/NA	Water	9040B	
280-161698-9	MW-12	Total/NA	Water	9040B	
280-161698-10	MW-14	Total/NA	Water	9040B	
280-161698-11	MW-16	Total/NA	Water	9040B	
LCS 280-575633/27	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-575633/4	Lab Control Sample	Total/NA	Water	9040B	
280-161698-3 DU	MW-3	Total/NA	Water	9040B	

Analysis Batch: 575689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-2	MW-1P	Total/NA	Water	9056A	
280-161698-3	MW-3	Total/NA	Water	9056A	
280-161698-3	MW-3	Total/NA	Water	9056A	
280-161698-5	MW-6	Total/NA	Water	9056A	
280-161698-5	MW-6	Total/NA	Water	9056A	
280-161698-7	MW-11	Total/NA	Water	9056A	
280-161698-7	MW-11	Total/NA	Water	9056A	
280-161698-8	MW-11-FD	Total/NA	Water	9056A	
280-161698-8	MW-11-FD	Total/NA	Water	9056A	
280-161698-9	MW-12	Total/NA	Water	9056A	
280-161698-11	MW-16	Total/NA	Water	9056A	
MB 280-575689/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575689/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575689/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575689/3	Lab Control Sample	Total/NA	Water	9056A	
280-161698-2 MS	MW-1P	Total/NA	Water	9056A	
280-161698-2 MSD	MW-1P	Total/NA	Water	9056A	
280-161698-2 DU	MW-1P	Total/NA	Water	9056A	

Analysis Batch: 575827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	9056A	
280-161698-4	MW-4	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 575827 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-6	MW-8	Total/NA	Water	9056A	
280-161698-10	MW-14	Total/NA	Water	9056A	
MB 280-575827/49	Method Blank	Total/NA	Water	9056A	
LCS 280-575827/47	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575827/48	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575827/3	Lab Control Sample	Total/NA	Water	9056A	
280-161698-1 MS	MW-7	Total/NA	Water	9056A	
280-161698-1 MSD	MW-7	Total/NA	Water	9056A	
280-161698-1 DU	MW-7	Total/NA	Water	9056A	

Analysis Batch: 576031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	SM 2540D	
280-161698-2	MW-1P	Total/NA	Water	SM 2540D	
280-161698-3	MW-3	Total/NA	Water	SM 2540D	
280-161698-4	MW-4	Total/NA	Water	SM 2540D	
280-161698-5	MW-6	Total/NA	Water	SM 2540D	
280-161698-6	MW-8	Total/NA	Water	SM 2540D	
280-161698-7	MW-11	Total/NA	Water	SM 2540D	
280-161698-8	MW-11-FD	Total/NA	Water	SM 2540D	
280-161698-9	MW-12	Total/NA	Water	SM 2540D	
280-161698-10	MW-14	Total/NA	Water	SM 2540D	
280-161698-11	MW-16	Total/NA	Water	SM 2540D	
MB 280-576031/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-576031/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Rad

Prep Batch: 564071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	PrecSep-21	
280-161698-2	MW-1P	Total/NA	Water	PrecSep-21	
280-161698-3	MW-3	Total/NA	Water	PrecSep-21	
280-161698-4	MW-4	Total/NA	Water	PrecSep-21	
280-161698-5	MW-6	Total/NA	Water	PrecSep-21	
280-161698-6	MW-8	Total/NA	Water	PrecSep-21	
280-161698-7	MW-11	Total/NA	Water	PrecSep-21	
280-161698-8	MW-11-FD	Total/NA	Water	PrecSep-21	
280-161698-9	MW-12	Total/NA	Water	PrecSep-21	
280-161698-10	MW-14	Total/NA	Water	PrecSep-21	
280-161698-11	MW-16	Total/NA	Water	PrecSep-21	
MB 160-564071/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564071/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-564071/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 564074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-1	MW-7	Total/NA	Water	PrecSep_0	
280-161698-2	MW-1P	Total/NA	Water	PrecSep_0	
280-161698-3	MW-3	Total/NA	Water	PrecSep_0	
280-161698-4	MW-4	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 564074 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161698-5	MW-6	Total/NA	Water	PrecSep_0	
280-161698-6	MW-8	Total/NA	Water	PrecSep_0	
280-161698-7	MW-11	Total/NA	Water	PrecSep_0	
280-161698-8	MW-11-FD	Total/NA	Water	PrecSep_0	
280-161698-9	MW-12	Total/NA	Water	PrecSep_0	
280-161698-10	MW-14	Total/NA	Water	PrecSep_0	
280-161698-11	MW-16	Total/NA	Water	PrecSep_0	
MB 160-564074/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564074/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-564074/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-7
Lab Sample ID: 280-161698-1

Date Collected: 04/29/22 14:45
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		1			354906	06/01/22 11:37	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 12:39	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 15:31	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 22:33	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:32	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:35	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:37	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:14	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575827	05/24/22 14:29	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573549	05/02/22 10:58	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			998.38 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:08	FLC	TAL SL
Total/NA	Prep	PrecSep_0			998.38 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-1P
Lab Sample ID: 280-161698-2

Date Collected: 04/25/22 13:15
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 12:48	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 22:37	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:36	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354021	05/23/22 15:32	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 13:33	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:17	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 00:04	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573549	05/02/22 10:58	ABW	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-1P
Lab Sample ID: 280-161698-2
Date Collected: 04/25/22 13:15
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.29 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			997.29 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-3
Lab Sample ID: 280-161698-3
Date Collected: 04/25/22 11:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 12:50	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 22:41	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:39	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354021	05/23/22 15:32	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 13:36	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:27	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 01:08	RAF	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575689	05/21/22 01:24	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573549	05/02/22 10:58	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			1005.37 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			1005.37 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-4
Lab Sample ID: 280-161698-4
Date Collected: 04/29/22 13:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		3			354906	06/01/22 12:42	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		3			353694	05/19/22 13:34	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 15:41	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		7			354712	05/28/22 22:44	DHM5	TAL CF

Client Sample ID: MW-4
Lab Sample ID: 280-161698-4

Date Collected: 04/29/22 13:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		10			355362	06/03/22 15:56	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:42	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:45	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:43	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:34	KEG	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	575827	05/24/22 19:33	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	573549	05/02/22 10:58	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			750.35 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			750.35 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-6
Lab Sample ID: 280-161698-5

Date Collected: 04/25/22 15:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		1			354906	06/01/22 11:49	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 12:58	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 15:44	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 22:48	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:46	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:48	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:45	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:38	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 01:40	RAF	TAL DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	575689	05/21/22 01:56	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN

Client Sample ID: MW-6
Lab Sample ID: 280-161698-5

Date Collected: 04/25/22 15:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573549	05/02/22 10:58	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			996.05 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			996.05 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-8
Lab Sample ID: 280-161698-6

Date Collected: 04/28/22 13:45
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		2			354906	06/01/22 12:44	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		2			353694	05/19/22 13:36	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		4			355639	06/07/22 15:48	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 23:08	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:49	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:50	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:52	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:41	KEG	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	575827	05/24/22 19:49	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			997.32 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 09:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			997.32 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-11
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 13:02	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 23:11	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:52	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354021	05/23/22 15:32	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 13:38	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:46	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 02:12	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575689	05/21/22 02:28	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			998.93 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 10:59	FLC	TAL SL
Total/NA	Prep	PrecSep_0			998.93 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:14	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-11-FD
Date Collected: 04/25/22 15:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 13:04	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 23:19	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 20:59	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354022	05/23/22 15:36	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 14:19	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:49	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 03:16	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575689	05/21/22 03:32	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			1000.22 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 10:59	FLC	TAL SL
Total/NA	Prep	PrecSep_0			1000.22 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:14	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-12
Lab Sample ID: 280-161698-9
Date Collected: 04/26/22 11:45
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 13:06	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 23:23	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 21:02	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354022	05/23/22 15:36	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 14:25	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:53	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 03:48	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			1000.10 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 11:00	FLC	TAL SL
Total/NA	Prep	PrecSep_0			1000.10 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:15	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-14
Lab Sample ID: 280-161698-10
Date Collected: 04/29/22 14:30
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		3			353694	05/19/22 13:38	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		7			354712	05/28/22 23:27	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 21:18	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354022	05/23/22 15:36	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 14:27	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 17:57	KEG	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575827	05/24/22 17:09	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573966	05/05/22 10:49	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			995.68 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 11:00	FLC	TAL SL
Total/NA	Prep	PrecSep_0			995.68 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567672	05/31/22 12:15	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-16
Date Collected: 04/25/22 12:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161698-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353422	05/18/22 09:00	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			353694	05/19/22 13:10	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 23:31	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354089	05/24/22 09:30	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354631	05/27/22 21:22	DHM5	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354022	05/23/22 15:36	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354190	05/24/22 14:30	XXW3	TAL CF
Total/NA	Analysis	9040B		1			575633	05/19/22 18:01	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 04:05	RAF	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			1003.44 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 11:00	FLC	TAL SL
Total/NA	Prep	PrecSep_0			1003.44 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567671	05/31/22 12:24	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: TSnyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: 720-838-6065	E-Mail: Danielle.Harrington@Eurofinset.com		Page: Page 3 of 3
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): ASAP			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Landfill Wells	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A Total Metals - ETA Canton	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D			
MW-7	4/29/22	1445	G	WATER			X	X	X	X	6	
MW-1P	4/25/22	1315	G	WATER			X	X	X		5	
MW-3	4/25/22	1100	G	WATER			X	X	X		6	
MW-4	4/29/22	1300	G	WATER			X	X	X	X	6	Only 1.7L for Radium
MW-6	4/25/22	1500	G	WATER			X	X	X	X	6	
MW-8	4/28/22	1345	G	WATER			X	X	X	X	6	
MW-11	4/25/22	1530	G	WATER			X	X	X		5	
MW-11-FD	4/25/22	1530	G	WATER			X	X	X		5	
MW-12	4/26/22	1145	G	WATER			X	X	X		5	
MW-14	4/29/22	1430	G	WATER			X	X	X		5	
MW-16	4/25/22	1230	G	WATER			X	X	X		5	

280-161698 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 4/29/22	Time:	Method of Shipment:
Relinquished by: TSnyder	Date/Time: 4/29/22 1655	Company: HDR	Received by: Madi Dorr
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Received by: Madi Dorr	Date/Time: 4/29/22 1655	Company: ETAStN		
Received by:	Date/Time:	Company		
Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.1, 4.4, 5.5, 5.8, 5.8 IR12 CF+0.1

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

6/9/2022

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: 720 838 6065	E-Mail: Danielle.Harrington@Eurofinset.com		Page: Page 3 of 3
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): ASAP			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Landfill Wells	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A Total Metals - ETA Canton	254/C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-14	4/29/22	1430	G	WATER			X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

280-161698 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	5/2/22 0800	HDR	[signature]	5/3/22 1030	EA ORL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

1.4 CF+0.1 IR2

Ver: 01/16/2019

5/22

eurofins | Environment Testing TestAmerica

1881284

ENGLEWOOD, CO 80112
UNITED STATES US

BILL CREDIT CARD

TO TEST AMERICA

4955 YARROW ST

ARVADA CO 80002

(303) 736-0100

MU:
PO:

REF:

DEPT:

FedEx Express

J222202041201uu

TRK# 0201 2726 4954 8618

TUE - 03 MAY 10:30A
PRIORITY OVERNIGHT

72 LAAA

AHS
80002
CO-US DEN

280-161698 Waybill

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612970.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161698-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/31/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-7 (280-161698-1)	4/29/22	14:45 Mountain		Water			X	X	X	2	
MW-1P (280-161698-2)	4/25/22	13:15 Mountain		Water			X	X	X	2	
MW-3 (280-161698-3)	4/25/22	11:00 Mountain		Water			X	X	X	2	
MW-4 (280-161698-4)	4/29/22	13:00 Mountain		Water			X	X	X	2	
MW-6 (280-161698-5)	4/25/22	15:00 Mountain		Water			X	X	X	2	
MW-8 (280-161698-6)	4/28/22	13:45 Mountain		Water			X	X	X	2	
MW-11 (280-161698-7)	4/25/22	15:30 Mountain		Water			X	X	X	2	
MW-11-FD (280-161698-8)	4/25/22	15:30 Mountain		Water			X	X	X	2	
MW-12 (280-161698-9)	4/26/22	11:45 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/4/22 1450	ETADEN	FED EX		
2	FED EX			[signature]	MAY 05 2022 0925	ETASR
3						

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

Ver: 06/08/2021

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612970.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161698-1
Address: 13715 Rider Trail North,	Due Date Requested: 5/31/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-14 (280-161698-10)	4/29/22	14:30 Mountain		Water			X	X	X	2	
MW-16 (280-161698-11)	4/25/22	12:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/4/22 1450	ETAS	FED EX		
2	FED EX			[signature] Sierra Worthington	MAY 05 2022 0925	ETAS
3						

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

Ver: 06/08/2021

eurofins | Environment Testing America

280-161698 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: Eurofins Denver			
City/State: CITY Arvada		STATE CO	Project:
Receipt Information			
Date/Time Received:	DATE 5/06/22	TIME 945	Received By: ZB

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

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

Temperature Record			
Coolant:	☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____		☐ NONE
Thermometer ID:	D	Correction Factor (°C):	-0.1
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	1.9	Corrected Temp (°C):	1.8

• **Sample Container Temperature**		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612968 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle Harrington@et.eurofinsus com	State of Origin: Colorado	Page: Page 1 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-161698-1
Address: 3019 Venture Way, ,	Due Date Requested: 5/31/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6010C/3005A (MOD) Boron	7470A/7470A_Prep Mercury	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	7470A/Filtration_ME Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
MW-7 (280-161698-1)	4/29/22	14 45 Mountain		Water			X	X	X	X	X	2	
MW-1P (280-161698-2)	4/25/22	13.15 Mountain		Water			X	X	X			1	
MW-3 (280-161698-3)	4/25/22	11 00 Mountain		Water			X	X	X			1	
MW-4 (280-161698-4)	4/29/22	13 00 Mountain		Water			X	X	X	X	X	2	
MW-6 (280-161698-5)	4/25/22	15.00 Mountain		Water			X	X	X	X	X	2	
MW-8 (280-161698-6)	4/28/22	13 45 Mountain		Water			X	X	X	X	X	2	
MW-11 (280-161698-7)	4/25/22	15 30 Mountain		Water			X	X	X			1	
MW-11-FD (280-161698-8)	4/25/22	15 30 Mountain		Water			X	X	X			1	
MW-12 (280-161698-9)	4/26/22	11 45 Mountain		Water			X	X	X			1	

Note: Since laboratory accreditations are subject to change Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements.

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Madd Dos	5/4/22 1350	ETADEN			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5-6-22 945	Company

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

Ver: 06/08/2021

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone. 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM. Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612968.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin. Colorado	Page: Page 2 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note). DoD - A2LA		Job #: 280-161698-1
Address. 3019 Venture Way, ,	Due Date Requested: 5/31/2022			
City: Cedar Falls	TAT Requested (days):			
State Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email.	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6010C/3005A (MOD) Boron	7470A/7470A_Prep Mercury	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	7470A/Filtration_ME Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
MW-14 (280-161698-10)	4/29/22	14 30 Mountain		Water			X	X	X			1	
MW-16 (280-161698-11)	4/25/22	12 30 Mountain		Water			X	X	X			1	

Note: Since laboratory accreditations are subject to change Eurofins TestAmerica places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/4/22 1350	ETADEN			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: RL	Date/Time: 5-6-22 945	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161698-1

Login Number: 161698
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161698-1

Login Number: 161698
List Number: 2
Creator: Rystrom, Joshua R

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161698-1

Login Number: 161698
List Number: 4
Creator: Kizer, Preston V

List Source: Eurofins Cedar Falls
List Creation: 05/06/22 11:35 AM

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161698-1

Login Number: 161698
List Number: 3
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 05/05/22 05:22 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-161698-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-161698-1	MW-7	94.3
280-161698-2	MW-1P	99.3
280-161698-3	MW-3	95.3
280-161698-4	MW-4	46.9
280-161698-5	MW-6	89.5
280-161698-6	MW-8	98.8
280-161698-7	MW-11	85.5
280-161698-8	MW-11-FD	85.8
280-161698-9	MW-12	88.8
280-161698-10	MW-14	97.5
280-161698-11	MW-16	95.3
LCS 160-564071/1-A	Lab Control Sample	98.0
LCSD 160-564071/2-A	Lab Control Sample Dup	90.5
MB 160-564071/23-A	Method Blank	89.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-161698-1	MW-7	94.3	84.1
280-161698-2	MW-1P	99.3	86.7
280-161698-3	MW-3	95.3	88.6
280-161698-4	MW-4	46.9	87.5
280-161698-5	MW-6	89.5	87.5
280-161698-6	MW-8	98.8	89.0
280-161698-7	MW-11	85.5	89.0
280-161698-8	MW-11-FD	85.8	90.8
280-161698-9	MW-12	88.8	90.1
280-161698-10	MW-14	97.5	91.6
280-161698-11	MW-16	95.3	88.6
LCS 160-564074/1-A	Lab Control Sample	98.0	85.2
LCSD 160-564074/2-A	Lab Control Sample Dup	90.5	87.9
MB 160-564074/23-A	Method Blank	89.5	89.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161699-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/9/2022 2:57:35 PM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-161699-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161699-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 04/29/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.2°C, 4.5°C, 5.6°C, 5.9°C and 5.9°C.

Per client request the samples were split up into two separate reports. MW-34, MW-35, and MW-36 are reported under 280-161699-2.

DISSOLVED METALS (ICPMS)
Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples, MW-29 (280-161699-1), MW-30 (280-161699-2), and MW-33B (280-161699-4) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium, Magnesium and Sodium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL RECOVERABLE METALS (ICPMS)
Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples, MW-29 (280-161699-1), MW-30 (280-161699-2), MW-33A (280-161699-3), and MW-33B (280-161699-4) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

GENERAL CHEMISTRY- VARIOUS METHODS
Some samples required dilution prior to analysis for Method 9056A. The reporting limits have been adjusted accordingly.

Duplicate Total Suspended Solids LCSs were prepared in batch 280-574043. Recoveries for one of the pair were below lower control limits. Because the LCSD was within control limits, corrective action was not taken

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

Job ID: 280-161699-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Detection Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-29 — Lab Sample ID: 280-161699-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	540000		7000	1300	ug/L	7		6020A	Total Recoverable
Potassium	15000		3500	1100	ug/L	7		6020A	Total Recoverable
Magnesium	300000		3500	1100	ug/L	7		6020A	Total Recoverable
Sodium	980000		7000	4300	ug/L	7		6020A	Total Recoverable
Selenium	2.4		0.035	0.0067	mg/L	7		6020A	Total Recoverable
Lithium	0.31		0.056	0.018	mg/L	7		6020A	Total Recoverable
Calcium	530000		7000	1300	ug/L	7		6020A	Dissolved
Lithium	0.27		0.056	0.018	mg/L	7		6020A	Dissolved
Magnesium	290000		3500	1100	ug/L	7		6020A	Dissolved
Potassium	15000		3500	1100	ug/L	7		6020A	Dissolved
Selenium	2.3		0.035	0.0067	mg/L	7		6020A	Dissolved
Sodium	940000		7000	4300	ug/L	7		6020A	Dissolved
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	110		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3700		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	750		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	62	*- *1	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6900		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-30 — Lab Sample ID: 280-161699-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	250000		4000	760	ug/L	4		6020A	Total Recoverable
Potassium	16000		2000	600	ug/L	4		6020A	Total Recoverable
Magnesium	310000		2000	600	ug/L	4		6020A	Total Recoverable
Sodium	2600000		7000	4300	ug/L	7		6020A	Total Recoverable
Selenium	0.0062	J	0.020	0.0038	mg/L	4		6020A	Total Recoverable
Lithium	0.48		0.032	0.010	mg/L	4		6020A	Total Recoverable
Calcium	230000		1000	190	ug/L	1		6020A	Dissolved
Lithium	0.35		0.0080	0.0025	mg/L	1		6020A	Dissolved
Magnesium	270000		3500	1100	ug/L	7		6020A	Dissolved
Potassium	20000		500	150	ug/L	1		6020A	Dissolved
Selenium	0.0094		0.0050	0.00096	mg/L	1		6020A	Dissolved
Sodium	2500000		7000	4300	ug/L	7		6020A	Dissolved
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	190		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	6400		250	52	mg/L	50		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	1000		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	220		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	11000		1000	470	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33A
Lab Sample ID: 280-161699-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	470000		4000	760	ug/L	4		6020A	Total Recoverable
Potassium	14000		2000	600	ug/L	4		6020A	Total Recoverable
Magnesium	290000		2000	600	ug/L	4		6020A	Total Recoverable
Sodium	510000		4000	2400	ug/L	4		6020A	Total Recoverable
Selenium	0.25		0.020	0.0038	mg/L	4		6020A	Total Recoverable
Lithium	0.14		0.032	0.010	mg/L	4		6020A	Total Recoverable
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	80		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3400		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	440		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	5000		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-33B
Lab Sample ID: 280-161699-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0042	J	0.020	0.0030	mg/L	4		6020A	Total Recoverable
Calcium	58000		4000	760	ug/L	4		6020A	Total Recoverable
Potassium	4200		2000	600	ug/L	4		6020A	Total Recoverable
Magnesium	31000		2000	600	ug/L	4		6020A	Total Recoverable
Sodium	730000		4000	2400	ug/L	4		6020A	Total Recoverable
Selenium	0.018	J	0.020	0.0038	mg/L	4		6020A	Total Recoverable
Lithium	0.10		0.032	0.010	mg/L	4		6020A	Total Recoverable
Calcium	45000		4000	760	ug/L	4		6020A	Dissolved
Lithium	0.081		0.032	0.010	mg/L	4		6020A	Dissolved
Magnesium	24000		2000	600	ug/L	4		6020A	Dissolved
Potassium	3900		2000	600	ug/L	4		6020A	Dissolved
Selenium	0.017	J	0.020	0.0038	mg/L	4		6020A	Dissolved
Sodium	710000		4000	2400	ug/L	4		6020A	Dissolved
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		30	10	mg/L	10		9056A	Total/NA
Sulfate	1500		50	10	mg/L	10		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	300		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	550	*- *1	7.7	2.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2400		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161699-1	MW-29	Water	04/28/22 10:50	04/29/22 16:55
280-161699-2	MW-30	Water	04/26/22 13:00	04/29/22 16:55
280-161699-3	MW-33A	Water	04/28/22 13:35	04/29/22 16:55
280-161699-4	MW-33B	Water	04/28/22 14:30	04/29/22 16:55

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-29
Date Collected: 04/28/22 10:50
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.035	0.0053	mg/L		05/25/22 09:15	05/28/22 20:52	7
Calcium	540000		7000	1300	ug/L		05/25/22 09:15	05/28/22 20:52	7
Potassium	15000		3500	1100	ug/L		05/25/22 09:15	05/28/22 20:52	7
Magnesium	300000		3500	1100	ug/L		05/25/22 09:15	05/28/22 20:52	7
Sodium	980000		7000	4300	ug/L		05/25/22 09:15	05/28/22 20:52	7
Selenium	2.4		0.035	0.0067	mg/L		05/25/22 09:15	05/28/22 20:52	7
Lithium	0.31		0.056	0.018	mg/L		05/25/22 09:15	05/28/22 20:52	7

Client Sample ID: MW-30
Date Collected: 04/26/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.0030	mg/L		05/25/22 09:15	05/28/22 21:12	4
Calcium	250000		4000	760	ug/L		05/25/22 09:15	05/28/22 21:12	4
Potassium	16000		2000	600	ug/L		05/25/22 09:15	05/28/22 21:12	4
Magnesium	310000		2000	600	ug/L		05/25/22 09:15	05/28/22 21:12	4
Sodium	2600000		7000	4300	ug/L		05/25/22 09:15	06/01/22 15:59	7
Selenium	0.0062	J	0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 21:12	4
Lithium	0.48		0.032	0.010	mg/L		05/25/22 09:15	05/28/22 21:12	4

Client Sample ID: MW-33A
Date Collected: 04/28/22 13:35
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.0030	mg/L		05/25/22 09:15	05/28/22 21:16	4
Calcium	470000		4000	760	ug/L		05/25/22 09:15	05/28/22 21:16	4
Potassium	14000		2000	600	ug/L		05/25/22 09:15	05/28/22 21:16	4
Magnesium	290000		2000	600	ug/L		05/25/22 09:15	05/28/22 21:16	4
Sodium	510000		4000	2400	ug/L		05/25/22 09:15	05/28/22 21:16	4
Selenium	0.25		0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 21:16	4
Lithium	0.14		0.032	0.010	mg/L		05/25/22 09:15	05/28/22 21:16	4

Client Sample ID: MW-33B
Date Collected: 04/28/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0042	J	0.020	0.0030	mg/L		05/25/22 09:15	05/28/22 21:20	4
Calcium	58000		4000	760	ug/L		05/25/22 09:15	05/28/22 21:20	4
Potassium	4200		2000	600	ug/L		05/25/22 09:15	05/28/22 21:20	4
Magnesium	31000		2000	600	ug/L		05/25/22 09:15	05/28/22 21:20	4
Sodium	730000		4000	2400	ug/L		05/25/22 09:15	05/28/22 21:20	4
Selenium	0.018	J	0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 21:20	4
Lithium	0.10		0.032	0.010	mg/L		05/25/22 09:15	05/28/22 21:20	4

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

Client Sample ID: MW-29
Date Collected: 04/28/22 10:50
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.035	0.0053	mg/L		05/31/22 09:45	06/07/22 15:51	7

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

Client Sample ID: MW-29
Date Collected: 04/28/22 10:50
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	530000		7000	1300	ug/L		05/31/22 09:45	06/07/22 15:51	7
Lithium	0.27		0.056	0.018	mg/L		05/31/22 09:45	06/07/22 15:51	7
Magnesium	290000		3500	1100	ug/L		05/31/22 09:45	06/07/22 15:51	7
Potassium	15000		3500	1100	ug/L		05/31/22 09:45	06/07/22 15:51	7
Selenium	2.3		0.035	0.0067	mg/L		05/31/22 09:45	06/07/22 15:51	7
Sodium	940000		7000	4300	ug/L		05/31/22 09:45	06/07/22 15:51	7

Client Sample ID: MW-30
Date Collected: 04/26/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		05/31/22 09:45	06/07/22 15:54	1
Calcium	230000		1000	190	ug/L		05/31/22 09:45	06/07/22 15:54	1
Lithium	0.35		0.0080	0.0025	mg/L		05/31/22 09:45	06/07/22 15:54	1
Magnesium	270000		3500	1100	ug/L		05/31/22 09:45	06/08/22 15:21	7
Potassium	20000		500	150	ug/L		05/31/22 09:45	06/07/22 15:54	1
Selenium	0.0094		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:54	1
Sodium	2500000		7000	4300	ug/L		05/31/22 09:45	06/08/22 15:21	7

Client Sample ID: MW-33B
Date Collected: 04/28/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.0030	mg/L		05/31/22 09:45	06/07/22 16:11	4
Calcium	45000		4000	760	ug/L		05/31/22 09:45	06/07/22 16:11	4
Lithium	0.081		0.032	0.010	mg/L		05/31/22 09:45	06/07/22 16:11	4
Magnesium	24000		2000	600	ug/L		05/31/22 09:45	06/07/22 16:11	4
Potassium	3900		2000	600	ug/L		05/31/22 09:45	06/07/22 16:11	4
Selenium	0.017	J	0.020	0.0038	mg/L		05/31/22 09:45	06/07/22 16:11	4
Sodium	710000		4000	2400	ug/L		05/31/22 09:45	06/07/22 16:11	4

General Chemistry

Client Sample ID: MW-29
Date Collected: 04/28/22 10:50
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			05/05/22 14:26	1
Temperature	19.4	HF	1.0	1.0	Degrees C			05/05/22 14:26	1
Chloride	110		3.0	1.0	mg/L			05/24/22 17:25	1
Sulfate	3700		100	21	mg/L			05/24/22 17:41	20
Bicarbonate Alkalinity as CaCO3	750		10	3.1	mg/L			05/05/22 15:02	1
Total Suspended Solids	62	*- *1	4.0	1.1	mg/L			05/05/22 16:27	1
Total Dissolved Solids (TDS)	6900		40	19	mg/L			05/02/22 11:03	1

Client Sample ID: MW-30
Date Collected: 04/26/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU			05/05/22 14:34	1
Temperature	19.6	HF	1.0	1.0	Degrees C			05/05/22 14:34	1

General Chemistry (Continued)

Client Sample ID: MW-30
Date Collected: 04/26/22 13:00
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	190		3.0	1.0	mg/L			05/24/22 22:13	1
Sulfate	6400		250	52	mg/L			05/24/22 22:29	50
Bicarbonate Alkalinity as CaCO3	1000		10	3.1	mg/L			05/05/22 15:16	1
Total Suspended Solids	220		4.0	1.1	mg/L			05/02/22 08:58	1
Total Dissolved Solids (TDS)	11000		1000	470	mg/L			05/02/22 11:03	1

Client Sample ID: MW-33A
Date Collected: 04/28/22 13:35
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.2	HF	0.1	0.1	SU			05/05/22 14:38	1
Temperature	19.3	HF	1.0	1.0	Degrees C			05/05/22 14:38	1
Chloride	80		3.0	1.0	mg/L			05/24/22 17:57	1
Sulfate	3400		100	21	mg/L			05/24/22 18:13	20
Bicarbonate Alkalinity as CaCO3	440		10	3.1	mg/L			05/05/22 15:24	1
Total Suspended Solids	ND	*- *1	4.0	1.1	mg/L			05/05/22 16:27	1
Total Dissolved Solids (TDS)	5000		100	47	mg/L			05/05/22 10:49	1

Client Sample ID: MW-33B
Date Collected: 04/28/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU			05/05/22 14:41	1
Temperature	19.0	HF	1.0	1.0	Degrees C			05/05/22 14:41	1
Chloride	120		30	10	mg/L			05/24/22 13:09	10
Sulfate	1500		50	10	mg/L			05/24/22 13:09	10
Bicarbonate Alkalinity as CaCO3	300		10	3.1	mg/L			05/05/22 15:32	1
Total Suspended Solids	550	*- *1	7.7	2.1	mg/L			05/05/22 16:27	1
Total Dissolved Solids (TDS)	2400		40	19	mg/L			05/02/22 11:03	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354185/1-A
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		05/25/22 09:15	05/28/22 20:26	1
Calcium	ND		1000	190	ug/L		05/25/22 09:15	05/28/22 20:26	1
Magnesium	ND		500	150	ug/L		05/25/22 09:15	05/28/22 20:26	1
Potassium	ND		500	150	ug/L		05/25/22 09:15	05/28/22 20:26	1
Selenium	ND		0.0050	0.00096	mg/L		05/25/22 09:15	05/28/22 20:26	1
Lithium	ND		0.0080	0.0025	mg/L		05/25/22 09:15	05/28/22 20:26	1
Sodium	ND		1000	610	ug/L		05/25/22 09:15	05/28/22 20:26	1

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.17		mg/L		108	80 - 120
Calcium	20000	21300		ug/L		106	80 - 120
Magnesium	20000	22000		ug/L		110	80 - 120
Potassium	20000	22000		ug/L		110	80 - 120
Selenium	4.00	4.27		mg/L		107	80 - 120
Lithium	2.00	2.32		mg/L		116	80 - 120
Sodium	20000	22300		ug/L		112	80 - 120

Lab Sample ID: MB 310-354543/1-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		05/31/22 09:45	06/07/22 15:25	1
Calcium	ND		1000	190	ug/L		05/31/22 09:45	06/07/22 15:25	1
Magnesium	ND		500	150	ug/L		05/31/22 09:45	06/07/22 15:25	1
Potassium	ND		500	150	ug/L		05/31/22 09:45	06/07/22 15:25	1
Selenium	ND		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lithium	ND		0.0080	0.0025	mg/L		05/31/22 09:45	06/07/22 15:25	1
Sodium	ND		1000	610	ug/L		05/31/22 09:45	06/07/22 15:25	1

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.197		mg/L		99	80 - 120
Calcium	2000	1740		ug/L		87	80 - 120
Magnesium	2000	2020		ug/L		101	80 - 120
Potassium	2000	1980		ug/L		99	80 - 120
Selenium	0.400	0.393		mg/L		98	80 - 120
Lithium	0.200	0.212		mg/L		106	80 - 120
Sodium	2000	2100		ug/L		105	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-574080/4
Matrix: Water
Analysis Batch: 574080

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: 280-161699-1 DU
Matrix: Water
Analysis Batch: 574080

Client Sample ID: MW-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.2	HF		7.2		SU				0.3	5
Temperature	19.4	HF		18.9		Degrees C				2	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-575827/49
Matrix: Water
Analysis Batch: 575827

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/24/22 14:13	1
Sulfate	ND		5.0	1.0	mg/L			05/24/22 14:13	1

Lab Sample ID: MB 280-575827/6
Matrix: Water
Analysis Batch: 575827

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/23/22 10:12	1
Sulfate	ND		5.0	1.0	mg/L			05/23/22 10:12	1

Lab Sample ID: LCS 280-575827/4
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	99.2		mg/L		99	90 - 110		
Sulfate			100	101		mg/L		101	90 - 110		

Lab Sample ID: LCS 280-575827/47
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	101		mg/L		101	90 - 110		
Sulfate			100	101		mg/L		101	90 - 110		

Lab Sample ID: LCSD 280-575827/48
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-575827/48
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: LCSD 280-575827/5
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	98.7		mg/L		99	90 - 110	0	10
Sulfate			100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-575827/3
Matrix: Water
Analysis Batch: 575827

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			5.00	4.59		mg/L		92	50 - 150
Sulfate			5.00	4.36	J	mg/L		87	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-574081/6
Matrix: Water
Analysis Batch: 574081

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			05/05/22 13:20	1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-573530/3
Matrix: Water
Analysis Batch: 573530

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/02/22 08:58	1

Lab Sample ID: LCS 280-573530/1
Matrix: Water
Analysis Batch: 573530

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids			100	88.0		mg/L		88	79 - 114

Lab Sample ID: LCSD 280-573530/2
Matrix: Water
Analysis Batch: 573530

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	99.2		mg/L		99	79 - 114	12	20

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-574043/3
Matrix: Water
Analysis Batch: 574043

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/05/22 16:27	1

Lab Sample ID: LCS 280-574043/1
Matrix: Water
Analysis Batch: 574043

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	75.2	*-	mg/L		75	79 - 114		

Lab Sample ID: LCSD 280-574043/2
Matrix: Water
Analysis Batch: 574043

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	105	*1	mg/L		105	79 - 114	33	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-573550/1
Matrix: Water
Analysis Batch: 573550

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/02/22 11:02	1

Lab Sample ID: LCS 280-573550/2
Matrix: Water
Analysis Batch: 573550

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			505	503		mg/L		100	88 - 114		

Lab Sample ID: LCSD 280-573550/3
Matrix: Water
Analysis Batch: 573550

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			503	530		mg/L		105	88 - 114	5	20

Lab Sample ID: MB 280-573966/1
Matrix: Water
Analysis Batch: 573966

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/05/22 10:48	1

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCS 280-573966/2
Matrix: Water
Analysis Batch: 573966

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	503	519		mg/L		103	88 - 114

QC Association Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Prep Batch: 354185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total Recoverable	Water	3005A	
280-161699-2	MW-30	Total Recoverable	Water	3005A	
280-161699-3	MW-33A	Total Recoverable	Water	3005A	
280-161699-4	MW-33B	Total Recoverable	Water	3005A	
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 354543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Dissolved	Water	Filtration	
280-161699-2	MW-30	Dissolved	Water	Filtration	
280-161699-4	MW-33B	Dissolved	Water	Filtration	
MB 310-354543/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 354691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Dissolved	Water	3005A	354543
280-161699-2	MW-30	Dissolved	Water	3005A	354543
280-161699-4	MW-33B	Dissolved	Water	3005A	354543
MB 310-354543/1-B	Method Blank	Dissolved	Water	3005A	354543
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	3005A	354543

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total Recoverable	Water	6020A	354185
280-161699-2	MW-30	Total Recoverable	Water	6020A	354185
280-161699-3	MW-33A	Total Recoverable	Water	6020A	354185
280-161699-4	MW-33B	Total Recoverable	Water	6020A	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6020A	354185
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 355012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-2	MW-30	Total Recoverable	Water	6020A	354185

Analysis Batch: 355639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Dissolved	Water	6020A	354691
280-161699-2	MW-30	Dissolved	Water	6020A	354691
280-161699-4	MW-33B	Dissolved	Water	6020A	354691
MB 310-354543/1-B	Method Blank	Dissolved	Water	6020A	354691
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	6020A	354691

Analysis Batch: 355653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Dissolved	Water	6020A	354691
280-161699-4	MW-33B	Dissolved	Water	6020A	354691
MB 310-354543/1-B	Method Blank	Dissolved	Water	6020A	354691
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	6020A	354691

QC Association Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 355738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-2	MW-30	Dissolved	Water	6020A	354691

General Chemistry

Analysis Batch: 573530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-2	MW-30	Total/NA	Water	SM 2540D	
MB 280-573530/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573530/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-573530/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 573550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total/NA	Water	SM2540 C	
280-161699-2	MW-30	Total/NA	Water	SM2540 C	
280-161699-4	MW-33B	Total/NA	Water	SM2540 C	
MB 280-573550/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573550/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573550/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 573966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-3	MW-33A	Total/NA	Water	SM2540 C	
MB 280-573966/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573966/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 574043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total/NA	Water	SM 2540D	
280-161699-3	MW-33A	Total/NA	Water	SM 2540D	
280-161699-4	MW-33B	Total/NA	Water	SM 2540D	
MB 280-574043/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-574043/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-574043/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 574080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total/NA	Water	9040B	
280-161699-2	MW-30	Total/NA	Water	9040B	
280-161699-3	MW-33A	Total/NA	Water	9040B	
280-161699-4	MW-33B	Total/NA	Water	9040B	
LCS 280-574080/4	Lab Control Sample	Total/NA	Water	9040B	
280-161699-1 DU	MW-29	Total/NA	Water	9040B	

Analysis Batch: 574081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total/NA	Water	SM 2320B	
280-161699-2	MW-30	Total/NA	Water	SM 2320B	
280-161699-3	MW-33A	Total/NA	Water	SM 2320B	
280-161699-4	MW-33B	Total/NA	Water	SM 2320B	
MB 280-574081/6	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 574081 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-574081/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-574081/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 575827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-1	MW-29	Total/NA	Water	9056A	
280-161699-1	MW-29	Total/NA	Water	9056A	
280-161699-2	MW-30	Total/NA	Water	9056A	
280-161699-2	MW-30	Total/NA	Water	9056A	
280-161699-3	MW-33A	Total/NA	Water	9056A	
280-161699-3	MW-33A	Total/NA	Water	9056A	
280-161699-4	MW-33B	Total/NA	Water	9056A	
MB 280-575827/49	Method Blank	Total/NA	Water	9056A	
MB 280-575827/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575827/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-575827/47	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575827/48	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-575827/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575827/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-29
Lab Sample ID: 280-161699-1
Date Collected: 04/28/22 10:50
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		7			355639	06/07/22 15:51	DHM5	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		7			355653	06/07/22 15:51	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		7			354712	05/28/22 20:52	DHM5	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:26	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575827	05/24/22 17:25	RAF	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575827	05/24/22 17:41	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:02	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	574043	05/05/22 16:27	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN

Client Sample ID: MW-30
Lab Sample ID: 280-161699-2
Date Collected: 04/26/22 13:00
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		7			355738	06/08/22 15:21	A6US	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 15:54	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 21:12	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		7			355012	06/01/22 15:59	DHM5	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:34	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575827	05/24/22 22:13	RAF	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	575827	05/24/22 22:29	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:16	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	573530	05/02/22 08:58	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	1 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN

Client Sample ID: MW-33A
Lab Sample ID: 280-161699-3
Date Collected: 04/28/22 13:35
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 21:16	DHM5	TAL CF

Lab Chronicle

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33A
Lab Sample ID: 280-161699-3
Date Collected: 04/28/22 13:35
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9040B		1			574080	05/05/22 14:38	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575827	05/24/22 17:57	RAF	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575827	05/24/22 18:13	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:24	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	574043	05/05/22 16:27	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	573966	05/05/22 10:49	ABW	TAL DEN

Client Sample ID: MW-33B
Lab Sample ID: 280-161699-4
Date Collected: 04/28/22 14:30
Matrix: Water
Date Received: 04/29/22 16:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		4			355639	06/07/22 16:11	DHM5	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		4			355653	06/07/22 16:11	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 21:20	DHM5	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:41	KEG	TAL DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	575827	05/24/22 13:09	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:32	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	130 mL	250 mL	574043	05/05/22 16:27	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN

Laboratory References:
TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161699-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

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280-161699 Chain of Custody

Client Information

Client Contact: Molly Reeves
Company: HDR Inc
Address: 1670 Broadway Suite 3400
City: Denver
State, Zip: CO, 80202
Phone: 734-263-7138(Tel)
Email: Molly.Reeves@hdrinc.com
Project Name: Xcel Energy GW CCR Monitoring - Valmon
Site: Colorado Quarterly- Release Characterization

Sampler: T. Snyder
Phone: 720-838-6065
PWSID:
Due Date Requested:
TAT Requested (days): ASAP
Compliance Project: Δ Yes Δ No
PO #: 10227700-400
WO #:
Project #: 28014379
SSOW#:

Lab PM: Harrington, Danielle M
E-Mail: Danielle.Harrington@Eurofinset.com
Carrier Tracking No(s):
State of Origin:
COC No: 280-113124-32494.1
Page: Page 1 of 1
Job #:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Cedar Falls	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	6020A- 6 metals ETA Cedar Falls	App III and App IV 6020A/6010C/7470A metals- Cedard Falls	9315 Rad 226 and 9320 Rad 228 - ETA St Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	N	N	N	N	D	D	D			
MW-29	4/28/22	1050	G	Water			X	X	X	X	X				X	4	
MW-30	4/26/22	1300	G	Water			X	X	X	X	X				X	4	
MW-33A	4/28/22	1335	G	Water			X	X	X	X	X				X[15]	3	
MW-33B	4/28/22	1430	G	Water			X	X	X	X	X				X	4	Only 625mL for TSS/TDS
MW-34	4/26/22	1430	G	Water			X[15]	X	X	X	X	X	X	X[15]	X	5	
MW-35	4/26/22	1015	G	Water				X	X	X	X	X	X	X[15]	X	5	
MW-36	4/29/22	1130	G	Water				X	X	X	X	X	X	X[15]	X	5	
				Water													

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 4/29/22 1655	Company HDR	Received by:	Date/Time: 4/29/22 1655	Company STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.1, 4.4, 5.5, 5.8, 5.8 IR12 CF+0.1

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612765.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161699-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/31/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-34 (280-161699-5)	4/26/22	14:30 Mountain		Water			X	X	X	2	
MW-35 (280-161699-6)	4/26/22	10:15 Mountain		Water			X	X	X	2	
MW-36 (280-161699-7)	4/29/22	11:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/3/22 1320	ETADEN	FED EX		
2	FED EX			[signature]	MAY 04 2022 0900	ETADEN
3						

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

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612764 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle Harrington@et.eurofinsus com	State of Origin: Colorado	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-161699-1
Address: 3019 Venture Way, ,	Due Date Requested: 5/31/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	6010C/3005A (MOD) Boron	7470A/7470A_Prep Mercury	7470A/Filtration_ME Mercury	6010C/Filtration_ME (MOD) Boron	Total Number of containers	Special Instructions/Note:
			Preservation Code.											
MW-29 (280-161699-1)	4/28/22	10.50 Mountain		Water			X	X					2	
MW-30 (280-161699-2)	4/26/22	13 00 Mountain		Water			X	X					2	
MW-33A (280-161699-3)	4/28/22	13.35 Mountain		Water			X						1	
MW-33B (280-161699-4)	4/26/22	14 30 Mountain		Water			X	X					2	
MW-34 (280-161699-5)	4/26/22	14.30 Mountain		Water			X	X	X	X	X	X	2	
MW-35 (280-161699-6)	4/26/22	10 15 Mountain		Water			X	X	X	X	X	X	2	
MW-36 (280-161699-7)	4/29/22	11.30 Mountain		Water			X	X	X	X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 4	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/3/22 1550	ETDEN	[signature]	5-4-22 0925	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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6/9/2022

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: TA. Denver

City/State: CITY Arvada STATE Co Project: Xcel energy

Receipt Information

Date/Time Received: DATE 5/22 TIME 0925 Received By: TO

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

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: W Correction Factor (°C): 0.0

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

Uncorrected Temp (°C): 2.6 Corrected Temp (°C): 2.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161699-1

Login Number: 161699
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161699-1

Login Number: 161699
List Number: 2
Creator: Hummel, Matthew R

List Source: Eurofins Cedar Falls
List Creation: 05/04/22 01:06 PM

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161699-2
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/9/2022 4:16:41 PM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

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

Glossary

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

Job ID: 280-161699-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-161699-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/29/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 0.2°C, 4.5°C, 5.6°C, 5.9°C and 5.9°C.

Per client request the samples were split up into two separate reports. MW-34, MW-35, and MW-36 are reported in this report and all other samples are under 280-161699-1.

Receipt Exceptions

The COC says there are only supposed to be 5 sample containers, but we received 6. MW-34 (280-161699-5), MW-35 (280-161699-6) and MW-36 (280-161699-7)

DISSOLVED METALS- Method 6010C/6020A

Sample MW-35 (280-161699-6) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL RECOVERABLE METALS- Method 6010C/6020A

Due to sample matrix effect on the internal standard (ISTD), samples MW-35 (280-161699-6) and MW-36 (280-161699-7) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

DISSOLVED MERCURY

Due to laboratory error, the following sample(s) was prepared outside of preparation holding time. : MW-34 (280-161699-5), MW-35 (280-161699-6) and MW-36 (280-161699-7).

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

Job ID: 280-161699-2 (Continued)

Laboratory: Eurofins Denver (Continued)

TOTAL MERCURY
Due to laboratory error, the following sample(s) was prepared outside of preparation holding time: MW-35 (280-161699-6) and MW-36 (280-161699-7).

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

GENERAL CHEMISTRY - VARIOUS
All of the samples required dilution prior to analysis for Method 9056A. The reporting limits have been adjusted accordingly.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Sulfate method 9056A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 280-574302 was outside control limits. Sample matrix interference is suspected.

Method SM 2540C: Reanalysis of the following sample(s) was performed outside of the analytical holding time due to failure of historical data review parameters in the initial analysis. MW-34 (280-161699-5)

Method SM 2540D: Reanalysis of the following sample(s) was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. MW-36 (280-161699-7)

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

RADIUM-226 (GFPC)- Method 9315
Method 9315_Ra226: Radium-226 Prep Batch 160-564074The following samples were prepared at a reduced aliquot due to Matrix: MW-34 (280-161699-5) and MW-35 (280-161699-6).

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

RADIUM-228- Method 9320
Method 9320_Ra228: Radium-228 Prep Batch 160-564074The following samples were prepared at a reduced aliquot due to Matrix: MW-34 (280-161699-5) and MW-35 (280-161699-6).

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

RADIUM-226/RADIUM-228 (GFPC)
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-34
Lab Sample ID: 280-161699-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.0		0.20	0.056	mg/L	1		6010C	Total Recoverable
Boron	1.9		0.20	0.056	mg/L	1		6010C	Dissolved
Antimony	0.0024		0.0020	0.00069	mg/L	1		6020A	Total Recoverable
Arsenic	0.0013	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.042		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	27		0.50	0.19	mg/L	1		6020A	Total Recoverable
Chromium	0.0013	J	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Cobalt	0.00081		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.00072		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.045		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Molybdenum	0.017		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Selenium	0.0083		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Antimony	0.0023		0.0020	0.00069	mg/L	1		6020A	Dissolved
Arsenic	0.0012	J	0.0020	0.00075	mg/L	1		6020A	Dissolved
Barium	0.038		0.0020	0.00088	mg/L	1		6020A	Dissolved
Calcium	25		0.50	0.19	mg/L	1		6020A	Dissolved
Cobalt	0.00033	J	0.00050	0.00019	mg/L	1		6020A	Dissolved
Lithium	0.040		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.019		0.0020	0.0012	mg/L	1		6020A	Dissolved
Selenium	0.0083		0.0050	0.00096	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	1.1	J	3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.57		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	320		25	5.2	mg/L	5		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	250		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	40		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	720	H	10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-35
Lab Sample ID: 280-161699-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.90		0.40	0.11	mg/L	2		6010C	Total Recoverable
Boron	0.89		0.40	0.11	mg/L	2		6010C	Dissolved
Barium	0.014		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	530		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.17		0.040	0.010	mg/L	4		6020A	Total Recoverable
Selenium	1.7		0.020	0.0038	mg/L	4		6020A	Total Recoverable
Barium	0.014		0.0080	0.0035	mg/L	4		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-35 (Continued)
Lab Sample ID: 280-161699-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	490		2.0	0.76	mg/L	4		6020A	Dissolved
Lithium	0.15		0.040	0.010	mg/L	4		6020A	Dissolved
Selenium	1.5		0.020	0.0038	mg/L	4		6020A	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	680		30	10	mg/L	10		9056A	Total/NA
Fluoride	0.50		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	180		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	9.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5900		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-36
Lab Sample ID: 280-161699-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.35		0.20	0.056	mg/L	1		6010C	Total Recoverable
Boron	0.35		0.20	0.056	mg/L	1		6010C	Dissolved
Barium	0.017		0.0080	0.0035	mg/L	4		6020A	Total Recoverable
Calcium	250		2.0	0.76	mg/L	4		6020A	Total Recoverable
Lithium	0.091		0.040	0.010	mg/L	4		6020A	Total Recoverable
Barium	0.018		0.0020	0.00088	mg/L	1		6020A	Dissolved
Calcium	250		0.50	0.19	mg/L	1		6020A	Dissolved
Cobalt	0.00020	J	0.00050	0.00019	mg/L	1		6020A	Dissolved
Lithium	0.087		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.0031		0.0020	0.0012	mg/L	1		6020A	Dissolved
Selenium	0.0013	J	0.0050	0.00096	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	18.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	33		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.69		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1300		50	10	mg/L	10		9056A	Total/NA
Bicarbonate Alkalinity as CaCO3	270		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	16	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2000		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161699-5	MW-34	Water	04/26/22 14:30	04/29/22 16:55
280-161699-6	MW-35	Water	04/26/22 10:15	04/29/22 16:55
280-161699-7	MW-36	Water	04/29/22 11:30	04/29/22 16:55

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.0		0.20	0.056	mg/L		05/25/22 09:15	06/01/22 11:09	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.90		0.40	0.11	mg/L		05/25/22 09:15	06/08/22 16:40	2

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.35		0.20	0.056	mg/L		05/25/22 09:15	06/01/22 11:17	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.20	0.056	mg/L			06/01/22 11:53	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.89		0.40	0.11	mg/L			06/01/22 12:46	2

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.35		0.20	0.056	mg/L			06/01/22 11:57	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0024		0.0020	0.00069	mg/L		05/25/22 09:15	05/28/22 21:23	1
Arsenic	0.0013	J	0.0020	0.00075	mg/L		05/25/22 09:15	05/28/22 21:23	1
Barium	0.042		0.0020	0.00088	mg/L		05/25/22 09:15	05/28/22 21:23	1
Beryllium	ND		0.0010	0.00027	mg/L		05/25/22 09:15	05/28/22 21:23	1
Cadmium	ND		0.00010	0.000055	mg/L		05/25/22 09:15	05/28/22 21:23	1
Calcium	27		0.50	0.19	mg/L		05/25/22 09:15	05/28/22 21:23	1
Chromium	0.0013	J	0.0050	0.0011	mg/L		05/25/22 09:15	05/28/22 21:23	1
Cobalt	0.00081		0.00050	0.00019	mg/L		05/25/22 09:15	05/28/22 21:23	1
Lead	0.00072		0.00050	0.00024	mg/L		05/25/22 09:15	05/28/22 21:23	1
Lithium	0.045		0.010	0.0025	mg/L		05/25/22 09:15	05/28/22 21:23	1
Molybdenum	0.017		0.0020	0.0012	mg/L		05/25/22 09:15	05/28/22 21:23	1

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

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	**0.0083**		0.0050	0.00096	mg/L		05/25/22 09:15	05/28/22 21:23	1
Thallium	ND		0.0010	0.00026	mg/L		05/25/22 09:15	05/28/22 21:23	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/25/22 09:15	05/28/22 21:27	4
Arsenic	ND		0.0080	0.0030	mg/L		05/25/22 09:15	05/28/22 21:27	4
Barium	**0.014**		0.0080	0.0035	mg/L		05/25/22 09:15	05/28/22 21:27	4
Beryllium	ND		0.0040	0.0011	mg/L		05/25/22 09:15	05/28/22 21:27	4
Cadmium	ND		0.00040	0.00022	mg/L		05/25/22 09:15	05/28/22 21:27	4
Calcium	**530**		2.0	0.76	mg/L		05/25/22 09:15	05/28/22 21:27	4
Chromium	ND		0.020	0.0044	mg/L		05/25/22 09:15	05/28/22 21:27	4
Cobalt	ND		0.0020	0.00076	mg/L		05/25/22 09:15	05/28/22 21:27	4
Lead	ND		0.0020	0.00096	mg/L		05/25/22 09:15	05/28/22 21:27	4
Lithium	**0.17**		0.040	0.010	mg/L		05/25/22 09:15	05/28/22 21:27	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/25/22 09:15	05/28/22 21:27	4
Selenium	**1.7**		0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 21:27	4
Thallium	ND		0.0040	0.0010	mg/L		05/25/22 09:15	05/28/22 21:27	4

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/25/22 09:15	05/28/22 21:31	4
Arsenic	ND		0.0080	0.0030	mg/L		05/25/22 09:15	05/28/22 21:31	4
Barium	**0.017**		0.0080	0.0035	mg/L		05/25/22 09:15	05/28/22 21:31	4
Beryllium	ND		0.0040	0.0011	mg/L		05/25/22 09:15	05/28/22 21:31	4
Cadmium	ND		0.00040	0.00022	mg/L		05/25/22 09:15	05/28/22 21:31	4
Calcium	**250**		2.0	0.76	mg/L		05/25/22 09:15	05/28/22 21:31	4
Chromium	ND		0.020	0.0044	mg/L		05/25/22 09:15	05/28/22 21:31	4
Cobalt	ND		0.0020	0.00076	mg/L		05/25/22 09:15	05/28/22 21:31	4
Lead	ND		0.0020	0.00096	mg/L		05/25/22 09:15	05/28/22 21:31	4
Lithium	**0.091**		0.040	0.010	mg/L		05/25/22 09:15	05/28/22 21:31	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/25/22 09:15	05/28/22 21:31	4
Selenium	ND		0.020	0.0038	mg/L		05/25/22 09:15	05/28/22 21:31	4
Thallium	ND		0.0040	0.0010	mg/L		05/25/22 09:15	05/28/22 21:31	4

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

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0023**		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 16:27	1
Arsenic	**0.0012**	**J**	0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 16:27	1
Barium	**0.038**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 16:27	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 16:27	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 16:27	1

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

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**25**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 16:27	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 16:27	1
Cobalt	**0.00033**	**J**	0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 16:27	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 16:27	1
Lithium	**0.040**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 16:27	1
Molybdenum	**0.019**		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 16:27	1
Selenium	**0.0083**		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 16:27	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 16:27	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0080	0.0028	mg/L		05/31/22 09:45	06/07/22 16:30	4
Arsenic	ND		0.0080	0.0030	mg/L		05/31/22 09:45	06/07/22 16:30	4
Barium	**0.014**		0.0080	0.0035	mg/L		05/31/22 09:45	06/07/22 16:30	4
Beryllium	ND		0.0040	0.0011	mg/L		05/31/22 09:45	06/07/22 16:30	4
Cadmium	ND		0.00040	0.00022	mg/L		05/31/22 09:45	06/07/22 16:30	4
Calcium	**490**		2.0	0.76	mg/L		05/31/22 09:45	06/07/22 16:30	4
Chromium	ND		0.020	0.0044	mg/L		05/31/22 09:45	06/07/22 16:30	4
Cobalt	ND		0.0020	0.00076	mg/L		05/31/22 09:45	06/07/22 16:30	4
Lead	ND		0.0020	0.00096	mg/L		05/31/22 09:45	06/07/22 16:30	4
Lithium	**0.15**		0.040	0.010	mg/L		05/31/22 09:45	06/07/22 16:30	4
Molybdenum	ND		0.0080	0.0048	mg/L		05/31/22 09:45	06/07/22 16:30	4
Selenium	**1.5**		0.020	0.0038	mg/L		05/31/22 09:45	06/07/22 16:30	4
Thallium	ND		0.0040	0.0010	mg/L		05/31/22 09:45	06/07/22 16:30	4

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 16:34	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 16:34	1
Barium	**0.018**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 16:34	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 16:34	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 16:34	1
Calcium	**250**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 16:34	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 16:34	1
Cobalt	**0.00020**	**J**	0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 16:34	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 16:34	1
Lithium	**0.087**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 16:34	1
Molybdenum	**0.0031**		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 16:34	1
Selenium	**0.0013**	**J**	0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 16:34	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 16:34	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:54	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:56	1

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:52	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:54	1

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:56	1

General Chemistry

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			05/05/22 14:45	1
Temperature	19.0	HF	1.0	1.0	Degrees C			05/05/22 14:45	1
Chloride	1.1	J	3.0	1.0	mg/L			05/21/22 04:36	1
Fluoride	0.57		0.50	0.17	mg/L			05/21/22 04:36	1
Sulfate	320		25	5.2	mg/L			05/21/22 04:52	5
Bicarbonate Alkalinity as CaCO3	250		10	3.1	mg/L			05/05/22 15:39	1
Total Suspended Solids	40		4.0	1.1	mg/L			05/02/22 08:58	1
Total Dissolved Solids (TDS)	720	H	10	4.7	mg/L			05/05/22 10:49	1

General Chemistry

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/05/22 14:49	1
Temperature	19.1	HF	1.0	1.0	Degrees C			05/05/22 14:49	1
Chloride	680		30	10	mg/L			05/21/22 06:44	10
Fluoride	0.50		0.50	0.17	mg/L			05/21/22 06:28	1
Sulfate	3200		100	21	mg/L			05/21/22 07:00	20
Bicarbonate Alkalinity as CaCO3	180		10	3.1	mg/L			05/05/22 15:45	1
Total Suspended Solids	9.2		4.0	1.1	mg/L			05/02/22 08:58	1
Total Dissolved Solids (TDS)	5900		40	19	mg/L			05/02/22 11:03	1

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			05/05/22 14:53	1
Temperature	18.8	HF	1.0	1.0	Degrees C			05/05/22 14:53	1
Chloride	33		3.0	1.0	mg/L			05/23/22 12:51	1
Fluoride	0.69		0.50	0.17	mg/L			05/23/22 12:51	1
Sulfate	1300		50	10	mg/L			05/23/22 13:07	10
Bicarbonate Alkalinity as CaCO3	270		10	3.1	mg/L			05/05/22 16:16	1
Total Suspended Solids	16	H	4.0	1.1	mg/L			05/09/22 13:59	1
Total Dissolved Solids (TDS)	2000		20	9.4	mg/L			05/02/22 11:03	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.223	U	0.242	0.243	1.00	0.390	pCi/L	05/06/22 09:17	06/01/22 11:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.5*		*40 - 110*	*05/06/22 09:17*	*06/01/22 11:00*	*1*

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.371		0.218	0.220	1.00	0.270	pCi/L	05/06/22 09:17	06/01/22 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*05/06/22 09:17*	*06/01/22 11:01*	*1*

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.155	U	0.145	0.146	1.00	0.220	pCi/L	05/06/22 09:17	06/01/22 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*05/06/22 09:17*	*06/01/22 11:01*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0624	U	0.313	0.313	1.00	0.613	pCi/L	05/06/22 09:58	05/31/22 12:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:24*	*1*
Y Carrier	*89.7*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:24*	*1*

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.554	U	0.392	0.395	1.00	0.587	pCi/L	05/06/22 09:58	05/31/22 12:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:24*	*1*
Y Carrier	*84.5*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:24*	*1*

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.592**		0.346	0.351	1.00	0.502	pCi/L	05/06/22 09:58	05/31/22 12:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:25*	*1*
Y Carrier	*90.8*		*40 - 110*	*05/06/22 09:58*	*05/31/22 12:25*	*1*

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.161	U	0.396	0.396	5.00	0.613	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.925**		0.449	0.452	5.00	0.587	pCi/L		06/02/22 15:39	1

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55
Lab Sample ID: 280-161699-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.747**		0.375	0.380	5.00	0.502	pCi/L		06/02/22 15:39	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-354185/1-A
Matrix: Water
Analysis Batch: 354898

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/25/22 09:15	06/01/22 10:51	1

Lab Sample ID: LCS 310-354185/2-A
Matrix: Water
Analysis Batch: 354898

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.84		mg/L		92	80 - 120

Lab Sample ID: MB 310-354545/1-A
Matrix: Water
Analysis Batch: 354906

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L			06/01/22 11:33	1

Lab Sample ID: LCS 310-354545/2-A
Matrix: Water
Analysis Batch: 354906

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.63		mg/L		81	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354185/1-A
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/25/22 09:15	05/28/22 20:26	1
Arsenic	ND		0.0020	0.00075	mg/L		05/25/22 09:15	05/28/22 20:26	1
Barium	ND		0.0020	0.00088	mg/L		05/25/22 09:15	05/28/22 20:26	1
Beryllium	ND		0.0010	0.00027	mg/L		05/25/22 09:15	05/28/22 20:26	1
Cadmium	ND		0.00010	0.000055	mg/L		05/25/22 09:15	05/28/22 20:26	1
Calcium	ND		0.50	0.19	mg/L		05/25/22 09:15	05/28/22 20:26	1
Chromium	ND		0.0050	0.0011	mg/L		05/25/22 09:15	05/28/22 20:26	1
Cobalt	ND		0.00050	0.00019	mg/L		05/25/22 09:15	05/28/22 20:26	1
Lead	ND		0.00050	0.00024	mg/L		05/25/22 09:15	05/28/22 20:26	1
Lithium	ND		0.010	0.0025	mg/L		05/25/22 09:15	05/28/22 20:26	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/25/22 09:15	05/28/22 20:26	1
Selenium	ND		0.0050	0.00096	mg/L		05/25/22 09:15	05/28/22 20:26	1
Thallium	ND		0.0010	0.00026	mg/L		05/25/22 09:15	05/28/22 20:26	1

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.17		mg/L		108	80 - 120

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

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	1.00	1.13		mg/L		113	80 - 120
Beryllium	1.00	1.14		mg/L		114	80 - 120
Cadmium	1.00	1.09		mg/L		109	80 - 120
Calcium	20.0	21.3		mg/L		106	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Cobalt	1.00	1.06		mg/L		106	80 - 120
Lead	2.00	2.24		mg/L		112	80 - 120
Lithium	2.00	2.32		mg/L		116	80 - 120
Molybdenum	2.00	2.35		mg/L		118	80 - 120
Selenium	4.00	4.27		mg/L		107	80 - 120
Thallium	2.00	2.35		mg/L		117	80 - 120

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354860

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	2.00	1.93		mg/L		96	80 - 120
Cadmium	1.00	0.950		mg/L		95	80 - 120
Chromium	1.00	0.952		mg/L		95	80 - 120

Lab Sample ID: MB 310-354543/1-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:25	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:25	1
Barium	ND		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:25	1
Calcium	ND		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:25	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cobalt	ND		0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lithium	ND		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:25	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:25	1
Selenium	ND		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:25	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:25	1

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.212		mg/L		106	80 - 120
Arsenic	0.200	0.197		mg/L		99	80 - 120
Barium	0.100	0.106		mg/L		106	80 - 120
Beryllium	0.100	0.105		mg/L		105	80 - 120

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

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.100	0.101		mg/L		101	80 - 120
Calcium	2.00	1.74		mg/L		87	80 - 120
Chromium	0.100	0.103		mg/L		103	80 - 120
Cobalt	0.100	0.101		mg/L		101	80 - 120
Lead	0.200	0.212		mg/L		106	80 - 120
Lithium	0.200	0.212		mg/L		106	80 - 120
Molybdenum	0.200	0.206		mg/L		103	80 - 120
Selenium	0.400	0.393		mg/L		98	80 - 120
Thallium	0.200	0.212		mg/L		106	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-354467/1-A
Matrix: Water
Analysis Batch: 354618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/26/22 13:46	05/27/22 12:30	1

Lab Sample ID: LCS 310-354467/2-A
Matrix: Water
Analysis Batch: 354618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00161		mg/L		96	80 - 120

Lab Sample ID: MB 310-354546/1-B
Matrix: Water
Analysis Batch: 355097

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		06/01/22 09:52	06/02/22 13:31	1

Lab Sample ID: LCS 310-354546/2-B
Matrix: Water
Analysis Batch: 355097

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00164		mg/L		98	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-574080/4
Matrix: Water
Analysis Batch: 574080

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-575689/6
Matrix: Water
Analysis Batch: 575689

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/20/22 17:24	1
Fluoride	ND		0.50	0.17	mg/L			05/20/22 17:24	1
Sulfate	ND		5.0	1.0	mg/L			05/20/22 17:24	1

Lab Sample ID: MB 280-575689/63
Matrix: Water
Analysis Batch: 575689

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/21/22 05:40	1
Fluoride	ND		0.50	0.17	mg/L			05/21/22 05:40	1
Sulfate	ND		5.0	1.0	mg/L			05/21/22 05:40	1

Lab Sample ID: LCS 280-575689/4
Matrix: Water
Analysis Batch: 575689

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	4.78		mg/L		96	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCS 280-575689/61
Matrix: Water
Analysis Batch: 575689

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	98.9		mg/L		99	90 - 110
Fluoride	5.00	4.51		mg/L		90	90 - 110
Sulfate	100	99.0		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-575689/5
Matrix: Water
Analysis Batch: 575689

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10
Fluoride	5.00	4.85		mg/L		97	90 - 110	1	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: LCSD 280-575689/62
Matrix: Water
Analysis Batch: 575689

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	98.8		mg/L		99	90 - 110	0	10
Fluoride	5.00	4.67		mg/L		93	90 - 110	3	10
Sulfate	100	99.0		mg/L		99	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-575689/3
Matrix: Water
Analysis Batch: 575689

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.73		mg/L		95	50 - 150
Fluoride	0.500	0.427	J	mg/L		85	50 - 150
Sulfate	5.00	4.52	J	mg/L		90	50 - 150

Lab Sample ID: MB 280-575827/6
Matrix: Water
Analysis Batch: 575827

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/23/22 10:12	1
Fluoride	ND		0.50	0.17	mg/L			05/23/22 10:12	1
Sulfate	ND		5.0	1.0	mg/L			05/23/22 10:12	1

Lab Sample ID: LCS 280-575827/4
Matrix: Water
Analysis Batch: 575827

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.2		mg/L		99	90 - 110
Fluoride	5.00	4.86		mg/L		97	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-575827/5
Matrix: Water
Analysis Batch: 575827

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	98.7		mg/L		99	90 - 110	0	10
Fluoride	5.00	4.86		mg/L		97	90 - 110	0	10
Sulfate	100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-575827/3
Matrix: Water
Analysis Batch: 575827

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.59		mg/L		92	50 - 150
Fluoride	0.500	0.405	J	mg/L		81	50 - 150
Sulfate	5.00	4.36	J	mg/L		87	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-574081/32
Matrix: Water
Analysis Batch: 574081

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			05/05/22 16:09	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-574081/6
Matrix: Water
Analysis Batch: 574081

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			05/05/22 13:20	1

Lab Sample ID: 280-161699-7 DU
Matrix: Water
Analysis Batch: 574081

Client Sample ID: MW-36
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bicarbonate Alkalinity as CaCO3	270		276		mg/L		1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-573530/3
Matrix: Water
Analysis Batch: 573530

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/02/22 08:58	1

Lab Sample ID: LCS 280-573530/1
Matrix: Water
Analysis Batch: 573530

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	88.0		mg/L		88	79 - 114

Lab Sample ID: LCSD 280-573530/2
Matrix: Water
Analysis Batch: 573530

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	99.2		mg/L		99	79 - 114	12	20

Lab Sample ID: MB 280-574302/3
Matrix: Water
Analysis Batch: 574302

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/09/22 13:58	1

Lab Sample ID: LCS 280-574302/1
Matrix: Water
Analysis Batch: 574302

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	87.6		mg/L		88	79 - 114

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 280-574302/2
Matrix: Water
Analysis Batch: 574302

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	79 - 114	9	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-573550/1
Matrix: Water
Analysis Batch: 573550

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/02/22 11:02	1

Lab Sample ID: LCS 280-573550/2
Matrix: Water
Analysis Batch: 573550

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			505	503		mg/L		100	88 - 114		

Lab Sample ID: LCSD 280-573550/3
Matrix: Water
Analysis Batch: 573550

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			503	530		mg/L		105	88 - 114	5	20

Lab Sample ID: 280-161699-7 DU
Matrix: Water
Analysis Batch: 573550

Client Sample ID: MW-36
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	2000			2000		mg/L				0.7	10

Lab Sample ID: MB 280-573966/1
Matrix: Water
Analysis Batch: 573966

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/05/22 10:48	1

Lab Sample ID: LCS 280-573966/2
Matrix: Water
Analysis Batch: 573966

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			503	519		mg/L		103	88 - 114		

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: 280-161699-5 DU
Matrix: Water
Analysis Batch: 573966

Client Sample ID: MW-34
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	720	H		736		mg/L				2	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-564071/23-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564071

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04129	U	0.134	0.134	1.00	0.254	pCi/L	05/06/22 09:17	06/01/22 11:01	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*05/06/22 09:17*	*06/01/22 11:01*	*1*

Lab Sample ID: LCS 160-564071/1-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564071

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.596		1.18	1.00	0.215	pCi/L	85	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*

Lab Sample ID: LCSD 160-564071/2-A
Matrix: Water
Analysis Batch: 567929

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564071

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.02		1.24	1.00	0.258	pCi/L	88	75 - 125	0.18	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-564074/23-A
Matrix: Water
Analysis Batch: 567671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564074

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01395	U	0.258	0.258	1.00	0.480	pCi/L	05/06/22 09:58	05/31/22 12:25	1

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

Lab Sample ID: MB 160-564074/23-A
Matrix: Water
Analysis Batch: 567671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564074

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		40 - 110	05/06/22 09:58	05/31/22 12:25	1
Y Carrier	89.3		40 - 110	05/06/22 09:58	05/31/22 12:25	1

Lab Sample ID: LCS 160-564074/1-A
Matrix: Water
Analysis Batch: 567672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564074

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.57	9.599		1.25	1.00	0.445	pCi/L	112	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.0		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: LCSD 160-564074/2-A
Matrix: Water
Analysis Batch: 567672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564074

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.57	9.223		1.23	1.00	0.432	pCi/L	108	75 - 125	0.15	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	90.5		40 - 110
Y Carrier	87.9		40 - 110

Metals

Prep Batch: 354185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total Recoverable	Water	3005A	
280-161699-6	MW-35	Total Recoverable	Water	3005A	
280-161699-7	MW-36	Total Recoverable	Water	3005A	
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-354185/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 354467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	7470A	
280-161699-6	MW-35	Total/NA	Water	7470A	
280-161699-7	MW-36	Total/NA	Water	7470A	
MB 310-354467/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-354467/2-A	Lab Control Sample	Total/NA	Water	7470A	

Filtration Batch: 354543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	Filtration	
280-161699-6	MW-35	Dissolved	Water	Filtration	
280-161699-7	MW-36	Dissolved	Water	Filtration	
MB 310-354543/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Filtration Batch: 354545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	Filtration	
280-161699-6	MW-35	Dissolved	Water	Filtration	
280-161699-7	MW-36	Dissolved	Water	Filtration	
MB 310-354545/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	Filtration	

Filtration Batch: 354546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	Filtration	
280-161699-6	MW-35	Dissolved	Water	Filtration	
280-161699-7	MW-36	Dissolved	Water	Filtration	
MB 310-354546/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Analysis Batch: 354618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	7470A	354467
280-161699-6	MW-35	Total/NA	Water	7470A	354467
280-161699-7	MW-36	Total/NA	Water	7470A	354467
MB 310-354467/1-A	Method Blank	Total/NA	Water	7470A	354467
LCS 310-354467/2-A	Lab Control Sample	Total/NA	Water	7470A	354467

Prep Batch: 354691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	3005A	354543
280-161699-6	MW-35	Dissolved	Water	3005A	354543

Metals (Continued)

Prep Batch: 354691 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-7	MW-36	Dissolved	Water	3005A	354543
MB 310-354543/1-B	Method Blank	Dissolved	Water	3005A	354543
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	3005A	354543

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total Recoverable	Water	6020A	354185
280-161699-6	MW-35	Total Recoverable	Water	6020A	354185
280-161699-7	MW-36	Total Recoverable	Water	6020A	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6020A	354185
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 354742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total Recoverable	Water	6020A	354185
280-161699-6	MW-35	Total Recoverable	Water	6020A	354185
280-161699-7	MW-36	Total Recoverable	Water	6020A	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6020A	354185
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 354860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Prep Batch: 354862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	7470A	354546
280-161699-6	MW-35	Dissolved	Water	7470A	354546
280-161699-7	MW-36	Dissolved	Water	7470A	354546
MB 310-354546/1-B	Method Blank	Dissolved	Water	7470A	354546
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	7470A	354546

Analysis Batch: 354898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total Recoverable	Water	6010C	354185
280-161699-7	MW-36	Total Recoverable	Water	6010C	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6010C	354185
LCS 310-354185/2-A	Lab Control Sample	Total Recoverable	Water	6010C	354185

Analysis Batch: 354906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	6010C	354545
280-161699-6	MW-35	Dissolved	Water	6010C	354545
280-161699-7	MW-36	Dissolved	Water	6010C	354545
MB 310-354545/1-A	Method Blank	Dissolved	Water	6010C	354545
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	6010C	354545

Analysis Batch: 355097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	7470A	354862
280-161699-6	MW-35	Dissolved	Water	7470A	354862

Metals (Continued)

Analysis Batch: 355097 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-7	MW-36	Dissolved	Water	7470A	354862
MB 310-354546/1-B	Method Blank	Dissolved	Water	7470A	354862
LCS 310-354546/2-B	Lab Control Sample	Dissolved	Water	7470A	354862

Analysis Batch: 355639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Dissolved	Water	6020A	354691
280-161699-6	MW-35	Dissolved	Water	6020A	354691
280-161699-7	MW-36	Dissolved	Water	6020A	354691
MB 310-354543/1-B	Method Blank	Dissolved	Water	6020A	354691
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	6020A	354691

Analysis Batch: 355750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-6	MW-35	Total Recoverable	Water	6010C	354185

General Chemistry

Analysis Batch: 573530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	SM 2540D	
280-161699-6	MW-35	Total/NA	Water	SM 2540D	
MB 280-573530/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-573530/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-573530/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 573550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-6	MW-35	Total/NA	Water	SM2540 C	
280-161699-7	MW-36	Total/NA	Water	SM2540 C	
MB 280-573550/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573550/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-573550/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	
280-161699-7 DU	MW-36	Total/NA	Water	SM2540 C	

Analysis Batch: 573966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	SM2540 C	
MB 280-573966/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-573966/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-161699-5 DU	MW-34	Total/NA	Water	SM2540 C	

Analysis Batch: 574080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	9040B	
280-161699-6	MW-35	Total/NA	Water	9040B	
280-161699-7	MW-36	Total/NA	Water	9040B	
LCS 280-574080/4	Lab Control Sample	Total/NA	Water	9040B	

QC Association Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 574081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	SM 2320B	
280-161699-6	MW-35	Total/NA	Water	SM 2320B	
280-161699-7	MW-36	Total/NA	Water	SM 2320B	
MB 280-574081/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-574081/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-574081/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-574081/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-574081/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-161699-7 DU	MW-36	Total/NA	Water	SM 2320B	

Analysis Batch: 574302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-7	MW-36	Total/NA	Water	SM 2540D	
MB 280-574302/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-574302/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-574302/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 575689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	9056A	
280-161699-5	MW-34	Total/NA	Water	9056A	
280-161699-6	MW-35	Total/NA	Water	9056A	
280-161699-6	MW-35	Total/NA	Water	9056A	
280-161699-6	MW-35	Total/NA	Water	9056A	
MB 280-575689/6	Method Blank	Total/NA	Water	9056A	
MB 280-575689/63	Method Blank	Total/NA	Water	9056A	
LCS 280-575689/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-575689/61	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575689/5	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-575689/62	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575689/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 575827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-7	MW-36	Total/NA	Water	9056A	
280-161699-7	MW-36	Total/NA	Water	9056A	
MB 280-575827/6	Method Blank	Total/NA	Water	9056A	
LCS 280-575827/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-575827/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-575827/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 564071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	PrecSep-21	
280-161699-6	MW-35	Total/NA	Water	PrecSep-21	
280-161699-7	MW-36	Total/NA	Water	PrecSep-21	
MB 160-564071/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564071/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-564071/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

QC Association Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 564074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161699-5	MW-34	Total/NA	Water	PrecSep_0	
280-161699-6	MW-35	Total/NA	Water	PrecSep_0	
280-161699-7	MW-36	Total/NA	Water	PrecSep_0	
MB 160-564074/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564074/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-564074/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-34
Date Collected: 04/26/22 14:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		1			354906	06/01/22 11:53	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			354898	06/01/22 11:09	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 16:27	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 21:23	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354742	05/28/22 21:23	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:52	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:54	XXW3	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:45	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 04:36	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	575689	05/21/22 04:52	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:39	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	573530	05/02/22 08:58	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	573966	05/05/22 10:49	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			748.26 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 11:00	FLC	TAL SL
Total/NA	Prep	PrecSep_0			748.26 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567671	05/31/22 12:24	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		2			354906	06/01/22 12:46	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		2			355750	06/08/22 16:40	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		4			355639	06/07/22 16:30	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 21:27	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354742	05/28/22 21:27	DHM5	TAL CF

Client Sample ID: MW-35
Date Collected: 04/26/22 10:15
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:54	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:56	XXW3	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:49	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575689	05/21/22 06:28	RAF	TAL DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	575689	05/21/22 06:44	RAF	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	575689	05/21/22 07:00	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 15:45	KEG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	573530	05/02/22 08:58	ABW	TAL DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			748.31 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1			567929	06/01/22 11:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			748.31 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567671	05/31/22 12:24	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		1			354906	06/01/22 11:57	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			354898	06/01/22 11:17	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 16:34	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354712	05/28/22 21:31	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		4			354742	05/28/22 21:31	DHM5	TAL CF
Dissolved	Filtration	Filtration			30 mL	30 mL	354546	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	7470A			30 mL	40 mL	354862	06/01/22 09:52	XXW3	TAL CF
Dissolved	Analysis	7470A		1			355097	06/02/22 13:56	XXW3	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	354467	05/26/22 13:46	XXW3	TAL CF
Total/NA	Analysis	7470A		1			354618	05/27/22 12:58	XXW3	TAL CF
Total/NA	Analysis	9040B		1			574080	05/05/22 14:53	KEG	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	575827	05/23/22 12:51	RAF	TAL DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	575827	05/23/22 13:07	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			574081	05/05/22 16:16	KEG	TAL DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-36
Date Collected: 04/29/22 11:30
Date Received: 04/29/22 16:55

Lab Sample ID: 280-161699-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	574302	05/09/22 13:59	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	573550	05/02/22 11:03	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			997.57 mL	1.0 g	564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	9315		1	1.0 mL	1.0 mL	567929	06/01/22 11:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			997.57 mL	1.0 g	564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	9320		1			567671	05/31/22 12:25	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568125	06/02/22 15:39	SCB	TAL SL

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

280-161699 Chain of Custody

Client Information

Client Contact: Molly Reeves
Company: HDR Inc
Address: 1670 Broadway Suite 3400
City: Denver
State, Zip: CO, 80202
Phone: 734-263-7138(Tel)
Email: Molly.Reeves@hdrinc.com
Project Name: Xcel Energy GW CCR Monitoring - Valmon
Site: Colorado Quarterly- Release Characterization

Sampler: T. Snyder
Phone: 720-838-6065
PWSID:
Due Date Requested:
TAT Requested (days): ASAP
Compliance Project: Δ Yes Δ No
PO #: 10227700-400
WO #:
Project #: 28014379
SSOW#:

Lab PM: Harrington, Danielle M
E-Mail: Danielle.Harrington@Eurofinset.com
Carrier Tracking No(s):
State of Origin:
COC No: 280-113124-32494.1
Page: Page 1 of 1
Job #:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - 7 metals ETA Cedar Falls	2320B Alkalinity	2540D - TSS/ 2540C TDS	pH	9056A Chloride/Sulfate	6020A- 6 metals ETA Cedar Falls	App III and App IV 6020A/6010C/7470A metals- Cedard Falls	9315 Rad 226 and 9320 Rad 228 - ETA St Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	N	N	N	N	D	D	D			
MW-29	4/28/22	1050	G	Water			X	X	X	X	X				X	4	
MW-30	4/26/22	1300	G	Water			X	X	X	X	X				X	4	
MW-33A	4/28/22	1335	G	Water			X	X	X	X	X				X	3	
MW-33B	4/28/22	1430	G	Water			X	X	X	X	X				X	4	Only 625mL for TSS/TDS
MW-34	4/26/22	1430	G	Water			X	X	X	X	X	X	X		X	5	
MW-35	4/26/22	1015	G	Water			X	X	X	X	X	X	X		X	5	
MW-36	4/29/22	1130	G	Water			X	X	X	X	X	X	X		X	5	
				Water													

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 4/29/22 1655	Company HDR	Received by:	Date/Time: 4/29/22 1655	Company STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.1, 4.4, 5.5, 5.8, 5.8 IR12 CF+0.1

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612765.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-161699-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/31/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-34 (280-161699-5)	4/26/22	14:30 Mountain		Water			X	X	X	2	
MW-35 (280-161699-6)	4/26/22	10:15 Mountain		Water			X	X	X	2	
MW-36 (280-161699-7)	4/29/22	11:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/3/22 1320	ETADEN	FED EX		
2	FED EX			Sierra Worthington	MAY 04 2022 0900	ETADEN
3						

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

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-612764 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle Harrington@et.eurofinsus com	State of Origin: Colorado	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-161699-1
Address: 3019 Venture Way, ,	Due Date Requested: 5/31/2022			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	6010C/3005A (MOD) Boron	7470A/7470A_Prep Mercury	7470A/Filtration_ME Mercury	6010C/Filtration_ME (MOD) Boron	Total Number of containers	Special Instructions/Note:
			Preservation Code.											
MW-29 (280-161699-1)	4/28/22	10.50 Mountain		Water			X	X					2	
MW-30 (280-161699-2)	4/26/22	13 00 Mountain		Water			X	X					2	
MW-33A (280-161699-3)	4/28/22	13.35 Mountain		Water			X						1	
MW-33B (280-161699-4)	4/26/22	14 30 Mountain		Water			X	X					2	
MW-34 (280-161699-5)	4/26/22	14.30 Mountain		Water			X	X	X	X	X	X	2	
MW-35 (280-161699-6)	4/26/22	10 15 Mountain		Water			X	X	X	X	X	X	2	
MW-36 (280-161699-7)	4/29/22	11.30 Mountain		Water			X	X	X	X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 4	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/3/22 1550	ETDEN	[signature]	5-4-22 0925	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

6/9/2022

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: TA. Denver

City/State: CITY Arvada STATE Co Project: Xcel energy

Receipt Information

Date/Time Received: DATE 5/22 TIME 0925 Received By: TO

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

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: W Correction Factor (°C): 0.0

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

Uncorrected Temp (°C): 2.6 Corrected Temp (°C): 2.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161699-2

Login Number: 161699
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161699-2

Login Number: 161699
List Number: 2
Creator: Hummel, Matthew R

List Source: Eurofins Cedar Falls
List Creation: 05/04/22 01:06 PM

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161699-2

Login Number: 161699
List Number: 3
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 05/05/22 12:54 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-161699-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-161699-5	MW-34	88.5
280-161699-6	MW-35	96.8
280-161699-7	MW-36	87.3
LCS 160-564071/1-A	Lab Control Sample	98.0
LCSD 160-564071/2-A	Lab Control Sample Dup	90.5
MB 160-564071/23-A	Method Blank	89.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-161699-5	MW-34	88.5	89.7
280-161699-6	MW-35	96.8	84.5
280-161699-7	MW-36	87.3	90.8
LCS 160-564074/1-A	Lab Control Sample	98.0	85.2
LCSD 160-564074/2-A	Lab Control Sample Dup	90.5	87.9
MB 160-564074/23-A	Method Blank	89.5	89.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-162099-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Danielle Harrington

Authorized for release by:
6/9/2022 4:27:13 PM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

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

Glossary

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

Job ID: 280-162099-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-162099-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 05/09/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.7 C.

TOTAL RECOVERABLE METALS - METHOD 6010C/6020A
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS - Method 6010C/6020A
Sample MW-5 (280-162099-1) was analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 05/31/2022 and analyzed on 06/07/2022.

The accuracy and precision of the Calcium MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

GENERAL CHEMISTRY - VARIOUS
Due to laboratory error, he following sample was prepared outside of preparation holding time for Method 2540D Total Suspended Solids : MW-5 (280-162099-1).

Sample MW-5 (280-162099-1) required dilution prior to analysis for Method 9056A. The reporting limits have been adjusted accordingly.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 140-27563-1. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

RADIUM-226 (GFPC)- Method 9315
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228 - Method 9320

Job ID: 280-162099-1 (Continued)

Laboratory: Eurofins Denver (Continued)

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

RADIUM-226/RADIUM-228 (GFPC)

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

Detection Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-5
Lab Sample ID: 280-162099-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.20	0.056	mg/L	1		6010C	Total Recoverable
Boron	1.8		0.20	0.056	mg/L	1		6010C	Dissolved
Barium	0.014		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Calcium	89		0.50	0.19	mg/L	1		6020A	Total Recoverable
Cobalt	0.00024	J	0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.071		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Magnesium	42		0.50	0.15	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0030		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Potassium	4.1		0.50	0.15	mg/L	1		6020A	Total Recoverable
Selenium	0.0077		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	260		1.0	0.61	mg/L	1		6020A	Total Recoverable
Barium	0.013		0.0020	0.00088	mg/L	1		6020A	Dissolved
Calcium	92		0.50	0.19	mg/L	1		6020A	Dissolved
Cobalt	0.00043	J	0.00050	0.00019	mg/L	1		6020A	Dissolved
Lithium	0.064		0.010	0.0025	mg/L	1		6020A	Dissolved
Molybdenum	0.0027		0.0020	0.0012	mg/L	1		6020A	Dissolved
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	18.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	24		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.28	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	360		25	5.2	mg/L	5		9056A	Total/NA
Total Suspended Solids	4.4	H	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	940		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM2540 C	Total Dissolved Solids	SM18	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-162099-1	MW-5	Water	05/09/22 12:30	05/09/22 15:24

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24
Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.4**		0.20	0.056	mg/L		05/25/22 09:15	06/01/22 11:07	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24
Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.8**		0.20	0.056	mg/L			06/01/22 12:18	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24
Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/25/22 09:15	05/28/22 20:49	1
Arsenic	ND		0.0020	0.00075	mg/L		05/25/22 09:15	05/28/22 20:49	1
Barium	**0.014**		0.0020	0.00088	mg/L		05/25/22 09:15	05/28/22 20:49	1
Beryllium	ND		0.0010	0.00027	mg/L		05/25/22 09:15	05/28/22 20:49	1
Cadmium	ND		0.00010	0.000055	mg/L		05/25/22 09:15	05/28/22 20:49	1
Calcium	**89**		0.50	0.19	mg/L		05/25/22 09:15	05/28/22 20:49	1
Chromium	ND		0.0050	0.0011	mg/L		05/25/22 09:15	05/28/22 20:49	1
Cobalt	**0.00024**	**J**	0.00050	0.00019	mg/L		05/25/22 09:15	05/28/22 20:49	1
Lead	ND		0.00050	0.00024	mg/L		05/25/22 09:15	05/28/22 20:49	1
Lithium	**0.071**		0.010	0.0025	mg/L		05/25/22 09:15	05/28/22 20:49	1
Magnesium	**42**		0.50	0.15	mg/L		05/25/22 09:15	05/28/22 20:49	1
Molybdenum	**0.0030**		0.0020	0.0012	mg/L		05/25/22 09:15	05/28/22 20:49	1
Potassium	**4.1**		0.50	0.15	mg/L		05/25/22 09:15	05/28/22 20:49	1
Selenium	**0.0077**		0.0050	0.00096	mg/L		05/25/22 09:15	05/28/22 20:49	1
Sodium	**260**		1.0	0.61	mg/L		05/25/22 09:15	05/28/22 20:49	1
Thallium	ND		0.0010	0.00026	mg/L		05/25/22 09:15	05/28/22 20:49	1

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

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24
Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 16:47	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 16:47	1
Barium	**0.013**		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 16:47	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 16:47	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 16:47	1
Calcium	**92**		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 16:47	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 16:47	1
Cobalt	**0.00043**	**J**	0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 16:47	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 16:47	1
Lithium	**0.064**		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 16:47	1
Molybdenum	**0.0027**		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 16:47	1
Selenium	ND		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 16:47	1

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

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 16:47	1

General Chemistry

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			05/26/22 16:09	1
Temperature	18.3	HF	1.0	1.0	Degrees C			05/26/22 16:09	1
Chloride	24		3.0	1.0	mg/L			05/28/22 20:55	1
Fluoride	0.28	J	0.50	0.17	mg/L			05/28/22 20:55	1
Sulfate	360		25	5.2	mg/L			05/28/22 21:43	5
Total Suspended Solids	4.4	H	4.0	1.1	mg/L			05/24/22 13:26	1
Total Dissolved Solids (TDS)	940		20	9.4	mg/L			05/16/22 10:13	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.404		0.151	0.155	1.00	0.162	pCi/L	05/12/22 13:05	06/03/22 12:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.8*		*40 - 110*	*05/12/22 13:05*	*06/03/22 12:33*	*1*

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.732	U	0.506	0.510	1.00	0.758	pCi/L	05/12/22 13:46	05/20/22 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.8*		*40 - 110*	*05/12/22 13:46*	*05/20/22 12:20*	*1*
Y Carrier	*86.7*		*40 - 110*	*05/12/22 13:46*	*05/20/22 12:20*	*1*

Client Sample Results

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.14		0.528	0.533	5.00	0.758	pCi/L		06/06/22 14:09	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-354185/1-A
Matrix: Water
Analysis Batch: 354898

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/25/22 09:15	06/01/22 10:51	1

Lab Sample ID: LCS 310-354185/2-A
Matrix: Water
Analysis Batch: 354898

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.84		mg/L		92	80 - 120

Lab Sample ID: MB 310-354545/1-A
Matrix: Water
Analysis Batch: 354906

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L			06/01/22 11:33	1

Lab Sample ID: LCS 310-354545/2-A
Matrix: Water
Analysis Batch: 354906

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.63		mg/L		81	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-354185/1-A
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/25/22 09:15	05/28/22 20:26	1
Arsenic	ND		0.0020	0.00075	mg/L		05/25/22 09:15	05/28/22 20:26	1
Barium	ND		0.0020	0.00088	mg/L		05/25/22 09:15	05/28/22 20:26	1
Beryllium	ND		0.0010	0.00027	mg/L		05/25/22 09:15	05/28/22 20:26	1
Cadmium	ND		0.00010	0.000055	mg/L		05/25/22 09:15	05/28/22 20:26	1
Calcium	ND		0.50	0.19	mg/L		05/25/22 09:15	05/28/22 20:26	1
Chromium	ND		0.0050	0.0011	mg/L		05/25/22 09:15	05/28/22 20:26	1
Cobalt	ND		0.00050	0.00019	mg/L		05/25/22 09:15	05/28/22 20:26	1
Lead	ND		0.00050	0.00024	mg/L		05/25/22 09:15	05/28/22 20:26	1
Lithium	ND		0.010	0.0025	mg/L		05/25/22 09:15	05/28/22 20:26	1
Magnesium	ND		0.50	0.15	mg/L		05/25/22 09:15	05/28/22 20:26	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/25/22 09:15	05/28/22 20:26	1
Potassium	ND		0.50	0.15	mg/L		05/25/22 09:15	05/28/22 20:26	1
Selenium	ND		0.0050	0.00096	mg/L		05/25/22 09:15	05/28/22 20:26	1
Sodium	ND		1.0	0.61	mg/L		05/25/22 09:15	05/28/22 20:26	1
Thallium	ND		0.0010	0.00026	mg/L		05/25/22 09:15	05/28/22 20:26	1

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

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.17		mg/L		108	80 - 120
Barium	1.00	1.13		mg/L		113	80 - 120
Beryllium	1.00	1.14		mg/L		114	80 - 120
Cadmium	1.00	1.09		mg/L		109	80 - 120
Calcium	20.0	21.3		mg/L		106	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Cobalt	1.00	1.06		mg/L		106	80 - 120
Lead	2.00	2.24		mg/L		112	80 - 120
Lithium	2.00	2.32		mg/L		116	80 - 120
Magnesium	20.0	22.0		mg/L		110	80 - 120
Molybdenum	2.00	2.35		mg/L		118	80 - 120
Potassium	20.0	22.0		mg/L		110	80 - 120
Selenium	4.00	4.27		mg/L		107	80 - 120
Sodium	20.0	22.3		mg/L		112	80 - 120
Thallium	2.00	2.35		mg/L		117	80 - 120

Lab Sample ID: LCS 310-354185/2-A ^10
Matrix: Water
Analysis Batch: 354860

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 354185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	2.00	1.93		mg/L		96	80 - 120
Cadmium	1.00	0.950		mg/L		95	80 - 120
Chromium	1.00	0.952		mg/L		95	80 - 120

Lab Sample ID: MB 310-354543/1-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 354691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/31/22 09:45	06/07/22 15:25	1
Arsenic	ND		0.0020	0.00075	mg/L		05/31/22 09:45	06/07/22 15:25	1
Barium	ND		0.0020	0.00088	mg/L		05/31/22 09:45	06/07/22 15:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cadmium	ND		0.00010	0.000055	mg/L		05/31/22 09:45	06/07/22 15:25	1
Calcium	ND		0.50	0.19	mg/L		05/31/22 09:45	06/07/22 15:25	1
Chromium	ND		0.0050	0.0011	mg/L		05/31/22 09:45	06/07/22 15:25	1
Cobalt	ND		0.00050	0.00019	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lead	ND		0.00050	0.00024	mg/L		05/31/22 09:45	06/07/22 15:25	1
Lithium	ND		0.010	0.0025	mg/L		05/31/22 09:45	06/07/22 15:25	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/31/22 09:45	06/07/22 15:25	1
Selenium	ND		0.0050	0.00096	mg/L		05/31/22 09:45	06/07/22 15:25	1
Thallium	ND		0.0010	0.00026	mg/L		05/31/22 09:45	06/07/22 15:25	1

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

Lab Sample ID: LCS 310-354543/2-B
Matrix: Water
Analysis Batch: 355639

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 354691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.212		mg/L		106	80 - 120
Arsenic	0.200	0.197		mg/L		99	80 - 120
Barium	0.100	0.106		mg/L		106	80 - 120
Beryllium	0.100	0.105		mg/L		105	80 - 120
Cadmium	0.100	0.101		mg/L		101	80 - 120
Calcium	2.00	1.74		mg/L		87	80 - 120
Chromium	0.100	0.103		mg/L		103	80 - 120
Cobalt	0.100	0.101		mg/L		101	80 - 120
Lead	0.200	0.212		mg/L		106	80 - 120
Lithium	0.200	0.212		mg/L		106	80 - 120
Molybdenum	0.200	0.206		mg/L		103	80 - 120
Selenium	0.400	0.393		mg/L		98	80 - 120
Thallium	0.200	0.212		mg/L		106	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-576370/4
Matrix: Water
Analysis Batch: 576370

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-576497/6
Matrix: Water
Analysis Batch: 576497

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/28/22 10:45	1
Fluoride	ND		0.50	0.17	mg/L			05/28/22 10:45	1
Sulfate	ND		5.0	1.0	mg/L			05/28/22 10:45	1

Lab Sample ID: LCS 280-576497/4
Matrix: Water
Analysis Batch: 576497

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	100		mg/L		100	90 - 110
Fluoride	5.00	4.87		mg/L		97	90 - 110
Sulfate	100	96.9		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-576497/5
Matrix: Water
Analysis Batch: 576497

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	1	10
Fluoride	5.00	4.92		mg/L		98	90 - 110	1	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-576497/5
Matrix: Water
Analysis Batch: 576497

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	98.0		mg/L		98	90 - 110	1	10

Lab Sample ID: MRL 280-576497/3
Matrix: Water
Analysis Batch: 576497

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	3.74		mg/L		75	50 - 150
Fluoride	0.500	0.451	J	mg/L		90	50 - 150
Sulfate	5.00	3.89	J	mg/L		78	50 - 150

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-576031/2
Matrix: Water
Analysis Batch: 576031

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			05/24/22 13:26	1

Lab Sample ID: LCS 280-576031/1
Matrix: Water
Analysis Batch: 576031

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.8		mg/L		95	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-575035/1
Matrix: Water
Analysis Batch: 575035

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			05/16/22 10:13	1

Lab Sample ID: LCS 280-575035/2
Matrix: Water
Analysis Batch: 575035

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	505	502		mg/L		99	88 - 114

Lab Sample ID: 280-162099-1 DU
Matrix: Water
Analysis Batch: 575035

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	940		942		mg/L		0.6	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-565211/21-A
Matrix: Water
Analysis Batch: 568250

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565211

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05163	U	0.0562	0.0564	1.00	0.0889	pCi/L	05/12/22 13:05	06/03/22 13:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*05/12/22 13:05*	*06/03/22 13:55*	*1*

Lab Sample ID: LCS 160-565211/1-A
Matrix: Water
Analysis Batch: 568250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565211

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.39		1.07	1.00	0.111	pCi/L	92	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*92.8*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-565213/21-A
Matrix: Water
Analysis Batch: 566756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565213

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4460	U	0.421	0.423	1.00	0.676	pCi/L	05/12/22 13:46	05/20/22 12:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*05/12/22 13:46*	*05/20/22 12:26*	*1*
Y Carrier	*87.1*		*40 - 110*	*05/12/22 13:46*	*05/20/22 12:26*	*1*

Lab Sample ID: LCS 160-565213/1-A
Matrix: Water
Analysis Batch: 566756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565213

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.61	8.701		1.19	1.00	0.523	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*92.8*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Metals

Prep Batch: 354185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total Recoverable	Water	3005A	
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-354185/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 354543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Dissolved	Water	Filtration	
MB 310-354543/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Filtration Batch: 354545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Dissolved	Water	Filtration	
MB 310-354545/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 354691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Dissolved	Water	3005A	354543
MB 310-354543/1-B	Method Blank	Dissolved	Water	3005A	354543
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	3005A	354543

Analysis Batch: 354712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total Recoverable	Water	6020A	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6020A	354185
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 354742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total Recoverable	Water	6020A	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6020A	354185
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 354860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-354185/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	354185

Analysis Batch: 354898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total Recoverable	Water	6010C	354185
MB 310-354185/1-A	Method Blank	Total Recoverable	Water	6010C	354185
LCS 310-354185/2-A	Lab Control Sample	Total Recoverable	Water	6010C	354185

Analysis Batch: 354906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Dissolved	Water	6010C	354545
MB 310-354545/1-A	Method Blank	Dissolved	Water	6010C	354545
LCS 310-354545/2-A	Lab Control Sample	Dissolved	Water	6010C	354545

Metals

Analysis Batch: 355639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Dissolved	Water	6020A	354691
MB 310-354543/1-B	Method Blank	Dissolved	Water	6020A	354691
LCS 310-354543/2-B	Lab Control Sample	Dissolved	Water	6020A	354691

General Chemistry

Analysis Batch: 575035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	SM2540 C	
MB 280-575035/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-575035/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-162099-1 DU	MW-5	Total/NA	Water	SM2540 C	

Analysis Batch: 576031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	SM 2540D	
MB 280-576031/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-576031/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 576370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	9040B	
LCS 280-576370/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 576497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	9056A	
280-162099-1	MW-5	Total/NA	Water	9056A	
MB 280-576497/6	Method Blank	Total/NA	Water	9056A	
LCS 280-576497/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-576497/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-576497/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 565211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	PrecSep-21	
MB 160-565211/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-565211/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 565213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-162099-1	MW-5	Total/NA	Water	PrecSep_0	
MB 160-565213/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-565213/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-5
Date Collected: 05/09/22 12:30
Date Received: 05/09/22 15:24

Lab Sample ID: 280-162099-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	354545	05/27/22 15:25	QTZ5	TAL CF
Dissolved	Analysis	6010C		1			354906	06/01/22 12:18	ZRI4	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6010C		1			354898	06/01/22 11:07	ZRI4	TAL CF
Dissolved	Filtration	Filtration			50 mL	50 mL	354543	05/27/22 13:30	QTZ5	TAL CF
Dissolved	Prep	3005A			50 mL	50 mL	354691	05/31/22 09:45	QTZ5	TAL CF
Dissolved	Analysis	6020A		1			355639	06/07/22 16:47	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354712	05/28/22 20:49	DHM5	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	354185	05/25/22 09:15	QTZ5	TAL CF
Total Recoverable	Analysis	6020A		1			354742	05/28/22 20:49	DHM5	TAL CF
Total/NA	Analysis	9040B		1			576370	05/26/22 16:09	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	576497	05/28/22 20:55	CJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	576497	05/28/22 21:43	CJ	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	576031	05/24/22 13:26	CAI	TAL DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	575035	05/16/22 10:13	CAI	TAL DEN
Total/NA	Prep	PrecSep-21			750.96 mL	1.0 g	565211	05/12/22 13:05	MS	TAL SL
Total/NA	Analysis	9315		1	1.0 mL	1.0 mL	568250	06/03/22 12:33	FLC	TAL SL
Total/NA	Prep	PrecSep_0			750.96 mL	1.0 g	565213	05/12/22 13:46	MS	TAL SL
Total/NA	Analysis	9320		1			566756	05/20/22 12:20	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			568735	06/06/22 14:09	SCB	TAL SL

Laboratory References:

TAL CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22

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

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: T. Snyder	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: 720-8386065	E-Mail: Danielle.Harrington@Eurofinset.com		Page: Page 3 of 3
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days): ASAP			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Landfill Wells	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A Total Metals - ETA Canton	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D			
MW-5	5/9/22	1230	G	WATER			X	X	X	X	5	Only 750 mL collected for Ra228/226
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								

280-162099 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	5-9-22 1520	HDR		5/9/22 1524	STADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.6 CF-011 IR

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-613820.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle.Harrington@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-162099-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/8/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-5 (280-162099-1)	5/9/22	12:30 Mountain		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by: [signature]	5/10/22 1545	ETADEN	Received by: FED EX		
Relinquished by: FED EX			Received by: Sierra Worthington	MAY 1 1 2022 0900	EDAEN
Relinquished by:			Received by:		

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

Ver: 06/08/2021

eurofins | Environment Testing America

280-162099 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client:	TA Operations		
City/State:	CITY: Arvada	STATE: Co	Project: Xcel Energy
Receipt Information			
Date/Time Received:	DATE: 5/11/22	TIME: 0930	Received By:

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

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

Temperature Record			
Coolant:	☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE		
Thermometer ID:	ρ	Correction Factor (°C):	-0.1
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	0.9	Corrected Temp (°C):	0.8

• **Sample Container Temperature**		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone. 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM. Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-613817 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Danielle Harrington@et.eurofinsus com	State of Origin. Colorado	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): DoD - A2LA		Job #: 280-162099-1
Address: 3019 Venture Way, ,	Due Date Requested: 6/8/2022			
City: Cedar Falls	TAT Requested (days)			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Total Metals (w/collision cell)	6010C/3005A (MOD) Boron	6010C/Filtration_ME (MOD) Boron	6020A/Filtration_ME (MOD) 13 Total Metals (w/collision cell)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
MW-5 (280-162099-1)	5/9/22	12 30 Mountain		Water			X	X	X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	5/10/22 1530	ESDEN	[signature]	5/11/22 0930	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver. 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-162099-1

Login Number: 162099
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-162099-1

Login Number: 162099
List Number: 2
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls
List Creation: 05/11/22 10:23 AM

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-162099-1

Login Number: 162099
List Number: 3
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 05/11/22 11:16 AM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-162099-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-162099-1	MW-5	77.8
LCS 160-565211/1-A	Lab Control Sample	92.8
MB 160-565211/21-A	Method Blank	84.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-162099-1	MW-5	77.8	86.7
LCS 160-565213/1-A	Lab Control Sample	92.8	87.9
MB 160-565213/21-A	Method Blank	84.5	87.1

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-164768-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
8/10/2022 1:17:26 PM
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LINKS

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-164768-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-164768-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than Eurofins TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

This submission may contain field data obtained by the sampler. The methods referenced in this submission for the field data results may not be the methods used to obtain the field data by the sampler.

RECEIPT

The samples were received on 7/25/2022 3:15 PM and 7/28/2022 12:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.7º C, 1.2º C and 1.9º C.

RECEIPT

9056A was logged for all samples per the project history although it was not marked on the chain of custody (COC).

DISSOLVED METALS (ICP/ICPMS) - METHOD 6010/6020

Due to analytes present above the linear calibration curve, sample MW-29 was analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.
MS/MSD analyses were performed on sample MW-29. The MS/MSD for method 6020B exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the 6020B MS/MSD performed on a sample MW-29 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

TOTAL RECOVERABLE METALS (ICP/ICPMS) - METHOD 6010/6020

Several samples were analyzed at a dilution due to high analyte concentrations or matrix interferences. The reporting limits have been adjusted accordingly.
Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for method 6020B exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The low level continuing calibration verification (CCVL) associated with batch 280-582969 recovered (135%) above the upper control

Job ID: 280-164768-1 (Continued)

Laboratory: Eurofins Denver (Continued)

(130%)limit for Li. The samples associated with this CCVL were >10x the level of the CCVL for the affected analytes; therefore, the data have been reported.

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

GENERAL CHEMISTRY - VARIOUS

Several samples were analyzed at a dilution due to high analyte concentrations or matrix interferences. The reporting limits have been adjusted accordingly.

Low levels of Total Alkalinity as CaCO3 and Bicarbonate Alkalinity as CaCO3 are present in the method blank associated with QC batch 280-582199. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

Low levels of Total Alkalinity as CaCO3 are present in the method blank associated with QC batch 280-582521. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

Method SM 2540D: High quantity of solids in liquid matrix requiring use of less than nominal volume for method analysis. MW-33B (280-164914-1)

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

Detection Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-29
Lab Sample ID: 280-164768-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	320		20	9.1	ug/L	1		6010C	Total Recoverable
Lithium	320	^+	20	9.1	ug/L	1		6010C	Dissolved
Arsenic	0.00082	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00092	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	2.4		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	16000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	570		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	360000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	1000000		7500	3200	ug/L	50		6020B	Total Recoverable
Calcium	570	F2	20	3.8	mg/L	50		6020B	Dissolved
Potassium	16	F2	12	5.2	mg/L	50		6020B	Dissolved
Magnesium	320	F2	5.0	2.1	mg/L	50		6020B	Dissolved
Sodium	1000	F2	15	6.5	mg/L	50		6020B	Dissolved
Selenium	2.2		0.010	0.00075	mg/L	1		6020B	Dissolved
Chloride	100		30	10	mg/L	10		9056A	Total/NA
Sulfate	3600		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	770		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	770		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6500		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-31
Lab Sample ID: 280-164768-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	180		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.00038	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00043	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.33		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	13000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	390		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	360000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	1200000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	220		30	10	mg/L	10		9056A	Total/NA
Sulfate	4200		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	630		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	630		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	6600		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33A — Lab Sample ID: 280-164768-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	150		20	9.1	ug/L	1		6010C	Total Recoverable
Cobalt	0.00019	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.24		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	15000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	480		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	340000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	560000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	71		30	10	mg/L	10		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	440		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	440		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	4600		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-32 — Lab Sample ID: 280-164768-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	58		20	9.1	ug/L	1		6010C	Total Recoverable
Selenium	0.077		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	11000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	520		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	160000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	400000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	49		30	10	mg/L	10		9056A	Total/NA
Sulfate	2400		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	380		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	380		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	18		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3500		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-30 — Lab Sample ID: 280-164770-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	450		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0011	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.0092		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.0017	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	18000		120	52	ug/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-30 (Continued) — Lab Sample ID: 280-164770-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	300		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	370000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	2300000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	150		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	6200		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	960		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	960		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	9100		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-33B — Lab Sample ID: 280-164914-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	140		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.017		0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.014		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.020		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	10000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	100		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	57000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	820000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	120		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	1500		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	330		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	330		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	400		5.0	1.4	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-38B — Lab Sample ID: 280-164914-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	40		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.0020	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.0032		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.054		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	5500		120	52	ug/L	1		6020B	Total Recoverable
Calcium	370		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	150000		2500	1100	ug/L	50		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-38B (Continued)
Lab Sample ID: 280-164914-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	280000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	84		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	1800		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	290		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	290		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	15		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2700		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-38C
Lab Sample ID: 280-164914-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	41		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.00052	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00053	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.092		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	5900		120	52	ug/L	1		6020B	Total Recoverable
Calcium	320		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	170000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	370000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	80		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	1900		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	350		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2900		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	ETA DEN
6020B	Metals (ICP/MS)	SW846	ETA DEN
9056A	Anions, Ion Chromatography	SW846	ETA DEN
SM 2320B	Alkalinity	SM	ETA DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	ETA DEN
SM2540 C	Total Dissolved Solids	SM18	ETA DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ETA DEN
FILTRATION	Sample Filtration	None	ETA DEN

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

ETA DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-164768-1	MW-29	Water	07/22/22 11:40	07/25/22 15:15
280-164768-2	MW-31	Water	07/22/22 15:05	07/25/22 15:15
280-164768-3	MW-33A	Water	07/25/22 12:10	07/25/22 15:15
280-164768-4	MW-32	Water	07/25/22 13:40	07/25/22 15:15
280-164770-1	MW-30	Water	07/21/22 16:20	07/25/22 15:15
280-164914-1	MW-33B	Water	07/26/22 09:00	07/28/22 12:15
280-164914-2	MW-38B	Water	07/28/22 09:35	07/28/22 12:15
280-164914-3	MW-38C	Water	07/28/22 11:15	07/28/22 12:15

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	320		20	9.1	ug/L		07/29/22 09:10	08/01/22 11:52	1

Client Sample ID: MW-31
Date Collected: 07/22/22 15:05
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	180		20	9.1	ug/L		07/29/22 09:10	08/01/22 11:56	1

Client Sample ID: MW-33A
Date Collected: 07/25/22 12:10
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	150		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:00	1

Client Sample ID: MW-32
Date Collected: 07/25/22 13:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	58		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:20	1

Client Sample ID: MW-30
Date Collected: 07/21/22 16:20
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	450		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:24	1

Client Sample ID: MW-33B
Date Collected: 07/26/22 09:00
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	140		20	9.1	ug/L		08/01/22 14:47	08/03/22 15:45	1

Client Sample ID: MW-38B
Date Collected: 07/28/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	40		20	9.1	ug/L		08/01/22 14:47	08/03/22 15:49	1

Client Sample ID: MW-38C
Date Collected: 07/28/22 11:15
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	41		20	9.1	ug/L		08/01/22 14:47	08/03/22 15:53	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	320	^+	20	9.1	ug/L		08/03/22 09:00	08/03/22 18:45	1

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00082	J	0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:28	1
Cobalt	0.00092	J	0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:28	1
Selenium	2.4		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:28	1
Potassium	16000		120	52	ug/L		07/29/22 09:10	08/01/22 11:28	1
Calcium	570		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:04	50
Magnesium	360000		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:04	50
Sodium	1000000		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:04	50

Client Sample ID: MW-31
Date Collected: 07/22/22 15:05
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00038	J	0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:32	1
Cobalt	0.00043	J	0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:32	1
Selenium	0.33		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:32	1
Potassium	13000		120	52	ug/L		07/29/22 09:10	08/01/22 11:32	1
Calcium	390		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:08	50
Magnesium	360000		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:08	50
Sodium	1200000		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:08	50

Client Sample ID: MW-33A
Date Collected: 07/25/22 12:10
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:36	1
Cobalt	0.00019	J	0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:36	1
Selenium	0.24		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:36	1
Potassium	15000		120	52	ug/L		07/29/22 09:10	08/01/22 11:36	1
Calcium	480		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:12	50
Magnesium	340000		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:12	50
Sodium	560000		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:12	50

Client Sample ID: MW-32
Date Collected: 07/25/22 13:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:54	1
Cobalt	ND		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:54	1
Selenium	0.077		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:54	1
Potassium	11000		120	52	ug/L		07/29/22 09:10	08/01/22 11:54	1
Calcium	520		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:16	50
Magnesium	160000		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:16	50
Sodium	400000		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:16	50

Client Sample ID: MW-30
Date Collected: 07/21/22 16:20
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0011	J	0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:58	1
Cobalt	0.0092		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:58	1

Method: 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-30
Date Collected: 07/21/22 16:20
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0017	J	0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:58	1
Potassium	18000		120	52	ug/L		07/29/22 09:10	08/01/22 11:58	1
Calcium	300		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:42	50
Magnesium	370000		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:42	50
Sodium	2300000		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:42	50

Client Sample ID: MW-33B
Date Collected: 07/26/22 09:00
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017		0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:19	1
Cobalt	0.014		0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:19	1
Selenium	0.020		0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:19	1
Potassium	10000		120	52	ug/L		08/01/22 08:47	08/02/22 00:19	1
Calcium	100		10	1.9	mg/L		08/01/22 08:47	08/02/22 17:47	50
Magnesium	57000		2500	1100	ug/L		08/01/22 08:47	08/02/22 17:47	50
Sodium	820000		7500	3200	ug/L		08/01/22 08:47	08/02/22 17:47	50

Client Sample ID: MW-38B
Date Collected: 07/28/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020	J	0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:34	1
Cobalt	0.0032		0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:34	1
Selenium	0.054		0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:34	1
Potassium	5500		120	52	ug/L		08/01/22 08:47	08/02/22 00:34	1
Calcium	370		10	1.9	mg/L		08/01/22 08:47	08/02/22 17:51	50
Magnesium	150000		2500	1100	ug/L		08/01/22 08:47	08/02/22 17:51	50
Sodium	280000		7500	3200	ug/L		08/01/22 08:47	08/02/22 17:51	50

Client Sample ID: MW-38C
Date Collected: 07/28/22 11:15
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00052	J	0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:38	1
Cobalt	0.00053	J	0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:38	1
Selenium	0.092		0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:38	1
Potassium	5900		120	52	ug/L		08/01/22 08:47	08/02/22 00:38	1
Calcium	320		10	1.9	mg/L		08/01/22 08:47	08/02/22 17:54	50
Magnesium	170000		2500	1100	ug/L		08/01/22 08:47	08/02/22 17:54	50
Sodium	370000		7500	3200	ug/L		08/01/22 08:47	08/02/22 17:54	50

Method: 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.00066	mg/L		08/03/22 14:33	08/04/22 00:05	1
Calcium	570	F2	20	3.8	mg/L		08/03/22 14:33	08/04/22 13:16	50
Cobalt	ND		0.0020	0.00018	mg/L		08/03/22 14:33	08/04/22 00:05	1

Method: 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	16	F2	12	5.2	mg/L		08/03/22 14:33	08/04/22 13:16	50
Magnesium	320	F2	5.0	2.1	mg/L		08/03/22 14:33	08/04/22 13:16	50
Sodium	1000	F2	15	6.5	mg/L		08/03/22 14:33	08/04/22 13:16	50
Selenium	2.2		0.010	0.00075	mg/L		08/03/22 14:33	08/04/22 00:05	1

General Chemistry

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100		30	10	mg/L			07/27/22 17:28	10
Sulfate	3600		100	21	mg/L			07/29/22 07:06	20
Total Alkalinity as CaCO3	770		10	3.1	mg/L			07/27/22 18:53	1
Bicarbonate Alkalinity as CaCO3	770		10	3.1	mg/L			07/27/22 18:53	1
Total Suspended Solids	6.4		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS)	6500		40	19	mg/L			07/26/22 10:45	1

Client Sample ID: MW-31
Date Collected: 07/22/22 15:05
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220		30	10	mg/L			07/27/22 17:44	10
Sulfate	4200		250	52	mg/L			07/29/22 07:54	50
Total Alkalinity as CaCO3	630		10	3.1	mg/L			07/27/22 19:04	1
Bicarbonate Alkalinity as CaCO3	630		10	3.1	mg/L			07/27/22 19:04	1
Total Suspended Solids	ND		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS)	6600		40	19	mg/L			07/26/22 10:45	1

Client Sample ID: MW-33A
Date Collected: 07/25/22 12:10
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71		30	10	mg/L			07/27/22 18:00	10
Sulfate	3200		100	21	mg/L			07/29/22 08:10	20
Total Alkalinity as CaCO3	440		10	3.1	mg/L			07/27/22 19:12	1
Bicarbonate Alkalinity as CaCO3	440		10	3.1	mg/L			07/27/22 19:12	1
Total Suspended Solids	1.2	J	4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS)	4600		40	19	mg/L			07/26/22 10:45	1

Client Sample ID: MW-32
Date Collected: 07/25/22 13:40
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164768-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49		30	10	mg/L			07/27/22 18:16	10
Sulfate	2400		100	21	mg/L			07/29/22 08:26	20
Total Alkalinity as CaCO3	380		10	3.1	mg/L			07/27/22 19:20	1
Bicarbonate Alkalinity as CaCO3	380		10	3.1	mg/L			07/27/22 19:20	1
Total Suspended Solids	18		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS)	3500		40	19	mg/L			07/26/22 10:45	1

General Chemistry

Client Sample ID: MW-30
Date Collected: 07/21/22 16:20
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150		3.0	1.0	mg/L			07/29/22 18:00	1
Sulfate	6200		250	52	mg/L			07/29/22 04:42	50
Total Alkalinity as CaCO3	960		10	3.1	mg/L			07/27/22 19:33	1
Bicarbonate Alkalinity as CaCO3	960		10	3.1	mg/L			07/27/22 19:33	1
Total Suspended Solids	2.8	J	4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS)	9100		100	47	mg/L			07/26/22 10:45	1

Client Sample ID: MW-33B
Date Collected: 07/26/22 09:00
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		15	5.1	mg/L			07/29/22 19:30	5
Sulfate	1500		100	21	mg/L			07/29/22 19:46	20
Total Alkalinity as CaCO3	330		10	3.1	mg/L			07/29/22 15:06	1
Bicarbonate Alkalinity as CaCO3	330		10	3.1	mg/L			07/29/22 15:06	1
Total Suspended Solids	400		5.0	1.4	mg/L			07/29/22 10:02	1
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L			07/29/22 13:51	1

Client Sample ID: MW-38B
Date Collected: 07/28/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84		15	5.1	mg/L			07/29/22 20:01	5
Sulfate	1800		100	21	mg/L			07/29/22 20:16	20
Total Alkalinity as CaCO3	290		10	3.1	mg/L			07/29/22 15:13	1
Bicarbonate Alkalinity as CaCO3	290		10	3.1	mg/L			07/29/22 15:13	1
Total Suspended Solids	15		4.0	1.1	mg/L			07/29/22 10:02	1
Total Dissolved Solids (TDS)	2700		40	19	mg/L			07/29/22 13:51	1

Client Sample ID: MW-38C
Date Collected: 07/28/22 11:15
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164914-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	80		15	5.1	mg/L			07/29/22 20:31	5
Sulfate	1900		100	21	mg/L			07/29/22 20:46	20
Total Alkalinity as CaCO3	350		10	3.1	mg/L			07/29/22 16:08	1
Bicarbonate Alkalinity as CaCO3	350		10	3.1	mg/L			07/29/22 16:08	1
Total Suspended Solids	6.4		4.0	1.1	mg/L			07/29/22 10:02	1
Total Dissolved Solids (TDS)	2900		40	19	mg/L			07/29/22 13:51	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-582255/1-A
Matrix: Water
Analysis Batch: 582593
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		07/29/22 09:10	08/01/22 11:24	1

Lab Sample ID: LCS 280-582255/2-A
Matrix: Water
Analysis Batch: 582593
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	962		ug/L		96	90 - 112

Lab Sample ID: MB 280-582392/1-A
Matrix: Water
Analysis Batch: 582969
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582392

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		08/01/22 14:47	08/03/22 14:48	1

Lab Sample ID: LCS 280-582392/2-A
Matrix: Water
Analysis Batch: 582969
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582392

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	965		ug/L		96	90 - 112

Lab Sample ID: MB 280-582633/1-B
Matrix: Water
Analysis Batch: 582969
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 582700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	^+	20	9.1	ug/L		08/03/22 09:00	08/03/22 18:37	1

Lab Sample ID: LCS 280-582633/2-B
Matrix: Water
Analysis Batch: 582969
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 582700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	969	^+	ug/L		97	90 - 112

Lab Sample ID: 280-164768-1 MS
Matrix: Water
Analysis Batch: 582969
Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	320	^+	1000	1340	^+	ug/L		102	89 - 114

Lab Sample ID: 280-164768-1 MSD
Matrix: Water
Analysis Batch: 582969
Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582700

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	320	^+	1000	1320	^+	ug/L		99	89 - 114	2	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-582178/1-A
Matrix: Water
Analysis Batch: 582587

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:06	1
Cobalt	ND		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:06	1
Potassium	ND		120	52	ug/L		07/29/22 09:10	08/01/22 11:06	1
Selenium	ND		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:06	1

Lab Sample ID: MB 280-582178/1-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.20	0.038	mg/L		07/29/22 09:10	08/02/22 15:57	1
Magnesium	ND		50	21	ug/L		07/29/22 09:10	08/02/22 15:57	1
Sodium	ND		150	65	ug/L		07/29/22 09:10	08/02/22 15:57	1

Lab Sample ID: LCS 280-582178/2-A
Matrix: Water
Analysis Batch: 582587

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0414		mg/L		103	85 - 117
Cobalt	0.0400	0.0413		mg/L		103	85 - 120
Potassium	800	831		ug/L		104	80 - 120
Selenium	0.0400	0.0412		mg/L		103	77 - 122

Lab Sample ID: LCS 280-582178/2-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.854		mg/L		107	80 - 120
Magnesium	800	831		ug/L		104	80 - 120
Sodium	800	825		ug/L		103	80 - 120

Lab Sample ID: MB 280-582342/1-A
Matrix: Water
Analysis Batch: 582659

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		08/01/22 08:47	08/01/22 23:19	1
Cobalt	ND		0.0010	0.000092	mg/L		08/01/22 08:47	08/01/22 23:19	1
Potassium	ND		120	52	ug/L		08/01/22 08:47	08/01/22 23:19	1
Selenium	ND		0.0050	0.00037	mg/L		08/01/22 08:47	08/01/22 23:19	1

Lab Sample ID: MB 280-582342/1-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.20	0.038	mg/L		08/01/22 08:47	08/02/22 15:49	1
Magnesium	ND		50	21	ug/L		08/01/22 08:47	08/02/22 15:49	1

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

Lab Sample ID: MB 280-582342/1-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		150	65	ug/L		08/01/22 08:47	08/02/22 15:49	1

Lab Sample ID: LCS 280-582342/2-A
Matrix: Water
Analysis Batch: 582659

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0376		mg/L		94	85 - 117
Cobalt	0.0400	0.0392		mg/L		98	85 - 120
Potassium	800	713		ug/L		89	80 - 120
Selenium	0.0400	0.0369		mg/L		92	77 - 122

Lab Sample ID: LCS 280-582342/2-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.851		mg/L		106	80 - 120
Magnesium	800	831		ug/L		104	80 - 120
Sodium	800	831		ug/L		104	80 - 120

Lab Sample ID: MB 280-582633/1-C
Matrix: Water
Analysis Batch: 582955

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 582795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.00066	mg/L		08/03/22 14:33	08/03/22 23:31	1
Cobalt	ND		0.0020	0.00018	mg/L		08/03/22 14:33	08/03/22 23:31	1
Selenium	ND		0.010	0.00075	mg/L		08/03/22 14:33	08/03/22 23:31	1

Lab Sample ID: MB 280-582633/1-C
Matrix: Water
Analysis Batch: 583060

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 582795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.24	0.10	mg/L		08/03/22 14:33	08/04/22 12:04	1
Calcium	ND		0.40	0.076	mg/L		08/03/22 14:33	08/04/22 12:04	1
Magnesium	ND		0.10	0.042	mg/L		08/03/22 14:33	08/04/22 12:04	1
Sodium	ND		0.30	0.13	mg/L		08/03/22 14:33	08/04/22 12:04	1

Lab Sample ID: LCS 280-582633/2-C
Matrix: Water
Analysis Batch: 582955

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0800	0.0813		mg/L		102	85 - 117
Cobalt	0.0800	0.0820		mg/L		103	85 - 120
Selenium	0.0800	0.0804		mg/L		100	77 - 122

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

Lab Sample ID: LCS 280-582633/2-C
Matrix: Water
Analysis Batch: 583060

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	1.60	1.67		mg/L		104	80 - 120
Calcium	1.60	1.83		mg/L		115	80 - 120
Magnesium	1.60	1.70		mg/L		106	80 - 120
Sodium	1.60	1.78		mg/L		111	80 - 120

Lab Sample ID: 280-164768-1 MS
Matrix: Water
Analysis Batch: 582955

Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.0800	0.0802		mg/L		100	92 - 112
Cobalt	ND		0.0800	0.0775		mg/L		97	94 - 115
Selenium	2.2		0.0800	2.34	4	mg/L		156	90 - 115

Lab Sample ID: 280-164768-1 MS
Matrix: Water
Analysis Batch: 583060

Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	16	F2	1.60	17.8	4	mg/L		105	80 - 120
Calcium	570	F2	1.60	588	4	mg/L		1208	80 - 120
Magnesium	320	F2	1.60	333	4	mg/L		627	80 - 120
Sodium	1000	F2	1.60	1070	4	mg/L		1821	80 - 120

Lab Sample ID: 280-164768-1 MSD
Matrix: Water
Analysis Batch: 582955

Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		0.0800	0.0806		mg/L		101	92 - 112	1	20
Cobalt	ND		0.0800	0.0785		mg/L		98	94 - 115	1	20
Selenium	2.2		0.0800	2.26	4	mg/L		60	90 - 115	3	20

Lab Sample ID: 280-164768-1 MSD
Matrix: Water
Analysis Batch: 583060

Client Sample ID: MW-29
Prep Type: Dissolved
Prep Batch: 582795

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	16	F2	1.60	14.0	4 F2	mg/L		-129	80 - 120	23	20
Calcium	570	F2	1.60	442	4 F2	mg/L		-7927	80 - 120	28	20
Magnesium	320	F2	1.60	253	4 F2	mg/L		-4401	80 - 120	27	20
Sodium	1000	F2	1.60	812	4 F2	mg/L		-1429 3	80 - 120	27	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-582062/6
Matrix: Water
Analysis Batch: 582062

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/27/22 11:14	1

Lab Sample ID: LCS 280-582062/4
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	100		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-582062/5
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-582062/3
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.65		mg/L		93	50 - 150

Lab Sample ID: MB 280-582229/60
Matrix: Water
Analysis Batch: 582229

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			07/29/22 02:33	1

Lab Sample ID: LCS 280-582229/58
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-582229/59
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-582229/3
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	5.00	4.48	J	mg/L		90	50 - 150

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: 280-164768-4 MS
Matrix: Water
Analysis Batch: 582229

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	2400		1000	3340		mg/L		96	80 - 120		

Lab Sample ID: 280-164768-4 MSD
Matrix: Water
Analysis Batch: 582229

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2400		1000	3310		mg/L		94	80 - 120	1	20

Lab Sample ID: 280-164768-4 DU
Matrix: Water
Analysis Batch: 582229

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	2400			2340		mg/L				2	15

Lab Sample ID: MB 280-582367/6
Matrix: Water
Analysis Batch: 582367

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/29/22 11:01	1
Sulfate	ND		5.0	1.0	mg/L			07/29/22 11:01	1

Lab Sample ID: LCS 280-582367/4
Matrix: Water
Analysis Batch: 582367

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	103		mg/L		103	90 - 110		
Sulfate			100	103		mg/L		103	90 - 110		

Lab Sample ID: LCSD 280-582367/5
Matrix: Water
Analysis Batch: 582367

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	103		mg/L		103	90 - 110	0	10
Sulfate			100	103		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-582367/3
Matrix: Water
Analysis Batch: 582367

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.80		mg/L		96	50 - 150		
Sulfate			5.00	4.42	J	mg/L		88	50 - 150		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-164770-1 MS
Matrix: Water
Analysis Batch: 582367

Client Sample ID: MW-30
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	150		50.0	203	E	mg/L		99	80 - 120		

Lab Sample ID: 280-164770-1 MSD
Matrix: Water
Analysis Batch: 582367

Client Sample ID: MW-30
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	150		50.0	204	E	mg/L		102	80 - 120	1	20

Lab Sample ID: 280-164770-1 DU
Matrix: Water
Analysis Batch: 582367

Client Sample ID: MW-30
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	150			153		mg/L				0.1	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-582199/32
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 17:00	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 17:00	1

Lab Sample ID: MB 280-582199/58
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 20:09	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 20:09	1

Lab Sample ID: MB 280-582199/6
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.19	J	10	3.1	mg/L			07/27/22 14:04	1
Bicarbonate Alkalinity as CaCO3	3.19	J	10	3.1	mg/L			07/27/22 14:04	1

Lab Sample ID: MB 280-582199/84
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 23:20	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 23:20	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-582199/31
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	202		mg/L		101	89 - 109

Lab Sample ID: LCS 280-582199/57
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	207		mg/L		104	89 - 109

Lab Sample ID: LCS 280-582199/83
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	207		mg/L		104	89 - 109

Lab Sample ID: LCSD 280-582199/5
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	200		mg/L		100	89 - 109	4	10

Lab Sample ID: MB 280-582521/32
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 13:33	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 13:33	1

Lab Sample ID: MB 280-582521/58
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 16:34	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 16:34	1

Lab Sample ID: MB 280-582521/6
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.34	J	10	3.1	mg/L			07/29/22 10:23	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 10:23	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-582521/31
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	208		mg/L		104	89 - 109

Lab Sample ID: LCS 280-582521/57
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	210		mg/L		105	89 - 109

Lab Sample ID: LCSD 280-582521/5
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	190		mg/L		95	89 - 109	9	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-581993/3
Matrix: Water
Analysis Batch: 581993

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			07/26/22 15:13	1

Lab Sample ID: LCS 280-581993/1
Matrix: Water
Analysis Batch: 581993

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	450		mg/L		90	79 - 114

Lab Sample ID: LCSD 280-581993/2
Matrix: Water
Analysis Batch: 581993

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	470		mg/L		94	79 - 114	4	20

Lab Sample ID: MB 280-582376/3
Matrix: Water
Analysis Batch: 582376

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			07/29/22 10:01	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 280-582376/1
Matrix: Water
Analysis Batch: 582376

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	408		mg/L		82	79 - 114

Lab Sample ID: LCSD 280-582376/2
Matrix: Water
Analysis Batch: 582376

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	447		mg/L		89	79 - 114	9	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-581939/1
Matrix: Water
Analysis Batch: 581939

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/26/22 10:45	1

Lab Sample ID: LCS 280-581939/2
Matrix: Water
Analysis Batch: 581939

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	481		mg/L		96	88 - 114

Lab Sample ID: MB 280-582423/1
Matrix: Water
Analysis Batch: 582423

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/29/22 13:51	1

Lab Sample ID: LCS 280-582423/2
Matrix: Water
Analysis Batch: 582423

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	486		mg/L		97	88 - 114

Lab Sample ID: LCSD 280-582423/3
Matrix: Water
Analysis Batch: 582423

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	481		mg/L		96	88 - 114	1	20

Metals

Prep Batch: 582178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total Recoverable	Water	3005A	
280-164768-2	MW-31	Total Recoverable	Water	3005A	
280-164768-3	MW-33A	Total Recoverable	Water	3005A	
280-164768-4	MW-32	Total Recoverable	Water	3005A	
280-164770-1	MW-30	Total Recoverable	Water	3005A	
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 582255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total Recoverable	Water	3005A	
280-164768-2	MW-31	Total Recoverable	Water	3005A	
280-164768-3	MW-33A	Total Recoverable	Water	3005A	
280-164768-4	MW-32	Total Recoverable	Water	3005A	
280-164770-1	MW-30	Total Recoverable	Water	3005A	
MB 280-582255/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582255/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 582342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total Recoverable	Water	3005A	
280-164914-2	MW-38B	Total Recoverable	Water	3005A	
280-164914-3	MW-38C	Total Recoverable	Water	3005A	
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 582392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total Recoverable	Water	3005A	
280-164914-2	MW-38B	Total Recoverable	Water	3005A	
280-164914-3	MW-38C	Total Recoverable	Water	3005A	
MB 280-582392/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582392/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 582587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total Recoverable	Water	6020B	582178
280-164768-2	MW-31	Total Recoverable	Water	6020B	582178
280-164768-3	MW-33A	Total Recoverable	Water	6020B	582178
280-164768-4	MW-32	Total Recoverable	Water	6020B	582178
280-164770-1	MW-30	Total Recoverable	Water	6020B	582178
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	6020B	582178
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582178

Analysis Batch: 582593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total Recoverable	Water	6010C	582255
280-164768-2	MW-31	Total Recoverable	Water	6010C	582255
280-164768-3	MW-33A	Total Recoverable	Water	6010C	582255
280-164768-4	MW-32	Total Recoverable	Water	6010C	582255
280-164770-1	MW-30	Total Recoverable	Water	6010C	582255

Metals (Continued)

Analysis Batch: 582593 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-582255/1-A	Method Blank	Total Recoverable	Water	6010C	582255
LCS 280-582255/2-A	Lab Control Sample	Total Recoverable	Water	6010C	582255

Filtration Batch: 582633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	FILTRATION	
MB 280-582633/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-582633/1-C	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-582633/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-582633/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
280-164768-1 MS	MW-29	Dissolved	Water	FILTRATION	
280-164768-1 MSD	MW-29	Dissolved	Water	FILTRATION	

Analysis Batch: 582659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total Recoverable	Water	6020B	582342
280-164914-2	MW-38B	Total Recoverable	Water	6020B	582342
280-164914-3	MW-38C	Total Recoverable	Water	6020B	582342
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	6020B	582342
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582342

Prep Batch: 582700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	3005A	582633
MB 280-582633/1-B	Method Blank	Dissolved	Water	3005A	582633
LCS 280-582633/2-B	Lab Control Sample	Dissolved	Water	3005A	582633
280-164768-1 MS	MW-29	Dissolved	Water	3005A	582633
280-164768-1 MSD	MW-29	Dissolved	Water	3005A	582633

Prep Batch: 582795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	3005A	582633
MB 280-582633/1-C	Method Blank	Dissolved	Water	3005A	582633
LCS 280-582633/2-C	Lab Control Sample	Dissolved	Water	3005A	582633
280-164768-1 MS	MW-29	Dissolved	Water	3005A	582633
280-164768-1 MSD	MW-29	Dissolved	Water	3005A	582633

Analysis Batch: 582816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total Recoverable	Water	6020B	582178
280-164768-2	MW-31	Total Recoverable	Water	6020B	582178
280-164768-3	MW-33A	Total Recoverable	Water	6020B	582178
280-164768-4	MW-32	Total Recoverable	Water	6020B	582178
280-164770-1	MW-30	Total Recoverable	Water	6020B	582178
280-164914-1	MW-33B	Total Recoverable	Water	6020B	582342
280-164914-2	MW-38B	Total Recoverable	Water	6020B	582342
280-164914-3	MW-38C	Total Recoverable	Water	6020B	582342
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	6020B	582178
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	6020B	582342
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582178
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582342

Metals

Analysis Batch: 582955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	6020B	582795
MB 280-582633/1-C	Method Blank	Dissolved	Water	6020B	582795
LCS 280-582633/2-C	Lab Control Sample	Dissolved	Water	6020B	582795
280-164768-1 MS	MW-29	Dissolved	Water	6020B	582795
280-164768-1 MSD	MW-29	Dissolved	Water	6020B	582795

Analysis Batch: 582969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	6010C	582700
280-164914-1	MW-33B	Total Recoverable	Water	6010C	582392
280-164914-2	MW-38B	Total Recoverable	Water	6010C	582392
280-164914-3	MW-38C	Total Recoverable	Water	6010C	582392
MB 280-582392/1-A	Method Blank	Total Recoverable	Water	6010C	582392
MB 280-582633/1-B	Method Blank	Dissolved	Water	6010C	582700
LCS 280-582392/2-A	Lab Control Sample	Total Recoverable	Water	6010C	582392
LCS 280-582633/2-B	Lab Control Sample	Dissolved	Water	6010C	582700
280-164768-1 MS	MW-29	Dissolved	Water	6010C	582700
280-164768-1 MSD	MW-29	Dissolved	Water	6010C	582700

Analysis Batch: 583060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Dissolved	Water	6020B	582795
MB 280-582633/1-C	Method Blank	Dissolved	Water	6020B	582795
LCS 280-582633/2-C	Lab Control Sample	Dissolved	Water	6020B	582795
280-164768-1 MS	MW-29	Dissolved	Water	6020B	582795
280-164768-1 MSD	MW-29	Dissolved	Water	6020B	582795

General Chemistry

Analysis Batch: 581939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total/NA	Water	SM2540 C	
280-164768-2	MW-31	Total/NA	Water	SM2540 C	
280-164768-3	MW-33A	Total/NA	Water	SM2540 C	
280-164768-4	MW-32	Total/NA	Water	SM2540 C	
280-164770-1	MW-30	Total/NA	Water	SM2540 C	
MB 280-581939/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-581939/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 581993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total/NA	Water	SM 2540D	
280-164768-2	MW-31	Total/NA	Water	SM 2540D	
280-164768-3	MW-33A	Total/NA	Water	SM 2540D	
280-164768-4	MW-32	Total/NA	Water	SM 2540D	
280-164770-1	MW-30	Total/NA	Water	SM 2540D	
MB 280-581993/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-581993/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-581993/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

General Chemistry

Analysis Batch: 582062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total/NA	Water	9056A	
280-164768-2	MW-31	Total/NA	Water	9056A	
280-164768-3	MW-33A	Total/NA	Water	9056A	
280-164768-4	MW-32	Total/NA	Water	9056A	
MB 280-582062/6	Method Blank	Total/NA	Water	9056A	
LCS 280-582062/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582062/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582062/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 582199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total/NA	Water	SM 2320B	
280-164768-2	MW-31	Total/NA	Water	SM 2320B	
280-164768-3	MW-33A	Total/NA	Water	SM 2320B	
280-164768-4	MW-32	Total/NA	Water	SM 2320B	
280-164770-1	MW-30	Total/NA	Water	SM 2320B	
MB 280-582199/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/6	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/84	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-582199/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582199/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582199/83	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-582199/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 582229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164768-1	MW-29	Total/NA	Water	9056A	
280-164768-2	MW-31	Total/NA	Water	9056A	
280-164768-3	MW-33A	Total/NA	Water	9056A	
280-164768-4	MW-32	Total/NA	Water	9056A	
280-164770-1	MW-30	Total/NA	Water	9056A	
MB 280-582229/60	Method Blank	Total/NA	Water	9056A	
LCS 280-582229/58	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582229/59	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582229/3	Lab Control Sample	Total/NA	Water	9056A	
280-164768-4 MS	MW-32	Total/NA	Water	9056A	
280-164768-4 MSD	MW-32	Total/NA	Water	9056A	
280-164768-4 DU	MW-32	Total/NA	Water	9056A	

Analysis Batch: 582367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-1	MW-30	Total/NA	Water	9056A	
280-164914-1	MW-33B	Total/NA	Water	9056A	
280-164914-1	MW-33B	Total/NA	Water	9056A	
280-164914-2	MW-38B	Total/NA	Water	9056A	
280-164914-2	MW-38B	Total/NA	Water	9056A	
280-164914-3	MW-38C	Total/NA	Water	9056A	
280-164914-3	MW-38C	Total/NA	Water	9056A	
MB 280-582367/6	Method Blank	Total/NA	Water	9056A	
LCS 280-582367/4	Lab Control Sample	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 582367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-582367/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582367/3	Lab Control Sample	Total/NA	Water	9056A	
280-164770-1 MS	MW-30	Total/NA	Water	9056A	
280-164770-1 MSD	MW-30	Total/NA	Water	9056A	
280-164770-1 DU	MW-30	Total/NA	Water	9056A	

Analysis Batch: 582376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total/NA	Water	SM 2540D	
280-164914-2	MW-38B	Total/NA	Water	SM 2540D	
280-164914-3	MW-38C	Total/NA	Water	SM 2540D	
MB 280-582376/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-582376/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-582376/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 582423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total/NA	Water	SM2540 C	
280-164914-2	MW-38B	Total/NA	Water	SM2540 C	
280-164914-3	MW-38C	Total/NA	Water	SM2540 C	
MB 280-582423/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-582423/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-582423/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 582521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164914-1	MW-33B	Total/NA	Water	SM 2320B	
280-164914-2	MW-38B	Total/NA	Water	SM 2320B	
280-164914-3	MW-38C	Total/NA	Water	SM 2320B	
MB 280-582521/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582521/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582521/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-582521/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582521/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-582521/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Client Sample ID: MW-29
Date Collected: 07/22/22 11:40
Date Received: 07/25/22 15:15

Lab Sample ID: 280-164768-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	582633	08/01/22 15:30	LRD	ETA DEN
Dissolved	Prep	3005A			50 mL	50 mL	582700	08/03/22 09:00	KMS	ETA DEN
Dissolved	Analysis	6010C		1			582969	08/03/22 18:45	KRP	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 11:52	LMT	ETA DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	582633	08/01/22 15:30	LRD	ETA DEN
Dissolved	Prep	3005A			25 mL	50 mL	582795	08/03/22 14:33	MCR	ETA DEN
Dissolved	Analysis	6020B		1			582955	08/04/22 00:05	LMT	ETA DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	582633	08/01/22 15:30	LRD	ETA DEN
Dissolved	Prep	3005A			25 mL	50 mL	582795	08/03/22 14:33	MCR	ETA DEN
Dissolved	Analysis	6020B		50			583060	08/04/22 13:16	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 11:28	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:04	LMT	ETA DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 17:28	MEC	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 07:06	MEC	ETA DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 18:53	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	ETA DEN

Client Sample ID: MW-31
Date Collected: 07/22/22 15:05
Date Received: 07/25/22 15:15

Lab Sample ID: 280-164768-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 11:56	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 11:32	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:08	LMT	ETA DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 17:44	MEC	ETA DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	582229	07/29/22 07:54	MEC	ETA DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:04	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	ETA DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33A
Lab Sample ID: 280-164768-3
Date Collected: 07/25/22 12:10
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:00	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 11:36	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:12	LMT	ETA DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 18:00	MEC	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 08:10	MEC	ETA DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:12	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	ETA DEN

Client Sample ID: MW-32
Lab Sample ID: 280-164768-4
Date Collected: 07/25/22 13:40
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:20	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 11:54	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:16	LMT	ETA DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 18:16	MEC	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 08:26	MEC	ETA DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:20	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	ETA DEN

Client Sample ID: MW-30
Lab Sample ID: 280-164770-1
Date Collected: 07/21/22 16:20
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:24	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 11:58	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:42	LMT	ETA DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582367	07/29/22 18:00	RAF	ETA DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	582229	07/29/22 04:42	MEC	ETA DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:33	KEG	ETA DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-30
Lab Sample ID: 280-164770-1
Date Collected: 07/21/22 16:20
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	581939	07/26/22 10:45	ASP	ETA DEN

Client Sample ID: MW-33B
Lab Sample ID: 280-164914-1
Date Collected: 07/26/22 09:00
Matrix: Water
Date Received: 07/28/22 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582392	08/01/22 14:47	MCR	ETA DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 15:45	KRP	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:19	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:47	LMT	ETA DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	582367	07/29/22 19:30	RAF	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582367	07/29/22 19:46	RAF	ETA DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 15:06	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	202 mL	250 mL	582376	07/29/22 10:02	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	582423	07/29/22 13:51	ASP	ETA DEN

Client Sample ID: MW-38B
Lab Sample ID: 280-164914-2
Date Collected: 07/28/22 09:35
Matrix: Water
Date Received: 07/28/22 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582392	08/01/22 14:47	MCR	ETA DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 15:49	KRP	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:34	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:51	LMT	ETA DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	582367	07/29/22 20:01	RAF	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582367	07/29/22 20:16	RAF	ETA DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 15:13	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	582376	07/29/22 10:02	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	582423	07/29/22 13:51	ASP	ETA DEN

Client Sample ID: MW-38C
Lab Sample ID: 280-164914-3
Date Collected: 07/28/22 11:15
Matrix: Water
Date Received: 07/28/22 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582392	08/01/22 14:47	MCR	ETA DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 15:53	KRP	ETA DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-38C
Date Collected: 07/28/22 11:15
Date Received: 07/28/22 12:15

Lab Sample ID: 280-164914-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:38	LMT	ETA DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	ETA DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:54	LMT	ETA DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	582367	07/29/22 20:31	RAF	ETA DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582367	07/29/22 20:46	RAF	ETA DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 16:08	KEG	ETA DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	582376	07/29/22 10:02	ASP	ETA DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	582423	07/29/22 13:51	ASP	ETA DEN

Laboratory References:
ETA DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-164768-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: D. Fuhr	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: (618) 521-5118	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:

Address: 1670 Broadway Suite 3400	Due Date Requested:
City: Denver	TAT Requested (days):
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No
Phone: 734-263-7138(Tel)	PO #: 10227700-400
Email: Molly.Reeves@hdrinc.com	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Colorado Quarterly- Release Characterization	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 7 metals / 6010C - Lithium	2320B Alkalinity	2540D - TSS/ 2540C TDS	9056A Chloride/ Suflate	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N			
MW-29	7/22/22	1140	G	Water			1	1	1		1	4	250mL unp. for DM
MW-31	7/22/22	1505	G	Water			1	1	1			3	
MW-33A	7/25/22	1210	G	Water			1	1	1			3	
MW-32	7/25/22	1340	G	Water			1	1	1			3	
				Water									
				Water									
				Water									
				Water									

280-164768 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
F. Davis Ray	7/25/22 1310	HDR	[signature]	7/25/22 1515	Stanley
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.1 CF+0.1 IR#12

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: D. Fuhr	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 618 521 5118	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:	Analysis Requested		Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			Other:
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 7 metals / 6010C - Lithium	2320B Alkalinity	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N		
MW-30	7/21/22	1020	G	Water			1	1	1		3	
MW-27	7/21/22	1100	G	Water			1	1	2		4	2x500 mL bottles for TDS
MW-27-EB	7/21/22	0855	G	Water			1	1	1		3	
MW-36	7/21/22	1330	G	Water			1	1	1		3	
MW-13	7/20/22	1525	G	Water			1	1	1		3	
MW-13-DUP	7/20/22	1525	G	Water			1	1	1		3	
MW-21	7/20/22	1345	G	Water			1	1	1		3	
MW-28	7/22/22	1515	G	Water			1	1	1		3	

280-164770 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
F. Davis Ray	7/25/22 1510	HDR		7/25/22 1515	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.6 CF +0.1 IR#12

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Drew Furr	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 618 521 5118	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:

Address: 1670 Broadway Suite 3400	Due Date Requested:
City: Denver	TAT Requested (days):
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No
Phone: 734-263-7138(Tel)	PO #: 10227700-400
Email: Molly.Reeves@hdrinc.com	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Colorado Quarterly- Release Characterization	SSOW#:

Analysis Requested

280-164914 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - Di Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	6020B - 7 metals / 6010C - Lithium	2320B Alkalinity	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:			D	N	N	N		
MW-33B	7/26/22	0900	G	Water		1	1	1	1	3	
MW-38B	7/28/22	0935	G	Water		1	1	1	1	3	
MW-38C	7/28/22	1115	G	Water		1	1	1	1	3	
				Water							
				Water							
				Water							
				Water							
				Water							

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	7/28/22 1215	HDR	[signature]	7/28/22 1215	ESTADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8 IR2 CF+0.1

Ver: 01/16/2019

8/10/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-164768-1

Login Number: 164768
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-164768-1

Login Number: 164770
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-164768-1

Login Number: 164914
List Number: 1
Creator: Lee, Jerry

List Source: Eurofins Denver

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-164770-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont
Revision: 1

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
11/14/2022 11:56:21 AM

Nicole Ryan, Project Manager I
(303)736-0100
Nicole.Ryan@ET.eurofinsus.com

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^6+	Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-164770-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-164770-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than Eurofins TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

This submission may contain field data obtained by the sampler. The methods referenced in this submission for the field data results may not be the methods used to obtain the field data by the sampler.

Revision 1, November 14, 2022
The report has been modified to include additional App III and IV metals per the clients request.

RECEIPT
The samples were received on 7/25/2022 3:15 PM and 7/28/2022 12:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7º C and 1.9º C.

RECEIPT
9056A was logged for all samples per the project history although it was not marked on the chain of custody (COC).

TOTAL RECOVERABLE METALS (ICP/ICPMS) - METHOD 6010/6020
Several samples were analyzed at a dilution due to high analyte concentrations or matrix interferences. The reporting limits have been adjusted accordingly.
MS/MSD analyses were performed on sample MW-28. The MS/MSD for method 6020B exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the 6020B MS/MSD performed on a sample MW-28 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The interference check standard solution (ICSA) associated with batch 280-582587 had results for one or more elements at a level greater than 2 times the RL. The ICSA result (2.96 ppb) was >2x the RL (1 ppb) for Ba. The vendor acknowledges that these elements are trace impurities in the ICSA standard. These results are not indicative of a matrix interference.

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

GENERAL CHEMISTRY - VARIOUS
Several samples were analyzed at a dilution due to high analyte concentrations or matrix interferences. The reporting limits have been

Job ID: 280-164770-1 (Continued)

Laboratory: Eurofins Denver (Continued)

adjusted accordingly.
Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for method 9056A exhibited spike compound recoveries outside the QC limits. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Low levels of Total Alkalinity as CaCO3 and Bicarbonate Alkalinity as CaCO3 are present in the method blank associated with QC batch 280-582199. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

Low levels of Total Alkalinity as CaCO3 are present in the method blank associated with QC batch 280-582521. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

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

Detection Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-27 — Lab Sample ID: 280-164770-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	31		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	64	J	100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	2.7	J	10	0.66	ug/L	1		6010C	Total Recoverable
Arsenic	0.00035	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00018	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.0041	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	2000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	47		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	22000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	50000		7500	3200	ug/L	50		6020B	Total Recoverable
Barium	0.099	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0043	B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Lead	0.00043	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Chromium	0.0023		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	25		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	50		5.0	1.0	mg/L	1		9056A	Total/NA
Total Alkalinity as CaCO3	220		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	220		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	360		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-27-EB — Lab Sample ID: 280-164770-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.095	J	0.20	0.038	mg/L	1		6020B	Total Recoverable
Sodium	120	J	150	65	ug/L	1		6020B	Total Recoverable
Barium	0.00044	J	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Chromium	0.00052	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Total Suspended Solids	14		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-36 — Lab Sample ID: 280-164770-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	120		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	480		100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	1.1	J	10	0.66	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-36 (Continued) — Lab Sample ID: 280-164770-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.00037	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.00063	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	5000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	320		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	130000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	240000		7500	3200	ug/L	50		6020B	Total Recoverable
Barium	0.017	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0014	J B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Chromium	0.0010	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	24		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	1600		50	10	mg/L	10		9056A	Total/NA
Total Alkalinity as CaCO3	300		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	300		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	7.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2500		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13 — Lab Sample ID: 280-164770-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	110		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	1200		100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	0.93	J	10	0.66	ug/L	1		6010C	Total Recoverable
Cobalt	0.0010		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.26		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	11000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	580		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	200000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	460000		7500	3200	ug/L	50		6020B	Total Recoverable
Barium	0.021	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0038	B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Chromium	0.00098	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	68		30	10	mg/L	10		9056A	Total/NA
Sulfate	2300		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	790		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	790		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	6.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-13 (Continued) — Lab Sample ID: 280-164770-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids (TDS)	3900		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13-DUP — Lab Sample ID: 280-164770-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	110		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	1200		100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	1.0	J	10	0.66	ug/L	1		6010C	Total Recoverable
Cobalt	0.0011		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.27		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	11000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	490		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	200000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	450000		7500	3200	ug/L	50		6020B	Total Recoverable
Barium	0.021	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0040	B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Chromium	0.0013	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	68		30	10	mg/L	10		9056A	Total/NA
Sulfate	2200		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	770		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	770		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 280-164770-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	230		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	1300		100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	0.95	J	10	0.66	ug/L	1		6010C	Total Recoverable
Cobalt	0.00018	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	1.3		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	12000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	530		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	280000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	730000		7500	3200	ug/L	50		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-21 (Continued) — Lab Sample ID: 280-164770-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.016	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0042	B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Chromium	0.0012	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	400		30	10	mg/L	10		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	240		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	240		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5200		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-28 — Lab Sample ID: 280-164770-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	280		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	1900		100	1.5	ug/L	1		6010C	Total Recoverable
Chromium	0.95	J	10	0.66	ug/L	1		6010C	Total Recoverable
Arsenic	0.00034	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00018	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	3.0		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	19000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	580		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	400000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	1100000		7500	3200	ug/L	50		6020B	Total Recoverable
Barium	0.014	^6+	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Molybdenum	0.00079	J B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Lead	0.00022	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Chromium	0.0010	J F1	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Chloride	65		30	10	mg/L	10		9056A	Total/NA
Sulfate	3300		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	620		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	620		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	64		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	7300		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-34 — Lab Sample ID: 280-164916-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	47		20	9.1	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-34 (Continued)
Lab Sample ID: 280-164916-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0013	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.0013		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.0037	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	3500		120	52	ug/L	1		6020B	Total Recoverable
Calcium	34		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	17000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	240000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	1.2	J	3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	310		25	5.2	mg/L	5		9056A	Total/NA
Total Alkalinity as CaCO3	280		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	280		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	39		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	730		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-35
Lab Sample ID: 280-164916-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	180		20	9.1	ug/L	1		6010C	Total Recoverable
Arsenic	0.00061	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.00052	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	1.9		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	12000		120	52	ug/L	1		6020B	Total Recoverable
Calcium	520		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	310000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	940000		7500	3200	ug/L	50		6020B	Total Recoverable
Chloride	720		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	3400		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	180		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	180		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	7.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5700		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-37
Lab Sample ID: 280-164916-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	77		20	9.1	ug/L	1		6010C	Total Recoverable
Boron	450		100	1.5	ug/L	1		6010C	Total Recoverable
Barium	43		10	0.82	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-37 (Continued)
Lab Sample ID: 280-164916-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	1.1	J	10	0.66	ug/L	1		6010C	Total Recoverable
Arsenic	0.0038	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Cobalt	0.0025		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Selenium	0.19		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	8500		120	52	ug/L	1		6020B	Total Recoverable
Calcium	340		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	130000		2500	1100	ug/L	50		6020B	Total Recoverable
Sodium	300000		7500	3200	ug/L	50		6020B	Total Recoverable
Antimony	0.0030		0.0020	0.00040	mg/L	1		6020B	Total Recoverable
Molybdenum	0.011		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Lead	0.00030	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Chloride	59		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	1800		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	220		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	220		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN

Protocol References:

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-164770-2	MW-27	Water	07/21/22 11:00	07/25/22 15:15
280-164770-3	MW-27-EB	Water	07/21/22 08:55	07/25/22 15:15
280-164770-4	MW-36	Water	07/21/22 13:30	07/25/22 15:15
280-164770-5	MW-13	Water	07/20/22 15:25	07/25/22 15:15
280-164770-6	MW-13-DUP	Water	07/20/22 15:25	07/25/22 15:15
280-164770-7	MW-21	Water	07/20/22 13:45	07/25/22 15:15
280-164770-8	MW-28	Water	07/22/22 15:15	07/25/22 15:15
280-164916-1	MW-34	Water	07/27/22 09:35	07/28/22 12:15
280-164916-2	MW-35	Water	07/27/22 10:10	07/28/22 12:15
280-164916-3	MW-37	Water	07/26/22 14:05	07/28/22 12:15

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-27
Date Collected: 07/21/22 11:00
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	31		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:28	1
Boron	64	J	100	1.5	ug/L		07/29/22 09:10	08/01/22 12:28	1
Chromium	2.7	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:28	1

Client Sample ID: MW-27-EB
Date Collected: 07/21/22 08:55
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:32	1
Boron	ND		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:32	1
Chromium	ND		10	0.66	ug/L		07/29/22 09:10	08/01/22 12:32	1

Client Sample ID: MW-36
Date Collected: 07/21/22 13:30
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	120		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:36	1
Boron	480		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:36	1
Chromium	1.1	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:36	1

Client Sample ID: MW-13
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	110		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:40	1
Boron	1200		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:40	1
Chromium	0.93	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:40	1

Client Sample ID: MW-13-DUP
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	110		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:44	1
Boron	1200		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:44	1
Chromium	1.0	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:44	1

Client Sample ID: MW-21
Date Collected: 07/20/22 13:45
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	230		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:48	1
Boron	1300		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:48	1
Chromium	0.95	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:48	1

Client Sample ID: MW-28
Date Collected: 07/22/22 15:15
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	280		20	9.1	ug/L		07/29/22 09:10	08/01/22 12:52	1
Boron	1900		100	1.5	ug/L		07/29/22 09:10	08/01/22 12:52	1
Chromium	0.95	J	10	0.66	ug/L		07/29/22 09:10	08/01/22 12:52	1

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-34
Date Collected: 07/27/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**47**		20	9.1	ug/L		08/02/22 09:22	08/03/22 17:28	1

Client Sample ID: MW-35
Date Collected: 07/27/22 10:10
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**180**		20	9.1	ug/L		08/02/22 09:22	08/03/22 17:32	1

Client Sample ID: MW-37
Date Collected: 07/26/22 14:05
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**77**		20	9.1	ug/L		08/02/22 09:22	08/03/22 17:36	1
Boron	**450**		100	1.5	ug/L		08/02/22 09:22	08/03/22 17:36	1
Barium	**43**		10	0.82	ug/L		08/02/22 09:22	08/03/22 17:36	1
Chromium	**1.1**	**J**	10	0.66	ug/L		08/02/22 09:22	08/03/22 17:36	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-27
Date Collected: 07/21/22 11:00
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00035**	**J**	0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:02	1
Cobalt	**0.00018**	**J**	0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 12:02	1
Selenium	**0.0041**	**J**	0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 12:02	1
Potassium	**2000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:02	1
Calcium	**47**		10	1.9	mg/L		07/29/22 09:10	08/02/22 16:55	50
Magnesium	**22000**		2500	1100	ug/L		07/29/22 09:10	08/02/22 16:55	50
Sodium	**50000**		7500	3200	ug/L		07/29/22 09:10	08/02/22 16:55	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:02	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:02	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/01/22 12:02	1
Barium	**0.099**	**^6+**	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:02	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:02	1
Molybdenum	**0.0043**	**B**	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:02	1
Lead	**0.00043**	**J**	0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:02	1
Chromium	**0.0023**		0.0020	0.00050	mg/L		07/29/22 09:10	08/01/22 12:02	1

Client Sample ID: MW-27-EB
Date Collected: 07/21/22 08:55
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:06	1
Cobalt	ND		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 12:06	1
Selenium	ND		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 12:06	1
Potassium	ND		120	52	ug/L		07/29/22 09:10	08/01/22 12:06	1
Calcium	**0.095**	**J**	0.20	0.038	mg/L		07/29/22 09:10	08/05/22 10:05	1
Magnesium	ND		50	21	ug/L		07/29/22 09:10	08/05/22 10:05	1
Sodium	**120**	**J**	150	65	ug/L		07/29/22 09:10	08/05/22 10:05	1
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:06	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-27-EB
Date Collected: 07/21/22 08:55
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:06	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/01/22 12:06	1
Barium	**0.00044**	**J**	0.0010	0.00029	mg/L		07/29/22 09:10	08/05/22 10:05	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:06	1
Molybdenum	ND		0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:06	1
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:06	1
Chromium	**0.00052**	**J**	0.0020	0.00050	mg/L		07/29/22 09:10	08/01/22 12:06	1

Client Sample ID: MW-36
Date Collected: 07/21/22 13:30
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:09	1
Cobalt	**0.00037**	**J**	0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 12:09	1
Selenium	**0.00063**	**J**	0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 12:09	1
Potassium	**5000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:09	1
Calcium	**320**		10	1.9	mg/L		07/29/22 09:10	08/02/22 17:02	50
Magnesium	**130000**		2500	1100	ug/L		07/29/22 09:10	08/02/22 17:02	50
Sodium	**240000**		7500	3200	ug/L		07/29/22 09:10	08/02/22 17:02	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:09	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:09	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/01/22 12:09	1
Barium	**0.017**	**^6+**	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:09	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:09	1
Molybdenum	**0.0014**	**J B**	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:09	1
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:09	1
Chromium	**0.0010**	**J**	0.0020	0.00050	mg/L		07/29/22 09:10	08/01/22 12:09	1

Client Sample ID: MW-13
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:13	1
Cobalt	**0.0010**		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 12:13	1
Selenium	**0.26**		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 12:13	1
Potassium	**11000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:13	1
Calcium	**580**		10	1.9	mg/L		07/29/22 09:10	08/01/22 22:38	50
Magnesium	**200000**		2500	1100	ug/L		07/29/22 09:10	08/01/22 22:38	50
Sodium	**460000**		7500	3200	ug/L		07/29/22 09:10	08/01/22 22:38	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:13	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:13	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/01/22 12:13	1
Barium	**0.021**	**^6+**	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:13	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:13	1
Molybdenum	**0.0038**	**B**	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:13	1
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:13	1
Chromium	**0.00098**	**J**	0.0020	0.00050	mg/L		07/29/22 09:10	08/01/22 12:13	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-13-DUP
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:28	1
Cobalt	**0.0011**		0.0010	0.000092	mg/L		07/29/22 09:10	08/02/22 01:12	1
Selenium	**0.27**		0.0050	0.00037	mg/L		07/29/22 09:10	08/03/22 13:16	1
Potassium	**11000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:28	1
Calcium	**490**		10	1.9	mg/L		07/29/22 09:10	08/02/22 17:10	50
Magnesium	**200000**		2500	1100	ug/L		07/29/22 09:10	08/02/22 17:10	50
Sodium	**450000**		7500	3200	ug/L		07/29/22 09:10	08/02/22 17:10	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:28	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:28	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/02/22 01:12	1
Barium	**0.021**	**^6+**	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:28	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:28	1
Molybdenum	**0.0040**	**B**	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:28	1
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:28	1
Chromium	**0.0013**	**J**	0.0020	0.00050	mg/L		07/29/22 09:10	08/02/22 01:12	1

Client Sample ID: MW-21
Date Collected: 07/20/22 13:45
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:32	1
Cobalt	**0.00018**	**J**	0.0010	0.000092	mg/L		07/29/22 09:10	08/02/22 01:16	1
Selenium	**1.3**		0.0050	0.00037	mg/L		07/29/22 09:10	08/03/22 13:20	1
Potassium	**12000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:32	1
Calcium	**530**		10	1.9	mg/L		07/29/22 09:10	08/02/22 17:13	50
Magnesium	**280000**		2500	1100	ug/L		07/29/22 09:10	08/02/22 17:13	50
Sodium	**730000**		7500	3200	ug/L		07/29/22 09:10	08/02/22 17:13	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:32	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:32	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/02/22 01:16	1
Barium	**0.016**	**^6+**	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:32	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:32	1
Molybdenum	**0.0042**	**B**	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:32	1
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:32	1
Chromium	**0.0012**	**J**	0.0020	0.00050	mg/L		07/29/22 09:10	08/02/22 01:16	1

Client Sample ID: MW-28
Date Collected: 07/22/22 15:15
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00034**	**J**	0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 12:36	1
Cobalt	**0.00018**	**J**	0.0010	0.000092	mg/L		07/29/22 09:10	08/02/22 01:19	1
Selenium	**3.0**		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 12:36	1
Potassium	**19000**		120	52	ug/L		07/29/22 09:10	08/01/22 12:36	1
Calcium	**580**		10	1.9	mg/L		07/29/22 09:10	08/02/22 17:28	50
Magnesium	**400000**		2500	1100	ug/L		07/29/22 09:10	08/02/22 17:28	50
Sodium	**1100000**		7500	3200	ug/L		07/29/22 09:10	08/02/22 17:28	50
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 12:36	1
Antimony	ND	F1	0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 12:36	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/02/22 01:19	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-28
Date Collected: 07/22/22 15:15
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.014	^6+	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 12:36	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 12:36	1
Molybdenum	0.00079	J B	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 12:36	1
Lead	0.00022	J	0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 12:36	1
Chromium	0.0010	J F1	0.0020	0.00050	mg/L		07/29/22 09:10	08/02/22 01:19	1

Client Sample ID: MW-34
Date Collected: 07/27/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013	J	0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:42	1
Cobalt	0.0013		0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:42	1
Selenium	0.0037	J	0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:42	1
Potassium	3500		120	52	ug/L		08/01/22 08:47	08/02/22 00:42	1
Calcium	34		10	1.9	mg/L		08/01/22 08:47	08/02/22 18:09	50
Magnesium	17000		2500	1100	ug/L		08/01/22 08:47	08/02/22 18:09	50
Sodium	240000		7500	3200	ug/L		08/01/22 08:47	08/02/22 18:09	50
Cadmium	ND		0.0010	0.00027	mg/L		08/01/22 08:47	08/02/22 00:42	1

Client Sample ID: MW-35
Date Collected: 07/27/22 10:10
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00061	J	0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:45	1
Cobalt	0.00052	J	0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:45	1
Selenium	1.9		0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:45	1
Potassium	12000		120	52	ug/L		08/01/22 08:47	08/02/22 00:45	1
Calcium	520		10	1.9	mg/L		08/01/22 08:47	08/02/22 18:13	50
Magnesium	310000		2500	1100	ug/L		08/01/22 08:47	08/02/22 18:13	50
Sodium	940000		7500	3200	ug/L		08/01/22 08:47	08/02/22 18:13	50
Cadmium	ND		0.0010	0.00027	mg/L		08/01/22 08:47	08/02/22 00:45	1

Client Sample ID: MW-37
Date Collected: 07/26/22 14:05
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0038	J	0.0050	0.00033	mg/L		08/01/22 08:47	08/02/22 00:49	1
Cobalt	0.0025		0.0010	0.000092	mg/L		08/01/22 08:47	08/02/22 00:49	1
Selenium	0.19		0.0050	0.00037	mg/L		08/01/22 08:47	08/02/22 00:49	1
Potassium	8500		120	52	ug/L		08/01/22 08:47	08/02/22 00:49	1
Calcium	340		10	1.9	mg/L		08/01/22 08:47	08/02/22 18:17	50
Magnesium	130000		2500	1100	ug/L		08/01/22 08:47	08/02/22 18:17	50
Sodium	300000		7500	3200	ug/L		08/01/22 08:47	08/02/22 18:17	50
Cadmium	ND		0.0010	0.00027	mg/L		08/01/22 08:47	08/02/22 00:49	1
Antimony	0.0030		0.0020	0.00040	mg/L		08/01/22 08:47	08/02/22 00:49	1
Beryllium	ND		0.0010	0.000080	mg/L		08/01/22 08:47	08/02/22 00:49	1
Thallium	ND		0.0010	0.000089	mg/L		08/01/22 08:47	08/02/22 00:49	1
Molybdenum	0.011		0.0020	0.00014	mg/L		08/01/22 08:47	08/02/22 00:49	1
Lead	0.00030	J	0.0010	0.00018	mg/L		08/01/22 08:47	08/02/22 00:49	1

General Chemistry

Client Sample ID: MW-27
Date Collected: 07/21/22 11:00
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**25**		3.0	1.0	mg/L			07/27/22 20:40	1
Sulfate (SW846 9056A)	**50**		5.0	1.0	mg/L			07/27/22 20:40	1
Total Alkalinity as CaCO3 (SM 2320B)	**220**		10	3.1	mg/L			07/27/22 19:40	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**220**		10	3.1	mg/L			07/27/22 19:40	1
Total Suspended Solids (SM 2540D)	**4.8**		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**360**		10	4.7	mg/L			07/26/22 10:45	1

Client Sample ID: MW-27-EB
Date Collected: 07/21/22 08:55
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	ND		3.0	1.0	mg/L			07/27/22 20:56	1
Sulfate (SW846 9056A)	ND		5.0	1.0	mg/L			07/27/22 20:56	1
Total Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			07/27/22 19:45	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			07/27/22 19:45	1
Total Suspended Solids (SM 2540D)	**14**		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	ND		10	4.7	mg/L			07/26/22 10:45	1

Client Sample ID: MW-36
Date Collected: 07/21/22 13:30
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**24**		3.0	1.0	mg/L			07/27/22 21:12	1
Sulfate (SW846 9056A)	**1600**		50	10	mg/L			07/27/22 21:28	10
Total Alkalinity as CaCO3 (SM 2320B)	**300**		10	3.1	mg/L			07/27/22 20:16	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**300**		10	3.1	mg/L			07/27/22 20:16	1
Total Suspended Solids (SM 2540D)	**7.2**		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**2500**		20	9.4	mg/L			07/26/22 10:45	1

Client Sample ID: MW-13
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**68**		30	10	mg/L			07/27/22 21:44	10
Sulfate (SW846 9056A)	**2300**		100	21	mg/L			07/29/22 04:58	20
Total Alkalinity as CaCO3 (SM 2320B)	**790**		10	3.1	mg/L			07/27/22 20:34	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**790**		10	3.1	mg/L			07/27/22 20:34	1
Total Suspended Solids (SM 2540D)	**6.0**		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**3900**		40	19	mg/L			07/26/22 10:45	1

General Chemistry

Client Sample ID: MW-13-DUP
Date Collected: 07/20/22 15:25
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	68		30	10	mg/L			07/27/22 22:00	10
Sulfate (SW846 9056A)	2200		100	21	mg/L			07/29/22 05:14	20
Total Alkalinity as CaCO3 (SM 2320B)	770		10	3.1	mg/L			07/27/22 20:46	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	770		10	3.1	mg/L			07/27/22 20:46	1
Total Suspended Solids (SM 2540D)	2.4	J	4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3800		40	19	mg/L			07/26/22 10:45	1

Client Sample ID: MW-21
Date Collected: 07/20/22 13:45
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	400		30	10	mg/L			07/27/22 22:16	10
Sulfate (SW846 9056A)	3200		100	21	mg/L			07/29/22 05:30	20
Total Alkalinity as CaCO3 (SM 2320B)	240		10	3.1	mg/L			07/27/22 20:53	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	240		10	3.1	mg/L			07/27/22 20:53	1
Total Suspended Solids (SM 2540D)	10		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	5200		40	19	mg/L			07/26/22 10:45	1

Client Sample ID: MW-28
Date Collected: 07/22/22 15:15
Date Received: 07/25/22 15:15
Lab Sample ID: 280-164770-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	65		30	10	mg/L			07/27/22 22:32	10
Sulfate (SW846 9056A)	3300		100	21	mg/L			07/29/22 05:46	20
Total Alkalinity as CaCO3 (SM 2320B)	620		10	3.1	mg/L			07/27/22 21:03	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	620		10	3.1	mg/L			07/27/22 21:03	1
Total Suspended Solids (SM 2540D)	64		4.0	1.1	mg/L			07/26/22 15:13	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	7300		100	47	mg/L			07/26/22 10:45	1

Client Sample ID: MW-34
Date Collected: 07/27/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	1.2	J	3.0	1.0	mg/L			07/29/22 21:01	1
Sulfate (SW846 9056A)	310		25	5.2	mg/L			07/31/22 06:07	5
Total Alkalinity as CaCO3 (SM 2320B)	280		10	3.1	mg/L			07/29/22 15:27	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	280		10	3.1	mg/L			07/29/22 15:27	1
Total Suspended Solids (SM 2540D)	39		4.0	1.1	mg/L			07/29/22 10:02	1

General Chemistry (Continued)

Client Sample ID: MW-34
Date Collected: 07/27/22 09:35
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS) (SM18 SM2540 C)	730		10	4.7	mg/L			07/29/22 13:51	1

Client Sample ID: MW-35
Date Collected: 07/27/22 10:10
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	720		15	5.1	mg/L			07/29/22 21:16	5
Sulfate (SW846 9056A)	3400		100	21	mg/L			07/29/22 21:31	20
Total Alkalinity as CaCO3 (SM 2320B)	180		10	3.1	mg/L			07/29/22 15:33	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	180		10	3.1	mg/L			07/29/22 15:33	1
Total Suspended Solids (SM 2540D)	7.6		4.0	1.1	mg/L			07/29/22 10:02	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	5700		40	19	mg/L			07/29/22 13:51	1

Client Sample ID: MW-37
Date Collected: 07/26/22 14:05
Date Received: 07/28/22 12:15
Lab Sample ID: 280-164916-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	59		3.0	1.0	mg/L			07/29/22 21:46	1
Sulfate (SW846 9056A)	1800		100	21	mg/L			07/29/22 22:31	20
Total Alkalinity as CaCO3 (SM 2320B)	220		10	3.1	mg/L			07/29/22 15:40	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	220		10	3.1	mg/L			07/29/22 15:40	1
Total Suspended Solids (SM 2540D)	4.0		4.0	1.1	mg/L			07/29/22 10:02	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	2600		20	9.4	mg/L			07/29/22 13:51	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-582255/1-A
Matrix: Water
Analysis Batch: 582593

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		07/29/22 09:10	08/01/22 11:24	1
Boron	ND		100	1.5	ug/L		07/29/22 09:10	08/01/22 11:24	1
Chromium	ND		10	0.66	ug/L		07/29/22 09:10	08/01/22 11:24	1

Lab Sample ID: LCS 280-582255/2-A
Matrix: Water
Analysis Batch: 582593

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	962		ug/L		96	90 - 112
Boron	2000	1960		ug/L		98	86 - 110
Chromium	1000	971		ug/L		97	90 - 113

Lab Sample ID: MB 280-582563/1-A
Matrix: Water
Analysis Batch: 582969

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582563

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		08/02/22 09:22	08/03/22 17:20	1
Boron	ND		100	1.5	ug/L		08/02/22 09:22	08/03/22 17:20	1
Barium	ND		10	0.82	ug/L		08/02/22 09:22	08/03/22 17:20	1
Chromium	ND		10	0.66	ug/L		08/02/22 09:22	08/03/22 17:20	1

Lab Sample ID: LCS 280-582563/2-A
Matrix: Water
Analysis Batch: 582969

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	939		ug/L		94	90 - 112
Boron	2000	1830		ug/L		91	86 - 110
Barium	1000	921		ug/L		92	90 - 112
Chromium	1000	928		ug/L		93	90 - 113

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-582178/1-A
Matrix: Water
Analysis Batch: 582587

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		07/29/22 09:10	08/01/22 11:06	1
Cobalt	ND		0.0010	0.000092	mg/L		07/29/22 09:10	08/01/22 11:06	1
Selenium	ND		0.0050	0.00037	mg/L		07/29/22 09:10	08/01/22 11:06	1
Potassium	ND		120	52	ug/L		07/29/22 09:10	08/01/22 11:06	1
Cadmium	ND		0.0010	0.00027	mg/L		07/29/22 09:10	08/01/22 11:06	1
Antimony	ND		0.0020	0.00040	mg/L		07/29/22 09:10	08/01/22 11:06	1
Beryllium	ND		0.0010	0.000080	mg/L		07/29/22 09:10	08/01/22 11:06	1
Barium	ND	^6+	0.0010	0.00029	mg/L		07/29/22 09:10	08/01/22 11:06	1
Thallium	ND		0.0010	0.000089	mg/L		07/29/22 09:10	08/01/22 11:06	1
Molybdenum	0.000182	J	0.0020	0.00014	mg/L		07/29/22 09:10	08/01/22 11:06	1

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

Lab Sample ID: MB 280-582178/1-A
Matrix: Water
Analysis Batch: 582587

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	0.00018	mg/L		07/29/22 09:10	08/01/22 11:06	1
Chromium	ND		0.0020	0.00050	mg/L		07/29/22 09:10	08/01/22 11:06	1

Lab Sample ID: MB 280-582178/1-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		50	21	ug/L		07/29/22 09:10	08/02/22 15:57	1
Sodium	ND		150	65	ug/L		07/29/22 09:10	08/02/22 15:57	1
Chromium	ND		0.0020	0.00050	mg/L		07/29/22 09:10	08/02/22 15:57	1

Lab Sample ID: LCS 280-582178/2-A
Matrix: Water
Analysis Batch: 582587

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0414		mg/L		103	85 - 117
Cobalt	0.0400	0.0413		mg/L		103	85 - 120
Selenium	0.0400	0.0412		mg/L		103	77 - 122
Potassium	800	831		ug/L		104	80 - 120
Cadmium	0.0400	0.0421		mg/L		105	85 - 115
Antimony	0.0400	0.0411		mg/L		103	85 - 115
Beryllium	0.0400	0.0368		mg/L		92	80 - 125
Barium	0.0400	0.0416	^6+	mg/L		104	85 - 118
Thallium	0.0400	0.0416		mg/L		104	85 - 118
Molybdenum	0.0400	0.0414		mg/L		104	85 - 119
Lead	0.0400	0.0419		mg/L		105	85 - 118
Chromium	0.0400	0.0425		mg/L		106	84 - 121

Lab Sample ID: LCS 280-582178/2-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	800	831		ug/L		104	80 - 120
Sodium	800	825		ug/L		103	80 - 120
Chromium	0.0400	0.0429		mg/L		107	84 - 121

Lab Sample ID: 280-164770-8 MS
Matrix: Water
Analysis Batch: 582587

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00034	J	0.0400	0.0422		mg/L		105	92 - 112
Selenium	3.0		0.0400	3.13	4	mg/L		349	90 - 115
Potassium	19000		800	19700	4	ug/L		104	80 - 120
Cadmium	ND		0.0400	0.0406		mg/L		101	91 - 114
Antimony	ND	F1	0.0400	0.0447	F1	mg/L		112	80 - 111
Barium	0.014	^6+	0.0400	0.0598	^6+	mg/L		114	92 - 117

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

Lab Sample ID: 280-164770-8 MS
Matrix: Water
Analysis Batch: 582587

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	ND		0.0400	0.0421		mg/L		105	94 - 115
Molybdenum	0.00079	J B	0.0400	0.0444		mg/L		109	84 - 117
Lead	0.00022	J	0.0400	0.0427		mg/L		106	95 - 116

Lab Sample ID: 280-164770-8 MS
Matrix: Water
Analysis Batch: 582659

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.00018	J	0.0400	0.0453		mg/L		113	94 - 115
Beryllium	ND		0.0400	0.0453		mg/L		113	87 - 118
Chromium	0.0010	J F1	0.0400	0.0488	F1	mg/L		119	91 - 114

Lab Sample ID: 280-164770-8 MS
Matrix: Water
Analysis Batch: 582816

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	580		0.800	591	4	mg/L		1790	80 - 120
Magnesium	400000		800	403000	4	ug/L		328	80 - 120
Sodium	1100000		800	1110000	4	ug/L		1402	80 - 120

Lab Sample ID: 280-164770-8 MSD
Matrix: Water
Analysis Batch: 582587

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.00034	J	0.0400	0.0428		mg/L		106	92 - 112	4	20
Selenium	3.0		0.0400	2.99	4	mg/L		-17	90 - 115	2	20
Potassium	19000		800	19900	4	ug/L		128	80 - 120	2	20
Cadmium	ND		0.0400	0.0425		mg/L		106	91 - 114	3	20
Antimony	ND	F1	0.0400	0.0454	F1	mg/L		113	80 - 111	1	20
Barium	0.014	^6+	0.0400	0.0601	^6+	mg/L		115	92 - 117	8	20
Thallium	ND		0.0400	0.0419		mg/L		105	94 - 115	3	20
Molybdenum	0.00079	J B	0.0400	0.0444		mg/L		109	84 - 117	7	20
Lead	0.00022	J	0.0400	0.0427		mg/L		106	95 - 116	4	20

Lab Sample ID: 280-164770-8 MSD
Matrix: Water
Analysis Batch: 582659

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cobalt	0.00018	J	0.0400	0.0455		mg/L		113	94 - 115	0	20
Beryllium	ND		0.0400	0.0455		mg/L		114	87 - 118	0	20
Chromium	0.0010	J F1	0.0400	0.0479	F1	mg/L		117	91 - 114	2	20

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

Lab Sample ID: 280-164770-8 MSD
Matrix: Water
Analysis Batch: 582816

Client Sample ID: MW-28
Prep Type: Total Recoverable
Prep Batch: 582178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	580		0.800	584	4	mg/L		904	80 - 120	1	20
Magnesium	400000		800	398000	4	ug/L		-317	80 - 120	1	20
Sodium	1100000		800	1090000	4	ug/L		-588	80 - 120	1	20

Lab Sample ID: MB 280-582342/1-A
Matrix: Water
Analysis Batch: 582659

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		08/01/22 08:47	08/01/22 23:19	1
Cobalt	ND		0.0010	0.000092	mg/L		08/01/22 08:47	08/01/22 23:19	1
Selenium	ND		0.0050	0.00037	mg/L		08/01/22 08:47	08/01/22 23:19	1
Potassium	ND		120	52	ug/L		08/01/22 08:47	08/01/22 23:19	1
Calcium	ND		0.20	0.038	mg/L		08/01/22 08:47	08/01/22 23:19	1
Cadmium	ND		0.0010	0.00027	mg/L		08/01/22 08:47	08/01/22 23:19	1
Antimony	ND		0.0020	0.00040	mg/L		08/01/22 08:47	08/01/22 23:19	1
Beryllium	ND		0.0010	0.000080	mg/L		08/01/22 08:47	08/01/22 23:19	1
Thallium	ND		0.0010	0.000089	mg/L		08/01/22 08:47	08/01/22 23:19	1
Lead	ND		0.0010	0.00018	mg/L		08/01/22 08:47	08/01/22 23:19	1

Lab Sample ID: MB 280-582342/1-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		50	21	ug/L		08/01/22 08:47	08/02/22 15:49	1
Sodium	ND		150	65	ug/L		08/01/22 08:47	08/02/22 15:49	1

Lab Sample ID: LCS 280-582342/2-A
Matrix: Water
Analysis Batch: 582659

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0376		mg/L		94	85 - 117
Cobalt	0.0400	0.0392		mg/L		98	85 - 120
Selenium	0.0400	0.0369		mg/L		92	77 - 122
Potassium	800	713		ug/L		89	80 - 120
Calcium	0.800	0.753		mg/L		94	80 - 120
Cadmium	0.0400	0.0382		mg/L		96	85 - 115
Antimony	0.0400	0.0379		mg/L		95	85 - 115
Beryllium	0.0400	0.0375		mg/L		94	80 - 125
Thallium	0.0400	0.0385		mg/L		96	85 - 118
Lead	0.0400	0.0383		mg/L		96	85 - 118

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

Lab Sample ID: LCS 280-582342/2-A
Matrix: Water
Analysis Batch: 582816

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 582342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	800	831		ug/L		104	80 - 120
Sodium	800	831		ug/L		104	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-582062/6
Matrix: Water
Analysis Batch: 582062

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/27/22 11:14	1
Sulfate	ND		5.0	1.0	mg/L			07/27/22 11:14	1

Lab Sample ID: LCS 280-582062/4
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	100		mg/L		100	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-582062/5
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	100		mg/L		100	90 - 110	0	10
Sulfate	100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-582062/3
Matrix: Water
Analysis Batch: 582062

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.65		mg/L		93	50 - 150
Sulfate	5.00	4.35	J	mg/L		87	50 - 150

Lab Sample ID: MB 280-582229/60
Matrix: Water
Analysis Batch: 582229

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			07/29/22 02:33	1

Lab Sample ID: LCS 280-582229/58
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	101		mg/L		101	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-582229/59
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	101		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-582229/3
Matrix: Water
Analysis Batch: 582229

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	5.00	4.48	J	mg/L		90	50 - 150

Lab Sample ID: MB 280-582367/6
Matrix: Water
Analysis Batch: 582367

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/29/22 11:01	1
Sulfate	ND		5.0	1.0	mg/L			07/29/22 11:01	1

Lab Sample ID: LCS 280-582367/4
Matrix: Water
Analysis Batch: 582367

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	103		mg/L		103	90 - 110
Sulfate	100	103		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-582367/5
Matrix: Water
Analysis Batch: 582367

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	103		mg/L		103	90 - 110	0	10
Sulfate	100	103		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-582367/3
Matrix: Water
Analysis Batch: 582367

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.80		mg/L		96	50 - 150
Sulfate	5.00	4.42	J	mg/L		88	50 - 150

Lab Sample ID: MB 280-582486/6
Matrix: Water
Analysis Batch: 582486

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			07/30/22 16:12	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-582486/4
Matrix: Water
Analysis Batch: 582486

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	99.5		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-582486/5
Matrix: Water
Analysis Batch: 582486

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	99.4		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-582486/3
Matrix: Water
Analysis Batch: 582486

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	5.00	4.32	J	mg/L		86	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-582199/32
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 17:00	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 17:00	1

Lab Sample ID: MB 280-582199/58
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 20:09	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 20:09	1

Lab Sample ID: MB 280-582199/6
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.19	J	10	3.1	mg/L			07/27/22 14:04	1
Bicarbonate Alkalinity as CaCO3	3.19	J	10	3.1	mg/L			07/27/22 14:04	1

Lab Sample ID: MB 280-582199/84
Matrix: Water
Analysis Batch: 582199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 23:20	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/27/22 23:20	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-582199/31
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	202		mg/L		101	89 - 109

Lab Sample ID: LCS 280-582199/57
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	207		mg/L		104	89 - 109

Lab Sample ID: LCS 280-582199/83
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	207		mg/L		104	89 - 109

Lab Sample ID: LCSD 280-582199/5
Matrix: Water
Analysis Batch: 582199

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	200		mg/L		100	89 - 109	4	10

Lab Sample ID: 280-164770-4 DU
Matrix: Water
Analysis Batch: 582199

Client Sample ID: MW-36
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3	300		298		mg/L		0.8	10
Bicarbonate Alkalinity as CaCO3	300		298		mg/L		0.8	20

Lab Sample ID: MB 280-582521/32
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 13:33	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 13:33	1

Lab Sample ID: MB 280-582521/58
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 16:34	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 16:34	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-582521/6
Matrix: Water
Analysis Batch: 582521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.34	J	10	3.1	mg/L			07/29/22 10:23	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			07/29/22 10:23	1

Lab Sample ID: LCS 280-582521/31
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	208		mg/L		104	89 - 109

Lab Sample ID: LCS 280-582521/57
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	210		mg/L		105	89 - 109

Lab Sample ID: LCSD 280-582521/5
Matrix: Water
Analysis Batch: 582521

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	190		mg/L		95	89 - 109	9	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-581993/3
Matrix: Water
Analysis Batch: 581993

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			07/26/22 15:13	1

Lab Sample ID: LCS 280-581993/1
Matrix: Water
Analysis Batch: 581993

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	450		mg/L		90	79 - 114

Lab Sample ID: LCSD 280-581993/2
Matrix: Water
Analysis Batch: 581993

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	470		mg/L		94	79 - 114	4	20

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-582376/3
Matrix: Water
Analysis Batch: 582376

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			07/29/22 10:01	1

Lab Sample ID: LCS 280-582376/1
Matrix: Water
Analysis Batch: 582376

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	408		mg/L		82	79 - 114

Lab Sample ID: LCSD 280-582376/2
Matrix: Water
Analysis Batch: 582376

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	447		mg/L		89	79 - 114	9	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-581939/1
Matrix: Water
Analysis Batch: 581939

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/26/22 10:45	1

Lab Sample ID: LCS 280-581939/2
Matrix: Water
Analysis Batch: 581939

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	481		mg/L		96	88 - 114

Lab Sample ID: 280-164770-2 DU
Matrix: Water
Analysis Batch: 581939

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	360		360		mg/L		0.6	10

Lab Sample ID: 280-164770-3 DU
Matrix: Water
Analysis Batch: 581939

Client Sample ID: MW-27-EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	ND		ND		mg/L		NC	10

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: MB 280-582423/1
Matrix: Water
Analysis Batch: 582423

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			07/29/22 13:51	1

Lab Sample ID: LCS 280-582423/2
Matrix: Water
Analysis Batch: 582423

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			502	486		mg/L		97	88 - 114		

Lab Sample ID: LCSD 280-582423/3
Matrix: Water
Analysis Batch: 582423

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			501	481		mg/L		96	88 - 114	1	20

Metals

Prep Batch: 582178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total Recoverable	Water	3005A	
280-164770-3	MW-27-EB	Total Recoverable	Water	3005A	
280-164770-4	MW-36	Total Recoverable	Water	3005A	
280-164770-5	MW-13	Total Recoverable	Water	3005A	
280-164770-6	MW-13-DUP	Total Recoverable	Water	3005A	
280-164770-7	MW-21	Total Recoverable	Water	3005A	
280-164770-8	MW-28	Total Recoverable	Water	3005A	
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-164770-8 MS	MW-28	Total Recoverable	Water	3005A	
280-164770-8 MSD	MW-28	Total Recoverable	Water	3005A	

Prep Batch: 582255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total Recoverable	Water	3005A	
280-164770-3	MW-27-EB	Total Recoverable	Water	3005A	
280-164770-4	MW-36	Total Recoverable	Water	3005A	
280-164770-5	MW-13	Total Recoverable	Water	3005A	
280-164770-6	MW-13-DUP	Total Recoverable	Water	3005A	
280-164770-7	MW-21	Total Recoverable	Water	3005A	
280-164770-8	MW-28	Total Recoverable	Water	3005A	
MB 280-582255/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582255/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 582342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total Recoverable	Water	3005A	
280-164916-2	MW-35	Total Recoverable	Water	3005A	
280-164916-3	MW-37	Total Recoverable	Water	3005A	
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 582563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total Recoverable	Water	3005A	
280-164916-2	MW-35	Total Recoverable	Water	3005A	
280-164916-3	MW-37	Total Recoverable	Water	3005A	
MB 280-582563/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-582563/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 582587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total Recoverable	Water	6020B	582178
280-164770-3	MW-27-EB	Total Recoverable	Water	6020B	582178
280-164770-4	MW-36	Total Recoverable	Water	6020B	582178
280-164770-5	MW-13	Total Recoverable	Water	6020B	582178
280-164770-6	MW-13-DUP	Total Recoverable	Water	6020B	582178
280-164770-7	MW-21	Total Recoverable	Water	6020B	582178
280-164770-8	MW-28	Total Recoverable	Water	6020B	582178
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	6020B	582178
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582178

Metals (Continued)

Analysis Batch: 582587 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-8 MS	MW-28	Total Recoverable	Water	6020B	582178
280-164770-8 MSD	MW-28	Total Recoverable	Water	6020B	582178

Analysis Batch: 582593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total Recoverable	Water	6010C	582255
280-164770-3	MW-27-EB	Total Recoverable	Water	6010C	582255
280-164770-4	MW-36	Total Recoverable	Water	6010C	582255
280-164770-5	MW-13	Total Recoverable	Water	6010C	582255
280-164770-6	MW-13-DUP	Total Recoverable	Water	6010C	582255
280-164770-7	MW-21	Total Recoverable	Water	6010C	582255
280-164770-8	MW-28	Total Recoverable	Water	6010C	582255
MB 280-582255/1-A	Method Blank	Total Recoverable	Water	6010C	582255
LCS 280-582255/2-A	Lab Control Sample	Total Recoverable	Water	6010C	582255

Analysis Batch: 582651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-5	MW-13	Total Recoverable	Water	6020B	582178

Analysis Batch: 582659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-6	MW-13-DUP	Total Recoverable	Water	6020B	582178
280-164770-7	MW-21	Total Recoverable	Water	6020B	582178
280-164770-8	MW-28	Total Recoverable	Water	6020B	582178
280-164916-1	MW-34	Total Recoverable	Water	6020B	582342
280-164916-2	MW-35	Total Recoverable	Water	6020B	582342
280-164916-3	MW-37	Total Recoverable	Water	6020B	582342
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	6020B	582342
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582342
280-164770-8 MS	MW-28	Total Recoverable	Water	6020B	582178
280-164770-8 MSD	MW-28	Total Recoverable	Water	6020B	582178

Analysis Batch: 582816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total Recoverable	Water	6020B	582178
280-164770-4	MW-36	Total Recoverable	Water	6020B	582178
280-164770-6	MW-13-DUP	Total Recoverable	Water	6020B	582178
280-164770-7	MW-21	Total Recoverable	Water	6020B	582178
280-164770-8	MW-28	Total Recoverable	Water	6020B	582178
280-164916-1	MW-34	Total Recoverable	Water	6020B	582342
280-164916-2	MW-35	Total Recoverable	Water	6020B	582342
280-164916-3	MW-37	Total Recoverable	Water	6020B	582342
MB 280-582178/1-A	Method Blank	Total Recoverable	Water	6020B	582178
MB 280-582342/1-A	Method Blank	Total Recoverable	Water	6020B	582342
LCS 280-582178/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582178
LCS 280-582342/2-A	Lab Control Sample	Total Recoverable	Water	6020B	582342
280-164770-8 MS	MW-28	Total Recoverable	Water	6020B	582178
280-164770-8 MSD	MW-28	Total Recoverable	Water	6020B	582178

Metals

Analysis Batch: 582893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-6	MW-13-DUP	Total Recoverable	Water	6020B	582178
280-164770-7	MW-21	Total Recoverable	Water	6020B	582178

Analysis Batch: 582969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total Recoverable	Water	6010C	582563
280-164916-2	MW-35	Total Recoverable	Water	6010C	582563
280-164916-3	MW-37	Total Recoverable	Water	6010C	582563
MB 280-582563/1-A	Method Blank	Total Recoverable	Water	6010C	582563
LCS 280-582563/2-A	Lab Control Sample	Total Recoverable	Water	6010C	582563

Analysis Batch: 583175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-3	MW-27-EB	Total Recoverable	Water	6020B	582178

General Chemistry

Analysis Batch: 581939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total/NA	Water	SM2540 C	
280-164770-3	MW-27-EB	Total/NA	Water	SM2540 C	
280-164770-4	MW-36	Total/NA	Water	SM2540 C	
280-164770-5	MW-13	Total/NA	Water	SM2540 C	
280-164770-6	MW-13-DUP	Total/NA	Water	SM2540 C	
280-164770-7	MW-21	Total/NA	Water	SM2540 C	
280-164770-8	MW-28	Total/NA	Water	SM2540 C	
MB 280-581939/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-581939/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-164770-2 DU	MW-27	Total/NA	Water	SM2540 C	
280-164770-3 DU	MW-27-EB	Total/NA	Water	SM2540 C	

Analysis Batch: 581993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total/NA	Water	SM 2540D	
280-164770-3	MW-27-EB	Total/NA	Water	SM 2540D	
280-164770-4	MW-36	Total/NA	Water	SM 2540D	
280-164770-5	MW-13	Total/NA	Water	SM 2540D	
280-164770-6	MW-13-DUP	Total/NA	Water	SM 2540D	
280-164770-7	MW-21	Total/NA	Water	SM 2540D	
280-164770-8	MW-28	Total/NA	Water	SM 2540D	
MB 280-581993/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-581993/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-581993/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 582062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total/NA	Water	9056A	
280-164770-3	MW-27-EB	Total/NA	Water	9056A	
280-164770-4	MW-36	Total/NA	Water	9056A	
280-164770-4	MW-36	Total/NA	Water	9056A	
280-164770-5	MW-13	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 582062 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-6	MW-13-DUP	Total/NA	Water	9056A	
280-164770-7	MW-21	Total/NA	Water	9056A	
280-164770-8	MW-28	Total/NA	Water	9056A	
MB 280-582062/6	Method Blank	Total/NA	Water	9056A	
LCS 280-582062/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582062/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582062/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 582199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-2	MW-27	Total/NA	Water	SM 2320B	
280-164770-3	MW-27-EB	Total/NA	Water	SM 2320B	
280-164770-4	MW-36	Total/NA	Water	SM 2320B	
280-164770-5	MW-13	Total/NA	Water	SM 2320B	
280-164770-6	MW-13-DUP	Total/NA	Water	SM 2320B	
280-164770-7	MW-21	Total/NA	Water	SM 2320B	
280-164770-8	MW-28	Total/NA	Water	SM 2320B	
MB 280-582199/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/6	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582199/84	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-582199/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582199/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582199/83	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-582199/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-164770-4 DU	MW-36	Total/NA	Water	SM 2320B	

Analysis Batch: 582229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164770-5	MW-13	Total/NA	Water	9056A	
280-164770-6	MW-13-DUP	Total/NA	Water	9056A	
280-164770-7	MW-21	Total/NA	Water	9056A	
280-164770-8	MW-28	Total/NA	Water	9056A	
MB 280-582229/60	Method Blank	Total/NA	Water	9056A	
LCS 280-582229/58	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582229/59	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582229/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 582367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total/NA	Water	9056A	
280-164916-2	MW-35	Total/NA	Water	9056A	
280-164916-2	MW-35	Total/NA	Water	9056A	
280-164916-3	MW-37	Total/NA	Water	9056A	
280-164916-3	MW-37	Total/NA	Water	9056A	
MB 280-582367/6	Method Blank	Total/NA	Water	9056A	
LCS 280-582367/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582367/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582367/3	Lab Control Sample	Total/NA	Water	9056A	

QC Association Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 582376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total/NA	Water	SM 2540D	
280-164916-2	MW-35	Total/NA	Water	SM 2540D	
280-164916-3	MW-37	Total/NA	Water	SM 2540D	
MB 280-582376/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-582376/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-582376/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 582423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total/NA	Water	SM2540 C	
280-164916-2	MW-35	Total/NA	Water	SM2540 C	
280-164916-3	MW-37	Total/NA	Water	SM2540 C	
MB 280-582423/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-582423/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-582423/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 582486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total/NA	Water	9056A	
MB 280-582486/6	Method Blank	Total/NA	Water	9056A	
LCS 280-582486/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-582486/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-582486/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 582521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-164916-1	MW-34	Total/NA	Water	SM 2320B	
280-164916-2	MW-35	Total/NA	Water	SM 2320B	
280-164916-3	MW-37	Total/NA	Water	SM 2320B	
MB 280-582521/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582521/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-582521/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-582521/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-582521/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-582521/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Client Sample ID: MW-27
Date Collected: 07/21/22 11:00
Date Received: 07/25/22 15:15

Lab Sample ID: 280-164770-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:02	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 16:55	LMT	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582062	07/27/22 20:40	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:40	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-27-EB
Date Collected: 07/21/22 08:55
Date Received: 07/25/22 15:15

Lab Sample ID: 280-164770-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:06	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			583175	08/05/22 10:05	LMT	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582062	07/27/22 20:56	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 19:45	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-36
Date Collected: 07/21/22 13:30
Date Received: 07/25/22 15:15

Lab Sample ID: 280-164770-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:09	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:02	LMT	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582062	07/27/22 21:12	MEC	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 21:28	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 20:16	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-13
Lab Sample ID: 280-164770-5
Date Collected: 07/20/22 15:25
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:40	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:13	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582651	08/01/22 22:38	LMT	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 21:44	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 04:58	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 20:34	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-13-DUP
Lab Sample ID: 280-164770-6
Date Collected: 07/20/22 15:25
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:44	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 01:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:10	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582893	08/03/22 13:16	LMT	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 22:00	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 05:14	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 20:46	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-21
Lab Sample ID: 280-164770-7
Date Collected: 07/20/22 13:45
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:48	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 01:16	LMT	EET DEN

Client Sample ID: MW-21
Lab Sample ID: 280-164770-7
Date Collected: 07/20/22 13:45
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:13	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582893	08/03/22 13:20	LMT	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 22:16	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 05:30	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 20:53	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-28
Lab Sample ID: 280-164770-8
Date Collected: 07/22/22 15:15
Matrix: Water
Date Received: 07/25/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582255	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582593	08/01/22 12:52	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582587	08/01/22 12:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 01:19	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582178	07/29/22 09:10	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 17:28	LMT	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	582062	07/27/22 22:32	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582229	07/29/22 05:46	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582199	07/27/22 21:03	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	581993	07/26/22 15:13	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	581939	07/26/22 10:45	ASP	EET DEN

Client Sample ID: MW-34
Lab Sample ID: 280-164916-1
Date Collected: 07/27/22 09:35
Matrix: Water
Date Received: 07/28/22 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582563	08/02/22 09:22	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 17:28	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:42	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 18:09	LMT	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582367	07/29/22 21:01	RAF	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	582486	07/31/22 06:07	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 15:27	KEG	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-34
Date Collected: 07/27/22 09:35
Date Received: 07/28/22 12:15

Lab Sample ID: 280-164916-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	582376	07/29/22 10:02	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	582423	07/29/22 13:51	ASP	EET DEN

Client Sample ID: MW-35
Date Collected: 07/27/22 10:10
Date Received: 07/28/22 12:15

Lab Sample ID: 280-164916-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582563	08/02/22 09:22	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 17:32	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:45	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 18:13	LMT	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	582367	07/29/22 21:16	RAF	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582367	07/29/22 21:31	RAF	EET DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 15:33	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	582376	07/29/22 10:02	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	582423	07/29/22 13:51	ASP	EET DEN

Client Sample ID: MW-37
Date Collected: 07/26/22 14:05
Date Received: 07/28/22 12:15

Lab Sample ID: 280-164916-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	582563	08/02/22 09:22	KMS	EET DEN
Total Recoverable	Analysis	6010C		1			582969	08/03/22 17:36	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			582659	08/02/22 00:49	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	582342	08/01/22 08:47	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			582816	08/02/22 18:17	LMT	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	582367	07/29/22 21:46	RAF	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	582367	07/29/22 22:31	RAF	EET DEN
Total/NA	Analysis	SM 2320B		1			582521	07/29/22 15:40	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	582376	07/29/22 10:02	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	582423	07/29/22 13:51	ASP	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-164770-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: D. Fuhr	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 618 521 5118	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 7 metals / 6010C - Lithium	2320B Alkalinity	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N		
MW-30	7/21/22	1020	G	Water			1	1	1		3	
MW-27	7/21/22	1100	G	Water			1	1	2		4	2x500 mL bottles for TDS
MW-27-EB	7/21/22	0855	G	Water			1	1	1		3	
MW-36	7/21/22	1330	G	Water			1	1	1		3	
MW-13	7/20/22	1525	G	Water			1	1	1		3	
MW-13-DUP	7/20/22	1525	G	Water			1	1	1		3	
MW-21	7/20/22	1345	G	Water			1	1	1		3	
MW-28	7/22/22	1515	G	Water			1	1	1		3	

280-164770 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
F. Davis Ray	7/25/22 1510	HDR		7/25/22 1515	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6 CF +0.1 IR #12

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Drew Fuhr	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: 618 521 5118	E-Mail: Danielle.Harrington@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:

Address: 1670 Broadway Suite 3400	Due Date Requested:
City: Denver	TAT Requested (days):
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No
Phone: 734-263-7138(Tel)	PO #: 10227700-400
Email: Molly.Reeves@hdrinc.com	WO #:
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379
Site: Colorado Quarterly- Release Characterization	SSOW#:

Analysis Requested

280-164916 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 7 metals / 6010C - Lithium	2320B Alkalinity	2540D - TSS/ 2540C TDS	9056A Chloride/ Suflate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N		
MW-34	7/27/22	0935	G	Water			1	1	1	1	3	
MW-35	7/27/22	1010	G	Water			1	1	1	1	3	
MW-37	7/26/22	1405	G	Water			1	1	1	1	3	
				Water								
				Water								
				Water								
				Water								
				Water								

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	7/28/22 1215	HDR		7/28/22 1215	ETADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8 IR12 CF+0.1

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-164770-1

Login Number: 164770
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-164770-1

Login Number: 164916
List Number: 1
Creator: Lee, Jerry

List Source: Eurofins Denver

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-167382-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
10/21/2022 1:40:59 PM

Nicole Ryan, Project Manager I
(303)736-0100
Nicole.Ryan@ET.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-167382-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167382-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The samples were received on 10/7/2022 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 0.9º C and 1.6º C.

DISSOLVED METALS
Samples MW-4 (280-167382-1) and MW-13 (2 of 2) (280-167382-3) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/12/2022 and analyzed on 10/13/2022.

Boron was detected in method blank MB 280-589465/1-B at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS
Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/10/2022 and analyzed on 10/11/2022 and 10/13/2022.

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

DISSOLVED METALS (ICP/MS)
Samples MW-4 (280-167382-1) and MW-13 (2 of 2) (280-167382-3) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared and analyzed on 10/12/2022.

Beryllium, Cobalt and Lead were detected in method blank MB 280-589465/1-D at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Job ID: 280-167382-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Calcium, Cobalt, Lead, Selenium and Thallium failed the recovery criteria low for the MS of sample MW-4MS (280-167382-1) in analytical batch 280-589801.

Calcium, Lead and Thallium failed the recovery criteria low for the MSD of sample MW-4MSD (280-167382-1) in analytical batch 280-589801.

Samples MW-4 (280-167382-1)[10X] and MW-13 (2 of 2) (280-167382-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL RECOVERABLE METALS (ICP/MS)

Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/10/2022 and 10/12/2022 and analyzed on 10/11/2022, 10/12/2022 and 10/13/2022.

The instrument blank for analytical batch 280-589801 contained 75 ppb &82 ppb K which is greater than one-half the reporting limit (RL) of 120 ppb, and were not re-analyzed because the samples were >10x the blank. The data have been qualified and reported.

The instrument blank for analytical batch 280-589801 contained 135 ppb Na which is greater than one-half the reporting limit (RL) of 150 ppb, and were not re-analyzed because the samples are >10x the blank. The data have been qualified and reported.

Cobalt was detected in method blank MB 280-589348/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Lead failed the recovery criteria low for the MS of sample 280-167438-1 in batch 280-589658. Refer to the QC report for details.

Samples MW-4 (280-167382-1)[50X], MW-13 (2 of 2) (280-167382-3)[50X], MW-6 (280-167382-4)[5X], MW-3 (280-167382-6)[50X], MW-7 (280-167382-7)[5X], MW-21 (280-167382-8)[5X] and MW-21-DUP (280-167382-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

DISSOLVED MERCURY

Samples MW-4 (280-167382-1) and MW-13 (2 of 2) (280-167382-3) were analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/17/2022.

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

TOTAL MERCURY

Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 10/11/2022 and analyzed on 10/12/2022.

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Insufficient volume for the samples, so a 3X dilution was needed to proceed with the mercury analysis.

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

ALKALINITY

Samples MW-4 (280-167382-1), MW-13 (1 of 2) (280-167382-2), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Alkalinity

Job ID: 280-167382-1 (Continued)

Laboratory: Eurofins Denver (Continued)

in accordance with SM20 2320B. The samples were analyzed on 10/11/2022 and 10/12/2022.

Alkalinity was detected in method blank MB 280-589667/84 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Bicarbonate Alkalinity as CaCO3 was detected in method blank MB 280-589667/84 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS

Samples MW-4 (280-167382-1), MW-13 (1 of 2) (280-167382-2), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/10/2022 and 10/11/2022.

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

TOTAL SUSPENDED SOLIDS

Samples MW-4 (280-167382-1), MW-13 (1 of 2) (280-167382-2), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/10/2022, 10/11/2022 and 10/12/2022.

The sample duplicate (DUP) precision for analytical batch 280-589451 was outside control limits. Sample non-homogeneity is suspected.

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

CORROSIVITY (PH)

Samples MW-4 (280-167382-1), MW-13 (1 of 2) (280-167382-2), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/11/2022 and 10/13/2022.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-167561-1. Refer to the QC report for details.

The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did therefore the sample was not rerun: MW-1 (280-167382-5).

The following sample did not equilibrate to within 0.05 pH units after three measurements: MW-21-EB (280-167382-10). This was observed in a previous analysis thus the sample was not rerun.

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

ANIONS (28 DAYS)

Samples MW-4 (280-167382-1), MW-13 (1 of 2) (280-167382-2), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 10/13/2022 and 10/17/2022.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-590207 were outside control limits for chloride. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Samples MW-4 (280-167382-1)[5X], MW-4 (280-167382-1)[50X], MW-13 (1 of 2) (280-167382-2)[5X], MW-13 (1 of 2) (280-167382-2)[50X], MW-6 (280-167382-4)[5X], MW-1 (280-167382-5)[2X], MW-3 (280-167382-6)[20X], MW-21 (280-167382-8)[20X], MW-21 (280-167382-8)[5X], MW-21-DUP (280-167382-9)[20X] and MW-21-DUP (280-167382-9)[5X] required dilution prior to analysis. The reporting limits have

Job ID: 280-167382-1 (Continued)

Laboratory: Eurofins Denver (Continued)

been adjusted accordingly.

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

Detection Summary

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-4
Lab Sample ID: 280-167382-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.98		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.23		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	1.0	B	0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.21		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	770		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.00068	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	1300		7.5	3.2	mg/L	50		6020B	Total Recoverable
Barium	0.010		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	9.7		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.0020		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00066	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00041	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.012		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.21		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Thallium	0.000089	J	0.0010	0.000089	mg/L	1		6020B	Total Recoverable
Calcium	470		10	1.9	mg/L	50		6020B	Total Recoverable
Arsenic	0.00050	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.0098		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.00060	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00039	J B F1	0.0010	0.000092	mg/L	1		6020B	Dissolved
Lead	0.00023	J B F1	0.0010	0.00018	mg/L	1		6020B	Dissolved
Calcium	430		2.0	0.38	mg/L	10		6020B	Dissolved
Molybdenum	0.013		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.20		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	500		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	3.4		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	5800		250	52	mg/L	50		9056A	Total/NA
Alkalinity	180	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	180	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	23		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	8900		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13 (1 of 2)
Lab Sample ID: 280-167382-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	71		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	0.83	J	2.5	0.83	mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample ID: MW-13 (1 of 2) (Continued)
Lab Sample ID: 280-167382-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2100		250	52	mg/L	50		9056A	Total/NA
Alkalinity	680	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	680	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	32		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-13 (2 of 2)
Lab Sample ID: 280-167382-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.097		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	1.2	B	0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.089		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	190		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.0011	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	500		7.5	3.2	mg/L	50		6020B	Total Recoverable
Barium	0.036		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	11		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.0031		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0015	B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.0013		0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0047		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.28		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	560		0.20	0.038	mg/L	1		6020B	Total Recoverable
Barium	0.027		0.0010	0.00029	mg/L	1		6020B	Dissolved
Beryllium	0.00011	J B	0.0010	0.000080	mg/L	1		6020B	Dissolved
Chromium	0.00084	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.0029	B	0.0010	0.000092	mg/L	1		6020B	Dissolved
Lead	0.00018	J B	0.0010	0.00018	mg/L	1		6020B	Dissolved
Calcium	550		2.0	0.38	mg/L	10		6020B	Dissolved
Molybdenum	0.0040		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.18		0.0050	0.00037	mg/L	1		6020B	Dissolved

Client Sample ID: MW-6
Lab Sample ID: 280-167382-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.37		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.065		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	110		0.050	0.021	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued)
Lab Sample ID: 280-167382-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00042	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	190		0.75	0.32	mg/L	5		6020B	Total Recoverable
Barium	0.035		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	9.3		0.60	0.26	mg/L	5		6020B	Total Recoverable
Chromium	0.0015	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00053	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00088	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0015	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.017		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	360		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	690		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	610		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	230	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	230	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	11		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-1
Lab Sample ID: 280-167382-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.38		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.031		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	43		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.0012	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	180		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.034		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	4.1		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.00062	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0013	B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00030	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0092		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	88		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1 (Continued)
Lab Sample ID: 280-167382-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	69		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.30	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	320		10	2.1	mg/L	2		9056A	Total/NA
Alkalinity	390	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	390	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	9.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	900		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-3
Lab Sample ID: 280-167382-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.077		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	140		0.050	0.021	mg/L	1		6020B	Total Recoverable
Sodium	520		7.5	3.2	mg/L	50		6020B	Total Recoverable
Barium	0.012		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	14		6.0	2.6	mg/L	50		6020B	Total Recoverable
Chromium	0.00055	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0014	B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00023	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.00074	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	550		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	48		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	2400		100	21	mg/L	20		9056A	Total/NA
Alkalinity	580	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	580	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	12		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-7
Lab Sample ID: 280-167382-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.34		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.042		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	31		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.00045	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	150		0.75	0.32	mg/L	5		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7 (Continued) — Lab Sample ID: 280-167382-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.023		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	4.1		0.60	0.26	mg/L	5		6020B	Total Recoverable
Chromium	0.0013	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00050	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.0011		0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0027		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.0030	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	56		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	52		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.43	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	91		5.0	1.0	mg/L	1		9056A	Total/NA
Alkalinity	350	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	190		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	720		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 280-167382-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.3		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.22		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	270		0.25	0.11	mg/L	5		6020B	Total Recoverable
Arsenic	0.00034	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	760		0.75	0.32	mg/L	5		6020B	Total Recoverable
Barium	0.016		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	11		0.60	0.26	mg/L	5		6020B	Total Recoverable
Chromium	0.0012	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00029	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0036		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	1.4		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	570		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	420		15	5.1	mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-21 (Continued) — Lab Sample ID: 280-167382-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3300		100	21	mg/L	20		9056A	Total/NA
Alkalinity	270	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	270	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5200		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-21-DUP — Lab Sample ID: 280-167382-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.23		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	270		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.00037	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	790		0.75	0.32	mg/L	5		6020B	Total Recoverable
Barium	0.015		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	11		0.60	0.26	mg/L	5		6020B	Total Recoverable
Chromium	0.0014	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00018	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0036		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	1.4		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	580		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	420		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	3100		100	21	mg/L	20		9056A	Total/NA
Alkalinity	270	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	270	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3700		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-21-EB — Lab Sample ID: 280-167382-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0037	J	0.10	0.0015	mg/L	1		6010C	Total Recoverable
Sodium	0.15		0.15	0.065	mg/L	1		6020B	Total Recoverable
Potassium	0.11	J	0.12	0.052	mg/L	1		6020B	Total Recoverable
Cobalt	0.0010	B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Calcium	0.084	J	0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	8.3	HF	0.1	0.1	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-21-EB (Continued)
Lab Sample ID: 280-167382-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167382-1	MW-4	Water	10/04/22 10:20	10/07/22 16:10
280-167382-2	MW-13 (1 of 2)	Water	10/04/22 15:40	10/07/22 16:10
280-167382-3	MW-13 (2 of 2)	Water	10/05/22 15:45	10/07/22 16:10
280-167382-4	MW-6	Water	10/05/22 11:40	10/07/22 16:10
280-167382-5	MW-1	Water	10/05/22 15:20	10/07/22 16:10
280-167382-6	MW-3	Water	10/06/22 15:00	10/07/22 16:10
280-167382-7	MW-7	Water	10/06/22 15:30	10/07/22 16:10
280-167382-8	MW-21	Water	10/07/22 11:00	10/07/22 16:10
280-167382-9	MW-21-DUP	Water	10/07/22 11:00	10/07/22 16:10
280-167382-10	MW-21-EB	Water	10/07/22 13:10	10/07/22 16:10

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.98		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:44	1
Lithium	0.23		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:00	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:49	1
Lithium	0.097		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:04	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.37		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:53	1
Lithium	0.065		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:08	1

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.38		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:57	1
Lithium	0.031		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:12	1

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:02	1
Lithium	0.077		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:16	1

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:06	1
Lithium	0.042		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:21	1

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:10	1
Lithium	0.22		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:25	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:14	1
Lithium	0.23		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:45	1

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0037**	**J**	0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:19	1
Lithium	ND		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:49	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.0**	**B**	0.10	0.0015	mg/L		10/12/22 04:25	10/13/22 14:26	1
Lithium	**0.21**		0.020	0.0091	mg/L		10/12/22 04:25	10/13/22 14:26	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.2**	**B**	0.10	0.0015	mg/L		10/12/22 04:25	10/13/22 14:30	1
Lithium	**0.089**		0.020	0.0091	mg/L		10/12/22 04:25	10/13/22 14:30	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:14	1
Magnesium	**770**		2.5	1.1	mg/L		10/10/22 14:23	10/12/22 18:31	50
Arsenic	**0.00068**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:43	1
Sodium	**1300**		7.5	3.2	mg/L		10/10/22 14:23	10/12/22 18:31	50
Barium	**0.010**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:43	1
Potassium	**9.7**		0.12	0.052	mg/L		10/10/22 14:23	10/12/22 19:08	1
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:08	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:43	1
Chromium	**0.0020**		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:43	1
Cobalt	**0.00066**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:43	1
Lead	**0.00041**	**J**	0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:43	1
Molybdenum	**0.012**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:14	1
Selenium	**0.21**		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:43	1
Thallium	**0.000089**	**J**	0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:43	1
Calcium	**470**		10	1.9	mg/L		10/10/22 14:23	10/12/22 18:31	50

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:16	1
Magnesium	**190**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 21:47	1
Arsenic	**0.0011**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:47	1
Sodium	**500**		7.5	3.2	mg/L		10/10/22 14:23	10/12/22 18:34	50
Barium	**0.036**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:47	1
Potassium	**11**		0.12	0.052	mg/L		10/10/22 14:23	10/12/22 19:12	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:12	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:47	1
Chromium	**0.0031**		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:47	1
Cobalt	**0.0015**	**B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:47	1
Lead	**0.0013**		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:47	1
Molybdenum	**0.0047**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:16	1
Selenium	**0.28**		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:47	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:47	1
Calcium	**560**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:47	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:18	1
Magnesium	**110**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 21:51	1
Arsenic	**0.00042**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:51	1
Sodium	**190**		0.75	0.32	mg/L		10/10/22 14:23	10/12/22 18:38	5
Barium	**0.035**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:51	1
Potassium	**9.3**		0.60	0.26	mg/L		10/10/22 14:23	10/12/22 18:38	5
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:16	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:51	1
Chromium	**0.0015**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:51	1
Cobalt	**0.00053**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:51	1
Lead	**0.00088**	**J**	0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:51	1
Molybdenum	**0.0015**	**J**	0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:18	1
Selenium	**0.017**		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:51	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:51	1
Calcium	**360**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:51	1

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:20	1
Magnesium	**43**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 21:55	1
Arsenic	**0.0012**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:55	1
Sodium	**180**		0.15	0.065	mg/L		10/10/22 14:23	10/12/22 18:42	1
Barium	**0.034**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:55	1
Potassium	**4.1**		0.12	0.052	mg/L		10/10/22 14:23	10/12/22 18:42	1
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 18:42	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:55	1
Chromium	**0.00062**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:55	1
Cobalt	**0.0013**	**B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:55	1
Lead	**0.00030**	**J**	0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:55	1
Molybdenum	**0.0092**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:20	1
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:55	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:55	1
Calcium	**88**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:55	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:22	1
Magnesium	**140**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 21:59	1
Arsenic	ND		0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:59	1
Sodium	**520**		7.5	3.2	mg/L		10/10/22 14:23	10/12/22 18:46	50
Barium	**0.012**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:59	1
Potassium	**14**		6.0	2.6	mg/L		10/10/22 14:23	10/12/22 18:46	50
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:23	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:59	1
Chromium	**0.00055**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:59	1
Cobalt	**0.0014**	**B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:59	1
Lead	**0.00023**	**J**	0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:59	1
Molybdenum	**0.00074**	**J**	0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:22	1
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:59	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:59	1
Calcium	**550**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:59	1

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:24	1
Magnesium	**31**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 22:02	1
Arsenic	**0.00045**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 22:02	1
Sodium	**150**		0.75	0.32	mg/L		10/10/22 14:23	10/12/22 18:49	5
Barium	**0.023**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 22:02	1
Potassium	**4.1**		0.60	0.26	mg/L		10/10/22 14:23	10/12/22 18:49	5
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:27	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 22:02	1
Chromium	**0.0013**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 22:02	1
Cobalt	**0.00050**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 22:02	1
Lead	**0.0011**		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 22:02	1
Molybdenum	**0.0027**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:24	1
Selenium	**0.0030**	**J**	0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 22:02	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 22:02	1
Calcium	**56**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 22:02	1

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:25	1
Magnesium	**270**		0.25	0.11	mg/L		10/10/22 14:23	10/12/22 18:53	5
Arsenic	**0.00034**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 22:06	1
Sodium	**760**		0.75	0.32	mg/L		10/10/22 14:23	10/12/22 18:53	5
Barium	**0.016**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 22:06	1
Potassium	**11**		0.60	0.26	mg/L		10/10/22 14:23	10/12/22 18:53	5
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:31	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 22:06	1
Chromium	**0.0012**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 22:06	1
Cobalt	**0.00029**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 22:06	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 22:06	1
Molybdenum	**0.0036**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:25	1
Selenium	**1.4**		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 22:06	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 22:06	1
Calcium	**570**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 22:06	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:27	1
Magnesium	**270**		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 23:13	1
Arsenic	**0.00037**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 23:13	1
Sodium	**790**		0.75	0.32	mg/L		10/10/22 14:23	10/12/22 18:57	5
Barium	**0.015**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 23:13	1
Potassium	**11**		0.60	0.26	mg/L		10/10/22 14:23	10/12/22 18:57	5
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 19:34	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 23:13	1
Chromium	**0.0014**	**J**	0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 23:13	1
Cobalt	**0.00018**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 23:13	1
Lead	ND		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 23:13	1
Molybdenum	**0.0036**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:27	1
Selenium	**1.4**		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 23:13	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 23:13	1
Calcium	**580**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 23:13	1

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:33	1
Magnesium	ND		0.050	0.021	mg/L		10/10/22 14:23	10/11/22 22:28	1
Arsenic	ND		0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 22:28	1
Sodium	**0.15**		0.15	0.065	mg/L		10/10/22 14:23	10/12/22 17:57	1
Barium	ND		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 22:28	1
Potassium	**0.11**	**J**	0.12	0.052	mg/L		10/10/22 14:23	10/12/22 17:57	1
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 17:57	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 22:28	1
Chromium	ND		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 22:28	1
Cobalt	**0.0010**	**B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 22:28	1
Lead	ND		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 22:28	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:33	1
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 22:28	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 22:28	1
Calcium	**0.084**	**J**	0.20	0.038	mg/L		10/10/22 14:23	10/11/22 22:28	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 04:25	10/12/22 22:12	1
Arsenic	**0.00050**	**J**	0.0050	0.00033	mg/L		10/12/22 04:25	10/12/22 22:12	1
Barium	**0.0098**		0.0010	0.00029	mg/L		10/12/22 04:25	10/12/22 22:12	1
Beryllium	ND		0.0010	0.000080	mg/L		10/12/22 04:25	10/12/22 22:12	1
Cadmium	ND		0.0010	0.00027	mg/L		10/12/22 04:25	10/12/22 22:12	1
Chromium	**0.00060**	**J**	0.0020	0.00050	mg/L		10/12/22 04:25	10/12/22 22:12	1
Cobalt	**0.00039**	**J B F1**	0.0010	0.000092	mg/L		10/12/22 04:25	10/12/22 22:12	1
Lead	**0.00023**	**J B F1**	0.0010	0.00018	mg/L		10/12/22 04:25	10/12/22 22:12	1
Calcium	**430**		2.0	0.38	mg/L		10/12/22 04:25	10/12/22 21:31	10
Molybdenum	**0.013**		0.0020	0.00014	mg/L		10/12/22 04:25	10/12/22 22:12	1
Selenium	**0.20**		0.0050	0.00037	mg/L		10/12/22 04:25	10/12/22 22:12	1
Thallium	ND	F1	0.0010	0.000089	mg/L		10/12/22 04:25	10/12/22 22:12	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 04:25	10/12/22 22:27	1
Arsenic	ND		0.0050	0.00033	mg/L		10/12/22 04:25	10/12/22 22:27	1
Barium	**0.027**		0.0010	0.00029	mg/L		10/12/22 04:25	10/12/22 22:27	1
Beryllium	**0.00011**	**J B**	0.0010	0.000080	mg/L		10/12/22 04:25	10/12/22 22:27	1
Cadmium	ND		0.0010	0.00027	mg/L		10/12/22 04:25	10/12/22 22:27	1
Chromium	**0.00084**	**J**	0.0020	0.00050	mg/L		10/12/22 04:25	10/12/22 22:27	1
Cobalt	**0.0029**	**B**	0.0010	0.000092	mg/L		10/12/22 04:25	10/12/22 22:27	1
Lead	**0.00018**	**J B**	0.0010	0.00018	mg/L		10/12/22 04:25	10/12/22 22:27	1
Calcium	**550**		2.0	0.38	mg/L		10/12/22 04:25	10/12/22 21:49	10
Molybdenum	**0.0040**		0.0020	0.00014	mg/L		10/12/22 04:25	10/12/22 22:27	1
Selenium	**0.18**		0.0050	0.00037	mg/L		10/12/22 04:25	10/12/22 22:27	1
Thallium	ND		0.0010	0.000089	mg/L		10/12/22 04:25	10/12/22 22:27	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:17	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:20	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:40	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:42	1

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:45	1

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:47	1

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:50	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:52	1

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:55	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.60	0.18	ug/L		10/17/22 14:57	10/17/22 19:53	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		10/17/22 14:57	10/17/22 20:00	1

General Chemistry

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.6	HF	0.1	0.1	SU			10/11/22 15:46	1
Temperature (SW846 9040B)	21.6	HF	1.0	1.0	Degrees C			10/11/22 15:46	1
Chloride (SW846 9056A)	500		15	5.1	mg/L			10/13/22 15:19	5
Fluoride (SW846 9056A)	3.4		2.5	0.83	mg/L			10/13/22 15:19	5
Sulfate (SW846 9056A)	5800		250	52	mg/L			10/13/22 15:27	50
Alkalinity (SM 2320B)	180	B	10	3.1	mg/L			10/11/22 22:37	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	180	B	10	3.1	mg/L			10/11/22 22:37	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 22:37	1
Total Suspended Solids (SM 2540D)	23		4.0	1.1	mg/L			10/10/22 15:44	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	8900		100	47	mg/L			10/10/22 11:42	1

Client Sample ID: MW-13 (1 of 2)
Date Collected: 10/04/22 15:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.8	HF	0.1	0.1	SU			10/11/22 15:50	1
Temperature (SW846 9040B)	21.6	HF	1.0	1.0	Degrees C			10/11/22 15:50	1
Chloride (SW846 9056A)	71		15	5.1	mg/L			10/13/22 15:35	5
Fluoride (SW846 9056A)	0.83	J	2.5	0.83	mg/L			10/13/22 15:35	5
Sulfate (SW846 9056A)	2100		250	52	mg/L			10/13/22 15:44	50
Alkalinity (SM 2320B)	680	B	10	3.1	mg/L			10/11/22 22:47	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	680	B	10	3.1	mg/L			10/11/22 22:47	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 22:47	1
Total Suspended Solids (SM 2540D)	32		4.0	1.1	mg/L			10/10/22 15:44	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3800		40	19	mg/L			10/10/22 11:42	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.5	HF	0.1	0.1	SU			10/11/22 15:58	1
Temperature (SW846 9040B)	21.1	HF	1.0	1.0	Degrees C			10/11/22 15:58	1
Chloride (SW846 9056A)	690		15	5.1	mg/L			10/13/22 16:09	5
Fluoride (SW846 9056A)	ND		2.5	0.83	mg/L			10/13/22 16:09	5
Sulfate (SW846 9056A)	610		25	5.2	mg/L			10/13/22 16:09	5
Alkalinity (SM 2320B)	230	B	10	3.1	mg/L			10/11/22 23:05	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230	B	10	3.1	mg/L			10/11/22 23:05	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:05	1
Total Suspended Solids (SM 2540D)	11		4.0	1.1	mg/L			10/10/22 15:44	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	2300		20	9.4	mg/L			10/10/22 11:42	1

General Chemistry

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.4	HF	0.1	0.1	SU			10/11/22 16:08	1
Temperature (SW846 9040B)	20.9	HF	1.0	1.0	Degrees C			10/11/22 16:08	1
Chloride (SW846 9056A)	69		3.0	1.0	mg/L			10/13/22 16:25	1
Fluoride (SW846 9056A)	0.30	J	0.50	0.17	mg/L			10/13/22 16:25	1
Sulfate (SW846 9056A)	320		10	2.1	mg/L			10/17/22 23:39	2
Alkalinity (SM 2320B)	390	B	10	3.1	mg/L			10/11/22 23:13	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	390	B	10	3.1	mg/L			10/11/22 23:13	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:13	1
Total Suspended Solids (SM 2540D)	9.2		4.0	1.1	mg/L			10/10/22 15:44	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	900		10	4.7	mg/L			10/10/22 11:42	1

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.1	HF	0.1	0.1	SU			10/11/22 16:16	1
Temperature (SW846 9040B)	21.1	HF	1.0	1.0	Degrees C			10/11/22 16:16	1
Chloride (SW846 9056A)	48		3.0	1.0	mg/L			10/13/22 16:50	1
Fluoride (SW846 9056A)	ND		0.50	0.17	mg/L			10/13/22 16:50	1
Sulfate (SW846 9056A)	2400		100	21	mg/L			10/13/22 16:58	20
Alkalinity (SM 2320B)	580	B	10	3.1	mg/L			10/11/22 23:35	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	580	B	10	3.1	mg/L			10/11/22 23:35	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:35	1
Total Suspended Solids (SM 2540D)	12		4.0	1.1	mg/L			10/11/22 11:30	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3800		40	19	mg/L			10/10/22 11:42	1

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.7	HF	0.1	0.1	SU			10/11/22 16:19	1
Temperature (SW846 9040B)	21.7	HF	1.0	1.0	Degrees C			10/11/22 16:19	1
Chloride (SW846 9056A)	52		3.0	1.0	mg/L			10/13/22 17:07	1
Fluoride (SW846 9056A)	0.43	J	0.50	0.17	mg/L			10/13/22 17:07	1
Sulfate (SW846 9056A)	91		5.0	1.0	mg/L			10/13/22 17:07	1
Alkalinity (SM 2320B)	350	B	10	3.1	mg/L			10/11/22 23:43	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	350	B	10	3.1	mg/L			10/11/22 23:43	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:43	1
Total Suspended Solids (SM 2540D)	190		4.0	1.1	mg/L			10/11/22 11:30	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	720		10	4.7	mg/L			10/10/22 11:42	1

General Chemistry

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.5**	**HF**	0.1	0.1	SU			10/11/22 16:23	1
Temperature (SW846 9040B)	**21.6**	**HF**	1.0	1.0	Degrees C			10/11/22 16:23	1
Chloride (SW846 9056A)	**420**		15	5.1	mg/L			10/13/22 17:40	5
Fluoride (SW846 9056A)	ND		2.5	0.83	mg/L			10/13/22 17:40	5
Sulfate (SW846 9056A)	**3300**		100	21	mg/L			10/13/22 17:48	20
Alkalinity (SM 2320B)	**270**	**B**	10	3.1	mg/L			10/11/22 23:50	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**270**	**B**	10	3.1	mg/L			10/11/22 23:50	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:50	1
Total Suspended Solids (SM 2540D)	**4.0**		4.0	1.1	mg/L			10/11/22 11:30	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**5200**		40	19	mg/L			10/11/22 11:27	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.4**	**HF**	0.1	0.1	SU			10/11/22 16:27	1
Temperature (SW846 9040B)	**21.3**	**HF**	1.0	1.0	Degrees C			10/11/22 16:27	1
Chloride (SW846 9056A)	**420**		15	5.1	mg/L			10/13/22 17:56	5
Fluoride (SW846 9056A)	ND		2.5	0.83	mg/L			10/13/22 17:56	5
Sulfate (SW846 9056A)	**3100**		100	21	mg/L			10/13/22 18:05	20
Alkalinity (SM 2320B)	**270**	**B**	10	3.1	mg/L			10/11/22 23:57	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**270**	**B**	10	3.1	mg/L			10/11/22 23:57	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/11/22 23:57	1
Total Suspended Solids (SM 2540D)	**2.4**	**J**	4.0	1.1	mg/L			10/11/22 11:30	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**3700**		40	19	mg/L			10/11/22 11:27	1

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**8.3**	**HF**	0.1	0.1	SU			10/13/22 15:46	1
Temperature (SW846 9040B)	**22.0**	**HF**	1.0	1.0	Degrees C			10/13/22 15:46	1
Chloride (SW846 9056A)	ND		3.0	1.0	mg/L			10/13/22 18:29	1
Fluoride (SW846 9056A)	ND		0.50	0.17	mg/L			10/13/22 18:29	1
Sulfate (SW846 9056A)	ND		5.0	1.0	mg/L			10/13/22 18:29	1
Alkalinity (SM 2320B)	ND		10	3.1	mg/L			10/12/22 00:03	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/12/22 00:03	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/12/22 00:03	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			10/12/22 14:20	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	ND		10	4.7	mg/L			10/11/22 11:27	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-589311/1-A
Matrix: Water
Analysis Batch: 589677
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:15	1

Lab Sample ID: MB 280-589311/1-A
Matrix: Water
Analysis Batch: 589956
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 13:48	1

Lab Sample ID: LCS 280-589311/2-A
Matrix: Water
Analysis Batch: 589677
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.94		mg/L		97	86 - 110

Lab Sample ID: LCS 280-589311/2-A
Matrix: Water
Analysis Batch: 589956
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.957		mg/L		96	90 - 112

Lab Sample ID: LCSD 280-589311/3-A
Matrix: Water
Analysis Batch: 589677
Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	1.95		mg/L		97	86 - 110	0	20

Lab Sample ID: LCSD 280-589311/3-A
Matrix: Water
Analysis Batch: 589956
Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	1.00	0.974		mg/L		97	90 - 112	2	20

Lab Sample ID: MB 280-589465/1-B
Matrix: Water
Analysis Batch: 589950
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 589492

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00267	J	0.10	0.0015	mg/L		10/12/22 04:25	10/13/22 13:11	1
Lithium	ND		0.020	0.0091	mg/L		10/12/22 04:25	10/13/22 13:11	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-589465/2-B
Matrix: Water
Analysis Batch: 589950

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 589492

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.96		mg/L		98	86 - 110
Lithium	1.00	0.964		mg/L		96	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-589348/1-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		50	21	ug/L		10/10/22 14:23	10/11/22 21:32	1
Arsenic	ND		0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:32	1
Sodium	ND		150	65	ug/L		10/10/22 14:23	10/11/22 21:32	1
Barium	ND		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:32	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:32	1
Chromium	ND		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:32	1
Cobalt	0.000238	J	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:32	1
Lead	ND		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:32	1
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:32	1
Calcium	ND		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:32	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:32	1

Lab Sample ID: MB 280-589348/1-A
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		120	52	ug/L		10/10/22 14:23	10/12/22 17:20	1
Beryllium	ND		0.0010	0.000080	mg/L		10/10/22 14:23	10/12/22 17:20	1

Lab Sample ID: LCS 280-589348/2-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	10000	9070		ug/L		91	80 - 120
Arsenic	0.200	0.204		mg/L		102	85 - 117
Sodium	10000	9700		ug/L		97	80 - 120
Barium	0.200	0.204		mg/L		102	85 - 118
Cadmium	0.200	0.200		mg/L		100	85 - 115
Chromium	0.200	0.201		mg/L		100	84 - 121
Cobalt	0.200	0.195		mg/L		98	85 - 120
Lead	0.200	0.200		mg/L		100	85 - 118
Selenium	0.200	0.203		mg/L		101	77 - 122
Calcium	10.0	9.13		mg/L		91	80 - 120
Thallium	0.200	0.201		mg/L		100	85 - 118

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

Lab Sample ID: LCS 280-589348/2-A
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	10000	8990		ug/L		90	80 - 120
Beryllium	0.200	0.203		mg/L		102	80 - 125

Lab Sample ID: LCSD 280-589348/3-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	10000	9070		ug/L		91	80 - 120	0	20
Arsenic	0.200	0.207		mg/L		104	85 - 117	2	10
Sodium	10000	9560		ug/L		96	80 - 120	1	20
Barium	0.200	0.207		mg/L		104	85 - 118	2	11
Cadmium	0.200	0.206		mg/L		103	85 - 115	3	7
Chromium	0.200	0.204		mg/L		102	84 - 121	2	8
Cobalt	0.200	0.198		mg/L		99	85 - 120	1	7
Lead	0.200	0.204		mg/L		102	85 - 118	2	7
Selenium	0.200	0.204		mg/L		102	77 - 122	1	9
Calcium	10.0	9.18		mg/L		92	80 - 120	1	20
Thallium	0.200	0.204		mg/L		102	85 - 118	2	5

Lab Sample ID: LCSD 280-589348/3-A
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	10000	9110		ug/L		91	80 - 120	1	20
Beryllium	0.200	0.202		mg/L		101	80 - 125	1	22

Lab Sample ID: MB 280-589695/1-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:09	1

Lab Sample ID: LCS 280-589695/2-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0415		mg/L		104	85 - 115
Molybdenum	0.0400	0.0410		mg/L		103	85 - 119

Lab Sample ID: LCSD 280-589695/3-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.0400	0.0400		mg/L		100	85 - 115	4	9

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

Lab Sample ID: LCSD 280-589695/3-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Molybdenum			0.0400	0.0391		mg/L		98	85 - 119	5	8

Lab Sample ID: MB 280-589465/1-D
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 589497

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 04:25	10/12/22 21:23	1
Arsenic	ND		0.0050	0.00033	mg/L		10/12/22 04:25	10/12/22 21:23	1
Barium	ND		0.0010	0.00029	mg/L		10/12/22 04:25	10/12/22 21:23	1
Beryllium	0.0000940	J	0.0010	0.000080	mg/L		10/12/22 04:25	10/12/22 21:23	1
Cadmium	ND		0.0010	0.00027	mg/L		10/12/22 04:25	10/12/22 21:23	1
Chromium	ND		0.0020	0.00050	mg/L		10/12/22 04:25	10/12/22 21:23	1
Cobalt	0.000212	J	0.0010	0.000092	mg/L		10/12/22 04:25	10/12/22 21:23	1
Lead	0.000210	J	0.0010	0.00018	mg/L		10/12/22 04:25	10/12/22 21:23	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/12/22 04:25	10/12/22 21:23	1
Selenium	ND		0.0050	0.00037	mg/L		10/12/22 04:25	10/12/22 21:23	1
Calcium	ND		0.20	0.038	mg/L		10/12/22 04:25	10/12/22 21:23	1
Thallium	ND		0.0010	0.000089	mg/L		10/12/22 04:25	10/12/22 21:23	1

Lab Sample ID: LCS 280-589465/2-D
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 589497

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony			0.0400	0.0389		mg/L		97	85 - 115
Arsenic			0.0400	0.0395		mg/L		99	85 - 117
Barium			0.0400	0.0397		mg/L		99	85 - 118
Beryllium			0.0400	0.0383		mg/L		96	80 - 125
Cadmium			0.0400	0.0397		mg/L		99	85 - 115
Chromium			0.0400	0.0398		mg/L		100	84 - 121
Cobalt			0.0400	0.0395		mg/L		99	85 - 120
Lead			0.0400	0.0393		mg/L		98	85 - 118
Molybdenum			0.0400	0.0396		mg/L		99	85 - 119
Selenium			0.0400	0.0407		mg/L		102	77 - 122
Calcium			0.800	0.865		mg/L		108	80 - 120
Thallium			0.0400	0.0387		mg/L		97	85 - 118

Lab Sample ID: 280-167382-1 MS
Matrix: Water
Analysis Batch: 589801

Client Sample ID: MW-4
Prep Type: Dissolved
Prep Batch: 589497

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	430		0.800	419	4	mg/L		-726	80 - 120

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

Lab Sample ID: 280-167382-1 MS
Matrix: Water
Analysis Batch: 589801

Client Sample ID: MW-4
Prep Type: Dissolved
Prep Batch: 589497

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0391		mg/L		98	80 - 111
Arsenic	0.00050	J	0.0400	0.0393		mg/L		97	92 - 112
Barium	0.0098		0.0400	0.0481		mg/L		96	92 - 117
Beryllium	ND		0.0400	0.0412		mg/L		103	87 - 118
Cadmium	ND		0.0400	0.0377		mg/L		94	91 - 114
Chromium	0.00060	J	0.0400	0.0400		mg/L		99	91 - 114
Cobalt	0.00039	J B F1	0.0400	0.0376	F1	mg/L		93	94 - 115
Lead	0.00023	J B F1	0.0400	0.0368	F1	mg/L		91	95 - 116
Molybdenum	0.013		0.0400	0.0521		mg/L		97	84 - 117
Selenium	0.20		0.0400	0.238	4	mg/L		84	90 - 115
Thallium	ND	F1	0.0400	0.0362	F1	mg/L		91	94 - 115

Lab Sample ID: 280-167382-1 MSD
Matrix: Water
Analysis Batch: 589801

Client Sample ID: MW-4
Prep Type: Dissolved
Prep Batch: 589497

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	430		0.800	424	4	mg/L		-132	80 - 120	1	20

Lab Sample ID: 280-167382-1 MSD
Matrix: Water
Analysis Batch: 589801

Client Sample ID: MW-4
Prep Type: Dissolved
Prep Batch: 589497

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0394		mg/L		98	80 - 111	1	20
Arsenic	0.00050	J	0.0400	0.0397		mg/L		98	92 - 112	1	20
Barium	0.0098		0.0400	0.0478		mg/L		95	92 - 117	1	20
Beryllium	ND		0.0400	0.0411		mg/L		103	87 - 118	0	20
Cadmium	ND		0.0400	0.0391		mg/L		98	91 - 114	4	20
Chromium	0.00060	J	0.0400	0.0394		mg/L		97	91 - 114	1	20
Cobalt	0.00039	J B F1	0.0400	0.0387		mg/L		96	94 - 115	3	20
Lead	0.00023	J B F1	0.0400	0.0371	F1	mg/L		92	95 - 116	1	20
Molybdenum	0.013		0.0400	0.0537		mg/L		101	84 - 117	3	20
Selenium	0.20		0.0400	0.241	4	mg/L		91	90 - 115	1	20
Thallium	ND	F1	0.0400	0.0366	F1	mg/L		91	94 - 115	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-589575/1-A
Matrix: Water
Analysis Batch: 589822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589575

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 11:57	1

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

Lab Sample ID: LCS 280-589575/2-A
Matrix: Water
Analysis Batch: 589822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589575

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00495		mg/L		99	84 - 120		

Lab Sample ID: MB 280-589465/1-F
Matrix: Water
Analysis Batch: 590277

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 590036

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		10/17/22 14:57	10/17/22 19:47	1

Lab Sample ID: LCS 280-589465/2-F
Matrix: Water
Analysis Batch: 590277

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 590036

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			5.00	4.78		ug/L		96	84 - 120		

Lab Sample ID: 280-167382-3 MS
Matrix: Water
Analysis Batch: 590277

Client Sample ID: MW-13 (2 of 2)
Prep Type: Dissolved
Prep Batch: 590036

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		5.00	4.81		ug/L		96	75 - 125		

Lab Sample ID: 280-167382-3 MSD
Matrix: Water
Analysis Batch: 590277

Client Sample ID: MW-13 (2 of 2)
Prep Type: Dissolved
Prep Batch: 590036

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.86		ug/L		97	75 - 125	1	20

Method: 9040B - pH

Lab Sample ID: LCS 280-589666/28
Matrix: Water
Analysis Batch: 589666

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101		

Lab Sample ID: LCS 280-589666/4
Matrix: Water
Analysis Batch: 589666

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101		

Method: 9040B - pH (Continued)

Lab Sample ID: LCSD 280-589666/5
Matrix: Water
Analysis Batch: 589666

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101	0	5

Lab Sample ID: 280-167382-5 DU
Matrix: Water
Analysis Batch: 589666

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH adj. to 25 deg C	7.4	HF		7.5		SU				2	5
Temperature	20.9	HF		21.0		Degrees C				0.1	10

Lab Sample ID: LCS 280-589953/4
Matrix: Water
Analysis Batch: 589953

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-589832/6
Matrix: Water
Analysis Batch: 589832

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/13/22 10:57	1
Fluoride	ND		0.50	0.17	mg/L			10/13/22 10:57	1
Sulfate	ND		5.0	1.0	mg/L			10/13/22 10:57	1

Lab Sample ID: LCS 280-589832/4
Matrix: Water
Analysis Batch: 589832

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			100	101		mg/L		101	90 - 110		
Fluoride			5.00	5.16		mg/L		103	90 - 110		
Sulfate			100	101		mg/L		101	90 - 110		

Lab Sample ID: LCSD 280-589832/5
Matrix: Water
Analysis Batch: 589832

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			100	102		mg/L		102	90 - 110	0	10
Fluoride			5.00	5.19		mg/L		104	90 - 110	1	10
Sulfate			100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-589832/3
Matrix: Water
Analysis Batch: 589832

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.89		mg/L		98	50 - 150		
Fluoride			0.500	0.456	J	mg/L		91	50 - 150		
Sulfate			5.00	4.92	J	mg/L		98	50 - 150		

Lab Sample ID: 280-167382-7 MS
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	52		50.0	96.5		mg/L		89	80 - 120		
Fluoride	0.43	J	5.00	4.86		mg/L		89	80 - 120		
Sulfate	91		50.0	136		mg/L		90	80 - 120		

Lab Sample ID: 280-167382-7 MSD
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	52		50.0	96.4		mg/L		89	80 - 120	0	20
Fluoride	0.43	J	5.00	4.92		mg/L		90	80 - 120	1	20
Sulfate	91		50.0	135		mg/L		88	80 - 120	1	20

Lab Sample ID: 280-167382-7 DU
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	52			51.9		mg/L				0	15
Fluoride	0.43	J		0.429	J	mg/L				0.6	15
Sulfate	91			90.7		mg/L				0.1	15

Lab Sample ID: MB 280-590207/6
Matrix: Water
Analysis Batch: 590207

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			10/17/22 16:22	1

Lab Sample ID: LCS 280-590207/4
Matrix: Water
Analysis Batch: 590207

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			100	103		mg/L		103	90 - 110		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-590207/5
Matrix: Water
Analysis Batch: 590207

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			100	103		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-590207/3
Matrix: Water
Analysis Batch: 590207

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			5.00	5.03		mg/L		101	50 - 150		

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-589667/84
Matrix: Water
Analysis Batch: 589667

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	6.50	J	10	3.1	mg/L			10/11/22 21:57	1
Bicarbonate Alkalinity as CaCO3	4.76	J	10	3.1	mg/L			10/11/22 21:57	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/11/22 21:57	1

Lab Sample ID: LCS 280-589667/83
Matrix: Water
Analysis Batch: 589667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	204		mg/L		102	89 - 109		

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-589451/3
Matrix: Water
Analysis Batch: 589451

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/10/22 15:44	1

Lab Sample ID: LCS 280-589451/1
Matrix: Water
Analysis Batch: 589451

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			501	447		mg/L		89	79 - 114		

Lab Sample ID: LCSD 280-589451/2
Matrix: Water
Analysis Batch: 589451

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			501	476		mg/L		95	79 - 114	6	20

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-589554/3
Matrix: Water
Analysis Batch: 589554

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/11/22 11:29	1

Lab Sample ID: LCS 280-589554/1
Matrix: Water
Analysis Batch: 589554

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	514		mg/L		102	79 - 114

Lab Sample ID: LCSD 280-589554/2
Matrix: Water
Analysis Batch: 589554

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	440		mg/L		88	79 - 114	15	20

Lab Sample ID: MB 280-589747/2
Matrix: Water
Analysis Batch: 589747

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/12/22 14:20	1

Lab Sample ID: LCS 280-589747/1
Matrix: Water
Analysis Batch: 589747

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	461		mg/L		92	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-589420/1
Matrix: Water
Analysis Batch: 589420

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/10/22 11:42	1

Lab Sample ID: LCS 280-589420/2
Matrix: Water
Analysis Batch: 589420

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	484		mg/L		97	88 - 114

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCSD 280-589420/3
Matrix: Water
Analysis Batch: 589420

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			501	481		mg/L		96	88 - 114	1	20

Lab Sample ID: MB 280-589552/1
Matrix: Water
Analysis Batch: 589552

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/11/22 11:27	1

Lab Sample ID: LCS 280-589552/2
Matrix: Water
Analysis Batch: 589552

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			501	486		mg/L		97	88 - 114		

Lab Sample ID: LCSD 280-589552/3
Matrix: Water
Analysis Batch: 589552

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			501	476		mg/L		95	88 - 114	2	20

Metals

Prep Batch: 589311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	3005A	
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	3005A	
280-167382-4	MW-6	Total Recoverable	Water	3005A	
280-167382-5	MW-1	Total Recoverable	Water	3005A	
280-167382-6	MW-3	Total Recoverable	Water	3005A	
280-167382-7	MW-7	Total Recoverable	Water	3005A	
280-167382-8	MW-21	Total Recoverable	Water	3005A	
280-167382-9	MW-21-DUP	Total Recoverable	Water	3005A	
280-167382-10	MW-21-EB	Total Recoverable	Water	3005A	
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 589348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	3005A	
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	3005A	
280-167382-4	MW-6	Total Recoverable	Water	3005A	
280-167382-5	MW-1	Total Recoverable	Water	3005A	
280-167382-6	MW-3	Total Recoverable	Water	3005A	
280-167382-7	MW-7	Total Recoverable	Water	3005A	
280-167382-8	MW-21	Total Recoverable	Water	3005A	
280-167382-9	MW-21-DUP	Total Recoverable	Water	3005A	
280-167382-10	MW-21-EB	Total Recoverable	Water	3005A	
MB 280-589348/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589348/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589348/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Filtration Batch: 589465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	FILTRATION	
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	FILTRATION	
MB 280-589465/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-589465/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-589465/1-F	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-589465/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-589465/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-589465/2-F	Lab Control Sample	Dissolved	Water	FILTRATION	
280-167382-1 MS	MW-4	Dissolved	Water	FILTRATION	
280-167382-1 MSD	MW-4	Dissolved	Water	FILTRATION	
280-167382-3 MS	MW-13 (2 of 2)	Dissolved	Water	FILTRATION	
280-167382-3 MSD	MW-13 (2 of 2)	Dissolved	Water	FILTRATION	

Prep Batch: 589492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	3005A	589465
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	3005A	589465
MB 280-589465/1-B	Method Blank	Dissolved	Water	3005A	589465
LCS 280-589465/2-B	Lab Control Sample	Dissolved	Water	3005A	589465

Metals

Prep Batch: 589497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	3005A	589465
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	3005A	589465
MB 280-589465/1-D	Method Blank	Dissolved	Water	3005A	589465
LCS 280-589465/2-D	Lab Control Sample	Dissolved	Water	3005A	589465
280-167382-1 MS	MW-4	Dissolved	Water	3005A	589465
280-167382-1 MSD	MW-4	Dissolved	Water	3005A	589465

Prep Batch: 589575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	7470A	
280-167382-3	MW-13 (2 of 2)	Total/NA	Water	7470A	
280-167382-4	MW-6	Total/NA	Water	7470A	
280-167382-5	MW-1	Total/NA	Water	7470A	
280-167382-6	MW-3	Total/NA	Water	7470A	
280-167382-7	MW-7	Total/NA	Water	7470A	
280-167382-8	MW-21	Total/NA	Water	7470A	
280-167382-9	MW-21-DUP	Total/NA	Water	7470A	
280-167382-10	MW-21-EB	Total/NA	Water	7470A	
MB 280-589575/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-589575/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 589658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	6020B	589348
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6020B	589348
280-167382-4	MW-6	Total Recoverable	Water	6020B	589348
280-167382-5	MW-1	Total Recoverable	Water	6020B	589348
280-167382-6	MW-3	Total Recoverable	Water	6020B	589348
280-167382-7	MW-7	Total Recoverable	Water	6020B	589348
280-167382-8	MW-21	Total Recoverable	Water	6020B	589348
280-167382-9	MW-21-DUP	Total Recoverable	Water	6020B	589348
280-167382-10	MW-21-EB	Total Recoverable	Water	6020B	589348
MB 280-589348/1-A	Method Blank	Total Recoverable	Water	6020B	589348
LCS 280-589348/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589348
LCSD 280-589348/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	589348

Analysis Batch: 589677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	6010C	589311
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6010C	589311
280-167382-4	MW-6	Total Recoverable	Water	6010C	589311
280-167382-5	MW-1	Total Recoverable	Water	6010C	589311
280-167382-6	MW-3	Total Recoverable	Water	6010C	589311
280-167382-7	MW-7	Total Recoverable	Water	6010C	589311
280-167382-8	MW-21	Total Recoverable	Water	6010C	589311
280-167382-9	MW-21-DUP	Total Recoverable	Water	6010C	589311
280-167382-10	MW-21-EB	Total Recoverable	Water	6010C	589311
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	6010C	589311
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	6010C	589311
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	589311

Metals

Prep Batch: 589695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	3005A	
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	3005A	
280-167382-4	MW-6	Total Recoverable	Water	3005A	
280-167382-5	MW-1	Total Recoverable	Water	3005A	
280-167382-6	MW-3	Total Recoverable	Water	3005A	
280-167382-7	MW-7	Total Recoverable	Water	3005A	
280-167382-8	MW-21	Total Recoverable	Water	3005A	
280-167382-9	MW-21-DUP	Total Recoverable	Water	3005A	
280-167382-10	MW-21-EB	Total Recoverable	Water	3005A	
MB 280-589695/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589695/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589695/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 589801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	6020B	589497
280-167382-1	MW-4	Dissolved	Water	6020B	589497
280-167382-1	MW-4	Total Recoverable	Water	6020B	589348
280-167382-1	MW-4	Total Recoverable	Water	6020B	589348
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	6020B	589497
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	6020B	589497
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6020B	589348
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6020B	589348
280-167382-4	MW-6	Total Recoverable	Water	6020B	589348
280-167382-4	MW-6	Total Recoverable	Water	6020B	589348
280-167382-5	MW-1	Total Recoverable	Water	6020B	589348
280-167382-6	MW-3	Total Recoverable	Water	6020B	589348
280-167382-6	MW-3	Total Recoverable	Water	6020B	589348
280-167382-7	MW-7	Total Recoverable	Water	6020B	589348
280-167382-7	MW-7	Total Recoverable	Water	6020B	589348
280-167382-8	MW-21	Total Recoverable	Water	6020B	589348
280-167382-8	MW-21	Total Recoverable	Water	6020B	589348
280-167382-9	MW-21-DUP	Total Recoverable	Water	6020B	589348
280-167382-9	MW-21-DUP	Total Recoverable	Water	6020B	589348
280-167382-10	MW-21-EB	Total Recoverable	Water	6020B	589348
MB 280-589348/1-A	Method Blank	Total Recoverable	Water	6020B	589348
MB 280-589465/1-D	Method Blank	Dissolved	Water	6020B	589497
LCS 280-589348/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589348
LCS 280-589465/2-D	Lab Control Sample	Dissolved	Water	6020B	589497
LCSD 280-589348/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	589348
280-167382-1 MS	MW-4	Dissolved	Water	6020B	589497
280-167382-1 MS	MW-4	Dissolved	Water	6020B	589497
280-167382-1 MSD	MW-4	Dissolved	Water	6020B	589497
280-167382-1 MSD	MW-4	Dissolved	Water	6020B	589497

Analysis Batch: 589822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	7470A	589575
280-167382-3	MW-13 (2 of 2)	Total/NA	Water	7470A	589575
280-167382-4	MW-6	Total/NA	Water	7470A	589575
280-167382-5	MW-1	Total/NA	Water	7470A	589575

Metals (Continued)

Analysis Batch: 589822 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-6	MW-3	Total/NA	Water	7470A	589575
280-167382-7	MW-7	Total/NA	Water	7470A	589575
280-167382-8	MW-21	Total/NA	Water	7470A	589575
280-167382-9	MW-21-DUP	Total/NA	Water	7470A	589575
280-167382-10	MW-21-EB	Total/NA	Water	7470A	589575
MB 280-589575/1-A	Method Blank	Total/NA	Water	7470A	589575
LCS 280-589575/2-A	Lab Control Sample	Total/NA	Water	7470A	589575

Analysis Batch: 589946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	6020B	589695
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6020B	589695
280-167382-4	MW-6	Total Recoverable	Water	6020B	589695
280-167382-5	MW-1	Total Recoverable	Water	6020B	589695
280-167382-6	MW-3	Total Recoverable	Water	6020B	589695
280-167382-7	MW-7	Total Recoverable	Water	6020B	589695
280-167382-8	MW-21	Total Recoverable	Water	6020B	589695
280-167382-9	MW-21-DUP	Total Recoverable	Water	6020B	589695
280-167382-10	MW-21-EB	Total Recoverable	Water	6020B	589695
MB 280-589695/1-A	Method Blank	Total Recoverable	Water	6020B	589695
LCS 280-589695/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589695
LCSD 280-589695/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	589695

Analysis Batch: 589950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	6010C	589492
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	6010C	589492
MB 280-589465/1-B	Method Blank	Dissolved	Water	6010C	589492
LCS 280-589465/2-B	Lab Control Sample	Dissolved	Water	6010C	589492

Analysis Batch: 589956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total Recoverable	Water	6010C	589311
280-167382-3	MW-13 (2 of 2)	Total Recoverable	Water	6010C	589311
280-167382-4	MW-6	Total Recoverable	Water	6010C	589311
280-167382-5	MW-1	Total Recoverable	Water	6010C	589311
280-167382-6	MW-3	Total Recoverable	Water	6010C	589311
280-167382-7	MW-7	Total Recoverable	Water	6010C	589311
280-167382-8	MW-21	Total Recoverable	Water	6010C	589311
280-167382-9	MW-21-DUP	Total Recoverable	Water	6010C	589311
280-167382-10	MW-21-EB	Total Recoverable	Water	6010C	589311
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	6010C	589311
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	6010C	589311
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	589311

Prep Batch: 590036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	7470A	589465
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	7470A	589465
MB 280-589465/1-F	Method Blank	Dissolved	Water	7470A	589465
LCS 280-589465/2-F	Lab Control Sample	Dissolved	Water	7470A	589465

Metals (Continued)

Prep Batch: 590036 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-3 MS	MW-13 (2 of 2)	Dissolved	Water	7470A	589465
280-167382-3 MSD	MW-13 (2 of 2)	Dissolved	Water	7470A	589465

Analysis Batch: 590277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Dissolved	Water	7470A	590036
280-167382-3	MW-13 (2 of 2)	Dissolved	Water	7470A	590036
MB 280-589465/1-F	Method Blank	Dissolved	Water	7470A	590036
LCS 280-589465/2-F	Lab Control Sample	Dissolved	Water	7470A	590036
280-167382-3 MS	MW-13 (2 of 2)	Dissolved	Water	7470A	590036
280-167382-3 MSD	MW-13 (2 of 2)	Dissolved	Water	7470A	590036

General Chemistry

Analysis Batch: 589420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	SM2540 C	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	SM2540 C	
280-167382-4	MW-6	Total/NA	Water	SM2540 C	
280-167382-5	MW-1	Total/NA	Water	SM2540 C	
280-167382-6	MW-3	Total/NA	Water	SM2540 C	
280-167382-7	MW-7	Total/NA	Water	SM2540 C	
MB 280-589420/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-589420/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-589420/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 589451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	SM 2540D	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	SM 2540D	
280-167382-4	MW-6	Total/NA	Water	SM 2540D	
280-167382-5	MW-1	Total/NA	Water	SM 2540D	
MB 280-589451/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-589451/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-589451/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 589552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-8	MW-21	Total/NA	Water	SM2540 C	
280-167382-9	MW-21-DUP	Total/NA	Water	SM2540 C	
280-167382-10	MW-21-EB	Total/NA	Water	SM2540 C	
MB 280-589552/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-589552/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-589552/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 589554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-6	MW-3	Total/NA	Water	SM 2540D	
280-167382-7	MW-7	Total/NA	Water	SM 2540D	
280-167382-8	MW-21	Total/NA	Water	SM 2540D	
280-167382-9	MW-21-DUP	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 589554 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-589554/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-589554/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-589554/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 589666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	9040B	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	9040B	
280-167382-4	MW-6	Total/NA	Water	9040B	
280-167382-5	MW-1	Total/NA	Water	9040B	
280-167382-6	MW-3	Total/NA	Water	9040B	
280-167382-7	MW-7	Total/NA	Water	9040B	
280-167382-8	MW-21	Total/NA	Water	9040B	
280-167382-9	MW-21-DUP	Total/NA	Water	9040B	
LCS 280-589666/28	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-589666/4	Lab Control Sample	Total/NA	Water	9040B	
LCSD 280-589666/5	Lab Control Sample Dup	Total/NA	Water	9040B	
280-167382-5 DU	MW-1	Total/NA	Water	9040B	

Analysis Batch: 589667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	SM 2320B	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	SM 2320B	
280-167382-4	MW-6	Total/NA	Water	SM 2320B	
280-167382-5	MW-1	Total/NA	Water	SM 2320B	
280-167382-6	MW-3	Total/NA	Water	SM 2320B	
280-167382-7	MW-7	Total/NA	Water	SM 2320B	
280-167382-8	MW-21	Total/NA	Water	SM 2320B	
280-167382-9	MW-21-DUP	Total/NA	Water	SM 2320B	
280-167382-10	MW-21-EB	Total/NA	Water	SM 2320B	
MB 280-589667/84	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-589667/83	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 589747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-10	MW-21-EB	Total/NA	Water	SM 2540D	
MB 280-589747/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-589747/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 589832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	9056A	
280-167382-1	MW-4	Total/NA	Water	9056A	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	9056A	
280-167382-2	MW-13 (1 of 2)	Total/NA	Water	9056A	
280-167382-4	MW-6	Total/NA	Water	9056A	
280-167382-5	MW-1	Total/NA	Water	9056A	
280-167382-6	MW-3	Total/NA	Water	9056A	
280-167382-6	MW-3	Total/NA	Water	9056A	
280-167382-7	MW-7	Total/NA	Water	9056A	
280-167382-8	MW-21	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 589832 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-8	MW-21	Total/NA	Water	9056A	
280-167382-9	MW-21-DUP	Total/NA	Water	9056A	
280-167382-9	MW-21-DUP	Total/NA	Water	9056A	
280-167382-10	MW-21-EB	Total/NA	Water	9056A	
MB 280-589832/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589832/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589832/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589832/3	Lab Control Sample	Total/NA	Water	9056A	
280-167382-7 MS	MW-7	Total/NA	Water	9056A	
280-167382-7 MSD	MW-7	Total/NA	Water	9056A	
280-167382-7 DU	MW-7	Total/NA	Water	9056A	

Analysis Batch: 589953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-10	MW-21-EB	Total/NA	Water	9040B	
LCS 280-589953/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 590207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-5	MW-1	Total/NA	Water	9056A	
MB 280-590207/6	Method Blank	Total/NA	Water	9056A	
LCS 280-590207/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-590207/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-590207/3	Lab Control Sample	Total/NA	Water	9056A	

Client Sample ID: MW-4
Lab Sample ID: 280-167382-1

Date Collected: 10/04/22 10:20
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589492	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6010C		1			589950	10/13/22 14:26	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:00	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 22:44	KRP	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589497	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6020B		10			589801	10/12/22 21:31	LMT	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589497	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6020B		1			589801	10/12/22 22:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 21:43	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			589801	10/12/22 18:31	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:08	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:14	LMT	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	7470A			10 mL	50 mL	590036	10/17/22 14:57	PFM	EET DEN
Dissolved	Analysis	7470A		1			590277	10/17/22 19:53	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:17	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 15:46	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589832	10/13/22 15:19	EJS	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	589832	10/13/22 15:27	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 22:37	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589451	10/10/22 15:44	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-13 (1 of 2)
Lab Sample ID: 280-167382-2

Date Collected: 10/04/22 15:40
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9040B		1			589666	10/11/22 15:50	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589832	10/13/22 15:35	EJS	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	589832	10/13/22 15:44	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 22:47	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589451	10/10/22 15:44	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-13 (2 of 2)
Lab Sample ID: 280-167382-3

Date Collected: 10/05/22 15:45
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589492	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6010C		1			589950	10/13/22 14:30	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:04	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 22:49	KRP	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589497	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6020B		10			589801	10/12/22 21:49	LMT	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	589497	10/12/22 04:25	MAB	EET DEN
Dissolved	Analysis	6020B		1			589801	10/12/22 22:27	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 21:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			589801	10/12/22 18:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:16	LMT	EET DEN
Dissolved	Filtration	FILTRATION			200 mL	200 mL	589465	10/10/22 16:46	MCR	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	590036	10/17/22 14:57	PFM	EET DEN
Dissolved	Analysis	7470A		1			590277	10/17/22 20:00	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:20	KMS	EET DEN

Client Sample ID: MW-6
Lab Sample ID: 280-167382-4

Date Collected: 10/05/22 11:40
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:08	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 22:53	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 21:51	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		5			589801	10/12/22 18:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:16	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:18	LMT	EET DEN

Client Sample ID: MW-6
Lab Sample ID: 280-167382-4

Date Collected: 10/05/22 11:40
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:40	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 15:58	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589832	10/13/22 16:09	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:05	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589451	10/10/22 15:44	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-1
Lab Sample ID: 280-167382-5

Date Collected: 10/05/22 15:20
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:12	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 22:57	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 21:55	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 18:42	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:20	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:42	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 16:08	KEG	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	590207	10/17/22 23:39	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589832	10/13/22 16:25	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:13	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589451	10/10/22 15:44	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-3
Lab Sample ID: 280-167382-6

Date Collected: 10/06/22 15:00
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:16	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:02	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 21:59	LMT	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			589801	10/12/22 18:46	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:23	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:22	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:45	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 16:16	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589832	10/13/22 16:50	EJS	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	589832	10/13/22 16:58	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:35	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589554	10/11/22 11:30	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:21	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:06	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 22:02	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		5			589801	10/12/22 18:49	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:27	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:24	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:47	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 16:19	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589832	10/13/22 17:07	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:43	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589554	10/11/22 11:30	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:25	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:10	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 22:06	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		5			589801	10/12/22 18:53	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:31	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:25	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:50	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 16:23	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589832	10/13/22 17:40	EJS	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	589832	10/13/22 17:48	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:50	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589554	10/11/22 11:30	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	589552	10/11/22 11:27	ASP	EET DEN

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:45	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:14	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 23:13	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		5			589801	10/12/22 18:57	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 19:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:27	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:52	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 16:27	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589832	10/13/22 17:56	EJS	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	589832	10/13/22 18:05	EJS	EET DEN

Client Sample ID: MW-21-DUP
Lab Sample ID: 280-167382-9

Date Collected: 10/07/22 11:00
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			589667	10/11/22 23:57	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589554	10/11/22 11:30	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	589552	10/11/22 11:27	ASP	EET DEN

Client Sample ID: MW-21-EB
Lab Sample ID: 280-167382-10

Date Collected: 10/07/22 13:10
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:49	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:19	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 22:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589801	10/12/22 17:57	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:33	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:55	KMS	EET DEN
Total/NA	Analysis	9040B		1			589953	10/13/22 15:46	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589832	10/13/22 18:29	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/12/22 00:03	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589747	10/12/22 14:20	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	589552	10/11/22 11:27	ASP	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167382-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: A. Binder	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (303) 524-0691	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

280-167382 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	2		
MW-4	10/4/22	1020	G	WATER			X	X	X	X	6	+250mL unp. (Diss. Metals)
MW-13 (1of2)	10/4/22	1540	G	WATER				X			2	
MW-13 (2of2)	10/5/22	1545	G	WATER			X		X	X	4	+250mL unp (Diss. Metals)
MW-6	10/5/22	1140	G	WATER			X	X	X		5	
MW-1	10/5/22	1520	G	WATER			X	X	X		5	
MW-3	10/6/22	1500	G	WATER			X	X	X		5	
MW-7	10/6/22	1530	G	WATER			X	X	X		5	
MW-21	10/7/22	1100	G	WATER			X	X	X		5	
MW-21-DUP	10/7/22	1100	G	WATER			X	X	X		5	
MW-21-EB	10/7/22	1310	G	WATER			X	X	X		5	
				WATER								

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
David Roy	10/7/22 1610	HDR		10/7/22 1610	EMDEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.9, 0.8, 1.6 CF0.0 FR12

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167382-1

Login Number: 167382
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-167382-2
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
11/10/2022 4:42:39 PM

Nicole Ryan, Project Manager I
(303)736-0100
Nicole.Ryan@ET.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the {0} Project Manager.

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Job ID: 280-167382-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167382-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/7/2022 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 0.9º C and 1.6º C.

RADIUM-226 (GFPC)
Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 10/18/2022 and analyzed on 11/09/2022 and 11/10/2022.

The Ba Carrier recovery is outside the upper control limit (110%) for the associated samples. There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference. . The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have (180-145923-A-1-A) and (180-145923-B-1-A DU)

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

RADIUM-228
Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 10/18/2022 and analyzed on 10/28/2022 and 11/02/2022.

The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: MW-13 (2 of 2) (280-167382-3). Analytical results are reported with the detection limit achieved.

The Ba Carrier recovery is outside the upper control limit (110%) for the following samples: (180-145923-A-1-B) and (180-145923-B-1-B DU). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Radium-228 was detected in method blank MB 160-586435/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Job ID: 280-167382-2 (Continued)

Laboratory: Eurofins Denver (Continued)

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-4 (280-167382-1), MW-13 (2 of 2) (280-167382-3), MW-6 (280-167382-4), MW-1 (280-167382-5), MW-3 (280-167382-6), MW-7 (280-167382-7), MW-21 (280-167382-8), MW-21-DUP (280-167382-9) and MW-21-EB (280-167382-10) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/10/2022.

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

Detection Summary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-4 — Lab Sample ID: 280-167382-1

No Detections.

Client Sample ID: MW-13 (2 of 2) — Lab Sample ID: 280-167382-3

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 280-167382-4

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 280-167382-5

No Detections.

Client Sample ID: MW-3 — Lab Sample ID: 280-167382-6

No Detections.

Client Sample ID: MW-7 — Lab Sample ID: 280-167382-7

No Detections.

Client Sample ID: MW-21 — Lab Sample ID: 280-167382-8

No Detections.

Client Sample ID: MW-21-DUP — Lab Sample ID: 280-167382-9

No Detections.

Client Sample ID: MW-21-EB — Lab Sample ID: 280-167382-10

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Protocol References:

None = None

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

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

Laboratory References:

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

Sample Summary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167382-1	MW-4	Water	10/04/22 10:20	10/07/22 16:10
280-167382-3	MW-13 (2 of 2)	Water	10/05/22 15:45	10/07/22 16:10
280-167382-4	MW-6	Water	10/05/22 11:40	10/07/22 16:10
280-167382-5	MW-1	Water	10/05/22 15:20	10/07/22 16:10
280-167382-6	MW-3	Water	10/06/22 15:00	10/07/22 16:10
280-167382-7	MW-7	Water	10/06/22 15:30	10/07/22 16:10
280-167382-8	MW-21	Water	10/07/22 11:00	10/07/22 16:10
280-167382-9	MW-21-DUP	Water	10/07/22 11:00	10/07/22 16:10
280-167382-10	MW-21-EB	Water	10/07/22 13:10	10/07/22 16:10

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.102	U	0.113	0.113	1.00	0.183	pCi/L	10/18/22 11:25	11/10/22 09:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.2*		*40 - 110*	*10/18/22 11:25*	*11/10/22 09:10*	*1*

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.237	U	0.170	0.171	1.00	0.242	pCi/L	10/18/22 11:25	11/10/22 09:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*10/18/22 11:25*	*11/10/22 09:22*	*1*

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.238**		0.104	0.107	1.00	0.118	pCi/L	10/18/22 11:25	11/10/22 09:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.7*		*40 - 110*	*10/18/22 11:25*	*11/10/22 09:22*	*1*

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.135**		0.0940	0.0948	1.00	0.134	pCi/L	10/18/22 11:25	11/10/22 09:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.0*		*40 - 110*	*10/18/22 11:25*	*11/10/22 09:23*	*1*

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.543**		0.130	0.139	1.00	0.0988	pCi/L	10/18/22 13:24	11/09/22 10:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/18/22 13:24*	*11/09/22 10:37*	*1*

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.441		0.128	0.134	1.00	0.118	pCi/L	10/18/22 13:24	11/09/22 10:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.3		40 - 110	10/18/22 13:24	11/09/22 10:37	1

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.186		0.0909	0.0924	1.00	0.114	pCi/L	10/18/22 13:24	11/09/22 10:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110	10/18/22 13:24	11/09/22 10:37	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.382		0.115	0.120	1.00	0.112	pCi/L	10/18/22 13:24	11/09/22 10:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.8		40 - 110	10/18/22 13:24	11/09/22 10:38	1

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.160		0.0909	0.0921	1.00	0.122	pCi/L	10/18/22 13:24	11/09/22 10:38	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110	10/18/22 13:24	11/09/22 10:38	1

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.455	U	0.467	0.469	1.00	0.756	pCi/L	10/18/22 12:01	11/02/22 14:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.2		40 - 110	10/18/22 12:01	11/02/22 14:10	1

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.0		40 - 110	10/18/22 12:01	11/02/22 14:10	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.33	G	0.771	0.781	1.00	1.10	pCi/L	10/18/22 12:01	11/02/22 14:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110	10/18/22 12:01	11/02/22 14:10	1
Y Carrier	87.1		40 - 110	10/18/22 12:01	11/02/22 14:10	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.26		0.464	0.478	1.00	0.564	pCi/L	10/18/22 12:01	11/02/22 14:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		40 - 110	10/18/22 12:01	11/02/22 14:10	1
Y Carrier	86.4		40 - 110	10/18/22 12:01	11/02/22 14:10	1

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.375	U	0.407	0.408	1.00	0.663	pCi/L	10/18/22 12:01	11/02/22 14:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.0		40 - 110	10/18/22 12:01	11/02/22 14:10	1
Y Carrier	83.7		40 - 110	10/18/22 12:01	11/02/22 14:10	1

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.955		0.418	0.428	1.00	0.586	pCi/L	10/18/22 15:20	10/28/22 11:26	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110	10/18/22 15:20	10/28/22 11:26	1
Y Carrier	90.8		40 - 110	10/18/22 15:20	10/28/22 11:26	1

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.05		0.391	0.402	1.00	0.478	pCi/L	10/18/22 15:20	10/28/22 11:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*
Y Carrier	*91.2*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.19		0.399	0.413	1.00	0.498	pCi/L	10/18/22 15:20	10/28/22 11:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*
Y Carrier	*92.7*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.724		0.322	0.329	1.00	0.426	pCi/L	10/18/22 15:20	10/28/22 11:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.8*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*
Y Carrier	*90.5*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:26*	*1*

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.234	U	0.271	0.272	1.00	0.445	pCi/L	10/18/22 15:20	10/28/22 11:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:27*	*1*
Y Carrier	*93.8*		*40 - 110*	*10/18/22 15:20*	*10/28/22 11:27*	*1*

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

Client Sample ID: MW-4
Date Collected: 10/04/22 10:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.557	U	0.480	0.482	5.00	0.756	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-13 (2 of 2)
Date Collected: 10/05/22 15:45
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.57**		0.790	0.800	5.00	1.10	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-6
Date Collected: 10/05/22 11:40
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.49**		0.476	0.490	5.00	0.564	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-1
Date Collected: 10/05/22 15:20
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.510	U	0.418	0.419	5.00	0.663	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-3
Date Collected: 10/06/22 15:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.50**		0.438	0.450	5.00	0.586	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-7
Date Collected: 10/06/22 15:30
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.49**		0.411	0.424	5.00	0.478	pCi/L		11/10/22 16:44	1

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

Client Sample ID: MW-21
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.38**		0.409	0.423	5.00	0.498	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-21-DUP
Date Collected: 10/07/22 11:00
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.11**		0.342	0.350	5.00	0.426	pCi/L		11/10/22 16:44	1

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10
Lab Sample ID: 280-167382-10
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.394	U	0.286	0.287	5.00	0.445	pCi/L		11/10/22 16:44	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-586412/1-A
Matrix: Water
Analysis Batch: 589595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586412

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01276	U	0.0494	0.0494	1.00	0.0971	pCi/L	10/18/22 11:25	11/10/22 07:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*10/18/22 11:25*	*11/10/22 07:26*	*1*

Lab Sample ID: LCS 160-586412/2-A
Matrix: Water
Analysis Batch: 589595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586412

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.16		1.07	1.00	0.109	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*

Lab Sample ID: MB 160-586424/1-A
Matrix: Water
Analysis Batch: 589434

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586424

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07547	U	0.0762	0.0765	1.00	0.121	pCi/L	10/18/22 13:24	11/09/22 08:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*40 - 110*	*10/18/22 13:24*	*11/09/22 08:41*	*1*

Lab Sample ID: LCS 160-586424/2-A
Matrix: Water
Analysis Batch: 589434

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586424

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.18		1.06	1.00	0.114	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-586415/1-A
Matrix: Water
Analysis Batch: 588204

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586415

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2793	U	0.268	0.269	1.00	0.582	pCi/L	10/18/22 12:01	11/02/22 14:07	1

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

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110	10/18/22 12:01	11/02/22 14:07	1
Y Carrier	87.1		40 - 110	10/18/22 12:01	11/02/22 14:07	1

Lab Sample ID: LCS 160-586415/2-A
Matrix: Water
Analysis Batch: 588204

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586415

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.48	8.830		1.25	1.00	0.563	pCi/L	104	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.0		40 - 110
Y Carrier	86.4		40 - 110

Lab Sample ID: MB 160-586435/1-A
Matrix: Water
Analysis Batch: 587626

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586435

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5753		0.319	0.323	1.00	0.447	pCi/L	10/18/22 15:20	10/28/22 11:20	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.6		40 - 110	10/18/22 15:20	10/28/22 11:20	1
Y Carrier	87.5		40 - 110	10/18/22 15:20	10/28/22 11:20	1

Lab Sample ID: LCS 160-586435/2-A
Matrix: Water
Analysis Batch: 587626

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586435

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.49	9.149		1.21	1.00	0.475	pCi/L	108	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.5		40 - 110
Y Carrier	87.1		40 - 110

Rad

Prep Batch: 586412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	PrecSep-21	
280-167382-3	MW-13 (2 of 2)	Total/NA	Water	PrecSep-21	
280-167382-4	MW-6	Total/NA	Water	PrecSep-21	
280-167382-5	MW-1	Total/NA	Water	PrecSep-21	
MB 160-586412/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-586412/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 586415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-1	MW-4	Total/NA	Water	PrecSep_0	
280-167382-3	MW-13 (2 of 2)	Total/NA	Water	PrecSep_0	
280-167382-4	MW-6	Total/NA	Water	PrecSep_0	
280-167382-5	MW-1	Total/NA	Water	PrecSep_0	
MB 160-586415/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-586415/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 586424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-6	MW-3	Total/NA	Water	PrecSep-21	
280-167382-7	MW-7	Total/NA	Water	PrecSep-21	
280-167382-8	MW-21	Total/NA	Water	PrecSep-21	
280-167382-9	MW-21-DUP	Total/NA	Water	PrecSep-21	
280-167382-10	MW-21-EB	Total/NA	Water	PrecSep-21	
MB 160-586424/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-586424/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 586435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167382-6	MW-3	Total/NA	Water	PrecSep_0	
280-167382-7	MW-7	Total/NA	Water	PrecSep_0	
280-167382-8	MW-21	Total/NA	Water	PrecSep_0	
280-167382-9	MW-21-DUP	Total/NA	Water	PrecSep_0	
280-167382-10	MW-21-EB	Total/NA	Water	PrecSep_0	
MB 160-586435/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-586435/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-4
Lab Sample ID: 280-167382-1
Date Collected: 10/04/22 10:20
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1004.04 mL	1.0 g	586412	10/18/22 11:25	BMP	EET SL
Total/NA	Analysis	9315		1			589595	11/10/22 09:10	FLC	EET SL
Total/NA	Prep	PrecSep_0			1004.04 mL	1.0 g	586415	10/18/22 12:01	BMP	EET SL
Total/NA	Analysis	9320		1			588204	11/02/22 14:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-13 (2 of 2)
Lab Sample ID: 280-167382-3
Date Collected: 10/05/22 15:45
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			502.07 mL	1.0 g	586412	10/18/22 11:25	BMP	EET SL
Total/NA	Analysis	9315		1			589595	11/10/22 09:22	FLC	EET SL
Total/NA	Prep	PrecSep_0			502.07 mL	1.0 g	586415	10/18/22 12:01	BMP	EET SL
Total/NA	Analysis	9320		1			588204	11/02/22 14:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-6
Lab Sample ID: 280-167382-4
Date Collected: 10/05/22 11:40
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.68 mL	1.0 g	586412	10/18/22 11:25	BMP	EET SL
Total/NA	Analysis	9315		1			589595	11/10/22 09:22	FLC	EET SL
Total/NA	Prep	PrecSep_0			1003.68 mL	1.0 g	586415	10/18/22 12:01	BMP	EET SL
Total/NA	Analysis	9320		1			588204	11/02/22 14:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-1
Lab Sample ID: 280-167382-5
Date Collected: 10/05/22 15:20
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.23 mL	1.0 g	586412	10/18/22 11:25	BMP	EET SL
Total/NA	Analysis	9315		1			589595	11/10/22 09:23	FLC	EET SL
Total/NA	Prep	PrecSep_0			999.23 mL	1.0 g	586415	10/18/22 12:01	BMP	EET SL
Total/NA	Analysis	9320		1			588204	11/02/22 14:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-3
Lab Sample ID: 280-167382-6
Date Collected: 10/06/22 15:00
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.6 mL	1.0 g	586424	10/18/22 13:24	ZR	EET SL
Total/NA	Analysis	9315		1			589434	11/09/22 10:37	FLC	EET SL
Total/NA	Prep	PrecSep_0			999.6 mL	1.0 g	586435	10/18/22 15:20	ZR	EET SL
Total/NA	Analysis	9320		1			587628	10/28/22 11:26	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-7
Lab Sample ID: 280-167382-7
Date Collected: 10/06/22 15:30
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.7 mL	1.0 g	586424	10/18/22 13:24	ZR	EET SL
Total/NA	Analysis	9315		1			589434	11/09/22 10:37	FLC	EET SL
Total/NA	Prep	PrecSep_0			1000.7 mL	1.0 g	586435	10/18/22 15:20	ZR	EET SL
Total/NA	Analysis	9320		1			587628	10/28/22 11:26	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-21
Lab Sample ID: 280-167382-8
Date Collected: 10/07/22 11:00
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.4 mL	1.0 g	586424	10/18/22 13:24	ZR	EET SL
Total/NA	Analysis	9315		1			589434	11/09/22 10:37	FLC	EET SL
Total/NA	Prep	PrecSep_0			1001.4 mL	1.0 g	586435	10/18/22 15:20	ZR	EET SL
Total/NA	Analysis	9320		1			587628	10/28/22 11:26	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Client Sample ID: MW-21-DUP
Lab Sample ID: 280-167382-9
Date Collected: 10/07/22 11:00
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.7 mL	1.0 g	586424	10/18/22 13:24	ZR	EET SL
Total/NA	Analysis	9315		1			589434	11/09/22 10:38	FLC	EET SL
Total/NA	Prep	PrecSep_0			999.7 mL	1.0 g	586435	10/18/22 15:20	ZR	EET SL
Total/NA	Analysis	9320		1			587628	10/28/22 11:26	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-21-EB
Date Collected: 10/07/22 13:10
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167382-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.6 mL	1.0 g	586424	10/18/22 13:24	ZR	EET SL
Total/NA	Analysis	9315		1			589434	11/09/22 10:38	FLC	EET SL
Total/NA	Prep	PrecSep_0			1001.6 mL	1.0 g	586435	10/18/22 15:20	ZR	EET SL
Total/NA	Analysis	9320		1			587628	10/28/22 11:27	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589650	11/10/22 16:44	CAH	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	07-01-22 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22 *
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: A. Binder	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (303) 524-0691	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

280-167382 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	2		
MW-4	10/4/22	1020	G	WATER			X	X	X	X	6	+250mL unp. (Diss. Metals)
MW-13 (1of2)	10/4/22	1540	G	WATER				X			2	
MW-13 (2of2)	10/5/22	1545	G	WATER			X		X	X	4	+250mL unp (Diss. Metals)
MW-6	10/5/22	1140	G	WATER			X	X	X		5	
MW-1	10/5/22	1520	G	WATER			X	X	X		5	
MW-3	10/6/22	1500	G	WATER			X	X	X		5	
MW-7	10/6/22	1530	G	WATER			X	X	X		5	
MW-21	10/7/22	1100	G	WATER			X	X	X		5	
MW-21-DUP	10/7/22	1100	G	WATER			X	X	X		5	
MW-21-EB	10/7/22	1310	G	WATER			X	X	X		5	
				WATER								

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	David Roy	10/7/22 1610	HDR		10/7/22 1610	EHDEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.9, 0.8, 1.6 C80.0 FR12

11/10/2022

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-631656.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-167382-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/20/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-4 (280-167382-1)	10/4/22	10:20 Mountain		Water			X	X	X	2	
MW-13 (2OF2) (280-167382-3)	10/5/22	15:45 Mountain		Water			X	X	X	2	
MW-6 (280-167382-4)	10/5/22	11:40 Mountain		Water			X	X	X	2	
MW-1 (280-167382-5)	10/5/22	15:20 Mountain		Water			X	X	X	2	
MW-3 (280-167382-6)	10/6/22	15:00 Mountain		Water			X	X	X	2	
MW-7 (280-167382-7)	10/6/22	15:30 Mountain		Water			X	X	X	2	
MW-21 (280-167382-8)	10/7/22	11:00 Mountain		Water			X	X	X	2	
MW-21-DUP (280-167382-9)	10/7/22	11:00 Mountain		Water			X	X	X	2	
MW-21-EB (280-167382-10)	10/7/22	13:10 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	William Cain	10-10-22 16:40	FED EX	FED EX		
2	FED EX			Autumn R. Johnson	OCT 11 2022 0830	TAT
3						

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167382-2

Login Number: 167382
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167382-2

Login Number: 167382
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 10/11/22 01:18 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-167382-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-167382-1	MW-4	76.2
280-167382-3	MW-13 (2 of 2)	92.2
280-167382-4	MW-6	88.7
280-167382-5	MW-1	86.0
280-167382-6	MW-3	97.1
280-167382-7	MW-7	87.3
280-167382-8	MW-21	100
280-167382-9	MW-21-DUP	99.8
280-167382-10	MW-21-EB	92.6
LCS 160-586412/2-A	Lab Control Sample	98.0
LCS 160-586424/2-A	Lab Control Sample	97.5
MB 160-586412/1-A	Method Blank	96.3
MB 160-586424/1-A	Method Blank	93.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-167382-1	MW-4	76.2	86.0
280-167382-3	MW-13 (2 of 2)	92.2	87.1
280-167382-4	MW-6	88.7	86.4
280-167382-5	MW-1	86.0	83.7
280-167382-6	MW-3	97.1	90.8
280-167382-7	MW-7	87.3	91.2
280-167382-8	MW-21	100	92.7
280-167382-9	MW-21-DUP	99.8	90.5
280-167382-10	MW-21-EB	92.6	93.8
LCS 160-586415/2-A	Lab Control Sample	98.0	86.4
LCS 160-586435/2-A	Lab Control Sample	97.5	87.1
MB 160-586415/1-A	Method Blank	96.3	87.1
MB 160-586435/1-A	Method Blank	93.6	87.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-167384-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
10/19/2022 11:08:02 AM

Nicole Ryan, Project Manager I
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LINKS

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-167384-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167384-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The samples were received on 10/7/2022 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 0.9º C and 1.6º C.

TOTAL RECOVERABLE METALS
Sample MW-39B (280-167384-1) was analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/10/2022 and analyzed on 10/11/2022 and 10/13/2022.

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

TOTAL RECOVERABLE METALS (ICP/MS)
Sample MW-39B (280-167384-1) was analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/10/2022, 10/11/2022 and 10/12/2022 and analyzed on 10/11/2022, 10/12/2022 and 10/13/2022.

Cobalt was detected in method blank MB 280-589348/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Sodium was detected in method blank MB 280-589457/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Lead failed the recovery criteria low for the MS of sample 280-167438-1 in analytical batch 280-589658. Refer to the QC report for details.

Sample MW-39B (280-167384-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY

Job ID: 280-167384-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Sample MW-39B (280-167384-1) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 10/11/2022 and analyzed on 10/12/2022.

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

ALKALINITY
Sample MW-39B (280-167384-1) was analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/12/2022.

Alkalinity was detected in method blank MB 280-589667/84 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Bicarbonate Alkalinity as CaCO3 was detected in method blank MB 280-589667/84 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS
Sample MW-39B (280-167384-1) was analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/10/2022.

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

TOTAL SUSPENDED SOLIDS
Sample MW-39B (280-167384-1) was analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/10/2022.

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

CORROSIVITY (PH)
Sample MW-39B (280-167384-1) was analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/11/2022.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-167281-10. Refer to the QC report for details.

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

ANIONS (28 DAYS)
Sample MW-39B (280-167384-1) was analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 10/13/2022.

Chloride, Fluoride and Sulfate failed the recovery criteria low for the MS and MSD of sample MW-39B (280-167384-1) in analytical batch 280-589832. Refer to the QC report for details.

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

Detection Summary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-39B
Lab Sample ID: 280-167384-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.11		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Magnesium	15		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.00033	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	46	B	1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.065		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	2.8		1.2	0.52	mg/L	10		6020B	Total Recoverable
Cobalt	0.00044	J B	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00028	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0030		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	41		0.20	0.038	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	55	F1	3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.56	F1	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	21	F1	5.0	1.0	mg/L	1		9056A	Total/NA
Alkalinity	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	13		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	280		10	4.7	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN

Protocol References:

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167384-1	MW-39B	Water	10/05/22 13:30	10/07/22 16:10

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.11**		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 23:40	1
Lithium	ND		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 14:53	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:35	1
Magnesium	**15**		0.050	0.021	mg/L		10/11/22 07:00	10/11/22 23:58	1
Arsenic	**0.00033**	**J**	0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 22:31	1
Sodium	**46**	**B**	1.5	0.65	mg/L		10/11/22 07:00	10/12/22 18:01	10
Barium	**0.065**		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 22:31	1
Potassium	**2.8**		1.2	0.52	mg/L		10/11/22 07:00	10/12/22 18:01	10
Beryllium	ND		0.0010	0.000080	mg/L		10/12/22 14:42	10/13/22 21:35	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 22:31	1
Chromium	ND		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 22:31	1
Cobalt	**0.00044**	**J B**	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 22:31	1
Lead	**0.00028**	**J**	0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 22:31	1
Molybdenum	**0.0030**		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:35	1
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 22:31	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 22:31	1
Calcium	**41**		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 22:31	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 12:58	1

General Chemistry

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.4**	**HF**	0.1	0.1	SU			10/11/22 15:16	1
Temperature (SW846 9040B)	**21.5**	**HF**	1.0	1.0	Degrees C			10/11/22 15:16	1
Chloride (SW846 9056A)	**55**	**F1**	3.0	1.0	mg/L			10/13/22 18:54	1
Fluoride (SW846 9056A)	**0.56**	**F1**	0.50	0.17	mg/L			10/13/22 18:54	1
Sulfate (SW846 9056A)	**21**	**F1**	5.0	1.0	mg/L			10/13/22 18:54	1
Alkalinity (SM 2320B)	**170**	**B**	10	3.1	mg/L			10/12/22 00:09	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**170**	**B**	10	3.1	mg/L			10/12/22 00:09	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/12/22 00:09	1
Total Suspended Solids (SM 2540D)	**13**		4.0	1.1	mg/L			10/10/22 15:44	1

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry (Continued)

Client Sample ID: MW-39B
Lab Sample ID: 280-167384-1
Date Collected: 10/05/22 13:30
Matrix: Water
Date Received: 10/07/22 16:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS) (SM18 SM2540 C)	280		10	4.7	mg/L			10/10/22 11:42	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-589311/1-A
Matrix: Water
Analysis Batch: 589677

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/10/22 06:30	10/11/22 22:15	1

Lab Sample ID: MB 280-589311/1-A
Matrix: Water
Analysis Batch: 589956

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		10/10/22 06:30	10/13/22 13:48	1

Lab Sample ID: LCS 280-589311/2-A
Matrix: Water
Analysis Batch: 589677

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.94		mg/L		97	86 - 110

Lab Sample ID: LCS 280-589311/2-A
Matrix: Water
Analysis Batch: 589956

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.957		mg/L		96	90 - 112

Lab Sample ID: LCSD 280-589311/3-A
Matrix: Water
Analysis Batch: 589677

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	1.95		mg/L		97	86 - 110	0	20

Lab Sample ID: LCSD 280-589311/3-A
Matrix: Water
Analysis Batch: 589956

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589311

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	1.00	0.974		mg/L		97	90 - 112	2	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-589348/1-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		10/10/22 14:23	10/11/22 21:32	1
Barium	ND		0.0010	0.00029	mg/L		10/10/22 14:23	10/11/22 21:32	1
Cadmium	ND		0.0010	0.00027	mg/L		10/10/22 14:23	10/11/22 21:32	1
Chromium	ND		0.0020	0.00050	mg/L		10/10/22 14:23	10/11/22 21:32	1
Cobalt	0.000238	J	0.0010	0.000092	mg/L		10/10/22 14:23	10/11/22 21:32	1
Lead	ND		0.0010	0.00018	mg/L		10/10/22 14:23	10/11/22 21:32	1

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

Lab Sample ID: MB 280-589348/1-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.00037	mg/L		10/10/22 14:23	10/11/22 21:32	1
Thallium	ND		0.0010	0.000089	mg/L		10/10/22 14:23	10/11/22 21:32	1
Calcium	ND		0.20	0.038	mg/L		10/10/22 14:23	10/11/22 21:32	1

Lab Sample ID: LCS 280-589348/2-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.204		mg/L		102	85 - 117
Barium	0.200	0.204		mg/L		102	85 - 118
Cadmium	0.200	0.200		mg/L		100	85 - 115
Chromium	0.200	0.201		mg/L		100	84 - 121
Cobalt	0.200	0.195		mg/L		98	85 - 120
Lead	0.200	0.200		mg/L		100	85 - 118
Selenium	0.200	0.203		mg/L		101	77 - 122
Thallium	0.200	0.201		mg/L		100	85 - 118
Calcium	10.0	9.13		mg/L		91	80 - 120

Lab Sample ID: LCSD 280-589348/3-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589348

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.200	0.207		mg/L		104	85 - 117	2	10
Barium	0.200	0.207		mg/L		104	85 - 118	2	11
Cadmium	0.200	0.206		mg/L		103	85 - 115	3	7
Chromium	0.200	0.204		mg/L		102	84 - 121	2	8
Cobalt	0.200	0.198		mg/L		99	85 - 120	1	7
Lead	0.200	0.204		mg/L		102	85 - 118	2	7
Selenium	0.200	0.204		mg/L		102	77 - 122	1	9
Thallium	0.200	0.204		mg/L		102	85 - 118	2	5
Calcium	10.0	9.18		mg/L		92	80 - 120	1	20

Lab Sample ID: MB 280-589457/1-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589457

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		0.050	0.021	mg/L		10/11/22 07:00	10/11/22 23:50	1

Lab Sample ID: MB 280-589457/1-A
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589457

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	0.0791	J	0.15	0.065	mg/L		10/11/22 07:00	10/12/22 15:13	1
Potassium	ND		0.12	0.052	mg/L		10/11/22 07:00	10/12/22 15:13	1

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

Lab Sample ID: LCS 280-589457/2-A
Matrix: Water
Analysis Batch: 589658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589457

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	10.0	8.80		mg/L		88	80 - 120

Lab Sample ID: LCS 280-589457/2-A
Matrix: Water
Analysis Batch: 589801

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589457

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	10.0	9.39		mg/L		94	80 - 120
Potassium	10.0	8.86		mg/L		89	80 - 120

Lab Sample ID: MB 280-589695/1-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/12/22 14:42	10/13/22 21:09	1
Beryllium	ND		0.0010	0.000080	mg/L		10/12/22 14:42	10/13/22 21:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/12/22 14:42	10/13/22 21:09	1

Lab Sample ID: LCS 280-589695/2-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0415		mg/L		104	85 - 115
Beryllium	0.0400	0.0393		mg/L		98	80 - 125
Molybdenum	0.0400	0.0410		mg/L		103	85 - 119

Lab Sample ID: LCSD 280-589695/3-A
Matrix: Water
Analysis Batch: 589946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 589695

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.0400	0.0400		mg/L		100	85 - 115	4	9
Beryllium	0.0400	0.0377		mg/L		94	80 - 125	4	22
Molybdenum	0.0400	0.0391		mg/L		98	85 - 119	5	8

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-589575/1-A
Matrix: Water
Analysis Batch: 589822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589575

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/11/22 16:10	10/12/22 11:57	1

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

Lab Sample ID: LCS 280-589575/2-A
Matrix: Water
Analysis Batch: 589822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589575

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00495		mg/L		99	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-589666/4
Matrix: Water
Analysis Batch: 589666

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCSD 280-589666/5
Matrix: Water
Analysis Batch: 589666

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101	0	5

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-589832/6
Matrix: Water
Analysis Batch: 589832

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/13/22 10:57	1
Fluoride	ND		0.50	0.17	mg/L			10/13/22 10:57	1
Sulfate	ND		5.0	1.0	mg/L			10/13/22 10:57	1

Lab Sample ID: LCS 280-589832/4
Matrix: Water
Analysis Batch: 589832

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Fluoride	5.00	5.16		mg/L		103	90 - 110
Sulfate	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-589832/5
Matrix: Water
Analysis Batch: 589832

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	102		mg/L		102	90 - 110	0	10
Fluoride	5.00	5.19		mg/L		104	90 - 110	1	10
Sulfate	100	101		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-589832/3
Matrix: Water
Analysis Batch: 589832

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.89		mg/L		98	50 - 150		
Fluoride			0.500	0.456	J	mg/L		91	50 - 150		
Sulfate			5.00	4.92	J	mg/L		98	50 - 150		

Lab Sample ID: 280-167384-1 MS
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-39B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	55	F1	50.0	91.8	F1	mg/L		74	80 - 120		
Fluoride	0.56	F1	5.00	4.32	F1	mg/L		75	80 - 120		
Sulfate	21	F1	50.0	58.9	F1	mg/L		76	80 - 120		

Lab Sample ID: 280-167384-1 MSD
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-39B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	55	F1	50.0	91.7	F1	mg/L		74	80 - 120	0	20
Fluoride	0.56	F1	5.00	4.36	F1	mg/L		76	80 - 120	1	20
Sulfate	21	F1	50.0	58.8	F1	mg/L		75	80 - 120	0	20

Lab Sample ID: 280-167384-1 DU
Matrix: Water
Analysis Batch: 589832

Client Sample ID: MW-39B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	55	F1	54.9		mg/L		0.1	15
Fluoride	0.56	F1	0.517		mg/L		8	15
Sulfate	21	F1	21.0		mg/L		0.3	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-589667/84
Matrix: Water
Analysis Batch: 589667

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	6.50	J	10	3.1	mg/L			10/11/22 21:57	1
Bicarbonate Alkalinity as CaCO3	4.76	J	10	3.1	mg/L			10/11/22 21:57	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/11/22 21:57	1

Lab Sample ID: LCS 280-589667/83
Matrix: Water
Analysis Batch: 589667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	204		mg/L		102	89 - 109		

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-589451/3
Matrix: Water
Analysis Batch: 589451

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/10/22 15:44	1

Lab Sample ID: LCS 280-589451/1
Matrix: Water
Analysis Batch: 589451

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			501	447		mg/L		89	79 - 114		

Lab Sample ID: LCSD 280-589451/2
Matrix: Water
Analysis Batch: 589451

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			501	476		mg/L		95	79 - 114	6	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-589420/1
Matrix: Water
Analysis Batch: 589420

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/10/22 11:42	1

Lab Sample ID: LCS 280-589420/2
Matrix: Water
Analysis Batch: 589420

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			501	484		mg/L		97	88 - 114		

Lab Sample ID: LCSD 280-589420/3
Matrix: Water
Analysis Batch: 589420

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			501	481		mg/L		96	88 - 114	1	20

Lab Sample ID: 280-167384-1 DU
Matrix: Water
Analysis Batch: 589420

Client Sample ID: MW-39B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	280			276		mg/L				0	10

Metals

Prep Batch: 589311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	3005A	
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 589348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	3005A	
MB 280-589348/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589348/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589348/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 589457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	3005A	
MB 280-589457/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589457/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 589575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	7470A	
MB 280-589575/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-589575/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 589658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	6020B	589348
280-167384-1	MW-39B	Total Recoverable	Water	6020B	589457
MB 280-589348/1-A	Method Blank	Total Recoverable	Water	6020B	589348
MB 280-589457/1-A	Method Blank	Total Recoverable	Water	6020B	589457
LCS 280-589348/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589348
LCS 280-589457/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589457
LCSD 280-589348/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	589348

Analysis Batch: 589677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	6010C	589311
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	6010C	589311
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	6010C	589311
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	589311

Prep Batch: 589695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	3005A	
MB 280-589695/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-589695/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-589695/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 589801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	6020B	589457

Metals (Continued)

Analysis Batch: 589801 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-589457/1-A	Method Blank	Total Recoverable	Water	6020B	589457
LCS 280-589457/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589457

Analysis Batch: 589822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	7470A	589575
MB 280-589575/1-A	Method Blank	Total/NA	Water	7470A	589575
LCS 280-589575/2-A	Lab Control Sample	Total/NA	Water	7470A	589575

Analysis Batch: 589946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	6020B	589695
MB 280-589695/1-A	Method Blank	Total Recoverable	Water	6020B	589695
LCS 280-589695/2-A	Lab Control Sample	Total Recoverable	Water	6020B	589695
LCSD 280-589695/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	589695

Analysis Batch: 589956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total Recoverable	Water	6010C	589311
MB 280-589311/1-A	Method Blank	Total Recoverable	Water	6010C	589311
LCS 280-589311/2-A	Lab Control Sample	Total Recoverable	Water	6010C	589311
LCSD 280-589311/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	589311

General Chemistry

Analysis Batch: 589420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	SM2540 C	
MB 280-589420/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-589420/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-589420/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	
280-167384-1 DU	MW-39B	Total/NA	Water	SM2540 C	

Analysis Batch: 589451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	SM 2540D	
MB 280-589451/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-589451/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-589451/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 589666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	9040B	
LCS 280-589666/4	Lab Control Sample	Total/NA	Water	9040B	
LCSD 280-589666/5	Lab Control Sample Dup	Total/NA	Water	9040B	

Analysis Batch: 589667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	SM 2320B	
MB 280-589667/84	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-589667/83	Lab Control Sample	Total/NA	Water	SM 2320B	

QC Association Summary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 589832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	9056A	
MB 280-589832/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589832/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589832/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589832/3	Lab Control Sample	Total/NA	Water	9056A	
280-167384-1 MS	MW-39B	Total/NA	Water	9056A	
280-167384-1 MSD	MW-39B	Total/NA	Water	9056A	
280-167384-1 DU	MW-39B	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589956	10/13/22 14:53	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589311	10/10/22 06:30	MAB	EET DEN
Total Recoverable	Analysis	6010C		1			589677	10/11/22 23:40	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589348	10/10/22 14:23	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 22:31	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589457	10/11/22 07:00	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			589658	10/11/22 23:58	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589457	10/11/22 07:00	PFM	EET DEN
Total Recoverable	Analysis	6020B		10			589801	10/12/22 18:01	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	589695	10/12/22 14:42	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			589946	10/13/22 21:35	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	589575	10/11/22 16:10	KMS	EET DEN
Total/NA	Analysis	7470A		1			589822	10/12/22 12:58	KMS	EET DEN
Total/NA	Analysis	9040B		1			589666	10/11/22 15:16	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589832	10/13/22 18:54	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			589667	10/12/22 00:09	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	589451	10/10/22 15:44	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	589420	10/10/22 11:42	ASP	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167384-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: F. Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-39B	10/5/22	1330	G	WATER			X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

280-167384 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	David Ray	10/7/22 1610	HDR		10/7/22 1610	EMPE-N
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.9, 0.8, 1.6 CF0.0 IR12

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167384-1

Login Number: 167384
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-167384-2
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
11/11/2022 4:29:13 PM

Nicole Ryan, Project Manager I
(303)736-0100
Nicole.Ryan@ET.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the {0} Project Manager.

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Job ID: 280-167384-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167384-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/7/2022 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 0.9º C and 1.6º C.

RADIUM-226 (GFPC)
Sample MW-39B (280-167384-1) was analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 10/19/2022 and analyzed on 11/11/2022.

The LCS recovered at (73%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-125) per method requirements. The LCS passes, no further action is required

Radium-226 exceeded the RPD limit for the duplicate of sample 310-242242-8. Refer to the QC report for details.

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

RADIUM-228
Sample MW-39B (280-167384-1) was analyzed for Radium-228 in accordance with 9320. The samples were prepared on 10/19/2022 and analyzed on 11/10/2022.

The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: MW-39B (280-167384-1). Analytical results are reported with the detection limit achieved.

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

RADIUM-226/RADIUM-228 (GFPC)
Sample MW-39B (280-167384-1) was analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/11/2022.

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

Job ID: 280-167384-2 (Continued)

Laboratory: Eurofins Denver (Continued)

Detection Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-39B **Lab Sample ID: 280-167384-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Protocol References:

None = None

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

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

Laboratory References:

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

Sample Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167384-1	MW-39B	Water	10/05/22 13:30	10/07/22 16:10

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.208	U	0.311	0.312	1.00	0.534	pCi/L	10/19/22 12:29	11/11/22 09:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/19/22 12:29*	*11/11/22 09:37*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**2.14**	**G**	0.869	0.891	1.00	1.12	pCi/L	10/19/22 12:54	11/10/22 13:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/19/22 12:54*	*11/10/22 13:44*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/19/22 12:54*	*11/10/22 13:44*	*1*

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

Client Sample ID: MW-39B
Date Collected: 10/05/22 13:30
Date Received: 10/07/22 16:10

Lab Sample ID: 280-167384-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.35**		0.923	0.944	5.00	1.12	pCi/L		11/11/22 16:59	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-586490/1-A
Matrix: Water
Analysis Batch: 589641

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586490

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.04274	U	0.124	0.124	1.00	0.283	pCi/L	10/19/22 12:29	11/10/22 20:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*10/19/22 12:29*	*11/10/22 20:06*	*1*

Lab Sample ID: LCS 160-586490/2-A
Matrix: Water
Analysis Batch: 589641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586490

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	8.305		1.10	1.00	0.286	pCi/L	73	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-586492/1-A
Matrix: Water
Analysis Batch: 589595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 586492

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2379	U	0.315	0.315	1.00	0.526	pCi/L	10/19/22 12:54	11/10/22 13:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*10/19/22 12:54*	*11/10/22 13:39*	*1*
Y Carrier	*76.6*		*40 - 110*	*10/19/22 12:54*	*11/10/22 13:39*	*1*

Lab Sample ID: LCS 160-586492/2-A
Matrix: Water
Analysis Batch: 589595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586492

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.46	8.483		1.15	1.00	0.459	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*
Y Carrier	*81.5*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 586490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	PrecSep-21	
MB 160-586490/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-586490/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 586492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167384-1	MW-39B	Total/NA	Water	PrecSep_0	
MB 160-586492/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-586492/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-39B
Lab Sample ID: 280-167384-1
Date Collected: 10/05/22 13:30
Matrix: Water
Date Received: 10/07/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			495.82 mL	1.0 g	586490	10/19/22 12:29	BMP	EET SL
Total/NA	Analysis	9315		1			589759	11/11/22 09:37	FLC	EET SL
Total/NA	Prep	PrecSep_0			495.82 mL	1.0 g	586492	10/19/22 12:54	BMP	EET SL
Total/NA	Analysis	9320		1			589655	11/10/22 13:44	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			589771	11/11/22 16:59	MLK	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	07-01-22 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22 *
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

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

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: F. Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-39B	10/5/22	1330	G	WATER			X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

280-167384 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	David Ray	10/7/22 1610	HDR		10/7/22 1610	EMPE.N
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.9, 0.8, 1.6 CF0.0 IR12

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-631658.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-167384-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/20/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-39B (280-167384-1)	10/5/22	13:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	William Sorenson FED EX	10-10-22 16:40	ETA DEN	FED EX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: OCT 11 2022 0830	Company PASTC
3	Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson	Date/Time:	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167384-2

Login Number: 167384
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167384-2

Login Number: 167384
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 10/11/22 01:02 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-167384-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-167384-1	MW-39B	88.2
LCS 160-586490/2-A	Lab Control Sample	109
MB 160-586490/1-A	Method Blank	105

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-167384-1	MW-39B	88.2	84.1
LCS 160-586492/2-A	Lab Control Sample	109	81.5
MB 160-586492/1-A	Method Blank	105	76.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

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ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-167814-1
Client Project/Site: Xcel Energy GW CCR Monitoring - Valmont

For:
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves

Authorized for release by:
11/1/2022 2:59:56 PM

Nicole Ryan, Project Manager I
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LINKS

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

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

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 280-167814-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167814-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The samples were received on 10/17/2022 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

TOTAL RECOVERABLE METALS
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/19/2022 and analyzed on 10/21/2022.

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

DISSOLVED METALS (ICP/MS)
Sample MW-39B (280-167814-5) was analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/23/2022 and analyzed on 10/24/2022 and 10/26/2022.

Chromium was detected in method blank MB 280-590590/1-C at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium failed the recovery criteria high for the MSD of sample MW-39BMSD (280-167814-5) in batch 280-591421.

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

TOTAL RECOVERABLE METALS (ICP/MS)
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/19/2022 and analyzed on 10/19/2022 and 10/20/2022.

Barium was detected in method blank MB 280-590256/1-A at a level that was above the method detection limit but below the reporting

Job ID: 280-167814-1 (Continued)

Laboratory: Eurofins Denver (Continued)

limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium and Sodium failed the recovery criteria high for the MS of sample 160-47428-2 in batch 280-590772.

Magnesium failed the recovery criteria low for the MSD of sample 160-47428-2 in batch 280-590772. Calcium failed the recovery criteria high.

Samples MW-28 (280-167814-1)[10X], MW-15 (280-167814-2)[10X], MW-14 (280-167814-3)[10X] and MW-16 (280-167814-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL MERCURY
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 10/19/2022 and 10/24/2022 and analyzed on 10/20/2022 and 10/25/2022.

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

ALKALINITY
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/20/2022.

Alkalinity was detected in method blank MB 280-590600/110 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Bicarbonate Alkalinity as CaCO3 and Carbonate Alkalinity as CaCO3 were detected in method blank MB 280-590600/110 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Alkalinity was detected in method blank MB 280-590600/6 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Bicarbonate Alkalinity as CaCO3 was detected in method blank MB 280-590600/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL DISSOLVED SOLIDS
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/18/2022.

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

TOTAL SUSPENDED SOLIDS
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/18/2022 and 10/19/2022.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample 280-167664-1. Refer to the QC report for details.

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

CORROSIVITY (PH)
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/18/2022 and 10/21/2022.

Job ID: 280-167814-1 (Continued)

Laboratory: Eurofins Denver (Continued)

The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did; therefore the sample was not rerun: MW-14 (280-167814-3).

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

ANIONS (28 DAYS)

Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 10/22/2022, 10/24/2022, 10/25/2022 and 10/31/2022.

The method blank and CCB for analytical batch 280-591029 contained Sulfate above the method detection limit. This target analyte concentration was less than 1/2 the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Fluoride failed the recovery criteria high for LCSD 280-591018/57. Refer to the QC report for details.

Fluoride failed the recovery criteria low for the MS of sample MW-15MS (280-167814-2) in batch 280-591838.

Fluoride exceeded the RPD limit for the MSD of sample MW-15MSD (280-167814-2) in batch 280-591838.

Samples MW-28 (280-167814-1)[20X], MW-15 (280-167814-2)[10X], MW-14 (280-167814-3)[10X] and MW-14 (280-167814-3)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Detection Summary

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-28 — Lab Sample ID: 280-167814-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.25		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	310		0.50	0.21	mg/L	10		6020B	Total Recoverable
Sodium	830		1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.011	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	15		1.2	0.52	mg/L	10		6020B	Total Recoverable
Chromium	0.0021		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00012	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.00090	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	2.8		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	630		2.0	0.38	mg/L	10		6020B	Total Recoverable
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	66		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.28	J *+ ^+	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3200		100	21	mg/L	20		9056A	Total/NA
Alkalinity	590		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	590		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6700		100	47	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-15 — Lab Sample ID: 280-167814-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.62		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.061		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	160		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.00033	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	410		1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.022	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	7.7		1.2	0.52	mg/L	10		6020B	Total Recoverable
Chromium	0.0026		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00047	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00032	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0020		0.0020	0.00014	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-15 (Continued) — Lab Sample ID: 280-167814-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.075		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	280		2.0	0.38	mg/L	10		6020B	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	85		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.70	F1 F2	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1300		50	10	mg/L	10		9056A	Total/NA
Alkalinity	430		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	430		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-14 — Lab Sample ID: 280-167814-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.2		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.16		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Magnesium	340		0.50	0.21	mg/L	10		6020B	Total Recoverable
Sodium	600		1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.015	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	11		1.2	0.52	mg/L	10		6020B	Total Recoverable
Cobalt	0.00013	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0017	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	1.6		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	530		2.0	0.38	mg/L	10		6020B	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	220		30	10	mg/L	10		9056A	Total/NA
Sulfate	3500		100	21	mg/L	20		9056A	Total/NA
Alkalinity	150	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	5100		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-16 — Lab Sample ID: 280-167814-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.61		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.054		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Antimony	0.0016	J	0.0020	0.00040	mg/L	1		6020B	Total Recoverable
Magnesium	35		0.50	0.21	mg/L	10		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16 (Continued) — Lab Sample ID: 280-167814-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0018	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	190		1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.043	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	3.6		1.2	0.52	mg/L	10		6020B	Total Recoverable
Cobalt	0.00014	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00018	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.025		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.00051	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	48		2.0	0.38	mg/L	10		6020B	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	71		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	170		5.0	1.0	mg/L	1		9056A	Total/NA
Alkalinity	370	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	370	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	3.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	670		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-39B — Lab Sample ID: 280-167814-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.058		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.0021	B	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00068	J	0.0010	0.000092	mg/L	1		6020B	Dissolved
Lead	0.00066	J	0.0010	0.00018	mg/L	1		6020B	Dissolved
Calcium	33		0.20	0.038	mg/L	1		6020B	Dissolved
Molybdenum	0.0031		0.0020	0.00014	mg/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167814-1	MW-28	Water	10/11/22 13:55	10/17/22 09:25
280-167814-2	MW-15	Water	10/13/22 13:40	10/17/22 09:25
280-167814-3	MW-14	Water	10/14/22 11:45	10/17/22 09:25
280-167814-4	MW-16	Water	10/14/22 14:50	10/17/22 09:25
280-167814-5	MW-39B	Water	10/13/22 12:15	10/17/22 09:25

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.5**		0.10	0.0015	mg/L		10/19/22 09:21	10/21/22 04:56	1
Lithium	**0.25**		0.020	0.0091	mg/L		10/19/22 09:21	10/21/22 04:56	1

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.62**		0.10	0.0015	mg/L		10/19/22 09:21	10/21/22 05:00	1
Lithium	**0.061**		0.020	0.0091	mg/L		10/19/22 09:21	10/21/22 05:00	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.2**		0.10	0.0015	mg/L		10/19/22 09:21	10/21/22 05:04	1
Lithium	**0.16**		0.020	0.0091	mg/L		10/19/22 09:21	10/21/22 05:04	1

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.61**		0.10	0.0015	mg/L		10/19/22 09:21	10/21/22 05:08	1
Lithium	**0.054**		0.020	0.0091	mg/L		10/19/22 09:21	10/21/22 05:08	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/19/22 07:52	10/19/22 16:36	1
Magnesium	**310**		0.50	0.21	mg/L		10/19/22 07:52	10/20/22 14:21	10
Arsenic	ND		0.0050	0.00033	mg/L		10/19/22 07:52	10/19/22 16:36	1
Sodium	**830**		1.5	0.65	mg/L		10/19/22 07:52	10/20/22 17:38	10
Barium	**0.011**	**B**	0.0010	0.00029	mg/L		10/19/22 07:52	10/19/22 16:36	1
Potassium	**15**		1.2	0.52	mg/L		10/19/22 07:52	10/20/22 17:38	10
Beryllium	ND		0.0010	0.000080	mg/L		10/19/22 07:52	10/19/22 16:36	1
Cadmium	ND		0.0010	0.00027	mg/L		10/19/22 07:52	10/19/22 16:36	1
Chromium	**0.0021**		0.0020	0.00050	mg/L		10/19/22 07:52	10/19/22 16:36	1
Cobalt	**0.00012**	**J**	0.0010	0.000092	mg/L		10/19/22 07:52	10/19/22 16:36	1
Lead	ND		0.0010	0.00018	mg/L		10/19/22 07:52	10/19/22 16:36	1
Molybdenum	**0.00090**	**J**	0.0020	0.00014	mg/L		10/19/22 07:52	10/19/22 16:36	1
Selenium	**2.8**		0.0050	0.00037	mg/L		10/19/22 07:52	10/19/22 16:36	1
Thallium	ND		0.0010	0.000089	mg/L		10/19/22 07:52	10/19/22 16:36	1
Calcium	**630**		2.0	0.38	mg/L		10/19/22 07:52	10/20/22 14:21	10

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/19/22 07:52	10/19/22 16:38	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	160		0.050	0.021	mg/L		10/19/22 07:52	10/19/22 16:38	1
Arsenic	0.00033	J	0.0050	0.00033	mg/L		10/19/22 07:52	10/19/22 16:38	1
Sodium	410		1.5	0.65	mg/L		10/19/22 07:52	10/20/22 17:42	10
Barium	0.022	B	0.0010	0.00029	mg/L		10/19/22 07:52	10/19/22 16:38	1
Potassium	7.7		1.2	0.52	mg/L		10/19/22 07:52	10/20/22 17:42	10
Beryllium	ND		0.0010	0.000080	mg/L		10/19/22 07:52	10/19/22 16:38	1
Cadmium	ND		0.0010	0.00027	mg/L		10/19/22 07:52	10/19/22 16:38	1
Chromium	0.0026		0.0020	0.00050	mg/L		10/19/22 07:52	10/19/22 16:38	1
Cobalt	0.00047	J	0.0010	0.000092	mg/L		10/19/22 07:52	10/19/22 16:38	1
Lead	0.00032	J	0.0010	0.00018	mg/L		10/19/22 07:52	10/19/22 16:38	1
Molybdenum	0.0020		0.0020	0.00014	mg/L		10/19/22 07:52	10/19/22 16:38	1
Selenium	0.075		0.0050	0.00037	mg/L		10/19/22 07:52	10/19/22 16:38	1
Thallium	ND		0.0010	0.000089	mg/L		10/19/22 07:52	10/19/22 16:38	1
Calcium	280		2.0	0.38	mg/L		10/19/22 07:52	10/20/22 14:23	10

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/19/22 07:52	10/19/22 16:45	1
Magnesium	340		0.50	0.21	mg/L		10/19/22 07:52	10/20/22 14:25	10
Arsenic	ND		0.0050	0.00033	mg/L		10/19/22 07:52	10/19/22 16:45	1
Sodium	600		1.5	0.65	mg/L		10/19/22 07:52	10/20/22 17:45	10
Barium	0.015	B	0.0010	0.00029	mg/L		10/19/22 07:52	10/19/22 16:45	1
Potassium	11		1.2	0.52	mg/L		10/19/22 07:52	10/20/22 17:45	10
Beryllium	ND		0.0010	0.000080	mg/L		10/19/22 07:52	10/19/22 16:45	1
Cadmium	ND		0.0010	0.00027	mg/L		10/19/22 07:52	10/19/22 16:45	1
Chromium	ND		0.0020	0.00050	mg/L		10/19/22 07:52	10/19/22 16:45	1
Cobalt	0.00013	J	0.0010	0.000092	mg/L		10/19/22 07:52	10/19/22 16:45	1
Lead	ND		0.0010	0.00018	mg/L		10/19/22 07:52	10/19/22 16:45	1
Molybdenum	0.0017	J	0.0020	0.00014	mg/L		10/19/22 07:52	10/19/22 16:45	1
Selenium	1.6		0.0050	0.00037	mg/L		10/19/22 07:52	10/19/22 16:45	1
Thallium	ND		0.0010	0.000089	mg/L		10/19/22 07:52	10/19/22 16:45	1
Calcium	530		2.0	0.38	mg/L		10/19/22 07:52	10/20/22 14:25	10

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0016	J	0.0020	0.00040	mg/L		10/19/22 07:52	10/19/22 16:47	1
Magnesium	35		0.50	0.21	mg/L		10/19/22 07:52	10/20/22 14:27	10
Arsenic	0.0018	J	0.0050	0.00033	mg/L		10/19/22 07:52	10/19/22 16:47	1
Sodium	190		1.5	0.65	mg/L		10/19/22 07:52	10/20/22 17:49	10
Barium	0.043	B	0.0010	0.00029	mg/L		10/19/22 07:52	10/19/22 16:47	1
Potassium	3.6		1.2	0.52	mg/L		10/19/22 07:52	10/20/22 17:49	10
Beryllium	ND		0.0010	0.000080	mg/L		10/19/22 07:52	10/19/22 16:47	1
Cadmium	ND		0.0010	0.00027	mg/L		10/19/22 07:52	10/19/22 16:47	1
Chromium	ND		0.0020	0.00050	mg/L		10/19/22 07:52	10/19/22 16:47	1
Cobalt	0.00014	J	0.0010	0.000092	mg/L		10/19/22 07:52	10/19/22 16:47	1
Lead	0.00018	J	0.0010	0.00018	mg/L		10/19/22 07:52	10/19/22 16:47	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	**0.025**		0.0020	0.00014	mg/L		10/19/22 07:52	10/19/22 16:47	1
Selenium	**0.00051**	**J**	0.0050	0.00037	mg/L		10/19/22 07:52	10/19/22 16:47	1
Thallium	ND		0.0010	0.000089	mg/L		10/19/22 07:52	10/19/22 16:47	1
Calcium	**48**		2.0	0.38	mg/L		10/19/22 07:52	10/20/22 14:27	10

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-39B
Date Collected: 10/13/22 12:15
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/23/22 14:47	10/24/22 15:27	1
Arsenic	ND		0.0050	0.00033	mg/L		10/23/22 14:47	10/24/22 15:27	1
Barium	**0.058**		0.0010	0.00029	mg/L		10/23/22 14:47	10/24/22 15:27	1
Beryllium	ND		0.0010	0.000080	mg/L		10/23/22 14:47	10/24/22 15:27	1
Cadmium	ND		0.0010	0.00027	mg/L		10/23/22 14:47	10/24/22 15:27	1
Chromium	**0.0021**	**B**	0.0020	0.00050	mg/L		10/23/22 14:47	10/24/22 15:27	1
Cobalt	**0.00068**	**J**	0.0010	0.000092	mg/L		10/23/22 14:47	10/24/22 15:27	1
Lead	**0.00066**	**J**	0.0010	0.00018	mg/L		10/23/22 14:47	10/24/22 15:27	1
Calcium	**33**		0.20	0.038	mg/L		10/23/22 14:47	10/26/22 19:33	1
Molybdenum	**0.0031**		0.0020	0.00014	mg/L		10/23/22 14:47	10/24/22 15:27	1
Selenium	ND		0.0050	0.00037	mg/L		10/23/22 14:47	10/24/22 15:27	1
Thallium	ND		0.0010	0.000089	mg/L		10/23/22 14:47	10/24/22 15:27	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/19/22 16:49	10/20/22 12:15	1

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/24/22 11:50	10/25/22 00:09	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/24/22 11:50	10/25/22 00:11	1

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/24/22 11:50	10/25/22 00:14	1

General Chemistry

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.1**	**HF**	0.1	0.1	SU			10/18/22 14:22	1
Temperature (SW846 9040B)	**20.3**	**HF**	1.0	1.0	Degrees C			10/18/22 14:22	1
Chloride (SW846 9056A)	**66**		3.0	1.0	mg/L			10/22/22 01:16	1
Fluoride (SW846 9056A)	**0.28**	**J *+ ^+**	0.50	0.17	mg/L			10/25/22 08:49	1
Sulfate (SW846 9056A)	**3200**		100	21	mg/L			10/25/22 09:06	20
Alkalinity (SM 2320B)	**590**		10	3.1	mg/L			10/20/22 02:11	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**590**		10	3.1	mg/L			10/20/22 02:11	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/20/22 02:11	1
Total Suspended Solids (SM 2540D)	**4.8**		4.0	1.1	mg/L			10/18/22 14:56	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**6700**		100	47	mg/L			10/18/22 11:38	1

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.3**	**HF**	0.1	0.1	SU			10/18/22 14:38	1
Temperature (SW846 9040B)	**21.3**	**HF**	1.0	1.0	Degrees C			10/18/22 14:38	1
Chloride (SW846 9056A)	**85**		3.0	1.0	mg/L			10/22/22 01:46	1
Fluoride (SW846 9056A)	**0.70**	**F1 F2**	0.50	0.17	mg/L			10/31/22 17:50	1
Sulfate (SW846 9056A)	**1300**		50	10	mg/L			10/22/22 02:01	10
Alkalinity (SM 2320B)	**430**		10	3.1	mg/L			10/20/22 02:19	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**430**		10	3.1	mg/L			10/20/22 02:19	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/20/22 02:19	1
Total Suspended Solids (SM 2540D)	**10**		4.0	1.1	mg/L			10/18/22 14:56	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**2300**		20	9.4	mg/L			10/18/22 11:38	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.3**	**HF**	0.1	0.1	SU			10/21/22 20:44	1
Temperature (SW846 9040B)	**22.7**	**HF**	1.0	1.0	Degrees C			10/21/22 20:44	1
Chloride (SW846 9056A)	**220**		30	10	mg/L			10/22/22 02:30	10
Fluoride (SW846 9056A)	ND		0.50	0.17	mg/L			10/31/22 17:41	1
Sulfate (SW846 9056A)	**3500**		100	21	mg/L			10/25/22 10:31	20
Alkalinity (SM 2320B)	**150**	**B**	10	3.1	mg/L			10/20/22 02:52	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**150**	**B**	10	3.1	mg/L			10/20/22 02:52	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/20/22 02:52	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			10/19/22 12:10	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**5100**		40	19	mg/L			10/18/22 11:38	1

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.8	HF	0.1	0.1	SU			10/18/22 14:26	1
Temperature (SW846 9040B)	20.3	HF	1.0	1.0	Degrees C			10/18/22 14:26	1
Chloride (SW846 9056A)	71		3.0	1.0	mg/L			10/22/22 02:45	1
Fluoride (SW846 9056A)	1.3		0.50	0.17	mg/L			10/24/22 18:16	1
Sulfate (SW846 9056A)	170		5.0	1.0	mg/L			10/22/22 02:45	1
Alkalinity (SM 2320B)	370	B	10	3.1	mg/L			10/20/22 03:05	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	370	B	10	3.1	mg/L			10/20/22 03:05	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/20/22 03:05	1
Total Suspended Solids (SM 2540D)	3.6	J	4.0	1.1	mg/L			10/19/22 12:10	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	670		10	4.7	mg/L			10/18/22 11:38	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-590452/1-A
Matrix: Water
Analysis Batch: 590779

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590452

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/19/22 09:21	10/21/22 03:55	1
Lithium	ND		0.020	0.0091	mg/L		10/19/22 09:21	10/21/22 03:55	1

Lab Sample ID: LCS 280-590452/2-A
Matrix: Water
Analysis Batch: 590779

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590452

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.98		mg/L		99	86 - 110
Lithium	1.00	0.959		mg/L		96	90 - 112

Lab Sample ID: LCSD 280-590452/3-A
Matrix: Water
Analysis Batch: 590779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 590452

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	1.99		mg/L		99	86 - 110	1	20
Lithium	1.00	0.964		mg/L		96	90 - 112	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-590256/1-A
Matrix: Water
Analysis Batch: 590599

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/19/22 07:52	10/19/22 16:23	1
Magnesium	ND		50	21	ug/L		10/19/22 07:52	10/19/22 16:23	1
Arsenic	ND		0.0050	0.00033	mg/L		10/19/22 07:52	10/19/22 16:23	1
Barium	0.000295	J	0.0010	0.00029	mg/L		10/19/22 07:52	10/19/22 16:23	1
Beryllium	ND		0.0010	0.000080	mg/L		10/19/22 07:52	10/19/22 16:23	1
Cadmium	ND		0.0010	0.00027	mg/L		10/19/22 07:52	10/19/22 16:23	1
Chromium	ND		0.0020	0.00050	mg/L		10/19/22 07:52	10/19/22 16:23	1
Cobalt	ND		0.0010	0.000092	mg/L		10/19/22 07:52	10/19/22 16:23	1
Lead	ND		0.0010	0.00018	mg/L		10/19/22 07:52	10/19/22 16:23	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/19/22 07:52	10/19/22 16:23	1
Selenium	ND		0.0050	0.00037	mg/L		10/19/22 07:52	10/19/22 16:23	1
Thallium	ND		0.0010	0.000089	mg/L		10/19/22 07:52	10/19/22 16:23	1

Lab Sample ID: MB 280-590256/1-A
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.20	0.038	mg/L		10/19/22 07:52	10/20/22 14:03	1

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

Lab Sample ID: MB 280-590256/1-A
Matrix: Water
Analysis Batch: 590772

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		150	65	ug/L		10/19/22 07:52	10/20/22 17:04	1
Potassium	ND		120	52	ug/L		10/19/22 07:52	10/20/22 17:04	1

Lab Sample ID: LCS 280-590256/2-A
Matrix: Water
Analysis Batch: 590599

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0391		mg/L		98	85 - 115
Magnesium	800	805		ug/L		101	80 - 120
Arsenic	0.0400	0.0392		mg/L		98	85 - 117
Barium	0.0400	0.0399		mg/L		100	85 - 118
Beryllium	0.0400	0.0387		mg/L		97	80 - 125
Cadmium	0.0400	0.0384		mg/L		96	85 - 115
Chromium	0.0400	0.0387		mg/L		97	84 - 121
Cobalt	0.0400	0.0379		mg/L		95	85 - 120
Lead	0.0400	0.0400		mg/L		100	85 - 118
Molybdenum	0.0400	0.0392		mg/L		98	85 - 119
Selenium	0.0400	0.0389		mg/L		97	77 - 122
Thallium	0.0400	0.0398		mg/L		100	85 - 118

Lab Sample ID: LCS 280-590256/2-A
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.846		mg/L		106	80 - 120

Lab Sample ID: LCS 280-590256/2-A
Matrix: Water
Analysis Batch: 590772

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 590256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	800	846		ug/L		106	80 - 120
Potassium	800	802		ug/L		100	80 - 120

Lab Sample ID: MB 280-590590/1-C
Matrix: Water
Analysis Batch: 591102

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 590753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/23/22 14:47	10/24/22 15:23	1
Arsenic	ND		0.0050	0.00033	mg/L		10/23/22 14:47	10/24/22 15:23	1
Barium	ND		0.0010	0.00029	mg/L		10/23/22 14:47	10/24/22 15:23	1
Beryllium	ND		0.0010	0.000080	mg/L		10/23/22 14:47	10/24/22 15:23	1
Cadmium	ND		0.0010	0.00027	mg/L		10/23/22 14:47	10/24/22 15:23	1
Chromium	0.000562	J	0.0020	0.00050	mg/L		10/23/22 14:47	10/24/22 15:23	1
Cobalt	ND		0.0010	0.000092	mg/L		10/23/22 14:47	10/24/22 15:23	1
Lead	ND		0.0010	0.00018	mg/L		10/23/22 14:47	10/24/22 15:23	1

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

Lab Sample ID: MB 280-590590/1-C
Matrix: Water
Analysis Batch: 591102

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 590753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0020	0.00014	mg/L		10/23/22 14:47	10/24/22 15:23	1
Selenium	ND		0.0050	0.00037	mg/L		10/23/22 14:47	10/24/22 15:23	1
Thallium	ND		0.0010	0.000089	mg/L		10/23/22 14:47	10/24/22 15:23	1

Lab Sample ID: MB 280-590590/1-C
Matrix: Water
Analysis Batch: 591421

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 590753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.20	0.038	mg/L		10/23/22 14:47	10/26/22 19:26	1

Lab Sample ID: LCS 280-590590/2-C
Matrix: Water
Analysis Batch: 591102

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0389		mg/L		97	85 - 115
Arsenic	0.0400	0.0391		mg/L		98	85 - 117
Barium	0.0400	0.0392		mg/L		98	85 - 118
Beryllium	0.0400	0.0380		mg/L		95	80 - 125
Cadmium	0.0400	0.0375		mg/L		94	85 - 115
Chromium	0.0400	0.0387		mg/L		97	84 - 121
Cobalt	0.0400	0.0389		mg/L		97	85 - 120
Lead	0.0400	0.0398		mg/L		99	85 - 118
Molybdenum	0.0400	0.0377		mg/L		94	85 - 119
Selenium	0.0400	0.0387		mg/L		97	77 - 122
Thallium	0.0400	0.0394		mg/L		98	85 - 118

Lab Sample ID: LCS 280-590590/2-C
Matrix: Water
Analysis Batch: 591421

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.896		mg/L		112	80 - 120

Lab Sample ID: 280-167814-5 MS
Matrix: Water
Analysis Batch: 591102

Client Sample ID: MW-39B
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0393		mg/L		98	80 - 111
Arsenic	ND		0.0400	0.0390		mg/L		98	92 - 112
Barium	0.058		0.0400	0.0968		mg/L		97	92 - 117
Beryllium	ND		0.0400	0.0395		mg/L		99	87 - 118
Cadmium	ND		0.0400	0.0377		mg/L		94	91 - 114
Chromium	0.0021	B	0.0400	0.0392		mg/L		93	91 - 114
Cobalt	0.00068	J	0.0400	0.0381		mg/L		94	94 - 115
Lead	0.00066	J	0.0400	0.0412		mg/L		101	95 - 116
Molybdenum	0.0031		0.0400	0.0412		mg/L		95	84 - 117
Selenium	ND		0.0400	0.0398		mg/L		100	90 - 115

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

Lab Sample ID: 280-167814-5 MS
Matrix: Water
Analysis Batch: 591102

Client Sample ID: MW-39B
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	ND		0.0400	0.0398		mg/L		99	94 - 115

Lab Sample ID: 280-167814-5 MS
Matrix: Water
Analysis Batch: 591421

Client Sample ID: MW-39B
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	33		0.800	33.9	4	mg/L		85	80 - 120

Lab Sample ID: 280-167814-5 MSD
Matrix: Water
Analysis Batch: 591102

Client Sample ID: MW-39B
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0382		mg/L		96	80 - 111	3	20
Arsenic	ND		0.0400	0.0397		mg/L		99	92 - 112	2	20
Barium	0.058		0.0400	0.0948		mg/L		92	92 - 117	2	20
Beryllium	ND		0.0400	0.0398		mg/L		100	87 - 118	1	20
Cadmium	ND		0.0400	0.0372		mg/L		93	91 - 114	1	20
Chromium	0.0021	B	0.0400	0.0401		mg/L		95	91 - 114	2	20
Cobalt	0.00068	J	0.0400	0.0384		mg/L		94	94 - 115	1	20
Lead	0.00066	J	0.0400	0.0402		mg/L		99	95 - 116	2	20
Molybdenum	0.0031		0.0400	0.0399		mg/L		92	84 - 117	3	20
Selenium	ND		0.0400	0.0385		mg/L		96	90 - 115	3	20
Thallium	ND		0.0400	0.0393		mg/L		98	94 - 115	1	20

Lab Sample ID: 280-167814-5 MSD
Matrix: Water
Analysis Batch: 591421

Client Sample ID: MW-39B
Prep Type: Dissolved
Prep Batch: 590753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	33		0.800	34.6	4	mg/L		180	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-590483/1-A
Matrix: Water
Analysis Batch: 590670

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590483

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/19/22 16:49	10/20/22 11:12	1

Lab Sample ID: LCS 280-590483/2-A
Matrix: Water
Analysis Batch: 590670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590483

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00511		mg/L		102	84 - 120

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

Lab Sample ID: MB 280-590958/1-A
Matrix: Water
Analysis Batch: 591099

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/24/22 11:50	10/24/22 23:00	1

Lab Sample ID: LCS 280-590958/2-A
Matrix: Water
Analysis Batch: 591099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00422		mg/L		84	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-590435/27
Matrix: Water
Analysis Batch: 590435

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCS 280-590946/96
Matrix: Water
Analysis Batch: 590946

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-167814-3 DU
Matrix: Water
Analysis Batch: 590946

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.3	HF	7.7		SU		4	5
Temperature	22.7	HF	22.3		Degrees C		2	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-590799/6
Matrix: Water
Analysis Batch: 590799

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/21/22 11:59	1
Sulfate	ND		5.0	1.0	mg/L			10/21/22 11:59	1

Lab Sample ID: LCS 280-590799/4
Matrix: Water
Analysis Batch: 590799

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	98.6		mg/L		99	90 - 110
Sulfate	100	99.7		mg/L		100	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-590799/5
Matrix: Water
Analysis Batch: 590799

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	98.8		mg/L		99	90 - 110	0	10
Sulfate	100	100		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-590799/3
Matrix: Water
Analysis Batch: 590799

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.78		mg/L		96	50 - 150
Sulfate	5.00	4.48	J	mg/L		90	50 - 150

Lab Sample ID: MB 280-591018/13
Matrix: Water
Analysis Batch: 591018

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/24/22 16:24	1
Fluoride	ND	^+	0.50	0.17	mg/L			10/24/22 16:24	1
Sulfate	ND		5.0	1.0	mg/L			10/24/22 16:24	1

Lab Sample ID: MB 280-591018/58
Matrix: Water
Analysis Batch: 591018

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			10/25/22 05:59	1
Sulfate	ND		5.0	1.0	mg/L			10/25/22 05:59	1

Lab Sample ID: LCS 280-591018/56
Matrix: Water
Analysis Batch: 591018

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	5.00	5.45		mg/L		109	90 - 110
Sulfate	100	103		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-591018/57
Matrix: Water
Analysis Batch: 591018

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	5.00	5.65	*+	mg/L		113	90 - 110	4	10
Sulfate	100	103		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-591018/10
Matrix: Water
Analysis Batch: 591018

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.08		mg/L		102	50 - 150

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-591018/10
Matrix: Water
Analysis Batch: 591018

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.500	0.483	J	mg/L		97	50 - 150
Sulfate	5.00	4.77	J	mg/L		95	50 - 150

Lab Sample ID: MB 280-591029/13
Matrix: Water
Analysis Batch: 591029

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			10/24/22 16:22	1

Lab Sample ID: LCS 280-591029/11
Matrix: Water
Analysis Batch: 591029

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	5.00	4.86		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-591029/12
Matrix: Water
Analysis Batch: 591029

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	5.00	4.83		mg/L		97	90 - 110	1	10

Lab Sample ID: MRL 280-591029/10
Matrix: Water
Analysis Batch: 591029

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.500	0.567		mg/L		113	50 - 150

Lab Sample ID: MB 280-591336/13
Matrix: Water
Analysis Batch: 591336

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/24/22 16:24	1
Fluoride	ND	^+	0.50	0.17	mg/L			10/24/22 16:24	1
Sulfate	ND		5.0	1.0	mg/L			10/24/22 16:24	1

Lab Sample ID: MB 280-591336/58
Matrix: Water
Analysis Batch: 591336

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			10/25/22 05:59	1
Fluoride	ND		0.50	0.17	mg/L			10/25/22 05:59	1
Sulfate	ND		5.0	1.0	mg/L			10/25/22 05:59	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-591336/56
Matrix: Water
Analysis Batch: 591336

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	103		mg/L		103	90 - 110
Fluoride	5.00	5.34		mg/L		107	90 - 110
Sulfate	100	103		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-591336/57
Matrix: Water
Analysis Batch: 591336

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	103		mg/L		103	90 - 110	0	10
Sulfate	100	103		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-591336/10
Matrix: Water
Analysis Batch: 591336

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.08		mg/L		102	50 - 150
Fluoride	0.500	0.483	J	mg/L		97	50 - 150
Sulfate	5.00	4.77	J	mg/L		95	50 - 150

Lab Sample ID: MB 280-591838/13
Matrix: Water
Analysis Batch: 591838

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			10/31/22 16:02	1

Lab Sample ID: LCS 280-591838/11
Matrix: Water
Analysis Batch: 591838

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.60		mg/L		104	90 - 110

Lab Sample ID: LCSD 280-591838/12
Matrix: Water
Analysis Batch: 591838

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.62		mg/L		105	90 - 110	1	10

Lab Sample ID: MRL 280-591838/10
Matrix: Water
Analysis Batch: 591838

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.250	0.331	J	mg/L		132	50 - 150

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-167814-2 MS
Matrix: Water
Analysis Batch: 591838

Client Sample ID: MW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.70	F1 F2	5.00	0.701	F1	mg/L		0.07	80 - 120

Lab Sample ID: 280-167814-2 MSD
Matrix: Water
Analysis Batch: 591838

Client Sample ID: MW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.70	F1 F2	5.00	5.19	E F2	mg/L		90	80 - 120	152	20

Lab Sample ID: 280-167814-2 DU
Matrix: Water
Analysis Batch: 591838

Client Sample ID: MW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.70	F1 F2	0.697		mg/L		0.1	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-590600/110
Matrix: Water
Analysis Batch: 590600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	12.5		10	3.1	mg/L			10/20/22 02:45	1
Bicarbonate Alkalinity as CaCO3	5.03	J	10	3.1	mg/L			10/20/22 02:45	1
Carbonate Alkalinity as CaCO3	7.44	J	10	3.1	mg/L			10/20/22 02:45	1

Lab Sample ID: MB 280-590600/58
Matrix: Water
Analysis Batch: 590600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/19/22 19:16	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/19/22 19:16	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/19/22 19:16	1

Lab Sample ID: MB 280-590600/6
Matrix: Water
Analysis Batch: 590600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	3.30	J	10	3.1	mg/L			10/19/22 12:56	1
Bicarbonate Alkalinity as CaCO3	3.23	J	10	3.1	mg/L			10/19/22 12:56	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/19/22 12:56	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-590600/84
Matrix: Water
Analysis Batch: 590600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/19/22 22:18	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/19/22 22:18	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/19/22 22:18	1

Lab Sample ID: LCS 280-590600/109
Matrix: Water
Analysis Batch: 590600

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	213		mg/L		107	89 - 109		

Lab Sample ID: LCS 280-590600/83
Matrix: Water
Analysis Batch: 590600

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	209		mg/L		105	89 - 109		

Lab Sample ID: LCSD 280-590600/5
Matrix: Water
Analysis Batch: 590600

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity			200	207		mg/L		103	89 - 109	1	10

Lab Sample ID: 280-167814-3 DU
Matrix: Water
Analysis Batch: 590600

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	150	B		143		mg/L				2	10
Bicarbonate Alkalinity as CaCO3	150	B		143		mg/L				2	20
Carbonate Alkalinity as CaCO3	ND			ND		mg/L				NC	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-590384/2
Matrix: Water
Analysis Batch: 590384

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/18/22 14:56	1

Lab Sample ID: LCS 280-590384/1
Matrix: Water
Analysis Batch: 590384

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			501	433		mg/L		86	79 - 114		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-590500/3
Matrix: Water
Analysis Batch: 590500

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/19/22 12:10	1

Lab Sample ID: LCS 280-590500/1
Matrix: Water
Analysis Batch: 590500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	471		mg/L		94	79 - 114

Lab Sample ID: LCSD 280-590500/2
Matrix: Water
Analysis Batch: 590500

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	501	474		mg/L		95	79 - 114	1	20

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-590334/1
Matrix: Water
Analysis Batch: 590334

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/18/22 11:38	1

Lab Sample ID: LCS 280-590334/2
Matrix: Water
Analysis Batch: 590334

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	483		mg/L		96	88 - 114

Lab Sample ID: 280-167814-4 DU
Matrix: Water
Analysis Batch: 590334

Client Sample ID: MW-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	670		667		mg/L		0	10

Metals

Prep Batch: 590256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	3005A	
280-167814-2	MW-15	Total Recoverable	Water	3005A	
280-167814-3	MW-14	Total Recoverable	Water	3005A	
280-167814-4	MW-16	Total Recoverable	Water	3005A	
MB 280-590256/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-590256/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 590452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	3005A	
280-167814-2	MW-15	Total Recoverable	Water	3005A	
280-167814-3	MW-14	Total Recoverable	Water	3005A	
280-167814-4	MW-16	Total Recoverable	Water	3005A	
MB 280-590452/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-590452/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-590452/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 590483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	7470A	
MB 280-590483/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-590483/2-A	Lab Control Sample	Total/NA	Water	7470A	

Filtration Batch: 590590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-5	MW-39B	Dissolved	Water	FILTRATION	
MB 280-590590/1-C	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-590590/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
280-167814-5 MS	MW-39B	Dissolved	Water	FILTRATION	
280-167814-5 MSD	MW-39B	Dissolved	Water	FILTRATION	

Analysis Batch: 590599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	6020B	590256
280-167814-2	MW-15	Total Recoverable	Water	6020B	590256
280-167814-3	MW-14	Total Recoverable	Water	6020B	590256
280-167814-4	MW-16	Total Recoverable	Water	6020B	590256
MB 280-590256/1-A	Method Blank	Total Recoverable	Water	6020B	590256
LCS 280-590256/2-A	Lab Control Sample	Total Recoverable	Water	6020B	590256

Analysis Batch: 590670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	7470A	590483
MB 280-590483/1-A	Method Blank	Total/NA	Water	7470A	590483
LCS 280-590483/2-A	Lab Control Sample	Total/NA	Water	7470A	590483

Prep Batch: 590753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-5	MW-39B	Dissolved	Water	3005A	590590
MB 280-590590/1-C	Method Blank	Dissolved	Water	3005A	590590
LCS 280-590590/2-C	Lab Control Sample	Dissolved	Water	3005A	590590

Metals (Continued)

Prep Batch: 590753 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-5 MS	MW-39B	Dissolved	Water	3005A	590590
280-167814-5 MSD	MW-39B	Dissolved	Water	3005A	590590

Analysis Batch: 590772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	6020B	590256
280-167814-2	MW-15	Total Recoverable	Water	6020B	590256
280-167814-3	MW-14	Total Recoverable	Water	6020B	590256
280-167814-4	MW-16	Total Recoverable	Water	6020B	590256
MB 280-590256/1-A	Method Blank	Total Recoverable	Water	6020B	590256
LCS 280-590256/2-A	Lab Control Sample	Total Recoverable	Water	6020B	590256

Analysis Batch: 590775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	6020B	590256
280-167814-2	MW-15	Total Recoverable	Water	6020B	590256
280-167814-3	MW-14	Total Recoverable	Water	6020B	590256
280-167814-4	MW-16	Total Recoverable	Water	6020B	590256
MB 280-590256/1-A	Method Blank	Total Recoverable	Water	6020B	590256
LCS 280-590256/2-A	Lab Control Sample	Total Recoverable	Water	6020B	590256

Analysis Batch: 590779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total Recoverable	Water	6010C	590452
280-167814-2	MW-15	Total Recoverable	Water	6010C	590452
280-167814-3	MW-14	Total Recoverable	Water	6010C	590452
280-167814-4	MW-16	Total Recoverable	Water	6010C	590452
MB 280-590452/1-A	Method Blank	Total Recoverable	Water	6010C	590452
LCS 280-590452/2-A	Lab Control Sample	Total Recoverable	Water	6010C	590452
LCSD 280-590452/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	590452

Prep Batch: 590958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-2	MW-15	Total/NA	Water	7470A	
280-167814-3	MW-14	Total/NA	Water	7470A	
280-167814-4	MW-16	Total/NA	Water	7470A	
MB 280-590958/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-590958/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 591099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-2	MW-15	Total/NA	Water	7470A	590958
280-167814-3	MW-14	Total/NA	Water	7470A	590958
280-167814-4	MW-16	Total/NA	Water	7470A	590958
MB 280-590958/1-A	Method Blank	Total/NA	Water	7470A	590958
LCS 280-590958/2-A	Lab Control Sample	Total/NA	Water	7470A	590958

Analysis Batch: 591102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-5	MW-39B	Dissolved	Water	6020B	590753
MB 280-590590/1-C	Method Blank	Dissolved	Water	6020B	590753

Metals (Continued)

Analysis Batch: 591102 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-590590/2-C	Lab Control Sample	Dissolved	Water	6020B	590753
280-167814-5 MS	MW-39B	Dissolved	Water	6020B	590753
280-167814-5 MSD	MW-39B	Dissolved	Water	6020B	590753

Analysis Batch: 591421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-5	MW-39B	Dissolved	Water	6020B	590753
MB 280-590590/1-C	Method Blank	Dissolved	Water	6020B	590753
LCS 280-590590/2-C	Lab Control Sample	Dissolved	Water	6020B	590753
280-167814-5 MS	MW-39B	Dissolved	Water	6020B	590753
280-167814-5 MSD	MW-39B	Dissolved	Water	6020B	590753

General Chemistry

Analysis Batch: 590334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	SM2540 C	
280-167814-2	MW-15	Total/NA	Water	SM2540 C	
280-167814-3	MW-14	Total/NA	Water	SM2540 C	
280-167814-4	MW-16	Total/NA	Water	SM2540 C	
MB 280-590334/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-590334/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-167814-4 DU	MW-16	Total/NA	Water	SM2540 C	

Analysis Batch: 590384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	SM 2540D	
280-167814-2	MW-15	Total/NA	Water	SM 2540D	
MB 280-590384/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-590384/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 590435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	9040B	
280-167814-2	MW-15	Total/NA	Water	9040B	
280-167814-4	MW-16	Total/NA	Water	9040B	
LCS 280-590435/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 590500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-3	MW-14	Total/NA	Water	SM 2540D	
280-167814-4	MW-16	Total/NA	Water	SM 2540D	
MB 280-590500/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-590500/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-590500/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 590600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	SM 2320B	
280-167814-2	MW-15	Total/NA	Water	SM 2320B	
280-167814-3	MW-14	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 590600 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-4	MW-16	Total/NA	Water	SM 2320B	
MB 280-590600/110	Method Blank	Total/NA	Water	SM 2320B	
MB 280-590600/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-590600/6	Method Blank	Total/NA	Water	SM 2320B	
MB 280-590600/84	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-590600/109	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-590600/83	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-590600/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-167814-3 DU	MW-14	Total/NA	Water	SM 2320B	

Analysis Batch: 590799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	9056A	
280-167814-2	MW-15	Total/NA	Water	9056A	
280-167814-2	MW-15	Total/NA	Water	9056A	
280-167814-3	MW-14	Total/NA	Water	9056A	
280-167814-4	MW-16	Total/NA	Water	9056A	
MB 280-590799/6	Method Blank	Total/NA	Water	9056A	
LCS 280-590799/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-590799/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-590799/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 590946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-3	MW-14	Total/NA	Water	9040B	
LCS 280-590946/96	Lab Control Sample	Total/NA	Water	9040B	
280-167814-3 DU	MW-14	Total/NA	Water	9040B	

Analysis Batch: 591018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	9056A	
280-167814-1	MW-28	Total/NA	Water	9056A	
280-167814-3	MW-14	Total/NA	Water	9056A	
MB 280-591018/13	Method Blank	Total/NA	Water	9056A	
MB 280-591018/58	Method Blank	Total/NA	Water	9056A	
LCS 280-591018/56	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-591018/57	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-591018/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 591029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-4	MW-16	Total/NA	Water	9056A	
MB 280-591029/13	Method Blank	Total/NA	Water	9056A	
LCS 280-591029/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-591029/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-591029/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 591336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-591336/13	Method Blank	Total/NA	Water	9056A	
MB 280-591336/58	Method Blank	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 591336 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-591336/56	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-591336/57	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-591336/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 591838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-2	MW-15	Total/NA	Water	9056A	
280-167814-3	MW-14	Total/NA	Water	9056A	
MB 280-591838/13	Method Blank	Total/NA	Water	9056A	
LCS 280-591838/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-591838/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-591838/10	Lab Control Sample	Total/NA	Water	9056A	
280-167814-2 MS	MW-15	Total/NA	Water	9056A	
280-167814-2 MSD	MW-15	Total/NA	Water	9056A	
280-167814-2 DU	MW-15	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	590452	10/19/22 09:21	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			590779	10/21/22 04:56	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590772	10/20/22 17:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		1			590599	10/19/22 16:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590775	10/20/22 14:21	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	590483	10/19/22 16:49	PFM	EET DEN
Total/NA	Analysis	7470A		1			590670	10/20/22 12:15	PFM	EET DEN
Total/NA	Analysis	9040B		1			590435	10/18/22 14:22	KEG	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	590799	10/22/22 01:16	MEC	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	591018	10/25/22 08:49	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	591018	10/25/22 09:06	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			590600	10/20/22 02:11	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	590384	10/18/22 14:56	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	10 mL	100 mL	590334	10/18/22 11:38	ASP	EET DEN

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	590452	10/19/22 09:21	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			590779	10/21/22 05:00	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590772	10/20/22 17:42	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		1			590599	10/19/22 16:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590775	10/20/22 14:23	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	590958	10/24/22 11:50	MAB	EET DEN
Total/NA	Analysis	7470A		1			591099	10/25/22 00:09	MAB	EET DEN
Total/NA	Analysis	9040B		1			590435	10/18/22 14:38	KEG	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	590799	10/22/22 01:46	MEC	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	590799	10/22/22 02:01	MEC	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	591838	10/31/22 17:50	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			590600	10/20/22 02:19	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	590384	10/18/22 14:56	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	590334	10/18/22 11:38	ASP	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	590452	10/19/22 09:21	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			590779	10/21/22 05:04	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590772	10/20/22 17:45	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		1			590599	10/19/22 16:45	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590775	10/20/22 14:25	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	590958	10/24/22 11:50	MAB	EET DEN
Total/NA	Analysis	7470A		1			591099	10/25/22 00:11	MAB	EET DEN
Total/NA	Analysis	9040B		1			590946	10/21/22 20:44	KEG	EET DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	590799	10/22/22 02:30	MEC	EET DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	591018	10/25/22 10:31	MEC	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	591838	10/31/22 17:41	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			590600	10/20/22 02:52	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	590500	10/19/22 12:10	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	590334	10/18/22 11:38	ASP	EET DEN

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	590452	10/19/22 09:21	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			590779	10/21/22 05:08	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590772	10/20/22 17:49	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		1			590599	10/19/22 16:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	590256	10/19/22 07:52	MAB	EET DEN
Total Recoverable	Analysis	6020B		10			590775	10/20/22 14:27	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	590958	10/24/22 11:50	MAB	EET DEN
Total/NA	Analysis	7470A		1			591099	10/25/22 00:14	MAB	EET DEN
Total/NA	Analysis	9040B		1			590435	10/18/22 14:26	KEG	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	590799	10/22/22 02:45	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	591029	10/24/22 18:16	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			590600	10/20/22 03:05	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	590500	10/19/22 12:10	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	590334	10/18/22 11:38	ASP	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-39B
Date Collected: 10/13/22 12:15
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			150 mL	150 mL	590590	10/20/22 00:26	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	590753	10/23/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			591421	10/26/22 19:33	LMT	EET DEN
Dissolved	Filtration	FILTRATION			150 mL	150 mL	590590	10/20/22 00:26	MCR	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	590753	10/23/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			591102	10/24/22 15:27	LMT	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167814-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information
Client Contact: Molly Reeves
Company: HDR Inc
Address: 9781 S. Meridian Blvd Suite 400
City: Englewood
State, Zip: CO, 80112
Phone: 734-263-7138(Tel)
Email: Molly.Reeves@hdrinc.com
Project Name: Xcel Energy GW CCR Monitoring - Valmont
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods

Sampler: E. Davis Ray/J. Wikh
Phone: (720) 298-3594
Lab PM: Nicole Ryan
E-Mail: nicole.ryan@et.eurofinsus.com
Carrier Tracking No(s):
COC No: 280-103098-29694.3
Page: Page 1 of 1
Job #:

Due Date Requested:
TAT Requested (days):
PO #: DEN-018
WO #:
Project #: 28014379
SSOW#:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:			D	N	D		
MW-28	10/11/22	1355	G	WATER		X	X	X	5	Sampled by J.Wikh
MW-15	10/13/22	1340	G	WATER		X	X	X	5	Sampled by J.Wikh
MW-14	10/14/22	1145	G	WATER		X	X	X	5	Sampled by F. Ray
MW-16	10/14/22	1450	G	WATER		X	X	X	5	Sampled by F. Ray
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						

280-167814 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)
Special Instructions/QC Requirements:

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

	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	10/17/22 0920	HDR		10/17/22 0925	SAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.3 CF+0.0 IR#12

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: F. Davis Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	D	N	X	
MW-39B	10/13/22	1215	G	WATER						X	1	250 mL unpreserved
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	F. Davis Ray	10/17/22 0920	HDR		10/17/22 0925	Stolar
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

11/1/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167814-1

Login Number: 167814
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 12/8/2022 12:26:54 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-167814-2

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

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

Glossary

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

Job ID: 280-167814-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-167814-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/17/2022 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

RADIUM-226 (GFPC)
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 11/15/2022 and analyzed on 12/07/2022.

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

RADIUM-228
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 11/15/2022 and analyzed on 11/21/2022.

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 12/08/2022.

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

Job ID: 280-167814-2 (Continued)

Laboratory: Eurofins Denver (Continued)

Detection Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-28 — Lab Sample ID: 280-167814-1

No Detections.

Client Sample ID: MW-15 — Lab Sample ID: 280-167814-2

No Detections.

Client Sample ID: MW-14 — Lab Sample ID: 280-167814-3

No Detections.

Client Sample ID: MW-16 — Lab Sample ID: 280-167814-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

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

Protocol References:

None = None

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

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

Laboratory References:

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

Sample Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167814-1	MW-28	Water	10/11/22 13:55	10/17/22 09:25
280-167814-2	MW-15	Water	10/13/22 13:40	10/17/22 09:25
280-167814-3	MW-14	Water	10/14/22 11:45	10/17/22 09:25
280-167814-4	MW-16	Water	10/14/22 14:50	10/17/22 09:25

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.560		0.130	0.140	1.00	0.0949	pCi/L	11/15/22 14:41	12/07/22 13:23	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110	11/15/22 14:41	12/07/22 13:23	1

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.133		0.0727	0.0737	1.00	0.0917	pCi/L	11/15/22 14:41	12/07/22 13:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	11/15/22 14:41	12/07/22 13:24	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.309		0.103	0.107	1.00	0.108	pCi/L	11/15/22 14:41	12/07/22 13:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.8		40 - 110	11/15/22 14:41	12/07/22 13:24	1

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.167		0.0844	0.0858	1.00	0.109	pCi/L	11/15/22 14:41	12/07/22 13:24	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110	11/15/22 14:41	12/07/22 13:24	1

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.78		0.475	0.502	1.00	0.489	pCi/L	11/15/22 13:13	11/21/22 12:47	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110	11/15/22 13:13	11/21/22 12:47	1

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-1
Matrix: Water

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.5		40 - 110	11/15/22 13:13	11/21/22 12:47	1

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.68		0.441	0.468	1.00	0.464	pCi/L	11/15/22 13:13	11/21/22 12:48	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	11/15/22 13:13	11/21/22 12:48	1
Y Carrier	87.5		40 - 110	11/15/22 13:13	11/21/22 12:48	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.29		0.519	0.560	1.00	0.508	pCi/L	11/15/22 13:13	11/21/22 12:48	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.8		40 - 110	11/15/22 13:13	11/21/22 12:48	1
Y Carrier	81.5		40 - 110	11/15/22 13:13	11/21/22 12:48	1

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.809		0.399	0.406	1.00	0.548	pCi/L	11/15/22 13:13	11/21/22 13:00	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110	11/15/22 13:13	11/21/22 13:00	1
Y Carrier	82.6		40 - 110	11/15/22 13:13	11/21/22 13:00	1

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

Client Sample ID: MW-28
Date Collected: 10/11/22 13:55
Date Received: 10/17/22 09:25

Lab Sample ID: 280-167814-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.34		0.492	0.521	5.00	0.489	pCi/L		12/08/22 12:21	1

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

Client Sample ID: MW-15
Date Collected: 10/13/22 13:40
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.82		0.447	0.474	5.00	0.464	pCi/L		12/08/22 12:21	1

Client Sample ID: MW-14
Date Collected: 10/14/22 11:45
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.60		0.529	0.570	5.00	0.508	pCi/L		12/08/22 12:21	1

Client Sample ID: MW-16
Date Collected: 10/14/22 14:50
Date Received: 10/17/22 09:25
Lab Sample ID: 280-167814-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.976		0.408	0.415	5.00	0.548	pCi/L		12/08/22 12:21	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-590197/1-A
Matrix: Water
Analysis Batch: 592657

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590197

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01887	U	0.0556	0.0556	1.00	0.103	pCi/L	11/15/22 14:41	12/07/22 09:09	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.1*		*40 - 110*	*11/15/22 14:41*	*12/07/22 09:09*	*1*

Lab Sample ID: LCS 160-590197/2-A
Matrix: Water
Analysis Batch: 592657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590197

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.72		1.10	1.00	0.0933	pCi/L	95	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*

Lab Sample ID: LCSD 160-590197/3-A
Matrix: Water
Analysis Batch: 592657

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 590197

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.55		1.08	1.00	0.107	pCi/L	93	75 - 125	0.08	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-590184/1-A
Matrix: Water
Analysis Batch: 590889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590184

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1541	U	0.396	0.396	1.00	0.797	pCi/L	11/15/22 13:13	11/21/22 16:49	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.1*		*40 - 110*	*11/15/22 13:13*	*11/21/22 16:49*	*1*
Y Carrier	*81.5*		*40 - 110*	*11/15/22 13:13*	*11/21/22 16:49*	*1*

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

Lab Sample ID: LCS 160-590184/2-A
Matrix: Water
Analysis Batch: 590886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590184

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.43	10.17		1.32	1.00	0.440	pCi/L	121	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.4*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Lab Sample ID: LCSD 160-590184/3-A
Matrix: Water
Analysis Batch: 590886

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 590184

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.43	8.346		1.15	1.00	0.445	pCi/L	99	75 - 125	0.74	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 590184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	PrecSep_0	
280-167814-2	MW-15	Total/NA	Water	PrecSep_0	
280-167814-3	MW-14	Total/NA	Water	PrecSep_0	
280-167814-4	MW-16	Total/NA	Water	PrecSep_0	
MB 160-590184/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-590184/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-590184/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 590197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167814-1	MW-28	Total/NA	Water	PrecSep-21	
280-167814-2	MW-15	Total/NA	Water	PrecSep-21	
280-167814-3	MW-14	Total/NA	Water	PrecSep-21	
280-167814-4	MW-16	Total/NA	Water	PrecSep-21	
MB 160-590197/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-590197/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-590197/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Lab Chronicle

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-28
Lab Sample ID: 280-167814-1
Date Collected: 10/11/22 13:55
Matrix: Water
Date Received: 10/17/22 09:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.74 mL	1.0 g	590197	11/15/22 14:41	DJP	EET SL
Total/NA	Analysis	9315		1			592658	12/07/22 13:23	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.74 mL	1.0 g	590184	11/15/22 13:13	DJP	EET SL
Total/NA	Analysis	9320		1			590889	11/21/22 12:47	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592789	12/08/22 12:21	CAH	EET SL

Client Sample ID: MW-15
Lab Sample ID: 280-167814-2
Date Collected: 10/13/22 13:40
Matrix: Water
Date Received: 10/17/22 09:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.89 mL	1.0 g	590197	11/15/22 14:41	DJP	EET SL
Total/NA	Analysis	9315		1			592657	12/07/22 13:24	CLP	EET SL
Total/NA	Prep	PrecSep_0			996.89 mL	1.0 g	590184	11/15/22 13:13	DJP	EET SL
Total/NA	Analysis	9320		1			590889	11/21/22 12:48	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592789	12/08/22 12:21	CAH	EET SL

Client Sample ID: MW-14
Lab Sample ID: 280-167814-3
Date Collected: 10/14/22 11:45
Matrix: Water
Date Received: 10/17/22 09:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			992.47 mL	1.0 g	590197	11/15/22 14:41	DJP	EET SL
Total/NA	Analysis	9315		1			592657	12/07/22 13:24	CLP	EET SL
Total/NA	Prep	PrecSep_0			992.47 mL	1.0 g	590184	11/15/22 13:13	DJP	EET SL
Total/NA	Analysis	9320		1			590889	11/21/22 12:48	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592789	12/08/22 12:21	CAH	EET SL

Client Sample ID: MW-16
Lab Sample ID: 280-167814-4
Date Collected: 10/14/22 14:50
Matrix: Water
Date Received: 10/17/22 09:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.96 mL	1.0 g	590197	11/15/22 14:41	DJP	EET SL
Total/NA	Analysis	9315		1			592657	12/07/22 13:24	CLP	EET SL
Total/NA	Prep	PrecSep_0			997.96 mL	1.0 g	590184	11/15/22 13:13	DJP	EET SL
Total/NA	Analysis	9320		1	1.0 mL	1.0 mL	590888	11/21/22 13:00	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592789	12/08/22 12:21	CAH	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22 *
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information
Client Contact: Molly Reeves
Company: HDR Inc
Address: 9781 S. Meridian Blvd Suite 400
City: Englewood
State, Zip: CO, 80112
Phone: 734-263-7138(Tel)
Email: Molly.Reeves@hdrinc.com
Project Name: Xcel Energy GW CCR Monitoring - Valmont
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods

Sampler: E. Davis Ray/J. Wikh
Phone: (720) 298-3594
Lab PM: Nicole Ryan
E-Mail: nicole.ryan@et.eurofinsus.com
Carrier Tracking No(s):
COC No: 280-103098-29694.3
Page: Page 1 of 1
Job #:

Due Date Requested:
TAT Requested (days):
PO #: DEN-018
WO #:
Project #: 28014379
SSOW#:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:			D	N	D		
MW-28	10/11/22	1355	G	WATER		X	X	X	5	Sampled by J.Wikh
MW-15	10/13/22	1340	G	WATER		X	X	X	5	Sampled by J.Wikh
MW-14	10/14/22	1145	G	WATER		X	X	X	5	Sampled by F. Ray
MW-16	10/14/22	1450	G	WATER		X	X	X	5	Sampled by F. Ray
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						

280-167814 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)
Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	10/17/22 0920	HDR		10/17/22 0925	SAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.3 CF+0.0 IR#12

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: F. Davis Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	D	N	X	
MW-39B	10/13/22	1215	G	WATER						X	1	250 mL unpreserved
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								
				WATER								

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/17/22 0920	Company HDR	Received by:	Date/Time: 10/17/22 0925	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

12/8/2022

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-632610.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-167814-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/15/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
Preservation Code:											
MW-28 (280-167814-1)	10/11/22	13:55 Mountain		Water			X	X	X	2	
MW-15 (280-167814-2)	10/13/22	13:40 Mountain		Water			X	X	X	2	
MW-14 (280-167814-3)	10/14/22	11:45 Mountain		Water			X	X	X	2	
MW-16 (280-167814-4)	10/14/22	14:50 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10,14,22 15;40	ET Den	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: OCT 19 2022 0800	Company ESMSR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167814-2

Login Number: 167814
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-167814-2

Login Number: 167814
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 10/19/22 10:48 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-167814-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-167814-1	MW-28	93.0
280-167814-2	MW-15	98.8
280-167814-3	MW-14	97.8
280-167814-4	MW-16	90.1
LCS 160-590197/2-A	Lab Control Sample	96.4
LCSD 160-590197/3-A	Lab Control Sample Dup	97.6
MB 160-590197/1-A	Method Blank	96.1

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-167814-1	MW-28	93.0	84.5
280-167814-2	MW-15	98.8	87.5
280-167814-3	MW-14	97.8	81.5
280-167814-4	MW-16	90.1	82.6
LCS 160-590184/2-A	Lab Control Sample	96.4	89.0
LCSD 160-590184/3-A	Lab Control Sample Dup	97.6	85.6
MB 160-590184/1-A	Method Blank	96.1	81.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver Colorado 80202

Generated 11/21/2022 5:43:33 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168147-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

myEOL

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168147-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168147-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

DISSOLVED METALS
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 10/27/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/26/2022 and analyzed on 10/27/2022 and 10/28/2022.

The low level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for Li. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/28/2022 and analyzed on 11/01/2022.

Calcium, Cobalt, Lead and Thallium failed the recovery criteria low for the MS and MSD of sample MW-36 (280-168147-1) in analytical batch 280-592051.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/26/2022 and analyzed on 10/26/2022, 10/27/2022, 10/28/2022 and 11/02/2022.

Job ID: 280-168147-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Chromium was detected in method blank MB 280-591082/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Calcium was detected in method blank MB 280-591164/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Magnesium, Potassium and Sodium failed the recovery criteria low for the MS of sample MW-37MS (280-168147-2) in batch 280-592132. Magnesium failed the recovery criteria high.

Magnesium, Potassium, Magnesium and Sodium failed the recovery criteria low for the MSD of sample MW-37MSD (280-168147-2) in batch 280-592132.

Calcium failed the recovery criteria high for the MS and MSD of sample 280-168149-1 in analytical batch 280-591578.

Samples MW-36 (280-168147-1)[50X] and MW-37 (280-168147-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/02/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/26/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/28/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/25/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/25/2022.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample MW-36DU (280-168147-1). Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/28/2022.

Job ID: 280-168147-1 (Continued)

Laboratory: Eurofins Denver (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 11/05/2022 and 11/18/2022.

Chloride and Sulfate failed the recovery criteria high for the MS and MSD of sample 280-167903-4 in analytical batch 280-594073.

Chloride and Fluoride failed the recovery criteria high for the MS and MSD of sample 280-168034-6 in analytical batch 280-592533.

Samples MW-36 (280-168147-1)[20X] and MW-37 (280-168147-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-36 — Lab Sample ID: 280-168147-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.51		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.13		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	0.51		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.13		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	150		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	280		7.5	3.2	mg/L	50		6020B	Total Recoverable
Barium	0.017		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	5.4		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.00087	J B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00021	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0013	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.00047	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	340		10	1.9	mg/L	50		6020B	Total Recoverable
Barium	0.016		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.00075	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00013	J F1	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	360		0.20	0.038	mg/L	1		6020B	Dissolved
Molybdenum	0.0012	J	0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.00065	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	23		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.53		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1600		100	21	mg/L	20		9056A	Total/NA
Alkalinity	310		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	310		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-37 — Lab Sample ID: 280-168147-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.57		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.086		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	0.55		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.084		0.020	0.0091	mg/L	1		6010C	Dissolved
Antimony	0.0020		0.0020	0.00040	mg/L	1		6020B	Total Recoverable
Magnesium	160		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0020	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-37 (Continued)
Lab Sample ID: 280-168147-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	320		7.5	3.2	mg/L	50		6020B	Total Recoverable
Barium	0.049		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	7.5		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.0019	J B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0019		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00092	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0075		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.22		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	420		10	1.9	mg/L	50		6020B	Total Recoverable
Antimony	0.0029		0.0020	0.00040	mg/L	1		6020B	Dissolved
Arsenic	0.0023	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.040		0.0010	0.00029	mg/L	1		6020B	Dissolved
Beryllium	0.00011	J	0.0010	0.000080	mg/L	1		6020B	Dissolved
Cobalt	0.0017		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	410		0.20	0.038	mg/L	1		6020B	Dissolved
Molybdenum	0.0054		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.21		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	64		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.79		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1800		250	52	mg/L	50		9056A	Total/NA
Alkalinity	230		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	230		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	9.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3200		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168147-1	MW-36	Water	10/21/22 11:40	10/24/22 10:20
280-168147-2	MW-37	Water	10/21/22 14:05	10/24/22 10:20

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.51**		0.10	0.0015	mg/L		10/26/22 23:06	10/27/22 23:45	1
Lithium	**0.13**		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:21	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.57**		0.10	0.0015	mg/L		10/26/22 23:06	10/27/22 23:50	1
Lithium	**0.086**		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:25	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.51**		0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 21:45	1
Lithium	**0.13**		0.020	0.0091	mg/L		10/27/22 09:19	10/27/22 21:45	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.55**		0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 21:50	1
Lithium	**0.084**		0.020	0.0091	mg/L		10/27/22 09:19	10/27/22 21:50	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:32	1
Magnesium	**150**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:30	50
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:32	1
Sodium	**280**		7.5	3.2	mg/L		10/26/22 15:17	11/02/22 11:29	50
Barium	**0.017**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:20	1
Potassium	**5.4**		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 14:28	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:32	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:20	1
Chromium	**0.00087**	**J B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:32	1
Cobalt	**0.00021**	**J**	0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:32	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:32	1
Molybdenum	**0.0013**	**J**	0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:32	1
Selenium	**0.00047**	**J**	0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:32	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:32	1
Calcium	**340**		10	1.9	mg/L		10/26/22 09:30	10/27/22 17:47	50

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0020**		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:34	1
Magnesium	**160**		2.5	1.1	mg/L		10/26/22 15:17	11/02/22 11:33	50
Arsenic	**0.0020**	**J**	0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:34	1
Sodium	**320**		7.5	3.2	mg/L		10/26/22 15:17	11/02/22 11:33	50
Barium	**0.049**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:22	1
Potassium	**7.5**		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 14:32	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:34	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:22	1
Chromium	**0.0019**	**J B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:34	1
Cobalt	**0.0019**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:34	1
Lead	**0.00092**	**J**	0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:34	1
Molybdenum	**0.0075**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:34	1
Selenium	**0.22**		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:34	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:34	1
Calcium	**420**		10	1.9	mg/L		10/26/22 09:30	10/27/22 17:48	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:24	1
Arsenic	ND		0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:24	1
Barium	**0.016**		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:24	1
Beryllium	ND		0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:24	1
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:24	1
Chromium	**0.00075**	**J**	0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:24	1
Cobalt	**0.00013**	**J F1**	0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:24	1
Lead	ND	F1	0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:24	1
Calcium	**360**		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:24	1
Molybdenum	**0.0012**	**J**	0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:24	1
Selenium	**0.00065**	**J**	0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:24	1
Thallium	ND	F1	0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:24	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0029**		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:43	1
Arsenic	**0.0023**	**J**	0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:43	1
Barium	**0.040**		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:43	1
Beryllium	**0.00011**	**J**	0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:43	1
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:43	1
Chromium	ND		0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:43	1
Cobalt	**0.0017**		0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:43	1
Lead	ND		0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:43	1
Calcium	**410**		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:43	1
Molybdenum	**0.0054**		0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:43	1
Selenium	**0.21**		0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:43	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:43	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:49	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:51	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:28	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:30	1

General Chemistry

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.5**	**HF**	0.1	0.1	SU			10/28/22 11:20	1
Temperature (SW846 9040B)	**19.7**	**HF**	1.0	1.0	Degrees C			10/28/22 11:20	1
Chloride (SW846 9056A)	**23**		3.0	1.0	mg/L			11/05/22 19:19	1
Fluoride (SW846 9056A)	**0.53**		0.50	0.17	mg/L			11/05/22 19:19	1
Sulfate (SW846 9056A)	**1600**		100	21	mg/L			11/05/22 19:28	20
Alkalinity (SM 2320B)	**310**		10	3.1	mg/L			10/28/22 00:46	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**310**		10	3.1	mg/L			10/28/22 00:46	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/28/22 00:46	1
Total Suspended Solids (SM 2540D)	**2.8**	**J**	4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**2600**		20	9.4	mg/L			10/25/22 15:21	1

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.4	HF	0.1	0.1	SU			10/28/22 11:23	1
Temperature (SW846 9040B)	19.8	HF	1.0	1.0	Degrees C			10/28/22 11:23	1
Chloride (SW846 9056A)	64		3.0	1.0	mg/L			11/05/22 19:52	1
Fluoride (SW846 9056A)	0.79		0.50	0.17	mg/L			11/05/22 19:52	1
Sulfate (SW846 9056A)	1800		250	52	mg/L			11/18/22 19:22	50
Alkalinity (SM 2320B)	230		10	3.1	mg/L			10/28/22 00:53	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		10	3.1	mg/L			10/28/22 00:53	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/28/22 00:53	1
Total Suspended Solids (SM 2540D)	9.2		4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3200		20	9.4	mg/L			10/25/22 15:21	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-591310/1-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/26/22 23:06	10/27/22 22:22	1
Lithium	ND	^+	0.020	0.0091	mg/L		10/26/22 23:06	10/27/22 22:22	1

Lab Sample ID: LCS 280-591310/2-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.00		mg/L		100	86 - 110
Lithium	1.00	0.972	^+	mg/L		97	90 - 112

Lab Sample ID: LCSD 280-591310/3-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	2.00		mg/L		100	86 - 110	0	20
Lithium	1.00	0.976	^+	mg/L		98	90 - 112	0	20

Lab Sample ID: MB 280-591243/1-B
Matrix: Water
Analysis Batch: 591586

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591341

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 21:13	1
Lithium	ND		0.020	0.0091	mg/L		10/27/22 09:19	10/27/22 21:13	1

Lab Sample ID: LCS 280-591243/2-B
Matrix: Water
Analysis Batch: 591586

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591341

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.99		mg/L		99	86 - 110
Lithium	1.00	0.975		mg/L		97	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:09	1
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:09	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:09	1
Chromium	0.000554	J	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:09	1
Cobalt	ND		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:09	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:09	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:09	1

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 17:41	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 17:41	1
Calcium	ND		0.20	0.038	mg/L		10/26/22 09:30	10/27/22 17:41	1

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0399		mg/L		100	85 - 115
Arsenic	0.0400	0.0396		mg/L		99	85 - 117
Beryllium	0.0400	0.0386		mg/L		96	80 - 125
Chromium	0.0400	0.0398		mg/L		100	84 - 121
Cobalt	0.0400	0.0389		mg/L		97	85 - 120
Lead	0.0400	0.0404		mg/L		101	85 - 118
Molybdenum	0.0400	0.0403		mg/L		101	85 - 119
Selenium	0.0400	0.0397		mg/L		99	77 - 122
Thallium	0.0400	0.0401		mg/L		100	85 - 118

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.0400	0.0389		mg/L		97	85 - 118
Cadmium	0.0400	0.0392		mg/L		98	85 - 115
Calcium	0.800	0.853		mg/L		107	80 - 120

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 15:17	10/27/22 20:26	1
Magnesium	ND		0.050	0.021	mg/L		10/26/22 15:17	10/27/22 20:26	1
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 15:17	10/27/22 20:26	1
Barium	ND		0.0010	0.00029	mg/L		10/26/22 15:17	10/27/22 20:26	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 15:17	10/27/22 20:26	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 15:17	10/27/22 20:26	1
Chromium	ND		0.0020	0.00050	mg/L		10/26/22 15:17	10/27/22 20:26	1
Cobalt	ND		0.0010	0.000092	mg/L		10/26/22 15:17	10/27/22 20:26	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 15:17	10/27/22 20:26	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/26/22 15:17	10/27/22 20:26	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 15:17	10/27/22 20:26	1
Calcium	0.0517	J	0.20	0.038	mg/L		10/26/22 15:17	10/27/22 20:26	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 15:17	10/27/22 20:26	1

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591763

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 14:20	1

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 12:10	1

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0394		mg/L		98	85 - 115
Magnesium	0.800	0.792		mg/L		99	80 - 120
Arsenic	0.0400	0.0376		mg/L		94	85 - 117
Barium	0.0400	0.0391		mg/L		98	85 - 118
Beryllium	0.0400	0.0365		mg/L		91	80 - 125
Cadmium	0.0400	0.0385		mg/L		96	85 - 115
Chromium	0.0400	0.0392		mg/L		98	84 - 121
Cobalt	0.0400	0.0381		mg/L		95	85 - 120
Lead	0.0400	0.0403		mg/L		101	85 - 118
Molybdenum	0.0400	0.0386		mg/L		96	85 - 119
Selenium	0.0400	0.0379		mg/L		95	77 - 122
Calcium	0.800	0.849		mg/L		106	80 - 120
Thallium	0.0400	0.0402		mg/L		100	85 - 118

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 591763

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	0.800	0.785		mg/L		98	80 - 120

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	0.800	0.801		mg/L		100	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 280-168147-2 MS
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	160000		0.800	156	4	mg/L		-1969 9326	80 - 120

Lab Sample ID: 280-168147-2 MS
Matrix: Water
Analysis Batch: 591763

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	7.5		0.800	8.13	4	mg/L		74	80 - 120

Lab Sample ID: 280-168147-2 MS
Matrix: Water
Analysis Batch: 592132

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	160		0.800	159	4	mg/L		299	80 - 120
Sodium	320		0.800	321	4	mg/L		-170	80 - 120

Lab Sample ID: 280-168147-2 MSD
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	160000		0.800	156	4	mg/L		-1969 9256	80 - 120	0	20

Lab Sample ID: 280-168147-2 MSD
Matrix: Water
Analysis Batch: 591763

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	7.5		0.800	7.95	4	mg/L		52	80 - 120	2	20

Lab Sample ID: 280-168147-2 MSD
Matrix: Water
Analysis Batch: 592132

Client Sample ID: MW-37
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	160		0.800	156	4	mg/L		-36	80 - 120	2	20
Sodium	320		0.800	319	4	mg/L		-474	80 - 120	1	20

Lab Sample ID: MB 280-591243/1-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:17	1
Arsenic	ND		0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:17	1
Barium	ND		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:17	1
Beryllium	ND		0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:17	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591243/1-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:17	1
Chromium	ND		0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:17	1
Cobalt	ND		0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:17	1
Lead	ND		0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:17	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:17	1
Selenium	ND		0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:17	1
Calcium	ND		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:17	1
Thallium	ND		0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:17	1

Lab Sample ID: LCS 280-591243/2-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591532

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0401		mg/L		100	85 - 115
Arsenic	0.0400	0.0397		mg/L		99	85 - 117
Barium	0.0400	0.0418		mg/L		104	85 - 118
Beryllium	0.0400	0.0385		mg/L		96	80 - 125
Cadmium	0.0400	0.0397		mg/L		99	85 - 115
Chromium	0.0400	0.0400		mg/L		100	84 - 121
Cobalt	0.0400	0.0394		mg/L		99	85 - 120
Lead	0.0400	0.0400		mg/L		100	85 - 118
Molybdenum	0.0400	0.0403		mg/L		101	85 - 119
Selenium	0.0400	0.0400		mg/L		100	77 - 122
Calcium	0.800	0.893		mg/L		112	80 - 120
Thallium	0.0400	0.0382		mg/L		96	85 - 118

Lab Sample ID: 280-168147-1 MS
Matrix: Water
Analysis Batch: 592051

Client Sample ID: MW-36
Prep Type: Dissolved
Prep Batch: 591532

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0405		mg/L		101	80 - 111
Arsenic	ND		0.0400	0.0393		mg/L		98	92 - 112
Barium	0.016		0.0400	0.0551		mg/L		98	92 - 117
Beryllium	ND		0.0400	0.0412		mg/L		103	87 - 118
Cadmium	ND		0.0400	0.0384		mg/L		96	91 - 114
Chromium	0.00075	J	0.0400	0.0394		mg/L		97	91 - 114
Cobalt	0.00013	J F1	0.0400	0.0372	F1	mg/L		93	94 - 115
Lead	ND	F1	0.0400	0.0378	F1	mg/L		94	95 - 116
Molybdenum	0.0012	J	0.0400	0.0419		mg/L		102	84 - 117
Selenium	0.00065	J	0.0400	0.0414		mg/L		102	90 - 115
Calcium	360		0.800	356	4	mg/L		-328	80 - 120
Thallium	ND	F1	0.0400	0.0363	F1	mg/L		91	94 - 115

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-168147-1 MSD
Matrix: Water
Analysis Batch: 592051

Client Sample ID: MW-36
Prep Type: Dissolved
Prep Batch: 591532

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0399		mg/L		100	80 - 111	1	20
Arsenic	ND		0.0400	0.0389		mg/L		97	92 - 112	1	20
Barium	0.016		0.0400	0.0541		mg/L		95	92 - 117	2	20
Beryllium	ND		0.0400	0.0416		mg/L		104	87 - 118	1	20
Cadmium	ND		0.0400	0.0385		mg/L		96	91 - 114	0	20
Chromium	0.00075	J	0.0400	0.0391		mg/L		96	91 - 114	1	20
Cobalt	0.00013	J F1	0.0400	0.0372	F1	mg/L		93	94 - 115	0	20
Lead	ND	F1	0.0400	0.0377	F1	mg/L		94	95 - 116	0	20
Molybdenum	0.0012	J	0.0400	0.0420		mg/L		102	84 - 117	0	20
Selenium	0.00065	J	0.0400	0.0398		mg/L		98	90 - 115	4	20
Calcium	360		0.800	346	4	mg/L		-1618	80 - 120	3	20
Thallium	ND	F1	0.0400	0.0362	F1	mg/L		91	94 - 115	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-591297/1-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 591297

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:26	1

Lab Sample ID: LCS 280-591297/2-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 591297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00506		mg/L		101	84 - 120

Lab Sample ID: MB 280-591243/1-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 592067

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:23	1

Lab Sample ID: LCS 280-591243/2-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 592067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.91		ug/L		98	84 - 120

Lab Sample ID: 280-168147-2 MS
Matrix: Water
Analysis Batch: 592247

Client Sample ID: MW-37
Prep Type: Dissolved
Prep Batch: 592067

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		5.00	4.83		ug/L		97	75 - 125

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 280-168147-2 MSD
Matrix: Water
Analysis Batch: 592247

Client Sample ID: MW-37
Prep Type: Dissolved
Prep Batch: 592067

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.76		ug/L		95	75 - 125	1	20

Method: 9040B - pH

Lab Sample ID: LCS 280-591768/4
Matrix: Water
Analysis Batch: 591768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH adj. to 25 deg C			7.00	7.1		SU		101	99 - 101		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-592533/6
Matrix: Water
Analysis Batch: 592533

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/05/22 11:18	1
Fluoride	ND		0.50	0.17	mg/L			11/05/22 11:18	1
Sulfate	ND		5.0	1.0	mg/L			11/05/22 11:18	1

Lab Sample ID: LCS 280-592533/4
Matrix: Water
Analysis Batch: 592533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.5		mg/L		99	90 - 110		
Fluoride			2.50	2.42		mg/L		97	90 - 110		
Sulfate			50.0	49.0		mg/L		98	90 - 110		

Lab Sample ID: LCSD 280-592533/5
Matrix: Water
Analysis Batch: 592533

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.5		mg/L		99	90 - 110	0	10
Fluoride			2.50	2.50		mg/L		100	90 - 110	3	10
Sulfate			50.0	49.0		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-592533/3
Matrix: Water
Analysis Batch: 592533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			2.50	2.49	J	mg/L		100	50 - 150		
Fluoride			0.250	0.237	J	mg/L		95	50 - 150		
Sulfate			2.50	2.34	J	mg/L		94	50 - 150		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-593497/6
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/15/22 16:44	1
Fluoride	ND	^1+ ^+	0.50	0.17	mg/L			11/15/22 16:44	1
Sulfate	ND		5.0	1.0	mg/L			11/15/22 16:44	1

Lab Sample ID: LCS 280-593497/4
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	46.8		mg/L		94	90 - 110
Sulfate	50.0	45.7		mg/L		91	90 - 110

Lab Sample ID: LCSD 280-593497/5
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	46.7		mg/L		93	90 - 110	0	10
Sulfate	50.0	45.7		mg/L		91	90 - 110	0	10

Lab Sample ID: MRL 280-593497/3
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.04	J	mg/L		81	50 - 150
Sulfate	2.50	2.16	J	mg/L		86	50 - 150

Lab Sample ID: MB 280-594073/44
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			11/19/22 03:02	1

Lab Sample ID: MB 280-594073/6
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/18/22 15:03	1
Sulfate	ND		5.0	1.0	mg/L			11/18/22 15:03	1

Lab Sample ID: LCS 280-594073/4
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.0		mg/L		98	90 - 110
Sulfate	50.0	48.6		mg/L		97	90 - 110

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: LCS 280-594073/40
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	48.2		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-594073/43
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	51.9		mg/L		104	90 - 110	7	10

Lab Sample ID: LCSD 280-594073/5
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.0		mg/L		98	90 - 110	0	10
Sulfate	50.0	49.3		mg/L		99	90 - 110	2	10

Lab Sample ID: MRL 280-594073/3
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.66	J	mg/L		106	50 - 150
Sulfate	2.50	2.09	J	mg/L		84	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-591609/32
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 20:05	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1

Lab Sample ID: MB 280-591609/58
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 23:00	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 23:00	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 23:00	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-591609/6
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 16:31	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1

Lab Sample ID: LCS 280-591609/57
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	200	201		mg/L		101	89 - 109

Lab Sample ID: LCSD 280-591609/5
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity	200	193		mg/L		96	89 - 109	7	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-591221/2
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/25/22 15:29	1

Lab Sample ID: LCS 280-591221/1
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	502	459		mg/L		91	79 - 114

Lab Sample ID: 280-168147-1 DU
Matrix: Water
Analysis Batch: 591221

Client Sample ID: MW-36
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	2.8	J	1.20	J F5	mg/L		80	10

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-591218/2
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/25/22 15:21	1

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCS 280-591218/1
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	515		mg/L		103	88 - 114

Metals

Prep Batch: 591082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	3005A	
280-168147-2	MW-37	Total Recoverable	Water	3005A	
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 591164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	3005A	
280-168147-2	MW-37	Total Recoverable	Water	3005A	
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-168147-2 MS	MW-37	Total Recoverable	Water	3005A	
280-168147-2 MSD	MW-37	Total Recoverable	Water	3005A	

Filtration Batch: 591243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	FILTRATION	
280-168147-2	MW-37	Dissolved	Water	FILTRATION	
MB 280-591243/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-591243/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-591243/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
280-168147-1 MS	MW-36	Dissolved	Water	FILTRATION	
280-168147-1 MSD	MW-36	Dissolved	Water	FILTRATION	
280-168147-2 MS	MW-37	Dissolved	Water	FILTRATION	
280-168147-2 MSD	MW-37	Dissolved	Water	FILTRATION	

Prep Batch: 591297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	7470A	
280-168147-2	MW-37	Total/NA	Water	7470A	
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 591310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	3005A	
280-168147-2	MW-37	Total Recoverable	Water	3005A	
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 591341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	3005A	591243
280-168147-2	MW-37	Dissolved	Water	3005A	591243
MB 280-591243/1-B	Method Blank	Dissolved	Water	3005A	591243
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	3005A	591243

QC Association Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 591422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6020B	591082
280-168147-2	MW-37	Total Recoverable	Water	6020B	591082
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082

Analysis Batch: 591488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	7470A	591297
280-168147-2	MW-37	Total/NA	Water	7470A	591297
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	591297
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	591297

Prep Batch: 591532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	3005A	591243
280-168147-2	MW-37	Dissolved	Water	3005A	591243
MB 280-591243/1-D	Method Blank	Dissolved	Water	3005A	591243
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	3005A	591243
280-168147-1 MS	MW-36	Dissolved	Water	3005A	591243
280-168147-1 MSD	MW-36	Dissolved	Water	3005A	591243

Analysis Batch: 591578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6020B	591082
280-168147-1	MW-36	Total Recoverable	Water	6020B	591082
280-168147-1	MW-36	Total Recoverable	Water	6020B	591164
280-168147-2	MW-37	Total Recoverable	Water	6020B	591082
280-168147-2	MW-37	Total Recoverable	Water	6020B	591082
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164
280-168147-2 MS	MW-37	Total Recoverable	Water	6020B	591164
280-168147-2 MSD	MW-37	Total Recoverable	Water	6020B	591164

Analysis Batch: 591586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	6010C	591341
280-168147-2	MW-37	Dissolved	Water	6010C	591341
MB 280-591243/1-B	Method Blank	Dissolved	Water	6010C	591341
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	6010C	591341

Analysis Batch: 591608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6010C	591310
280-168147-2	MW-37	Total Recoverable	Water	6010C	591310
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	6010C	591310
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	6010C	591310
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	591310

QC Association Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 591727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6010C	591310
280-168147-2	MW-37	Total Recoverable	Water	6010C	591310

Analysis Batch: 591763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6020B	591164
280-168147-2	MW-37	Total Recoverable	Water	6020B	591164
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164
280-168147-2 MS	MW-37	Total Recoverable	Water	6020B	591164
280-168147-2 MSD	MW-37	Total Recoverable	Water	6020B	591164

Analysis Batch: 592051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	6020B	591532
280-168147-2	MW-37	Dissolved	Water	6020B	591532
MB 280-591243/1-D	Method Blank	Dissolved	Water	6020B	591532
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	6020B	591532
280-168147-1 MS	MW-36	Dissolved	Water	6020B	591532
280-168147-1 MSD	MW-36	Dissolved	Water	6020B	591532

Prep Batch: 592067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	7470A	591243
280-168147-2	MW-37	Dissolved	Water	7470A	591243
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	591243
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	591243
280-168147-2 MS	MW-37	Dissolved	Water	7470A	591243
280-168147-2 MSD	MW-37	Dissolved	Water	7470A	591243

Analysis Batch: 592132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total Recoverable	Water	6020B	591164
280-168147-2	MW-37	Total Recoverable	Water	6020B	591164
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164
280-168147-2 MS	MW-37	Total Recoverable	Water	6020B	591164
280-168147-2 MSD	MW-37	Total Recoverable	Water	6020B	591164

Analysis Batch: 592247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Dissolved	Water	7470A	592067
280-168147-2	MW-37	Dissolved	Water	7470A	592067
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	592067
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	592067
280-168147-2 MS	MW-37	Dissolved	Water	7470A	592067
280-168147-2 MSD	MW-37	Dissolved	Water	7470A	592067

General Chemistry

Analysis Batch: 591218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	SM2540 C	
280-168147-2	MW-37	Total/NA	Water	SM2540 C	
MB 280-591218/2	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-591218/1	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 591221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	SM 2540D	
280-168147-2	MW-37	Total/NA	Water	SM 2540D	
MB 280-591221/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591221/1	Lab Control Sample	Total/NA	Water	SM 2540D	
280-168147-1 DU	MW-36	Total/NA	Water	SM 2540D	

Analysis Batch: 591609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	SM 2320B	
280-168147-2	MW-37	Total/NA	Water	SM 2320B	
MB 280-591609/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-591609/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-591609/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-591609/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-591609/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 591768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	9040B	
280-168147-2	MW-37	Total/NA	Water	9040B	
LCS 280-591768/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 592533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	9056A	
280-168147-1	MW-36	Total/NA	Water	9056A	
280-168147-2	MW-37	Total/NA	Water	9056A	
MB 280-592533/6	Method Blank	Total/NA	Water	9056A	
LCS 280-592533/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-592533/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-592533/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 593497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-593497/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593497/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593497/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593497/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 594073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-2	MW-37	Total/NA	Water	9056A	
MB 280-594073/44	Method Blank	Total/NA	Water	9056A	
MB 280-594073/6	Method Blank	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 594073 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-594073/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-594073/40	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-594073/43	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-594073/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-594073/3	Lab Control Sample	Total/NA	Water	9056A	

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591586	10/27/22 21:45	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/27/22 23:45	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:21	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591532	10/28/22 09:20	LJS	EET DEN
Dissolved	Analysis	6020B		1			592051	11/01/22 19:24	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			591763	10/28/22 14:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592132	11/02/22 11:29	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 17:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:20	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:30	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:28	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 17:49	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:20	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	592533	11/05/22 19:19	MEC	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	592533	11/05/22 19:28	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/28/22 00:46	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591586	10/27/22 21:50	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/27/22 23:50	KRP	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:25	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591532	10/28/22 09:20	LJS	EET DEN
Dissolved	Analysis	6020B		1			592051	11/01/22 19:43	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			591763	10/28/22 14:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592132	11/02/22 11:33	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 17:48	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:22	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:30	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 17:51	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:23	KEG	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	594073	11/18/22 19:22	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	592533	11/05/22 19:52	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/28/22 00:53	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168147-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

280-168147 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

Client Contact: Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Company: HDR Inc	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			Job #:
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				Preservation Codes:
Phone: 734-263-7138(Tel)	PO #: DEN-018			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			Other:
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	300.0_28D_Cl_SO4_Prep (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-36	10/21/2022	1140	G	WATER	N		X	X	X	5	
MW-37	10/21/2022	1405	G	WATER	N		X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Mattison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHat
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Received by: AHat	Date/Time: 10/24/2022 1020	Company: EDA DEN
Received by:	Date/Time:	Company:
Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.3°C IR2 CF0.0°C

Ver: 01/16/2019

11/21/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168147-1

Login Number: 168147
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver Colorado 80202

Generated 11/23/2022 1:27:38 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168147-2

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

myEOL

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168147-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168147-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

RADIUM-226 (GFPC)
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 10/28/2022 and analyzed on 11/22/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 10/28/2022 and analyzed on 11/16/2022.

The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 130%: (LCS 160-587627/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.

The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative.MW-37 (280-168147-2)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-36 (280-168147-1) and MW-37 (280-168147-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/23/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 280-168147-2 (Continued)

Laboratory: Eurofins Denver (Continued)

Method Summary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168147-1	MW-36	Water	10/21/22 11:40	10/24/22 10:20
280-168147-2	MW-37	Water	10/21/22 14:05	10/24/22 10:20

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0393	U	0.0665	0.0666	1.00	0.117	pCi/L	10/28/22 08:53	11/22/22 20:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.5*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:02*	*1*

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.438	U	0.342	0.344	1.00	0.490	pCi/L	10/28/22 08:53	11/22/22 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:03*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.03**		0.472	0.482	1.00	0.647	pCi/L	10/28/22 09:13	11/16/22 16:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.5*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**4.95**	**G**	1.93	1.99	1.00	2.47	pCi/L	10/28/22 09:13	11/16/22 16:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*
Y Carrier	*85.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*

Client Sample Results

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-36
Date Collected: 10/21/22 11:40
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.06		0.477	0.487	5.00	0.647	pCi/L		11/23/22 12:37	1

Client Sample ID: MW-37
Date Collected: 10/21/22 14:05
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168147-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	5.39		1.96	2.02	5.00	2.47	pCi/L		11/23/22 12:37	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-587625/1-A
Matrix: Water
Analysis Batch: 590931

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587625

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09436	U	0.106	0.106	1.00	0.173	pCi/L	10/28/22 08:53	11/22/22 20:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:04*	*1*

Lab Sample ID: LCS 160-587625/2-A
Matrix: Water
Analysis Batch: 590931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587625

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.18		1.10	1.00	0.157	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-587627/1-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1729	U	0.267	0.267	1.00	0.570	pCi/L	10/28/22 09:13	11/16/22 16:31	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:31*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:31*	*1*

Lab Sample ID: LCS 160-587627/2-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587627

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.44	10.97		1.52	1.00	0.674	pCi/L	130	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 587625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	PrecSep-21	
280-168147-2	MW-37	Total/NA	Water	PrecSep-21	
MB 160-587625/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-587625/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 587627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168147-1	MW-36	Total/NA	Water	PrecSep_0	
280-168147-2	MW-37	Total/NA	Water	PrecSep_0	
MB 160-587627/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-587627/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-36
Lab Sample ID: 280-168147-1
Date Collected: 10/21/22 11:40
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.10 mL	1.0 g	587625	10/28/22 08:53	BMP	EET SL
Total/NA	Analysis	9315		1			590932	11/22/22 20:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			1001.10 mL	1.0 g	587627	10/28/22 09:13	BMP	EET SL
Total/NA	Analysis	9320		1			590347	11/16/22 16:37	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591173	11/23/22 12:37	SCB	EET SL

Client Sample ID: MW-37
Lab Sample ID: 280-168147-2
Date Collected: 10/21/22 14:05
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			265.96 mL	1.0 g	587625	10/28/22 08:53	BMP	EET SL
Total/NA	Analysis	9315		1			590932	11/22/22 20:03	FLC	EET SL
Total/NA	Prep	PrecSep_0			265.96 mL	1.0 g	587627	10/28/22 09:13	BMP	EET SL
Total/NA	Analysis	9320		1			590347	11/16/22 16:37	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591173	11/23/22 12:37	SCB	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

280-168147 Chain of Custody

Chain of Custody Record

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Client Contact: Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Company: HDR Inc	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			Job #:
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				Preservation Codes:
Phone: 734-263-7138(Tel)	PO #: DEN-018			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			Other:
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	300.0_28Days_Cl_SO4_NO3 (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-36	10/21/2022	1140	G	WATER	N		X	X	X	5	
MW-37	10/21/2022	1405	G	WATER	N		X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Mattison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHall
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Received by: AHall	Date/Time: 10/24/2022 1020	Company: EDA DEN
Received by:	Date/Time:	Company
Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.3°C IR2 CF0.0°C

Ver: 01/16/2019

11/23/2022

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Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-633537.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-168147-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-36 (280-168147-1)	10/21/22	11:40 Mountain		Water			X	X	X	2	
MW-37 (280-168147-2)	10/21/22	14:05 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	ETADEN 10/25/22 15:25		FED EX		
2	Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: OCT 26 2022 0900	Company ET ST L
3	Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168147-2

Login Number: 168147
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168147-2

Login Number: 168147
List Number: 2
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 10/26/22 12:23 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-168147-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-168147-1	MW-36	86.5
280-168147-2	MW-37	81.6
LCS 160-587625/2-A	Lab Control Sample	81.4
MB 160-587625/1-A	Method Blank	83.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-168147-1	MW-36	86.5	84.5
280-168147-2	MW-37	81.6	85.6
LCS 160-587627/2-A	Lab Control Sample	81.4	84.1
MB 160-587627/1-A	Method Blank	83.6	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver Colorado 80202

Generated 11/21/2022 6:06:18 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168149-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

myEOL

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168149-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168149-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 0.4º C and 0.4º C.

DISSOLVED METALS
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/02/2022 and analyzed on 11/03/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/26/2022 and analyzed on 10/28/2022.

The low level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for Li. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 11/02/2022 and analyzed on 11/03/2022.

Calcium failed the recovery criteria high for the MS of sample MW-1PMS (280-168149-1) in batch 280-592234.

Barium, Chromium, Cobalt and Lead failed the recovery criteria low for the MSD of sample MW-1PMSD (280-168149-1) in batch 280-592234. Calcium failed the recovery criteria high.

Job ID: 280-168149-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Samples MW-1P (280-168149-1)[50X], MW-9 (280-168149-2)[50X], MW-11 (280-168149-3)[50X], MW-12 (280-168149-4)[50X] and MW-9-DUP (280-168149-6)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/26/2022 and analyzed on 10/26/2022, 10/27/2022 and 11/02/2022.

The instrument blank for analytical batch 280-592086 contained 77 ppb Na which is greater than one-half the reporting limit (RL) of 150 ppb, and were not re-analyzed because the samples are >10x the blank. The data have been qualified and reported.

Chromium was detected in method blank MB 280-591082/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Magnesium and Sodium failed the recovery criteria low for the MS of sample 280-168147-2 in batch 280-592132. Potassium failed the recovery criteria high.

Magnesium, Potassium and Sodium failed the recovery criteria low for the MSD of sample 280-168147-2 in batch 280-592132.

Calcium failed the recovery criteria high for the MS and MSD of sample MW-1P (280-168149-1) in analytical batch 280-591578.

Samples MW-1P (280-168149-1)[50X], MW-9 (280-168149-2)[10X], MW-9 (280-168149-2)[50X], MW-11 (280-168149-3)[50X], MW-12 (280-168149-4)[10X], MW-12 (280-168149-4)[50X], MW-9-DUP (280-168149-6)[10X] and MW-9-DUP (280-168149-6)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/02/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/26/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/28/2022 and 10/31/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/25/2022.

Job ID: 280-168149-1 (Continued)

Laboratory: Eurofins Denver (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/25/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/28/2022.

The following sample did not equilibrate to within 0.05 pH units after three measurements: MW-12-EB (280-168149-5). This was observed in a previous analysis thus the sample was not rerun.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 11/15/2022, 11/16/2022 and 11/18/2022.

Reanalysis of the following sample(s) was performed outside of the analytical holding time due to samples needing further dilutions: MW-9-DUP (280-168149-6).

Chloride and Sulfate failed the recovery criteria high for the MS and MSD of sample 280-167903-4 in analytical batch 280-594073.

Samples MW-1P (280-168149-1)[5X], MW-9 (280-168149-2)[5X], MW-11 (280-168149-3)[5X], MW-9-DUP (280-168149-6)[10X] and MW-9-DUP (280-168149-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-1P
Lab Sample ID: 280-168149-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.6		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.014	J	0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	1.6		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.012	J	0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	36		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0041	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	73		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.13		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	4.7		0.12	0.052	mg/L	1		6020B	Total Recoverable
Cobalt	0.0014		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.013		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	170		10	1.9	mg/L	50		6020B	Total Recoverable
Antimony	0.00041	J	0.0020	0.00040	mg/L	1		6020B	Dissolved
Arsenic	0.0027	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.12	F1	0.0010	0.00029	mg/L	1		6020B	Dissolved
Cobalt	0.0012	F1	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	150		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.012		0.0020	0.00014	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	52		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	0.77		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	170		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	850		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-9
Lab Sample ID: 280-168149-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	12		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.038		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	12		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.035		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	98		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0017	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	160		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.042		0.0010	0.00029	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-9 (Continued)
Lab Sample ID: 280-168149-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	1.3		0.12	0.052	mg/L	1		6020B	Total Recoverable
Cobalt	0.0046		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00022	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.080		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	130		2.0	0.38	mg/L	10		6020B	Total Recoverable
Arsenic	0.0015	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.037		0.0010	0.00029	mg/L	1		6020B	Dissolved
Cobalt	0.0041		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	130		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.073		0.0020	0.00014	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	57		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	2.4		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	490		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	450		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	450		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1300		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-11
Lab Sample ID: 280-168149-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.1		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.020		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	2.1		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.015	J	0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	110		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0052		0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	160		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.11		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	1.6		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.00072	J B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.012		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00040	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.014		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	180		10	1.9	mg/L	50		6020B	Total Recoverable
Arsenic	0.0019	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.086		0.0010	0.00029	mg/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-11 (Continued)
Lab Sample ID: 280-168149-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0069		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	180		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.011		0.0020	0.00014	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	55		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	2.1		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	370		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	730		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	730		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	10		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1300		20	9.4	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-12
Lab Sample ID: 280-168149-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	7.3		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Boron	7.6		0.10	0.0015	mg/L	1		6010C	Dissolved
Magnesium	44		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0075		0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	80		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.21		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	1.2		0.12	0.052	mg/L	1		6020B	Total Recoverable
Cobalt	0.0064		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.011		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	96		2.0	0.38	mg/L	10		6020B	Total Recoverable
Arsenic	0.0042	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.19		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.00058	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.0057		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	88		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.0096		0.0020	0.00014	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	33		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.2		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	90		5.0	1.0	mg/L	1		9056A	Total/NA
Alkalinity	420		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	420		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	640		10	4.7	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-12-EB
Lab Sample ID: 280-168149-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.011	J	0.10	0.0015	mg/L	1		6010C	Total Recoverable
Boron	0.0071	J	0.10	0.0015	mg/L	1		6010C	Dissolved
Barium	0.00045	J	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Calcium	0.055	J	0.20	0.038	mg/L	1		6020B	Total Recoverable
Calcium	0.050	J	0.20	0.038	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	6.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

Client Sample ID: MW-9-DUP
Lab Sample ID: 280-168149-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	12		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.038		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	12		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.036		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	100		2.5	1.1	mg/L	50		6020B	Total Recoverable
Arsenic	0.0014	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Sodium	160		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.040		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	1.2		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.00055	J B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0050		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00023	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.081		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Calcium	130		2.0	0.38	mg/L	10		6020B	Total Recoverable
Arsenic	0.0010	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.039		0.0010	0.00029	mg/L	1		6020B	Dissolved
Cobalt	0.0045		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	130		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.077		0.0020	0.00014	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	59		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	2.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	480	H	50	10	mg/L	10		9056A	Total/NA
Alkalinity	440		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	440		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1300		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168149-1	MW-1P	Water	10/19/22 11:37	10/24/22 10:20
280-168149-2	MW-9	Water	10/19/22 14:24	10/24/22 10:20
280-168149-3	MW-11	Water	10/19/22 14:45	10/24/22 10:20
280-168149-4	MW-12	Water	10/20/22 14:45	10/24/22 10:20
280-168149-5	MW-12-EB	Water	10/20/22 11:50	10/24/22 10:20
280-168149-6	MW-9-DUP	Water	10/19/22 15:01	10/24/22 10:20

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:14	1
Lithium	0.014	J	0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:33	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:18	1
Lithium	0.038		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:37	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:22	1
Lithium	0.020		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:41	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.3		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:26	1
Lithium	ND		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:45	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.011	J	0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:30	1
Lithium	ND		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:49	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:34	1
Lithium	0.038		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:53	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:24	1
Lithium	0.012	J	0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:24	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**12**		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:28	1
Lithium	**0.035**		0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:28	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2.1**		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:33	1
Lithium	**0.015**	**J**	0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:33	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**7.6**		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:54	1
Lithium	ND		0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:54	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0071**	**J**	0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:59	1
Lithium	ND		0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:59	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**12**		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 18:20	1
Lithium	**0.036**		0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 18:20	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:37	1
Magnesium	**36**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:43	50
Arsenic	**0.0041**	**J**	0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:37	1
Sodium	**73**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:25	1
Barium	**0.13**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:25	1
Potassium	**4.7**		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:25	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:37	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:25	1
Chromium	ND		0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:37	1
Cobalt	**0.0014**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:37	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:37	1
Molybdenum	**0.013**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:37	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:37	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:37	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**170**		10	1.9	mg/L		10/26/22 09:30	10/27/22 17:52	50

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:50	1
Magnesium	**98**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:49	50
Arsenic	**0.0017**	**J**	0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:50	1
Sodium	**160**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:28	1
Barium	**0.042**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:38	1
Potassium	**1.3**		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:28	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:50	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:38	1
Chromium	ND		0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:50	1
Cobalt	**0.0046**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:50	1
Lead	**0.00022**	**J**	0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:50	1
Molybdenum	**0.080**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:50	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:50	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:50	1
Calcium	**130**		2.0	0.38	mg/L		10/26/22 09:30	10/27/22 18:05	10

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:52	1
Magnesium	**110**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:51	50
Arsenic	**0.0052**		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:52	1
Sodium	**160**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:32	1
Barium	**0.11**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:40	1
Potassium	**1.6**		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:32	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:52	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:40	1
Chromium	**0.00072**	**J B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:52	1
Cobalt	**0.012**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:52	1
Lead	**0.00040**	**J**	0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:52	1
Molybdenum	**0.014**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:52	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:52	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:52	1
Calcium	**180**		10	1.9	mg/L		10/26/22 09:30	10/27/22 18:07	50

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:54	1
Magnesium	**44**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:52	50
Arsenic	**0.0075**		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:54	1
Sodium	**80**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:36	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.21**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:42	1
Potassium	**1.2**		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:36	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:54	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:42	1
Chromium	ND		0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:54	1
Cobalt	**0.0064**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:54	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:54	1
Molybdenum	**0.011**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:54	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:54	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:54	1
Calcium	**96**		2.0	0.38	mg/L		10/26/22 09:30	10/27/22 18:09	10

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:56	1
Magnesium	ND		0.050	0.021	mg/L		10/26/22 15:17	10/27/22 21:32	1
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:56	1
Sodium	ND		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:13	1
Barium	**0.00045**	**J**	0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 17:45	1
Potassium	ND		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:13	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:56	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 17:45	1
Chromium	ND		0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:56	1
Cobalt	ND		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:56	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:56	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:56	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:56	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:56	1
Calcium	**0.055**	**J**	0.20	0.038	mg/L		10/26/22 09:30	10/27/22 17:45	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:58	1
Magnesium	**100**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:56	50
Arsenic	**0.0014**	**J**	0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:58	1
Sodium	**160**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 09:39	1
Barium	**0.040**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:44	1
Potassium	**1.2**		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 09:39	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:58	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:44	1
Chromium	**0.00055**	**J B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:58	1
Cobalt	**0.0050**		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:58	1
Lead	**0.00023**	**J**	0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:58	1
Molybdenum	**0.081**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:58	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:58	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:58	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**130**		2.0	0.38	mg/L		10/26/22 09:30	10/27/22 18:11	10

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00041**	**J**	0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:23	1
Arsenic	**0.0027**	**J**	0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:23	1
Barium	**0.12**	**F1**	0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:23	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:23	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:23	1
Chromium	ND	F1	0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:23	1
Cobalt	**0.0012**	**F1**	0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:23	1
Lead	ND	F1	0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:23	1
Calcium	**150**		10	1.9	mg/L		11/02/22 14:47	11/03/22 10:20	50
Molybdenum	**0.012**		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:23	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:23	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:23	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:36	1
Arsenic	**0.0015**	**J**	0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:36	1
Barium	**0.037**		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:36	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:36	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:36	1
Chromium	ND		0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:36	1
Cobalt	**0.0041**		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:36	1
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:36	1
Calcium	**130**		10	1.9	mg/L		11/02/22 14:47	11/03/22 10:28	50
Molybdenum	**0.073**		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:36	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:36	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:36	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:38	1
Arsenic	**0.0019**	**J**	0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:38	1
Barium	**0.086**		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:38	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:38	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:38	1
Chromium	ND		0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:38	1
Cobalt	**0.0069**		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:38	1
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:38	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**180**		10	1.9	mg/L		11/02/22 14:47	11/03/22 10:30	50
Molybdenum	**0.011**		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:38	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:38	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:38	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:40	1
Arsenic	**0.0042**	**J**	0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:40	1
Barium	**0.19**		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:40	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:40	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:40	1
Chromium	**0.00058**	**J**	0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:40	1
Cobalt	**0.0057**		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:40	1
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:40	1
Calcium	**88**		10	1.9	mg/L		11/02/22 14:47	11/03/22 10:32	50
Molybdenum	**0.0096**		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:40	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:40	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:40	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:42	1
Arsenic	ND		0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:42	1
Barium	ND		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:42	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:42	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:42	1
Chromium	ND		0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:42	1
Cobalt	ND		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:42	1
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:42	1
Calcium	**0.050**	**J**	0.20	0.038	mg/L		11/02/22 14:47	11/03/22 08:42	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:42	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:42	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:42	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:44	1
Arsenic	**0.0010**	**J**	0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:44	1
Barium	**0.039**		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:44	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:44	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:44	1
Chromium	ND		0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:44	1
Cobalt	**0.0045**		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:44	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:44	1
Calcium	**130**		10	1.9	mg/L		11/02/22 14:47	11/03/22 10:34	50
Molybdenum	**0.077**		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:44	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:44	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:44	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:56	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:59	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 18:01	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 18:09	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 18:11	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 18:14	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:40	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:43	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:45	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:53	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:56	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:58	1

General Chemistry

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.4	HF	0.1	0.1	SU			10/28/22 11:37	1
Temperature (SW846 9040B)	21.3	HF	1.0	1.0	Degrees C			10/28/22 11:37	1
Chloride (SW846 9056A)	52		15	5.1	mg/L			11/16/22 00:39	5
Fluoride (SW846 9056A)	0.77		0.50	0.17	mg/L			11/15/22 20:51	1
Sulfate (SW846 9056A)	170		25	5.2	mg/L			11/16/22 00:39	5
Alkalinity (SM 2320B)	400		10	3.1	mg/L			10/28/22 01:08	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	400		10	3.1	mg/L			10/28/22 01:08	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/28/22 01:08	1
Total Suspended Solids (SM 2540D)	1.6	J	4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	850		10	4.7	mg/L			10/25/22 15:21	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.5	HF	0.1	0.1	SU			10/28/22 11:41	1

General Chemistry (Continued)

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature (SW846 9040B)	21.2	HF	1.0	1.0	Degrees C			10/28/22 11:41	1
Chloride (SW846 9056A)	57		15	5.1	mg/L			11/16/22 00:55	5
Fluoride (SW846 9056A)	2.4		0.50	0.17	mg/L			11/15/22 20:59	1
Sulfate (SW846 9056A)	490		25	5.2	mg/L			11/16/22 00:55	5
Alkalinity (SM 2320B)	450		10	3.1	mg/L			10/28/22 01:17	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	450		10	3.1	mg/L			10/28/22 01:17	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/28/22 01:17	1
Total Suspended Solids (SM 2540D)	2.8	J	4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	1300		20	9.4	mg/L			10/25/22 15:21	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.4	HF	0.1	0.1	SU			10/28/22 11:45	1
Temperature (SW846 9040B)	21.4	HF	1.0	1.0	Degrees C			10/28/22 11:45	1
Chloride (SW846 9056A)	55		15	5.1	mg/L			11/16/22 01:11	5
Fluoride (SW846 9056A)	2.1		0.50	0.17	mg/L			11/15/22 21:08	1
Sulfate (SW846 9056A)	370		25	5.2	mg/L			11/16/22 01:11	5
Alkalinity (SM 2320B)	730		10	3.1	mg/L			10/28/22 01:28	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	730		10	3.1	mg/L			10/28/22 01:28	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/28/22 01:28	1
Total Suspended Solids (SM 2540D)	10		4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	1300		20	9.4	mg/L			10/25/22 15:21	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.6	HF	0.1	0.1	SU			10/28/22 11:48	1
Temperature (SW846 9040B)	21.6	HF	1.0	1.0	Degrees C			10/28/22 11:48	1
Chloride (SW846 9056A)	33		3.0	1.0	mg/L			11/16/22 01:27	1
Fluoride (SW846 9056A)	1.2		0.50	0.17	mg/L			11/15/22 21:16	1
Sulfate (SW846 9056A)	90		5.0	1.0	mg/L			11/16/22 01:27	1
Alkalinity (SM 2320B)	420		10	3.1	mg/L			10/31/22 12:01	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	420		10	3.1	mg/L			10/31/22 12:01	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:01	1
Total Suspended Solids (SM 2540D)	4.8		4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	640		10	4.7	mg/L			10/25/22 15:21	1

General Chemistry

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**6.8**	**HF**	0.1	0.1	SU			10/28/22 11:54	1
Temperature (SW846 9040B)	**21.9**	**HF**	1.0	1.0	Degrees C			10/28/22 11:54	1
Chloride (SW846 9056A)	ND		3.0	1.0	mg/L			11/15/22 21:24	1
Fluoride (SW846 9056A)	ND		0.50	0.17	mg/L			11/15/22 21:24	1
Sulfate (SW846 9056A)	ND		5.0	1.0	mg/L			11/15/22 21:24	1
Alkalinity (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:07	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:07	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:07	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	ND		10	4.7	mg/L			10/25/22 15:21	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.6**	**HF**	0.1	0.1	SU			10/28/22 11:58	1
Temperature (SW846 9040B)	**22.0**	**HF**	1.0	1.0	Degrees C			10/28/22 11:58	1
Chloride (SW846 9056A)	**59**		15	5.1	mg/L			11/16/22 03:18	5
Fluoride (SW846 9056A)	**2.3**		0.50	0.17	mg/L			11/15/22 21:49	1
Sulfate (SW846 9056A)	**480**	**H**	50	10	mg/L			11/18/22 20:26	10
Alkalinity (SM 2320B)	**440**		10	3.1	mg/L			10/31/22 12:15	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**440**		10	3.1	mg/L			10/31/22 12:15	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:15	1
Total Suspended Solids (SM 2540D)	**1.6**	**J**	4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**1300**		20	9.4	mg/L			10/25/22 15:21	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-591310/1-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/26/22 23:06	10/27/22 22:22	1
Lithium	ND	^+	0.020	0.0091	mg/L		10/26/22 23:06	10/27/22 22:22	1

Lab Sample ID: LCS 280-591310/2-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.00		mg/L		100	86 - 110
Lithium	1.00	0.972	^+	mg/L		97	90 - 112

Lab Sample ID: LCSD 280-591310/3-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	2.00		mg/L		100	86 - 110	0	20
Lithium	1.00	0.976	^+	mg/L		98	90 - 112	0	20

Lab Sample ID: MB 280-591860/1-E
Matrix: Water
Analysis Batch: 592353

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591880

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		11/02/22 21:10	11/03/22 17:11	1
Lithium	ND		0.020	0.0091	mg/L		11/02/22 21:10	11/03/22 17:11	1

Lab Sample ID: LCS 280-591860/2-E
Matrix: Water
Analysis Batch: 592353

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591880

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.03		mg/L		101	86 - 110
Lithium	1.00	0.956		mg/L		96	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:09	1
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:09	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:09	1
Chromium	0.000554	J	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:09	1
Cobalt	ND		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:09	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:09	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:09	1

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 17:41	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 17:41	1
Calcium	ND		0.20	0.038	mg/L		10/26/22 09:30	10/27/22 17:41	1

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0399		mg/L		100	85 - 115
Arsenic	0.0400	0.0396		mg/L		99	85 - 117
Beryllium	0.0400	0.0386		mg/L		96	80 - 125
Chromium	0.0400	0.0398		mg/L		100	84 - 121
Cobalt	0.0400	0.0389		mg/L		97	85 - 120
Lead	0.0400	0.0404		mg/L		101	85 - 118
Molybdenum	0.0400	0.0403		mg/L		101	85 - 119
Selenium	0.0400	0.0397		mg/L		99	77 - 122
Thallium	0.0400	0.0401		mg/L		100	85 - 118

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.0400	0.0389		mg/L		97	85 - 118
Cadmium	0.0400	0.0392		mg/L		98	85 - 115
Calcium	0.800	0.853		mg/L		107	80 - 120

Lab Sample ID: 280-168149-1 MS
Matrix: Water
Analysis Batch: 591422

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0406		mg/L		101	80 - 111
Arsenic	0.0041	J	0.0400	0.0446		mg/L		101	92 - 112
Beryllium	ND		0.0400	0.0410		mg/L		102	87 - 118
Chromium	ND		0.0400	0.0400		mg/L		100	91 - 114
Cobalt	0.0014		0.0400	0.0399		mg/L		96	94 - 115
Lead	ND		0.0400	0.0406		mg/L		102	95 - 116
Molybdenum	0.013		0.0400	0.0526		mg/L		100	84 - 117
Selenium	ND		0.0400	0.0388		mg/L		97	90 - 115
Thallium	ND		0.0400	0.0404		mg/L		101	94 - 115

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-168149-1 MS
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	170		0.800	171	4	mg/L		528	80 - 120

Lab Sample ID: 280-168149-1 MS
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.13		0.0400	0.168		mg/L		102	92 - 117
Cadmium	ND		0.0400	0.0392		mg/L		98	91 - 114

Lab Sample ID: 280-168149-1 MSD
Matrix: Water
Analysis Batch: 591422

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0405		mg/L		101	80 - 111	0	20
Arsenic	0.0041	J	0.0400	0.0449		mg/L		102	92 - 112	1	20
Beryllium	ND		0.0400	0.0415		mg/L		104	87 - 118	1	20
Chromium	ND		0.0400	0.0401		mg/L		100	91 - 114	0	20
Cobalt	0.0014		0.0400	0.0405		mg/L		98	94 - 115	1	20
Lead	ND		0.0400	0.0405		mg/L		101	95 - 116	0	20
Molybdenum	0.013		0.0400	0.0538		mg/L		103	84 - 117	2	20
Selenium	ND		0.0400	0.0391		mg/L		98	90 - 115	1	20
Thallium	ND		0.0400	0.0405		mg/L		101	94 - 115	0	20

Lab Sample ID: 280-168149-1 MSD
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	170		0.800	168	4	mg/L		124	80 - 120	2	20

Lab Sample ID: 280-168149-1 MSD
Matrix: Water
Analysis Batch: 591578

Client Sample ID: MW-1P
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.13		0.0400	0.171		mg/L		110	92 - 117	2	20
Cadmium	ND		0.0400	0.0391		mg/L		98	91 - 114	0	20

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		50	21	ug/L		10/26/22 15:17	10/27/22 20:26	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 12:10	1
Potassium	ND		0.12	0.052	mg/L		10/26/22 15:17	11/02/22 12:10	1

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	800	792		ug/L		99	80 - 120

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	0.800	0.801		mg/L		100	80 - 120
Potassium	0.800	0.836		mg/L		105	80 - 120

Lab Sample ID: MB 280-591860/1-D
Matrix: Water
Analysis Batch: 592217

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/02/22 14:47	11/03/22 08:17	1
Arsenic	ND		0.0050	0.00033	mg/L		11/02/22 14:47	11/03/22 08:17	1
Barium	ND		0.0010	0.00029	mg/L		11/02/22 14:47	11/03/22 08:17	1
Beryllium	ND		0.0010	0.000080	mg/L		11/02/22 14:47	11/03/22 08:17	1
Cadmium	ND		0.0010	0.00027	mg/L		11/02/22 14:47	11/03/22 08:17	1
Chromium	ND		0.0020	0.00050	mg/L		11/02/22 14:47	11/03/22 08:17	1
Cobalt	ND		0.0010	0.000092	mg/L		11/02/22 14:47	11/03/22 08:17	1
Lead	ND		0.0010	0.00018	mg/L		11/02/22 14:47	11/03/22 08:17	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/02/22 14:47	11/03/22 08:17	1
Selenium	ND		0.0050	0.00037	mg/L		11/02/22 14:47	11/03/22 08:17	1
Calcium	ND		0.20	0.038	mg/L		11/02/22 14:47	11/03/22 08:17	1
Thallium	ND		0.0010	0.000089	mg/L		11/02/22 14:47	11/03/22 08:17	1

Lab Sample ID: LCS 280-591860/2-D
Matrix: Water
Analysis Batch: 592217

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0394		mg/L		99	85 - 115
Arsenic	0.0400	0.0389		mg/L		97	85 - 117
Barium	0.0400	0.0385		mg/L		96	85 - 118
Beryllium	0.0400	0.0404		mg/L		101	80 - 125
Cadmium	0.0400	0.0388		mg/L		97	85 - 115
Chromium	0.0400	0.0382		mg/L		95	84 - 121
Cobalt	0.0400	0.0379		mg/L		95	85 - 120
Lead	0.0400	0.0384		mg/L		96	85 - 118

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-591860/2-D
Matrix: Water
Analysis Batch: 592217

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Molybdenum	0.0400	0.0394		mg/L		99	85 - 119
Selenium	0.0400	0.0406		mg/L		102	77 - 122
Calcium	0.800	0.812		mg/L		101	80 - 120
Thallium	0.0400	0.0380		mg/L		95	85 - 118

Lab Sample ID: 280-168149-1 MS
Matrix: Water
Analysis Batch: 592217

Client Sample ID: MW-1P
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.00041	J	0.0400	0.0399		mg/L		99	80 - 111
Arsenic	0.0027	J	0.0400	0.0429		mg/L		100	92 - 112
Barium	0.12	F1	0.0400	0.164		mg/L		99	92 - 117
Beryllium	ND		0.0400	0.0389		mg/L		97	87 - 118
Cadmium	ND		0.0400	0.0400		mg/L		100	91 - 114
Chromium	ND	F1	0.0400	0.0385		mg/L		96	91 - 114
Cobalt	0.0012	F1	0.0400	0.0388		mg/L		94	94 - 115
Lead	ND	F1	0.0400	0.0398		mg/L		99	95 - 116
Molybdenum	0.012		0.0400	0.0516		mg/L		100	84 - 117
Selenium	ND		0.0400	0.0399		mg/L		100	90 - 115
Thallium	ND		0.0400	0.0401		mg/L		100	94 - 115

Lab Sample ID: 280-168149-1 MS
Matrix: Water
Analysis Batch: 592234

Client Sample ID: MW-1P
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	150		0.800	160	4	mg/L		824	80 - 120

Lab Sample ID: 280-168149-1 MSD
Matrix: Water
Analysis Batch: 592217

Client Sample ID: MW-1P
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.00041	J	0.0400	0.0385		mg/L		95	80 - 111	3	20
Arsenic	0.0027	J	0.0400	0.0403		mg/L		94	92 - 112	6	20
Barium	0.12	F1	0.0400	0.158	F1	mg/L		84	92 - 117	4	20
Beryllium	ND		0.0400	0.0388		mg/L		97	87 - 118	0	20
Cadmium	ND		0.0400	0.0376		mg/L		94	91 - 114	6	20
Chromium	ND	F1	0.0400	0.0360	F1	mg/L		90	91 - 114	7	20
Cobalt	0.0012	F1	0.0400	0.0372	F1	mg/L		90	94 - 115	4	20
Lead	ND	F1	0.0400	0.0373	F1	mg/L		93	95 - 116	7	20
Molybdenum	0.012		0.0400	0.0504		mg/L		97	84 - 117	2	20
Selenium	ND		0.0400	0.0392		mg/L		98	90 - 115	2	20
Thallium	ND		0.0400	0.0376		mg/L		94	94 - 115	6	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-168149-1 MSD
Matrix: Water
Analysis Batch: 592234

Client Sample ID: MW-1P
Prep Type: Dissolved
Prep Batch: 591879

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	150		0.800	156	4	mg/L		306	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-591297/1-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 591297

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:26	1

Lab Sample ID: LCS 280-591297/2-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 591297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00506		mg/L		101	84 - 120

Lab Sample ID: MB 280-591243/1-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 592067

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:23	1

Lab Sample ID: LCS 280-591243/2-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 592067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.91		ug/L		98	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-591768/4
Matrix: Water
Analysis Batch: 591768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593497/44
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/16/22 02:46	1
Fluoride	ND	^1+ ^+	0.50	0.17	mg/L			11/16/22 02:46	1
Sulfate	ND		5.0	1.0	mg/L			11/16/22 02:46	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593497/6
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/15/22 16:44	1
Fluoride	ND	^1+ ^+	0.50	0.17	mg/L			11/15/22 16:44	1
Sulfate	ND		5.0	1.0	mg/L			11/15/22 16:44	1

Lab Sample ID: LCS 280-593497/4
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	46.8		mg/L		94	90 - 110
Sulfate	50.0	45.7		mg/L		91	90 - 110

Lab Sample ID: LCS 280-593497/40
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	46.5		mg/L		93	90 - 110
Sulfate	50.0	45.2		mg/L		90	90 - 110

Lab Sample ID: LCSD 280-593497/43
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	46.5		mg/L		93	90 - 110	0	10
Sulfate	50.0	45.4		mg/L		91	90 - 110	1	10

Lab Sample ID: LCSD 280-593497/5
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	46.7		mg/L		93	90 - 110	0	10
Sulfate	50.0	45.7		mg/L		91	90 - 110	0	10

Lab Sample ID: MRL 280-593497/3
Matrix: Water
Analysis Batch: 593497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.04	J	mg/L		81	50 - 150
Sulfate	2.50	2.16	J	mg/L		86	50 - 150

Lab Sample ID: MB 280-593499/6
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/15/22 12:30	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-593499/6
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			11/15/22 12:30	1
Sulfate	ND		5.0	1.0	mg/L			11/15/22 12:30	1

Lab Sample ID: LCS 280-593499/4
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.1		mg/L		96	90 - 110
Fluoride	2.50	2.71		mg/L		108	90 - 110
Sulfate	50.0	50.3		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-593499/5
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.0		mg/L		96	90 - 110	0	10
Fluoride	2.50	2.70		mg/L		108	90 - 110	0	10
Sulfate	50.0	50.3		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-593499/3
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.81	J	mg/L		112	50 - 150
Fluoride	0.250	0.348	J	mg/L		139	50 - 150
Sulfate	2.50	2.88	J	mg/L		115	50 - 150

Lab Sample ID: MB 280-594073/44
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			11/19/22 03:02	1

Lab Sample ID: MB 280-594073/6
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/18/22 15:03	1
Sulfate	ND		5.0	1.0	mg/L			11/18/22 15:03	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-594073/4
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.0		mg/L		98	90 - 110
Sulfate	50.0	48.6		mg/L		97	90 - 110

Lab Sample ID: LCS 280-594073/40
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	48.2		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-594073/43
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	51.9		mg/L		104	90 - 110	7	10

Lab Sample ID: LCSD 280-594073/5
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.0		mg/L		98	90 - 110	0	10
Sulfate	50.0	49.3		mg/L		99	90 - 110	2	10

Lab Sample ID: MRL 280-594073/3
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.66	J	mg/L		106	50 - 150
Sulfate	2.50	2.09	J	mg/L		84	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-591609/32
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 20:05	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1

Lab Sample ID: MB 280-591609/58
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 23:00	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-591609/58
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 23:00	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 23:00	1

Lab Sample ID: MB 280-591609/6
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 16:31	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1

Lab Sample ID: LCS 280-591609/57
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	201		mg/L		101	89 - 109		

Lab Sample ID: LCSD 280-591609/5
Matrix: Water
Analysis Batch: 591609

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity			200	193		mg/L		96	89 - 109	7	10

Lab Sample ID: MB 280-591831/6
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/31/22 10:19	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/31/22 10:19	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/31/22 10:19	1

Lab Sample ID: LCS 280-591831/4
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	204		mg/L		102	89 - 109		

Lab Sample ID: LCSD 280-591831/5
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity			200	200		mg/L		100	89 - 109	2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-591221/2
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/25/22 15:29	1

Lab Sample ID: LCS 280-591221/1
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	502	459		mg/L		91	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-591218/2
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/25/22 15:21	1

Lab Sample ID: LCS 280-591218/1
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	515		mg/L		103	88 - 114

Metals

Prep Batch: 591082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	3005A	
280-168149-2	MW-9	Total Recoverable	Water	3005A	
280-168149-3	MW-11	Total Recoverable	Water	3005A	
280-168149-4	MW-12	Total Recoverable	Water	3005A	
280-168149-5	MW-12-EB	Total Recoverable	Water	3005A	
280-168149-6	MW-9-DUP	Total Recoverable	Water	3005A	
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-168149-1 MS	MW-1P	Total Recoverable	Water	3005A	
280-168149-1 MSD	MW-1P	Total Recoverable	Water	3005A	

Prep Batch: 591164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	3005A	
280-168149-2	MW-9	Total Recoverable	Water	3005A	
280-168149-3	MW-11	Total Recoverable	Water	3005A	
280-168149-4	MW-12	Total Recoverable	Water	3005A	
280-168149-5	MW-12-EB	Total Recoverable	Water	3005A	
280-168149-6	MW-9-DUP	Total Recoverable	Water	3005A	
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 591243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-591243/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	

Prep Batch: 591297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	7470A	
280-168149-2	MW-9	Total/NA	Water	7470A	
280-168149-3	MW-11	Total/NA	Water	7470A	
280-168149-4	MW-12	Total/NA	Water	7470A	
280-168149-5	MW-12-EB	Total/NA	Water	7470A	
280-168149-6	MW-9-DUP	Total/NA	Water	7470A	
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 591310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	3005A	
280-168149-2	MW-9	Total Recoverable	Water	3005A	
280-168149-3	MW-11	Total Recoverable	Water	3005A	
280-168149-4	MW-12	Total Recoverable	Water	3005A	
280-168149-5	MW-12-EB	Total Recoverable	Water	3005A	
280-168149-6	MW-9-DUP	Total Recoverable	Water	3005A	
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

QC Association Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 591422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-2	MW-9	Total Recoverable	Water	6020B	591082
280-168149-3	MW-11	Total Recoverable	Water	6020B	591082
280-168149-4	MW-12	Total Recoverable	Water	6020B	591082
280-168149-5	MW-12-EB	Total Recoverable	Water	6020B	591082
280-168149-6	MW-9-DUP	Total Recoverable	Water	6020B	591082
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082
280-168149-1 MS	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1 MSD	MW-1P	Total Recoverable	Water	6020B	591082

Analysis Batch: 591488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	7470A	591297
280-168149-2	MW-9	Total/NA	Water	7470A	591297
280-168149-3	MW-11	Total/NA	Water	7470A	591297
280-168149-4	MW-12	Total/NA	Water	7470A	591297
280-168149-5	MW-12-EB	Total/NA	Water	7470A	591297
280-168149-6	MW-9-DUP	Total/NA	Water	7470A	591297
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	591297
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	591297

Analysis Batch: 591578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1	MW-1P	Total Recoverable	Water	6020B	591164
280-168149-2	MW-9	Total Recoverable	Water	6020B	591082
280-168149-2	MW-9	Total Recoverable	Water	6020B	591082
280-168149-2	MW-9	Total Recoverable	Water	6020B	591164
280-168149-3	MW-11	Total Recoverable	Water	6020B	591082
280-168149-3	MW-11	Total Recoverable	Water	6020B	591082
280-168149-3	MW-11	Total Recoverable	Water	6020B	591164
280-168149-4	MW-12	Total Recoverable	Water	6020B	591082
280-168149-4	MW-12	Total Recoverable	Water	6020B	591082
280-168149-4	MW-12	Total Recoverable	Water	6020B	591164
280-168149-5	MW-12-EB	Total Recoverable	Water	6020B	591082
280-168149-5	MW-12-EB	Total Recoverable	Water	6020B	591164
280-168149-6	MW-9-DUP	Total Recoverable	Water	6020B	591082
280-168149-6	MW-9-DUP	Total Recoverable	Water	6020B	591082
280-168149-6	MW-9-DUP	Total Recoverable	Water	6020B	591164
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164
280-168149-1 MS	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1 MS	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1 MSD	MW-1P	Total Recoverable	Water	6020B	591082
280-168149-1 MSD	MW-1P	Total Recoverable	Water	6020B	591082

Metals

Analysis Batch: 591608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	6010C	591310
280-168149-2	MW-9	Total Recoverable	Water	6010C	591310
280-168149-3	MW-11	Total Recoverable	Water	6010C	591310
280-168149-4	MW-12	Total Recoverable	Water	6010C	591310
280-168149-5	MW-12-EB	Total Recoverable	Water	6010C	591310
280-168149-6	MW-9-DUP	Total Recoverable	Water	6010C	591310
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	6010C	591310
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	6010C	591310
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	591310

Analysis Batch: 591727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	6010C	591310
280-168149-2	MW-9	Total Recoverable	Water	6010C	591310
280-168149-3	MW-11	Total Recoverable	Water	6010C	591310
280-168149-4	MW-12	Total Recoverable	Water	6010C	591310
280-168149-5	MW-12-EB	Total Recoverable	Water	6010C	591310
280-168149-6	MW-9-DUP	Total Recoverable	Water	6010C	591310

Filtration Batch: 591860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	FILTRATION	
280-168149-2	MW-9	Dissolved	Water	FILTRATION	
280-168149-3	MW-11	Dissolved	Water	FILTRATION	
280-168149-4	MW-12	Dissolved	Water	FILTRATION	
280-168149-5	MW-12-EB	Dissolved	Water	FILTRATION	
280-168149-6	MW-9-DUP	Dissolved	Water	FILTRATION	
MB 280-591860/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-591860/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-591860/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-591860/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
280-168149-1 MS	MW-1P	Dissolved	Water	FILTRATION	
280-168149-1 MSD	MW-1P	Dissolved	Water	FILTRATION	

Prep Batch: 591879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	3005A	591860
280-168149-2	MW-9	Dissolved	Water	3005A	591860
280-168149-3	MW-11	Dissolved	Water	3005A	591860
280-168149-4	MW-12	Dissolved	Water	3005A	591860
280-168149-5	MW-12-EB	Dissolved	Water	3005A	591860
280-168149-6	MW-9-DUP	Dissolved	Water	3005A	591860
MB 280-591860/1-D	Method Blank	Dissolved	Water	3005A	591860
LCS 280-591860/2-D	Lab Control Sample	Dissolved	Water	3005A	591860
280-168149-1 MS	MW-1P	Dissolved	Water	3005A	591860
280-168149-1 MSD	MW-1P	Dissolved	Water	3005A	591860

Prep Batch: 591880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	3005A	591860
280-168149-2	MW-9	Dissolved	Water	3005A	591860

Metals (Continued)

Prep Batch: 591880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-3	MW-11	Dissolved	Water	3005A	591860
280-168149-4	MW-12	Dissolved	Water	3005A	591860
280-168149-5	MW-12-EB	Dissolved	Water	3005A	591860
280-168149-6	MW-9-DUP	Dissolved	Water	3005A	591860
MB 280-591860/1-E	Method Blank	Dissolved	Water	3005A	591860
LCS 280-591860/2-E	Lab Control Sample	Dissolved	Water	3005A	591860

Prep Batch: 592067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	7470A	591860
280-168149-2	MW-9	Dissolved	Water	7470A	591860
280-168149-3	MW-11	Dissolved	Water	7470A	591860
280-168149-4	MW-12	Dissolved	Water	7470A	591860
280-168149-5	MW-12-EB	Dissolved	Water	7470A	591860
280-168149-6	MW-9-DUP	Dissolved	Water	7470A	591860
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	591243
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	591243

Analysis Batch: 592086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total Recoverable	Water	6020B	591164
280-168149-2	MW-9	Total Recoverable	Water	6020B	591164
280-168149-3	MW-11	Total Recoverable	Water	6020B	591164
280-168149-4	MW-12	Total Recoverable	Water	6020B	591164
280-168149-5	MW-12-EB	Total Recoverable	Water	6020B	591164
280-168149-6	MW-9-DUP	Total Recoverable	Water	6020B	591164

Analysis Batch: 592132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164

Analysis Batch: 592217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	6020B	591879
280-168149-2	MW-9	Dissolved	Water	6020B	591879
280-168149-3	MW-11	Dissolved	Water	6020B	591879
280-168149-4	MW-12	Dissolved	Water	6020B	591879
280-168149-5	MW-12-EB	Dissolved	Water	6020B	591879
280-168149-6	MW-9-DUP	Dissolved	Water	6020B	591879
MB 280-591860/1-D	Method Blank	Dissolved	Water	6020B	591879
LCS 280-591860/2-D	Lab Control Sample	Dissolved	Water	6020B	591879
280-168149-1 MS	MW-1P	Dissolved	Water	6020B	591879
280-168149-1 MSD	MW-1P	Dissolved	Water	6020B	591879

Analysis Batch: 592234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	6020B	591879
280-168149-2	MW-9	Dissolved	Water	6020B	591879
280-168149-3	MW-11	Dissolved	Water	6020B	591879
280-168149-4	MW-12	Dissolved	Water	6020B	591879

Metals (Continued)

Analysis Batch: 592234 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-6	MW-9-DUP	Dissolved	Water	6020B	591879
280-168149-1 MS	MW-1P	Dissolved	Water	6020B	591879
280-168149-1 MSD	MW-1P	Dissolved	Water	6020B	591879

Analysis Batch: 592247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	7470A	592067
280-168149-2	MW-9	Dissolved	Water	7470A	592067
280-168149-3	MW-11	Dissolved	Water	7470A	592067
280-168149-4	MW-12	Dissolved	Water	7470A	592067
280-168149-5	MW-12-EB	Dissolved	Water	7470A	592067
280-168149-6	MW-9-DUP	Dissolved	Water	7470A	592067
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	592067
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	592067

Analysis Batch: 592353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Dissolved	Water	6010C	591880
280-168149-2	MW-9	Dissolved	Water	6010C	591880
280-168149-3	MW-11	Dissolved	Water	6010C	591880
280-168149-4	MW-12	Dissolved	Water	6010C	591880
280-168149-5	MW-12-EB	Dissolved	Water	6010C	591880
280-168149-6	MW-9-DUP	Dissolved	Water	6010C	591880
MB 280-591860/1-E	Method Blank	Dissolved	Water	6010C	591880
LCS 280-591860/2-E	Lab Control Sample	Dissolved	Water	6010C	591880

General Chemistry

Analysis Batch: 591218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	SM2540 C	
280-168149-2	MW-9	Total/NA	Water	SM2540 C	
280-168149-3	MW-11	Total/NA	Water	SM2540 C	
280-168149-4	MW-12	Total/NA	Water	SM2540 C	
280-168149-5	MW-12-EB	Total/NA	Water	SM2540 C	
280-168149-6	MW-9-DUP	Total/NA	Water	SM2540 C	
MB 280-591218/2	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-591218/1	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 591221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	SM 2540D	
280-168149-2	MW-9	Total/NA	Water	SM 2540D	
280-168149-3	MW-11	Total/NA	Water	SM 2540D	
280-168149-4	MW-12	Total/NA	Water	SM 2540D	
280-168149-5	MW-12-EB	Total/NA	Water	SM 2540D	
280-168149-6	MW-9-DUP	Total/NA	Water	SM 2540D	
MB 280-591221/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591221/1	Lab Control Sample	Total/NA	Water	SM 2540D	

General Chemistry

Analysis Batch: 591609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	SM 2320B	
280-168149-2	MW-9	Total/NA	Water	SM 2320B	
280-168149-3	MW-11	Total/NA	Water	SM 2320B	
MB 280-591609/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-591609/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-591609/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-591609/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-591609/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 591768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	9040B	
280-168149-2	MW-9	Total/NA	Water	9040B	
280-168149-3	MW-11	Total/NA	Water	9040B	
280-168149-4	MW-12	Total/NA	Water	9040B	
280-168149-5	MW-12-EB	Total/NA	Water	9040B	
280-168149-6	MW-9-DUP	Total/NA	Water	9040B	
LCS 280-591768/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 591831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-4	MW-12	Total/NA	Water	SM 2320B	
280-168149-5	MW-12-EB	Total/NA	Water	SM 2320B	
280-168149-6	MW-9-DUP	Total/NA	Water	SM 2320B	
MB 280-591831/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-591831/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-591831/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 593497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	9056A	
280-168149-2	MW-9	Total/NA	Water	9056A	
280-168149-3	MW-11	Total/NA	Water	9056A	
280-168149-4	MW-12	Total/NA	Water	9056A	
280-168149-6	MW-9-DUP	Total/NA	Water	9056A	
MB 280-593497/44	Method Blank	Total/NA	Water	9056A	
MB 280-593497/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593497/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-593497/40	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593497/43	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-593497/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593497/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 593499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	9056A	
280-168149-2	MW-9	Total/NA	Water	9056A	
280-168149-3	MW-11	Total/NA	Water	9056A	
280-168149-4	MW-12	Total/NA	Water	9056A	
280-168149-5	MW-12-EB	Total/NA	Water	9056A	
280-168149-6	MW-9-DUP	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 593499 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-593499/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593499/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593499/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593499/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 594073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-6	MW-9-DUP	Total/NA	Water	9056A	
MB 280-594073/44	Method Blank	Total/NA	Water	9056A	
MB 280-594073/6	Method Blank	Total/NA	Water	9056A	
LCS 280-594073/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-594073/40	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-594073/43	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-594073/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-594073/3	Lab Control Sample	Total/NA	Water	9056A	

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 17:24	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:14	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:33	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:23	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		50			592234	11/03/22 10:20	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:25	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:37	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 17:52	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:25	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:43	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:40	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 17:56	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:37	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593497	11/16/22 00:39	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 20:51	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/28/22 01:08	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 17:28	KRP	EET DEN

Client Sample ID: MW-9
Lab Sample ID: 280-168149-2

Date Collected: 10/19/22 14:24
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:18	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:37	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:36	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		50			592234	11/03/22 10:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:50	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		10			591578	10/27/22 18:05	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:49	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:43	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 17:59	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:41	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593497	11/16/22 00:55	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 20:59	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/28/22 01:17	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-11
Lab Sample ID: 280-168149-3

Date Collected: 10/19/22 14:45
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 17:33	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:22	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:41	KRP	EET DEN

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:38	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		50			592234	11/03/22 10:30	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:52	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 18:07	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:40	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:51	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:45	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 18:01	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:45	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593497	11/16/22 01:11	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 21:08	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/28/22 01:28	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 17:54	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:26	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:45	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:40	LMT	EET DEN

Client Sample ID: MW-12
Lab Sample ID: 280-168149-4

Date Collected: 10/20/22 14:45
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		50			592234	11/03/22 10:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:54	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		10			591578	10/27/22 18:09	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:42	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:52	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:53	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 18:09	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:48	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593497	11/16/22 01:27	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 21:16	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591831	10/31/22 12:01	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-12-EB
Lab Sample ID: 280-168149-5

Date Collected: 10/20/22 11:50
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 17:59	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:30	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:49	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:42	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:13	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:56	LMT	EET DEN

Client Sample ID: MW-12-EB
Lab Sample ID: 280-168149-5

Date Collected: 10/20/22 11:50
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 17:45	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 21:32	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:56	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 18:11	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:54	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 21:24	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591831	10/31/22 12:07	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Client Sample ID: MW-9-DUP
Lab Sample ID: 280-168149-6

Date Collected: 10/19/22 15:01
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591880	11/02/22 21:10	LJS	EET DEN
Dissolved	Analysis	6010C		1			592353	11/03/22 18:20	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:34	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:53	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		1			592217	11/03/22 08:44	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591879	11/02/22 14:47	MCR	EET DEN
Dissolved	Analysis	6020B		50			592234	11/03/22 10:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:39	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 19:58	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		10			591578	10/27/22 18:11	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:44	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:56	LMT	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591860	10/31/22 17:12	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 18:58	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 18:14	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:58	KEG	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593497	11/16/22 03:18	MEC	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	594073	11/18/22 20:26	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 21:49	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591831	10/31/22 12:15	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168149-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

280-168149 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

Client Contact: Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Company: HDR Inc	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			Job #:
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-1P	10/19/2022	1137	G	WATER	N		X	X	X	5	
MW-9	10/19/2022	1424	G	WATER	N		X	X	X	5	
MW-11	10/19/2022	1445	G	WATER	N		X	X	X	5	
MW-12	10/20/2022	1445	G	WATER	N		X	X	X	5	
MW-12-EB	10/20/2022	1150	G	WATER	N		X	X	X	5	
MW-9-DUP	10/19/2022	1501	G	WATER	N		X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Matt Ison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHG
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time: 10/24/2022 1020	Company: ETA PEM		
Date/Time:	Company		
Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: n/a

Cooler Temperature(s) °C and Other Remarks: 2.4°C, 0.4°C, 0.3°C IR12CF00

Ver: 01/16/2019

11/21/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168149-1

Login Number: 168149
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

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Authorized for release by
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(303)736-0100

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 11/28/2022 3:06:00 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168149-2

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

myEOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

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Authorized for release by
Nicole Ryan, Project Manager I
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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168149-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168149-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 0.4º C and 0.4º C.

RADIUM-226 (GFPC)
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 11/02/2022 and analyzed on 11/28/2022.

The Barium carrier recovery is outside the upper control limit (110%) for the following sample: MW-12-EB (280-168149-5). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228
Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 11/02/2022 and 11/18/2022 and analyzed on 11/16/2022 and 11/23/2022.

The following sample(s) have Ba carrier recoveries above the 110% QC limit. During preparation the analyst visually noted matrix effects. The LCS/LCSD (laboratory control sample/laboratory control sample duplicate) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. The sample(s) have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been reported with this narrative.MW-12-EB (280-168149-5)

Radium-228 was detected in method blank MB 160-588253/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226/RADIUM-228 (GFPC)

Job ID: 280-168149-2 (Continued)

Laboratory: Eurofins Denver (Continued)

Samples MW-1P (280-168149-1), MW-9 (280-168149-2), MW-11 (280-168149-3), MW-12 (280-168149-4), MW-12-EB (280-168149-5) and MW-9-DUP (280-168149-6) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/28/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168149-1	MW-1P	Water	10/19/22 11:37	10/24/22 10:20
280-168149-2	MW-9	Water	10/19/22 14:24	10/24/22 10:20
280-168149-3	MW-11	Water	10/19/22 14:45	10/24/22 10:20
280-168149-4	MW-12	Water	10/20/22 14:45	10/24/22 10:20
280-168149-5	MW-12-EB	Water	10/20/22 11:50	10/24/22 10:20
280-168149-6	MW-9-DUP	Water	10/19/22 15:01	10/24/22 10:20

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.106		0.0628	0.0636	1.00	0.0766	pCi/L	11/02/22 13:27	11/28/22 12:53	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110	11/02/22 13:27	11/28/22 12:53	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0951		0.0660	0.0665	1.00	0.0910	pCi/L	11/02/22 13:27	11/28/22 12:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.8		40 - 110	11/02/22 13:27	11/28/22 12:54	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.118		0.0707	0.0715	1.00	0.0881	pCi/L	11/02/22 13:27	11/28/22 12:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	11/02/22 13:27	11/28/22 12:54	1

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.184		0.0791	0.0808	1.00	0.0824	pCi/L	11/02/22 13:27	11/28/22 12:55	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	11/02/22 13:27	11/28/22 12:55	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00413	U	0.0356	0.0356	1.00	0.0817	pCi/L	11/02/22 13:27	11/28/22 12:55	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	114	X	40 - 110	11/02/22 13:27	11/28/22 12:55	1

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.140		0.0731	0.0742	1.00	0.0849	pCi/L	11/02/22 13:27	11/28/22 12:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*11/02/22 13:27*	*11/28/22 12:55*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.13		0.445	0.457	1.00	0.564	pCi/L	11/18/22 11:03	11/23/22 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:07*	*1*
Y Carrier	*79.3*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:07*	*1*

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.741		0.368	0.374	1.00	0.509	pCi/L	11/02/22 15:10	11/16/22 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.8*		*40 - 110*	*11/02/22 15:10*	*11/16/22 13:46*	*1*
Y Carrier	*83.0*		*40 - 110*	*11/02/22 15:10*	*11/16/22 13:46*	*1*

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.991		0.402	0.412	1.00	0.498	pCi/L	11/18/22 11:03	11/23/22 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.5*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:07*	*1*
Y Carrier	*85.6*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:07*	*1*

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.568		0.323	0.327	1.00	0.457	pCi/L	11/02/22 15:10	11/16/22 13:46	1

Method: SW846 9320 - Radium-228 (GFPC)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110	11/02/22 15:10	11/16/22 13:46	1
Y Carrier	83.7		40 - 110	11/02/22 15:10	11/16/22 13:46	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.492	U	0.346	0.349	1.00	0.527	pCi/L	11/02/22 15:10	11/16/22 13:46	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	114	X	40 - 110	11/02/22 15:10	11/16/22 13:46	1
Y Carrier	85.6		40 - 110	11/02/22 15:10	11/16/22 13:46	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.862**		0.381	0.389	1.00	0.504	pCi/L	11/02/22 15:10	11/16/22 13:46	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110	11/02/22 15:10	11/16/22 13:46	1
Y Carrier	85.6		40 - 110	11/02/22 15:10	11/16/22 13:46	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-1P
Date Collected: 10/19/22 11:37
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.24**		0.449	0.461	5.00	0.564	pCi/L		11/28/22 15:31	1

Client Sample ID: MW-9
Date Collected: 10/19/22 14:24
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.836**		0.374	0.380	5.00	0.509	pCi/L		11/28/22 15:31	1

Client Sample ID: MW-11
Date Collected: 10/19/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.11**		0.408	0.418	5.00	0.498	pCi/L		11/28/22 15:31	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-12
Date Collected: 10/20/22 14:45
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.752**		0.333	0.337	5.00	0.457	pCi/L		11/28/22 15:31	1

Client Sample ID: MW-12-EB
Date Collected: 10/20/22 11:50
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.488	U	0.348	0.351	5.00	0.527	pCi/L		11/28/22 15:31	1

Client Sample ID: MW-9-DUP
Date Collected: 10/19/22 15:01
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168149-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.00**		0.388	0.396	5.00	0.504	pCi/L		11/28/22 15:31	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-588230/1-A
Matrix: Water
Analysis Batch: 591359

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 588230

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01921	U	0.0671	0.0671	1.00	0.124	pCi/L	11/02/22 13:27	11/28/22 12:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.4*		*40 - 110*	*11/02/22 13:27*	*11/28/22 12:53*	*1*

Lab Sample ID: LCS 160-588230/2-A
Matrix: Water
Analysis Batch: 591359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 588230

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.875		1.03	1.00	0.115	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.2*		*40 - 110*

Lab Sample ID: LCSD 160-588230/3-A
Matrix: Water
Analysis Batch: 591359

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 588230

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	8.675		0.913	1.00	0.0843	pCi/L	77	75 - 125	0.62	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-588253/1-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 588253

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.165		0.394	0.409	1.00	0.458	pCi/L	11/02/22 15:10	11/16/22 13:44	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.4*		*40 - 110*	*11/02/22 15:10*	*11/16/22 13:44*	*1*
Y Carrier	*85.6*		*40 - 110*	*11/02/22 15:10*	*11/16/22 13:44*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-588253/2-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 588253

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.44	9.874		1.33	1.00	0.550	pCi/L	117	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.2*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: LCSD 160-588253/3-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 588253

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.44	10.49		1.37	1.00	0.489	pCi/L	124	75 - 125	0.23	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*80.4*		*40 - 110*

Lab Sample ID: MB 160-590557/1-A
Matrix: Water
Analysis Batch: 591177

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590557

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2848	U	0.285	0.287	1.00	0.459	pCi/L	11/18/22 11:03	11/23/22 13:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:06*	*1*
Y Carrier	*87.5*		*40 - 110*	*11/18/22 11:03*	*11/23/22 13:06*	*1*

Lab Sample ID: LCS 160-590557/2-A
Matrix: Water
Analysis Batch: 591177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590557

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.42	8.427		1.18	1.00	0.480	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.5*		*40 - 110*
Y Carrier	*84.5*		*40 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-590557/3-A
Matrix: Water
Analysis Batch: 591177

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 590557

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.42	8.251		1.14	1.00	0.445	pCi/L	98	75 - 125	0.08	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*83.4*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 588230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	PrecSep-21	
280-168149-2	MW-9	Total/NA	Water	PrecSep-21	
280-168149-3	MW-11	Total/NA	Water	PrecSep-21	
280-168149-4	MW-12	Total/NA	Water	PrecSep-21	
280-168149-5	MW-12-EB	Total/NA	Water	PrecSep-21	
280-168149-6	MW-9-DUP	Total/NA	Water	PrecSep-21	
MB 160-588230/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-588230/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-588230/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 588253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-2	MW-9	Total/NA	Water	PrecSep_0	
280-168149-4	MW-12	Total/NA	Water	PrecSep_0	
280-168149-5	MW-12-EB	Total/NA	Water	PrecSep_0	
280-168149-6	MW-9-DUP	Total/NA	Water	PrecSep_0	
MB 160-588253/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-588253/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-588253/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 590557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168149-1	MW-1P	Total/NA	Water	PrecSep_0	
280-168149-3	MW-11	Total/NA	Water	PrecSep_0	
MB 160-590557/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-590557/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-590557/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-1P
Lab Sample ID: 280-168149-1
Date Collected: 10/19/22 11:37
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1005.97 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:53	FLC	EET SL
Total/NA	Prep	PrecSep_0			1002.25 mL	1.0 g	590557	11/18/22 11:03	DJP	EET SL
Total/NA	Analysis	9320		1			591177	11/23/22 13:07	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Client Sample ID: MW-9
Lab Sample ID: 280-168149-2
Date Collected: 10/19/22 14:24
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1006.26 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:54	FLC	EET SL
Total/NA	Prep	PrecSep_0			1006.26 mL	1.0 g	588253	11/02/22 15:10	BMP	EET SL
Total/NA	Analysis	9320		1			590346	11/16/22 13:46	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Client Sample ID: MW-11
Lab Sample ID: 280-168149-3
Date Collected: 10/19/22 14:45
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.61 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:54	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.79 mL	1.0 g	590557	11/18/22 11:03	DJP	EET SL
Total/NA	Analysis	9320		1			591177	11/23/22 13:07	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Client Sample ID: MW-12
Lab Sample ID: 280-168149-4
Date Collected: 10/20/22 14:45
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			994.62 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:55	FLC	EET SL
Total/NA	Prep	PrecSep_0			994.62 mL	1.0 g	588253	11/02/22 15:10	BMP	EET SL
Total/NA	Analysis	9320		1			590346	11/16/22 13:46	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Lab Chronicle

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-12-EB
Lab Sample ID: 280-168149-5
Date Collected: 10/20/22 11:50
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			995.91 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:55	FLC	EET SL
Total/NA	Prep	PrecSep_0			995.91 mL	1.0 g	588253	11/02/22 15:10	BMP	EET SL
Total/NA	Analysis	9320		1			590346	11/16/22 13:46	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Client Sample ID: MW-9-DUP
Lab Sample ID: 280-168149-6
Date Collected: 10/19/22 15:01
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1008.73 mL	1.0 g	588230	11/02/22 13:27	BMP	EET SL
Total/NA	Analysis	9315		1			591359	11/28/22 12:55	FLC	EET SL
Total/NA	Prep	PrecSep_0			1008.73 mL	1.0 g	588253	11/02/22 15:10	BMP	EET SL
Total/NA	Analysis	9320		1			590346	11/16/22 13:46	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591370	11/28/22 15:31	CAH	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

280-168149 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

11/28/2022

Client Contact: Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):
Company: HDR Inc	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com	COC No: 280-103098-29694.3
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:		Page: Page 1 of 1
City: Englewood	TAT Requested (days):		Job #:
State, Zip: CO, 80112			
Phone: 734-263-7138(Tel)	PO #: DEN-018		
Email: Molly.Reeves@hdrinc.com	WO #:		
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379		
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA St. Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
MW-1P	10/19/2022	1137	G	WATER	N		X	X	X	5	
MW-9	10/19/2022	1424	G	WATER	N		X	X	X	5	
MW-11	10/19/2022	1445	G	WATER	N		X	X	X	5	
MW-12	10/20/2022	1445	G	WATER	N		X	X	X	5	
MW-12-EB	10/20/2022	1150	G	WATER	N		X	X	X	5	
MW-9-DUP	10/19/2022	1501	G	WATER	N		X	X	X	5	
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Matthison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHG
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time: 10/24/2022 1020	Company: STL DEN		
Date/Time:	Company		
Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: n/a

Cooler Temperature(s) °C and Other Remarks: 2.4°C, 0.4°C, 0.3°C IR12CF00

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-633539.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-168149-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1P (280-168149-1)	10/19/22	11:37 Mountain		Water			X	X	X	2	
MW-9 (280-168149-2)	10/19/22	14:24 Mountain		Water			X	X	X	2	
MW-11 (280-168149-3)	10/19/22	14:45 Mountain		Water			X	X	X	2	
MW-12 (280-168149-4)	10/20/22	14:45 Mountain		Water			X	X	X	2	
MW-12-EB (280-168149-5)	10/20/22	11:50 Mountain		Water			X	X	X	2	
MW-9-DUP (280-168149-6)	10/19/22	15:01 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FED EX	Date/Time: 10/20/22 15:25	Company: ETADEN	Received by: FED EX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson	Date/Time: OCT 26 2022 0900	Company: ETAST

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168149-2

Login Number: 168149
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168149-2

Login Number: 168149
List Number: 2
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 10/26/22 12:23 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-168149-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-168149-1	MW-1P	100
280-168149-2	MW-9	97.8
280-168149-3	MW-11	86.3
280-168149-4	MW-12	98.8
280-168149-5	MW-12-EB	114 X
280-168149-6	MW-9-DUP	92.2
LCS 160-588230/2-A	Lab Control Sample	90.2
LCSD 160-588230/3-A	Lab Control Sample Dup	101
MB 160-588230/1-A	Method Blank	93.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-168149-1	MW-1P	90.3	79.3
280-168149-2	MW-9	97.8	83.0
280-168149-3	MW-11	86.5	85.6
280-168149-4	MW-12	98.8	83.7
280-168149-5	MW-12-EB	114 X	85.6
280-168149-6	MW-9-DUP	92.2	85.6
LCS 160-588253/2-A	Lab Control Sample	90.2	85.2
LCS 160-590557/2-A	Lab Control Sample	93.5	84.5
LCSD 160-588253/3-A	Lab Control Sample Dup	101	80.4
LCSD 160-590557/3-A	Lab Control Sample Dup	101	83.4
MB 160-588253/1-A	Method Blank	93.4	85.6
MB 160-590557/1-A	Method Blank	100	87.5

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver Colorado 80202

Generated 11/21/2022 6:20:38 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168150-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

myEOL

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
^6+	Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
E	Result exceeded calibration range.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168150-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168150-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.6º C.

DISSOLVED METALS
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/27/2022 and analyzed on 10/27/2022 and 10/28/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/26/2022 and analyzed on 10/28/2022.

The low level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for Li. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/28/2022 and analyzed on 11/01/2022.

Calcium, Cobalt, Lead and Thallium failed the recovery criteria low for the MS and MSD of sample 280-168147-1 in analytical batch 280-592051.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/26/2022 and analyzed on 10/26/2022, 10/27/2022, 10/28/2022, 11/02/2022 and

Job ID: 280-168150-1 (Continued)

Laboratory: Eurofins Denver (Continued)

11/03/2022.

The instrument blank result for analytical batch 280-591763 was -127 ppb K which is more negative than the reporting limit (RL), and were not reanalyzed because the samples are >10x the blank. The data have been qualified and reported.

Chromium was detected in method blank MB 280-591082/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Magnesium, Potassium and Sodium failed the recovery criteria low for the MS and MSD of sample 280-168147-2 in analytical batch 280-592132.

Calcium failed the recovery criteria high for the MS and MSD of sample 280-168149-1 in analytical batch 280-591578.

Samples MW-26 (280-168150-1)[10X], MW-26 (280-168150-1)[50X] and MW-27 (280-168150-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/02/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/26/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/31/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/24/2022 and 10/25/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/24/2022 and 10/25/2022.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample MW-26DU (280-168150-1). Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 10/28/2022.

Job ID: 280-168150-1 (Continued)

Laboratory: Eurofins Denver (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 11/15/2022 and 11/18/2022.

Reanalysis of the following sample was performed outside of the analytical holding time due to samples needing further dilutions : MW-26 (280-168150-1).

Samples MW-26 (280-168150-1)[20X] and MW-26 (280-168150-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-26
Lab Sample ID: 280-168150-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.66		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.087		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	0.63		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.086		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	200		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	220		1.5	0.65	mg/L	10		6020B	Total Recoverable
Barium	0.017		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	10		0.12	0.052	mg/L	1		6020B	Total Recoverable
Chromium	0.00098	J B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00012	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Molybdenum	0.00053	J	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.0025	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	540		10	1.9	mg/L	50		6020B	Total Recoverable
Barium	0.014		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.00051	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Calcium	550		0.20	0.038	mg/L	1		6020B	Dissolved
Molybdenum	0.00045	J	0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0024	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170	H	60	20	mg/L	20		9056A	Total/NA
Sulfate	2100	H	250	52	mg/L	50		9056A	Total/NA
Alkalinity	270		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	270		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3300		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-27
Lab Sample ID: 280-168150-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.082	J	0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.031		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	0.071	J	0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.029		0.020	0.0091	mg/L	1		6010C	Dissolved
Magnesium	24		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	58		0.15	0.065	mg/L	1		6020B	Total Recoverable
Barium	0.089		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Potassium	2.1		0.12	0.052	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-27 (Continued)
Lab Sample ID: 280-168150-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0023	B	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.000095	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00018	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0034		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.0040	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	58		10	1.9	mg/L	50		6020B	Total Recoverable
Barium	0.088		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.0018	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Calcium	56		0.20	0.038	mg/L	1		6020B	Dissolved
Molybdenum	0.0036		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0042	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	31		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.91		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	43		5.0	1.0	mg/L	1		9056A	Total/NA
Alkalinity	230		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	230		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	6.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	410		10	4.7	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168150-1	MW-26	Water	10/17/22 12:25	10/24/22 10:20
280-168150-2	MW-27	Water	10/18/22 12:43	10/24/22 10:20

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.66**		0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:38	1
Lithium	**0.087**		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 14:57	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.082**	**J**	0.10	0.0015	mg/L		10/26/22 23:06	10/28/22 00:43	1
Lithium	**0.031**		0.020	0.0091	mg/L		10/26/22 23:06	10/28/22 15:18	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.63**		0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 22:10	1
Lithium	**0.086**		0.020	0.0091	mg/L		10/27/22 09:19	10/28/22 15:22	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.071**	**J**	0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 22:14	1
Lithium	**0.029**		0.020	0.0091	mg/L		10/27/22 09:19	10/28/22 15:26	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 20:00	1
Magnesium	**200**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 20:58	50
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 20:00	1
Sodium	**220**		1.5	0.65	mg/L		10/26/22 15:17	11/03/22 09:30	10
Barium	**0.017**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:46	1
Potassium	**10**		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 15:24	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 20:00	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:46	1
Chromium	**0.00098**	**J B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 20:00	1
Cobalt	**0.00012**	**J**	0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 20:00	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 20:00	1
Molybdenum	**0.00053**	**J**	0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 20:00	1
Selenium	**0.0025**	**J**	0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 20:00	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 20:00	1
Calcium	**540**		10	1.9	mg/L		10/26/22 09:30	10/27/22 18:12	50

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 20:02	1
Magnesium	**24**		2.5	1.1	mg/L		10/26/22 15:17	10/27/22 21:00	50
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 20:02	1
Sodium	**58**		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 14:06	1
Barium	**0.089**		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 18:48	1
Potassium	**2.1**		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 15:28	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 20:02	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 18:48	1
Chromium	**0.0023**	**B**	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 20:02	1
Cobalt	**0.000095**	**J**	0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 20:02	1
Lead	**0.00018**	**J**	0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 20:02	1
Molybdenum	**0.0034**		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 20:02	1
Selenium	**0.0040**	**J**	0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 20:02	1
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 20:02	1
Calcium	**58**		10	1.9	mg/L		10/26/22 09:30	10/27/22 18:14	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:47	1
Arsenic	ND		0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:47	1
Barium	**0.014**		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:47	1
Beryllium	ND		0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:47	1
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:47	1
Chromium	**0.00051**	**J**	0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:47	1
Cobalt	ND		0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:47	1
Lead	ND		0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:47	1
Calcium	**550**		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:47	1
Molybdenum	**0.00045**	**J**	0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:47	1
Selenium	**0.0024**	**J**	0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:47	1
Thallium	ND		0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:47	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:50	1
Arsenic	ND		0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:50	1
Barium	**0.088**		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:50	1
Beryllium	ND		0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:50	1
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:50	1
Chromium	**0.0018**	**J**	0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:50	1
Cobalt	ND		0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:50	1
Lead	ND		0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:50	1
Calcium	**56**		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:50	1
Molybdenum	**0.0036**		0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:50	1
Selenium	**0.0042**	**J**	0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:50	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:50	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 18:16	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:43	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 19:01	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 19:03	1

General Chemistry

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20
Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	**7.4**	**HF**	0.1	0.1	SU			10/28/22 11:27	1
Temperature (SW846 9040B)	**19.9**	**HF**	1.0	1.0	Degrees C			10/28/22 11:27	1
Chloride (SW846 9056A)	**170**	**H**	60	20	mg/L			11/15/22 22:33	20
Fluoride (SW846 9056A)	ND	*+ H ^1+ ^+	10	3.3	mg/L			11/15/22 22:33	20
Sulfate (SW846 9056A)	**2100**	**H**	250	52	mg/L			11/18/22 20:42	50
Alkalinity (SM 2320B)	**270**		10	3.1	mg/L			10/31/22 12:22	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**270**		10	3.1	mg/L			10/31/22 12:22	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 12:22	1
Total Suspended Solids (SM 2540D)	**2.4**	**J**	4.0	1.1	mg/L			10/24/22 19:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	**3300**		40	19	mg/L			10/24/22 19:20	1

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.9	HF	0.1	0.1	SU			10/28/22 11:31	1
Temperature (SW846 9040B)	20.7	HF	1.0	1.0	Degrees C			10/28/22 11:31	1
Chloride (SW846 9056A)	31		3.0	1.0	mg/L			11/15/22 23:20	1
Fluoride (SW846 9056A)	0.91		0.50	0.17	mg/L			11/15/22 20:18	1
Sulfate (SW846 9056A)	43		5.0	1.0	mg/L			11/15/22 23:20	1
Alkalinity (SM 2320B)	230		10	3.1	mg/L			10/31/22 13:06	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		10	3.1	mg/L			10/31/22 13:06	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/31/22 13:06	1
Total Suspended Solids (SM 2540D)	6.8		4.0	1.1	mg/L			10/25/22 15:29	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	410		10	4.7	mg/L			10/25/22 15:21	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-591310/1-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/26/22 23:06	10/27/22 22:22	1
Lithium	ND	^+	0.020	0.0091	mg/L		10/26/22 23:06	10/27/22 22:22	1

Lab Sample ID: LCS 280-591310/2-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.00		mg/L		100	86 - 110
Lithium	1.00	0.972	^+	mg/L		97	90 - 112

Lab Sample ID: LCSD 280-591310/3-A
Matrix: Water
Analysis Batch: 591608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 591310

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2.00	2.00		mg/L		100	86 - 110	0	20
Lithium	1.00	0.976	^+	mg/L		98	90 - 112	0	20

Lab Sample ID: MB 280-591243/1-B
Matrix: Water
Analysis Batch: 591586

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591341

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		10/27/22 09:19	10/27/22 21:13	1
Lithium	ND		0.020	0.0091	mg/L		10/27/22 09:19	10/27/22 21:13	1

Lab Sample ID: LCS 280-591243/2-B
Matrix: Water
Analysis Batch: 591586

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591341

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.99		mg/L		99	86 - 110
Lithium	1.00	0.975		mg/L		97	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/26/22 09:30	10/26/22 19:09	1
Arsenic	ND		0.0050	0.00033	mg/L		10/26/22 09:30	10/26/22 19:09	1
Beryllium	ND		0.0010	0.000080	mg/L		10/26/22 09:30	10/26/22 19:09	1
Chromium	0.000554	J	0.0020	0.00050	mg/L		10/26/22 09:30	10/26/22 19:09	1
Cobalt	ND		0.0010	0.000092	mg/L		10/26/22 09:30	10/26/22 19:09	1
Lead	ND		0.0010	0.00018	mg/L		10/26/22 09:30	10/26/22 19:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/26/22 09:30	10/26/22 19:09	1
Selenium	ND		0.0050	0.00037	mg/L		10/26/22 09:30	10/26/22 19:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.000089	mg/L		10/26/22 09:30	10/26/22 19:09	1

Lab Sample ID: MB 280-591082/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0010	0.00029	mg/L		10/26/22 09:30	10/27/22 17:41	1
Cadmium	ND		0.0010	0.00027	mg/L		10/26/22 09:30	10/27/22 17:41	1
Calcium	ND		0.20	0.038	mg/L		10/26/22 09:30	10/27/22 17:41	1

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591422

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0399		mg/L		100	85 - 115
Arsenic	0.0400	0.0396		mg/L		99	85 - 117
Barium	0.0400	0.0413	^3+ ^6+	mg/L		103	85 - 118
Beryllium	0.0400	0.0386		mg/L		96	80 - 125
Chromium	0.0400	0.0398		mg/L		100	84 - 121
Cobalt	0.0400	0.0389		mg/L		97	85 - 120
Lead	0.0400	0.0404		mg/L		101	85 - 118
Molybdenum	0.0400	0.0403		mg/L		101	85 - 119
Selenium	0.0400	0.0397		mg/L		99	77 - 122
Thallium	0.0400	0.0401		mg/L		100	85 - 118

Lab Sample ID: LCS 280-591082/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.0400	0.0389		mg/L		97	85 - 118
Cadmium	0.0400	0.0392		mg/L		98	85 - 115
Calcium	0.800	0.853		mg/L		107	80 - 120

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		50	21	ug/L		10/26/22 15:17	10/27/22 20:26	1

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 591763

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.12	0.052	mg/L		10/26/22 15:17	10/28/22 14:20	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-591164/1-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.15	0.065	mg/L		10/26/22 15:17	11/02/22 12:10	1

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 591578

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	800	792		ug/L		99	80 - 120

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 591763

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	0.800	0.785		mg/L		98	80 - 120

Lab Sample ID: LCS 280-591164/2-A
Matrix: Water
Analysis Batch: 592132

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	0.800	0.801		mg/L		100	80 - 120

Lab Sample ID: MB 280-591243/1-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 591532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/28/22 09:20	11/01/22 19:17	1
Arsenic	ND		0.0050	0.00033	mg/L		10/28/22 09:20	11/01/22 19:17	1
Barium	ND		0.0010	0.00029	mg/L		10/28/22 09:20	11/01/22 19:17	1
Beryllium	ND		0.0010	0.000080	mg/L		10/28/22 09:20	11/01/22 19:17	1
Cadmium	ND		0.0010	0.00027	mg/L		10/28/22 09:20	11/01/22 19:17	1
Chromium	ND		0.0020	0.00050	mg/L		10/28/22 09:20	11/01/22 19:17	1
Cobalt	ND		0.0010	0.000092	mg/L		10/28/22 09:20	11/01/22 19:17	1
Lead	ND		0.0010	0.00018	mg/L		10/28/22 09:20	11/01/22 19:17	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/28/22 09:20	11/01/22 19:17	1
Selenium	ND		0.0050	0.00037	mg/L		10/28/22 09:20	11/01/22 19:17	1
Calcium	ND		0.20	0.038	mg/L		10/28/22 09:20	11/01/22 19:17	1
Thallium	ND		0.0010	0.000089	mg/L		10/28/22 09:20	11/01/22 19:17	1

Lab Sample ID: LCS 280-591243/2-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591532

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0401		mg/L		100	85 - 115
Arsenic	0.0400	0.0397		mg/L		99	85 - 117
Barium	0.0400	0.0418		mg/L		104	85 - 118
Beryllium	0.0400	0.0385		mg/L		96	80 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-591243/2-D
Matrix: Water
Analysis Batch: 592051

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 591532

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.0400	0.0397		mg/L		99	85 - 115
Chromium	0.0400	0.0400		mg/L		100	84 - 121
Cobalt	0.0400	0.0394		mg/L		99	85 - 120
Lead	0.0400	0.0400		mg/L		100	85 - 118
Molybdenum	0.0400	0.0403		mg/L		101	85 - 119
Selenium	0.0400	0.0400		mg/L		100	77 - 122
Calcium	0.800	0.893		mg/L		112	80 - 120
Thallium	0.0400	0.0382		mg/L		96	85 - 118

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-591297/1-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 591297

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		10/26/22 12:13	10/26/22 17:26	1

Lab Sample ID: LCS 280-591297/2-A
Matrix: Water
Analysis Batch: 591488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 591297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00506		mg/L		101	84 - 120

Lab Sample ID: MB 280-591243/1-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 592067

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/02/22 13:17	11/02/22 18:23	1

Lab Sample ID: LCS 280-591243/2-E
Matrix: Water
Analysis Batch: 592247

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 592067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.91		ug/L		98	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-591768/4
Matrix: Water
Analysis Batch: 591768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593497/6
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/15/22 16:44	1
Fluoride	ND	^1+ ^+	0.50	0.17	mg/L			11/15/22 16:44	1
Sulfate	ND		5.0	1.0	mg/L			11/15/22 16:44	1

Lab Sample ID: LCS 280-593497/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	46.8		mg/L		94	90 - 110		
Sulfate			50.0	45.7		mg/L		91	90 - 110		

Lab Sample ID: LCSD 280-593497/5
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	46.7		mg/L		93	90 - 110	0	10
Sulfate			50.0	45.7		mg/L		91	90 - 110	0	10

Lab Sample ID: MRL 280-593497/3
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			2.50	2.04	J	mg/L		81	50 - 150		
Sulfate			2.50	2.16	J	mg/L		86	50 - 150		

Lab Sample ID: 280-168150-2 MS
Client Sample ID: MW-27
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	31		50.0	85.0		mg/L		109	80 - 120		
Sulfate	43		50.0	99.9		mg/L		114	80 - 120		

Lab Sample ID: 280-168150-2 MSD
Client Sample ID: MW-27
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	31		50.0	85.1		mg/L		109	80 - 120	0	20
Sulfate	43		50.0	99.8		mg/L		113	80 - 120	0	20

Lab Sample ID: 280-168150-2 DU
Client Sample ID: MW-27
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 593497

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	31			30.7		mg/L				0.1	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-168150-2 DU
Matrix: Water
Analysis Batch: 593497

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	43			42.9		mg/L				0.5	15

Lab Sample ID: MB 280-593499/6
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			11/15/22 12:30	1

Lab Sample ID: LCS 280-593499/4
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.50	2.71		mg/L		108	90 - 110		

Lab Sample ID: LCSD 280-593499/5
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			2.50	2.70		mg/L		108	90 - 110	0	10

Lab Sample ID: MRL 280-593499/3
Matrix: Water
Analysis Batch: 593499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			0.250	0.348	J	mg/L		139	50 - 150		

Lab Sample ID: 280-168150-2 MS
Matrix: Water
Analysis Batch: 593499

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.91		5.00	5.96	E	mg/L		101	80 - 120		

Lab Sample ID: 280-168150-2 MSD
Matrix: Water
Analysis Batch: 593499

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.91		5.00	6.00	E	mg/L		102	80 - 120	1	20

Lab Sample ID: 280-168150-2 DU
Matrix: Water
Analysis Batch: 593499

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fluoride	0.91			0.907		mg/L				0.7	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-594073/6
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			11/18/22 15:03	1

Lab Sample ID: LCS 280-594073/4
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	48.6		mg/L		97	90 - 110		

Lab Sample ID: LCSD 280-594073/5
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	49.3		mg/L		99	90 - 110	2	10

Lab Sample ID: MRL 280-594073/3
Matrix: Water
Analysis Batch: 594073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			2.50	2.09	J	mg/L		84	50 - 150		

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-591831/6
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/31/22 10:19	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/31/22 10:19	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/31/22 10:19	1

Lab Sample ID: LCS 280-591831/4
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			200	204		mg/L		102	89 - 109		

Lab Sample ID: LCSD 280-591831/5
Matrix: Water
Analysis Batch: 591831

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity			200	200		mg/L		100	89 - 109	2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-591090/2
Matrix: Water
Analysis Batch: 591090

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/24/22 19:29	1

Lab Sample ID: LCS 280-591090/1
Matrix: Water
Analysis Batch: 591090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	500	438		mg/L		88	79 - 114

Lab Sample ID: 280-168150-1 DU
Matrix: Water
Analysis Batch: 591090

Client Sample ID: MW-26
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	2.4	J	3.20	J F5	mg/L		29	10

Lab Sample ID: MB 280-591221/2
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/25/22 15:29	1

Lab Sample ID: LCS 280-591221/1
Matrix: Water
Analysis Batch: 591221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	502	459		mg/L		91	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-591088/1
Matrix: Water
Analysis Batch: 591088

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/24/22 19:20	1

Lab Sample ID: LCS 280-591088/2
Matrix: Water
Analysis Batch: 591088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	444		mg/L		89	88 - 114

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: 280-168150-1 DU
Matrix: Water
Analysis Batch: 591088

Client Sample ID: MW-26
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	3300			3390		mg/L				2	10

Lab Sample ID: MB 280-591218/2
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/25/22 15:21	1

Lab Sample ID: LCS 280-591218/1
Matrix: Water
Analysis Batch: 591218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			501	515		mg/L		103	88 - 114		

Metals

Prep Batch: 591082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	3005A	
280-168150-2	MW-27	Total Recoverable	Water	3005A	
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 591164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	3005A	
280-168150-2	MW-27	Total Recoverable	Water	3005A	
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 591243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	FILTRATION	
280-168150-2	MW-27	Dissolved	Water	FILTRATION	
MB 280-591243/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-591243/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-591243/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	

Prep Batch: 591297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	7470A	
280-168150-2	MW-27	Total/NA	Water	7470A	
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 591310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	3005A	
280-168150-2	MW-27	Total Recoverable	Water	3005A	
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 591341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	3005A	591243
280-168150-2	MW-27	Dissolved	Water	3005A	591243
MB 280-591243/1-B	Method Blank	Dissolved	Water	3005A	591243
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	3005A	591243

Analysis Batch: 591422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	6020B	591082
280-168150-2	MW-27	Total Recoverable	Water	6020B	591082
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082

Metals

Analysis Batch: 591488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	7470A	591297
280-168150-2	MW-27	Total/NA	Water	7470A	591297
MB 280-591297/1-A	Method Blank	Total/NA	Water	7470A	591297
LCS 280-591297/2-A	Lab Control Sample	Total/NA	Water	7470A	591297

Prep Batch: 591532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	3005A	591243
280-168150-2	MW-27	Dissolved	Water	3005A	591243
MB 280-591243/1-D	Method Blank	Dissolved	Water	3005A	591243
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	3005A	591243

Analysis Batch: 591578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	6020B	591082
280-168150-1	MW-26	Total Recoverable	Water	6020B	591082
280-168150-1	MW-26	Total Recoverable	Water	6020B	591164
280-168150-2	MW-27	Total Recoverable	Water	6020B	591082
280-168150-2	MW-27	Total Recoverable	Water	6020B	591082
280-168150-2	MW-27	Total Recoverable	Water	6020B	591164
MB 280-591082/1-A	Method Blank	Total Recoverable	Water	6020B	591082
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591082/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591082
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164

Analysis Batch: 591586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	6010C	591341
280-168150-2	MW-27	Dissolved	Water	6010C	591341
MB 280-591243/1-B	Method Blank	Dissolved	Water	6010C	591341
LCS 280-591243/2-B	Lab Control Sample	Dissolved	Water	6010C	591341

Analysis Batch: 591608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	6010C	591310
280-168150-2	MW-27	Total Recoverable	Water	6010C	591310
MB 280-591310/1-A	Method Blank	Total Recoverable	Water	6010C	591310
LCS 280-591310/2-A	Lab Control Sample	Total Recoverable	Water	6010C	591310
LCSD 280-591310/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	591310

Analysis Batch: 591727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	6010C	591341
280-168150-1	MW-26	Total Recoverable	Water	6010C	591310
280-168150-2	MW-27	Dissolved	Water	6010C	591341
280-168150-2	MW-27	Total Recoverable	Water	6010C	591310

Analysis Batch: 591763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	6020B	591164
280-168150-2	MW-27	Total Recoverable	Water	6020B	591164

Metals (Continued)

Analysis Batch: 591763 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164

Analysis Batch: 592051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	6020B	591532
280-168150-2	MW-27	Dissolved	Water	6020B	591532
MB 280-591243/1-D	Method Blank	Dissolved	Water	6020B	591532
LCS 280-591243/2-D	Lab Control Sample	Dissolved	Water	6020B	591532

Prep Batch: 592067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	7470A	591243
280-168150-2	MW-27	Dissolved	Water	7470A	591243
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	591243
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	591243

Analysis Batch: 592132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-591164/1-A	Method Blank	Total Recoverable	Water	6020B	591164
LCS 280-591164/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591164

Analysis Batch: 592149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-2	MW-27	Total Recoverable	Water	6020B	591164

Analysis Batch: 592241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total Recoverable	Water	6020B	591164

Analysis Batch: 592247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Dissolved	Water	7470A	592067
280-168150-2	MW-27	Dissolved	Water	7470A	592067
MB 280-591243/1-E	Method Blank	Dissolved	Water	7470A	592067
LCS 280-591243/2-E	Lab Control Sample	Dissolved	Water	7470A	592067

General Chemistry

Analysis Batch: 591088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	SM2540 C	
MB 280-591088/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-591088/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-168150-1 DU	MW-26	Total/NA	Water	SM2540 C	

Analysis Batch: 591090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	SM 2540D	
MB 280-591090/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591090/1	Lab Control Sample	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 591090 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1 DU	MW-26	Total/NA	Water	SM 2540D	

Analysis Batch: 591218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-2	MW-27	Total/NA	Water	SM2540 C	
MB 280-591218/2	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-591218/1	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 591221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-2	MW-27	Total/NA	Water	SM 2540D	
MB 280-591221/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591221/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 591768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	9040B	
280-168150-2	MW-27	Total/NA	Water	9040B	
LCS 280-591768/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 591831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	SM 2320B	
280-168150-2	MW-27	Total/NA	Water	SM 2320B	
MB 280-591831/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-591831/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-591831/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 593497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	9056A	
280-168150-2	MW-27	Total/NA	Water	9056A	
MB 280-593497/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593497/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593497/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593497/3	Lab Control Sample	Total/NA	Water	9056A	
280-168150-2 MS	MW-27	Total/NA	Water	9056A	
280-168150-2 MSD	MW-27	Total/NA	Water	9056A	
280-168150-2 DU	MW-27	Total/NA	Water	9056A	

Analysis Batch: 593499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-2	MW-27	Total/NA	Water	9056A	
MB 280-593499/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593499/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593499/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593499/3	Lab Control Sample	Total/NA	Water	9056A	
280-168150-2 MS	MW-27	Total/NA	Water	9056A	
280-168150-2 MSD	MW-27	Total/NA	Water	9056A	
280-168150-2 DU	MW-27	Total/NA	Water	9056A	

QC Association Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Analysis Batch: 594073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	9056A	
MB 280-594073/6	Method Blank	Total/NA	Water	9056A	
LCS 280-594073/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-594073/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-594073/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:39	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591586	10/27/22 22:10	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:39	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591727	10/28/22 15:22	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:38	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 14:57	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:39	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591532	10/28/22 09:20	LJS	EET DEN
Dissolved	Analysis	6020B		1			592051	11/01/22 19:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			591763	10/28/22 15:24	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		10			592241	11/03/22 09:30	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 20:00	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 18:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:46	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 20:58	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:39	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 19:01	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 18:16	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:27	KEG	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	593497	11/15/22 22:33	MEC	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	594073	11/18/22 20:42	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591831	10/31/22 12:22	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591090	10/24/22 19:29	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	591088	10/24/22 19:20	ASP	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591586	10/27/22 22:14	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591341	10/27/22 09:19	LJS	EET DEN
Dissolved	Analysis	6010C		1			591727	10/28/22 15:26	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591608	10/28/22 00:43	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591310	10/26/22 23:06	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			591727	10/28/22 15:18	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	591532	10/28/22 09:20	LJS	EET DEN
Dissolved	Analysis	6020B		1			592051	11/01/22 19:50	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			591763	10/28/22 15:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592149	11/02/22 14:06	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591422	10/26/22 20:02	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 18:14	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591082	10/26/22 09:30	KMS	EET DEN
Total Recoverable	Analysis	6020B		1			591578	10/27/22 18:48	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591164	10/26/22 15:17	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			591578	10/27/22 21:00	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	591243	10/25/22 17:36	KMS	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	592067	11/02/22 13:17	KMS	EET DEN
Dissolved	Analysis	7470A		1			592247	11/02/22 19:03	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	591297	10/26/22 12:13	MAB	EET DEN
Total/NA	Analysis	7470A		1			591488	10/26/22 17:43	MAB	EET DEN
Total/NA	Analysis	9040B		1			591768	10/28/22 11:31	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593497	11/15/22 23:20	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593499	11/15/22 20:18	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591831	10/31/22 13:06	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591221	10/25/22 15:29	LRB	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	591218	10/25/22 15:21	LRB	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168150-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

280-168150 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
Company: HDR Inc	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			Job #:
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA SL Louis	Total Number of containers	Special Instructions/Note:
			Preservation Code:			D	N	D		
MW-26	10/17/2022	1225	G	WATER	N	X	X	X	5	
MW-27	10/18/2022	1243	G	WATER	N	X	X	X	5	
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						
				WATER						

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Mattison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHK
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time: 10/24/2022 1020	Company: FDA DSR		
Date/Time:	Company		
Date/Time:	Company		

Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6C IR12 CF0.0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168150-1

Login Number: 168150
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver Colorado 80202

Generated 11/23/2022 3:08:14 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168150-2

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

myEOL

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168150-2

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168150-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 10/24/2022 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.6º C.

RADIUM-226 (GFPC)
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 10/28/2022 and analyzed on 11/22/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 10/28/2022 and analyzed on 11/16/2022.

The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 130%: (LCS 160-587627/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.

Radium-228 exceeded the RPD limit for the duplicate of sample 180-146516-1. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226/RADIUM-228 (GFPC)
Samples MW-26 (280-168150-1) and MW-27 (280-168150-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/23/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168150-1	MW-26	Water	10/17/22 12:25	10/24/22 10:20
280-168150-2	MW-27	Water	10/18/22 12:43	10/24/22 10:20

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.211		0.106	0.108	1.00	0.128	pCi/L	10/28/22 08:53	11/22/22 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:03*	*1*

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.151		0.100	0.101	1.00	0.138	pCi/L	10/28/22 08:53	11/22/22 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:03*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.21		0.460	0.474	1.00	0.584	pCi/L	10/28/22 09:13	11/16/22 16:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*
Y Carrier	*87.5*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:37*	*1*

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.598	U	0.413	0.417	1.00	0.619	pCi/L	10/28/22 09:13	11/16/22 16:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:38*	*1*
Y Carrier	*85.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:38*	*1*

Client Sample Results

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-26
Date Collected: 10/17/22 12:25
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.42		0.472	0.486	5.00	0.584	pCi/L		11/23/22 12:37	1

Client Sample ID: MW-27
Date Collected: 10/18/22 12:43
Date Received: 10/24/22 10:20

Lab Sample ID: 280-168150-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.749		0.425	0.429	5.00	0.619	pCi/L		11/23/22 12:37	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-587625/1-A
Matrix: Water
Analysis Batch: 590931

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587625

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09436	U	0.106	0.106	1.00	0.173	pCi/L	10/28/22 08:53	11/22/22 20:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*10/28/22 08:53*	*11/22/22 20:04*	*1*

Lab Sample ID: LCS 160-587625/2-A
Matrix: Water
Analysis Batch: 590931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587625

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.18		1.10	1.00	0.157	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-587627/1-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1729	U	0.267	0.267	1.00	0.570	pCi/L	10/28/22 09:13	11/16/22 16:31	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:31*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/28/22 09:13*	*11/16/22 16:31*	*1*

Lab Sample ID: LCS 160-587627/2-A
Matrix: Water
Analysis Batch: 590346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587627

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.44	10.97		1.52	1.00	0.674	pCi/L	130	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 587625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	PrecSep-21	
280-168150-2	MW-27	Total/NA	Water	PrecSep-21	
MB 160-587625/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-587625/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 587627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168150-1	MW-26	Total/NA	Water	PrecSep_0	
280-168150-2	MW-27	Total/NA	Water	PrecSep_0	
MB 160-587627/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-587627/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-26
Lab Sample ID: 280-168150-1
Date Collected: 10/17/22 12:25
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.28 mL	1.0 g	587625	10/28/22 08:53	BMP	EET SL
Total/NA	Analysis	9315		1			590932	11/22/22 20:03	FLC	EET SL
Total/NA	Prep	PrecSep_0			1000.28 mL	1.0 g	587627	10/28/22 09:13	BMP	EET SL
Total/NA	Analysis	9320		1			590347	11/16/22 16:37	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591173	11/23/22 12:37	SCB	EET SL

Client Sample ID: MW-27
Lab Sample ID: 280-168150-2
Date Collected: 10/18/22 12:43
Matrix: Water
Date Received: 10/24/22 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.23 mL	1.0 g	587625	10/28/22 08:53	BMP	EET SL
Total/NA	Analysis	9315		1			590932	11/22/22 20:03	FLC	EET SL
Total/NA	Prep	PrecSep_0			1003.23 mL	1.0 g	587627	10/28/22 09:13	BMP	EET SL
Total/NA	Analysis	9320		1			590347	11/16/22 16:38	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591173	11/23/22 12:37	SCB	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

280-168150 Chain of Custody

Chain of Custody Record

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Molly Reeves	Sampler: MHB + FDR	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-103098-29694.3
	Phone: (720) 385-4021	E-Mail: nicole.ryan@et.eurofinsus.com		Page: Page 1 of 1
Company: HDR Inc				Job #:
Address: 9781 S. Meridian Blvd Suite 400	Due Date Requested:			
City: Englewood	TAT Requested (days):			
State, Zip: CO, 80112				
Phone: 734-263-7138(Tel)	PO #: DEN-018			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Groundwater App III + App IV + TSS and Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		6010C, 6020A, 7470A Total Metals, 6020 Additional Methods Mg, Na, K	2540C_Calcd TDS/ IC Chloride, Fluoride, Sulfate/ pH/ Alkalinity/ TSS	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC - ETA SL Louis													Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D														
MW-26	10/17/2022	1225	G	WATER	N		X	X	X													5	
MW-27	10/18/2022	1243	G	WATER	N		X	X	X													5	
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			
				WATER																			

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Mattison Barickman	Date/Time: 10/24/2022, 1020	Company: HDR	Received by: AHK
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Received by: AHK	Date/Time: 10/24/2022 1020	Company: FDA DSR	
Received by:	Date/Time:	Company	
Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.6C IR12 CF0.0

Ver: 01/16/2019

11/23/2022

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-633540.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-168150-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (1/3)	9320_Ra228/PrecSep_0 Radium-228 (2/3)	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-26 (280-168150-1)	10/17/22	12:25 Mountain		Water			X	X	X	2	
MW-27 (280-168150-2)	10/18/22	12:43 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/25/22 ETHDEN	Company 15:25	Received by: FED EX
Relinquished by: FED EX	Date/Time:	Company	Received by: Autumn R. Johnson
Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson

Date/Time:	Company
Date/Time: OCT 26 2022 0900	Company EDSTL
Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

11/23/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168150-2

Login Number: 168150
List Number: 1
Creator: Kazenga, Oliver M

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168150-2

Login Number: 168150
List Number: 2
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 10/26/22 12:23 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-168150-2
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-168150-1	MW-26	88.2
280-168150-2	MW-27	80.6
LCS 160-587625/2-A	Lab Control Sample	81.4
MB 160-587625/1-A	Method Blank	83.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-168150-1	MW-26	88.2	87.5
280-168150-2	MW-27	80.6	85.6
LCS 160-587627/2-A	Lab Control Sample	81.4	84.1
MB 160-587627/1-A	Method Blank	83.6	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 11/30/2022 4:39:06 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168473-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

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Authorized for release by
Nicole Ryan, Project Manager I
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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
^-	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168473-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168473-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The samples were received on 11/1/2022 3:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

DISSOLVED METALS
Samples MW-30 (280-168473-2), MW-29 (280-168473-7) and MW-31 (280-168473-9) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/09/2022 and analyzed on 11/12/2022.

Lithium failed the recovery criteria high for the MS and MSD of sample MW-30 (280-168473-2) in analytical batch 280-593277.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/04/2022 and analyzed on 11/09/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Samples MW-30 (280-168473-2), MW-29 (280-168473-7) and MW-31 (280-168473-9) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 11/09/2022 and analyzed on 11/10/2022 and 11/11/2022.

Calcium, Magnesium, Potassium and Sodium failed the recovery criteria low for the MS of sample MW-31MS (280-168473-9) in batch 280-593209.

For the MSD of sample MW-31MSD (280-168473-9) in batch 280-593209, Magnesium, Sodium and Selenium failed the recovery criteria low. Potassium failed the recovery criteria high. Also, Calcium, Magnesium, Potassium and Sodium exceeded the RPD limit.

Job ID: 280-168473-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Samples MW-30 (280-168473-2)[50X], MW-29 (280-168473-7)[50X] and MW-31 (280-168473-9)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 11/03/2022 and 11/04/2022 and analyzed on 11/04/2022, 11/07/2022 and 11/10/2022.

Calcium, Magnesium and Sodium were detected in method blank MB 280-592240/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The instrument blank for analytical batch 280-592549 contained 134 ppb Na and 28 ppb Mg which is greater than one-half the reporting limit (RL) of 150 ppb for Na and 50 ppb for Mg, and were not re-analyzed because the samples were >10x the blank. The data have been qualified and reported. The closing CCB result (-35 ppb) was more negative than 1/2 the RL (50 ppb) for Mg, but again the samples were >10x the result of the blank.

Lead, Thallium and Sodium failed the recovery criteria low for the MS of sample 280-168470-1 in batch 280-592825. Calcium, Magnesium and Potassium failed the recovery criteria high.

For the MSD of sample 280-168470-1 in batch 280-592825, Lead and Thallium failed the recovery criteria low. Potassium, Cadmium and Sodium failed the recovery criteria high. Also, Cadmium exceeded the RPD limit.

Several analytes failed the recovery criteria low for the MS of sample 280-168506-2 in batch 280-592549. Arsenic failed the recovery criteria high.

Several analytes failed the recovery criteria low for the MSD of sample 280-168506-2 in batch 280-592687. Calcium, Arsenic, Barium and Chromium failed the recovery criteria high.

Samples MW-32 (280-168473-1)[50X], MW-30 (280-168473-2)[50X], MW-32-FD (280-168473-3)[50X], MW-33A (280-168473-4)[50X], MW-35 (280-168473-5)[50X], MW-34 (280-168473-6)[50X], MW-29 (280-168473-7)[50X] and MW-31 (280-168473-9)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Samples MW-35 (280-168473-5) and MW-34 (280-168473-6) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 11/04/2022 and analyzed on 11/08/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 11/02/2022.

Bicarbonate Alkalinity as CaCO3 was detected in method blank MB 280-592197/6 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Total Alkalinity as CaCO3 was detected in method blank MB 280-592197/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Job ID: 280-168473-1 (Continued)

Laboratory: Eurofins Denver (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 11/02/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 11/02/2022.

High quantity of solids in liquid matrix requiring use of less than nominal volume for method analysis: MW-30 (280-168473-2).

Total Suspended Solids exceeded the RPD limit for the duplicate of sample MW-32DU (280-168473-1). Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 11/03/2022.

The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did; therefore the sample was not rerun: MW-31-EB (280-168473-8).

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample MW-31-EBDU (280-168473-8). Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-32 (280-168473-1), MW-30 (280-168473-2), MW-32-FD (280-168473-3), MW-33A (280-168473-4), MW-35 (280-168473-5), MW-34 (280-168473-6), MW-29 (280-168473-7), MW-31-EB (280-168473-8) and MW-31 (280-168473-9) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 11/17/2022 and 11/22/2022.

Fluoride failed the recovery criteria low for LCS 280-593666/46. Fluoride failed the recovery criteria low for LCSD 280-593666/47. Fluoride exceeded the RPD limit. Refer to the QC report for details.

Samples MW-32 (280-168473-1)[50X], MW-30 (280-168473-2)[100X], MW-30 (280-168473-2)[5X], MW-32-FD (280-168473-3)[5X], MW-32-FD (280-168473-3)[50X], MW-33A (280-168473-4)[50X], MW-35 (280-168473-5)[50X], MW-34 (280-168473-6)[10X], MW-29 (280-168473-7)[50X] and MW-31 (280-168473-9)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-32 — Lab Sample ID: 280-168473-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.063		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Selenium	0.081		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	11		6.0	2.6	mg/L	50		6020B	Total Recoverable
Calcium	520	B	10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	150	B	2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	400	B	7.5	3.2	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	54	J	150	51	mg/L	50		9056A	Total/NA
Sulfate	2600		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	390		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	390		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3500		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-30 — Lab Sample ID: 280-168473-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.52		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Lithium	0.47	F1	0.020	0.0091	mg/L	1		6010C	Dissolved
Arsenic	0.011		0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	0.0017	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	23		6.0	2.6	mg/L	50		6020B	Total Recoverable
Calcium	300	B	10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	340	B	2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	2400	B	7.5	3.2	mg/L	50		6020B	Total Recoverable
Arsenic	0.0010	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Calcium	250		10	1.9	mg/L	50		6020B	Dissolved
Potassium	18		6.0	2.6	mg/L	50		6020B	Dissolved
Magnesium	310		2.5	1.1	mg/L	50		6020B	Dissolved
Sodium	2400		7.5	3.2	mg/L	50		6020B	Dissolved
Selenium	0.0012	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	150		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	6000		500	100	mg/L	100		9056A	Total/NA
Total Alkalinity as CaCO3	1000		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	1000		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1700		19	5.3	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	8500		1000	470	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-32-FD
Lab Sample ID: 280-168473-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.064		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Selenium	0.082		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	10		0.12	0.052	mg/L	1		6020B	Total Recoverable
Calcium	540	B	10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	140	B	2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	360	B	7.5	3.2	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	48		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	2500		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	7.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3500		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-33A
Lab Sample ID: 280-168473-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.16		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Selenium	0.24		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	16		6.0	2.6	mg/L	50		6020B	Total Recoverable
Calcium	470	B	10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	320	B	2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	570	B	7.5	3.2	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	90	J	150	51	mg/L	50		9056A	Total/NA
Sulfate	3200		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	460		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	460		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	4600		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-35
Lab Sample ID: 280-168473-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.0		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.18		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Arsenic	0.00051	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Barium	0.018		0.0010	0.00029	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-35 (Continued) — Lab Sample ID: 280-168473-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0013	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00045	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00040	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0022		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	1.6		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	540	B	10	1.9	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	640		150	51	mg/L	50		9056A	Total/NA
Fluoride	0.65	*- *1	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3200		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	190		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	190		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5600		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-34 — Lab Sample ID: 280-168473-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.2		0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.043		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Antimony	0.0021		0.0020	0.00040	mg/L	1		6020B	Total Recoverable
Arsenic	0.00084	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Barium	0.041		0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Chromium	0.0012	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00092	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00063	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.010		0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.0013	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	40		10	1.9	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	1.5	J	3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.61	*- *1	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	320		50	10	mg/L	10		9056A	Total/NA
Total Alkalinity as CaCO3	290		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	290		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	18		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	740		10	4.7	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-29 — Lab Sample ID: 280-168473-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.35		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Lithium	0.38		0.020	0.0091	mg/L	1		6010C	Dissolved
Arsenic	0.00062	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	2.3		0.25	0.019	mg/L	50		6020B	Total Recoverable
Potassium	16		6.0	2.6	mg/L	50		6020B	Total Recoverable
Calcium	560		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	350		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	1200		7.5	3.2	mg/L	50		6020B	Total Recoverable
Arsenic	0.00038	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Calcium	550		10	1.9	mg/L	50		6020B	Dissolved
Potassium	18		6.0	2.6	mg/L	50		6020B	Dissolved
Magnesium	340		2.5	1.1	mg/L	50		6020B	Dissolved
Sodium	1100		7.5	3.2	mg/L	50		6020B	Dissolved
Selenium	2.4		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	110	J	150	51	mg/L	50		9056A	Total/NA
Sulfate	3700		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	830		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	830		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	46		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6600		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-31-EB — Lab Sample ID: 280-168473-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0012	J	0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	0.35		0.20	0.038	mg/L	1		6020B	Total Recoverable
Sodium	0.18		0.15	0.065	mg/L	1		6020B	Total Recoverable
pH adj. to 25 deg C	6.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Total Dissolved Solids (TDS)	11		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-31 — Lab Sample ID: 280-168473-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.16		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Lithium	0.18		0.020	0.0091	mg/L	1		6010C	Dissolved
Arsenic	0.00052	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	0.34		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	12		6.0	2.6	mg/L	50		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-31 (Continued)
Lab Sample ID: 280-168473-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	360		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	320		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	1200		7.5	3.2	mg/L	50		6020B	Total Recoverable
Arsenic	0.00041	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Calcium	360	F2	10	1.9	mg/L	50		6020B	Dissolved
Potassium	14	F2	6.0	2.6	mg/L	50		6020B	Dissolved
Magnesium	310	F2	2.5	1.1	mg/L	50		6020B	Dissolved
Sodium	1200	F2	7.5	3.2	mg/L	50		6020B	Dissolved
Selenium	0.33		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.3	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	220	J	300	100	mg/L	100		9056A	Total/NA
Sulfate	3800		500	100	mg/L	100		9056A	Total/NA
Total Alkalinity as CaCO3	630		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	630		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	22		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	6000		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168473-1	MW-32	Water	10/26/22 12:35	11/01/22 15:15
280-168473-2	MW-30	Water	10/26/22 16:00	11/01/22 15:15
280-168473-3	MW-32-FD	Water	10/26/22 12:50	11/01/22 15:15
280-168473-4	MW-33A	Water	10/27/22 11:10	11/01/22 15:15
280-168473-5	MW-35	Water	10/27/22 11:08	11/01/22 15:15
280-168473-6	MW-34	Water	10/27/22 12:40	11/01/22 15:15
280-168473-7	MW-29	Water	10/28/22 11:15	11/01/22 15:15
280-168473-8	MW-31-EB	Water	10/28/22 12:00	11/01/22 15:15
280-168473-9	MW-31	Water	10/28/22 14:30	11/01/22 15:15

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-32
Date Collected: 10/26/22 12:35
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.063		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 15:06	1

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.52		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 15:16	1

Client Sample ID: MW-32-FD
Date Collected: 10/26/22 12:50
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.064		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 15:21	1

Client Sample ID: MW-33A
Date Collected: 10/27/22 11:10
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.16		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 15:25	1

Client Sample ID: MW-35
Date Collected: 10/27/22 11:08
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.0		0.10	0.0015	mg/L		11/04/22 09:23	11/09/22 03:59	1
Lithium	0.18		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 03:59	1

Client Sample ID: MW-34
Date Collected: 10/27/22 12:40
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.10	0.0015	mg/L		11/04/22 09:23	11/09/22 04:04	1
Lithium	0.043		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:04	1

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.35		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:08	1

Client Sample ID: MW-31-EB
Date Collected: 10/28/22 12:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:12	1

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.16		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:16	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.47	F1	0.020	0.0091	mg/L		11/09/22 21:14	11/12/22 19:57	1

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.38		0.020	0.0091	mg/L		11/09/22 21:14	11/12/22 20:21	1

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.18		0.020	0.0091	mg/L		11/09/22 21:14	11/12/22 20:41	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-32
Date Collected: 10/26/22 12:35
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 18:56	1
Selenium	0.081		0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 18:56	1
Potassium	11		6.0	2.6	mg/L		11/04/22 09:23	11/04/22 18:30	50
Calcium	520	B	10	1.9	mg/L		11/04/22 09:23	11/04/22 18:30	50
Magnesium	150	B	2.5	1.1	mg/L		11/04/22 09:23	11/04/22 18:30	50
Sodium	400	B	7.5	3.2	mg/L		11/04/22 09:23	11/04/22 18:30	50

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011		0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 19:00	1
Selenium	0.0017	J	0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 19:00	1
Potassium	23		6.0	2.6	mg/L		11/04/22 09:23	11/04/22 18:34	50
Calcium	300	B	10	1.9	mg/L		11/04/22 09:23	11/04/22 18:34	50
Magnesium	340	B	2.5	1.1	mg/L		11/04/22 09:23	11/04/22 18:34	50
Sodium	2400	B	7.5	3.2	mg/L		11/04/22 09:23	11/04/22 18:34	50

Client Sample ID: MW-32-FD
Date Collected: 10/26/22 12:50
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 19:04	1
Selenium	0.082		0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 19:04	1
Potassium	10		0.12	0.052	mg/L		11/04/22 09:23	11/04/22 19:04	1
Calcium	540	B	10	1.9	mg/L		11/04/22 09:23	11/04/22 18:38	50
Magnesium	140	B	2.5	1.1	mg/L		11/04/22 09:23	11/04/22 18:38	50
Sodium	360	B	7.5	3.2	mg/L		11/04/22 09:23	11/04/22 18:38	50

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-33A
Date Collected: 10/27/22 11:10
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 19:08	1
Selenium	**0.24**		0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 19:08	1
Potassium	**16**		6.0	2.6	mg/L		11/04/22 09:23	11/04/22 18:41	50
Calcium	**470**	**B**	10	1.9	mg/L		11/04/22 09:23	11/04/22 18:41	50
Magnesium	**320**	**B**	2.5	1.1	mg/L		11/04/22 09:23	11/04/22 18:41	50
Sodium	**570**	**B**	7.5	3.2	mg/L		11/04/22 09:23	11/04/22 18:41	50

Client Sample ID: MW-35
Date Collected: 10/27/22 11:08
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/04/22 09:23	11/04/22 19:12	1
Arsenic	**0.00051**	**J**	0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 19:12	1
Barium	**0.018**		0.0010	0.00029	mg/L		11/04/22 09:23	11/04/22 19:12	1
Beryllium	ND		0.0010	0.000080	mg/L		11/04/22 09:23	11/04/22 19:12	1
Cadmium	ND		0.0010	0.00027	mg/L		11/04/22 09:23	11/07/22 20:08	1
Chromium	**0.0013**	**J**	0.0020	0.00050	mg/L		11/04/22 09:23	11/04/22 19:12	1
Cobalt	**0.00045**	**J**	0.0010	0.000092	mg/L		11/04/22 09:23	11/04/22 19:12	1
Lead	**0.00040**	**J**	0.0010	0.00018	mg/L		11/04/22 09:23	11/04/22 19:12	1
Molybdenum	**0.0022**		0.0020	0.00014	mg/L		11/04/22 09:23	11/04/22 19:12	1
Selenium	**1.6**		0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 19:12	1
Thallium	ND		0.0010	0.000089	mg/L		11/04/22 09:23	11/04/22 19:12	1
Calcium	**540**	**B**	10	1.9	mg/L		11/04/22 09:23	11/04/22 18:45	50

Client Sample ID: MW-34
Date Collected: 10/27/22 12:40
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0021**		0.0020	0.00040	mg/L		11/03/22 15:36	11/04/22 15:18	1
Arsenic	**0.00084**	**J**	0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:18	1
Barium	**0.041**		0.0010	0.00029	mg/L		11/03/22 15:36	11/04/22 15:18	1
Beryllium	ND		0.0010	0.000080	mg/L		11/03/22 15:36	11/04/22 15:18	1
Cadmium	ND		0.0010	0.00027	mg/L		11/03/22 15:36	11/07/22 19:31	1
Chromium	**0.0012**	**J**	0.0020	0.00050	mg/L		11/03/22 15:36	11/04/22 15:18	1
Cobalt	**0.00092**	**J**	0.0010	0.000092	mg/L		11/03/22 15:36	11/04/22 15:18	1
Lead	**0.00063**	**J**	0.0010	0.00018	mg/L		11/03/22 15:36	11/04/22 15:18	1
Molybdenum	**0.010**		0.0020	0.00014	mg/L		11/03/22 15:36	11/04/22 15:18	1
Selenium	**0.0013**	**J**	0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 15:18	1
Thallium	ND		0.0010	0.000089	mg/L		11/03/22 15:36	11/04/22 15:18	1
Calcium	**40**		10	1.9	mg/L		11/03/22 15:36	11/04/22 14:15	50

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00062**	**J**	0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:22	1
Selenium	**2.3**		0.25	0.019	mg/L		11/03/22 15:36	11/04/22 14:19	50
Potassium	**16**		6.0	2.6	mg/L		11/03/22 15:36	11/04/22 14:19	50
Calcium	**560**		10	1.9	mg/L		11/03/22 15:36	11/04/22 14:19	50
Magnesium	**350**		2.5	1.1	mg/L		11/03/22 15:36	11/04/22 14:19	50

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**1200**		7.5	3.2	mg/L		11/03/22 15:36	11/04/22 14:19	50

Client Sample ID: MW-31-EB
Date Collected: 10/28/22 12:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:26	1
Selenium	**0.0012**	**J**	0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 15:26	1
Potassium	ND		0.12	0.052	mg/L		11/03/22 15:36	11/04/22 15:26	1
Calcium	**0.35**		0.20	0.038	mg/L		11/03/22 15:36	11/04/22 15:26	1
Magnesium	ND		0.050	0.021	mg/L		11/03/22 15:36	11/10/22 17:36	1
Sodium	**0.18**		0.15	0.065	mg/L		11/03/22 15:36	11/10/22 17:36	1

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00052**	**J**	0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:30	1
Selenium	**0.34**		0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 15:30	1
Potassium	**12**		6.0	2.6	mg/L		11/03/22 15:36	11/04/22 14:26	50
Calcium	**360**		10	1.9	mg/L		11/03/22 15:36	11/04/22 14:26	50
Magnesium	**320**		2.5	1.1	mg/L		11/03/22 15:36	11/04/22 14:26	50
Sodium	**1200**		7.5	3.2	mg/L		11/03/22 15:36	11/04/22 14:26	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0010**	**J**	0.0050	0.00033	mg/L		11/09/22 15:48	11/11/22 12:47	1
Calcium	**250**		10	1.9	mg/L		11/09/22 15:48	11/10/22 18:03	50
Potassium	**18**		6.0	2.6	mg/L		11/09/22 15:48	11/10/22 18:03	50
Magnesium	**310**		2.5	1.1	mg/L		11/09/22 15:48	11/10/22 18:03	50
Sodium	**2400**		7.5	3.2	mg/L		11/09/22 15:48	11/10/22 18:03	50
Selenium	**0.0012**	**J**	0.0050	0.00037	mg/L		11/09/22 15:48	11/11/22 12:47	1

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00038**	**J**	0.0050	0.00033	mg/L		11/09/22 15:48	11/11/22 14:14	1
Calcium	**550**		10	1.9	mg/L		11/09/22 15:48	11/10/22 18:06	50
Potassium	**18**		6.0	2.6	mg/L		11/09/22 15:48	11/10/22 18:06	50
Magnesium	**340**		2.5	1.1	mg/L		11/09/22 15:48	11/10/22 18:06	50
Sodium	**1100**		7.5	3.2	mg/L		11/09/22 15:48	11/10/22 18:06	50
Selenium	**2.4**		0.0050	0.00037	mg/L		11/09/22 15:48	11/11/22 14:14	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00041	J	0.0050	0.00033	mg/L		11/09/22 15:48	11/11/22 12:54	1
Calcium	360	F2	10	1.9	mg/L		11/09/22 15:48	11/10/22 18:10	50
Potassium	14	F2	6.0	2.6	mg/L		11/09/22 15:48	11/10/22 18:10	50
Magnesium	310	F2	2.5	1.1	mg/L		11/09/22 15:48	11/10/22 18:10	50
Sodium	1200	F2	7.5	3.2	mg/L		11/09/22 15:48	11/10/22 18:10	50
Selenium	0.33		0.0050	0.00037	mg/L		11/09/22 15:48	11/11/22 12:54	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-35
Date Collected: 10/27/22 11:08
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/04/22 10:59	11/08/22 19:13	1

Client Sample ID: MW-34
Date Collected: 10/27/22 12:40
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/04/22 10:59	11/08/22 19:21	1

General Chemistry

Client Sample ID: MW-32
Date Collected: 10/26/22 12:35
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 14:46	1
Temperature (SW846 9040B)	21.3	HF	1.0	1.0	Degrees C			11/03/22 14:46	1
Chloride (SW846 9056A)	54	J	150	51	mg/L			11/17/22 01:58	50
Sulfate (SW846 9056A)	2600		250	52	mg/L			11/17/22 01:58	50
Total Alkalinity as CaCO3 (SM 2320B)	390		10	3.1	mg/L			11/02/22 18:48	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	390		10	3.1	mg/L			11/02/22 18:48	1
Total Suspended Solids (SM 2540D)	1.2	J	4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3500		40	19	mg/L			11/02/22 12:02	1

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 14:52	1
Temperature (SW846 9040B)	21.7	HF	1.0	1.0	Degrees C			11/03/22 14:52	1
Chloride (SW846 9056A)	150		15	5.1	mg/L			11/17/22 02:06	5
Sulfate (SW846 9056A)	6000		500	100	mg/L			11/22/22 13:17	100
Total Alkalinity as CaCO3 (SM 2320B)	1000		10	3.1	mg/L			11/02/22 19:09	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	1000		10	3.1	mg/L			11/02/22 19:09	1

General Chemistry (Continued)

Client Sample ID: MW-30
Date Collected: 10/26/22 16:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	1700		19	5.3	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	8500		1000	470	mg/L			11/02/22 12:02	1

Client Sample ID: MW-32-FD
Date Collected: 10/26/22 12:50
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 14:56	1
Temperature (SW846 9040B)	21.5	HF	1.0	1.0	Degrees C			11/03/22 14:56	1
Chloride (SW846 9056A)	48		15	5.1	mg/L			11/17/22 02:15	5
Sulfate (SW846 9056A)	2500		250	52	mg/L			11/22/22 13:33	50
Total Alkalinity as CaCO3 (SM 2320B)	400		10	3.1	mg/L			11/02/22 19:17	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	400		10	3.1	mg/L			11/02/22 19:17	1
Total Suspended Solids (SM 2540D)	7.2		4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3500		40	19	mg/L			11/02/22 12:02	1

Client Sample ID: MW-33A
Date Collected: 10/27/22 11:10
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 15:14	1
Temperature (SW846 9040B)	21.5	HF	1.0	1.0	Degrees C			11/03/22 15:14	1
Chloride (SW846 9056A)	90	J	150	51	mg/L			11/17/22 03:05	50
Sulfate (SW846 9056A)	3200		250	52	mg/L			11/17/22 03:05	50
Total Alkalinity as CaCO3 (SM 2320B)	460		10	3.1	mg/L			11/02/22 19:26	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	460		10	3.1	mg/L			11/02/22 19:26	1
Total Suspended Solids (SM 2540D)	3.2	J	4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	4600		40	19	mg/L			11/02/22 12:02	1

Client Sample ID: MW-35
Date Collected: 10/27/22 11:08
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.5	HF	0.1	0.1	SU			11/03/22 15:18	1
Temperature (SW846 9040B)	22.2	HF	1.0	1.0	Degrees C			11/03/22 15:18	1
Chloride (SW846 9056A)	640		150	51	mg/L			11/17/22 03:21	50
Fluoride (SW846 9056A)	0.65	*- *1	0.50	0.17	mg/L			11/17/22 03:13	1
Sulfate (SW846 9056A)	3200		250	52	mg/L			11/17/22 03:21	50
Total Alkalinity as CaCO3 (SM 2320B)	190		10	3.1	mg/L			11/02/22 19:33	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	190		10	3.1	mg/L			11/02/22 19:33	1

General Chemistry (Continued)

Client Sample ID: MW-35
Date Collected: 10/27/22 11:08
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	22		4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	5600		40	19	mg/L			11/02/22 12:02	1

Client Sample ID: MW-34
Date Collected: 10/27/22 12:40
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	8.0	HF	0.1	0.1	SU			11/03/22 15:22	1
Temperature (SW846 9040B)	22.4	HF	1.0	1.0	Degrees C			11/03/22 15:22	1
Chloride (SW846 9056A)	1.5	J	3.0	1.0	mg/L			11/17/22 03:29	1
Fluoride (SW846 9056A)	0.61	*- *1	0.50	0.17	mg/L			11/17/22 03:29	1
Sulfate (SW846 9056A)	320		50	10	mg/L			11/17/22 03:38	10
Total Alkalinity as CaCO3 (SM 2320B)	290		10	3.1	mg/L			11/02/22 19:40	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	290		10	3.1	mg/L			11/02/22 19:40	1
Total Suspended Solids (SM 2540D)	18		4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	740		10	4.7	mg/L			11/02/22 12:02	1

Client Sample ID: MW-29
Date Collected: 10/28/22 11:15
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 15:25	1
Temperature (SW846 9040B)	22.0	HF	1.0	1.0	Degrees C			11/03/22 15:25	1
Chloride (SW846 9056A)	110	J	150	51	mg/L			11/17/22 03:46	50
Sulfate (SW846 9056A)	3700		250	52	mg/L			11/17/22 03:46	50
Total Alkalinity as CaCO3 (SM 2320B)	830		10	3.1	mg/L			11/02/22 19:51	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	830		10	3.1	mg/L			11/02/22 19:51	1
Total Suspended Solids (SM 2540D)	46		4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	6600		40	19	mg/L			11/02/22 12:02	1

Client Sample ID: MW-31-EB
Date Collected: 10/28/22 12:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	6.6	HF	0.1	0.1	SU			11/03/22 15:37	1
Temperature (SW846 9040B)	22.0	HF	1.0	1.0	Degrees C			11/03/22 15:37	1
Chloride (SW846 9056A)	ND		3.0	1.0	mg/L			11/22/22 14:21	1
Sulfate (SW846 9056A)	ND		5.0	1.0	mg/L			11/22/22 14:21	1
Total Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			11/02/22 19:57	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			11/02/22 19:57	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			11/02/22 12:03	1

General Chemistry (Continued)

Client Sample ID: MW-31-EB
Date Collected: 10/28/22 12:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS) (SM18 SM2540 C)	11		10	4.7	mg/L			11/02/22 12:02	1

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168473-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.3	HF	0.1	0.1	SU			11/03/22 15:45	1
Temperature (SW846 9040B)	21.9	HF	1.0	1.0	Degrees C			11/03/22 15:45	1
Chloride (SW846 9056A)	220	J	300	100	mg/L			11/17/22 04:19	100
Sulfate (SW846 9056A)	3800		500	100	mg/L			11/17/22 04:19	100
Total Alkalinity as CaCO3 (SM 2320B)	630		10	3.1	mg/L			11/02/22 20:07	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	630		10	3.1	mg/L			11/02/22 20:07	1
Total Suspended Solids (SM 2540D)	22		4.0	1.1	mg/L			11/02/22 12:03	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	6000		40	19	mg/L			11/02/22 12:02	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-592338/1-A
Matrix: Water
Analysis Batch: 592858
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		11/04/22 09:23	11/09/22 02:38	1

Lab Sample ID: MB 280-592338/1-A
Matrix: Water
Analysis Batch: 592967
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 14:58	1

Lab Sample ID: LCS 280-592338/2-A
Matrix: Water
Analysis Batch: 592858
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.95		mg/L		98	86 - 110

Lab Sample ID: LCS 280-592338/2-A
Matrix: Water
Analysis Batch: 592967
Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.924		mg/L		92	90 - 112

Lab Sample ID: MB 280-592659/1-B
Matrix: Water
Analysis Batch: 593277
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 592778

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		11/09/22 21:14	11/12/22 19:35	1

Lab Sample ID: LCS 280-592659/2-B
Matrix: Water
Analysis Batch: 593277
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 592778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.968		mg/L		97	90 - 112

Lab Sample ID: 280-168473-2 MS
Matrix: Water
Analysis Batch: 593277
Client Sample ID: MW-30
Prep Type: Dissolved
Prep Batch: 592778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	0.47	F1	1.00	1.67	F1	mg/L		119	89 - 114

Lab Sample ID: 280-168473-2 MSD
Matrix: Water
Analysis Batch: 593277
Client Sample ID: MW-30
Prep Type: Dissolved
Prep Batch: 592778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	0.47	F1	1.00	1.66	F1	mg/L		119	89 - 114	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-592240/1-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/04/22 09:23	11/04/22 18:23	1
Arsenic	ND		0.0050	0.00033	mg/L		11/04/22 09:23	11/04/22 18:23	1
Barium	ND		0.0010	0.00029	mg/L		11/04/22 09:23	11/04/22 18:23	1
Beryllium	ND		0.0010	0.000080	mg/L		11/04/22 09:23	11/04/22 18:23	1
Potassium	ND		0.12	0.052	mg/L		11/04/22 09:23	11/04/22 18:23	1
Magnesium	0.0256	J	0.050	0.021	mg/L		11/04/22 09:23	11/04/22 18:23	1
Chromium	ND		0.0020	0.00050	mg/L		11/04/22 09:23	11/04/22 18:23	1
Sodium	0.0868	J	0.15	0.065	mg/L		11/04/22 09:23	11/04/22 18:23	1
Cobalt	ND		0.0010	0.000092	mg/L		11/04/22 09:23	11/04/22 18:23	1
Lead	ND		0.0010	0.00018	mg/L		11/04/22 09:23	11/04/22 18:23	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/04/22 09:23	11/04/22 18:23	1
Selenium	ND		0.0050	0.00037	mg/L		11/04/22 09:23	11/04/22 18:23	1
Thallium	ND		0.0010	0.000089	mg/L		11/04/22 09:23	11/04/22 18:23	1
Calcium	0.0511	J	0.20	0.038	mg/L		11/04/22 09:23	11/04/22 18:23	1

Lab Sample ID: MB 280-592240/1-A
Matrix: Water
Analysis Batch: 592687

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010	0.00027	mg/L		11/04/22 09:23	11/07/22 20:01	1

Lab Sample ID: LCS 280-592240/2-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0391		mg/L		98	85 - 115
Arsenic	0.0400	0.0389		mg/L		97	85 - 117
Barium	0.0400	0.0387		mg/L		97	85 - 118
Beryllium	0.0400	0.0389		mg/L		97	80 - 125
Potassium	0.800	0.758		mg/L		95	80 - 120
Magnesium	0.800	0.777		mg/L		97	80 - 120
Chromium	0.0400	0.0391		mg/L		98	84 - 121
Sodium	0.800	0.775		mg/L		97	80 - 120
Cobalt	0.0400	0.0392		mg/L		98	85 - 120
Lead	0.0400	0.0380		mg/L		95	85 - 118
Molybdenum	0.0400	0.0386		mg/L		97	85 - 119
Selenium	0.0400	0.0392		mg/L		98	77 - 122
Thallium	0.0400	0.0380		mg/L		95	85 - 118
Calcium	0.800	0.838		mg/L		105	80 - 120

Lab Sample ID: LCS 280-592240/2-A
Matrix: Water
Analysis Batch: 592687

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.0400	0.0395		mg/L		99	85 - 115

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-592243/1-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/03/22 15:36	11/04/22 14:04	1
Arsenic	ND		0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 14:04	1
Barium	ND		0.0010	0.00029	mg/L		11/03/22 15:36	11/04/22 14:04	1
Beryllium	ND		0.0010	0.000080	mg/L		11/03/22 15:36	11/04/22 14:04	1
Potassium	ND		0.12	0.052	mg/L		11/03/22 15:36	11/04/22 14:04	1
Magnesium	ND		0.050	0.021	mg/L		11/03/22 15:36	11/04/22 14:04	1
Chromium	ND		0.0020	0.00050	mg/L		11/03/22 15:36	11/04/22 14:04	1
Sodium	ND		0.15	0.065	mg/L		11/03/22 15:36	11/04/22 14:04	1
Cobalt	ND		0.0010	0.000092	mg/L		11/03/22 15:36	11/04/22 14:04	1
Lead	ND		0.0010	0.00018	mg/L		11/03/22 15:36	11/04/22 14:04	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/03/22 15:36	11/04/22 14:04	1
Selenium	ND		0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 14:04	1
Thallium	ND		0.0010	0.000089	mg/L		11/03/22 15:36	11/04/22 14:04	1
Calcium	ND		0.20	0.038	mg/L		11/03/22 15:36	11/04/22 14:04	1

Lab Sample ID: MB 280-592243/1-A
Matrix: Water
Analysis Batch: 592687

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010	0.00027	mg/L		11/03/22 15:36	11/07/22 19:23	1

Lab Sample ID: LCS 280-592243/2-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0405		mg/L		101	85 - 115
Arsenic	0.0400	0.0393		mg/L		98	85 - 117
Barium	0.0400	0.0414		mg/L		103	85 - 118
Beryllium	0.0400	0.0399		mg/L		100	80 - 125
Potassium	0.800	0.789		mg/L		99	80 - 120
Magnesium	0.800	0.807		mg/L		101	80 - 120
Chromium	0.0400	0.0400		mg/L		100	84 - 121
Sodium	0.800	0.844		mg/L		106	80 - 120
Cobalt	0.0400	0.0389		mg/L		97	85 - 120
Lead	0.0400	0.0404		mg/L		101	85 - 118
Molybdenum	0.0400	0.0409		mg/L		102	85 - 119
Selenium	0.0400	0.0398		mg/L		99	77 - 122
Thallium	0.0400	0.0399		mg/L		100	85 - 118
Calcium	0.800	0.855		mg/L		107	80 - 120

Lab Sample ID: LCS 280-592243/2-A
Matrix: Water
Analysis Batch: 592687

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.0400	0.0410		mg/L		103	85 - 115

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-592659/1-C
Matrix: Water
Analysis Batch: 593149

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 592780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/09/22 15:48	11/10/22 17:48	1
Potassium	ND		0.12	0.052	mg/L		11/09/22 15:48	11/10/22 17:48	1
Magnesium	ND		0.050	0.021	mg/L		11/09/22 15:48	11/10/22 17:48	1
Sodium	ND		0.15	0.065	mg/L		11/09/22 15:48	11/10/22 17:48	1
Selenium	ND		0.0050	0.00037	mg/L		11/09/22 15:48	11/10/22 17:48	1
Calcium	ND		0.20	0.038	mg/L		11/09/22 15:48	11/10/22 17:48	1

Lab Sample ID: LCS 280-592659/2-C
Matrix: Water
Analysis Batch: 593149

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 592780

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0409		mg/L		102	85 - 117
Potassium	0.800	0.838		mg/L		105	80 - 120
Magnesium	0.800	0.776		mg/L		97	80 - 120
Sodium	0.800	0.812		mg/L		101	80 - 120
Selenium	0.0400	0.0395		mg/L		99	77 - 122
Calcium	0.800	0.857		mg/L		107	80 - 120

Lab Sample ID: 280-168473-9 MS
Matrix: Water
Analysis Batch: 593149

Client Sample ID: MW-31
Prep Type: Dissolved
Prep Batch: 592780

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	14	F2	0.800	11.5	4	mg/L		-307	80 - 120
Magnesium	310	F2	0.800	226	4	mg/L		-10689	80 - 120
Sodium	1200	F2	0.800	888	4	mg/L		-39045	80 - 120
Calcium	360	F2	0.800	268	4	mg/L		-11918	80 - 120

Lab Sample ID: 280-168473-9 MS
Matrix: Water
Analysis Batch: 593209

Client Sample ID: MW-31
Prep Type: Dissolved
Prep Batch: 592780

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00041	J	0.0400	0.0404		mg/L		100	92 - 112
Selenium	0.33		0.0400	0.371	4	mg/L		99	90 - 115

Lab Sample ID: 280-168473-9 MSD
Matrix: Water
Analysis Batch: 593149

Client Sample ID: MW-31
Prep Type: Dissolved
Prep Batch: 592780

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	14	F2	0.800	15.1	4 F2	mg/L		152	80 - 120	28	20
Magnesium	310	F2	0.800	307	4 F2	mg/L		-469	80 - 120	31	20
Sodium	1200	F2	0.800	1200	4 F2	mg/L		-644	80 - 120	29	20
Calcium	360	F2	0.800	364	4 F2	mg/L		112	80 - 120	30	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-168473-9 MSD
Matrix: Water
Analysis Batch: 593209

Client Sample ID: MW-31
Prep Type: Dissolved
Prep Batch: 592780

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.00041	J	0.0400	0.0409		mg/L		101	92 - 112	1	20
Selenium	0.33		0.0400	0.366	4	mg/L		85	90 - 115	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-592402/1-A
Matrix: Water
Analysis Batch: 592836

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/04/22 10:59	11/08/22 19:08	1

Lab Sample ID: LCS 280-592402/2-A
Matrix: Water
Analysis Batch: 592836

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592402

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00503		mg/L		101	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-592368/27
Matrix: Water
Analysis Batch: 592368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCS 280-592368/4
Matrix: Water
Analysis Batch: 592368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-168473-8 DU
Matrix: Water
Analysis Batch: 592368

Client Sample ID: MW-31-EB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	6.6	HF	6.1	F3	SU		8	5
Temperature	22.0	HF	21.8		Degrees C		0.7	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593666/48
Matrix: Water
Analysis Batch: 593666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	^-	0.50	0.17	mg/L			11/17/22 00:02	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593666/6
Matrix: Water
Analysis Batch: 593666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/16/22 12:27	1
Fluoride	ND		0.50	0.17	mg/L			11/16/22 12:27	1
Sulfate	ND		5.0	1.0	mg/L			11/16/22 12:27	1

Lab Sample ID: LCS 280-593666/46
Matrix: Water
Analysis Batch: 593666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	1.01	^- *-	mg/L		40	90 - 110

Lab Sample ID: LCSD 280-593666/47
Matrix: Water
Analysis Batch: 593666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	1.60	^- *- *1	mg/L		64	90 - 110	46	10

Lab Sample ID: MRL 280-593666/3
Matrix: Water
Analysis Batch: 593666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.77	J	mg/L		111	50 - 150
Fluoride	0.250	0.323	J	mg/L		129	50 - 150
Sulfate	2.50	2.85	J	mg/L		114	50 - 150

Lab Sample ID: MB 280-594247/40
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/22/22 03:57	1
Sulfate	ND		5.0	1.0	mg/L			11/22/22 03:57	1

Lab Sample ID: LCS 280-594247/38
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.4		mg/L		101	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-594247/39
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.4		mg/L		101	90 - 110	0	10
Sulfate	50.0	50.6		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MRL 280-594247/3
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.31	J	mg/L		92	50 - 150
Sulfate	2.50	2.40	J	mg/L		96	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-592197/32
Matrix: Water
Analysis Batch: 592197

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			11/02/22 15:38	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			11/02/22 15:38	1

Lab Sample ID: MB 280-592197/58
Matrix: Water
Analysis Batch: 592197

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		10	3.1	mg/L			11/02/22 18:41	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			11/02/22 18:41	1

Lab Sample ID: MB 280-592197/6
Matrix: Water
Analysis Batch: 592197

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.56	J	10	3.1	mg/L			11/02/22 12:50	1
Bicarbonate Alkalinity as CaCO3	3.17	J	10	3.1	mg/L			11/02/22 12:50	1

Lab Sample ID: LCS 280-592197/57
Matrix: Water
Analysis Batch: 592197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	197		mg/L		99	89 - 109

Lab Sample ID: LCSD 280-592197/5
Matrix: Water
Analysis Batch: 592197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	205		mg/L		102	89 - 109	1	10

Lab Sample ID: 280-168473-1 DU
Matrix: Water
Analysis Batch: 592197

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3	390		394		mg/L		1	10
Bicarbonate Alkalinity as CaCO3	390		394		mg/L		1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-592122/3
Matrix: Water
Analysis Batch: 592122

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			11/02/22 12:03	1

Lab Sample ID: LCS 280-592122/1
Matrix: Water
Analysis Batch: 592122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	503	474		mg/L		94	79 - 114

Lab Sample ID: LCSD 280-592122/2
Matrix: Water
Analysis Batch: 592122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	500	422		mg/L		84	79 - 114	12	20

Lab Sample ID: 280-168473-1 DU
Matrix: Water
Analysis Batch: 592122

Client Sample ID: MW-32
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	1.2	J	2.00	J F5	mg/L		50	10

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-592121/1
Matrix: Water
Analysis Batch: 592121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/02/22 12:02	1

Lab Sample ID: LCS 280-592121/2
Matrix: Water
Analysis Batch: 592121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	462		mg/L		92	88 - 114

Metals

Prep Batch: 592240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total Recoverable	Water	3005A	
280-168473-2	MW-30	Total Recoverable	Water	3005A	
280-168473-3	MW-32-FD	Total Recoverable	Water	3005A	
280-168473-4	MW-33A	Total Recoverable	Water	3005A	
280-168473-5	MW-35	Total Recoverable	Water	3005A	
MB 280-592240/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592240/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 592243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-6	MW-34	Total Recoverable	Water	3005A	
280-168473-7	MW-29	Total Recoverable	Water	3005A	
280-168473-8	MW-31-EB	Total Recoverable	Water	3005A	
280-168473-9	MW-31	Total Recoverable	Water	3005A	
MB 280-592243/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592243/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 592338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total Recoverable	Water	3005A	
280-168473-2	MW-30	Total Recoverable	Water	3005A	
280-168473-3	MW-32-FD	Total Recoverable	Water	3005A	
280-168473-4	MW-33A	Total Recoverable	Water	3005A	
280-168473-5	MW-35	Total Recoverable	Water	3005A	
280-168473-6	MW-34	Total Recoverable	Water	3005A	
280-168473-7	MW-29	Total Recoverable	Water	3005A	
280-168473-8	MW-31-EB	Total Recoverable	Water	3005A	
280-168473-9	MW-31	Total Recoverable	Water	3005A	
MB 280-592338/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592338/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 592402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-5	MW-35	Total/NA	Water	7470A	
280-168473-6	MW-34	Total/NA	Water	7470A	
MB 280-592402/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-592402/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 592549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total Recoverable	Water	6020B	592240
280-168473-1	MW-32	Total Recoverable	Water	6020B	592240
280-168473-2	MW-30	Total Recoverable	Water	6020B	592240
280-168473-2	MW-30	Total Recoverable	Water	6020B	592240
280-168473-3	MW-32-FD	Total Recoverable	Water	6020B	592240
280-168473-3	MW-32-FD	Total Recoverable	Water	6020B	592240
280-168473-4	MW-33A	Total Recoverable	Water	6020B	592240
280-168473-4	MW-33A	Total Recoverable	Water	6020B	592240
280-168473-5	MW-35	Total Recoverable	Water	6020B	592240
280-168473-5	MW-35	Total Recoverable	Water	6020B	592240
280-168473-6	MW-34	Total Recoverable	Water	6020B	592243

Metals (Continued)

Analysis Batch: 592549 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-6	MW-34	Total Recoverable	Water	6020B	592243
280-168473-7	MW-29	Total Recoverable	Water	6020B	592243
280-168473-7	MW-29	Total Recoverable	Water	6020B	592243
280-168473-8	MW-31-EB	Total Recoverable	Water	6020B	592243
280-168473-9	MW-31	Total Recoverable	Water	6020B	592243
280-168473-9	MW-31	Total Recoverable	Water	6020B	592243
MB 280-592240/1-A	Method Blank	Total Recoverable	Water	6020B	592240
MB 280-592243/1-A	Method Blank	Total Recoverable	Water	6020B	592243
LCS 280-592240/2-A	Lab Control Sample	Total Recoverable	Water	6020B	592240
LCS 280-592243/2-A	Lab Control Sample	Total Recoverable	Water	6020B	592243

Filtration Batch: 592659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	FILTRATION	
280-168473-7	MW-29	Dissolved	Water	FILTRATION	
280-168473-9	MW-31	Dissolved	Water	FILTRATION	
MB 280-592659/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-592659/1-C	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-592659/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-592659/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
280-168473-2 MS	MW-30	Dissolved	Water	FILTRATION	
280-168473-2 MSD	MW-30	Dissolved	Water	FILTRATION	
280-168473-9 MS	MW-31	Dissolved	Water	FILTRATION	
280-168473-9 MSD	MW-31	Dissolved	Water	FILTRATION	

Analysis Batch: 592687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-5	MW-35	Total Recoverable	Water	6020B	592240
280-168473-6	MW-34	Total Recoverable	Water	6020B	592243
MB 280-592240/1-A	Method Blank	Total Recoverable	Water	6020B	592240
MB 280-592243/1-A	Method Blank	Total Recoverable	Water	6020B	592243
LCS 280-592240/2-A	Lab Control Sample	Total Recoverable	Water	6020B	592240
LCS 280-592243/2-A	Lab Control Sample	Total Recoverable	Water	6020B	592243

Prep Batch: 592778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	3005A	592659
280-168473-7	MW-29	Dissolved	Water	3005A	592659
280-168473-9	MW-31	Dissolved	Water	3005A	592659
MB 280-592659/1-B	Method Blank	Dissolved	Water	3005A	592659
LCS 280-592659/2-B	Lab Control Sample	Dissolved	Water	3005A	592659
280-168473-2 MS	MW-30	Dissolved	Water	3005A	592659
280-168473-2 MSD	MW-30	Dissolved	Water	3005A	592659

Prep Batch: 592780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	3005A	592659
280-168473-7	MW-29	Dissolved	Water	3005A	592659
280-168473-9	MW-31	Dissolved	Water	3005A	592659
MB 280-592659/1-C	Method Blank	Dissolved	Water	3005A	592659
LCS 280-592659/2-C	Lab Control Sample	Dissolved	Water	3005A	592659

Metals (Continued)

Prep Batch: 592780 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-9 MS	MW-31	Dissolved	Water	3005A	592659
280-168473-9 MSD	MW-31	Dissolved	Water	3005A	592659

Analysis Batch: 592836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-5	MW-35	Total/NA	Water	7470A	592402
280-168473-6	MW-34	Total/NA	Water	7470A	592402
MB 280-592402/1-A	Method Blank	Total/NA	Water	7470A	592402
LCS 280-592402/2-A	Lab Control Sample	Total/NA	Water	7470A	592402

Analysis Batch: 592858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-5	MW-35	Total Recoverable	Water	6010C	592338
280-168473-6	MW-34	Total Recoverable	Water	6010C	592338
280-168473-7	MW-29	Total Recoverable	Water	6010C	592338
280-168473-8	MW-31-EB	Total Recoverable	Water	6010C	592338
280-168473-9	MW-31	Total Recoverable	Water	6010C	592338
MB 280-592338/1-A	Method Blank	Total Recoverable	Water	6010C	592338
LCS 280-592338/2-A	Lab Control Sample	Total Recoverable	Water	6010C	592338

Analysis Batch: 592967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total Recoverable	Water	6010C	592338
280-168473-2	MW-30	Total Recoverable	Water	6010C	592338
280-168473-3	MW-32-FD	Total Recoverable	Water	6010C	592338
280-168473-4	MW-33A	Total Recoverable	Water	6010C	592338
MB 280-592338/1-A	Method Blank	Total Recoverable	Water	6010C	592338
LCS 280-592338/2-A	Lab Control Sample	Total Recoverable	Water	6010C	592338

Analysis Batch: 593149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	6020B	592780
280-168473-7	MW-29	Dissolved	Water	6020B	592780
280-168473-8	MW-31-EB	Total Recoverable	Water	6020B	592243
280-168473-9	MW-31	Dissolved	Water	6020B	592780
MB 280-592659/1-C	Method Blank	Dissolved	Water	6020B	592780
LCS 280-592659/2-C	Lab Control Sample	Dissolved	Water	6020B	592780
280-168473-9 MS	MW-31	Dissolved	Water	6020B	592780
280-168473-9 MSD	MW-31	Dissolved	Water	6020B	592780

Analysis Batch: 593209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	6020B	592780
280-168473-7	MW-29	Dissolved	Water	6020B	592780
280-168473-9	MW-31	Dissolved	Water	6020B	592780
280-168473-9 MS	MW-31	Dissolved	Water	6020B	592780
280-168473-9 MSD	MW-31	Dissolved	Water	6020B	592780

Analysis Batch: 593277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Dissolved	Water	6010C	592778

Metals (Continued)

Analysis Batch: 593277 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-7	MW-29	Dissolved	Water	6010C	592778
280-168473-9	MW-31	Dissolved	Water	6010C	592778
MB 280-592659/1-B	Method Blank	Dissolved	Water	6010C	592778
LCS 280-592659/2-B	Lab Control Sample	Dissolved	Water	6010C	592778
280-168473-2 MS	MW-30	Dissolved	Water	6010C	592778
280-168473-2 MSD	MW-30	Dissolved	Water	6010C	592778

General Chemistry

Analysis Batch: 592121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total/NA	Water	SM2540 C	
280-168473-2	MW-30	Total/NA	Water	SM2540 C	
280-168473-3	MW-32-FD	Total/NA	Water	SM2540 C	
280-168473-4	MW-33A	Total/NA	Water	SM2540 C	
280-168473-5	MW-35	Total/NA	Water	SM2540 C	
280-168473-6	MW-34	Total/NA	Water	SM2540 C	
280-168473-7	MW-29	Total/NA	Water	SM2540 C	
280-168473-8	MW-31-EB	Total/NA	Water	SM2540 C	
280-168473-9	MW-31	Total/NA	Water	SM2540 C	
MB 280-592121/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-592121/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 592122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total/NA	Water	SM 2540D	
280-168473-2	MW-30	Total/NA	Water	SM 2540D	
280-168473-3	MW-32-FD	Total/NA	Water	SM 2540D	
280-168473-4	MW-33A	Total/NA	Water	SM 2540D	
280-168473-5	MW-35	Total/NA	Water	SM 2540D	
280-168473-6	MW-34	Total/NA	Water	SM 2540D	
280-168473-7	MW-29	Total/NA	Water	SM 2540D	
280-168473-8	MW-31-EB	Total/NA	Water	SM 2540D	
280-168473-9	MW-31	Total/NA	Water	SM 2540D	
MB 280-592122/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-592122/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-592122/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
280-168473-1 DU	MW-32	Total/NA	Water	SM 2540D	

Analysis Batch: 592197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total/NA	Water	SM 2320B	
280-168473-2	MW-30	Total/NA	Water	SM 2320B	
280-168473-3	MW-32-FD	Total/NA	Water	SM 2320B	
280-168473-4	MW-33A	Total/NA	Water	SM 2320B	
280-168473-5	MW-35	Total/NA	Water	SM 2320B	
280-168473-6	MW-34	Total/NA	Water	SM 2320B	
280-168473-7	MW-29	Total/NA	Water	SM 2320B	
280-168473-8	MW-31-EB	Total/NA	Water	SM 2320B	
280-168473-9	MW-31	Total/NA	Water	SM 2320B	
MB 280-592197/32	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 592197 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-592197/58	Method Blank	Total/NA	Water	SM 2320B	
MB 280-592197/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-592197/57	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-592197/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-168473-1 DU	MW-32	Total/NA	Water	SM 2320B	

Analysis Batch: 592368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total/NA	Water	9040B	
280-168473-2	MW-30	Total/NA	Water	9040B	
280-168473-3	MW-32-FD	Total/NA	Water	9040B	
280-168473-4	MW-33A	Total/NA	Water	9040B	
280-168473-5	MW-35	Total/NA	Water	9040B	
280-168473-6	MW-34	Total/NA	Water	9040B	
280-168473-7	MW-29	Total/NA	Water	9040B	
280-168473-8	MW-31-EB	Total/NA	Water	9040B	
280-168473-9	MW-31	Total/NA	Water	9040B	
LCS 280-592368/27	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-592368/4	Lab Control Sample	Total/NA	Water	9040B	
280-168473-8 DU	MW-31-EB	Total/NA	Water	9040B	

Analysis Batch: 593666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-1	MW-32	Total/NA	Water	9056A	
280-168473-2	MW-30	Total/NA	Water	9056A	
280-168473-3	MW-32-FD	Total/NA	Water	9056A	
280-168473-4	MW-33A	Total/NA	Water	9056A	
280-168473-5	MW-35	Total/NA	Water	9056A	
280-168473-5	MW-35	Total/NA	Water	9056A	
280-168473-6	MW-34	Total/NA	Water	9056A	
280-168473-6	MW-34	Total/NA	Water	9056A	
280-168473-7	MW-29	Total/NA	Water	9056A	
280-168473-9	MW-31	Total/NA	Water	9056A	
MB 280-593666/48	Method Blank	Total/NA	Water	9056A	
MB 280-593666/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593666/46	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593666/47	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593666/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 594247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168473-2	MW-30	Total/NA	Water	9056A	
280-168473-3	MW-32-FD	Total/NA	Water	9056A	
280-168473-8	MW-31-EB	Total/NA	Water	9056A	
MB 280-594247/40	Method Blank	Total/NA	Water	9056A	
LCS 280-594247/38	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-594247/39	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-594247/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-32
Lab Sample ID: 280-168473-1
Date Collected: 10/26/22 12:35
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592967	11/09/22 15:06	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 18:30	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 18:56	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 14:46	KEG	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	593666	11/17/22 01:58	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 18:48	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-30
Lab Sample ID: 280-168473-2
Date Collected: 10/26/22 16:00
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592778	11/09/22 21:14	LJS	EET DEN
Dissolved	Analysis	6010C		1			593277	11/12/22 19:57	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592967	11/09/22 15:16	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		50			593149	11/10/22 18:03	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		1			593209	11/11/22 12:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 18:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 19:00	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 14:52	KEG	EET DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	594247	11/22/22 13:17	MEC	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593666	11/17/22 02:06	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:09	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	52 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	1 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-32-FD
Lab Sample ID: 280-168473-3
Date Collected: 10/26/22 12:50
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592967	11/09/22 15:21	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 18:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 19:04	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 14:56	KEG	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	594247	11/22/22 13:33	MEC	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	593666	11/17/22 02:15	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:17	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-33A
Lab Sample ID: 280-168473-4
Date Collected: 10/27/22 11:10
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592967	11/09/22 15:25	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 18:41	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 19:08	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:14	KEG	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	593666	11/17/22 03:05	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:26	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-35
Lab Sample ID: 280-168473-5
Date Collected: 10/27/22 11:08
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 03:59	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 18:45	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 19:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592240	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			592687	11/07/22 20:08	LMT	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-35
Lab Sample ID: 280-168473-5
Date Collected: 10/27/22 11:08
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	50 mL	592402	11/04/22 10:59	PFM	EET DEN
Total/NA	Analysis	7470A		1			592836	11/08/22 19:13	PFM	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:18	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593666	11/17/22 03:13	EJS	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	593666	11/17/22 03:21	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:33	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-34
Lab Sample ID: 280-168473-6
Date Collected: 10/27/22 12:40
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:04	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 14:15	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:18	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592687	11/07/22 19:31	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	592402	11/04/22 10:59	PFM	EET DEN
Total/NA	Analysis	7470A		1			592836	11/08/22 19:21	PFM	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:22	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	593666	11/17/22 03:29	EJS	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	593666	11/17/22 03:38	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:40	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-29
Lab Sample ID: 280-168473-7
Date Collected: 10/28/22 11:15
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592778	11/09/22 21:14	LJS	EET DEN
Dissolved	Analysis	6010C		1			593277	11/12/22 20:21	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:08	LRD	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		50			593149	11/10/22 18:06	LMT	EET DEN

Client Sample ID: MW-29
Lab Sample ID: 280-168473-7
Date Collected: 10/28/22 11:15
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		1			593209	11/11/22 14:14	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 14:19	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:22	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:25	KEG	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	593666	11/17/22 03:46	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:51	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-31-EB
Lab Sample ID: 280-168473-8
Date Collected: 10/28/22 12:00
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:12	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:26	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			593149	11/10/22 17:36	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:37	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	594247	11/22/22 14:21	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 19:57	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Client Sample ID: MW-31
Lab Sample ID: 280-168473-9
Date Collected: 10/28/22 14:30
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592778	11/09/22 21:14	LJS	EET DEN
Dissolved	Analysis	6010C		1			593277	11/12/22 20:41	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:16	LRD	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		50			593149	11/10/22 18:10	LMT	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-31
Date Collected: 10/28/22 14:30
Date Received: 11/01/22 15:15

Lab Sample ID: 280-168473-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	592659	11/07/22 17:14	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	592780	11/09/22 15:48	MCR	EET DEN
Dissolved	Analysis	6020B		1			593209	11/11/22 12:54	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 14:26	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:30	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 15:45	KEG	EET DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	593666	11/17/22 04:19	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			592197	11/02/22 20:07	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592122	11/02/22 12:03	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592121	11/02/22 12:02	ASP	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168473-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: A. Binder	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: (303) 524-0691	E-Mail: Nicole.Ryan@ET.EurofinsUS.com	State of Origin: CO	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 6 metals / 6010C - Lithium / 6020A	2320B Alkalinity / 90408	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	2 Dissolved Metals (Lab Filter)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N			
MW-32	10/26/22	1235	G	Water			X	X	X	X		3	*Ask PM for all analyses*
MW-30	10/26/22	1600	G	Water			X	X	X	X	X	4	+250mL unp. for DM
MW-32-FD	10/26/22	1250	G	Water			X	X	X	X		3	
MW-33A	10/27/22	1110	G	Water			X	X	X	X		3	
MW-35	10/27/22	1108	G	Water			X	X	X	X		3	
MW-34	10/27/22	1240	G	Water			X	X	X	X		3	
MW-29	10/28/22	1115	G	Water			X	X	X	X	X	4	+250mL unp. for DM
MW-31-EB	10/28/22	1200	G	Water			X	X	X	X		3	
MW-31	10/28/22	1430	G	Water			X	X	X	X	X	4	+250mL unp. for DM

280-168473 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	F. Davis Ray	11/1/22 1515	HDR		11.1.22 1615	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.1°C IR12 CF0.0

Ver: 01/16/2019

11/30/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168473-1

Login Number: 168473
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 11/28/2022 12:35:59 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168474-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168474-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168474-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The samples were received on 11/1/2022 3:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0º C.

TOTAL RECOVERABLE METALS
Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/04/2022 and analyzed on 11/09/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)
Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 11/03/2022 and analyzed on 11/04/2022.

Several analytes failed the recovery criteria low for the MS of sample 280-168506-2 in batch 280-592549. Arsenic failed the recovery criteria high.

Selenium failed the recovery criteria low for the MSD of sample 280-168506-2 in batch 280-592549. Several analytes failed the recovery criteria high.

Samples MW-38C (280-168474-1)[50X] and MW-38B (280-168474-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 11/03/2022.

Job ID: 280-168474-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Total Alkalinity as CaCO3 was detected in method blank MB 280-592369/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS

Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 11/04/2022 and 11/07/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS

Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 11/03/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)

Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 11/03/2022.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-168473-8. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-38C (280-168474-1) and MW-38B (280-168474-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 11/17/2022 and 11/22/2022.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-593777 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Samples MW-38C (280-168474-1)[10X], MW-38C (280-168474-1)[50X] and MW-38B (280-168474-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-38C — Lab Sample ID: 280-168474-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.034		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Arsenic	0.00082	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	0.11		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	5.7		0.12	0.052	mg/L	1		6020B	Total Recoverable
Calcium	350		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	190		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	390		7.5	3.2	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	28	J	30	10	mg/L	10		9056A	Total/NA
Sulfate	2000		250	52	mg/L	50		9056A	Total/NA
Total Alkalinity as CaCO3	350	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	13		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	3000		40	19	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-38B — Lab Sample ID: 280-168474-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.042		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Arsenic	0.0017	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	0.017		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	4.6		0.12	0.052	mg/L	1		6020B	Total Recoverable
Calcium	330		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	140		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	300		7.5	3.2	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	30		30	10	mg/L	10		9056A	Total/NA
Sulfate	820		50	10	mg/L	10		9056A	Total/NA
Total Alkalinity as CaCO3	250	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	250		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168474-1	MW-38C	Water	10/31/22 15:30	11/01/22 15:15
280-168474-2	MW-38B	Water	11/01/22 11:00	11/01/22 15:15

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-38C
Date Collected: 10/31/22 15:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168474-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.034		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:21	1

Client Sample ID: MW-38B
Date Collected: 11/01/22 11:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168474-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.042		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 04:25	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-38C
Date Collected: 10/31/22 15:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168474-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00082	J	0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:33	1
Selenium	0.11		0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 15:33	1
Potassium	5.7		0.12	0.052	mg/L		11/03/22 15:36	11/04/22 15:33	1
Calcium	350		10	1.9	mg/L		11/03/22 15:36	11/04/22 14:30	50
Magnesium	190		2.5	1.1	mg/L		11/03/22 15:36	11/04/22 14:30	50
Sodium	390		7.5	3.2	mg/L		11/03/22 15:36	11/04/22 14:30	50

Client Sample ID: MW-38B
Date Collected: 11/01/22 11:00
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168474-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017	J	0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 15:37	1
Selenium	0.017		0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 15:37	1
Potassium	4.6		0.12	0.052	mg/L		11/03/22 15:36	11/04/22 15:37	1
Calcium	330		10	1.9	mg/L		11/03/22 15:36	11/04/22 14:34	50
Magnesium	140		2.5	1.1	mg/L		11/03/22 15:36	11/04/22 14:34	50
Sodium	300		7.5	3.2	mg/L		11/03/22 15:36	11/04/22 14:34	50

General Chemistry

Client Sample ID: MW-38C
Date Collected: 10/31/22 15:30
Date Received: 11/01/22 15:15
Lab Sample ID: 280-168474-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.5	HF	0.1	0.1	SU			11/03/22 16:26	1
Temperature (SW846 9040B)	23.4	HF	1.0	1.0	Degrees C			11/03/22 16:26	1
Chloride (SW846 9056A)	28	J	30	10	mg/L			11/17/22 01:50	10
Sulfate (SW846 9056A)	2000		250	52	mg/L			11/22/22 14:36	50
Total Alkalinity as CaCO3 (SM 2320B)	350	B	10	3.1	mg/L			11/03/22 13:45	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	350		10	3.1	mg/L			11/03/22 13:45	1
Total Suspended Solids (SM 2540D)	13		4.0	1.1	mg/L			11/03/22 12:20	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	3000		40	19	mg/L			11/04/22 12:14	1

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry

Client Sample ID: MW-38B
Date Collected: 11/01/22 11:00
Date Received: 11/01/22 15:15

Lab Sample ID: 280-168474-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.6	HF	0.1	0.1	SU			11/03/22 16:30	1
Temperature (SW846 9040B)	23.4	HF	1.0	1.0	Degrees C			11/03/22 16:30	1
Chloride (SW846 9056A)	30		30	10	mg/L			11/17/22 02:22	10
Sulfate (SW846 9056A)	820		50	10	mg/L			11/17/22 02:22	10
Total Alkalinity as CaCO3 (SM 2320B)	250	B	10	3.1	mg/L			11/03/22 13:52	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	250		10	3.1	mg/L			11/03/22 13:52	1
Total Suspended Solids (SM 2540D)	5.2		4.0	1.1	mg/L			11/03/22 12:20	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	2600		20	9.4	mg/L			11/07/22 11:59	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-592338/1-A
Matrix: Water
Analysis Batch: 592967

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		11/04/22 09:23	11/09/22 14:58	1

Lab Sample ID: LCS 280-592338/2-A
Matrix: Water
Analysis Batch: 592967

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592338

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.924		mg/L		92	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-592243/1-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		11/03/22 15:36	11/04/22 14:04	1
Selenium	ND		0.0050	0.00037	mg/L		11/03/22 15:36	11/04/22 14:04	1
Potassium	ND		0.12	0.052	mg/L		11/03/22 15:36	11/04/22 14:04	1
Calcium	ND		0.20	0.038	mg/L		11/03/22 15:36	11/04/22 14:04	1
Magnesium	ND		0.050	0.021	mg/L		11/03/22 15:36	11/04/22 14:04	1
Sodium	ND		0.15	0.065	mg/L		11/03/22 15:36	11/04/22 14:04	1

Lab Sample ID: LCS 280-592243/2-A
Matrix: Water
Analysis Batch: 592549

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 592243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0393		mg/L		98	85 - 117
Selenium	0.0400	0.0398		mg/L		99	77 - 122
Potassium	0.800	0.789		mg/L		99	80 - 120
Calcium	0.800	0.855		mg/L		107	80 - 120
Magnesium	0.800	0.807		mg/L		101	80 - 120
Sodium	0.800	0.844		mg/L		106	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-592368/27
Matrix: Water
Analysis Batch: 592368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-593777/6
Matrix: Water
Analysis Batch: 593777

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			11/16/22 21:21	1
Sulfate	ND		5.0	1.0	mg/L			11/16/22 21:21	1

Lab Sample ID: LCS 280-593777/4
Matrix: Water
Analysis Batch: 593777

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.9		mg/L		98	90 - 110
Sulfate	50.0	48.5		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-593777/5
Matrix: Water
Analysis Batch: 593777

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.9		mg/L		98	90 - 110	0	10
Sulfate	50.0	48.5		mg/L		97	90 - 110	0	10

Lab Sample ID: MRL 280-593777/3
Matrix: Water
Analysis Batch: 593777

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.02	J	mg/L		81	50 - 150
Sulfate	2.50	2.10	J	mg/L		84	50 - 150

Lab Sample ID: MB 280-594247/40
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.0	mg/L			11/22/22 03:57	1

Lab Sample ID: LCS 280-594247/38
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-594247/39
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	50.6		mg/L		101	90 - 110	0	10

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-594247/3
Matrix: Water
Analysis Batch: 594247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	2.50	2.40	J	mg/L		96	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-592369/6
Matrix: Water
Analysis Batch: 592369

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.11	J	10	3.1	mg/L			11/03/22 11:53	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			11/03/22 11:53	1

Lab Sample ID: LCS 280-592369/4
Matrix: Water
Analysis Batch: 592369

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	197		mg/L		98	89 - 109

Lab Sample ID: LCSD 280-592369/5
Matrix: Water
Analysis Batch: 592369

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	198		mg/L		99	89 - 109	NaN	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-592261/2
Matrix: Water
Analysis Batch: 592261

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			11/03/22 12:20	1

Lab Sample ID: LCS 280-592261/1
Matrix: Water
Analysis Batch: 592261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	500	436		mg/L		87	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-592427/1
Matrix: Water
Analysis Batch: 592427

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/04/22 12:14	1

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: LCS 280-592427/2
Matrix: Water
Analysis Batch: 592427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			501	486		mg/L		97	88 - 114		

Lab Sample ID: LCSD 280-592427/3
Matrix: Water
Analysis Batch: 592427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)			501	475		mg/L		95	88 - 114	2	20

Lab Sample ID: MB 280-592604/1
Matrix: Water
Analysis Batch: 592604

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/07/22 11:59	1

Lab Sample ID: LCS 280-592604/2
Matrix: Water
Analysis Batch: 592604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			501	473		mg/L		94	88 - 114		

QC Association Summary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Prep Batch: 592243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total Recoverable	Water	3005A	
280-168474-2	MW-38B	Total Recoverable	Water	3005A	
MB 280-592243/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592243/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 592338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total Recoverable	Water	3005A	
280-168474-2	MW-38B	Total Recoverable	Water	3005A	
MB 280-592338/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592338/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 592549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total Recoverable	Water	6020B	592243
280-168474-1	MW-38C	Total Recoverable	Water	6020B	592243
280-168474-2	MW-38B	Total Recoverable	Water	6020B	592243
280-168474-2	MW-38B	Total Recoverable	Water	6020B	592243
MB 280-592243/1-A	Method Blank	Total Recoverable	Water	6020B	592243
LCS 280-592243/2-A	Lab Control Sample	Total Recoverable	Water	6020B	592243

Analysis Batch: 592858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total Recoverable	Water	6010C	592338
280-168474-2	MW-38B	Total Recoverable	Water	6010C	592338

Analysis Batch: 592967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-592338/1-A	Method Blank	Total Recoverable	Water	6010C	592338
LCS 280-592338/2-A	Lab Control Sample	Total Recoverable	Water	6010C	592338

General Chemistry

Analysis Batch: 592261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	SM 2540D	
280-168474-2	MW-38B	Total/NA	Water	SM 2540D	
MB 280-592261/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-592261/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 592368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	9040B	
280-168474-2	MW-38B	Total/NA	Water	9040B	
LCS 280-592368/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 592369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	SM 2320B	
280-168474-2	MW-38B	Total/NA	Water	SM 2320B	
MB 280-592369/6	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 592369 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-592369/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-592369/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 592427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	SM2540 C	
MB 280-592427/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-592427/2	Lab Control Sample	Total/NA	Water	SM2540 C	
LCSD 280-592427/3	Lab Control Sample Dup	Total/NA	Water	SM2540 C	

Analysis Batch: 592604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-2	MW-38B	Total/NA	Water	SM2540 C	
MB 280-592604/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-592604/2	Lab Control Sample	Total/NA	Water	SM2540 C	

Analysis Batch: 593777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	9056A	
280-168474-2	MW-38B	Total/NA	Water	9056A	
MB 280-593777/6	Method Blank	Total/NA	Water	9056A	
LCS 280-593777/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-593777/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-593777/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 594247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168474-1	MW-38C	Total/NA	Water	9056A	
MB 280-594247/40	Method Blank	Total/NA	Water	9056A	
LCS 280-594247/38	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-594247/39	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-594247/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-38C
Lab Sample ID: 280-168474-1
Date Collected: 10/31/22 15:30
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:21	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 14:30	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:33	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 16:26	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	593777	11/17/22 01:50	MEC	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	594247	11/22/22 14:36	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			592369	11/03/22 13:45	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592261	11/03/22 12:20	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	592427	11/04/22 12:14	ASP	EET DEN

Client Sample ID: MW-38B
Lab Sample ID: 280-168474-2
Date Collected: 11/01/22 11:00
Matrix: Water
Date Received: 11/01/22 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	592338	11/04/22 09:23	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			592858	11/09/22 04:25	LRD	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		50			592549	11/04/22 14:34	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592243	11/03/22 15:36	MCR	EET DEN
Total Recoverable	Analysis	6020B		1			592549	11/04/22 15:37	LMT	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 16:30	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	593777	11/17/22 02:22	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			592369	11/03/22 13:52	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	592261	11/03/22 12:20	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	592604	11/07/22 11:59	ASP	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168474-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

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Client Information	Sampler: F. Davis Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: Nicole.Ryan@ET.EurofinsUS.com	State of Origin: CO	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - 6 metals / 6010C - Lithium / 6020A	2320B Alkalinity / 9040B	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	N	N	X	
MW-38C	10/31/22	1530	G	Water			X	X	X	X	3	*Ask PM for all analyses*
MW-38B	11/1/22	1100	G	Water			X	X	X	X	3	
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								

280-168474 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	F. Davis Ray Gunter	11/1/22 1515	HDR	MH	11-1-22 1515	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.0°C IR12 CF0.0

Ver: 01/16/2019

11/28/2022

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168474-1

Login Number: 168474
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 12/5/2022 11:20:15 AM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-168680-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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12/5/2022 11:20:15 AM

Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-168680-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-168680-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt
The samples were received on 11/4/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.6º C.

RADIUM-226 (GFPC)
Samples MW-34 (280-168680-1) and MW-35 (280-168680-2) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 11/09/2022 and analyzed on 12/01/2022.

The following samples were prepared at a reduced aliquot due to Matrix: MW-34 (280-168680-1) and MW-35 (280-168680-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-34 (280-168680-1) and MW-35 (280-168680-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228
Samples MW-34 (280-168680-1) and MW-35 (280-168680-2) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 11/09/2022 and analyzed on 12/01/2022.

The following samples were prepared at a reduced aliquot due to Matrix: MW-34 (280-168680-1) and MW-35 (280-168680-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-34 (280-168680-1) and MW-35 (280-168680-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 280-168680-1 (Continued)

Laboratory: Eurofins Denver (Continued)

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-34 (280-168680-1) and MW-35 (280-168680-2) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 12/04/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168680-1	MW-34	Water	11/03/22 14:00	11/04/22 09:50
280-168680-2	MW-35	Water	11/03/22 12:30	11/04/22 09:50

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-34
Date Collected: 11/03/22 14:00
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.138	U	0.269	0.269	1.00	0.476	pCi/L	11/09/22 09:56	12/01/22 18:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*11/09/22 09:56*	*12/01/22 18:17*	*1*

Client Sample ID: MW-35
Date Collected: 11/03/22 12:30
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.833**		0.359	0.367	1.00	0.419	pCi/L	11/09/22 09:56	12/01/22 18:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*11/09/22 09:56*	*12/01/22 18:17*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-34
Date Collected: 11/03/22 14:00
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.385	U	0.421	0.423	1.00	0.686	pCi/L	11/09/22 11:20	12/01/22 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*11/09/22 11:20*	*12/01/22 12:00*	*1*
Y Carrier	*86.7*		*40 - 110*	*11/09/22 11:20*	*12/01/22 12:00*	*1*

Client Sample ID: MW-35
Date Collected: 11/03/22 12:30
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.785**		0.502	0.508	1.00	0.757	pCi/L	11/09/22 11:20	12/01/22 12:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*11/09/22 11:20*	*12/01/22 12:07*	*1*
Y Carrier	*86.0*		*40 - 110*	*11/09/22 11:20*	*12/01/22 12:07*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Client Sample ID: MW-34
Date Collected: 11/03/22 14:00
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.524	U	0.500	0.501	5.00	0.686	pCi/L		12/04/22 16:01	1

Client Sample ID: MW-35
Date Collected: 11/03/22 12:30
Date Received: 11/04/22 09:50

Lab Sample ID: 280-168680-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.62**		0.617	0.627	5.00	0.757	pCi/L		12/04/22 16:01	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-589411/1-A
Matrix: Water
Analysis Batch: 591876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589411

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09939	U	0.168	0.168	1.00	0.296	pCi/L	11/09/22 09:56	12/01/22 16:49	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*11/09/22 09:56*	*12/01/22 16:49*	*1*

Lab Sample ID: LCS 160-589411/2-A
Matrix: Water
Analysis Batch: 591876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589411

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	12.45		1.55	1.00	0.286	pCi/L	110	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*

Lab Sample ID: LCSD 160-589411/3-A
Matrix: Water
Analysis Batch: 591876

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 589411

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.15		1.43	1.00	0.407	pCi/L	98	75 - 125	0.44	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.8*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-589415/1-A
Matrix: Water
Analysis Batch: 591877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589415

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.009089	U	0.353	0.353	1.00	0.648	pCi/L	11/09/22 11:20	12/01/22 11:58	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*11/09/22 11:20*	*12/01/22 11:58*	*1*
Y Carrier	*84.5*		*40 - 110*	*11/09/22 11:20*	*12/01/22 11:58*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-589415/2-A
Matrix: Water
Analysis Batch: 591877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589415

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.40	10.06		1.36	1.00	0.553	pCi/L	120	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*
Y Carrier	*84.9*		*40 - 110*

Lab Sample ID: LCSD 160-589415/3-A
Matrix: Water
Analysis Batch: 591877

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 589415

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.40	9.743		1.33	1.00	0.535	pCi/L	116	75 - 125	0.12	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.8*		*40 - 110*
Y Carrier	*86.0*		*40 - 110*

QC Association Summary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Rad

Prep Batch: 589411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168680-1	MW-34	Total/NA	Water	PrecSep-21	
280-168680-2	MW-35	Total/NA	Water	PrecSep-21	
MB 160-589411/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-589411/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-589411/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 589415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168680-1	MW-34	Total/NA	Water	PrecSep_0	
280-168680-2	MW-35	Total/NA	Water	PrecSep_0	
MB 160-589415/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-589415/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-589415/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-34
Lab Sample ID: 280-168680-1
Date Collected: 11/03/22 14:00
Matrix: Water
Date Received: 11/04/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			761.88 mL	1.0 g	589411	11/09/22 09:56	BMP	EET SL
Total/NA	Analysis	9315		1			591880	12/01/22 18:17	FLC	EET SL
Total/NA	Prep	PrecSep_0			761.88 mL	1.0 g	589415	11/09/22 11:20	BMP	EET SL
Total/NA	Analysis	9320		1			591877	12/01/22 12:00	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592178	12/04/22 16:01	MLK	EET SL

Client Sample ID: MW-35
Lab Sample ID: 280-168680-2
Date Collected: 11/03/22 12:30
Matrix: Water
Date Received: 11/04/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			761.79 mL	1.0 g	589411	11/09/22 09:56	BMP	EET SL
Total/NA	Analysis	9315		1			591880	12/01/22 18:17	FLC	EET SL
Total/NA	Prep	PrecSep_0			761.79 mL	1.0 g	589415	11/09/22 11:20	BMP	EET SL
Total/NA	Analysis	9320		1			591880	12/01/22 12:07	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592178	12/04/22 16:01	MLK	EET SL

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22 *
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

12/5/2022

Client Information	Sampler: Tauten Buszka	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-123984-34657.2
Client Contact: Ms. Sierra Schupp	Phone: 269-993-0855	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: DEN-021			
Email: Sierra.Schupp@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - ~~Comanche~~ Vermont	Project #: 28014376			
Site: Colorado App. III + TSS, Additional Methods	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - Total Boron, 6020B - Total Ca, Mg, K, Na	2320B - Alkalinity, 2540C - TDS, 9040B - pH, 9056A_28D - Cl, Fl, SO4	2540C_Calcd - TDS, 9040B - pH, 9056A_28D - Cl, Fl, SO4	6010C - Diss. B, 6020B - Diss. Ca	Rad, Ra 226 / 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	N	N		X	
MW-34	11/3/22	14:00	G	Water	N	N					X		
MW-33	11/3/22	12:30	G	W	N	N					X		

280-168680 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Mattison Barickman	11/04/2022 0950	HDR Inc.		11/4/22 0950	EATDEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.6 IR12 CF 0.0

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ryan, Nicole C	Carrier Tracking No(s):	COC No: 280-635141.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD - A2LA		Job #: 280-168680-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/7/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #			
Email:	WO #			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Xcel Energy CCR - Valmont Station	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Ra226 (1/3) - SUB	9320_Ra228/PrecSep_0 Ra228 (2/3) - SUB	Ra226Ra228_GFPC/ Ra226/RA228 Calc (3/3) - SUB	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-34 (280-168680-1)	11/3/22	14:00 Mountain		Water			X	X	X	2	
MW-35 (280-168680-2)	11/3/22	12:30 Mountain		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11-7-22	ET A DEN	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: 11/08/2022 0900	Company: ETAJTU
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168680-1

Login Number: 168680
List Number: 1
Creator: Held, Wesley

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168680-1

Login Number: 168680
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 11/08/22 12:31 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Job ID: 280-168680-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
280-168680-1	MW-34	92.0
280-168680-2	MW-35	101
LCS 160-589411/2-A	Lab Control Sample	91.3
LCSD 160-589411/3-A	Lab Control Sample Dup	91.8
MB 160-589411/1-A	Method Blank	90.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
280-168680-1	MW-34	92.0	86.7
280-168680-2	MW-35	101	86.0
LCS 160-589415/2-A	Lab Control Sample	91.3	84.9
LCSD 160-589415/3-A	Lab Control Sample Dup	91.8	86.0
MB 160-589415/1-A	Method Blank	90.3	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 12/16/2022 5:21:03 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-169878-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Nicole Ryan, Project Manager I
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Definitions/Glossary

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-169878-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-169878-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt
The sample was received on 12/2/2022 11:05 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4º C.

DISSOLVED METALS
Sample MW-33B (280-169878-1) was analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/11/2022 and analyzed on 12/12/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Sample MW-33B (280-169878-1) was analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/08/2022 and analyzed on 12/09/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Sample MW-33B (280-169878-1) was analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 12/13/2022 and analyzed on 12/13/2022, 12/14/2022 and 12/15/2022.

Magnesium and Sodium failed the recovery criteria low for the MS of sample MW-33BMS (280-169878-1) in batch 280-596811. Calcium failed the recovery criteria high.

Magnesium and Sodium failed the recovery criteria low for the MSD of sample MW-33BMSD (280-169878-1) in batch 280-596811. Calcium failed the recovery criteria high.

Sample MW-33B (280-169878-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 280-169878-1 (Continued)

Laboratory: Eurofins Denver (Continued)

TOTAL RECOVERABLE METALS (ICP/MS)
Sample MW-33B (280-169878-1) was analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 12/08/2022 and analyzed on 12/08/2022, 12/09/2022 and 12/12/2022.

The instrument blank for analytical batch 280-596307 contained K greater than the reporting limit (RL), and were not reanalyzed because the sample was >10x the blank. The data have been qualified and reported.

The instrument blank for analytical batch 280-596432 contained 443 ppb Na which is greater than the reporting limit (RL) of 150 ppb, and were not reanalyzed because the sample was >10x the blank. The data have been qualified and reported.

The instrument blank for analytical batch 280-596140 contained 128 ug/L K greater than the reporting limit (RL) of 120 ug/L, and were not reanalyzed because sample (MB/LCS) < 1/2 RL and within control limit.The data have been qualified and reported.

Several analytes failed the recovery criteria low for the MS of sample 280-169800-2 in batch 280-596307.

Selenium, Calcium, Potassium and Sodium failed the recovery criteria low for the MSD of sample 280-169800-2 in batch 280-596307. Magnesium failed the recovery criteria high.

Sample MW-33B (280-169878-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Sample MW-33B (280-169878-1) was analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 12/05/2022.

Bicarbonate Alkalinity as CaCO3 and Total Alkalinity as CaCO3 were detected in method blank MB 280-595678/32 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Total Alkalinity as CaCO3 was detected in method blank MB 280-595678/6 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Sample MW-33B (280-169878-1) was analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 12/07/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS
Sample MW-33B (280-169878-1) was analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 12/06/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)
Sample MW-33B (280-169878-1) was analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 12/05/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)
Sample MW-33B (280-169878-1) was analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 12/15/2022.

Job ID: 280-169878-1 (Continued)

Laboratory: Eurofins Denver (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-596883 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Sample MW-33B (280-169878-1)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33B
Lab Sample ID: 280-169878-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.11		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Lithium	0.090		0.020	0.0091	mg/L	1		6010C	Dissolved
Arsenic	0.0077		0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Selenium	0.0092		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Potassium	4.4	^2	0.12	0.052	mg/L	1		6020B	Total Recoverable
Calcium	110		10	1.9	mg/L	50		6020B	Total Recoverable
Magnesium	53		2.5	1.1	mg/L	50		6020B	Total Recoverable
Sodium	820	^2	7.5	3.2	mg/L	50		6020B	Total Recoverable
Arsenic	0.0018	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Calcium	44		0.20	0.038	mg/L	1		6020B	Dissolved
Cobalt	0.00022	J	0.0010	0.000092	mg/L	1		6020B	Dissolved
Potassium	3.6		0.12	0.052	mg/L	1		6020B	Dissolved
Magnesium	24		0.050	0.021	mg/L	1		6020B	Dissolved
Sodium	760		7.5	3.2	mg/L	50		6020B	Dissolved
Selenium	0.0074		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		60	20	mg/L	20		9056A	Total/NA
Sulfate	1300		100	21	mg/L	20		9056A	Total/NA
Total Alkalinity as CaCO3	340	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	340	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	350		4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	2400		20	9.4	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-169878-1	MW-33B	Water	12/01/22 13:10	12/02/22 11:05

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05
Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.11		0.020	0.0091	mg/L		12/08/22 16:40	12/09/22 14:04	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05
Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.090		0.020	0.0091	mg/L		12/11/22 17:55	12/12/22 14:52	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05
Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0077		0.0050	0.00033	mg/L		12/08/22 08:20	12/08/22 21:14	1
Selenium	0.0092		0.0050	0.00037	mg/L		12/08/22 08:20	12/08/22 21:14	1
Potassium	4.4	^2	0.12	0.052	mg/L		12/08/22 08:20	12/09/22 19:16	1
Calcium	110		10	1.9	mg/L		12/08/22 08:20	12/12/22 13:53	50
Magnesium	53		2.5	1.1	mg/L		12/08/22 08:20	12/12/22 13:53	50
Sodium	820	^2	7.5	3.2	mg/L		12/08/22 08:20	12/12/22 13:53	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05
Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0018	J	0.0050	0.00033	mg/L		12/13/22 08:13	12/13/22 18:03	1
Calcium	44		0.20	0.038	mg/L		12/13/22 08:13	12/13/22 18:03	1
Cobalt	0.00022	J	0.0010	0.000092	mg/L		12/13/22 08:13	12/13/22 18:03	1
Potassium	3.6		0.12	0.052	mg/L		12/13/22 08:13	12/15/22 09:18	1
Magnesium	24		0.050	0.021	mg/L		12/13/22 08:13	12/13/22 18:03	1
Sodium	760		7.5	3.2	mg/L		12/13/22 08:13	12/14/22 18:04	50
Selenium	0.0074		0.0050	0.00037	mg/L		12/13/22 08:13	12/13/22 18:03	1

General Chemistry

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05
Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.8	HF	0.1	0.1	SU			12/05/22 14:14	1
Temperature (SW846 9040B)	23.6	HF	1.0	1.0	Degrees C			12/05/22 14:14	1
Chloride (SW846 9056A)	120		60	20	mg/L			12/15/22 21:56	20
Sulfate (SW846 9056A)	1300		100	21	mg/L			12/15/22 21:56	20
Total Alkalinity as CaCO3 (SM 2320B)	340	B	10	3.1	mg/L			12/05/22 17:18	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	340	B	10	3.1	mg/L			12/05/22 17:18	1

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

General Chemistry (Continued)

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05

Lab Sample ID: 280-169878-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	350		4.0	1.1	mg/L			12/06/22 13:30	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	2400		20	9.4	mg/L			12/07/22 12:01	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-595919/1-A
Matrix: Water
Analysis Batch: 596356

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 595919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		12/08/22 16:40	12/09/22 11:40	1

Lab Sample ID: LCS 280-595919/2-A
Matrix: Water
Analysis Batch: 596356

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 595919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.990		mg/L		99	90 - 112

Lab Sample ID: MB 280-596079/1-C
Matrix: Water
Analysis Batch: 596461

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 596100

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		12/11/22 17:55	12/12/22 12:47	1

Lab Sample ID: LCS 280-596079/2-C
Matrix: Water
Analysis Batch: 596461

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 596100

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.990		mg/L		99	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-595856/1-A
Matrix: Water
Analysis Batch: 596140

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 595856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		12/08/22 08:20	12/08/22 20:47	1
Potassium	ND		0.12	0.052	mg/L		12/08/22 08:20	12/08/22 20:47	1
Selenium	ND		0.0050	0.00037	mg/L		12/08/22 08:20	12/08/22 20:47	1

Lab Sample ID: MB 280-595856/1-A
Matrix: Water
Analysis Batch: 596432

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 595856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.20	0.038	mg/L		12/08/22 08:20	12/12/22 13:45	1
Magnesium	ND		0.050	0.021	mg/L		12/08/22 08:20	12/12/22 13:45	1
Sodium	ND		0.15	0.065	mg/L		12/08/22 08:20	12/12/22 13:45	1

Lab Sample ID: LCS 280-595856/2-A
Matrix: Water
Analysis Batch: 596140

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 595856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0404		mg/L		101	85 - 117
Potassium	0.800	0.856		mg/L		107	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-595856/2-A
Matrix: Water
Analysis Batch: 596140

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 595856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	0.0400	0.0387		mg/L		97	77 - 122

Lab Sample ID: LCS 280-595856/2-A
Matrix: Water
Analysis Batch: 596432

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 595856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.866		mg/L		108	80 - 120
Magnesium	0.800	0.813		mg/L		102	80 - 120
Sodium	0.800	0.751		mg/L		94	80 - 120

Lab Sample ID: MB 280-596079/1-E
Matrix: Water
Analysis Batch: 596629

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 596352

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00033	mg/L		12/13/22 08:13	12/13/22 17:56	1
Cobalt	ND		0.0010	0.000092	mg/L		12/13/22 08:13	12/13/22 17:56	1
Calcium	ND		0.20	0.038	mg/L		12/13/22 08:13	12/13/22 17:56	1
Magnesium	ND		0.050	0.021	mg/L		12/13/22 08:13	12/13/22 17:56	1
Selenium	ND		0.0050	0.00037	mg/L		12/13/22 08:13	12/13/22 17:56	1

Lab Sample ID: MB 280-596079/1-E
Matrix: Water
Analysis Batch: 596770

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 596352

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.12	0.052	mg/L		12/13/22 08:13	12/14/22 17:57	1
Sodium	ND		0.15	0.065	mg/L		12/13/22 08:13	12/14/22 17:57	1

Lab Sample ID: LCS 280-596079/2-E
Matrix: Water
Analysis Batch: 596629

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0400	0.0402		mg/L		100	85 - 117
Cobalt	0.0400	0.0403		mg/L		101	85 - 120
Calcium	0.800	0.826		mg/L		103	80 - 120
Magnesium	0.800	0.777		mg/L		97	80 - 120
Selenium	0.0400	0.0395		mg/L		99	77 - 122

Lab Sample ID: LCS 280-596079/2-E
Matrix: Water
Analysis Batch: 596770

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	0.800	0.783		mg/L		98	80 - 120
Sodium	0.800	0.714		mg/L		89	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-169878-1 MS
Matrix: Water
Analysis Batch: 596629

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0018	J	0.0400	0.0423		mg/L		101	92 - 112
Cobalt	0.00022	J	0.0400	0.0396		mg/L		98	94 - 115
Calcium	44		0.800	45.6	4	mg/L		142	80 - 120
Magnesium	24		0.800	24.0	4	mg/L		28	80 - 120
Selenium	0.0074		0.0400	0.0463		mg/L		97	90 - 115

Lab Sample ID: 280-169878-1 MS
Matrix: Water
Analysis Batch: 596770

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	760		0.800	717	4	mg/L		-5359	80 - 120

Lab Sample ID: 280-169878-1 MS
Matrix: Water
Analysis Batch: 596811

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	3.6		0.800	4.25	4	mg/L		83	80 - 120

Lab Sample ID: 280-169878-1 MSD
Matrix: Water
Analysis Batch: 596629

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0018	J	0.0400	0.0429		mg/L		103	92 - 112	1	20
Cobalt	0.00022	J	0.0400	0.0402		mg/L		100	94 - 115	2	20
Calcium	44		0.800	46.1	4	mg/L		201	80 - 120	1	20
Magnesium	24		0.800	24.3	4	mg/L		72	80 - 120	1	20
Selenium	0.0074		0.0400	0.0473		mg/L		100	90 - 115	2	20

Lab Sample ID: 280-169878-1 MSD
Matrix: Water
Analysis Batch: 596770

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	760		0.800	760	4	mg/L		18	80 - 120	6	20

Lab Sample ID: 280-169878-1 MSD
Matrix: Water
Analysis Batch: 596811

Client Sample ID: MW-33B
Prep Type: Dissolved
Prep Batch: 596352

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	3.6		0.800	4.34	4	mg/L		95	80 - 120	2	20

Method: 9040B - pH

Lab Sample ID: LCS 280-595679/4
Matrix: Water
Analysis Batch: 595679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-596883/6
Matrix: Water
Analysis Batch: 596883

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			12/15/22 17:30	1
Sulfate	ND		5.0	1.0	mg/L			12/15/22 17:30	1

Lab Sample ID: LCS 280-596883/4
Matrix: Water
Analysis Batch: 596883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.0		mg/L		96	90 - 110
Sulfate	50.0	49.4		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-596883/5
Matrix: Water
Analysis Batch: 596883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.0		mg/L		96	90 - 110	0	10
Sulfate	50.0	49.4		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-596883/3
Matrix: Water
Analysis Batch: 596883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.35	J	mg/L		94	50 - 150
Sulfate	2.50	2.33	J	mg/L		93	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-595678/32
Matrix: Water
Analysis Batch: 595678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.45	J	10	3.1	mg/L			12/05/22 14:41	1
Bicarbonate Alkalinity as CaCO3	3.45	J	10	3.1	mg/L			12/05/22 14:41	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-595678/6
Matrix: Water
Analysis Batch: 595678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	3.27	J	10	3.1	mg/L			12/05/22 11:28	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			12/05/22 11:28	1

Lab Sample ID: LCS 280-595678/31
Matrix: Water
Analysis Batch: 595678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	200	204		mg/L		102	89 - 109

Lab Sample ID: LCSD 280-595678/5
Matrix: Water
Analysis Batch: 595678

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity as CaCO3	200	206		mg/L		103	89 - 109	2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-595750/2
Matrix: Water
Analysis Batch: 595750

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/06/22 13:30	1

Lab Sample ID: LCS 280-595750/1
Matrix: Water
Analysis Batch: 595750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	501	475		mg/L		95	79 - 114

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-595890/1
Matrix: Water
Analysis Batch: 595890

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/07/22 12:01	1

Lab Sample ID: LCS 280-595890/2
Matrix: Water
Analysis Batch: 595890

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	500	478		mg/L		96	88 - 114

Method: SM2540 C - Total Dissolved Solids (Continued)

Lab Sample ID: 280-169878-1 DU
Client Sample ID: MW-33B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 595890

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	2400			2330		mg/L				0.8	10

Metals

Prep Batch: 595856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	3005A	
MB 280-595856/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-595856/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 595919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	3005A	
MB 280-595919/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-595919/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 596079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	FILTRATION	
MB 280-596079/1-C	Method Blank	Dissolved	Water	FILTRATION	
MB 280-596079/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-596079/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-596079/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
280-169878-1 MS	MW-33B	Dissolved	Water	FILTRATION	
280-169878-1 MSD	MW-33B	Dissolved	Water	FILTRATION	

Prep Batch: 596100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	3005A	596079
MB 280-596079/1-C	Method Blank	Dissolved	Water	3005A	596079
LCS 280-596079/2-C	Lab Control Sample	Dissolved	Water	3005A	596079

Analysis Batch: 596140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	6020B	595856
MB 280-595856/1-A	Method Blank	Total Recoverable	Water	6020B	595856
LCS 280-595856/2-A	Lab Control Sample	Total Recoverable	Water	6020B	595856

Analysis Batch: 596307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	6020B	595856

Prep Batch: 596352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	3005A	596079
MB 280-596079/1-E	Method Blank	Dissolved	Water	3005A	596079
LCS 280-596079/2-E	Lab Control Sample	Dissolved	Water	3005A	596079
280-169878-1 MS	MW-33B	Dissolved	Water	3005A	596079
280-169878-1 MSD	MW-33B	Dissolved	Water	3005A	596079

Analysis Batch: 596356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	6010C	595919
MB 280-595919/1-A	Method Blank	Total Recoverable	Water	6010C	595919
LCS 280-595919/2-A	Lab Control Sample	Total Recoverable	Water	6010C	595919

Metals

Analysis Batch: 596432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total Recoverable	Water	6020B	595856
MB 280-595856/1-A	Method Blank	Total Recoverable	Water	6020B	595856
LCS 280-595856/2-A	Lab Control Sample	Total Recoverable	Water	6020B	595856

Analysis Batch: 596461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	6010C	596100
MB 280-596079/1-C	Method Blank	Dissolved	Water	6010C	596100
LCS 280-596079/2-C	Lab Control Sample	Dissolved	Water	6010C	596100

Analysis Batch: 596629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	6020B	596352
MB 280-596079/1-E	Method Blank	Dissolved	Water	6020B	596352
LCS 280-596079/2-E	Lab Control Sample	Dissolved	Water	6020B	596352
280-169878-1 MS	MW-33B	Dissolved	Water	6020B	596352
280-169878-1 MSD	MW-33B	Dissolved	Water	6020B	596352

Analysis Batch: 596770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	6020B	596352
MB 280-596079/1-E	Method Blank	Dissolved	Water	6020B	596352
LCS 280-596079/2-E	Lab Control Sample	Dissolved	Water	6020B	596352
280-169878-1 MS	MW-33B	Dissolved	Water	6020B	596352
280-169878-1 MSD	MW-33B	Dissolved	Water	6020B	596352

Analysis Batch: 596811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Dissolved	Water	6020B	596352
280-169878-1 MS	MW-33B	Dissolved	Water	6020B	596352
280-169878-1 MSD	MW-33B	Dissolved	Water	6020B	596352

General Chemistry

Analysis Batch: 595678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total/NA	Water	SM 2320B	
MB 280-595678/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-595678/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-595678/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-595678/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 595679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total/NA	Water	9040B	
LCS 280-595679/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 595750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total/NA	Water	SM 2540D	
MB 280-595750/2	Method Blank	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 595750 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-595750/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 595890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total/NA	Water	SM2540 C	
MB 280-595890/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-595890/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-169878-1 DU	MW-33B	Total/NA	Water	SM2540 C	

Analysis Batch: 596883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-169878-1	MW-33B	Total/NA	Water	9056A	
MB 280-596883/6	Method Blank	Total/NA	Water	9056A	
LCS 280-596883/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-596883/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-596883/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-33B
Date Collected: 12/01/22 13:10
Date Received: 12/02/22 11:05

Lab Sample ID: 280-169878-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	596079	12/08/22 16:13	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	596100	12/11/22 17:55	LJS	EET DEN
Dissolved	Analysis	6010C		1			596461	12/12/22 14:52	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	595919	12/08/22 16:40	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			596356	12/09/22 14:04	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	596079	12/08/22 16:13	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	596352	12/13/22 08:13	PFM	EET DEN
Dissolved	Analysis	6020B		1			596629	12/13/22 18:03	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	596079	12/08/22 16:13	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	596352	12/13/22 08:13	PFM	EET DEN
Dissolved	Analysis	6020B		50			596770	12/14/22 18:04	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	596079	12/08/22 16:13	KMS	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	596352	12/13/22 08:13	PFM	EET DEN
Dissolved	Analysis	6020B		1			596811	12/15/22 09:18	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	595856	12/08/22 08:20	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			596140	12/08/22 21:14	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	595856	12/08/22 08:20	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			596307	12/09/22 19:16	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	595856	12/08/22 08:20	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			596432	12/12/22 13:53	LMT	EET DEN
Total/NA	Analysis	9040B		1			595679	12/05/22 14:14	KEG	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	596883	12/15/22 21:56	EJS	EET DEN
Total/NA	Analysis	SM 2320B		1			595678	12/05/22 17:18	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	595750	12/06/22 13:30	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	50 mL	100 mL	595890	12/07/22 12:01	ASP	EET DEN

Laboratory References:
EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-169878-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: J. Wilch / F. Davis Ray	Lab PM: Nicole Ryan	Carrier Tracking No(s):	COC No: 280-113124-32494.1
Client Contact: Molly Reeves	Phone: (720) 298-3594	E-Mail: Nicole.Ryan@ET.EurofinsUS.com	State of Origin: CO	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:	Analysis Requested		Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			Other:
Phone: 734-263-7138(Tel)	PO #: 10227700-400			
Email: Molly.Reeves@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado Quarterly- Release Characterization	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	6020B - 6 metals / 6010C - Lithium / 6020A	2320B Alkalinity / 9040B	2540D - TSS/ 2540C TDS	9056A Chloride/ Sulfate	Dissolved Metals (Lab Filter)	Perform MS/MSD (Yes or No)	Special Instructions/Note:
			Preservation Code:			D	N	N	N			
MW-33B	12/1/22	1310	G	Water		XX	XX	X				*Ask PM for all analytes* (4 bottles)
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								

280-169878 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by: F. Davis Ray Saenz	Date/Time: 12/2/22 1105	Company: HDR	Received by: ZM	Date/Time: 12/2/22 1105 Company: TECHADEM
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.4°C IR#12 CF: 0.0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-169878-1

Login Number: 169878
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202

Generated 1/18/2023 12:14:18 PM Revision 1

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Valmont

JOB NUMBER

280-170465-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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1/18/2023 12:14:18 PM
Revision 1

Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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Definitions/Glossary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 280-170465-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Valmont

Report Number: 280-170465-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Revision 1, January 18, 2023
This report has been to revised to include Alkalinity, Na, Mg, and K for all samples per the clients request.

Receipt
The samples were received on 12/15/2022 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7° C.

Receipt Exceptions
All of the sample containers for the following samples were received partially frozen: MW-5 (280-170465-1) and MW-8 (280-170465-2)

DISSOLVED METALS
Sample MW-5 (280-170465-1) was analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/27/2022 and analyzed on 12/29/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS
Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/21/2022 and analyzed on 12/27/2022 and 12/31/2022.

Boron was detected in method blank MB 280-597448/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED METALS (ICP/MS)
Sample MW-5 (280-170465-1) was analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 12/27/2022 and analyzed on 12/28/2022.

Job ID: 280-170465-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Calcium failed the recovery criteria high for the MS and MSD of sample MW-5M (280-170465-1) in batch 280-597906.

Sample MW-5 (280-170465-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICP/MS)

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 12/22/2022 and analyzed on 12/27/2022 and 12/28/2022.

Barium, Calcium and Molybdenum were detected in method blank MB 280-597445/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Magnesium, Potassium and Calcium failed the recovery criteria low for the MS of sample 280-170437-7 in batch 280-597906. Sodium failed the recovery criteria high.

Potassium and Calcium failed the recovery criteria low for the MSD of sample 280-170437-7 in batch 280-597906. Magnesium and Sodium failed the recovery criteria high.

Samples MW-5 (280-170465-1)[50X] and MW-8 (280-170465-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY

Sample MW-5 (280-170465-1) was analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/28/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 12/29/2022 and analyzed on 12/30/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 01/10/2023.

The following samples were logged for this analysis with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-5 (280-170465-1) and MW-8 (280-170465-2).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 12/20/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SUSPENDED SOLIDS

Job ID: 280-170465-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 12/16/2022.

High quantity of solids in liquid matrix requiring use of less than nominal volume for method analysis for the following sample: MW-8 (280-170465-2)

Total Suspended Solids exceeded the RPD limit for the duplicate of sample 280-170341-1. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 12/20/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-5 (280-170465-1) and MW-8 (280-170465-2) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 12/29/2022.

Samples MW-5 (280-170465-1)[5X], MW-8 (280-170465-2)[5X] and MW-8 (280-170465-2)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-5
Lab Sample ID: 280-170465-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5	B	0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.065		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Boron	1.4		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	0.064		0.020	0.0091	mg/L	1		6010C	Dissolved
Arsenic	0.00088	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable
Barium	0.014	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Chromium	0.00064	J	0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.00028	J	0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.00029	J	0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0028	B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.018		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Calcium	79	B	10	1.9	mg/L	50		6020B	Total Recoverable
Sodium	250		7.5	3.2	mg/L	50		6020B	Total Recoverable
Potassium	3.8		0.12	0.052	mg/L	1		6020B	Total Recoverable
Magnesium	38		0.050	0.021	mg/L	1		6020B	Total Recoverable
Arsenic	0.00055	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.012		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.00058	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00016	J	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	79		10	1.9	mg/L	50		6020B	Dissolved
Molybdenum	0.0025		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.018		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	33		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.34	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	460		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	370	H	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	370	H	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	1100		10	4.7	mg/L	1		SM2540 C	Total/NA

Client Sample ID: MW-8
Lab Sample ID: 280-170465-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.3	B	0.10	0.0015	mg/L	1		6010C	Total Recoverable
Lithium	0.23		0.020	0.0091	mg/L	1		6010C	Total Recoverable
Antimony	0.00081	J	0.0020	0.00040	mg/L	1		6020B	Total Recoverable
Arsenic	0.0019	J	0.0050	0.00033	mg/L	1		6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Client Sample ID: MW-8 (Continued)
Lab Sample ID: 280-170465-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057	B	0.0010	0.00029	mg/L	1		6020B	Total Recoverable
Beryllium	0.00049	J	0.0010	0.000080	mg/L	1		6020B	Total Recoverable
Chromium	0.0086		0.0020	0.00050	mg/L	1		6020B	Total Recoverable
Cobalt	0.0059		0.0010	0.000092	mg/L	1		6020B	Total Recoverable
Lead	0.0054		0.0010	0.00018	mg/L	1		6020B	Total Recoverable
Molybdenum	0.0019	J B	0.0020	0.00014	mg/L	1		6020B	Total Recoverable
Selenium	0.017		0.0050	0.00037	mg/L	1		6020B	Total Recoverable
Thallium	0.00011	J	0.0010	0.000089	mg/L	1		6020B	Total Recoverable
Calcium	580	B	10	1.9	mg/L	50		6020B	Total Recoverable
Sodium	630		7.5	3.2	mg/L	50		6020B	Total Recoverable
Potassium	13		0.12	0.052	mg/L	1		6020B	Total Recoverable
Magnesium	360		2.5	1.1	mg/L	50		6020B	Total Recoverable
pH adj. to 25 deg C	7.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	320		15	5.1	mg/L	5		9056A	Total/NA
Sulfate	3700		250	52	mg/L	50		9056A	Total/NA
Alkalinity	280	H	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	280	H	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Suspended Solids	1300		9.3	2.5	mg/L	1		SM 2540D	Total/NA
Total Dissolved Solids (TDS)	5500		40	19	mg/L	1		SM2540 C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
SM2540 C	Total Dissolved Solids	SM18	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-170465-1	MW-5	Water	12/15/22 11:00	12/15/22 14:15
280-170465-2	MW-8	Water	12/15/22 12:00	12/15/22 14:15

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.5**	**B**	0.10	0.0015	mg/L		12/21/22 17:24	12/31/22 23:01	1
Lithium	**0.065**		0.020	0.0091	mg/L		12/21/22 17:24	12/27/22 18:52	1

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.3**	**B**	0.10	0.0015	mg/L		12/21/22 17:24	12/31/22 23:06	1
Lithium	**0.23**		0.020	0.0091	mg/L		12/21/22 17:24	12/27/22 18:56	1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.4**		0.10	0.0015	mg/L		12/27/22 08:20	12/29/22 22:34	1
Lithium	**0.064**		0.020	0.0091	mg/L		12/27/22 08:20	12/29/22 22:34	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		12/22/22 07:26	12/27/22 20:36	1
Arsenic	**0.00088**	**J**	0.0050	0.00033	mg/L		12/22/22 07:26	12/27/22 20:36	1
Barium	**0.014**	**B**	0.0010	0.00029	mg/L		12/22/22 07:26	12/27/22 20:36	1
Beryllium	ND		0.0010	0.000080	mg/L		12/22/22 07:26	12/27/22 20:36	1
Cadmium	ND		0.0010	0.00027	mg/L		12/22/22 07:26	12/27/22 20:36	1
Chromium	**0.00064**	**J**	0.0020	0.00050	mg/L		12/22/22 07:26	12/27/22 20:36	1
Cobalt	**0.00028**	**J**	0.0010	0.000092	mg/L		12/22/22 07:26	12/27/22 20:36	1
Lead	**0.00029**	**J**	0.0010	0.00018	mg/L		12/22/22 07:26	12/27/22 20:36	1
Molybdenum	**0.0028**	**B**	0.0020	0.00014	mg/L		12/22/22 07:26	12/27/22 20:36	1
Selenium	**0.018**		0.0050	0.00037	mg/L		12/22/22 07:26	12/27/22 20:36	1
Thallium	ND		0.0010	0.000089	mg/L		12/22/22 07:26	12/27/22 20:36	1
Calcium	**79**	**B**	10	1.9	mg/L		12/22/22 07:26	12/28/22 10:25	50
Sodium	**250**		7.5	3.2	mg/L		12/22/22 07:26	01/16/23 14:56	50
Potassium	**3.8**		0.12	0.052	mg/L		12/22/22 07:26	01/16/23 15:28	1
Magnesium	**38**		0.050	0.021	mg/L		12/22/22 07:26	12/27/22 20:36	1

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00081**	**J**	0.0020	0.00040	mg/L		12/22/22 07:26	12/27/22 20:38	1
Arsenic	**0.0019**	**J**	0.0050	0.00033	mg/L		12/22/22 07:26	12/27/22 20:38	1
Barium	**0.057**	**B**	0.0010	0.00029	mg/L		12/22/22 07:26	12/27/22 20:38	1
Beryllium	**0.00049**	**J**	0.0010	0.000080	mg/L		12/22/22 07:26	12/27/22 20:38	1
Cadmium	ND		0.0010	0.00027	mg/L		12/22/22 07:26	12/27/22 20:38	1
Chromium	**0.0086**		0.0020	0.00050	mg/L		12/22/22 07:26	12/27/22 20:38	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0059		0.0010	0.000092	mg/L		12/22/22 07:26	12/27/22 20:38	1
Lead	0.0054		0.0010	0.00018	mg/L		12/22/22 07:26	12/27/22 20:38	1
Molybdenum	0.0019	J B	0.0020	0.00014	mg/L		12/22/22 07:26	12/27/22 20:38	1
Selenium	0.017		0.0050	0.00037	mg/L		12/22/22 07:26	12/27/22 20:38	1
Thallium	0.00011	J	0.0010	0.000089	mg/L		12/22/22 07:26	12/27/22 20:38	1
Calcium	580	B	10	1.9	mg/L		12/22/22 07:26	12/28/22 10:27	50
Sodium	630		7.5	3.2	mg/L		12/22/22 07:26	01/16/23 15:00	50
Potassium	13		0.12	0.052	mg/L		12/22/22 07:26	01/16/23 15:31	1
Magnesium	360		2.5	1.1	mg/L		12/22/22 07:26	01/16/23 15:00	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		12/27/22 08:20	12/28/22 00:11	1
Arsenic	0.00055	J	0.0050	0.00033	mg/L		12/27/22 08:20	12/28/22 00:11	1
Barium	0.012		0.0010	0.00029	mg/L		12/27/22 08:20	12/28/22 00:11	1
Beryllium	ND		0.0010	0.000080	mg/L		12/27/22 08:20	12/28/22 00:11	1
Cadmium	ND		0.0010	0.00027	mg/L		12/27/22 08:20	12/28/22 00:11	1
Chromium	0.00058	J	0.0020	0.00050	mg/L		12/27/22 08:20	12/28/22 00:11	1
Cobalt	0.00016	J	0.0010	0.000092	mg/L		12/27/22 08:20	12/28/22 00:11	1
Lead	ND		0.0010	0.00018	mg/L		12/27/22 08:20	12/28/22 00:11	1
Calcium	79		10	1.9	mg/L		12/27/22 08:20	12/28/22 10:32	50
Molybdenum	0.0025		0.0020	0.00014	mg/L		12/27/22 08:20	12/28/22 00:11	1
Selenium	0.018		0.0050	0.00037	mg/L		12/27/22 08:20	12/28/22 00:11	1
Thallium	ND		0.0010	0.000089	mg/L		12/27/22 08:20	12/28/22 00:11	1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		12/29/22 16:11	12/30/22 13:01	1

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		12/29/22 16:11	12/30/22 13:03	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15
Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.40	0.12	ug/L		12/28/22 13:05	12/28/22 20:45	1

General Chemistry

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15

Lab Sample ID: 280-170465-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.8	HF	0.1	0.1	SU			12/20/22 15:40	1
Temperature (SW846 9040B)	22.5	HF	1.0	1.0	Degrees C			12/20/22 15:40	1
Chloride (SW846 9056A)	33		3.0	1.0	mg/L			12/29/22 03:58	1
Fluoride (SW846 9056A)	0.34	J	0.50	0.17	mg/L			12/29/22 03:58	1
Sulfate (SW846 9056A)	460		25	5.2	mg/L			12/29/22 04:06	5
Alkalinity (SM 2320B)	370	H	10	3.1	mg/L			01/10/23 16:15	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	370	H	10	3.1	mg/L			01/10/23 16:15	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND	H	10	3.1	mg/L			01/10/23 16:15	1
Total Suspended Solids (SM 2540D)	2.4	J	4.0	1.1	mg/L			12/16/22 15:07	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	1100		10	4.7	mg/L			12/20/22 11:22	1

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15

Lab Sample ID: 280-170465-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.8	HF	0.1	0.1	SU			12/20/22 17:05	1
Temperature (SW846 9040B)	23.3	HF	1.0	1.0	Degrees C			12/20/22 17:05	1
Chloride (SW846 9056A)	320		15	5.1	mg/L			12/29/22 04:22	5
Fluoride (SW846 9056A)	ND		0.50	0.17	mg/L			12/29/22 04:14	1
Sulfate (SW846 9056A)	3700		250	52	mg/L			12/29/22 04:30	50
Alkalinity (SM 2320B)	280	H	10	3.1	mg/L			01/10/23 16:21	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	280	H	10	3.1	mg/L			01/10/23 16:21	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND	H	10	3.1	mg/L			01/10/23 16:21	1
Total Suspended Solids (SM 2540D)	1300		9.3	2.5	mg/L			12/16/22 15:07	1
Total Dissolved Solids (TDS) (SM18 SM2540 C)	5500		40	19	mg/L			12/20/22 11:22	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-597448/1-A
Matrix: Water
Analysis Batch: 597844

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 597448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	0.0091	mg/L		12/21/22 17:24	12/27/22 17:27	1

Lab Sample ID: MB 280-597448/1-A
Matrix: Water
Analysis Batch: 598323

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 597448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00519	J	0.10	0.0015	mg/L		12/21/22 17:24	12/31/22 22:19	1

Lab Sample ID: LCS 280-597448/2-A
Matrix: Water
Analysis Batch: 597844

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 597448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	0.991		mg/L		99	90 - 112

Lab Sample ID: LCS 280-597448/2-A
Matrix: Water
Analysis Batch: 598323

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 597448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.13		mg/L		106	86 - 110

Lab Sample ID: MB 280-597455/1-B
Matrix: Water
Analysis Batch: 598155

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 597457

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		12/27/22 08:20	12/29/22 21:38	1
Lithium	ND		0.020	0.0091	mg/L		12/27/22 08:20	12/29/22 21:38	1

Lab Sample ID: LCS 280-597455/2-B
Matrix: Water
Analysis Batch: 598155

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 597457

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.12		mg/L		106	86 - 110
Lithium	1.00	0.983		mg/L		98	90 - 112

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-597445/1-A
Matrix: Water
Analysis Batch: 597840

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 597445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		12/22/22 07:26	12/27/22 19:51	1
Arsenic	ND		0.0050	0.00033	mg/L		12/22/22 07:26	12/27/22 19:51	1
Barium	0.000534	J	0.0010	0.00029	mg/L		12/22/22 07:26	12/27/22 19:51	1
Beryllium	ND		0.0010	0.000080	mg/L		12/22/22 07:26	12/27/22 19:51	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-597445/1-A
Matrix: Water
Analysis Batch: 597840

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 597445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010	0.00027	mg/L		12/22/22 07:26	12/27/22 19:51	1
Chromium	ND		0.0020	0.00050	mg/L		12/22/22 07:26	12/27/22 19:51	1
Cobalt	ND		0.0010	0.000092	mg/L		12/22/22 07:26	12/27/22 19:51	1
Lead	ND		0.0010	0.00018	mg/L		12/22/22 07:26	12/27/22 19:51	1
Molybdenum	0.000161	J	0.0020	0.00014	mg/L		12/22/22 07:26	12/27/22 19:51	1
Selenium	ND		0.0050	0.00037	mg/L		12/22/22 07:26	12/27/22 19:51	1
Calcium	0.0443	J	0.20	0.038	mg/L		12/22/22 07:26	12/27/22 19:51	1
Thallium	ND		0.0010	0.000089	mg/L		12/22/22 07:26	12/27/22 19:51	1
Sodium	ND		0.15	0.065	mg/L		12/22/22 07:26	12/27/22 19:51	1
Magnesium	ND		0.050	0.021	mg/L		12/22/22 07:26	12/27/22 19:51	1

Lab Sample ID: MB 280-597445/1-A
Matrix: Water
Analysis Batch: 599526

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 597445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.12	0.052	mg/L		12/22/22 07:26	01/16/23 14:30	1

Lab Sample ID: LCS 280-597445/2-A
Matrix: Water
Analysis Batch: 597840

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 597445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0408		mg/L		102	85 - 115
Arsenic	0.0400	0.0419		mg/L		105	85 - 117
Barium	0.0400	0.0405		mg/L		101	85 - 118
Beryllium	0.0400	0.0412		mg/L		103	80 - 125
Cadmium	0.0400	0.0411		mg/L		103	85 - 115
Chromium	0.0400	0.0426		mg/L		106	84 - 121
Cobalt	0.0400	0.0421		mg/L		105	85 - 120
Lead	0.0400	0.0404		mg/L		101	85 - 118
Molybdenum	0.0400	0.0405		mg/L		101	85 - 119
Selenium	0.0400	0.0397		mg/L		99	77 - 122
Calcium	0.800	0.840		mg/L		105	80 - 120
Thallium	0.0400	0.0407		mg/L		102	85 - 118
Sodium	0.800	0.775		mg/L		97	80 - 120
Magnesium	0.800	0.764		mg/L		95	80 - 120

Lab Sample ID: LCS 280-597445/2-A
Matrix: Water
Analysis Batch: 599526

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 597445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Potassium	0.800	0.719		mg/L		90	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-597455/1-D
Matrix: Water
Analysis Batch: 597840

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 597463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		12/27/22 08:20	12/28/22 00:07	1
Arsenic	ND		0.0050	0.00033	mg/L		12/27/22 08:20	12/28/22 00:07	1
Barium	ND		0.0010	0.00029	mg/L		12/27/22 08:20	12/28/22 00:07	1
Beryllium	ND		0.0010	0.000080	mg/L		12/27/22 08:20	12/28/22 00:07	1
Cadmium	ND		0.0010	0.00027	mg/L		12/27/22 08:20	12/28/22 00:07	1
Chromium	ND		0.0020	0.00050	mg/L		12/27/22 08:20	12/28/22 00:07	1
Cobalt	ND		0.0010	0.000092	mg/L		12/27/22 08:20	12/28/22 00:07	1
Lead	ND		0.0010	0.00018	mg/L		12/27/22 08:20	12/28/22 00:07	1
Molybdenum	ND		0.0020	0.00014	mg/L		12/27/22 08:20	12/28/22 00:07	1
Selenium	ND		0.0050	0.00037	mg/L		12/27/22 08:20	12/28/22 00:07	1
Calcium	ND		0.20	0.038	mg/L		12/27/22 08:20	12/28/22 00:07	1
Thallium	ND		0.0010	0.000089	mg/L		12/27/22 08:20	12/28/22 00:07	1

Lab Sample ID: LCS 280-597455/2-D
Matrix: Water
Analysis Batch: 597840

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 597463

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0403		mg/L		101	85 - 115
Arsenic	0.0400	0.0406		mg/L		101	85 - 117
Barium	0.0400	0.0399		mg/L		100	85 - 118
Beryllium	0.0400	0.0419		mg/L		105	80 - 125
Cadmium	0.0400	0.0396		mg/L		99	85 - 115
Chromium	0.0400	0.0402		mg/L		100	84 - 121
Cobalt	0.0400	0.0398		mg/L		99	85 - 120
Lead	0.0400	0.0406		mg/L		102	85 - 118
Molybdenum	0.0400	0.0406		mg/L		102	85 - 119
Selenium	0.0400	0.0393		mg/L		98	77 - 122
Calcium	0.800	0.818		mg/L		102	80 - 120
Thallium	0.0400	0.0404		mg/L		101	85 - 118

Lab Sample ID: 280-170465-1 MS
Matrix: Water
Analysis Batch: 597840

Client Sample ID: MW-5
Prep Type: Dissolved
Prep Batch: 597463

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0404		mg/L		101	80 - 111
Arsenic	0.00055	J	0.0400	0.0408		mg/L		101	92 - 112
Barium	0.012		0.0400	0.0518		mg/L		99	92 - 117
Beryllium	ND		0.0400	0.0413		mg/L		103	87 - 118
Cadmium	ND		0.0400	0.0390		mg/L		98	91 - 114
Chromium	0.00058	J	0.0400	0.0404		mg/L		100	91 - 114
Cobalt	0.00016	J	0.0400	0.0395		mg/L		98	94 - 115
Lead	ND		0.0400	0.0406		mg/L		101	95 - 116
Molybdenum	0.0025		0.0400	0.0423		mg/L		99	84 - 117
Selenium	0.018		0.0400	0.0574		mg/L		98	90 - 115
Thallium	ND		0.0400	0.0405		mg/L		101	94 - 115

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-170465-1 MS
Matrix: Water
Analysis Batch: 597906

Client Sample ID: MW-5
Prep Type: Dissolved
Prep Batch: 597463

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	79		0.800	82.7	4	mg/L		447	80 - 120

Lab Sample ID: 280-170465-1 MSD
Matrix: Water
Analysis Batch: 597840

Client Sample ID: MW-5
Prep Type: Dissolved
Prep Batch: 597463

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0408		mg/L		102	80 - 111	1	20
Arsenic	0.00055	J	0.0400	0.0405		mg/L		100	92 - 112	1	20
Barium	0.012		0.0400	0.0517		mg/L		99	92 - 117	0	20
Beryllium	ND		0.0400	0.0382		mg/L		95	87 - 118	8	20
Cadmium	ND		0.0400	0.0384		mg/L		96	91 - 114	2	20
Chromium	0.00058	J	0.0400	0.0400		mg/L		99	91 - 114	1	20
Cobalt	0.00016	J	0.0400	0.0397		mg/L		99	94 - 115	0	20
Lead	ND		0.0400	0.0400		mg/L		100	95 - 116	1	20
Molybdenum	0.0025		0.0400	0.0433		mg/L		102	84 - 117	2	20
Selenium	0.018		0.0400	0.0583		mg/L		100	90 - 115	1	20
Thallium	ND		0.0400	0.0402		mg/L		101	94 - 115	1	20

Lab Sample ID: 280-170465-1 MSD
Matrix: Water
Analysis Batch: 597906

Client Sample ID: MW-5
Prep Type: Dissolved
Prep Batch: 597463

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	79		0.800	83.6	4	mg/L		550	80 - 120	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-598045/1-A
Matrix: Water
Analysis Batch: 598226

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598045

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		12/29/22 16:11	12/30/22 12:50	1

Lab Sample ID: LCS 280-598045/2-A
Matrix: Water
Analysis Batch: 598226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598045

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00491		mg/L		98	84 - 120

Lab Sample ID: MB 280-597455/1-E
Matrix: Water
Analysis Batch: 597997

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 597872

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		12/28/22 13:05	12/28/22 20:37	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 280-597455/2-E
Matrix: Water
Analysis Batch: 597997

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 597872

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.91		ug/L		98	84 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-597408/31
Matrix: Water
Analysis Batch: 597408

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-597936/13
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			12/28/22 17:13	1
Fluoride	ND		0.50	0.17	mg/L			12/28/22 17:13	1
Sulfate	ND		5.0	1.0	mg/L			12/28/22 17:13	1

Lab Sample ID: MB 280-597936/59
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			12/29/22 00:08	1
Fluoride	ND		0.50	0.17	mg/L			12/29/22 00:08	1
Sulfate	ND		5.0	1.0	mg/L			12/29/22 00:08	1

Lab Sample ID: LCS 280-597936/11
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.3		mg/L		101	90 - 110
Fluoride	2.50	2.48		mg/L		99	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: LCS 280-597936/57
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.9		mg/L		100	90 - 110
Fluoride	2.50	2.54		mg/L		102	90 - 110
Sulfate	50.0	50.0		mg/L		100	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-597936/12
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	50.5		mg/L		101	90 - 110	0	10
Fluoride			2.50	2.49		mg/L		99	90 - 110	0	10
Sulfate			50.0	50.5		mg/L		101	90 - 110	0	10

Lab Sample ID: LCSD 280-597936/58
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.7		mg/L		99	90 - 110	0	10
Fluoride			2.50	2.53		mg/L		101	90 - 110	0	10
Sulfate			50.0	49.7		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-597936/10
Matrix: Water
Analysis Batch: 597936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			2.50	2.51	J	mg/L		100	50 - 150
Fluoride			0.250	0.290	J	mg/L		116	50 - 150
Sulfate			2.50	2.45	J	mg/L		98	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-599059/32
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			01/10/23 15:32	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/10/23 15:32	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			01/10/23 15:32	1

Lab Sample ID: LCS 280-599059/31
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity			200	209		mg/L		105	89 - 109

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-597011/2
Matrix: Water
Analysis Batch: 597011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/16/22 15:07	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 280-597011/1
Matrix: Water
Analysis Batch: 597011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			502	434		mg/L		86	79 - 114		

Method: SM2540 C - Total Dissolved Solids

Lab Sample ID: MB 280-597311/1
Matrix: Water
Analysis Batch: 597311

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/20/22 11:22	1

Lab Sample ID: LCS 280-597311/2
Matrix: Water
Analysis Batch: 597311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)			500	475		mg/L		95	88 - 114		

Lab Sample ID: 280-170465-1 DU
Matrix: Water
Analysis Batch: 597311

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	1100			1080		mg/L				2	10

QC Association Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Prep Batch: 597445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	3005A	
280-170465-2	MW-8	Total Recoverable	Water	3005A	
MB 280-597445/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-597445/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 597448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	3005A	
280-170465-2	MW-8	Total Recoverable	Water	3005A	
MB 280-597448/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-597448/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 597455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	FILTRATION	
MB 280-597455/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-597455/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-597455/1-E	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-597455/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-597455/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-597455/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
280-170465-1 MS	MW-5	Dissolved	Water	FILTRATION	
280-170465-1 MSD	MW-5	Dissolved	Water	FILTRATION	

Prep Batch: 597457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	3005A	597455
MB 280-597455/1-B	Method Blank	Dissolved	Water	3005A	597455
LCS 280-597455/2-B	Lab Control Sample	Dissolved	Water	3005A	597455

Prep Batch: 597463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	3005A	597455
MB 280-597455/1-D	Method Blank	Dissolved	Water	3005A	597455
LCS 280-597455/2-D	Lab Control Sample	Dissolved	Water	3005A	597455
280-170465-1 MS	MW-5	Dissolved	Water	3005A	597455
280-170465-1 MSD	MW-5	Dissolved	Water	3005A	597455

Analysis Batch: 597840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	6020B	597463
280-170465-1	MW-5	Total Recoverable	Water	6020B	597445
280-170465-2	MW-8	Total Recoverable	Water	6020B	597445
MB 280-597445/1-A	Method Blank	Total Recoverable	Water	6020B	597445
MB 280-597455/1-D	Method Blank	Dissolved	Water	6020B	597463
LCS 280-597445/2-A	Lab Control Sample	Total Recoverable	Water	6020B	597445
LCS 280-597455/2-D	Lab Control Sample	Dissolved	Water	6020B	597463
280-170465-1 MS	MW-5	Dissolved	Water	6020B	597463
280-170465-1 MSD	MW-5	Dissolved	Water	6020B	597463

QC Association Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 597844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	6010C	597448
280-170465-2	MW-8	Total Recoverable	Water	6010C	597448
MB 280-597448/1-A	Method Blank	Total Recoverable	Water	6010C	597448
LCS 280-597448/2-A	Lab Control Sample	Total Recoverable	Water	6010C	597448

Prep Batch: 597872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	7470A	597455
MB 280-597455/1-E	Method Blank	Dissolved	Water	7470A	597455
LCS 280-597455/2-E	Lab Control Sample	Dissolved	Water	7470A	597455

Analysis Batch: 597906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	6020B	597463
280-170465-1	MW-5	Total Recoverable	Water	6020B	597445
280-170465-2	MW-8	Total Recoverable	Water	6020B	597445
280-170465-1 MS	MW-5	Dissolved	Water	6020B	597463
280-170465-1 MSD	MW-5	Dissolved	Water	6020B	597463

Analysis Batch: 597997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	7470A	597872
MB 280-597455/1-E	Method Blank	Dissolved	Water	7470A	597872
LCS 280-597455/2-E	Lab Control Sample	Dissolved	Water	7470A	597872

Prep Batch: 598045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	7470A	
280-170465-2	MW-8	Total/NA	Water	7470A	
MB 280-598045/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-598045/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 598155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Dissolved	Water	6010C	597457
MB 280-597455/1-B	Method Blank	Dissolved	Water	6010C	597457
LCS 280-597455/2-B	Lab Control Sample	Dissolved	Water	6010C	597457

Analysis Batch: 598226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	7470A	598045
280-170465-2	MW-8	Total/NA	Water	7470A	598045
MB 280-598045/1-A	Method Blank	Total/NA	Water	7470A	598045
LCS 280-598045/2-A	Lab Control Sample	Total/NA	Water	7470A	598045

Analysis Batch: 598323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	6010C	597448
280-170465-2	MW-8	Total Recoverable	Water	6010C	597448
MB 280-597448/1-A	Method Blank	Total Recoverable	Water	6010C	597448
LCS 280-597448/2-A	Lab Control Sample	Total Recoverable	Water	6010C	597448

QC Association Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Metals

Analysis Batch: 599526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	6020B	597445
280-170465-2	MW-8	Total Recoverable	Water	6020B	597445
MB 280-597445/1-A	Method Blank	Total Recoverable	Water	6020B	597445
LCS 280-597445/2-A	Lab Control Sample	Total Recoverable	Water	6020B	597445

Analysis Batch: 599533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total Recoverable	Water	6020B	597445
280-170465-2	MW-8	Total Recoverable	Water	6020B	597445

General Chemistry

Analysis Batch: 597011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	SM 2540D	
280-170465-2	MW-8	Total/NA	Water	SM 2540D	
MB 280-597011/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-597011/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 597311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	SM2540 C	
280-170465-2	MW-8	Total/NA	Water	SM2540 C	
MB 280-597311/1	Method Blank	Total/NA	Water	SM2540 C	
LCS 280-597311/2	Lab Control Sample	Total/NA	Water	SM2540 C	
280-170465-1 DU	MW-5	Total/NA	Water	SM2540 C	

Analysis Batch: 597408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	9040B	
280-170465-2	MW-8	Total/NA	Water	9040B	
LCS 280-597408/31	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 597936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	9056A	
280-170465-1	MW-5	Total/NA	Water	9056A	
280-170465-2	MW-8	Total/NA	Water	9056A	
280-170465-2	MW-8	Total/NA	Water	9056A	
280-170465-2	MW-8	Total/NA	Water	9056A	
MB 280-597936/13	Method Blank	Total/NA	Water	9056A	
MB 280-597936/59	Method Blank	Total/NA	Water	9056A	
LCS 280-597936/11	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-597936/57	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-597936/12	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-597936/58	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-597936/10	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 599059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-1	MW-5	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 599059 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-170465-2	MW-8	Total/NA	Water	SM 2320B	
MB 280-599059/32	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-599059/31	Lab Control Sample	Total/NA	Water	SM 2320B	

Client Sample ID: MW-5
Date Collected: 12/15/22 11:00
Date Received: 12/15/22 14:15

Lab Sample ID: 280-170465-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	597455	12/21/22 10:34	DNM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	597457	12/27/22 08:20	LJS	EET DEN
Dissolved	Analysis	6010C		1			598155	12/29/22 22:34	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597448	12/21/22 17:24	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			597844	12/27/22 18:52	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597448	12/21/22 17:24	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			598323	12/31/22 23:01	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	597455	12/21/22 10:34	DNM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	597463	12/27/22 08:20	LJS	EET DEN
Dissolved	Analysis	6020B		1			597840	12/28/22 00:11	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	597455	12/21/22 10:34	DNM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	597463	12/27/22 08:20	LJS	EET DEN
Dissolved	Analysis	6020B		50			597906	12/28/22 10:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			599526	01/16/23 14:56	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			599533	01/16/23 15:28	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			597840	12/27/22 20:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			597906	12/28/22 10:25	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	250 mL	597455	12/21/22 10:34	DNM	EET DEN
Dissolved	Prep	7470A			15 mL	50 mL	597872	12/28/22 13:05	KMS	EET DEN
Dissolved	Analysis	7470A		1			597997	12/28/22 20:45	KMS	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	598045	12/29/22 16:11	KMS	EET DEN
Total/NA	Analysis	7470A		1			598226	12/30/22 13:01	KMS	EET DEN
Total/NA	Analysis	9040B		1			597408	12/20/22 15:40	KEG	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	597936	12/29/22 03:58	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	597936	12/29/22 04:06	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			599059	01/10/23 16:15	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	597011	12/16/22 15:07	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	100 mL	100 mL	597311	12/20/22 11:22	ASP	EET DEN

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15

Lab Sample ID: 280-170465-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	597448	12/21/22 17:24	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			597844	12/27/22 18:56	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597448	12/21/22 17:24	LJS	EET DEN
Total Recoverable	Analysis	6010C		1			598323	12/31/22 23:06	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			599526	01/16/23 15:00	LMT	EET DEN

Lab Chronicle

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Client Sample ID: MW-8
Date Collected: 12/15/22 12:00
Date Received: 12/15/22 14:15

Lab Sample ID: 280-170465-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			599533	01/16/23 15:31	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		1			597840	12/27/22 20:38	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	597445	12/22/22 07:26	LJS	EET DEN
Total Recoverable	Analysis	6020B		50			597906	12/28/22 10:27	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	598045	12/29/22 16:11	KMS	EET DEN
Total/NA	Analysis	7470A		1			598226	12/30/22 13:03	KMS	EET DEN
Total/NA	Analysis	9040B		1			597408	12/20/22 17:05	KEG	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	597936	12/29/22 04:14	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	597936	12/29/22 04:22	MEC	EET DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	597936	12/29/22 04:30	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			599059	01/10/23 16:21	KEG	EET DEN
Total/NA	Analysis	SM 2540D		1	108 mL	250 mL	597011	12/16/22 15:07	ASP	EET DEN
Total/NA	Analysis	SM2540 C		1	25 mL	100 mL	597311	12/20/22 11:22	ASP	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: HDR Inc
Job ID: 280-170465-1
Project/Site: Xcel Energy GW CCR Monitoring - Valmont

Laboratory: Eurofins Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Calcium
6020B	3005A	Water	Magnesium
6020B	3005A	Water	Potassium
6020B	3005A	Water	Sodium
9040B		Water	Temperature

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Joe Wilch	Lab PM: Ryan, Nicole C	Carrier Tracking No(s): —	COC No: 280-124564-34785.1
Client Contact: Ms. Sierra Schupp	Phone: 517-416-0011	E-Mail: Nicole.Ryan@ET.eurofinsus.com	State of Origin: CO	Page: Page 1 of 1
Company: HDR Inc	PWSID:			Job #:
Address: 1670 Broadway Suite 3400	Due Date Requested:			
City: Denver	TAT Requested (days): Standard			
State, Zip: CO, 80202	Compliance Project: Δ Yes Δ No			
Phone: 734-263-7138(Tel)	PO #: DEN-021			
Email: Sierra.Schupp@hdrinc.com	WO #:			
Project Name: Xcel Energy GW CCR Monitoring - Valmont	Project #: 28014379			
Site: Colorado	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226 - Radium-226 (1/3)	9320_Ra228 - Radium-228 (2/3)	6010C, 6020B, 7470A	2540D - TSS	2540C_Calcd, 9040B, 9056A_28D	6010C, 6020B, 7470A	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	N	N	N		
MW-5	12-15-22	1100	G	Water					X	X	X	X		Min V. is collected Max Vol.
MW-8	12-15-22	1200	G	Water					X	X	X	X		
~~MW-25B~~ JW				Water										
~~MW-39A~~ JW				Water										

280-170465 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12-15-22 1415	HDR		12/15/22 1415	ET ADEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.7 K12 CF0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-170465-1

Login Number: 170465
List Number: 1
Creator: Rystrom, Joshua R

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	False	Refer to Job Narrative for details.
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Limited volume received.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Alkalinity by Standard Method SM2320B
pH by USEPA SW-846 Method 9040B

Project: Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - January 2022
Project/Task Number: 10279387-001
Sample Data Package: 280-157589-1
Lab Report Date: 1/24/22
Data Validation Report Date: 1/26/22
Laboratory: TestAmerica Denver, Arvada, Colorado (anions, TDS, TSS, alk, pH); TestAmerica Canton, North Canton, Ohio (metals)
Sample Matrix: Groundwater
Sampling Dates: January 4-11, 2022
Validation Guidelines: Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10- 011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level: Stage 2BVM (100%)
Data Reviewer: Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions Chloride Sulfate	TDS TSS	Alkalinity	Dissolved Metals
MW-13	GW	280-157589-5	1/7/22	X	X	X	X	
MW-21	GW	280-157589-1	1/4/22	X	X	X	X	
MW-27	GW	280-157589-4	1/7/22	X	X	X	X	
MW-28	GW	280-157589-3	1/7/22	X	X	X	X	X
MW-29 (NEW)	GW	280-157589-14	1/10/22	X	X	X	X	
MW-30 (NEW)	GW	280-157589-9	1/10/22	X	X	X	X	
MW-31 (NEW)	GW	280-157589-6	1/10/22	X	X	X	X	X
MW-32 (NEW)	GW	280-157589-8	1/10/22	X	X	X	X	
MW-33A (NEW)	GW	280-157589-13	1/11/22	X	X	X	X	
MW-33B (NEW)	GW	280-157589-12	1/11/22	X	X	X	X	X
MW-34 (NEW)	GW	280-157589-2	1/4/22	X	X	X	X	
MW-35 (NEW)	GW	280-157589-10	1/11/22	X	X	X	X	X
MW-31-FD	QC	280-157589-7	1/10/22	X	X	X	X	X
MW-35-EB	QC	280-157589-11	1/11/22	X	X	X	X	

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.2°C and 0.4°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Anions: Samples were analyzed within 28 days of collection.

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples MW-21 and MW-34 were analyzed past the 7-day limit and have been qualified as estimated (J). Both samples were received at the laboratory with less than half of the holding time already expired.

TSS: Samples MW-21, MW-27, and MW-34 were analyzed past the 7-day limit and have been qualified as estimated (J). Samples MW-21 and MW-34 were received at the laboratory with less than half of the holding time already expired.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No

qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Metals were not detected in the MBs. Calcium, magnesium, and sodium were detected in the EB MW-35-EB at 0.310 mg/L, 0.180 mg/L, and 0.950 mg/L, respectively. Sample results in the parent sample MW-35 were much higher at 380 mg/L, 240 mg/L, and 780 mg/L, respectively, so no qualification was required.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the MBs or the EBs. No qualification was required.

TDS: TDS was not detected in the MBs or the EBs. No qualification was required.

TSS: TSS was not detected in the MBs or the EBs. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity, Bicarbonate, Carbonate: Not applicable.

TDS: Not applicable.

TSS: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked samples MW-21 for total metals and MW-28 for dissolved metals. Results were within the control limits except for those listed below. The presence of these analytes in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary. These results have been qualified as estimated (J). The parent samples MW-21 and MW-28 has also been qualified as estimated (J) since the accuracy cannot be verified.

Sample	Constituents	Dissolved/Total	Qualifier
MW-21	Calcium Magnesium Potassium	Total	J

	Sodium		
MW-28	Calcium Magnesium Potassium Selenium Sodium	Dissolved	J

Anions: The lab spiked sample MW-27 for chloride and sulfate. Recoveries were within control limits and no qualification was required.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-31-FD was collected as a field duplicate of MW-31.

Metals: FD results were within control limits. No qualification was required.

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were outside of control limits at 52% with MW-31 at 3.2 mg/L and MW-31-FD at 10 mg/L. The parent sample MW-31 was qualified as estimated with potential for low bias (J-) and the field duplicate MW-31-FD was qualified as estimated with potential for high bias (J+). LCS/LCSD analysis data indicated that the analytical process was operating within control; therefore, no further qualification was required.

pH: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was performed on sample MW-35-EB for metals. Metals were non-detect in the lab duplicate. Calcium, magnesium, and sodium were detected in the parent sample, but below the RL; therefore, no qualification was required.

Anions: Lab duplicate analysis was performed on sample MW-27. All RPDs were within the 20% control limit. No qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-27. A laboratory-generated duplicate sample was also analyzed. The RPDs were within the 20% control limit. No qualification was required.

TDS: Lab duplicate analysis was performed on samples MW-21 and MW-35-EB. Two laboratory-generated duplicate samples were also analyzed. The RPDs were all within the 20% control limit. No qualification was required.

TSS: Lab duplicate analysis was not performed on any project samples. The lab analyzed two laboratory-generated duplicates. In one duplicate, the result was detectable but non-detect in the parent, and in the other duplicate, the duplicate result was non-detect but the parent was detectable. RPDs could not be calculated, but results were at or below the RL and LCS/LCSD

analysis indicated that the analytical process was within control. No qualification was required.

pH: Lab duplicate analysis was performed on sample MW-32 and one laboratory-generated duplicate sample. The RPDs were within the 20% control limit. No qualification was required.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Anions: Not applicable.

Alkalinity: Not applicable.

TDS: Not applicable.

TSS: Not applicable.

pH: Not applicable.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Post-digestion spike (PDS) analyses were not performed. Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL.

Metals: The dilution test was performed on all samples. Results were within control limits. No qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)
Arsenic	0.005	0.00075	0.010 (MCL)	Zero
Calcium	1	0.58	Not Listed	Not Listed

Lithium	0.008	0.0017	Not Listed	Not Listed
Magnesium	1	0.2	Not Listed	Not Listed
Potassium	1	0.22	Not Listed	Not Listed
Selenium	0.005	0.00089	0.05 (MCL)	0.05
Sodium	1	0.33	Not Listed	Not Listed

Anions: The RLs of 3 mg/L and 5 mg/L for chloride and sulfate respectively are below the secondary MCLs of 250 mg/L and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L and 1.05 mg/L, respectively.

Alkalinity: The MDL for alkalinity is 3.1 mg/L and the RL is 10 mg/L. There are no Colorado drinking water standards for alkalinity.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified. Sample MW-29 was submitted for analysis but was not listed on the chain of custody. MW-29 was received with one of the four plastic 250 ml unpreserved containers half full. Limited sample volume was provided for MW-33B.

Metals: MW-30 was not preserved at pH<2 per the Method 6020A. pH was adjusted and preserved once received at the laboratory, but it is possible that results were affected.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues besides holding time as referenced in Section I.

TSS: Sample MW-27 was run twice; the first result of 2.4 mg/L was outside historical data as determined by 2-sigma statistical methods. The second analysis was performed outside of the holding time and had a result of 8 mg/L. Both have been reported, but the first result of 2.4 mg/L should be used as the reportable value. The first result has been qualified as estimated with possible low bias (J-) and the second result has been qualified as estimated with possible high bias (J+).

pH: No issues.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness,

comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for TSS.

Lab precision goals were met in that MS/MSD RPDs were within control limits. However, MS/MSD RPDs could not be verified for calcium, magnesium, potassium, or sodium in total metals or the same plus selenium for dissolved metals.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met except MS/MSD recoveries could not be verified for calcium, magnesium, potassium, and sodium in one sample and calcium, magnesium, potassium, selenium, and sodium in a second sample due to sample concentrations over 4 times the spike amount. The parent samples were qualified (J) for these analytes.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- TDS in two samples required qualification as estimated (J) due to analysis past the holding time;
- TSS in three sample required qualification as estimated (J) due to analysis past the holding time;
- Calcium, magnesium, potassium, and sodium results in one MS/MSD pair and the

corresponding parent sample required qualification as estimated (J) since the sample concentrations were higher than the spike amount and compliance with control limits could not be verified;

- Calcium, magnesium, potassium, selenium, and sodium results in one MS/MSD pair and the corresponding parent sample required qualification as estimated (J) since the sample concentrations were higher than the spike amount and compliance with control limits could not be verified;

- TSS in the parent/field duplicate pair required qualification as estimated with low bias (J-) and estimated with high bias (J+), respectively, due to RPD outside control limits;

- TSS in one sample required qualification as estimated with low bias (J-) in the reportable result and estimated with high bias (J+) in the re-run result due to the first result being statistically outside historical range. The initial result should be reported.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. All planned samples were collected.

Lab completeness goals were met. No data were rejected. Of the planned 14 samples for analysis, all 14 were analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except for sodium. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as

qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Alkalinity by Standard Method SM2320B
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B

Project:	Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - April 2022
Project/Task Number:	10279387-001
Sample Data Package:	280-161429-1 (MW-31, MW-32) 280-161699-1 (MW-29, MW-30, MW-33A, MW-33B) 280-161696-1 (MW-25, MW-26) 280-161425-1 (MW-1, MW-7, MW-9, MW-13, MW-15, MW-21, MW-27, MW-27-FD, MW-28, MW-34-EB) 280-161428-1 (MW-13, MW-21, MW-27, MW-28) 280-161698-1 (MW-7, MW-1P, MW-3, MW-4, MW-6, MW-8, MW-11, MW-11-FD, MW-12, MW-14, MW-16) 280-161699-1 (MW-34, MW-35, MW-36) 280-162099-1 (MW-5) Lab Report Date: 6/7/22, 6/9/22, 6/6/22, 5/31/22, 6/1/22, 6/9/22, 6/9/22, 6/9/22, respectively Data Validation Report Date: 6/27/22
Laboratory:	TestAmerica Denver, Arvada, Colorado (anions, TDS, TSS, alk, pH); TestAmerica Cedar Falls, Cedar Falls, Iowa (metals) TestAmerica St. Louis, Earth City, Missouri (radiochemistry)
Sample Matrix:	Groundwater
Sampling Dates:	April 20-29 and May 9, 2022
Validation Guidelines:	Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10- 011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level:	Stage 2BVM (100%)
Data Reviewer:	Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-1	GW	280-161425-1	04/20/2022	X	X	X	X	X	
MW-1P	GW	280-161698-2	04/25/2022	X	X	X	X	X	
MW-3	GW	280-161698-3	04/25/2022	X	X	X	X	X	
MW-4	GW	280-161698-4	04/29/2022	X	X	X	X	X	X
MW-5	GW	280-162099-1	05/09/2022	X	X	X	X	X	X
MW-6	GW	280-161698-5	04/25/2022	X	X	X	X	X	X
MW-7	GW	280-161425-2 280-161698-1	04/21/2022 04/29/2022	X X	X X	X X	X X	X X	 X
MW-8	GW	280-161698-6	04/25/2022	X	X	X	X	X	X
MW-9	GW	280-161425-3	04/20/2022	X	X	X	X	X	
MW-11	GW	280-161698-7	04/25/2022	X	X	X	X	X	
MW-12	GW	280-161698-9	04/26/2022	X	X	X	X	X	
MW-13	GW	280-161425-4 280-161428-1	04/21/2022 04/21/2022	X X^	X	X	X	X	
MW-14	GW	280-161698-10	04/29/2022	X	X	X	X	X	
MW-15	GW	280-161425-5	04/21/2022	X	X	X	X	X	
MW-16	GW	280-161698-11	04/25/2022	X	X	X	X	X	
MW-21	GW	280-161425-6 280-161428-2	04/21/2022 04/21/2022	X X^	X	X	X	X	
MW-25B	GW	280-161696-1	04/29/2022	X	X	X	X	X	
MW-26	GW	280-161696-2	04/25/2022	X	X	X	X	X	
MW-27	GW	280-161425-7 280-161428-3	04/21/2022 04/21/2022	X X^	X	X	X	X	
MW-28	GW	280-161425-9 280-161428-4	04/21/2022 04/21/2022	X X^	X	X	X	X	
MW-34	GW	280-161699-5	04/26/2022	X*	X	X	X		X
MW-35	GW	280-161699-6	04/26/2022	X*	X	X	X		X
MW-36	GW	280-161699-7	04/29/2022	X*	X	X	X		X
MW-11-FD	QC	280-161698-8	04/25/2022	X	X	X	X	X	
MW-27-FD	QC	280-161425-8	04/21/2022	X	X	X	X	X	
MW-34-EB	QC	280-161425-10	04/20/2022	X	X	X	X	X	
MW-29	GW	280-161699-1	04/28/2022	X	X	X	X		X
MW-30	GW	280-161699-2	04/26/2022	X	X	X	X		X
MW-31	GW	280-161429-1	04/22/2022	X	X	X	X		
MW-32	GW	280-161429-2	04/22/2022	X	X	X	X		X
MW-33A	GW	280-161699-3	04/28/2022	X	X	X	X		
MW-33B	GW	280-161699-4	04/28/2022	X	X	X	X		X

*App III and IV metals send to TestAmerica Cedar Falls
^Ca, K, Mg, Na, Se, Li Cedar Falls

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.2°C and 0.4°C, within the correct temperature range of 0.2-5.9°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: Samples were analyzed within 28 days of collection except MW-11-FD, which has been qualified as estimated but not detected (UJ).

Anions: Samples were analyzed within 28 days of collection except MW-34-EB, which has been qualified as estimated but not detected (UJ).

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples MW-11-FD and MW-34-EB were analyzed past the 7-day limit and have been qualified as estimated (J) (or UJ if non-detect).

TSS: Samples were analyzed within 7 days of collection except MW-11-FD, which has been qualified as estimated (J).

Radium-226: Sample had ingrowth times of at least 21 days.

Radium-228: Sample had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Metals were detected in MBs as follows:

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5766681-C	Calcium	0.0287	MW-32	J+
	Magnesium	0.0141		
	Potassium	0.00969		
	Sodium	0.0255		

Calcium, magnesium, selenium, and sodium were detected in the EB MW-34-EB at 0.58 mg/L, 0.33 mg/L, 0.0023 mg/L, and 0.94 mg/L, respectively. Sample results for calcium in the parent sample MW-34 were much higher at 27 mg/L, so no qualification was required. Selenium in the parent sample was 0.0083 mg/L and has been qualified as estimated with potential for high bias (J+). Magnesium and sodium were not analyzed in the parent sample.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the MBs or the EBs. No qualification was required.

TDS: TDS was not detected in the MBs or the EBs. No qualification was required.

TSS: TSS was not detected in the MBs or the EBs. No qualification was required.

Radium-226: Ra-226 was not detected in the MBs or the EB. No qualification was required.

Radium-228: Ra-228 was not detected in the MBs or the EB. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the ICBs or CCBs. No qualification was required.

TDS: Not applicable.

TSS: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was

required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125% except LCS 160-5626071-A had a recovery of 126%. Rad-228 and combined radium results for MW-1, MW-7, MW-9, MW-13, MW-15, MW-21, MW-27, MW-27-FD, MW-28, and MW-34-EB have been qualified as estimated (J) (or UJ if non-detect). The RPDs were within the control limit of 20% as suggested in the Functional Guidelines.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked samples MW-7 and MW-32 from this project for metals. Results were within the control limits except for those listed below. The presence of these analytes in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary. The parent samples MW-7 and MW-32 has also been qualified as estimated (J) since the accuracy cannot be verified.

Sample	Analyte	Affected Samples	Qualifier
MW-7	Calcium (D)	MW-7, MW-4, MW-6, MW-8	J
MW-32	Calcium (D) Calcium (T) Magnesium (D) Magnesium (T) Potassium (D) Sodium (D) Sodium (T)	MW-32	J

Mercury: The lab spiked sample MW-11-FD from this project for mercury. Recovery was outside control limits at 55%. Samples MW-1P, MW-3, MW-11, MW-11-FD, MW-12, MW-14, and MW-16

were qualified as estimated (J) (or UJ if non-detect) for mercury. RPDs were within control limits.

Anions: The lab spiked samples MW-1, MW-1P, MW-7, MW-7, MW-13, and MW-28 from this project for anions. Recoveries were within control limits and no qualification was required.

Radium-226: MS/MSD analysis was not performed for Rad-226.

Radium-228: MS/MSD analysis was not performed for Rad-228.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-11-FD was collected as a field duplicate of MW-11 and MW-27-FD was collected as a field duplicate of MW-27-FD.

Metals: FD results were within control limits except those listed below.

Analyte	Parent Result (mg/L)	Duplicate Result (mg/L)	RPD	Qualifier
Cobalt (MW-27)	ND	0.00027	100%	Parent UJ Duplicate J+
Lead (MW-27)	ND	0.00046	100%	Parent UJ Duplicate J+
Molybdenum (MW-27)	ND	0.0038	21%	Parent UJ Duplicate J+

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits. No qualification was required.

Radium-226: FD results were within control limits. No qualification was required.

Radium-228: FD results were within control limits. No qualification was required.

pH: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was performed on sample MW-7 and MW-16 for boron and MW-11 and MW-13 for other metals. RPDs were within the 20% control limit. No qualification was required.

Mercury: Lab duplicate analysis was not performed on a sample from this project for mercury. Laboratory-generated duplicate RPDs were within control limits and no qualification was required.

Anions: Lab duplicate analysis was performed on samples MW-1, MW-1P, MW-7, MW-13, and MW-28. All RPDs were within the 20% control limit. No qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-36 for bicarbonate. The RPD was within the 20% control limit. No qualification was required.

TDS: Lab duplicate analysis was performed on samples MW-5, MW-34, and MW-36. The RPDs were all within the 20% control limit. No qualification was required.

TSS: Lab duplicate analysis was performed on samples MW-26, MW-27, and MW-34-EB. The RPDs were all within the 20% control limit. No qualification was required.

Radium-226: Lab duplicate analysis was not performed for Rad-226.

Radium-228: Lab duplicate analysis was not performed for Rad-228.

pH: Lab duplicate analysis was performed on samples MW-3, MW-7, and MW-29. The RPDs were within the 20% control limit. No qualification was required.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples. MW-26 (280-161696-2), MW-29 (280-161699-1), MW-30 (280-161699-2), MW-33A (280-161699-3), MW-33B (280-161699-4), MW-35 (280-161699-6), and MW-36 (280-161699-7) required dilution prior to analysis for total metals. MW-29, MW-30, and MW-33B required dilution prior to analysis for dissolved metals. The reporting limits have been adjusted accordingly.

Radium-226: Tracer recoveries in all samples were within limits.

Radium-228: Tracer recoveries in all samples were within limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits. No qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.00069	0.006 (MCL)	0.006	None
Arsenic	0.002	0.00075	0.010 (MCL)	Zero	0.0100
Barium	0.00	0.00088	2 (MCL)	2	2.00
Beryllium	0.001	0.00027	0.004 (MCL)	0.004	0.00400
Boron	0.2	0.056	Not Listed	Not Listed	None
Cadmium	0.0001	0.000055	0.005 (MCL)	0.005	0.0310
Calcium	0.5	0.19	Not Listed	Not Listed	None
Chromium	0.005	0.0011	0.1 (MCL)	0.1	0.100
Cobalt	0.0005	0.00019	Not Listed	Not Listed	0.006
Lead	0.0005	0.00024	0.015 (AL)	Zero	0.0150
Lithium	0.01	0.0025	Not Listed	Not Listed	0.0511
Molybdenum	0.002	0.0012	Not Listed	Not Listed	0.100
Selenium	0.005	0.00096	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.00026	0.002 (MCL)	0.0005	None

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.11 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified. Several samples had conflicting information between the bottle labels and the COCs. All information has been reported per the COC.

Metals: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues besides holding time as referenced in Section I.

TSS: No issues.

Radium-226: No issues.

Radium-228: No issues.

pH: No issues.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for cobalt, lead, and molybdenum.

Lab precision goals were met in that MS/MSD RPDs were within control limits. However, MS/MSD RPDs could not be verified for calcium, magnesium, potassium, or sodium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met except MS/MSD recoveries could not be verified for calcium, magnesium, potassium, and sodium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits except Rad-228, which has been qualified.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Mercury in one sample required qualification as estimated (UJ) due to analysis past the holding time and non-detect;
- Anions in one sample required qualification as estimated (UJ) due to analysis past the holding time and non-detect;
- TDS in two samples required qualification as estimated (J) due to analysis past the holding time;
- TSS in one sample required qualification as estimated (J) due to analysis past the holding time;
- Calcium, magnesium, potassium, and sodium results in one sample required qualification as estimated with potential for high bias (J+) due to detection in the method blanks;
- Selenium in one sample has been qualified as estimated with potential for high bias (J+) due to detection in the EB;
- Rad-228 and combined radium in ten samples required qualification as estimated (J) (or UJ if non-detect) due to LCS recoveries outside control limits;
- Cobalt, lead, and molybdenum required qualification as estimated but non-detect (UJ) in the parent sample and estimated with potential for high bias (J+) in a parent/field duplicate pair due to detection in the duplicate but no detection in the parent;
- The accuracy of calcium, magnesium, potassium, and sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. All planned samples were collected.

Lab completeness goals were met. No data were rejected. Of the planned 14 samples for analysis, all 14 were analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except for sodium. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Alkalinity by Standard Method SM2320B
pH by USEPA SW-846 Method 9040B

Project:	Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - July 2022
Project/Task Number:	10279387-001
Sample Data Package:	280-164768-1 (MW-29, MW-30, MW-31, MW-32, MW-33A, MW-33B, MW-38B, MW-38C) 280-164770-1 (MW-13, MW-21, MW-27, MW-28, MW-34, MW-35, MW-36, MW-37) Lab Report Date: 8/10/22, 8/8/22, **Rev. 1 11/14/22** Data Validation Report Date: 8/17/22, **12/26/22**
Laboratory:	TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH);
Sample Matrix:	Groundwater
Sampling Dates:	July 20-28, 2022
Validation Guidelines:	Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10- 011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level:	Stage 2BVM (100%)
Data Reviewer:	Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-13	GW	280-164770-5	07/20/2022	App III	X	X	X		
MW-21	GW	280-164770-7	07/20/2022	App III	X	X	X		
MW-27	GW	280-164770-2	07/21/2022	App III	X	X	X		
MW-28	GW	280-164770-8	07/22/2022	App III	X	X	X		
MW-34	GW	280-164916-1	07/27/2022	App III	X	X	X		
MW-35	GW	280-164916-2	07/27/2022	App III	X	X	X		
MW-36	GW	280-164770-4	07/21/2022	App III	X	X	X		
MW-37	GW	280-164916-3	07/26/2022	App III	X	X	X		
MW-13-FD	QC	280-164770-6	07/20/2022	App III	X	X	X		
MW-27-EB	QC	280-164770-3	07/21/2022	App III	X	X	X		
MW-29	GW	280-164768-1	07/22/2022	App III	X	X	X		X
MW-30	GW	280-164770-1	07/21/2022	App III	X	X	X		
MW-31	GW	280-164768-2	07/22/2022	App III	X	X	X		
MW-32	GW	280-164768-4	07/25/2022	App III	X	X	X		
MW-33A	GW	280-164768-3	07/25/2022	App III	X	X	X		
MW-33B	GW	280-164914-1	07/26/2022	App III	X	X	X		
MW-38B	GW	280-164914-2	07/28/2022	App III	X	X	X		
MW-38C	GW	280-164914-3	07/28/2022	App III	X	X	X		

Original report/EDD contained the following metals:

- Arsenic
- Calcium
- Cobalt
- Lithium
- Magnesium
- Potassium
- Selenium
- Sodium

Rev. 1 includes all App III and App IV metals.

- Antimony
- Barium
- Beryllium
- Boron
- Cadmium
- Chromium
- Lead
- Molybdenum
- Thallium

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.2°C and 0.4°C, within the correct temperature range of 0.7-1.9°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Anions: Samples were analyzed within 28 days of collection.

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples were analyzed within 7 days of collection.

TSS: Samples were analyzed within 7 days of collection.

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

The low-level continuing calibration verification (CCVL) associated with batch 280-582969 recovered (135%) above the upper control (130%) limit for lithium. The samples associated with this CCVL were >10x the level of the CCVL for the affected analytes; therefore, the data have been reported and no qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Molybdenum was detected in MB 280-5821781-A at 0.000182 mg/L. Samples MW-13, MW-13-DUP, MW-21, MW-27, MW-27-EB, MW-28, and MW-36 required qualification as estimated with high bias (J+) or UJ if non-detect. Calcium and sodium were detected in the EB MW-27-EB at 0.095 mg/L and 120 ug/L, respectively. Parent sample results were much higher and no qualification was required.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the MBs or the EBs. No qualification was required.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5821996	Total Alkalinity (Bicarbonate Alkalinity)	3.19	None	None
MB 280-5825216	Total Alkalinity (Bicarbonate Alkalinity)	3.34	None	None

TDS: TDS was not detected in the MBs or the EBs. No qualification was required.

TSS: TSS was not detected in the MBs. TSS was detected in the EB MW-27-EB at 14 mg/L. TSS was detected in the parent sample at 4.8 mg/L. Since the EB result was higher than the parent sample result, only the EB has been qualified as estimated with high bias (J+).

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as indicated below.

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Beryllium	CCB 280-582659/39	None	0.000126	None
	CCB 280-582658/79	None	0.000179	
Boron	ICB 280-582969/11	MW-34, MW-35, MW-37	0.00216	None (sample results much higher)
	CCB 280-582969/55		0.00230	
	CCB 280-582969/66		0.00156	
	CCB 280-582969/75		0.00240	
Molybdenum	ICB 280-582587/13	MW-13, MW-13-DUP, MW-21, MW-27, MW-27-EB, MW-28, MW-36	0.000231	J+ (or UJ if non-detect)
	CCB 280-582587/33		0.000560	
	CCB 280-582587/45		0.000184	
	CCB 280-582587/65		0.000243	
	ICB 280-582659/13	MW-13-DUP, MW-21, MW-28, MW-34, MW-35, MW-37	0.000231	J+ (or UJ if non-detect)
	CCB 280-582659/31		0.000217	
	CCB 280-582659/39		0.000351	
	CCB 280-582659/49		0.000919	
	CCB 280-582659/59		0.000330	
	CCB 280-582659/69		0.000187	
	CCB 280-582659/79		0.000357	
	ICB 280-582955/20	None	0.000163	
	CCB 280-582955/71		0.000175	
	CCB 280-582955/83		0.000159	

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity: Alkalinity was detected in the ICBs or CCBs as noted below.

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Total Alkalinity (equal to Bicarbonate Alkalinity as CaCO3)	CCB 582199/91	None	3.40	None
	CCB 582521/30		3.44	
	CCB 582521/56		3.30	
	CCB 582521/70		4.70	

TDS: Not applicable.

TSS: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked sample MW-28 from this project for total metals and sample MW-29 for dissolved metals. Results were within the control limits except for those listed below. The presence of calcium, magnesium, potassium, selenium, and sodium analytes in the original sample were greater than 4 times the matrix spike concentration for both total and dissolved metals; therefore, control limits are not applicable. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary. The total metals in the parent sample MW-28 and the dissolved metals in MW-29 have also been qualified as estimated (J) since the accuracy cannot be verified. The other analytes listed below were also qualified as estimated (J) in the respective samples. RPDs for calcium, magnesium, potassium, and sodium were also outside control limits.

Sample	Analyte	Affected Samples	Qualifier
MW-28 (total)	Arsenic Calcium Cobalt Magnesium Potassium Selenium Sodium	MW-28	J
MW-29 (dissolved)	Arsenic Calcium Cobalt Lithium Magnesium Potassium Selenium Sodium	MW-29	J (or UJ if non-detect)

Anions: The lab spiked sample MW-30 from this project for chloride and sample MW-32 for sulfate. Recoveries were within control limits and no qualification was required.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-13-DUP was collected as a field duplicate of MW-13.

Metals: FD results were within control limits except those listed below.

Analyte	Parent Result (mg/L)	Duplicate Result (mg/L)	RPD	Qualifier
Calcium	10	490	96%	Parent J- Duplicate J+
Magnesium	14	200	87%	Parent J- Duplicate J+
Sodium	30	450	88%	Parent J- Duplicate J+

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Anions: Lab duplicate analysis was performed on sample MW-30 for chloride and MW-32 for sulfate. All RPDs were within the 20% control limit. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-36 for bicarbonate. The RPD was within the 20% control limit. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

TDS: Lab duplicate analysis was performed on samples MW-27 and MW-27-EB. The RPDs were all within the 20% control limit. All laboratory- generated duplicate samples were also within control limits. No qualification was required.

TSS: Lab duplicate analysis was not performed on samples from this project for TSS. Laboratory-generated duplicate samples were within control limits. No qualification was required.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits except total potassium. The acceptable LCS data indicates that no corrective action was necessary and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

"The interference check standard solution (ICSA) associated with batch 280-582587 had results for one or more elements at a level greater than 2 times the RL. The ICSA result (2.96 ppb) was >2x the RL (1 ppb) for Ba. The vendor acknowledges that these elements are trace impurities in the ICSA standard. These results are not indicative of a matrix interference." No qualification was required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.00069	0.006 (MCL)	0.006	None
Arsenic	0.002	0.00075	0.010 (MCL)	Zero	0.0100
Barium	0.00	0.00088	2 (MCL)	2	2.00
Beryllium	0.001	0.00027	0.004 (MCL)	0.004	0.00400
Boron	0.2	0.056	Not Listed	Not Listed	None
Cadmium	0.0001	0.000055	0.005 (MCL)	0.005	0.0310
Calcium	0.5	0.19	Not Listed	Not Listed	None
Chromium	0.005	0.0011	0.1 (MCL)	0.1	0.100
Cobalt	0.0005	0.00019	Not Listed	Not Listed	0.006
Lead	0.0005	0.00024	0.015 (AL)	Zero	0.0150
Lithium	0.01	0.0025	Not Listed	Not Listed	0.0511
Molybdenum	0.002	0.0012	Not Listed	Not Listed	0.100
Selenium	0.005	0.00096	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.00026	0.002 (MCL)	0.0005	None

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are

below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified. Several samples had conflicting information between the bottle labels and the COCs. All information has been reported per the COC.

Metals: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: No issues.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for calcium, magnesium, and sodium.

Lab precision goals were met in that MS/MSD RPDs were within control limits. However, MS/MSD RPDs could not be verified for calcium, magnesium, potassium, or sodium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met except MS/MSD recoveries could not be verified for calcium,

magnesium, potassium, selenium, and sodium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Seven samples required qualification as estimated with high bias (J+ or UJ if non-detect) due to detection in a MB;
- Ten samples required qualification as estimated with high bias (J+ or UJ if non-detect) due to detection in an ICB or CCB;
- TSS in one sample has been qualified as estimated with potential for high bias (J+) due to detection in the EB;
- Total arsenic, calcium, cobalt, magnesium, potassium, selenium, and sodium in one sample required qualification as estimated (J) due to MS/MSD recoveries outside control limits;
- Dissolved arsenic, calcium, cobalt, lithium, magnesium, potassium, selenium, and sodium in one sample required qualification as estimated (J) (or UJ if non-detect) due to MS/MSD recoveries outside control limits;
- Calcium, magnesium, and sodium required qualification as estimated with low bias (J-) in the parent sample and estimated with potential for high bias (J+) in the duplicate due to RPDs outside control limits in the parent/field duplicate pair;
- The accuracy of calcium, magnesium, potassium, selenium, and sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. All 16 planned wells were sampled.

Lab completeness goals were met. No data were rejected. Of the planned 18 samples for analysis, all 18 were analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Mercury by USEPA SW-846 Method 7470A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B
Alkalinity by Standard Method SM2320B

Project: Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont – October-December 2022

Project/Task Number: 10279387-001

Sample Data Package: 280-168473-1, 280-168474-1, 280-168680-1, 280-169878-1
Lab Report Date: 11/30/22 (168473-1), 11/28/22 (168474-1), 12/5/22 (280-168680), 12/16/22 (280-169878)
Data Validation Report Date: 12/27/22

Laboratory: TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH);
TestAmerica St. Louis, Earth City, Missouri (Radiochemistry)

Sample Matrix: Groundwater

Sampling Dates: October 26-December 1, 2022

Validation Guidelines: Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10-011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment

Validation Level: Stage 2BVM (100%)

Data Reviewer: Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-29	GW	280-168473-7	10/28/2022	X	X	X	X		X
MW-30	GW	280-168473-2	10/26/2022	X	X	X	X		X
MW-31	GW	280-168473-9	10/28/2022	X	X	X	X		X
MW-32	GW	280-168473-1	10/26/2022	X	X	X	X		
MW-33A	GW	280-168473-4	10/27/2022	X	X	X	X		
MW-33B	GW	280-169878-1	12/01/2022	X	X	X	X		X
MW-34	GW	280-168473-6	10/27/2022	X	X	X	X		
MW-34	GW	280-168680-1	11/03/2022					X	
MW-35	GW	280-168473-5	10/27/2022	X	X	X	X		
MW-35	GW	280-168680-2	11/03/2022					X	
MW-38B	GW	280-168474-2	11/01/2022	X	X	X	X		
MW-38C	GW	280-168474-1	10/31/2022	X	X	X	X		
MW-31-EB	QC	280-168473-8	10/28/2022	X	X	X	X		
MW-32-FD	QC	280-168473-3	10/26/2022	X	X	X	X		

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.4°C, 1.0°C, 1.1°C, and 3.6°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: All samples were analyzed within 28 days of collection.

Anions: Samples were analyzed within 28 days of collection.

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples were analyzed within 7 days of collection except MW-30, MW-32, and MW-32-FD, which required qualification as estimated (J).

TSS: Samples were analyzed within 7 days of collection.

Radium-226: Samples had ingrowth times of at least 21 days.

Radium-228: Samples had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met except one fluoride CCV that was not associated with the sample batch. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Metals were detected in MBs and EB as indicated below.

Method Blank or EB	Analyte	Result (mg/L)	Affected Samples	Qualifier
MW-31-EB	Calcium	0.35	MW-31	None (sample

Method Blank or EB	Analyte	Result (mg/L)	Affected Samples	Qualifier
				results much higher)
MW-31-EB	Selenium	0.0012	MW-31	None (sample results much higher)
MW-31-EB	Sodium	0.18	MW-31	None (sample results much higher)
MB 280-5922401-A	Calcium	0.0511	MW-30, MW-32, MW-32-FD, MW-33A, MW-35	None (sample results much higher)
MB 280-5922401-A	Magnesium	0.0256	MW-30, MW-32, MW-32-FD, MW-33A, MW-35	None (sample results much higher)
MB 280-5922401-A	Sodium	0.0868	MW-30, MW-32, MW-32-FD, MW-33A, MW-35	None (sample results much higher)

Mercury: Mercury was not detected in the MBs or the EB. No qualification was required.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was detected in the MBs or the EB as indicated below.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5923696	Total alkalinity	3.11	MW-38B, MW-38C	None (sample results much higher)
MB 280-5921976	Total alkalinity	3.56	MW-29, MW-30, MW-31, MW-31-EB, MW-32, MW-32-FD, MW-33A, MW-34, MW-35	J+ (MW-31-EB only, other sample results much higher)
	Bicarbonate alkalinity	3.17		
MB 280-59567832	Total alkalinity	3.45	MW-33B	None (sample results much higher)
	Bicarbonate alkalinity	3.45		
MB 280-5956786	Total alkalinity	3.27	MW-33B	None (sample results much higher)

TDS: TDS was not detected in the MBs. TDS was detected in MW-31-EB at 11 mg/L. Sample results were much higher and no qualification was required.

TSS: TSS was not detected in the MBs or the EBs. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs or the EB. No qualification was required.

Radium-228: Rad-228 was not detected in the MBs or the EB. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as indicated below:

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Barium	CCB 280-592549/89	MW-34, MW-35	0.000469	J+
Boron	CCB 280-592858/24	MW-34, MW-35	0.00209	None (sample results much higher)
	CCB 280-592858/43		0.00175	
Beryllium	CCB 280-592549/51	MW-34, MW-35	0.000114	UJ
	CCB 280-592549/89		0.0000940	
	CCB 280-592549/142		0.000145	
Calcium	CCB 280-592549/80	MW-29, MW-30, MW-31, MW-31-EB, MW-32, MW-32-FD, MW-33A, MW-34, MW-35	0.0767	J+ (MW-31-EB only, other samples much higher)
	CCB 280-592549/89		0.0394	
	CCB 280-592549/121		0.0489	
Magnesium	CCB 280-592549/80	MW-29, MW-30, MW-31, MW-31-EB, MW-32, MW-32-FD, MW-33A, MW-34, MW-35	0.0378	UJ (MW-31-EB only, other samples much higher)
	CCB 280-592549/121		0.0283	
Molybdenum	CCB 280-592549/121	MW-34, MW-35	0.000144	J+
Potassium	CCB 280-596140/45	MW-33B	0.128	J+
	CCB 280-596307/71	MW-33B	0.133	J+
	CCB 280-596307/80		0.367	
Sodium	CCB 280-592549/51	MW-29, MW-30, MW-31, MW-31-EB, MW-32, MW-32-FD, MW-33A, MW-34, MW-35	0.0668	J+ (MW-31-EB only, other samples much higher)
	CCB 280-592549/121		0.134	
	CCB 280-596432/37	MW-33B	0.443	None (sample results much higher)

From case narrative: "The instrument blank for analytical batch 280-592549 contained 134 ppb Na and 28 ppb Mg which is greater than one-half the reporting limit (RL) of 150 ppb for Na and 50 ppb for Mg, and were not re-analyzed because the samples were >10x the blank. The data have been qualified and reported. The closing CCB result (-35 ppb) was more negative than 1/2 the RL (50 ppb) for Mg, but again the samples were >10x the result of the blank."

"The instrument blank for analytical batch 280-596307 contained K greater than the reporting limit (RL), and were not reanalyzed because the sample was >10x the blank. The data have been qualified and reported. The instrument blank for analytical batch 280-596432 contained 443 ppb Na which is greater than the reporting limit (RL) of 150 ppb, and were not reanalyzed because the sample was >10x the blank. The data have been qualified and reported. The instrument blank for analytical batch 280-596140 contained 128 ug/L K greater than the reporting limit (RL) of 120 ug/L, and were not reanalyzed because sample (MB/LCS) < 1/2 RL and within control limit. The data

have been qualified and reported."

Mercury: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs except chloride was detected in ICB 593066-9 at 1.16 mg/L. This ICB was not associated with project samples and no qualification was required.

Alkalinity: Alkalinity was detected in the ICBs or CCBs as indicated below.

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Total and bicarbonate alkalinity	CCB 592197-30	MW-29, MW-30, MW-31, MW-32, MW-32-FD, MW-33A, MW-34, MW-35	3.35	None (sample results much higher)
	CCB 592197-44		3.27	
	CCB 592369-30	MW-38B, MW-38C	3.34	None (sample results much higher)
	CCB 595678-18	MW-33B	3.43	None (sample results much higher)
	CCB 595678-44		3.33	
	CCB 595678-56		3.30	

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125% except fluoride in LCS 280-59366646 had a recovery of 40%. Associated samples MW-34 and MW-35 required qualification as estimated (J). The RPDs were within the control limit of 20% as suggested in the Functional Guidelines.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were

within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked sample MW-30 for dissolved lithium, MW-31 for dissolved arsenic, calcium, magnesium, potassium, selenium, and sodium, and MW-33B for dissolved arsenic, calcium, cobalt, magnesium, potassium, selenium, and sodium. Recoveries and RPDs were outside the control limits for calcium, magnesium, potassium, and sodium. Dissolved calcium, magnesium, potassium, and sodium in MW-31 and dissolved calcium, magnesium, and sodium in MW-33B required qualification as estimated (J). The presence of dissolved calcium, magnesium, potassium, selenium, and sodium was greater than 4 times the matrix spike concentration and accuracy could not be verified.

“Lead, Thallium and Sodium failed the recovery criteria low for the MS of sample 280-168470-1 in batch 280-592825. Calcium, Magnesium and Potassium failed the recovery criteria high.” This MS was not associated with project samples and no qualification was required.

“For the MSD of sample 280-168470-1 in batch 280-592825, Lead and Thallium failed the recovery criteria low. Potassium, Cadmium and Sodium failed the recovery criteria high. Also, Cadmium exceeded the RPD limit.” This MS was not associated with project samples and no qualification was required.

“Several analytes failed the recovery criteria low for the MS of sample 280-168506-2 in batch 280-592549. Arsenic failed the recovery criteria high. Several analytes failed the recovery criteria low for the MSD of sample 280-168506-2 in batch 280-592687. Calcium, Arsenic, Barium and Chromium failed the recovery criteria high.” This MS was not associated with project samples and no qualification was required.

“Several analytes failed the recovery criteria low for the MS of sample 280-169800-2 in batch 280-596307. Selenium, Calcium, Potassium and Sodium failed the recovery criteria low for the MSD of sample 280-169800-2 in batch 280-596307. Magnesium failed the recovery criteria high.” This MS was not associated with project samples and no qualification was required.

Mercury: The lab did not spike samples from this project for mercury. Recoveries and RPDs of laboratory-generated MS/MSD analyses were within control limits and no qualification was required.

Anions: The lab did not spike samples from this project for anions. “The matrix spike / matrix spike

duplicate (MS/MSD) recoveries for analytical batch 280-593777 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits." The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-596883 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits." These batches were not associated with project samples; no qualification was required.

Radium-226: MS/MSD analysis was not performed for Rad-226 due to limited sample volume.

Radium-228: MS/MSD analysis was not performed for Rad-228 due to limited sample volume.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-32-FD was collected as a field duplicate of MW-32.

Metals: FD results were within control limits. No qualification was required.

Mercury: FD results were within control limits. No qualification was required.

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: TSS had an RPD of 71%. The parent sample required qualification as estimated with low bias (J-) and the field duplicate required qualification as estimated with high bias (J+).

Rad-226: FD results were within control limits. No qualification was required.

Rad-228: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Mercury: Lab duplicate analysis was not performed on samples from this project for mercury.

Anions: Lab duplicate analysis was not performed on samples from this project for anions. All laboratory-generated duplicate samples were within control limits. No qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-32 from this project for alkalinity. Results were within control limits. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

TDS: Lab duplicate analysis was performed on sample MW-33B from this project for TDS. Results were within control limits. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

TSS: Lab duplicate analysis was performed on sample MW-32 from this project for TSS. Results

were outside control limits with a RPD of 50%. TSS in MW-32 required qualification as estimated (J). All laboratory-generated duplicate samples were within control limits. No qualification was required.

pH: Lab duplicate analysis was performed on sample MW-31-EB from this project for pH. Results were outside control limits with a RPD of 8%. pH in MW-31-EB required qualification as estimated (J). All laboratory-generated duplicate samples were within control limits. No qualification was required

Rad-226: Lab duplicate analysis was not performed for Rad-226.

Rad-228: Lab duplicate analysis was not performed for Rad-228.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: Tracer recoveries were within control limits.

Radium-228: Tracer recoveries were within control limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits except total calcium and barium. The acceptable LCS data indicates that no corrective action was necessary, and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.0004	0.006 (MCL)	0.006	0.00600
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0100
Barium	0.001	0.00029	2 (MCL)	2	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	0.00400
Boron	0.1	0.0015	Not Listed	Not Listed	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	0.00500
Calcium	0.2	0.038	Not Listed	Not Listed	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	0.100
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.00600
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.0506
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	0.00200

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.061 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively. Fluoride GPS is 4 mg/L.

Alkalinity: The RLs of 10 mg/L for alkalinity, bicarbonate, and carbonate are below the MDLs of 3.1 mg/L for each parameter.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified.

Metals: No issues.

Mercury: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: High quantity of solids in liquid matrix requiring use of less than nominal volume for method analysis: MW-30 (280-168473-2).

Radium-226: No issues.

Radium-228: No issues.

pH: The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did; therefore the sample was not rerun: MW-31-EB (280-168473-8).

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for TSS.

Lab precision goals were nearly met in that MS/MSD RPDs were within control limits except dissolved calcium, magnesium, potassium, and sodium. However, MS/MSD RPDs could not be verified for these constituents, nor selenium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were nearly met in that MS/MSD recoveries were within control limits except

dissolved calcium, magnesium, potassium, selenium, and sodium. MS/MSD recoveries could not be verified for calcium, magnesium, potassium, selenium, or sodium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits except fluoride affecting two samples.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- TDS in three samples required qualification as estimated (J) due to analysis past the holding time;
- Bicarbonate and total alkalinity in one sample required qualification as estimated with high bias (J+) due to detection in a MB;
- Barium, beryllium, and molybdenum in two samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a CCB;
- Calcium, magnesium, and sodium in one sample required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a CCB;
- Potassium in one sample required qualification as estimated with high bias (J+) due to detection in a CCB;
- Fluoride in two samples required qualification as estimated (J) due to LCS recoveries outside control limits;
- Dissolved calcium, magnesium, potassium, and sodium in one sample and dissolved calcium, magnesium, and sodium in another sample required qualification as estimated (J) due to MS/MSD recoveries outside control limits;
- TSS required qualification as estimated with low bias (J-) in the parent sample and estimated with high bias (J+) in the duplicate due to RPDs outside control limits in the parent/field duplicate pair;
- TSS in one sample required qualification as estimated (J) due to laboratory duplicate RPD outside control limits;
- pH in one sample required qualification as estimated (J) due to laboratory duplicate RPD

outside control limits;

- The accuracy of calcium, magnesium, potassium, selenium, and sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were nearly met. Ten of eleven planned wells were sampled; MW-38A was dry. This results in a field completeness of 91%.

Lab completeness goals were met. No data were rejected. Of the planned 12 samples for analysis, all 12 were analyzed for all requested analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except pH and Rad-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Mercury by USEPA SW-846 Method 7470A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B
Alkalinity by Standard Method SM2320B

Project: Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - October 2022

Project/Task Number: 10279387-001

Sample Data Package: 280-168149-1, 280-168149-2
Lab Report Date: 11/21/22 (168149-1), 11/28/22 (168149-2)
Data Validation Report Date: 12/17/22

Laboratory: TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH);
TestAmerica St. Louis, Earth City, Missouri (Radiochemistry)

Sample Matrix: Groundwater

Sampling Dates: October 19-20, 2022

Validation Guidelines: Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10-011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment

Validation Level: Stage 2BVM (100%)

Data Reviewer: Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-1P	GW	280-168149-1	10/19/2022	X	X	X	X	X	
MW-9	GW	280-168149-2	10/19/2022	X	X	X	X	X	
MW-11	GW	280-168149-3	10/19/2022	X	X	X	X	X	
MW-12	GW	280-168149-4	10/20/2022	X	X	X	X	X	
MW-12-EB	QC	280-168149-5	10/20/2022	X	X	X	X	X	
MW-9-DUP	QC	280-168149-6	10/19/2022	X	X	X	X	X	

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.3°C, 0.4°C, and 0.4°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: All samples were analyzed within 28 days of collection.

Anions: Samples were analyzed within 28 days of collection except samples MW-1P, MW-9, MW-9-DUP, and MW-11. Chloride and sulfate in MW-1P, MW-9, MW-9-DUP, and MW-11 required qualification as estimated (J). “Reanalysis of the following sample(s) was performed outside of the analytical holding time due to samples needing further dilutions: MW-9-DUP (280-168149-6).”

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples were analyzed within 7 days of collection.

TSS: Samples were analyzed within 7 days of collection.

Radium-226: Samples had ingrowth times of at least 21 days.

Radium-228: Samples had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

"The low level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for Li. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported."

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Metals were detected in MBs as indicated below.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MW-12-EB	Barium	0.00045	MW-12	None (sample results much higher)
MW-12-EB	Boron	0.011	MW-12	None (sample results much higher)
MW-12-EB	Calcium	0.055	MW-12	None (sample results much higher)
MB 280-5910821-A	Chromium	0.000554	MW-1P, MW-9, MW-9-DUP, MW-11, MW-12, MW-12-EB	J+ (or UJ if non-detect)

Mercury: Mercury was not detected in the MBs or the EB. No qualification was required.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the MBs or the EBs. No qualification was required.

TDS: TDS was not detected in the MBs or the EBs. No qualification was required.

TSS: TSS was not detected in the MBs or the EBs. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs or the EB. No qualification was required.

Radium-228: Rad-228 was detected in the MB 160-5882531-A at 1.165 pCi/L. Samples MW-9, MW-9-DUP, MW-12, and MW-12-EB required qualification as estimated with potential for high bias (J+) in Rad-228 and consequently in combined radium results for all samples. Rad-228 was not detected in the EB.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as indicated below:

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Boron	CCB 280-591608/47	MW-1P, MW-9, MW-9-DUP, MW-11, MW-12, MW-12-EB	0.00184	J+ (MW-12-EB only, other sample results much higher)
	CCB 280-591608/61		0.00188	
	CCB 280-592353/61	None	0.00153	
Sodium	CCB 280-592086/54	MW-1P, MW-9, MW-9-DUP, MW-11, MW-12,	0.0771	None (sample results much higher)

		MW-12-EB		

From the case narrative: “The instrument blank for analytical batch 280-592086 contained 77 ppb Na which is greater than one-half the reporting limit (RL) of 150 ppb, and were not re-analyzed because the samples are >10x the blank. The data have been qualified and reported.”

Mercury: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs except chloride was detected in ICB 593066-9 at 1.16 mg/L. This ICB was not associated with project samples and no qualification was required.

Alkalinity: Alkalinity was not detected in the ICBs or CCBs. No qualification was required.

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs

were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked sample MW-1P from this project for metals. Results were within the control limits except calcium recovery failed high. Calcium in MW-1P required qualification as estimated (J). The presence of calcium in MW-1P was greater than 4 times the matrix spike concentration.

In laboratory-generated MS/MSD analyses, magnesium and sodium failed the recovery criteria low for the MS of sample 280-168147-2 in batch 280-592132. Potassium failed the recovery criteria high. Magnesium, potassium, and sodium failed the recovery criteria low for the MSD of sample 280-168147-2 in batch 280-592132. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary.

Mercury: The lab did not spike samples from this project for mercury. Recoveries and RPDs of laboratory-generated MS/MSD analyses were within control limits and no qualification was required.

Anions: The lab did not spike samples from this project for anions. Recoveries and RPDs for laboratory-generated MS/MSD analyses were within control limits except “Chloride and Sulfate failed the recovery criteria high for the MS and MSD of sample 280-167903-4 in analytical batch 280-594073”. This batch was not associated with project samples; no qualification was required.

Radium-226: MS/MSD analysis was not performed for Rad-226 due to limited sample volume.

Radium-228: MS/MSD analysis was not performed for Rad-228 due to limited sample volume.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-9-DUP was collected as a field duplicate of MW-9.

Metals: FD results were within control limits except chromium was non-detect in the parent sample and detected in the field duplicate. The parent sample required qualification as estimated but not detected (UJ) and the field duplicate required qualification as estimated with high bias (J+).

Mercury: FD results were within control limits. No qualification was required.

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits except TSS had an RPD of 27%. The parent sample required qualification as estimated with high bias (J+) and the field duplicate required qualification as estimated with low bias (J-).

Rad-226: FD results were within control limits. No qualification was required.

Rad-228: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Mercury: Lab duplicate analysis was not performed on samples from this project for metals.

Anions: Lab duplicate analysis was not performed on samples from this project for anions. All laboratory-generated duplicate samples were within control limits. No qualification was required.

Alkalinity: Lab duplicate analysis was not performed on samples from this project for alkalinity. All laboratory-generated duplicate samples were within control limits. No qualification was required.

TDS: Lab duplicate analysis was not performed on samples from this project for TDS. All laboratory-generated duplicate samples were within control limits. No qualification was required.

TSS: Lab duplicate analysis was not performed on samples from this project for TSS. All laboratory-generated duplicate samples were within control limits. No qualification was required

pH: Lab duplicate analysis was not performed on samples from this project for pH. All laboratory-generated duplicate samples were within control limits. No qualification was required

Rad-226: Lab duplicate analysis was not performed for Rad-226.

Rad-228: Lab duplicate analysis was not performed for Rad-228.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: "The Barium carrier recovery is outside the upper control limit (110%) for the following sample: MW-12-EB (280-168149-5). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have." No additional qualification was required.

Radium-228: "The following sample(s) have Ba carrier recoveries above the 110% QC limit. During preparation the analyst visually noted matrix effects. The LCS/LCSD (laboratory control sample/laboratory control sample duplicate) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. The sample(s) have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been reported with this narrative MW-12-EB (280-168149-5)." No additional qualification was required.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits except total calcium. The acceptable LCS data indicates that no corrective action was necessary, and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.0004	0.006 (MCL)	0.006	None
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0107
Barium	0.001	0.00029	2 (MCL)	2	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	None
Boron	0.1	0.0015	Not Listed	Not Listed	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	None
Calcium	0.2	0.038	Not Listed	Not Listed	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	None
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.006
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.0400
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	None
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	None

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.061 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively. Fluoride GPS is 4 mg/L.

Alkalinity: The RLs of 10 mg/L for alkalinity, bicarbonate, and carbonate are below the MDLs of 3.1 mg/L for each parameter.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified.

Metals: No issues.

Mercury: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: No issues.

Radium-226: No issues.

Radium-228: A reduced sample volume was prepared for MW-13 (2 of 2) due to matrix interferences, but all RLs were 1.0 pCi/L.

pH: The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did therefore the sample was not rerun: MW-12-EB (280-168149-5).

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for chromium and TSS.

Lab precision goals were met in that MS/MSD RPDs were within control limits. However, MS/MSD RPDs could not be verified for calcium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were nearly met in that MS/MSD recoveries were within control limits except calcium. MS/MSD recoveries could not be verified for calcium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Anions in four samples required qualification as estimated (J) due to analysis past the holding time;
- Chromium in all six samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a MB;
- Rad-228 and combined radium in four samples required qualification as estimated with high bias (J+) due to detection in a MB;
- Boron in one sample required qualification as estimated with high bias (J+) due to detection in a CCB;
- Calcium in one sample required qualification as estimated (J) due to MS/MSD recoveries outside control limits;

- TSS required qualification as estimated with high bias (J+) in the parent sample and estimated with potential for low bias (J-) in the duplicate due to RPDs outside control limits in the parent/field duplicate pair;

- Chromium required qualification as estimated but not detected (UJ) in the parent sample and estimated with potential for high bias (J+) in the duplicate due to RPDs outside control limits in the parent/field duplicate pair;

- The accuracy of calcium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. All 4 planned wells were sampled.

Lab completeness goals were met. No data were rejected. Of the planned 6 samples for analysis, all 6 were analyzed for all requested analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except pH and Rad-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Mercury by USEPA SW-846 Method 7470A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B
Alkalinity by Standard Method SM2320B

Project:	Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - October 2022
Project/Task Number:	10279387-001
Sample Data Package:	**280-167814-1, 280-167814-2** (MW-14, MW-15, MW-16, MW-28, MW-39B) **280-167382-1**, **280-167382-2** (MW-1, MW-3, MW-4, MW-6, MW-7, MW-13, MW-21, MW-21-DUP, MW-21-EB) **280-168150-1**, **280-168150-2** (MW-26, MW-27) **280-170465-1** (MW-5, MW-8) Lab Report Date: 11/1/22 (167814-1), 11/10/22 (167382-2), 11/21/22 (168150-1), 11/23/22 (168150-2), 12/8/22 (167814-2), 1/3/23, 1/18/23 Rev 2 (170465-1) Data Validation Report Date: 1/8/23
Laboratory:	TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH); TestAmerica St. Louis, Earth City, Missouri (Radiochemistry)
Sample Matrix:	Groundwater
Sampling Dates:	October 4-18, 2022
Validation Guidelines:	Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10-011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level:	Stage 2BVM (100%)
Data Reviewer:	Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-1	GW	280-167382-5	10/05/2022	X	X	X	X	X	
MW-3	GW	280-167382-6	10/06/2022	X	X	X	X	X	
MW-4	GW	280-167382-1	10/04/2022	X	X	X	X	X	X
MW-5	GW	280-170465-1	12/15/2022	X	X	X	X		X
MW-6	GW	280-167382-4	10/05/2022	X	X	X	X	X	
MW-7	GW	280-167382-7	10/06/2022	X	X	X	X	X	
MW-8	GW	280-170465-2	12/15/2022	X	X	X	X		
MW-13 (1 of 2)	GW	280-167382-2	10/04/2022		X	X	X		
MW-13 (2 of 2)	GW	280-167382-3	10/05/2022	X				X	X
MW-14	GW	280-167814-3	10/14/2022	X	X	X	X	X	
MW-15	GW	280-167814-2	10/13/2022	X	X	X	X	X	
MW-16	GW	280-167814-4	10/14/2022	X	X	X	X	X	
MW-21	GW	280-167382-8	10/07/2022	X	X	X	X	X	
MW-26	GW	280-168150-1	10/17/2022	X	X	X	X	X	
MW-27	GW	280-168150-2	10/18/2022	X	X	X	X	X	
MW-28	GW	280-167814-1	10/11/2022	X	X	X	X	X	
MW-39B	GW	280-167814-5	10/13/2022						X
MW-21-DUP	QC	280-167382-9	10/07/2022	X	X	X	X	X	
MW-21-EB	QC	280-167382-10	10/07/2022	X	X	X	X	X	

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.3°C, 0.6°C, 0.8°C, 0.9°C, 1.6°C, and 1.7°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: All samples were analyzed within 28 days of collection.

Anions: Samples were analyzed within 28 days of collection except samples MW-26 and MW-27. Chloride, fluoride, and sulfate in MW-26 and MW-27 required qualification as estimated (J) (or UJ if non-detect). MW-26 required re-analysis due to needing further dilution and the re-analysis was outside the holding time.

Alkalinity: Samples were analyzed within 14 days of collection except samples MW-5, MW-8, and MW-26. Alkalinity, bicarbonate, and carbonate in MW-5, MW-8, and MW-26 required qualification as estimated (J) (or UJ if non-detect).

TDS: Samples were analyzed within 7 days of collection except samples MW-26, MW-27, and MW-28. TDS in samples MW-26, MW-27, and MW-28 required qualification as estimated (J).

TSS: Samples were analyzed within 7 days of collection except samples MW-26, MW-27, and MW-28. TSS in samples MW-26, MW-27, and MW-28 required qualification as estimated (J).

Radium-226: Samples had ingrowth times of at least 21 days.

Radium-228: Samples had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

The low-level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for lithium. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported and no qualification was required.

Mercury: Continuing calibration criteria were nearly met. All analytes had %D values less than 10% except CCV 280-590961/12-A had a recovery of 85%, a %D of 14%. This CCV was not associated with project samples. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

Metals: Metals were detected in MBs as indicated below.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5902561-A	Barium (total)	0.000295	MW-14, MW-15, MW-16, MW-28	J+ (or UJ if non-detect)
MB 280-5974451-A	Barium (total)	0.000534	MW-5, MW-8	J+
MB 280-5894651-D	Beryllium (diss.)	0.000094	MW-4, MW-13 (2 of 2)	J+ (or UJ if non-detect)
MB 280-5894651-B	Boron (diss.)	0.00267	MW-4, MW-13 (2 of 2)	None (sample results much higher)
MB 280-5974481-A	Boron (total)	0.00519	MW-5, MW-8	None (sample results much higher)
MW-21-EB	Boron (total)	0.0037	MW-21	None (sample results much higher)
MB 280-5974451-A	Calcium (total)	0.0443	MW-5, MW-8	None (sample results much higher)
MW-21-EB	Calcium (total)	0.084	MW-21	None (sample results much higher)
MB 280-5905901-C	Chromium (diss.)	0.000562	MW-39B	J+ (or UJ if non-detect)
MB 280-5910821-A	Chromium (total)	0.000554	MW-26, MW-27	J+
MB 280-5894651-D	Cobalt (diss.)	0.000212	MW-4, MW-13 (2 of 2)	J+
MB 280-5893481-A	Cobalt (total)	0.000238	MW-1, MW-3, MW-4, MW-6, MW-7, MW-13 (2 of 2), MW-21, MW-21-DUP, MW-21-EB	J+
MW-21-EB	Cobalt (total)	0.001	MW-21	J+
MB 280-5894651-D	Lead (diss.)	0.00021	MW-4, MW-13 (2 of 2)	J+
MB 280-5974451-A	Molybdenum (total)	0.000161	MW-5, MW-8	J+
MW-21-EB	Potassium (total)	0.11	MW-21	None (sample results much higher)
MW-21-EB	Sodium (total)	0.15	MW-21	None (sample results much higher)

Mercury: Mercury was not detected in the MBs or the EB. No qualification was required.

Anions: Anions were not detected in the MBs or the EBs. No qualification was required.

Alkalinity: Alkalinity was detected in the MBs as indicated below.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-590600110	Total Alkalinity	12.5	MW-14, MW-15, MW-16, MW-28	J+ (or UJ if non-detect)
	Bicarbonate Alkalinity	5.03		
	Carbonate Alkalinity	7.44		
MB 280-5906006	Total Alkalinity	3.3	MW-14, MW-15, MW-16, MW-28	J+ (or UJ if non-detect)
	Bicarbonate Alkalinity	3.23		
MB 280-58966784	Total Alkalinity	6.5	MW-1, MW-3, MW-4, MW-6, MW-7, MW-13 (1 of 2), MW-21, MW-21-DUP, MW-21-EB	J+ (or UJ if non-detect)
	Bicarbonate Alkalinity	4.76		

TDS: TDS was not detected in the MBs or the EBs. No qualification was required.

TSS: TSS was not detected in the MBs or the EBs. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs. Rad-226 was detected in MW-21-EB at 0.16 pCi/L. Rad-226 and consequently combined radium in MW-21 required qualification as estimated with high bias (J+).

Radium-228: Rad-228 was detected in the MB 160-5864351-A at 0.5753 pCi/L. Samples MW-3, MW-7, MW-21, MW-21-DUP, and MW-21-EB required qualification as estimated with potential for high bias (J+) in Rad-228 and consequently in combined radium results for all samples. Rad-228 was not detected in the EB.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were not detected in the ICBs or CCBs. No qualification was required.

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Beryllium	CCB 280-589801/97	MW-1, MW-4 (D), MW-13 (2 of 2) (D), MW-21-EB	0.000093	J+ (or UJ if non-detect)
	CCB 280-589801/129		0.000104	
	CCB 280-589801/142		0.000236	
	CCB 280-589801/153		0.000161	
	ICB 280-592051/13	MW-26, MW-27	0.000110	J+ (or UJ if non-detect)
Boron	CCB 280-589677/21	None	0.00186	None

	CCB 280-589950/20	MW-4 (D), MW-13 (2 of 2) (D)	0.00441	J+ (or UJ if non-detect)
	CCB 280-589950/48		0.00283	
	CCB 280-591608/47	MW-26, MW-27	0.00184	J+ (or UJ if non-detect)
	CCB 280-591608/61		0.00188	
	CCB 280-598323/138	MW-5 (T), MW-8	0.0123	None (sample results much higher)
Calcium	CCB 280-597840/68	MW-5 (T), MW-5 (D), MW-8	0.0423	None (sample results much higher)
	CCB 280-597840/192		0.0758	
Lithium	ICB 280-589950/13	MW-4 (D), MW-13 (2 of 2) (D)	0.0153	J+ (or UJ if non-detect)
	CCB 280-589950/20		0.0113	
	CCB 280-589950/34		0.0146	
	CCB 280-589950/48		0.0110	
Magnesium	CCB 280-589658/110	MW-1, MW-3, MW-6, MW-7, MW-13 (2 of 2), MW-21-EB	0.0238	J+ (or UJ if non-detect)
	CCB 280-597840/68	MW-5	0.0419	None (sample results much higher)
	CCB 280-597840/80		0.0220	
Potassium	CCB 280-589801/78	MW-1, MW-3, MW-4, MW-6, MW-7, MW-13 (2 of 2), MW-21, MW-21-DUP, MW-21-EB	0.0557	J+ (or UJ if non-detect)
	CCB 280-589801/88		0.0723	
	CCB 280-589801/97		0.0751	
	CCB 280-589801/117		0.0825	
	CCB 280-589801/129		0.0739	
	CCB 280-589801/107		0.0926	
Sodium	CCB 280-589658/98	None	0.0693	None
	CCB 280-589801/107	MW-1, MW-3, MW-4, MW-6, MW-7, MW-13 (2 of 2), MW-21, MW-21-DUP	0.136	None (sample results much higher)
	CCB 280-597840/68	None		None
	CCB 280-597840/80			
	CCB 280-597840/87			

Noted on case narrative "The instrument blank for analytical batch 280-589801 contained 75 ppb &82 ppb K which is greater than one-half the reporting limit (RL) of 120 ppb, and were not re-analyzed because the samples were >10x the blank. The data have been qualified and reported."

"The instrument blank for analytical batch 280-589801 contained 135 ppb Na which is greater than one-half the reporting limit (RL) of 150 ppb, and were not re-analyzed because the samples are >10x the blank. The data have been qualified and reported."

"The instrument blank result for analytical batch 280-591763 was -127 ppb K which is more negative than the reporting limit (RL), and were not reanalyzed because the samples are >10x the blank. The data have been qualified and reported."

Mercury: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs except chloride was detected in ICB 593066-9 at 1.16 mg/L. This ICB was not associated with project samples and no qualification was required.

Alkalinity: Alkalinity and bicarbonate alkalinity were detected in CCB 590600-108 at 3.11 mg/L. MW-14, MW-15, MW-16, and MW-28 required qualification as estimated with high bias (J+). Alkalinity and bicarbonate alkalinity were detected in CCB 589667-82 at 3.57 mg/L, CCB 589667-96 at 4.68 mg/L and CCB 589667-108 at 3.27 mg/L. Alkalinity and bicarbonate alkalinity required qualification as estimated with high bias (J+) (or UJ if non-detect) in samples MW-1, MW-3, MW-4, MW-6, MW-7, MW-13 (1 of 2), MW-21, MW-21-DUP, and MW-21-EB.

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125% except fluoride failed the recovery criteria high for LCSD 280-591018/57. Fluoride in MW-14 and MW-28 required qualification as estimated (J) (or UJ if non-detect). The RPDs were within the control limit of 20% as suggested in the Functional Guidelines.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: From the case narrative: “The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 130%: (LCS 160-587627/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is

within criteria and no further action is required." No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked samples MW-4, MW-5, and MW-39B from this project for dissolved metals. Results were within the control limits except dissolved calcium in recovered high in MW-5 and recovered low in a laboratory-generated MS/MSD sample. The presence of calcium analytes in the original MW-5 and MW-39B samples were greater than 4 times the matrix spike concentration for dissolved metals; therefore, control limits are not applicable. Dissolved calcium in the parent samples MW-5 and MW-39B have been qualified as estimated (J) since the accuracy cannot be verified. The presence of selenium and calcium analytes in the original MW-4 sample were greater than 4 times the matrix spike concentration for dissolved metals; therefore, control limits are not applicable. Dissolved calcium and selenium in the parent sample MW-4 has been qualified as estimated (J) since the accuracy cannot be verified. The presence of calcium, magnesium, potassium, and sodium analytes in the laboratory-generated sample were greater than 4 times the matrix spike concentration for total metals. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary.

Mercury: The lab spiked sample MW-13 (2 of 2) from this project for mercury. Recoveries and RPDs were within control limits. Recoveries and RPDs of laboratory-generated MS/MSD analyses were within control limits and no qualification was required.

Anions: The lab spiked sample MW-15 from this project for fluoride and samples MW-7 and MW-27 for all three anions. Recoveries and RPDs were outside control limits for MW-15. MW-15 required qualification as estimated (J) for fluoride. Recoveries and RPDs for laboratory-generated MS/MSD analyses for chloride and sulfate were within control limits.

Radium-226: MS/MSD analysis was not performed for Rad-226 due to limited sample volume.

Radium-228: MS/MSD analysis was not performed for Rad-228 due to limited sample volume.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-21-DUP was collected as a field duplicate of MW-21.

Metals: FD results were within control limits except cobalt had an RPD of 23%. The parent sample required qualification as estimated with high bias (J+) and the field duplicate required qualification as estimated with low bias (J-). However, MW-21-DUP was qualified as estimated with high bias due to another QC outside control limits. It has been qualified as estimated with no bias (J).

Mercury: FD results were within control limits. No qualification was required.

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits except TSS had an RPD of 25%. The parent sample required qualification as estimated with high bias (J+) and the field duplicate required qualification as estimated with low bias (J-).

Rad-226: FD results were within control limits. No qualification was required.

Rad-228: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Mercury: Lab duplicate analysis was not performed on samples from this project for metals.

Anions: Lab duplicate analysis was performed on sample MW-15 for fluoride and on samples MW-7 and MW-27 for all three anions. All RPDs were within the 20% control limit. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-14 for bicarbonate, carbonate, and total alkalinity. The RPD was within the 20% control limit. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

TDS: Lab duplicate analysis was performed on samples MW-16 and MW-26. The RPDs were all within the 20% control limit. No qualification was required. All laboratory-generated duplicate samples were also within control limits. No qualification was required.

TSS: Lab duplicate analysis was performed on sample MW-26 from this project for TSS. The RPD was outside control limits at 29%. TSS in MW-26 has been qualified as estimated (J). Two laboratory-generated duplicate samples were outside control limits. These samples were not associated with project batch and no qualification was required.

pH: Lab duplicate analysis was performed on samples MW-1 and MW-14 from this project. Resulting RPDs were within control limits. One laboratory-generated duplicate sample was outside control limits. This sample was not associated with project batch and no qualification was required.

Rad-226: Laboratory duplicate results were within control limits. No qualification was required. Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Rad-228: Radium-228 exceeded the RPD limit for the duplicate of sample 180-146516-1. This was not associated with the project sample batch. No qualification was required. Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-28 (280-167814-1), MW-15 (280-167814-2), MW-14 (280-167814-3) and MW-16 (280-167814-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: "The Ba Carrier recovery is outside the upper control limit (110%) for the associated samples. There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have (180-145923-A-1-A) and (180-145923-B-1-A DU)." No additional qualification was required.

Radium-228: "The Ba Carrier recovery is outside the upper control limit (110%) for the following samples: (180-145923-A-1-B) and (180-145923-B-1-B DU). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference." No additional qualification was required.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits except total calcium, magnesium, potassium, and mercury. The acceptable LCS data indicates that no corrective action was necessary, and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.0004	0.006 (MCL)	0.006	0.00600
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0100
Barium	0.001	0.00029	2 (MCL)	2	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	0.00400
Boron	0.1	0.0015	Not Listed	Not Listed	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	0.00500

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Calcium	0.2	0.038	Not Listed	Not Listed	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	0.100
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.00600
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.0506
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	0.00200

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.061 µg/L. GPS is 0.002 mg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1 mg/L, 0.17 mg/L, and 1 mg/L, respectively. GPS for fluoride is 4.00 mg/L.

Alkalinity: The RLs of 10 mg/L for alkalinity, bicarbonate, and carbonate are below the MDLs of 3.1 mg/L for each parameter.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified.

Metals: No issues.

Mercury: “A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Insufficient volume for the samples, so a 3X dilution was needed to proceed with the mercury analysis.”

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: High quantity of solids in liquid matrix requiring use of less than nominal volume for method analysis for the following sample: MW-8 (280-170465-2).

Radium-226: No issues.

Radium-228: A reduced sample volume was prepared for MW-13 (2 of 2) due to matrix interferences, but all RLs were 1.0 pCi/L.

pH: The following sample did not equilibrate to within 0.05 pH units after three measurements but its duplicate did therefore the sample was not rerun: MW-1 (280-167382-5).

The following sample did not equilibrate to within 0.05 pH units after three measurements: MW-21-EB (280-167382-10). This was observed in a previous analysis thus the sample was not rerun.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Field precision goals were met in that parent/field duplicate pair RPDs were within control limits except for cobalt and TSS.

Lab precision goals were nearly met in that MS/MSD RPDs were within control limits except fluoride. However, MS/MSD RPDs could not be verified for calcium, magnesium, potassium, selenium, or sodium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met except MS/MSD recoveries could not be verified for calcium, magnesium, potassium, selenium, and sodium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were nearly met in that LCS/LCSD recoveries were within control limits except fluoride and Rad-228.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Anions in two samples required qualification as estimated (J or UJ) due to analysis past the holding time;
- Alkalinity, bicarbonate, and carbonate in three samples required qualification as estimated (J or UJ) due to analysis past the holding time;
- TDS and TSS in three samples required qualification as estimated (J) due to analysis past the holding time;
- Barium in six samples, dissolved beryllium in two samples, dissolved chromium in one sample, total chromium in two samples, dissolved cobalt in two samples, total cobalt in nine samples, dissolved lead in two samples, and total molybdenum in two samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a MB;
- Total alkalinity, bicarbonate alkalinity, and carbonate alkalinity in thirteen samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a MB;
- Rad-228 and combined radium in five samples required qualification as estimated with high bias (J+) due to detection in a MB;
- Cobalt in one samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in the EB;
- Rad-226 and combined radium in one sample required qualification as estimated with high bias (J+) due to detection in the EB;
- Beryllium, boron, lithium, magnesium, and potassium in several samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a ICB or CCB;
- Total alkalinity, bicarbonate alkalinity, and carbonate alkalinity in thirteen samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to detection in a CCB;
- Fluoride in two samples required qualification as estimated with high bias (J+) or estimated but not detected (UJ) due to LCS recovery outside control limits;

- Calcium in two samples, selenium in one sample, dissolved calcium in three samples, and dissolved selenium in one sample required qualification as estimated (J) because the accuracy could not be verified;

- Fluoride in one sample required qualification as estimated (J) due to MS/MSD recoveries and RPDs outside control limits;

- Cobalt and TSS required qualification as estimated with high bias (J+) in the parent sample and estimated with potential for low bias (J-) in the duplicate due to RPDs outside control limits in the parent/field duplicate pair;

- The accuracy of calcium, magnesium, potassium, selenium, and sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. All 16 planned wells were sampled.

Lab completeness goals were nearly met. No data were rejected. Of the planned 19 samples for analysis, all 19 were analyzed for all requested analytes except MW-5 and MW-8 had insufficient volume for radiochemistry analyses.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except pH and Rad-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Mercury by USEPA SW-846 Method 7470A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B
Alkalinity by Standard Method SM2320B

Project:	Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont - October 2022
Project/Task Number:	10279387-001
Sample Data Package:	280-167384-1 (MW-39B), 280-167384-2 (radiochemistry) Lab Report Date: 10/19/22, 11/11/22 Data Validation Report Date: 11/25/22
Laboratory:	TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH) TestAmerica St. Louis, Earth City, Missouri (radiochemistry)
Sample Matrix:	Groundwater
Sampling Dates:	October 5, 2022
Validation Guidelines:	Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10- 011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level:	Stage 2BVM (100%)
Data Reviewer:	Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-39B	GW	280-167384-1	10/5/2022	X	X	X	X	X	

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.8°C, 0.9°C, and 1.6°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: All samples were analyzed within 28 days of collection.

Anions: Samples were analyzed within 28 days of collection.

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples were analyzed within 7 days of collection.

TSS: Samples were analyzed within 7 days of collection.

Radium-226: Samples had ingrowth times of at least 21 days.

Radium-228: Samples had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient

of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

See the Landfill and CCR Ponds data validation reports for equipment blank evaluation.

Metals: Metals were detected in MBs as indicated below.

Method Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5893481-A	Cobalt	0.000238	MW-39B	J+
MB 280-5894571-A	Sodium	0.0791	MW-39B	None (sample results much higher)

Mercury: Mercury was not detected in the MBs. No qualification was required.

Anions: Anions were not detected in the MBs. No qualification was required.

Alkalinity: Alkalinity and bicarbonate alkalinity were detected in the MB 280-58966784 at 6.5 mg/L and 4.76 mg/L, respectively. Alkalinity and bicarbonate alkalinity required qualification as estimated with high bias (J+) in MW-39B.

TDS: TDS was not detected in the MBs. No qualification was required.

TSS: TSS was not detected in the MBs. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs. No qualification was required.

Radium-228: Rad-228 was not detected in the MBs. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as noted below.

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Beryllium	CCB 280-589946/99	MW-39B	0.000084	UJ
	CCB 280-589946/108		0.000107	
Boron	CCB 280-589677/21	MW-39B	0.00186	J+
Magnesium	CCB 280-589658/144	MW-39B	0.0235	None (sample results much higher)
Potassium	CCB 280-589801/60	MW-39B	0.0540	J+
	CCB 280-589801/88		0.0723	
	CCB 280-589801/97		0.0751	

Mercury: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity: Alkalinity and bicarbonate alkalinity were detected in CCB 589667-82 at 3.57 mg/L, CCB 589667-96 at 4.68 mg/L, and CCB589667-108 at 3.27 mg/L. MW-39B required qualification as estimated with high bias (J+).

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were outside the project control limits of 75-125%. However, the lab's in-house statistical limits of 62-125% were met per method requirements. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab did not spike samples from this project for metals. Recoveries and RPDs for laboratory-generated MS/MSD analyses were within the control limits. The presence of calcium analytes in the original sample were greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. LCS/LCSD analysis indicated that laboratory processes were operating under control and no corrective action was necessary.

Mercury: The lab did not spike any samples from this project for mercury. Recoveries and RPDs of laboratory-generated MS/MSD analyses were within control limits and no qualification was required.

Anions: The lab spiked sample MW-39B from this project for anions. Recovery for chloride was slightly below control limits at 74%. RPDs were outside control limits. MW-39B required qualification as estimated (J) for chloride.

Radium-226: MS/MSD analysis was not performed for Rad-226 due to limited sample volume.

Radium-228: MS/MSD analysis was not performed for Rad-228 due to limited sample volume.

VII. DUPLICATES

See the Landfill and CCR Ponds data validation reports for field duplicate evaluations.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Mercury: Lab duplicate analysis was not performed on samples from this project for metals.

Anions: Lab duplicate analysis was performed on sample MW-39B for anions. All RPDs were within the 20% control limit. No qualification was required.

Alkalinity: Lab duplicate analysis was not performed on samples from this project for alkalinity. All laboratory-generated duplicate samples were within control limits. No qualification was required.

TDS: Lab duplicate analysis was performed on samples MW-39B. The RPDs were within the 20% control limit. No qualification was required.

TSS: Lab duplicate analysis was not performed on samples from this project for TSS. All laboratory-generated duplicate samples were within control limits. No qualification was required.

pH: Lab duplicate analysis was not performed on samples from this project for pH. All laboratory-generated duplicate samples were within control limits. No qualification was required.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: Tracer recoveries in all samples were within limits.

Radium-228: Tracer recoveries in all samples were within limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.0004	0.006 (MCL)	0.006	None
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0100
Barium	0.001	0.00029	2 (MCL)	2	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	0.00400
Boron	0.1	0.0015	Not Listed	Not Listed	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	0.0310
Calcium	0.2	0.038	Not Listed	Not Listed	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	0.100
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.006
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.0511
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	None

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.061 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively.

Alkalinity: The RLs of 10 mg/L for alkalinity, bicarbonate, and carbonate are below the MDLs of 3.1 mg/L for each parameter.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified.

Metals: No issues.

Mercury: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: No issues.

Radium-226: No issues.

Radium-228: A reduced sample volume was prepared for project sample MW-39B due to matrix interferences, but all RLs were 1.0 pCi/L.

pH: Sample did not equilibrate to within 0.05 pH units after three measurements. This was observed in a previous analysis thus the sample was not rerun.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds

are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

See the Landfill and CCR Ponds data validation reports for field precision goals evaluation.

Lab precision goals were met in that MS/MSD RPDs were within control limits except chloride. However, MS/MSD RPDs could not be verified for calcium.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met except MS/MSD recoveries could not be verified for calcium due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Cobalt required qualification as estimated with high bias (J+) due to detection in a method blank;
- Alkalinity and bicarbonate required qualification as estimated with high bias (J+) due to detection in method blanks;
- Beryllium required qualification as estimated but not detected (UJ) due to detection in a CCB;
- Boron and potassium required qualification as estimated with high bias (J+) due to detection in a CCB;
- Chloride required qualification as estimated (J) due to MS/MSD recoveries outside control limits;
- The accuracy of calcium sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. The planned well was sampled.

Lab completeness goals were met. No data were rejected. Of the planned 1 sample for analysis, it was analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except pH, Rad-226, and Rad-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A
Mercury by USEPA SW-846 Method 7470A
Anions by USEPA SW-846 Method 9056A
Total Dissolved Solids (TDS) by Standard Method SM2540C
Total Suspended Solids (TSS) by Standard Method SM2540D
Radium-226 (Ra-226) by USEPA SW-846 Method 9315
Radium-228 (Ra-228) by USEPA SW-846 Method 9320
pH by USEPA SW-846 Method 9040B
Alkalinity by Standard Method SM2320B

Project:	Xcel Energy Coal Combustion Residuals (CCR) Project – Valmont – October 2022
Project/Task Number:	10279387-001
Sample Data Package:	280-168147-1, 280-168147-2 Lab Report Date: 11/21/22 (168147-1), 11/23/22 (168147-2) Data Validation Report Date: 12/30/22
Laboratory:	TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, alk, pH); TestAmerica St. Louis, Earth City, Missouri (Radiochemistry)
Sample Matrix:	Groundwater
Sampling Dates:	October 21, 2022
Validation Guidelines:	Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy* [HDR, December 7, 2015]), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10-011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment
Validation Level:	Stage 2BVM (100%)
Data Reviewer:	Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals	Anions	TDS TSS	Alkalinity	Rad-226 Rad-228	Dissolved Metals
MW-36	GW	280-168147-1	10/21/2022	X	X	X	X	X	
MW-37	GW	280-168147-2	10/21/2022	X	X	X	X	X	

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 0.3°C, within the correct temperature range of 0-6°C. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: All samples were analyzed within 28 days of collection.

Anions: Samples were analyzed within 28 days of collection except sulfate in MW-37, which required qualification as estimated (J).

Alkalinity: Samples were analyzed within 14 days of collection.

TDS: Samples were analyzed within 7 days of collection.

TSS: Samples were analyzed within 7 days of collection.

Radium-226: Samples had ingrowth times of at least 21 days.

Radium-228: Samples had ingrowth times of at least 36 hours.

pH: Samples were analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

"The low level continuing calibration verification (CCVL) associated with batch 280-591608 recovered above the upper control limit for Li. The samples associated with this CCV were QC samples that were non-detects or greater than 10x the level of the CCVL for the affected analytes; therefore, the data have been reported." No qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable. Analysis was gravimetric.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) and EQUIPMENT BLANK (EB)

See the Data Validation report for the Valmont Landfill for evaluation of equipment blanks.

Metals: Metals were detected in MBs as indicated below.

Method Blank or EB	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5911641-A	Calcium	0.0517	MW-36, MW-37	None (sample results much higher)
MB 280-5910821-A	Chromium	0.000554	MW-36, MW-37	J+

Mercury: Mercury was not detected in the MBs. No qualification was required.

Anions: Anions were not detected in the MBs. No qualification was required.

Alkalinity: Alkalinity was detected in the MBs. No qualification was required.

TDS: TDS was not detected in the MBs. No qualification was required.

TSS: TSS was not detected in the MBs. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs. No qualification was required.

Radium-228: Rad-228 was not detected in the MBs. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as indicated below:

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Boron	CCB 280-591608/47	MW-36, MW-37	0.00184	None (sample results much higher)
Beryllium	CCB 280-591578/92	MW-36, MW-37	0.0000830	None

Mercury: Metals were not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs except chloride was detected in ICB 593066-9 at 1.16 mg/L. This ICB was not associated with project samples and no qualification was required.

Alkalinity: Alkalinity were not detected in the ICBs or CCBs. No qualification was required.

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125% except one LCS at 130% recovery. From the case narrative, “The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 130%: (LCS 160-587627/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.” The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked sample MW-37 for magnesium, potassium, and sodium. Recoveries and RPDs were outside the control limits for all three constituents and required qualification as estimated (J). The presence of magnesium, potassium, and sodium were greater than 4 times the matrix spike concentration and accuracy could not be verified.

“Calcium failed the recovery criteria high for the MS and MSD of sample 280-168149-1 in analytical batch 280-591578.” This MS/MSD analysis was not associated with the project sample batch so no qualification was required.

Mercury: The lab did not spike samples from this project for mercury. Recoveries and RPDs of laboratory-generated MS/MSD analyses were within control limits and no qualification was required.

Anions: The lab did not spike samples from this project for anions. “Chloride and Sulfate failed the recovery criteria high for the MS and MSD of sample 280-167903-4 in analytical batch 280-594073. Chloride and Fluoride failed the recovery criteria high for the MS and MSD of sample 280-168034-6 in analytical batch 280-592533.” These batches were not associated with project samples; no qualification was required.

Radium-226: MS/MSD analysis was not performed for Rad-226 due to limited sample volume.

Radium-228: MS/MSD analysis was not performed for Rad-228 due to limited sample volume.

VII. DUPLICATES

FIELD DUPLICATES

See the Data Validation report for the Valmont Landfill for evaluation of field duplicates.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on samples from this project for metals.

Mercury: Lab duplicate analysis was not performed on samples from this project for mercury.

Anions: Lab duplicate analysis was not performed on samples from this project for anions. All laboratory-generated duplicate samples were within control limits. No qualification was required.

Alkalinity: Lab duplicate analysis was not performed on samples from this project for alkalinity. Results were within control limits. All laboratory-generated duplicate samples were within control limits. No qualification was required.

TDS: Lab duplicate analysis was not performed on samples from this project for TDS. All laboratory-generated duplicate samples were within control limits. No qualification was required.

TSS: Lab duplicate analysis was performed on sample MW-36 from this project for TSS. Results were outside control limits with a RPD of 80%. TSS in MW-36 required qualification as estimated (J). All laboratory-generated duplicate samples were within control limits. No qualification was required.

pH: Lab duplicate analysis was not performed on samples from this project for pH. All laboratory-generated duplicate samples were within control limits. No qualification was required

Rad-226: Lab duplicate analysis was not performed for Rad-226.

Rad-228: Lab duplicate analysis was not performed for Rad-228.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: Tracer recoveries were within control limits.

Radium-228: Tracer recoveries were within control limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Serial dilution tests were performed for Method 6020A metals. The dilution tests were not applicable unless sample results were greater than 50 times the MDL. Dilution tests were performed on several samples.

Metals: Post-digestion spike (PDS) analyses results were within control limits except total calcium and potassium. The acceptable LCS data indicates that no corrective action was necessary, and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only,** against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Antimony	0.002	0.0004	0.006 (MCL)	0.006	0.00600
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0100
Barium	0.001	0.00029	2 (MCL)	2	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	0.00400
Boron	0.1	0.0015	Not Listed	Not Listed	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	0.00500
Calcium	0.2	0.038	Not Listed	Not Listed	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	0.100
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.00600
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.0506

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	0.0500
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	0.00200

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.061 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1.02 mg/L, 0.17 mg/L, and 1.05 mg/L, respectively. Fluoride GPS is 4 mg/L.

Alkalinity: The RLs of 10 mg/L for alkalinity, bicarbonate, and carbonate are below the MDLs of 3.1 mg/L for each parameter.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified.

Metals: No issues.

Mercury: No issues.

Anions: No issues.

Alkalinity: No issues.

TDS: No issues.

TSS: No issues.

Radium-226: No issues.

Radium-228: The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative. MW-37 (280-168147-

2).

pH: No issues.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

See Valmont Landfill Data Validation Report for evaluation of field precision.

Lab precision goals were nearly met in that MS/MSD RPDs were within control limits except magnesium, potassium, and sodium. However, MS/MSD RPDs could not be verified for these constituents.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were nearly met in that MS/MSD recoveries were within control limits except magnesium, potassium, and sodium. MS/MSD recoveries could not be verified for these analytes due to sample concentrations over 4 times the spike amount.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits except Rad-228.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;

- Sulfate in one sample required qualification as estimated (J) due to analysis past the holding time;

- Chromium in one sample required qualification as estimated with high bias (J+) due to detection in a MB;

- Magnesium, potassium, and sodium in one sample required qualification as estimated (J) due to MS/MSD recoveries outside control limits;

- TSS in one sample required qualification as estimated (J) due to laboratory duplicate RPD outside control limits;

- The accuracy of magnesium, potassium, and sodium results could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were met. Two of two planned wells were sampled.

Lab completeness goals were met. No data were rejected. Of the planned two samples for analysis, both were analyzed for all requested analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were ≤ one-half the RLs except pH and Rad-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as

qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

Appendix C
Statistical Output Reports

Table 1: Summary Statistics, Non-Detects Included

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.407	0.375	0.330	0.770	0.0971	0.239	0.0519	2.96	10.7
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	84.9	85.0	72.0	98.0	7.0	0.0824	7.41	-0.214	-0.411
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	66.2	66.0	61.0	73.0	2.92	0.0440	2.22	0.177	0.387
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.370	0.360	0.200	0.580	0.0986	0.267	0.0889	0.501	0.00858
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.27	7.21	7.07	7.59	0.144	0.0199	0.119	0.908	0.0585
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.72	7.70	7.30	8.20	0.240	0.0311	0.222	0.0894	-0.239
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	294	295	170	400	42	0.143	37.0	-0.579	5.01
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	932	930	860	1100	55.9	0.0599	44.4	1.46	3.06
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000785	0.000570	0.000200	0.00240	0.000483	0.616	0.000178	2.37	6.73
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	2015-12-17 to 2022-10-05	Lognormal	Lognormal	0.00146	0.00120	0.000490	0.00430	0.000889	0.608	0.000444	1.96	4.35
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0840	0.0760	0.0310	0.190	0.0476	0.566	0.0533	0.749	-0.276
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	2015-12-17 to 2022-10-05	Gamma; Normal	Nonparametric	0.000372	0.000310	0.0000760	0.000680	0.000175	0.470	0.000133	0.190	-0.345
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000281	0.000275	0.0000550	0.000460	0.000102	0.362	0.0000889	-0.0425	0.201
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00684	0.00250	0.000620	0.0300	0.00903	1.32	0.00225	1.84	2.40
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00156	0.00130	0.000180	0.00540	0.00156	1.00	0.00116	1.57	1.77
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.370	0.360	0.200	0.580	0.0986	0.267	0.0889	0.501	0.00858
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00180	0.000840	0.000240	0.00860	0.00240	1.33	0.000578	2.19	4.13
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	0.0328	0.0310	0.0270	0.0490	0.00484	0.148	0.00296	2.18	5.90
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-17 to 2022-10-05		Nonparametric	0.0000642	0.0000270	0.0000270	0.000130	0.0000485	0.755	0	0.627	-1.72
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Lognormal	Lognormal	0.0221	0.0150	0.00680	0.0910	0.0202	0.911	0.00741	2.50	6.70
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.956	0.695	0.342	2.27	0.515	0.539	0.388	1.11	0.660
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00126	0.00110	0.000270	0.00290	0.000624	0.494	0.000459	0.846	0.998
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	2015-12-17 to 2022-10-05		Nonparametric	0.000211	0.000200	0.0000740	0.000560	0.000109	0.516	0.0000444	1.80	5.79
11_3_101	MW-1	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
11_3_102	MW-1	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-05 to 2022-10-05		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
11_3_103	MW-1	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	1355	1381	1063	1510	138	0.102	135	-0.831	-0.308
11_3_119	MW-1	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	42.5	42.5	42.0	43.0	0.707	0.0166	0.741	NA	NA
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-17 to 2022-10-05	Normal	Normal	-32.9	-31.1	-130	75.7	49.6	-1.51	50.4	0.207	0.389
11_3_125	MW-1	Supplemental	Potassium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	4.30	4.30	4.10	4.50	0.283	0.0658	0.296	NA	NA
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.380	0.283	0.0945	0.989	0.256	0.672	0.219	1.06	0.299
11_3_128	MW-1	Supplemental	Radium-228	pci/l	21	12	57%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.740	0.663	0.342	1.73	0.376	0.508	0.258	1.53	2.06
11_3_130	MW-1	Supplemental	Sodium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	185	185	180	190	7.07	0.0382	7.41	NA	NA
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	15.4	15.2	13.7	17.0	1.10	0.0715	1.48	-0.0558	-1.25
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	21.8	22.0	19.4	24.1	1.37	0.0630	1.48	-0.0634	-0.689
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	135	50.0	6.00	450	161	1.20	64.6	0.962	-0.647
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	88.2	8.45	1.85	1000	274	3.11	2.13	3.59	12.9
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	1.17	1.10	1.10	1.40	0.106	0.0905	0	1.44	1.26
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	466	500	10.0	560	144	0.309	59.3	-3.05	10.1
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	67.2	67.0	60.0	72.0	3.83	0.0570	4.44	-0.618	-0.430
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-09 to 2022-10-04	Lognormal	Lognormal	0.823	0.795	0.460	1.90	0.407	0.495	0.133	2.35	6.62
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	6.96	6.90	6.73	7.44	0.210	0.0302	0.104	1.62	1.98

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	7.42	7.40	7.20	7.90	0.230	0.0310	0.222	1.14	0.451
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	2085	2100	1800	2300	152	0.0729	148	-0.201	-0.622
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	3969	4000	3800	4200	118	0.0298	148	0.349	-0.286
12_2_104	MW-13	Appendix IV	Antimony	mg/l	8	8	100%	2018-11-28 to 2022-10-05		Nonparametric	0.000828	0.000570	0.000400	0.00280	0.000799	0.966	0	2.80	7.87
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00243	0.00250	0.000330	0.00430	0.00124	0.509	0.00133	-0.191	-0.865
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0291	0.0255	0.0210	0.0460	0.00941	0.323	0.00593	0.972	-0.546
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-09 to 2022-10-05		Nonparametric	0.000451	0.000310	0.0000800	0.00110	0.000312	0.691	0.000170	1.36	2.30
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	2018-08-09 to 2022-10-05		Nonparametric	0.000249	0.000210	0.000200	0.000400	0.0000737	0.296	0.0000148	1.47	1.02
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00376	0.00335	0.00100	0.00810	0.00197	0.524	0.00163	1.04	1.84
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00114	0.000910	0.000430	0.00320	0.000781	0.686	0.000430	2.06	5.02
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-09 to 2022-10-04	Lognormal	Lognormal	0.823	0.795	0.460	1.90	0.407	0.495	0.133	2.35	6.62
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	2018-08-09 to 2022-10-05		Nonparametric	0.000681	0.000455	0.000450	0.00130	0.000362	0.532	0.00000741	1.23	-0.316
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	0.102	0.100	0.0930	0.110	0.00685	0.0671	0.00889	0.214	-1.83
12_2_120	MW-13	Appendix IV	Mercury	mg/l	7	7	100%	2018-11-28 to 2022-10-05		Nonparametric	0.000117	0.000130	0.0000610	0.000130	0.0000259	0.221	0	-2.26	5.12
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00473	0.00470	0.00340	0.00660	0.00102	0.217	0.000741	0.845	0.194
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.687	0.557	0.307	1.57	0.406	0.591	0.304	1.24	1.16
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.311	0.320	0.230	0.420	0.0506	0.163	0.0296	0.472	0.685
12_2_134	MW-13	Appendix IV	Thallium	mg/l	7	7	100%	2018-11-28 to 2022-10-05		Nonparametric	0.000298	0.000200	0.0000890	0.00100	0.000312	1.05	0	2.54	6.63
12_3_101	MW-13	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-02 to 2022-10-04		Nonparametric	805	830	680	880	92.6	0.115	66.7	-1.06	-0.161
12_3_102	MW-13	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-12-02 to 2022-10-04		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
12_3_103	MW-13	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-20 to 2022-10-04		Nonparametric	735	735	680	790	77.8	0.106	81.5	NA	NA
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	4168	4309	3395	4647	396	0.0949	166	-1.01	-0.152
12_3_119	MW-13	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-02 to 2022-10-05	Normal	Nonparametric	145	180	14.0	190	74.9	0.518	14.8	-1.99	4.0
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal	Gamma	131	103	60.9	391	85.3	0.654	47.6	2.66	8.20
12_3_125	MW-13	Supplemental	Potassium	mg/l	5	0	0%	2021-12-02 to 2022-10-05		Nonparametric	10.6	11.0	9.90	11.0	0.576	0.0545	0	-0.626	-3.23
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	2018-08-09 to 2022-10-05	Gamma; Lognormal	Gamma	0.258	0.219	0.121	0.440	0.114	0.442	0.121	0.491	-1.34
12_3_128	MW-13	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-09 to 2022-10-05		Nonparametric	0.565	0.531	0.274	1.33	0.299	0.529	0.174	2.09	5.41
12_3_130	MW-13	Supplemental	Sodium	mg/l	5	0	0%	2021-12-02 to 2022-10-05	Normal	Nonparametric	346	400	30.0	500	182	0.527	29.6	-1.87	3.93
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	15.1	14.8	12.1	17.7	1.70	0.112	1.19	-0.0896	-0.434
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	21.6	21.8	19.8	23.0	1.07	0.0498	1.19	-0.420	-0.943
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	2018-08-09 to 2022-10-04	Gamma; Lognormal	Gamma	22.8	8.40	1.10	160	44.0	1.93	7.56	3.24	10.8
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	4.68	4.12	0.0200	22.0	5.78	1.24	3.41	2.46	7.47
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	1.36	1.30	1.20	1.70	0.165	0.121	0.0741	1.37	1.02
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	476	480	430	530	29.5	0.0620	29.6	0.231	-0.195
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Normal	Normal	197	205	160	220	22.6	0.115	14.8	-0.901	-0.615
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.953	0.680	0.170	3.30	0.917	0.962	0.407	2.20	5.29
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	7.35	7.30	7.14	7.82	0.194	0.0264	0.0815	1.83	3.94
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	7.65	7.70	7.30	8.10	0.207	0.0270	0.0741	0.659	2.47
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	3120	3100	2600	3500	253	0.0811	148	-0.537	1.09
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	5130	5250	3800	5900	570	0.111	296	-1.39	3.06
13_2_104	MW-14	Appendix IV	Antimony	mg/l	8	8	100%	2018-11-27 to 2022-10-14		Nonparametric	0.000564	0.000570	0.000400	0.000690	0.0000784	0.139	0	-0.941	3.95
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00962	0.0103	0.000330	0.0160	0.00439	0.456	0.00281	-0.921	1.36

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.0205	0.0200	0.0150	0.0290	0.00484	0.236	0.00593	0.663	-0.732
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-13 to 2022-10-14		Nonparametric	0.000553	0.000310	0.0000800	0.00190	0.000571	1.03	0.000170	2.34	5.97
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	2018-08-13 to 2022-10-14		Nonparametric	0.000234	0.000210	0.000200	0.000390	0.0000627	0.267	0.0000148	2.36	5.73
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00393	0.00255	0.000500	0.00810	0.00286	0.728	0.00230	0.585	-1.50
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.000573	0.000480	0.000130	0.00130	0.000381	0.666	0.000393	0.713	-0.341
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.953	0.680	0.170	3.30	0.917	0.962	0.407	2.20	5.29
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	2018-08-13 to 2022-10-14		Nonparametric	0.000428	0.000450	0.000180	0.000700	0.000139	0.326	0	-0.0861	1.74
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.147	0.150	0.130	0.160	0.0116	0.0789	0.0148	-0.342	-1.23
13_2_120	MW-14	Appendix IV	Mercury	mg/l	7	7	100%	2018-11-27 to 2022-10-14		Nonparametric	0.000117	0.000130	0.0000610	0.000130	0.0000259	0.221	0	-2.26	5.12
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00283	0.00230	0.00160	0.00590	0.00137	0.485	0.000963	1.41	1.73
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	1.08	1.00	0.413	2.60	0.595	0.550	0.299	2.04	5.36
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.58	1.60	1.40	1.70	0.103	0.0654	0.148	-0.272	-0.896
13_2_134	MW-14	Appendix IV	Thallium	mg/l	7	7	100%	2018-11-27 to 2022-10-14		Nonparametric	0.000193	0.000200	0.0000890	0.000260	0.0000509	0.264	0	-1.43	4.06
13_3_101	MW-14	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	150	150	150	150	NA	NA	0	NA	NA
13_3_102	MW-14	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-14 to 2022-10-14		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
13_3_103	MW-14	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	150	150	150	150	NA	NA	0	NA	NA
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	5750	5733	5156	6183	338	0.0588	443	-0.400	-0.785
13_3_119	MW-14	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	320	320	300	340	28.3	0.0884	29.6	NA	NA
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2018-08-13 to 2022-10-14	Normal	Normal	75.2	79.1	-55.1	186	75.2	0.999	51.5	-0.346	-0.353
13_3_125	MW-14	Supplemental	Potassium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	10.5	10.5	10.0	11.0	0.707	0.0673	0.741	NA	NA
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.367	0.353	0.184	0.605	0.134	0.366	0.133	0.481	-0.552
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	2018-08-13 to 2022-10-14	Lognormal	Lognormal	0.734	0.595	0.340	2.29	0.562	0.765	0.105	2.85	8.59
13_3_130	MW-14	Supplemental	Sodium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	575	575	550	600	35.4	0.0615	37.0	NA	NA
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	15.6	15.8	12.9	18.6	2.20	0.141	3.14	0.0109	-1.72
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	21.1	20.9	19.0	23.4	1.48	0.0698	1.85	0.113	-1.14
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	2018-08-13 to 2022-10-14	Lognormal	Lognormal	10.1	7.20	1.10	29.0	10.2	1.01	3.56	1.36	0.467
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Normal	Gamma	2.91	2.11	0.0200	7.47	2.76	0.951	2.87	0.621	-1.14
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.531	0.550	0.450	0.620	0.0608	0.115	0.0815	-0.113	-1.62
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	195	185	140	280	38.7	0.198	22.2	1.10	1.89
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	82.2	85.0	57.0	96.0	10.5	0.128	5.93	-1.55	3.61
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.715	0.680	0.450	1.30	0.254	0.356	0.222	1.29	2.46
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	7.17	7.14	6.93	7.59	0.189	0.0264	0.0741	1.60	4.10
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	7.69	7.70	7.30	8.10	0.213	0.0277	0.148	0.0757	1.29
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	1174	1150	940	1600	195	0.166	222	1.08	1.49
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Lognormal	Lognormal	2320	2200	2000	2700	253	0.109	148	0.698	-1.06
14_2_104	MW-15	Appendix IV	Antimony	mg/l	8	8	100%	2018-11-27 to 2022-10-13		Nonparametric	0.000828	0.000570	0.000400	0.00280	0.000799	0.966	0	2.80	7.87
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.00188	0.00145	0.000330	0.00470	0.00126	0.669	0.000815	1.29	1.90
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	0.0353	0.0210	0.0160	0.130	0.0352	0.996	0.00370	2.64	7.22
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-13 to 2022-10-13		Nonparametric	0.000494	0.000310	0.0000800	0.00110	0.000351	0.711	0.000170	0.886	-0.406
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	9	9	100%	2018-08-13 to 2022-10-13		Nonparametric	0.000213	0.000210	0.000200	0.000270	0.0000224	0.105	0.0000148	2.48	6.61
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.00903	0.00470	0.00210	0.0370	0.0110	1.21	0.00341	2.21	5.08
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-10-13	Gamma; Lognormal	Gamma	0.000937	0.000555	0.000190	0.00390	0.00114	1.21	0.000363	2.39	5.87

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.715	0.680	0.450	1.30	0.254	0.356	0.222	1.29	2.46
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	2018-08-13 to 2022-10-13		Nonparametric	0.00134	0.000450	0.000320	0.00660	0.00195	1.46	0.0000963	2.67	7.35
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	0.0503	0.0475	0.0460	0.0610	0.00512	0.102	0.00222	1.22	0.551
14_2_120	MW-15	Appendix IV	Mercury	mg/l	7	7	100%	2018-11-27 to 2022-10-13		Nonparametric	0.000117	0.000130	0.0000610	0.000130	0.0000259	0.221	0	-2.26	5.12
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.00457	0.00430	0.00200	0.00710	0.00164	0.360	0.00148	0.304	-0.598
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.786	0.479	0.367	1.82	0.519	0.660	0.126	1.29	0.365
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.137	0.130	0.0750	0.190	0.0343	0.251	0.0296	-0.137	-0.244
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	2018-11-27 to 2022-10-13		Nonparametric	0.000300	0.000200	0.0000890	0.00100	0.000312	1.04	0	2.54	6.61
14_3_101	MW-15	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-13 to 2022-10-13		Nonparametric	430	430	430	430	NA	NA	0	NA	NA
14_3_102	MW-15	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-13 to 2022-10-13		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
14_3_103	MW-15	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-13 to 2022-10-13		Nonparametric	430	430	430	430	NA	NA	0	NA	NA
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	2810	2816	2171	3292	362	0.129	401	-0.544	0.0392
14_3_119	MW-15	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	140	140	120	160	28.3	0.202	29.6	NA	NA
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	76.4	76.5	32.5	129	36.8	0.482	51.9	0.293	-1.38
14_3_125	MW-15	Supplemental	Potassium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	7.40	7.40	7.10	7.70	0.424	0.0573	0.444	NA	NA
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	2018-08-13 to 2022-10-13	Gamma; Lognormal	Nonparametric	0.264	0.167	0.0879	0.864	0.246	0.933	0.107	1.94	3.75
14_3_128	MW-15	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-13 to 2022-10-13		Nonparametric	0.631	0.463	0.367	1.68	0.398	0.630	0.0644	2.46	6.38
14_3_130	MW-15	Supplemental	Sodium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	370	370	330	410	56.6	0.153	59.3	NA	NA
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	15.7	15.6	14.3	18.1	1.17	0.0746	0.667	1.06	1.98
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	21.7	21.5	19.4	23.6	1.18	0.0546	0.667	-0.132	0.717
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	115	9.20	6.00	570	202	1.76	4.15	1.90	2.80
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	2019-05-13 to 2022-10-13	Normal	Normal	5.03	5.12	0.0200	9.93	3.01	0.599	2.27	-0.164	0.514
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.580	0.555	0.480	0.870	0.111	0.191	0.0519	2.29	6.22
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	93.0	48.0	41.0	490	140	1.50	5.19	3.15	9.96
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	62.7	62.5	54.0	71.0	6.11	0.0975	7.41	0.0254	-1.82
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.22	1.25	1.00	1.40	0.140	0.115	0.222	-0.134	-1.38
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	2019-05-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	7.56	7.56	7.48	7.64	0.0587	0.00776	0.0667	0.176	-0.972
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	7.99	8.00	7.80	8.50	0.197	0.0246	0.0741	2.14	5.88
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	191	195	170	210	15.2	0.0798	22.2	-0.207	-1.51
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	717	725	660	780	38.3	0.0534	44.4	-0.0391	-0.892
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	2018-11-28 to 2022-10-14	Gamma; Lognormal	Gamma	0.00245	0.00195	0.000570	0.00670	0.00183	0.748	0.000593	2.15	5.51
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.00309	0.00175	0.000750	0.0130	0.00370	1.20	0.00103	2.58	6.99
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.0677	0.0470	0.0160	0.200	0.0523	0.773	0.0163	2.13	4.94
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	2018-08-13 to 2022-10-14		Nonparametric	0.000381	0.000310	0.0000800	0.000840	0.000236	0.620	0.0000296	1.15	1.26
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	2018-08-13 to 2022-10-14		Nonparametric	0.000203	0.000200	0.0000550	0.000280	0.0000637	0.314	0.0000148	-1.53	4.10
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	2018-08-13 to 2022-10-14		Nonparametric	0.00720	0.000980	0.000500	0.0390	0.0133	1.85	0.0000889	2.07	3.44
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	2018-08-13 to 2022-10-14		Nonparametric	0.00103	0.000190	0.000140	0.00490	0.00177	1.73	0	1.87	2.05
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.22	1.25	1.00	1.40	0.140	0.115	0.222	-0.134	-1.38
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	2018-08-13 to 2022-10-14		Nonparametric	0.00162	0.000450	0.000180	0.00780	0.00267	1.64	0	1.98	2.84
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.0551	0.0540	0.0430	0.0780	0.00985	0.179	0.00519	1.46	2.84
15_2_120	MW-16	Appendix IV	Mercury	mg/l	7	7	100%	2018-11-28 to 2022-10-14		Nonparametric	0.000117	0.000130	0.0000610	0.000130	0.0000259	0.221	0	-2.26	5.12
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.0342	0.0300	0.00110	0.0920	0.0231	0.677	0.00815	1.73	5.07

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.797	0.663	0.462	1.60	0.346	0.434	0.299	1.48	2.51
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00225	0.00110	0.000510	0.00820	0.00247	1.10	0.000378	1.97	3.45
15_2_134	MW-16	Appendix IV	Thallium	mg/l	7	7	100%	2018-11-28 to 2022-10-14		Nonparametric	0.000193	0.000200	0.0000890	0.000260	0.0000509	0.264	0	-1.43	4.06
15_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	370	370	370	370	NA	NA	0	NA	NA
15_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-14 to 2022-10-14		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
15_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	370	370	370	370	NA	NA	0	NA	NA
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	2019-05-13 to 2022-10-14	Nonparametric	Nonparametric	1119	1152	915	1186	92.5	0.0827	34.8	-1.93	3.56
15_3_119	MW-16	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	34.5	34.5	34.0	35.0	0.707	0.0205	0.741	NA	NA
15_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2019-05-13 to 2022-10-14	Normal	Normal	37.4	65.6	-222	195	125	3.35	74.1	-1.26	2.35
15_3_125	MW-16	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	3.75	3.75	3.60	3.90	0.212	0.0566	0.222	NA	NA
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.293	0.248	0.113	0.772	0.194	0.663	0.119	1.87	4.18
15_3_128	MW-16	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-13 to 2022-10-14		Nonparametric	0.668	0.654	0.433	0.894	0.152	0.228	0.176	-0.143	-0.868
15_3_130	MW-16	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	170	170	150	190	28.3	0.166	29.6	NA	NA
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	2019-05-13 to 2022-10-14	Nonparametric	Nonparametric	13.4	13.1	12.0	17.9	1.89	0.140	0.593	2.31	5.98
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.5	23.2	1.31	0.0613	1.70	-0.284	-1.30
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	212	14.0	1.60	870	343	1.62	18.4	1.49	0.606
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	2019-05-13 to 2022-10-14	Gamma; Normal	Gamma	4.16	2.86	0.0200	9.84	3.68	0.883	2.62	0.865	-0.723
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Lognormal; Normal	Lognormal	1.33	1.30	1.20	1.50	0.0866	0.0650	0	0.660	0.825
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	488	485	380	570	49.7	0.102	37.0	-0.614	1.08
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	415	420	330	490	42.5	0.103	29.6	-0.252	1.01
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.834	0.755	0.450	1.60	0.350	0.420	0.170	1.69	3.55
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	7.25	7.25	7.02	7.44	0.109	0.0151	0.0963	-0.398	0.909
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	7.60	7.60	7.50	7.80	0.105	0.0139	0.148	0.712	-0.450
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	2991	3000	2400	3300	247	0.0825	148	-1.34	2.58
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	5308	5400	4800	5800	275	0.0517	296	-0.294	0.432
16_2_104	MW-21	Appendix IV	Antimony	mg/l	8	8	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000828	0.000570	0.000400	0.00280	0.000799	0.966	0	2.80	7.87
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	2019-03-22 to 2022-10-07	Normal	Normal	0.00672	0.00820	0.000330	0.0120	0.00440	0.655	0.00415	-0.562	-1.38
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.0177	0.0160	0.0130	0.0260	0.00458	0.259	0.00444	0.827	-0.572
16_2_107	MW-21	Appendix IV	Beryllium	mg/l	7	7	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000434	0.000310	0.0000800	0.00110	0.000333	0.767	0	1.58	2.74
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	8	8	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000214	0.000205	0.000200	0.000270	0.0000239	0.112	0.00000741	2.35	5.83
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	8	89%	2019-03-22 to 2022-10-07		Nonparametric	0.00155	0.000980	0.000980	0.00440	0.00118	0.758	0	2.24	4.77
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.000407	0.000320	0.000180	0.000850	0.000237	0.582	0.000185	1.03	-0.0986
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.834	0.755	0.450	1.60	0.350	0.420	0.170	1.69	3.55
16_2_117	MW-21	Appendix IV	Lead	mg/l	9	9	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000477	0.000450	0.000180	0.000960	0.000202	0.424	0	1.69	5.44
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.197	0.190	0.170	0.230	0.0197	0.100	0.0222	0.301	-0.938
16_2_120	MW-21	Appendix IV	Mercury	mg/l	7	7	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000117	0.000130	0.0000610	0.000130	0.0000259	0.221	0	-2.26	5.12
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.00598	0.00600	0.00360	0.00790	0.00139	0.233	0.00133	-0.282	-0.753
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.991	0.918	0.347	1.81	0.440	0.445	0.218	0.707	1.03
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	1.27	1.30	1.10	1.50	0.106	0.0828	0.148	0.592	0.888
16_2_134	MW-21	Appendix IV	Thallium	mg/l	7	7	100%	2019-03-22 to 2022-10-07		Nonparametric	0.000298	0.000200	0.0000890	0.00100	0.000312	1.05	0	2.54	6.63
16_3_101	MW-21	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-11-30 to 2022-10-07		Nonparametric	260	265	240	270	14.1	0.0544	7.41	-1.41	1.50
16_3_102	MW-21	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-11-30 to 2022-10-07		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
16_3_103	MW-21	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-20 to 2022-10-07		Nonparametric	255	255	240	270	21.2	0.0832	22.2	NA	NA
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	5422	5680	4095	6130	640	0.118	563	-0.917	-0.102
16_3_119	MW-21	Supplemental	Magnesium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	254	250	220	280	23.0	0.0906	29.6	-0.606	0.274
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal	Gamma	140	148	13.6	370	87.6	0.625	39.6	1.51	4.36
16_3_125	MW-21	Supplemental	Potassium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	10.3	9.90	9.10	12.0	1.19	0.115	1.19	0.739	-0.971
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.288	0.297	0.157	0.409	0.0941	0.326	0.130	-0.119	-1.48
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.734	0.602	0.347	1.40	0.374	0.509	0.236	1.06	-0.102
16_3_130	MW-21	Supplemental	Sodium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	706	710	640	760	45.1	0.0638	29.6	-0.548	0.455
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	13.1	12.9	11.3	15.9	1.34	0.102	1.48	0.647	0.326
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	20.8	20.9	18.3	23.0	1.17	0.0560	0.593	-0.461	3.14
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	2019-03-22 to 2022-10-07	Lognormal	Lognormal	5.98	2.80	1.20	31.0	8.72	1.46	1.78	2.81	8.32
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	2.30	2.15	0.0200	5.56	2.15	0.934	3.13	0.271	-1.62
17_1_108	MW-25B	Appendix III	Boron	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.565	0.565	0.480	0.660	0.0660	0.117	0.0741	0.176	-0.812
17_1_110	MW-25B	Appendix III	Calcium	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	133	130	120	160	13.7	0.102	0	1.93	4.55
17_1_111	MW-25B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	93.2	88.0	78.0	110	13.6	0.146	9.63	0.626	-1.70
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.485	0.505	0.350	0.620	0.0940	0.194	0.0815	-0.130	0.0156
17_1_123	MW-25B	Appendix III	pH (field)	su	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	7.15	7.15	7.00	7.29	0.107	0.0150	0.126	-0.0671	-0.980
17_1_124	MW-25B	Appendix III	pH (lab)	su	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	7.58	7.55	7.40	7.80	0.147	0.0194	0.148	0.418	-0.859
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	615	620	560	680	45.1	0.0733	51.9	0.118	-0.892
17_1_135	MW-25B	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	1400	1400	1300	1500	63.2	0.0452	0	0	2.50
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	1	20%	2019-10-23 to 2022-04-29		Nonparametric	0.000698	0.000620	0.000570	0.00100	0.000179	0.256	0.0000741	1.70	2.75
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.00253	0.00260	0.00160	0.00330	0.000565	0.223	0.000370	-0.593	1.42
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	0.0210	0.0205	0.0200	0.0240	0.00155	0.0738	0.000741	1.94	3.96
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	4	3	75%	2020-04-28 to 2022-04-29		Nonparametric	0.000458	0.000465	0.000270	0.000630	0.000194	0.424	0.000237	-0.0343	-5.78
17_2_109	MW-25B	Appendix IV	Cadmium	mg/l	5	5	100%	2019-10-23 to 2022-04-29		Nonparametric	0.000171	0.000200	0.0000550	0.000200	0.0000648	0.379	0	-2.24	5.00
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	5	83%	2019-10-23 to 2022-04-29		Nonparametric	0.00129	0.00104	0.000980	0.00250	0.000599	0.465	0.0000889	2.33	5.53
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.000537	0.000495	0.000370	0.000790	0.000156	0.291	0.000141	0.860	-0.101
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.485	0.505	0.350	0.620	0.0940	0.194	0.0815	-0.130	0.0156
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	5	83%	2019-10-23 to 2022-04-29		Nonparametric	0.000425	0.000450	0.000240	0.000510	0.0000938	0.221	0	-2.06	4.85
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.0482	0.0475	0.0450	0.0550	0.00354	0.0736	0.00148	1.86	3.97
17_2_120	MW-25B	Appendix IV	Mercury	mg/l	4	4	100%	2020-04-28 to 2022-04-29		Nonparametric	0.000125	0.000130	0.000110	0.000130	0.0000100	0.0800	0	-2.00	4.00
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.0692	0.0625	0.0500	0.0960	0.0193	0.278	0.0148	0.628	-1.78
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	3	50%	2019-10-23 to 2022-04-29		Nonparametric	0.516	0.525	0.429	0.583	0.0507	0.0982	0.0259	-0.842	2.02
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.00537	0.00520	0.00360	0.00800	0.00147	0.274	0.000741	1.17	2.52
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	4	2	50%	2020-04-28 to 2022-04-29		Nonparametric	0.000505	0.000310	0.000200	0.00120	0.000475	0.940	0.000163	1.73	2.94
17_3_101	MW-25B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
17_3_114	MW-25B	Supplemental	Conductivity (field)	us/cm	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	1958	1979	1794	2070	96.4	0.0492	77.8	-0.946	0.995
17_3_119	MW-25B	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	65.0	65.0	65.0	65.0	NA	NA	0	NA	NA
17_3_122	MW-25B	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2019-10-23 to 2022-04-29	Normal	Nonparametric	46.5	51.4	-2.40	92.3	42.4	0.912	56.5	-0.192	-2.39
17_3_125	MW-25B	Supplemental	Potassium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	7.50	7.50	7.50	7.50	NA	NA	0	NA	NA
17_3_126	MW-25B	Supplemental	Radium-226	pci/l	6	3	50%	2019-10-23 to 2022-04-29		Nonparametric	0.259	0.197	0.146	0.506	0.144	0.555	0.0711	1.29	0.555
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	6	4	67%	2019-10-23 to 2022-04-29		Nonparametric	0.481	0.480	0.419	0.545	0.0535	0.111	0.0785	0.0353	-2.19

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
17_3_130	MW-25B	Supplemental	Sodium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
17_3_132	MW-25B	Supplemental	Temperature (field)	deg c	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	13.4	13.2	12.8	14.4	0.672	0.0502	0.667	0.569	-1.50
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	20.6	20.4	18.9	22.9	1.50	0.0726	1.63	0.471	-0.940
17_3_136	MW-25B	Supplemental	Total Suspended Solids	mg/l	5	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	10.5	10.0	5.20	18.0	5.19	0.493	5.33	0.636	-0.652
17_3_137	MW-25B	Supplemental	Turbidity (field)	ntu	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	5.45	5.77	0.700	9.89	3.92	0.718	5.68	-0.168	-2.0
18_1_108	MW-26	Appendix III	Boron	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.670	0.660	0.630	0.740	0.0396	0.0591	0.0296	0.948	0.118
18_1_110	MW-26	Appendix III	Calcium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Nonparametric	Nonparametric	451	500	48.0	580	183	0.405	74.1	-2.35	5.80
18_1_111	MW-26	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	184	180	160	210	19.9	0.108	14.8	0.415	-1.50
18_1_115	MW-26	Appendix III	Fluoride	mg/l	7	3	43%	2019-10-23 to 2022-10-17		Nonparametric	1.81	0.830	0.170	4.50	1.89	1.04	0.978	0.477	-2.14
18_1_123	MW-26	Appendix III	pH (field)	su	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	6.87	6.89	6.76	6.95	0.0741	0.0108	0.0444	-0.768	-1.07
18_1_124	MW-26	Appendix III	pH (lab)	su	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	7.37	7.30	7.20	7.60	0.138	0.0187	0.148	0.706	-0.325
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	2057	2000	1900	2300	127	0.0619	148	1.14	1.95
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	2019-10-23 to 2022-10-17		Nonparametric	3414	3400	3300	3500	90	0.0264	148	-0.353	-1.82
18_2_104	MW-26	Appendix IV	Antimony	mg/l	6	5	83%	2019-10-23 to 2022-10-17		Nonparametric	0.000833	0.000570	0.000400	0.00220	0.000676	0.811	0.0000889	2.35	5.62
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	7	6	86%	2019-10-23 to 2022-10-17		Nonparametric	0.00122	0.000750	0.000330	0.00300	0.000984	0.807	0	1.35	0.491
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Nonparametric	Nonparametric	0.0219	0.0140	0.0120	0.0680	0.0204	0.934	0.00296	2.60	6.83
18_2_107	MW-26	Appendix IV	Beryllium	mg/l	5	5	100%	2020-04-23 to 2022-10-17		Nonparametric	0.000484	0.000310	0.0000800	0.00110	0.000394	0.815	0.000341	1.09	0.941
18_2_109	MW-26	Appendix IV	Cadmium	mg/l	6	6	100%	2019-10-23 to 2022-10-17		Nonparametric	0.000215	0.000200	0.000200	0.000270	0.0000281	0.131	0	2.07	4.24
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	7	5	71%	2019-10-23 to 2022-10-17		Nonparametric	0.00269	0.000980	0.000980	0.00800	0.00267	0.994	0	1.65	2.27
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.000503	0.000480	0.000120	0.000810	0.000290	0.577	0.000430	-0.186	-2.02
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	3	43%	2019-10-23 to 2022-10-17		Nonparametric	1.81	0.830	0.170	4.50	1.89	1.04	0.978	0.477	-2.14
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	6	86%	2019-10-23 to 2022-10-17		Nonparametric	0.000503	0.000450	0.000180	0.00130	0.000370	0.735	0	2.10	5.08
18_2_118	MW-26	Appendix IV	Lithium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.0724	0.0720	0.0520	0.0870	0.0108	0.148	0.00593	-0.961	2.33
18_2_120	MW-26	Appendix IV	Mercury	mg/l	5	5	100%	2020-04-23 to 2022-10-17		Nonparametric	0.000112	0.000130	0.0000610	0.000130	0.0000299	0.267	0	-1.83	3.21
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	7	4	57%	2019-10-23 to 2022-10-17		Nonparametric	0.00610	0.00110	0.000530	0.0360	0.0132	2.16	0.000148	2.64	6.99
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	1.02	1.00	0.543	1.42	0.300	0.294	0.160	-0.0623	-0.0598
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.00408	0.00380	0.000890	0.00950	0.00282	0.690	0.00222	1.25	1.91
18_2_134	MW-26	Appendix IV	Thallium	mg/l	5	5	100%	2020-04-23 to 2022-10-17		Nonparametric	0.000190	0.000200	0.0000890	0.000260	0.0000620	0.327	0	-1.18	2.76
18_3_101	MW-26	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	265	265	260	270	7.07	0.0267	7.41	NA	NA
18_3_102	MW-26	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-17 to 2022-10-17		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
18_3_103	MW-26	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-17 to 2022-10-17		Nonparametric	270	270	270	270	NA	NA	0	NA	NA
18_3_114	MW-26	Supplemental	Conductivity (field)	us/cm	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	3616	3705	3135	4039	321	0.0889	153	-0.600	-0.601
18_3_119	MW-26	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	190	190	180	200	14.1	0.0744	14.8	NA	NA
18_3_122	MW-26	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	2019-10-23 to 2022-10-17	Normal	Nonparametric	80.1	108	-42.4	138	64.0	0.799	45.0	-1.37	1.46
18_3_125	MW-26	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	9.55	9.55	9.10	10.0	0.636	0.0666	0.667	NA	NA
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.345	0.279	0.211	0.486	0.118	0.342	0.101	0.271	-2.47
18_3_128	MW-26	Supplemental	Radium-228	pci/l	7	1	14%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.753	0.679	0.442	1.21	0.282	0.375	0.256	0.806	-0.562
18_3_130	MW-26	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	195	195	170	220	35.4	0.181	37.0	NA	NA
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	7	0	0%	2019-10-23 to 2022-10-17	Lognormal; Normal	Nonparametric	13.8	13.3	13.1	15.1	0.858	0.0620	0.311	0.541	-2.03
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	21.6	21.9	19.6	22.9	1.38	0.0636	1.48	-0.759	-1.23
18_3_136	MW-26	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal	Nonparametric	3.67	2.20	1.60	9.60	3.14	0.857	0.889	1.80	2.98
18_3_137	MW-26	Supplemental	Turbidity (field)	ntu	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	2.30	2.43	0.180	6.72	2.22	0.967	2.34	1.45	2.53

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
19_1_108	MW-27	Appendix III	Boron	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.0789	0.0820	0.0580	0.0950	0.0116	0.147	0.00593	-0.741	1.44
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	48.6	49.0	37.0	58.0	5.52	0.114	4.44	-0.583	1.87
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	21.0	20.0	14.0	31.0	5.40	0.257	7.41	0.472	-0.523
19_1_115	MW-27	Appendix III	Fluoride	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.780	0.780	0.690	0.910	0.0770	0.0988	0.0889	0.607	-0.307
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	7.56	7.53	7.41	7.80	0.116	0.0153	0.0741	1.08	0.965
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	7.89	7.90	7.80	8.10	0.105	0.0134	0.148	1.09	0.611
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	45.1	45.0	38.0	51.0	4.56	0.101	5.19	-0.292	-1.26
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	403	385	360	530	51.0	0.127	29.6	1.99	4.35
19_2_104	MW-27	Appendix IV	Antimony	mg/l	6	6	100%	2019-10-24 to 2022-10-18		Nonparametric	0.000562	0.000570	0.000400	0.000690	0.0000926	0.165	0	-0.797	2.83
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	2019-10-24 to 2022-10-18		Nonparametric	0.000763	0.000750	0.000330	0.00170	0.000371	0.486	0	1.83	5.31
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.0864	0.0830	0.0740	0.110	0.0123	0.142	0.0119	1.22	1.73
19_2_107	MW-27	Appendix IV	Beryllium	mg/l	5	5	100%	2020-04-22 to 2022-10-18		Nonparametric	0.000318	0.000310	0.0000800	0.000620	0.000194	0.610	0.0000593	0.798	2.21
19_2_109	MW-27	Appendix IV	Cadmium	mg/l	6	6	100%	2019-10-24 to 2022-10-18		Nonparametric	0.000188	0.000200	0.0000550	0.000270	0.0000707	0.377	0	-1.49	3.69
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.00306	0.00230	0.00110	0.00680	0.00210	0.687	0.00119	1.20	0.264
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	4	50%	2019-10-24 to 2022-10-18		Nonparametric	0.000296	0.000190	0.0000950	0.000960	0.000279	0.944	0.00000741	2.45	6.24
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.780	0.780	0.690	0.910	0.0770	0.0988	0.0889	0.607	-0.307
19_2_117	MW-27	Appendix IV	Lead	mg/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.000849	0.000450	0.000180	0.00350	0.00118	1.39	0.000311	2.54	6.59
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	0.0281	0.0280	0.0240	0.0310	0.00281	0.0999	0.00444	-0.127	-1.88
19_2_120	MW-27	Appendix IV	Mercury	mg/l	5	5	100%	2020-04-22 to 2022-10-18		Nonparametric	0.000112	0.000130	0.0000610	0.000130	0.0000299	0.267	0	-1.83	3.21
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.00364	0.00340	0.00250	0.00520	0.000981	0.269	0.000889	0.594	-0.858
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.673	0.667	0.435	0.975	0.217	0.322	0.313	0.324	-1.68
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	0.00446	0.00435	0.00330	0.00600	0.000763	0.171	0.000593	0.728	0.791
19_2_134	MW-27	Appendix IV	Thallium	mg/l	5	5	100%	2020-04-22 to 2022-10-18		Nonparametric	0.000190	0.000200	0.0000890	0.000260	0.0000620	0.327	0	-1.18	2.76
19_3_101	MW-27	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-02 to 2022-10-18		Nonparametric	242	245	220	260	20.6	0.0850	22.2	-0.200	-4.86
19_3_102	MW-27	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-12-02 to 2022-10-18		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
19_3_103	MW-27	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-21 to 2022-10-18		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	603	621	485	658	51.4	0.0851	45	-1.42	2.28
19_3_119	MW-27	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-02 to 2022-10-18		Nonparametric	22.8	22.0	22.0	24.0	1.10	0.0480	0	0.609	-3.33
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2019-10-24 to 2022-10-18	Normal	Normal	99.2	96.0	-53.7	269	80.3	0.809	39	0.348	2.98
19_3_125	MW-27	Supplemental	Potassium	mg/l	5	0	0%	2021-12-02 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	2.14	2.10	2.00	2.30	0.114	0.0533	0.148	0.405	-0.178
19_3_126	MW-27	Supplemental	Radium-226	pci/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.226	0.210	0.108	0.454	0.119	0.528	0.0948	1.23	1.61
19_3_128	MW-27	Supplemental	Radium-228	pci/l	7	6	86%	2019-10-24 to 2022-10-18		Nonparametric	0.626	0.619	0.435	0.912	0.197	0.315	0.264	0.508	-1.52
19_3_130	MW-27	Supplemental	Sodium	mg/l	5	0	0%	2021-12-02 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	55.0	56.0	50.0	58.0	3.16	0.0575	2.96	-1.19	1.05
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	15.3	16.0	10.8	20.2	3.33	0.217	3.04	-0.289	-1.22
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	21.2	21.3	19.8	22.8	0.985	0.0464	0.889	-0.0595	-0.471
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2019-10-24 to 2022-10-18	Lognormal	Nonparametric	17.5	6.80	2.40	93.0	28.9	1.65	4.15	2.79	7.96
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal	Gamma	22	4.38	0.0200	94.3	35.5	1.61	6.44	1.73	1.41
20_1_108	MW-28	Appendix III	Boron	mg/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.74	1.70	1.50	1.90	0.140	0.0802	0.148	-0.566	0.377
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	540	540	400	630	63.8	0.118	51.9	-0.964	1.86
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	63.6	65.0	58.0	69.0	3.86	0.0608	3.70	-0.414	-1.21
20_1_115	MW-28	Appendix III	Fluoride	mg/l	7	1	14%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	2.53	0.350	0.200	8.80	3.71	1.46	0.222	1.30	-0.335
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	6.93	6.88	6.80	7.32	0.156	0.0224	0.0889	1.94	4.24

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	7.38	7.40	7.10	7.70	0.211	0.0286	0.296	0.168	-1.50
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	3130	3200	2700	3400	245	0.0783	296	-0.659	-0.778
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	7160	7350	6000	7600	484	0.0675	148	-1.83	3.32
20_2_104	MW-28	Appendix IV	Antimony	mg/l	6	6	100%	2019-10-24 to 2022-10-11		Nonparametric	0.000562	0.000570	0.000400	0.000690	0.0000926	0.165	0	-0.797	2.83
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	2019-10-24 to 2022-10-11	Normal	Normal	0.0135	0.0170	0.000330	0.0290	0.0112	0.831	0.0133	-0.173	-1.90
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.0139	0.0140	0.0110	0.0170	0.00186	0.135	0.00148	0.287	1.05
20_2_107	MW-28	Appendix IV	Beryllium	mg/l	5	5	100%	2020-04-22 to 2022-10-11		Nonparametric	0.000484	0.000310	0.0000800	0.00110	0.000394	0.815	0.000341	1.09	0.941
20_2_109	MW-28	Appendix IV	Cadmium	mg/l	6	6	100%	2019-10-24 to 2022-10-11		Nonparametric	0.000215	0.000200	0.000200	0.000270	0.0000281	0.131	0	2.07	4.24
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	2	29%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.00260	0.00230	0.00130	0.00440	0.00111	0.426	0.000741	0.807	-0.466
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	0.000460	0.000430	0.000120	0.000890	0.000304	0.661	0.000363	0.210	-2.06
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	7	1	14%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	2.53	0.350	0.200	8.80	3.71	1.46	0.222	1.30	-0.335
20_2_117	MW-28	Appendix IV	Lead	mg/l	7	7	100%	2019-10-24 to 2022-10-11		Nonparametric	0.000484	0.000450	0.000180	0.000960	0.000233	0.480	0	1.47	4.12
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	0.244	0.245	0.220	0.280	0.0201	0.0824	0.0222	0.541	-0.495
20_2_120	MW-28	Appendix IV	Mercury	mg/l	5	5	100%	2020-04-22 to 2022-10-11		Nonparametric	0.000112	0.000130	0.0000610	0.000130	0.0000299	0.267	0	-1.83	3.21
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	5	71%	2019-10-24 to 2022-10-11		Nonparametric	0.00111	0.00110	0.000900	0.00130	0.000121	0.109	0	-0.366	1.78
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.65	1.65	0.966	2.34	0.487	0.295	0.593	0.0374	-1.12
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	2.85	2.80	2.60	3.10	0.151	0.0530	0.148	0.121	-0.401
20_2_134	MW-28	Appendix IV	Thallium	mg/l	5	5	100%	2020-04-22 to 2022-10-11		Nonparametric	0.000338	0.000200	0.0000890	0.00100	0.000373	1.11	0	2.14	4.70
20_3_101	MW-28	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-03 to 2022-10-11		Nonparametric	650	655	590	700	53.5	0.0824	59.3	-0.235	-4.34
20_3_102	MW-28	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-12-03 to 2022-10-11		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
20_3_103	MW-28	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-22 to 2022-10-11		Nonparametric	605	605	590	620	21.2	0.0351	22.2	NA	NA
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	7108	7237	6096	7922	670	0.0942	710	-0.362	-1.56
20_3_119	MW-28	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-03 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	344	350	300	400	40.4	0.117	59.3	0.351	-0.950
20_3_122	MW-28	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2019-10-24 to 2022-10-11	Normal	Normal	98.1	101	-4.40	169	60.6	0.618	71.4	-0.498	-0.999
20_3_125	MW-28	Supplemental	Potassium	mg/l	5	0	0%	2021-12-03 to 2022-10-11		Nonparametric	17.8	18.0	15.0	19.0	1.64	0.0923	1.48	-1.74	3.25
20_3_126	MW-28	Supplemental	Radium-226	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.599	0.560	0.460	0.725	0.112	0.187	0.148	0.0606	-2.27
20_3_128	MW-28	Supplemental	Radium-228	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.05	0.945	0.506	1.78	0.428	0.407	0.319	0.659	0.0404
20_3_130	MW-28	Supplemental	Sodium	mg/l	5	0	0%	2021-12-03 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	986	1000	830	1100	120	0.122	148	-0.351	-2.13
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	15.1	14.1	10.4	22.3	3.92	0.259	2.07	1.17	0.491
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	21	20.9	19.1	23.0	1.14	0.0544	1.19	0.192	0.324
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	26.7	15.0	4.80	74.0	25.2	0.943	11.6	1.35	0.394
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	8.48	8.15	1.09	28.4	7.64	0.901	3.38	2.21	6.10
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Nonparametric	Nonparametric	520	535	400	570	61.6	0.119	29.6	-1.96	4.24
21_1_111	MW-29	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-28		Nonparametric	105	105	100	110	5.48	0.0522	7.41	0	-3.33
21_1_123	MW-29	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6.85	6.83	6.68	7.03	0.118	0.0172	0.0889	0.266	0.686
21_1_124	MW-29	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	7.34	7.30	7.20	7.50	0.114	0.0155	0.148	0.405	-0.178
21_1_131	MW-29	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	3567	3650	3200	3700	197	0.0551	74.1	-1.67	2.67
21_1_135	MW-29	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-03 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6700	6700	6500	6900	158	0.0236	148	0	-1.20
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-15 to 2022-10-28		Nonparametric	0.00908	0.00306	0.000620	0.0260	0.0114	1.26	0.00352	0.954	-1.43
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-22 to 2022-07-22		Nonparametric	0.000920	0.000920	0.000920	0.000920	NA	NA	0	NA	NA
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.310	0.315	0.270	0.350	0.0341	0.110	0.0444	-0.273	-1.83
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	2.38	2.35	2.10	2.90	0.279	0.117	0.148	1.50	2.90

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	798	805	750	830	36.0	0.0451	37.0	-0.299	-2.41
21_3_102	MW-29	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-15 to 2022-01-10		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
21_3_103	MW-29	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-28		Nonparametric	793	780	770	830	32.1	0.0405	14.8	1.55	NA
21_3_114	MW-29	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6797	6654	5785	8522	1064	0.157	1050	0.796	-0.315
21_3_119	MW-29	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	327	330	270	370	39.3	0.120	44.4	-0.367	-1.58
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	136	117	76.2	266	74.0	0.543	58.9	1.24	1.15
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Nonparametric	Nonparametric	17.2	16.0	15.0	23.0	2.93	0.170	0.741	2.20	5.06
21_3_130	MW-29	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	983	965	840	1200	120	0.122	51.9	1.23	2.71
21_3_132	MW-29	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	13.6	13.1	10.9	16.9	2.0	0.147	1.19	0.691	1.43
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.0	20.5	19.4	23.3	1.61	0.0764	1.63	0.705	-1.13
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	229	141	6.40	680	258	1.12	170	1.27	1.07
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	178	77.8	2.86	668	250	1.41	84.8	2.06	4.40
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Lognormal; Normal	Lognormal	1.49	1.50	1.30	1.70	0.118	0.0796	0.148	0.319	-0.697
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	518	520	460	600	39.2	0.0756	44.4	0.547	-0.280
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	45.1	45.0	40.0	52.0	3.39	0.0751	3.70	0.230	-0.637
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.579	0.130	0.0600	5.20	1.40	2.41	0.0593	3.02	8.04
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	6.79	6.77	6.58	7.30	0.139	0.0205	0.0593	2.39	8.94
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	7.34	7.28	6.96	8.10	0.288	0.0393	0.178	1.43	2.33
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	2320	2300	2100	2500	95.1	0.0410	148	-0.440	0.253
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	3885	3900	3800	4200	104	0.0268	148	1.58	3.16
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	2015-12-10 to 2022-10-06		Nonparametric	0.000476	0.000570	0.000160	0.000870	0.000196	0.410	0	-0.321	-0.471
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.000930	0.000750	0.000330	0.00300	0.000573	0.616	0.0000593	2.77	8.73
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.0138	0.0130	0.0110	0.0200	0.00262	0.191	0.00148	1.26	0.611
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	2015-12-10 to 2022-10-06		Nonparametric	0.000358	0.000310	0.0000530	0.00110	0.000216	0.604	0	2.29	7.88
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.000230	0.000210	0.000110	0.000310	0.0000543	0.236	0.0000148	0.0132	-0.138
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	2015-12-10 to 2022-10-06	Lognormal	Nonparametric	0.00304	0.00160	0.000350	0.0290	0.00604	1.98	0.00133	4.35	19.5
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.000758	0.000710	0.000230	0.00150	0.000329	0.434	0.000281	0.791	0.347
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.579	0.130	0.0600	5.20	1.40	2.41	0.0593	3.02	8.04
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.000475	0.000450	0.000120	0.00120	0.000239	0.503	0	1.47	3.52
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.0796	0.0790	0.0600	0.0990	0.0111	0.139	0.0119	-0.00691	-0.493
22_2_120	MW-3	Appendix IV	Mercury	mg/l	17	17	100%	2015-12-10 to 2022-10-06		Nonparametric	0.0000642	0.0000270	0.0000270	0.000130	0.0000485	0.755	0	0.627	-1.72
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.00231	0.00110	0.000740	0.0100	0.00271	1.17	0.000148	2.0	2.77
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	1.32	1.23	0.927	1.92	0.281	0.213	0.237	0.655	-0.448
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.00142	0.00110	0.000370	0.00380	0.000823	0.579	0.000741	1.25	1.96
22_2_134	MW-3	Appendix IV	Thallium	mg/l	18	18	100%	2015-12-10 to 2022-10-06		Nonparametric	0.000189	0.000200	0.0000740	0.000280	0.0000689	0.364	0	-0.617	-0.411
22_3_101	MW-3	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-06 to 2022-10-06		Nonparametric	580	580	580	580	NA	NA	0	NA	NA
22_3_102	MW-3	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-06 to 2022-10-06		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
22_3_103	MW-3	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-06 to 2022-10-06		Nonparametric	580	580	580	580	NA	NA	0	NA	NA
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	2015-12-10 to 2022-10-06	Normal	Normal	3946	4065	3116	4427	389	0.0986	376	-0.730	-0.544
22_3_119	MW-3	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	135	135	130	140	7.07	0.0524	7.41	NA	NA
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	2015-12-10 to 2022-10-06	Normal	Normal	45	43.8	-26.2	168	49.5	1.10	70.5	0.680	0.180
22_3_125	MW-3	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	11.9	11.9	9.90	14.0	2.90	0.243	3.04	NA	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.458	0.453	0.239	0.696	0.128	0.279	0.0933	0.263	-0.439
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.858	0.832	0.479	1.46	0.254	0.297	0.188	1.12	1.27
22_3_130	MW-3	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	485	485	450	520	49.5	0.102	51.9	NA	NA
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	15.2	15.0	12.3	18.3	1.40	0.0924	1.04	0.448	0.451
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	21.6	21.6	19.3	24.2	1.32	0.0612	1.63	0.132	-0.754
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	2015-12-10 to 2022-10-06	Lognormal	Lognormal	18	10.0	1.10	51.0	17.1	0.953	9.48	0.980	-0.738
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	17.3	6.02	0.0200	237	51.7	2.99	3.76	4.45	19.8
23_1_110	MW-30	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	263	275	180	300	45.9	0.174	37.0	-1.44	2.01
23_1_111	MW-30	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	163	155	150	190	17.5	0.107	7.41	0.919	-1.21
23_1_123	MW-30	Appendix III	pH (field)	su	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	6.97	6.92	6.86	7.16	0.112	0.0161	0.0444	1.27	0.780
23_1_124	MW-30	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-10-26		Nonparametric	7.34	7.30	7.30	7.50	0.0894	0.0122	0	2.24	5.00
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	5983	5950	5600	6400	286	0.0478	296	0.250	-0.465
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-11-29 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	9560	9500	8500	11000	926	0.0969	593	0.891	1.52
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	1	17%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.00388	0.00290	0.00100	0.0110	0.00371	0.956	0.00244	1.84	3.68
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-21 to 2022-07-21		Nonparametric	0.00920	0.00920	0.00920	0.00920	NA	NA	0	NA	NA
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.428	0.440	0.330	0.520	0.0719	0.168	0.0889	-0.283	-1.20
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.00523	0.00390	0.00170	0.0140	0.00473	0.905	0.00326	1.58	2.53
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	1060	1050	960	1200	89.4	0.0844	74.1	0.604	-0.615
23_3_102	MW-30	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-20 to 2022-01-10		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
23_3_103	MW-30	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-10-26		Nonparametric	1053	1000	960	1200	129	0.122	59.3	1.55	NA
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	10237	10428	9075	11560	871	0.0851	719	0.154	0.102
23_3_119	MW-30	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	320	325	250	370	40.0	0.125	22.2	-0.984	2.07
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-20 to 2022-10-26	Normal	Nonparametric	87.2	88.6	-7.90	170	61.8	0.709	49.9	-0.328	0.0623
23_3_125	MW-30	Supplemental	Potassium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	19.2	18.0	16.0	23.0	3.06	0.160	2.22	0.707	-1.80
23_3_130	MW-30	Supplemental	Sodium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	2283	2300	1900	2600	232	0.101	148	-0.568	1.50
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	16.7	16.2	12.5	22.3	3.55	0.213	3.85	0.616	-0.108
23_3_133	MW-30	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	20.9	21.2	19.5	22.7	1.38	0.0659	2.22	0.0819	-1.97
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	6	1	17%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	592	124	1.10	1700	824	1.39	180	0.934	-1.85
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	250	111	7.10	687	309	1.23	153	0.773	-1.75
24_1_110	MW-31	Appendix III	Calcium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	347	370	270	400	57.2	0.165	37.0	-0.762	-1.84
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	198	195	170	220	19.4	0.0979	22.2	-0.146	-0.848
24_1_123	MW-31	Appendix III	pH (field)	su	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6.93	6.91	6.81	7.13	0.121	0.0174	0.133	0.888	0.253
24_1_124	MW-31	Appendix III	pH (lab)	su	5	0	0%	2021-10-18 to 2022-10-28		Nonparametric	7.40	7.40	7.30	7.60	0.122	0.0166	0.148	1.36	2.0
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	3933	3950	3600	4200	216	0.0549	222	-0.463	-0.300
24_1_135	MW-31	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6420	6500	6000	6700	277	0.0432	296	-0.927	0.130
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-18 to 2022-10-28		Nonparametric	0.00133	0.000750	0.000380	0.00380	0.00131	0.981	0.000444	1.78	2.97
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-22 to 2022-07-22		Nonparametric	0.000430	0.000430	0.000430	0.000430	NA	NA	0	NA	NA
24_2_118	MW-31	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.155	0.155	0.120	0.180	0.0235	0.151	0.0296	-0.349	-0.850
24_2_129	MW-31	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.317	0.330	0.210	0.390	0.0599	0.189	0.0296	-1.13	2.39
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	625	630	580	650	24.3	0.0389	14.8	-1.51	2.89
24_3_102	MW-31	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-18 to 2022-01-10		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-18 to 2022-10-28		Nonparametric	637	630	630	650	11.5	0.0181	0	1.73	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6739	6481	5457	8091	1172	0.174	1219	0.263	-2.43
24_3_119	MW-31	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	303	310	230	370	58.9	0.194	81.5	-0.243	-1.87
24_3_122	MW-31	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	156	155	58.3	252	62.2	0.400	24.7	-0.0368	1.97
24_3_125	MW-31	Supplemental	Potassium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	12.8	12.5	10.0	16.0	2.04	0.159	1.48	0.333	0.516
24_3_130	MW-31	Supplemental	Sodium	mg/l	6	0	0%	2021-10-18 to 2022-10-28		Nonparametric	1108	1200	910	1200	142	0.128	0	-0.988	-1.76
24_3_132	MW-31	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	13.7	13.4	10.7	16.7	2.08	0.152	1.93	0.0656	0.0521
24_3_133	MW-31	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.7	21.9	20.2	22.4	0.915	0.0423	0.741	-1.25	1.17
24_3_136	MW-31	Supplemental	Total Suspended Solids	mg/l	6	1	17%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	13.2	15.5	1.10	22.0	9.34	0.707	9.63	-0.455	-2.15
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.4	17.5	8.34	40.4	13.7	0.643	13.5	0.643	-1.65
25_1_110	MW-32	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	467	470	370	550	72.6	0.156	74.1	-0.176	-2.18
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	45.3	45.5	37.0	54.0	6.62	0.146	7.41	0.0356	-1.87
25_1_123	MW-32	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	6.86	6.83	6.79	7.00	0.0782	0.0114	0.0444	1.42	1.59
25_1_124	MW-32	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-26		Nonparametric	7.30	7.30	7.20	7.50	0.122	0.0168	0.148	1.36	2.00
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	2400	2400	2300	2600	110	0.0456	74.1	1.37	2.50
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-26		Nonparametric	3580	3500	3500	3700	110	0.0306	0	0.609	-3.33
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	5	83%	2021-10-15 to 2022-10-26		Nonparametric	0.000628	0.000750	0.000330	0.000860	0.000235	0.374	0.0000815	-0.815	-1.80
25_2_113	MW-32	Appendix IV	Cobalt	mg/l	1	1	100%	2022-07-25 to 2022-07-25		Nonparametric	0.0000920	0.0000920	0.0000920	0.0000920	NA	NA	0	NA	NA
25_2_118	MW-32	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.0532	0.0520	0.0440	0.0630	0.00662	0.124	0.00593	0.261	-0.00879
25_2_129	MW-32	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.0705	0.0725	0.0500	0.0830	0.0125	0.177	0.0126	-0.854	0.0259
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	395	400	370	410	17.6	0.0446	14.8	-0.495	-1.93
25_3_102	MW-32	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-15 to 2022-01-10		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
25_3_103	MW-32	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-26		Nonparametric	393	390	380	410	15.3	0.0388	14.8	0.935	NA
25_3_114	MW-32	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	3820	4010	3186	4272	434	0.114	236	-0.807	-1.31
25_3_119	MW-32	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	147	150	130	160	13.7	0.0932	14.8	-0.523	-1.88
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	115	111	50.7	187	52	0.453	65.9	0.231	-1.28
25_3_125	MW-32	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	11.1	11.0	9.50	12.0	0.917	0.0828	0.741	-0.944	1.36
25_3_130	MW-32	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	367	375	310	400	36.7	0.100	37.0	-0.695	-1.01
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	16	14.5	13.2	22.3	3.37	0.211	1.19	1.74	2.97
25_3_133	MW-32	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	20.4	20.8	18.1	21.3	1.33	0.0652	0.741	-1.88	3.70
25_3_136	MW-32	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Lognormal	Nonparametric	5.33	1.80	1.20	18.0	6.66	1.25	0.593	1.86	3.22
25_3_137	MW-32	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	0.413	0.0200	0.0200	1.53	0.644	1.56	0	1.40	0.640
26_1_110	MW-33A	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	432	445	350	480	51.2	0.119	44.4	-0.790	-0.598
26_1_111	MW-33A	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	71.7	67.5	62.0	90.0	11.3	0.157	7.41	0.997	-0.333
26_1_123	MW-33A	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	7.00	6.96	6.85	7.28	0.159	0.0227	0.126	1.17	1.08
26_1_124	MW-33A	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-27		Nonparametric	7.28	7.30	7.20	7.40	0.0837	0.0115	0.148	0.512	-0.612
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	3150	3150	2900	3400	164	0.0522	74.1	0	1.28
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-27		Nonparametric	4740	4600	4500	5000	241	0.0508	148	0.473	-3.09
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	4	67%	2021-10-15 to 2022-10-27		Nonparametric	0.00122	0.000925	0.000330	0.00300	0.00103	0.847	0.000881	1.19	0.840
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-25 to 2022-07-25		Nonparametric	0.000190	0.000190	0.000190	0.000190	NA	NA	0	NA	NA
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.138	0.135	0.120	0.160	0.0147	0.106	0.0148	0.418	-0.859
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	0.225	0.240	0.170	0.250	0.0302	0.134	0.00741	-1.57	1.99
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	463	465	440	490	20.7	0.0446	29.6	-0.0530	-1.72

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
26_3_102	MW-33A	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-15 to 2022-01-11		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
26_3_103	MW-33A	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	457	460	440	470	15.3	0.0334	14.8	-0.935	NA
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	4719	4752	4076	5333	560	0.119	733	-0.0574	-2.85
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	300	305	260	340	31.6	0.105	37.0	-0.114	-1.87
26_3_122	MW-33A	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	143	133	68.0	234	58	0.405	53.9	0.521	0.153
26_3_125	MW-33A	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	15.5	15.5	14.0	18.0	1.52	0.0978	1.48	0.774	0.284
26_3_130	MW-33A	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	517	510	460	570	41.8	0.0809	51.9	0.130	-1.10
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	13.2	13.9	10.8	14.2	1.36	0.103	0.444	-1.53	1.63
26_3_133	MW-33A	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	21.4	21.5	19.3	23.1	1.40	0.0653	0.889	-0.753	1.38
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	6	2	33%	2021-10-15 to 2022-10-27		Nonparametric	1.88	1.50	1.10	3.20	0.891	0.473	0.519	0.898	-1.40
26_3_137	MW-33A	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal	Nonparametric	1.01	0.0650	0.0200	3.95	1.63	1.61	0.0667	1.56	1.55
27_1_110	MW-33B	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal	Nonparametric	192	105	52.0	530	189	0.986	74.1	1.49	1.46
27_1_111	MW-33B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-12-01		Nonparametric	120	120	120	120	0	0	0	NA	NA
27_1_123	MW-33B	Appendix III	pH (field)	su	5	0	0%	2021-10-20 to 2022-12-01	Nonparametric	Nonparametric	7.23	7.67	5.22	8.01	1.14	0.157	0.148	-2.11	4.61
27_1_124	MW-33B	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-12-01		Nonparametric	7.92	8.00	7.80	8.00	0.110	0.0138	0	-0.609	-3.33
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-12-01		Nonparametric	1450	1500	1300	1600	122	0.0845	74.1	-0.490	-1.47
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-08 to 2022-12-01		Nonparametric	2500	2500	2400	2600	100	0.0400	148	0	-3.00
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.0223	0.0123	0.00420	0.0560	0.0223	1.00	0.0116	0.924	-1.25
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-26 to 2022-07-26		Nonparametric	0.0140	0.0140	0.0140	0.0140	NA	NA	0	NA	NA
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.149	0.125	0.0870	0.240	0.0651	0.435	0.0467	0.723	-1.74
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.0227	0.0195	0.00920	0.0430	0.0115	0.505	0.00667	1.16	2.05
27_3_101	MW-33B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	313	315	280	340	21.6	0.0689	22.2	-0.463	-0.300
27_3_102	MW-33B	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-20 to 2022-01-11		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
27_3_103	MW-33B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-12-01		Nonparametric	317	330	280	340	32.1	0.102	14.8	-1.55	NA
27_3_114	MW-33B	Supplemental	Conductivity (field)	us/cm	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	3569	3502	3042	4200	512	0.143	681	0.263	-2.46
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	88.8	55.0	31.0	220	75.8	0.853	34.8	1.34	0.703
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2021-10-20 to 2022-12-01	Nonparametric	Nonparametric	183	148	115	371	106	0.582	24.3	2.14	4.68
27_3_125	MW-33B	Supplemental	Potassium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	12.8	7.25	4.20	27.0	11.2	0.870	4.37	0.819	-1.95
27_3_130	MW-33B	Supplemental	Sodium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	733	730	630	820	77.1	0.105	111	-0.0363	-1.44
27_3_132	MW-33B	Supplemental	Temperature (field)	deg c	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	13.5	14.5	11.6	15.1	1.61	0.119	0.889	-0.535	-2.94
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	21.2	21.4	19.0	23.6	1.79	0.0846	2.07	0.102	-0.873
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal	Nonparametric	1132	475	290	3000	1168	1.03	230	1.14	-0.704
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	420	458	25.2	860	382	0.911	596	-0.0386	-2.69
28_1_108	MW-34	Appendix III	Boron	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	2.10	2.10	2.00	2.20	0.100	0.0476	0.148	0	NA
28_1_110	MW-34	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	37.5	36.5	22.0	63.0	14.3	0.381	9.63	1.20	2.02
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1.43	1.40	1.10	1.90	0.294	0.205	0.296	0.640	-0.300
28_1_115	MW-34	Appendix III	Fluoride	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.687	0.610	0.570	0.880	0.169	0.246	0.0593	1.62	NA
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	2021-10-20 to 2022-10-27	Nonparametric	Nonparametric	7.78	7.64	7.59	8.31	0.301	0.0387	0.0741	2.14	4.67
28_1_124	MW-34	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	8.08	8.00	7.90	8.30	0.164	0.0203	0.148	0.518	-1.69
28_1_131	MW-34	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	330	320	270	410	46.9	0.142	29.6	0.855	1.60
28_1_135	MW-34	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	787	755	720	960	89.8	0.114	44.4	1.92	3.84
28_2_104	MW-34	Appendix IV	Antimony	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00293	0.00240	0.00210	0.00430	0.00119	0.407	0.000444	1.61	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Lognormal	Nonparametric	0.00604	0.00145	0.000840	0.0220	0.00844	1.40	0.000563	1.82	3.0
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.0743	0.0420	0.0410	0.140	0.0569	0.765	0.00148	1.73	NA
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	3	2	67%	2021-10-20 to 2022-10-27		Nonparametric	0.000423	0.000270	0.0000800	0.000920	0.000440	1.04	0.000281	1.38	NA
28_2_109	MW-34	Appendix IV	Cadmium	mg/l	3	3	100%	2021-10-20 to 2022-10-27		Nonparametric	0.000175	0.000200	0.0000550	0.000270	0.000110	0.627	0.000104	-0.973	NA
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00983	0.00130	0.00120	0.0270	0.0149	1.51	0.000148	1.73	NA
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00296	0.00111	0.000810	0.00880	0.00390	1.32	0.000363	1.98	3.94
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.687	0.610	0.570	0.880	0.169	0.246	0.0593	1.62	NA
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00578	0.000720	0.000630	0.0160	0.00885	1.53	0.000133	1.73	NA
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.0582	0.0485	0.0430	0.100	0.0218	0.375	0.00667	1.90	3.54
28_2_120	MW-34	Appendix IV	Mercury	mg/l	3	3	100%	2021-10-20 to 2022-10-27		Nonparametric	0.000100	0.000110	0.0000610	0.000130	0.0000355	0.354	0.0000296	-1.13	NA
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.0240	0.0170	0.0100	0.0450	0.0185	0.772	0.0104	1.46	NA
28_2_127	MW-34	Appendix IV	Radium-226+228	pci/l	3	3	100%	2021-10-20 to 2022-11-03		Nonparametric	1.06	0.686	0.613	1.88	0.711	0.671	0.108	1.71	NA
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.0159	0.0126	0.00130	0.0400	0.0147	0.927	0.0150	0.886	-0.0649
28_2_134	MW-34	Appendix IV	Thallium	mg/l	3	2	67%	2021-10-20 to 2022-10-27		Nonparametric	0.000193	0.000230	0.0000890	0.000260	0.0000913	0.473	0.0000444	-1.52	NA
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	260	265	210	290	29.7	0.114	22.2	-0.965	0.439
28_3_102	MW-34	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-20 to 2022-01-04		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
28_3_103	MW-34	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	260	280	210	290	43.6	0.168	14.8	-1.63	NA
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1127	1110	914	1364	163	0.144	88.9	0.342	1.28
28_3_119	MW-34	Supplemental	Magnesium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	27.3	17.0	15.0	50.0	19.7	0.719	2.96	1.71	NA
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2021-10-20 to 2022-10-27	Nonparametric	Nonparametric	115	126	58.5	139	32.1	0.280	5.78	-2.01	4.30
28_3_125	MW-34	Supplemental	Potassium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	6.47	3.50	2.90	13.0	5.67	0.876	0.889	1.71	NA
28_3_126	MW-34	Supplemental	Radium-226	pci/l	3	3	100%	2021-10-20 to 2022-11-03		Nonparametric	0.835	0.476	0.390	1.64	0.698	0.836	0.127	1.70	NA
28_3_128	MW-34	Supplemental	Radium-228	pci/l	3	3	100%	2021-10-20 to 2022-11-03		Nonparametric	1.06	0.686	0.613	1.88	0.711	0.671	0.108	1.71	NA
28_3_130	MW-34	Supplemental	Sodium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	220	220	200	240	20.0	0.0909	29.6	0	NA
28_3_132	MW-34	Supplemental	Temperature (field)	deg c	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	15.0	12.0	8.30	30.6	9.10	0.606	4.44	1.80	3.36
28_3_133	MW-34	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	21.4	21.7	19.0	22.4	1.40	0.0655	1.04	-1.78	3.39
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal	Nonparametric	107	39.5	5.20	360	139	1.30	41.3	1.58	1.86
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal	Nonparametric	28.9	12.6	5.61	99.3	39.7	1.37	8.89	2.15	4.69
29_1_108	MW-35	Appendix III	Boron	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	1.07	1.00	0.900	1.30	0.208	0.195	0.148	1.29	NA
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	500	525	380	540	60.3	0.121	14.8	-2.19	4.93
29_1_111	MW-35	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	685	685	640	720	32.1	0.0469	44.4	-0.191	-1.31
29_1_115	MW-35	Appendix III	Fluoride	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	2.98	0.650	0.500	7.80	4.17	1.40	0.222	1.73	NA
29_1_123	MW-35	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	7.30	7.30	7.12	7.51	0.128	0.0175	0.0667	0.560	1.74
29_1_124	MW-35	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-27		Nonparametric	7.52	7.50	7.40	7.70	0.110	0.0146	0	1.29	2.92
29_1_131	MW-35	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	3233	3200	3100	3400	103	0.0319	74.1	0.666	0.586
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	5867	5900	5600	6200	207	0.0352	148	0.461	0.740
29_2_104	MW-35	Appendix IV	Antimony	mg/l	3	3	100%	2021-10-15 to 2022-10-27		Nonparametric	0.00126	0.000570	0.000400	0.00280	0.00134	1.07	0.000252	1.70	NA
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-15 to 2022-10-27		Nonparametric	0.00401	0.00187	0.000510	0.0120	0.00468	1.17	0.00195	1.24	0.429
29_2_106	MW-35	Appendix IV	Barium	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	0.0183	0.0180	0.0140	0.0230	0.00451	0.246	0.00593	0.331	NA
29_2_107	MW-35	Appendix IV	Beryllium	mg/l	3	3	100%	2021-10-15 to 2022-10-27		Nonparametric	0.000600	0.000620	0.0000800	0.00110	0.000510	0.850	0.000711	-0.176	NA
29_2_109	MW-35	Appendix IV	Cadmium	mg/l	3	3	100%	2021-10-15 to 2022-10-27		Nonparametric	0.000230	0.000220	0.000200	0.000270	0.0000361	0.157	0.0000296	1.15	NA
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	3	2	67%	2021-10-15 to 2022-10-27		Nonparametric	0.00273	0.00250	0.00130	0.00440	0.00156	0.572	0.00178	0.657	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	4	1	25%	2021-10-15 to 2022-10-27		Nonparametric	0.000758	0.000640	0.000450	0.00130	0.000385	0.509	0.000230	1.37	1.44
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	2.98	0.650	0.500	7.80	4.17	1.40	0.222	1.73	NA
29_2_117	MW-35	Appendix IV	Lead	mg/l	3	1	33%	2021-10-15 to 2022-10-27		Nonparametric	0.000620	0.000500	0.000400	0.000960	0.000299	0.482	0.000148	1.52	NA
29_2_118	MW-35	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-27		Nonparametric	0.168	0.175	0.150	0.180	0.0147	0.0874	0.00741	-0.711	-2.05
29_2_120	MW-35	Appendix IV	Mercury	mg/l	3	3	100%	2021-10-15 to 2022-10-27		Nonparametric	0.000100	0.000110	0.0000610	0.000130	0.0000355	0.354	0.0000296	-1.13	NA
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	3	1	33%	2021-10-15 to 2022-10-27		Nonparametric	0.00323	0.00270	0.00220	0.00480	0.00138	0.427	0.000741	1.48	NA
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	3	0	0%	2021-10-15 to 2022-11-03		Nonparametric	1.10	0.925	0.745	1.62	0.462	0.421	0.267	1.44	NA
29_2_129	MW-35	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1.63	1.60	1.50	1.90	0.151	0.0922	0.148	1.27	1.53
29_2_134	MW-35	Appendix IV	Thallium	mg/l	3	3	100%	2021-10-15 to 2022-10-27		Nonparametric	0.000430	0.000200	0.0000890	0.00100	0.000497	1.16	0.000164	1.64	NA
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-27		Nonparametric	188	190	180	200	7.53	0.0400	7.41	0.313	-0.104
29_3_102	MW-35	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	2021-10-15 to 2022-01-11		Nonparametric	3.10	3.10	3.10	3.10	0	0	0	NA	NA
29_3_103	MW-35	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	190	190	180	200	10.0	0.0526	14.8	0	NA
29_3_114	MW-35	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	6052	6128	4516	7398	989	0.163	836	-0.351	0.375
29_3_119	MW-35	Supplemental	Magnesium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	288	300	240	310	33.0	0.115	14.8	-1.56	2.17
29_3_122	MW-35	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	133	128	77.2	216	47.3	0.355	30.6	1.08	2.01
29_3_125	MW-35	Supplemental	Potassium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	11.2	11.5	10.0	12.0	0.957	0.0851	0.741	-0.855	-1.29
29_3_126	MW-35	Supplemental	Radium-226	pci/l	3	0	0%	2021-10-15 to 2022-11-03		Nonparametric	0.557	0.466	0.371	0.833	0.244	0.438	0.141	1.44	NA
29_3_128	MW-35	Supplemental	Radium-228	pci/l	3	2	67%	2021-10-15 to 2022-11-03		Nonparametric	0.602	0.587	0.434	0.785	0.176	0.292	0.227	0.381	NA
29_3_130	MW-35	Supplemental	Sodium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	842	825	780	940	71.4	0.0847	51.9	1.11	0.501
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	12.5	12.3	9.40	15.6	2.43	0.194	3.11	0.0948	-1.68
29_3_133	MW-35	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	20.9	21.5	19.1	22.2	1.35	0.0645	1.04	-0.653	-2.06
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	14.1	14.0	7.60	22.0	5.51	0.390	6.52	0.255	-1.32
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	20.8	14.5	7.23	40.0	15.1	0.727	9.24	0.698	-2.02
30_1_108	MW-36	Appendix III	Boron	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.430	0.430	0.350	0.510	0.113	0.263	0.119	NA	NA
30_1_110	MW-36	Appendix III	Calcium	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	303	320	250	340	47.3	0.156	29.6	-1.39	NA
30_1_111	MW-36	Appendix III	Chloride (as Cl)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	26.7	24.0	23.0	33.0	5.51	0.207	1.48	1.67	NA
30_1_115	MW-36	Appendix III	Fluoride	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.610	0.610	0.530	0.690	0.113	0.185	0.119	NA	NA
30_1_123	MW-36	Appendix III	pH (field)	su	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	7.09	7.11	7.01	7.16	0.0764	0.0108	0.0741	-0.935	NA
30_1_124	MW-36	Appendix III	pH (lab)	su	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	7.50	7.50	7.50	7.50	0	0	0	NA	NA
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	1500	1600	1300	1600	173	0.115	0	-1.73	NA
30_1_135	MW-36	Appendix III	Total Dissolved Solids	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	2367	2500	2000	2600	321	0.136	148	-1.55	NA
30_2_104	MW-36	Appendix IV	Antimony	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.00160	0.00160	0.000400	0.00280	0.00170	1.06	0.00178	NA	NA
30_2_105	MW-36	Appendix IV	Arsenic	mg/l	3	3	100%	2022-04-29 to 2022-10-21		Nonparametric	0.00122	0.000330	0.000330	0.00300	0.00154	1.26	0	1.73	NA
30_2_106	MW-36	Appendix IV	Barium	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.0170	0.0170	0.0170	0.0170	0	0	0	NA	NA
30_2_107	MW-36	Appendix IV	Beryllium	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.000590	0.000590	0.0000800	0.00110	0.000721	1.22	0.000756	NA	NA
30_2_109	MW-36	Appendix IV	Cadmium	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.000245	0.000245	0.000220	0.000270	0.0000354	0.144	0.0000370	NA	NA
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	2	1	50%	2022-04-29 to 2022-10-21		Nonparametric	0.00264	0.00264	0.000870	0.00440	0.00250	0.947	0.00261	NA	NA
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	3	1	33%	2022-04-29 to 2022-10-21		Nonparametric	0.000447	0.000370	0.000210	0.000760	0.000283	0.633	0.000237	1.13	NA
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.610	0.610	0.530	0.690	0.113	0.185	0.119	NA	NA
30_2_117	MW-36	Appendix IV	Lead	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.000570	0.000570	0.000180	0.000960	0.000552	0.968	0.000578	NA	NA
30_2_118	MW-36	Appendix IV	Lithium	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.114	0.120	0.0910	0.130	0.0203	0.178	0.0148	-1.27	NA
30_2_120	MW-36	Appendix IV	Mercury	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.0000855	0.0000855	0.0000610	0.000110	0.0000346	0.405	0.0000363	NA	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	2	1	50%	2022-04-29 to 2022-10-21		Nonparametric	0.00305	0.00305	0.00130	0.00480	0.00247	0.811	0.00259	NA	NA
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.903	0.903	0.747	1.06	0.221	0.245	0.232	NA	NA
30_2_129	MW-36	Appendix IV	Selenium	mg/l	3	1	33%	2022-04-29 to 2022-10-21		Nonparametric	0.00163	0.000630	0.000470	0.00380	0.00188	1.15	0.000237	1.72	NA
30_2_134	MW-36	Appendix IV	Thallium	mg/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.000544	0.000544	0.0000890	0.00100	0.000644	1.18	0.000675	NA	NA
30_3_101	MW-36	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	293	300	270	310	20.8	0.0710	14.8	-1.29	NA
30_3_102	MW-36	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
30_3_103	MW-36	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	305	305	300	310	7.07	0.0232	7.41	NA	NA
30_3_114	MW-36	Supplemental	Conductivity (field)	us/cm	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	2441	2479	2358	2486	72	0.0295	10.4	-1.71	NA
30_3_119	MW-36	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	140	140	130	150	14.1	0.101	14.8	NA	NA
30_3_122	MW-36	Supplemental	Oxidation-reduction Potential (field)	mV	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	93.4	118	-50.4	213	133	1.43	141	-0.794	NA
30_3_125	MW-36	Supplemental	Potassium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	5.20	5.20	5.00	5.40	0.283	0.0544	0.296	NA	NA
30_3_126	MW-36	Supplemental	Radium-226	pci/l	2	2	100%	2022-04-29 to 2022-10-21		Nonparametric	0.169	0.169	0.117	0.220	0.0728	0.432	0.0763	NA	NA
30_3_128	MW-36	Supplemental	Radium-228	pci/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.811	0.811	0.592	1.03	0.310	0.382	0.324	NA	NA
30_3_130	MW-36	Supplemental	Sodium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	260	260	240	280	28.3	0.109	29.6	NA	NA
30_3_132	MW-36	Supplemental	Temperature (field)	deg c	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	13.9	12.9	12.0	16.8	2.55	0.184	1.33	1.49	NA
30_3_133	MW-36	Supplemental	Temperature (lab)	deg c	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	19.2	19.2	18.8	19.7	0.636	0.0331	0.667	NA	NA
30_3_136	MW-36	Supplemental	Total Suspended Solids	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	8.67	7.20	2.80	16.0	6.72	0.776	6.52	0.935	NA
30_3_137	MW-36	Supplemental	Turbidity (field)	ntu	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	8.00	8.68	4.43	10.9	3.29	0.411	3.29	-0.887	NA
31_1_108	MW-37	Appendix III	Boron	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.570	0.570	0.570	0.570	NA	NA	0	NA	NA
31_1_110	MW-37	Appendix III	Calcium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	380	380	340	420	56.6	0.149	59.3	NA	NA
31_1_111	MW-37	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	61.5	61.5	59.0	64.0	3.54	0.0575	3.70	NA	NA
31_1_115	MW-37	Appendix III	Fluoride	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.790	0.790	0.790	0.790	NA	NA	0	NA	NA
31_1_123	MW-37	Appendix III	pH (field)	su	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	7.14	7.14	7.14	7.15	0.00707	0.000990	0.00741	NA	NA
31_1_124	MW-37	Appendix III	pH (lab)	su	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	7.40	7.40	7.40	7.40	NA	NA	0	NA	NA
31_1_131	MW-37	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	1800	1800	1800	1800	0	0	0	NA	NA
31_1_135	MW-37	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	2900	2900	2600	3200	424	0.146	444	NA	NA
31_2_104	MW-37	Appendix IV	Antimony	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.00290	0.00290	0.00200	0.00380	0.00127	0.439	0.00133	NA	NA
31_2_106	MW-37	Appendix IV	Barium	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.0490	0.0490	0.0490	0.0490	NA	NA	0	NA	NA
31_2_107	MW-37	Appendix IV	Beryllium	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	0.0000800	0.0000800	0.0000800	0.0000800	NA	NA	0	NA	NA
31_2_109	MW-37	Appendix IV	Cadmium	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	0.000270	0.000270	0.000270	0.000270	NA	NA	0	NA	NA
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00190	0.00190	0.00190	0.00190	NA	NA	0	NA	NA
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.00220	0.00220	0.00190	0.00250	0.000424	0.193	0.000444	NA	NA
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.790	0.790	0.790	0.790	NA	NA	0	NA	NA
31_2_117	MW-37	Appendix IV	Lead	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.000920	0.000920	0.000920	0.000920	NA	NA	0	NA	NA
31_2_118	MW-37	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.0815	0.0815	0.0770	0.0860	0.00636	0.0781	0.00667	NA	NA
31_2_120	MW-37	Appendix IV	Mercury	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	0.0000610	0.0000610	0.0000610	0.0000610	NA	NA	0	NA	NA
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00750	0.00750	0.00750	0.00750	NA	NA	0	NA	NA
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	5.39	5.39	5.39	5.39	NA	NA	0	NA	NA
31_2_129	MW-37	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.205	0.205	0.190	0.220	0.0212	0.103	0.0222	NA	NA
31_2_134	MW-37	Appendix IV	Thallium	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	0.0000890	0.0000890	0.0000890	0.0000890	NA	NA	0	NA	NA
31_3_101	MW-37	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
31_3_102	MW-37	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
31_3_103	MW-37	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA
31_3_114	MW-37	Supplemental	Conductivity (field)	us/cm	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	2901	2901	2598	3204	429	0.148	449	NA	NA
31_3_119	MW-37	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	145	145	130	160	21.2	0.146	22.2	NA	NA
31_3_122	MW-37	Supplemental	Oxidation-reduction Potential (field)	mV	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	121	121	17.9	223	145	1.20	152	NA	NA
31_3_125	MW-37	Supplemental	Potassium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	8.00	8.00	7.50	8.50	0.707	0.0884	0.741	NA	NA
31_3_126	MW-37	Supplemental	Radium-226	pci/l	1	1	100%	2022-10-21 to 2022-10-21		Nonparametric	0.490	0.490	0.490	0.490	NA	NA	0	NA	NA
31_3_128	MW-37	Supplemental	Radium-228	pci/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	4.95	4.95	4.95	4.95	NA	NA	0	NA	NA
31_3_130	MW-37	Supplemental	Sodium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	310	310	300	320	14.1	0.0456	14.8	NA	NA
31_3_132	MW-37	Supplemental	Temperature (field)	deg c	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	22.9	22.9	18.2	27.6	6.65	0.290	6.96	NA	NA
31_3_133	MW-37	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	19.8	19.8	19.8	19.8	NA	NA	0	NA	NA
31_3_136	MW-37	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	6.60	6.60	4.00	9.20	3.68	0.557	3.85	NA	NA
31_3_137	MW-37	Supplemental	Turbidity (field)	ntu	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	7.08	7.08	5.08	9.09	2.84	0.400	2.97	NA	NA
32_1_110	MW-38B	Appendix III	Calcium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	350	350	330	370	28.3	0.0808	29.6	NA	NA
32_1_111	MW-38B	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	57.0	57.0	30.0	84.0	38.2	0.670	40.0	NA	NA
32_1_123	MW-38B	Appendix III	pH (field)	su	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	7.16	7.16	7.16	7.16	NA	NA	0	NA	NA
32_1_124	MW-38B	Appendix III	pH (lab)	su	1	0	0%	2022-11-01 to 2022-11-01		Nonparametric	7.60	7.60	7.60	7.60	NA	NA	0	NA	NA
32_1_131	MW-38B	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	1310	1310	820	1800	693	0.529	726	NA	NA
32_1_135	MW-38B	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	2650	2650	2600	2700	70.7	0.0267	74.1	NA	NA
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.00185	0.00185	0.00170	0.00200	0.000212	0.115	0.000222	NA	NA
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	0.00320	0.00320	0.00320	0.00320	NA	NA	0	NA	NA
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.0410	0.0410	0.0400	0.0420	0.00141	0.0345	0.00148	NA	NA
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.0355	0.0355	0.0170	0.0540	0.0262	0.737	0.0274	NA	NA
32_3_101	MW-38B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	270	270	250	290	28.3	0.105	29.6	NA	NA
32_3_103	MW-38B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	270	270	250	290	28.3	0.105	29.6	NA	NA
32_3_114	MW-38B	Supplemental	Conductivity (field)	us/cm	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	1908	1908	1908	1908	NA	NA	0	NA	NA
32_3_119	MW-38B	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	145	145	140	150	7.07	0.0488	7.41	NA	NA
32_3_122	MW-38B	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	232	232	232	232	NA	NA	0	NA	NA
32_3_125	MW-38B	Supplemental	Potassium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	5.05	5.05	4.60	5.50	0.636	0.126	0.667	NA	NA
32_3_130	MW-38B	Supplemental	Sodium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	290	290	280	300	14.1	0.0488	14.8	NA	NA
32_3_132	MW-38B	Supplemental	Temperature (field)	deg c	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	13.2	13.2	13.2	13.2	NA	NA	0	NA	NA
32_3_133	MW-38B	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-11-01 to 2022-11-01		Nonparametric	23.4	23.4	23.4	23.4	NA	NA	0	NA	NA
32_3_136	MW-38B	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	10.1	10.1	5.20	15.0	6.93	0.686	7.26	NA	NA
32_3_137	MW-38B	Supplemental	Turbidity (field)	ntu	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	9.78	9.78	9.78	9.78	NA	NA	0	NA	NA
33_1_110	MW-38C	Appendix III	Calcium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	335	335	320	350	21.2	0.0633	22.2	NA	NA
33_1_111	MW-38C	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	54.0	54.0	28.0	80.0	36.8	0.681	38.5	NA	NA
33_1_123	MW-38C	Appendix III	pH (field)	su	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	7.04	7.04	7.04	7.04	NA	NA	0	NA	NA
33_1_124	MW-38C	Appendix III	pH (lab)	su	1	0	0%	2022-10-31 to 2022-10-31		Nonparametric	7.50	7.50	7.50	7.50	NA	NA	0	NA	NA
33_1_131	MW-38C	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	1950	1950	1900	2000	70.7	0.0363	74.1	NA	NA
33_1_135	MW-38C	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	2950	2950	2900	3000	70.7	0.0240	74.1	NA	NA
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.000670	0.000670	0.000520	0.000820	0.000212	0.317	0.000222	NA	NA
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	0.000530	0.000530	0.000530	0.000530	NA	NA	0	NA	NA

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.0375	0.0375	0.0340	0.0410	0.00495	0.132	0.00519	NA	NA
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.101	0.101	0.0920	0.110	0.0127	0.126	0.0133	NA	NA
33_3_101	MW-38C	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	350	350	350	350	0	0	0	NA	NA
33_3_103	MW-38C	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	350	350	350	350	0	0	0	NA	NA
33_3_114	MW-38C	Supplemental	Conductivity (field)	us/cm	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	2043	2043	2043	2043	NA	NA	0	NA	NA
33_3_119	MW-38C	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	180	180	170	190	14.1	0.0786	14.8	NA	NA
33_3_122	MW-38C	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	227	227	227	227	NA	NA	0	NA	NA
33_3_125	MW-38C	Supplemental	Potassium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	5.80	5.80	5.70	5.90	0.141	0.0244	0.148	NA	NA
33_3_130	MW-38C	Supplemental	Sodium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	380	380	370	390	14.1	0.0372	14.8	NA	NA
33_3_132	MW-38C	Supplemental	Temperature (field)	deg c	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	12.5	12.5	12.5	12.5	NA	NA	0	NA	NA
33_3_133	MW-38C	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-10-31 to 2022-10-31		Nonparametric	23.4	23.4	23.4	23.4	NA	NA	0	NA	NA
33_3_136	MW-38C	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	9.70	9.70	6.40	13.0	4.67	0.481	4.89	NA	NA
33_3_137	MW-38C	Supplemental	Turbidity (field)	ntu	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	6.39	6.39	6.39	6.39	NA	NA	0	NA	NA
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	1.22	1.20	0.940	1.80	0.215	0.176	0.296	0.781	1.13
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	398	390	360	470	26.5	0.0665	29.6	1.05	1.53
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	498	505	370	560	51.1	0.103	37.0	-1.17	1.20
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	4.61	3.70	2.20	17.0	3.27	0.708	0.444	3.16	10.8
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	7.47	7.46	7.28	7.76	0.103	0.0137	0.0444	1.15	3.75
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	7.72	7.70	7.50	8.40	0.227	0.0294	0.148	1.87	3.80
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	5720	5750	5300	6100	174	0.0303	74.1	-0.341	1.22
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	9375	9450	7700	11000	733	0.0782	519	-0.534	1.87
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000522	0.000570	0.000180	0.000880	0.000153	0.293	0.0000815	-0.0751	1.11
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.0103	0.00680	0.000680	0.0290	0.00937	0.910	0.00892	0.558	-1.26
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	0.0430	0.0310	0.0100	0.170	0.0432	1.01	0.0163	2.40	5.28
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000444	0.000310	0.0000800	0.00190	0.000395	0.889	0.0000593	3.17	11.1
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000267	0.000210	0.0000550	0.000670	0.000152	0.569	0.0000889	1.56	2.84
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.00784	0.00470	0.00130	0.0390	0.00925	1.18	0.00326	2.54	6.56
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.00345	0.00240	0.000660	0.0140	0.00338	0.980	0.00193	2.21	4.78
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	4.61	3.70	2.20	17.0	3.27	0.708	0.444	3.16	10.8
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	0.00319	0.00200	0.000410	0.0170	0.00411	1.29	0.00104	2.77	7.38
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Lognormal; Normal	Lognormal	0.211	0.210	0.180	0.230	0.0170	0.0806	0.0296	-0.366	-1.32
34_2_120	MW-4	Appendix IV	Mercury	mg/l	17	17	100%	2015-12-09 to 2022-10-04		Nonparametric	0.0000642	0.0000270	0.0000270	0.000130	0.0000485	0.755	0	0.627	-1.72
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	0.0160	0.0160	0.0120	0.0230	0.00272	0.170	0.00296	0.840	0.922
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	2.31	1.13	0.484	20.7	4.32	1.87	0.554	4.25	18.7
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	0.240	0.240	0.200	0.300	0.0283	0.118	0.0444	0.308	-0.693
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	2015-12-09 to 2022-10-04		Nonparametric	0.000192	0.000200	0.0000740	0.000280	0.0000641	0.335	0	-0.585	-0.219
34_3_101	MW-4	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-04 to 2022-10-04		Nonparametric	180	180	180	180	NA	NA	0	NA	NA
34_3_102	MW-4	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-04 to 2022-10-04		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
34_3_103	MW-4	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-04 to 2022-10-04		Nonparametric	180	180	180	180	NA	NA	0	NA	NA
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	7618	8820	922	9684	2800	0.368	1150	-1.79	2.48
34_3_119	MW-4	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	765	765	760	770	7.07	0.00924	7.41	NA	NA
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-09 to 2022-10-04	Normal	Normal	76.9	97.2	-39.7	156	66.7	0.867	60.1	-0.667	-1.03

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
34_3_125	MW-4	Supplemental	Potassium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	9.75	9.75	9.70	9.80	0.0707	0.00725	0.0741	NA	NA
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	1.02	0.408	0.183	9.67	2.05	2.00	0.218	4.13	17.9
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	1.50	0.756	0.333	11.1	2.29	1.53	0.375	4.03	17.3
34_3_130	MW-4	Supplemental	Sodium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	1200	1200	1100	1300	141	0.118	148	NA	NA
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	15.5	14.9	13.4	19.8	1.89	0.122	1.63	0.845	-0.185
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.5	24.1	1.26	0.0586	1.48	0.195	-0.503
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-09 to 2022-10-04	Lognormal	Nonparametric	211	68.0	17.0	1100	338	1.60	44.4	2.25	4.01
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	39.9	42.1	8.30	118	31.1	0.779	13.8	1.57	3.66
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Normal	Normal	1.34	1.30	0.470	1.90	0.397	0.297	0.222	-0.836	1.97
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	75.4	79.0	49.0	90.0	14.5	0.193	14.1	-0.786	-0.617
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	29.7	29.5	12.0	44.0	10.3	0.345	11.1	-0.313	-0.789
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.323	0.330	0.230	0.430	0.0598	0.185	0.0444	-0.0656	0.130
35_1_123	MW-5	Appendix III	pH (field)	su	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	7.40	7.38	7.29	7.62	0.117	0.0158	0.119	1.12	0.916
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	7.88	7.80	7.60	8.40	0.253	0.0321	0.222	0.949	0.524
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	402	410	150	570	145	0.360	156	-0.566	-0.811
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	1033	1020	610	1400	249	0.241	267	-0.204	-0.782
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	2018-08-13 to 2022-12-15		Nonparametric	0.000620	0.000570	0.000400	0.000780	0.000116	0.186	0.0000889	-0.304	-0.0960
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	2018-08-13 to 2022-12-15		Nonparametric	0.000853	0.000750	0.000750	0.00130	0.000175	0.206	0	2.16	5.04
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal	Gamma	0.0216	0.0190	0.0140	0.0510	0.0109	0.503	0.00444	2.61	7.46
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	2018-08-13 to 2022-12-15		Nonparametric	0.000338	0.000310	0.0000800	0.000620	0.000150	0.444	0.0000296	0.439	1.49
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	10	10	100%	2018-08-13 to 2022-12-15		Nonparametric	0.000196	0.000200	0.0000550	0.000270	0.0000538	0.275	0.00000741	-2.10	6.64
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.00315	0.00140	0.000640	0.0100	0.00343	1.09	0.000874	1.54	0.951
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.000607	0.000510	0.000190	0.00190	0.000514	0.847	0.000430	2.0	4.70
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.323	0.330	0.230	0.430	0.0598	0.185	0.0444	-0.0656	0.130
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	2018-08-13 to 2022-12-15	Lognormal	Lognormal	0.000888	0.000510	0.000240	0.00410	0.00115	1.29	0.000296	2.98	9.15
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.0602	0.0615	0.0430	0.0710	0.00892	0.148	0.0111	-0.604	-0.245
35_2_120	MW-5	Appendix IV	Mercury	mg/l	7	7	100%	2018-11-29 to 2022-12-15		Nonparametric	0.000120	0.000130	0.0000610	0.000130	0.0000261	0.217	0	-2.65	7.00
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal	Gamma	0.00399	0.00320	0.00270	0.00740	0.00161	0.404	0.000667	1.32	0.702
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	5	0	0%	2018-11-29 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	1.14	1.14	0.437	1.85	0.532	0.465	0.385	0.00924	-0.0703
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Nonparametric	Nonparametric	0.00694	0.00505	0.00360	0.0180	0.00482	0.694	0.00193	1.78	2.44
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	2018-08-13 to 2022-12-15		Nonparametric	0.000194	0.000200	0.0000890	0.000260	0.0000442	0.227	0	-1.65	5.37
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	1086	1042	660	1684	312	0.287	138	1.02	2.58
35_3_119	MW-5	Supplemental	Magnesium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	42.0	42.0	42.0	42.0	NA	NA	0	NA	NA
35_3_122	MW-5	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	66.4	57.1	35.1	112	34.4	0.517	31.3	0.433	-2.23
35_3_125	MW-5	Supplemental	Potassium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	4.10	4.10	4.10	4.10	NA	NA	0	NA	NA
35_3_126	MW-5	Supplemental	Radium-226	pci/l	5	0	0%	2018-11-29 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	0.334	0.370	0.120	0.482	0.138	0.412	0.116	-0.985	1.07
35_3_128	MW-5	Supplemental	Radium-228	pci/l	5	2	40%	2018-11-29 to 2022-05-09		Nonparametric	0.828	0.758	0.384	1.48	0.416	0.502	0.243	1.03	1.35
35_3_130	MW-5	Supplemental	Sodium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	260	260	260	260	NA	NA	0	NA	NA
35_3_132	MW-5	Supplemental	Temperature (field)	deg c	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	13.6	13.4	12.0	16.1	1.68	0.123	2.07	0.674	-1.24
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	20.7	20.9	18.3	22.8	1.34	0.0649	1.26	-0.108	0.0533
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	24.2	26.0	2.40	49.0	17.3	0.715	24.4	0.101	-1.31
35_3_137	MW-5	Supplemental	Turbidity (field)	ntu	6	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	3.26	1.27	0.0200	11.4	4.42	1.36	1.59	1.62	2.24

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.428	0.430	0.360	0.510	0.0480	0.112	0.0593	0.104	-1.21
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	330	330	270	390	37	0.112	44.4	-0.155	-1.00
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	540	570	260	730	142	0.264	141	-0.674	-0.509
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.206	0.160	0.0600	0.830	0.184	0.893	0.0444	2.63	6.97
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.07	7.09	6.74	7.34	0.167	0.0236	0.178	-0.132	-0.387
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	2015-12-14 to 2022-10-05	Lognormal; Normal	Lognormal	7.59	7.50	7.30	8.10	0.218	0.0287	0.148	0.748	-0.304
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	714	660	490	1200	171	0.239	111	1.36	2.33
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	2220	2150	1600	3500	381	0.171	222	1.97	6.52
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.000504	0.000570	0.000160	0.000770	0.000150	0.297	0	-0.785	0.386
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00245	0.00180	0.000420	0.00690	0.00193	0.788	0.00156	0.994	0.0879
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	0.0707	0.0490	0.0240	0.180	0.0495	0.700	0.0193	1.51	1.04
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.000489	0.000330	0.0000800	0.00150	0.000358	0.731	0.000104	1.85	2.91
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000324	0.000275	0.0000810	0.000690	0.000166	0.512	0.000104	1.11	0.410
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	0.0100	0.00480	0.000980	0.0520	0.0126	1.25	0.00370	2.28	5.54
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.00267	0.00100	0.000460	0.0110	0.00328	1.23	0.000681	1.80	2.04
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.206	0.160	0.0600	0.830	0.184	0.893	0.0444	2.63	6.97
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.00561	0.00250	0.000450	0.0240	0.00736	1.31	0.00240	1.87	2.31
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0643	0.0640	0.0460	0.0870	0.0120	0.186	0.0148	0.399	-1.04
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-14 to 2022-10-05		Nonparametric	0.0000679	0.0000270	0.0000270	0.000130	0.0000479	0.705	0	0.432	-1.87
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.00237	0.00200	0.00120	0.00740	0.00153	0.644	0.000889	2.42	6.05
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	1.30	1.10	0.450	2.69	0.635	0.490	0.379	1.09	0.183
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0157	0.0150	0.0100	0.0220	0.00254	0.162	0.00148	0.252	1.47
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	2015-12-14 to 2022-10-05		Nonparametric	0.000205	0.000200	0.0000740	0.000280	0.0000553	0.269	0	-0.853	1.36
36_3_101	MW-6	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
36_3_102	MW-6	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	2022-10-05 to 2022-10-05		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
36_3_103	MW-6	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	2829	2929	1706	4251	623	0.220	483	0.0395	0.775
36_3_119	MW-6	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	102	102	93.0	110	12.0	0.118	12.6	NA	NA
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-14 to 2022-10-05	Normal	Normal	93.0	95.3	-17.4	204	66.0	0.710	66.2	0.0603	-0.433
36_3_125	MW-6	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	9.15	9.15	9.00	9.30	0.212	0.0232	0.222	NA	NA
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.448	0.348	0.190	1.37	0.296	0.661	0.213	1.78	3.80
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.997	0.896	0.414	1.84	0.450	0.452	0.459	0.766	-0.397
36_3_130	MW-6	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	185	185	180	190	7.07	0.0382	7.41	NA	NA
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	15.7	14.9	11.9	21.4	2.48	0.158	1.48	0.913	0.607
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	21.5	21.2	19.5	23.9	1.29	0.0602	1.41	0.277	-0.856
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Lognormal	Nonparametric	182	69.0	2.40	2000	445	2.44	69.6	4.19	18
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	29.9	15.2	6.24	160	42.4	1.42	12	2.79	8.42
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	0.870	0.900	0.610	1.30	0.163	0.187	0.0593	0.506	1.62
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	482	480	430	580	30.5	0.0632	14.8	1.80	5.63
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	186	160	110	320	67.4	0.363	59.3	0.737	-0.640
37_1_115	MW-8	Appendix III	Fluoride	mg/l	20	9	45%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	1.44	0.155	0.0600	9.00	2.80	1.95	0.135	2.10	3.25
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	2015-12-14 to 2022-04-28	Gamma; Lognormal; Normal	Gamma	6.90	6.87	6.67	7.27	0.161	0.0234	0.141	0.820	0.347

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	7.44	7.40	7.20	8.10	0.245	0.0329	0.296	1.15	1.36
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	2732	2700	2300	3700	298	0.109	148	1.90	5.63
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	4146	4150	520	5500	967	0.233	370	-2.77	11.2
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000532	0.000570	0.000160	0.00120	0.000233	0.439	0	0.985	2.87
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00197	0.00170	0.000750	0.00630	0.00133	0.675	0.00119	1.88	4.83
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.0414	0.0250	0.0130	0.210	0.0444	1.07	0.0148	3.06	10.8
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000410	0.000310	0.000110	0.00110	0.000230	0.561	0.0000296	2.05	4.36
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000273	0.000235	0.000140	0.000710	0.000125	0.457	0.0000593	2.49	7.92
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	2015-12-14 to 2022-12-15	Lognormal	Nonparametric	0.0104	0.00490	0.00120	0.0640	0.0156	1.49	0.00385	2.70	7.25
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Lognormal	Lognormal	0.00268	0.00150	0.000350	0.0120	0.00295	1.10	0.000889	2.25	4.89
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	9	45%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	1.44	0.155	0.0600	9.00	2.80	1.95	0.135	2.10	3.25
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00334	0.00130	0.000390	0.0190	0.00474	1.42	0.00126	2.41	5.84
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	0.126	0.120	0.0920	0.230	0.0311	0.246	0.0148	2.08	5.70
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-14 to 2022-12-15		Nonparametric	0.0000651	0.0000270	0.0000270	0.000130	0.0000479	0.736	0	0.614	-1.71
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00155	0.00110	0.000450	0.00870	0.00172	1.11	0.000548	3.91	16.6
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	2.07	1.60	1.00	8.84	1.70	0.823	0.496	3.67	14.6
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.0104	0.00990	0.00360	0.0200	0.00380	0.364	0.00163	0.801	1.24
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	2015-12-14 to 2022-12-15		Nonparametric	0.000198	0.000200	0.0000740	0.000280	0.0000587	0.297	0	-0.587	0.388
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	2015-12-14 to 2022-04-28	Normal	Normal	4293	4454	2752	5228	725	0.169	515	-0.974	0.203
37_3_119	MW-8	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	280	280	280	280	NA	NA	0	NA	NA
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	16	0	0%	2015-12-14 to 2022-04-28	Normal	Normal	79.5	53.8	-36.6	312	98.1	1.23	81.9	0.903	0.512
37_3_125	MW-8	Supplemental	Potassium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	11.0	11.0	11.0	11.0	NA	NA	0	NA	NA
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	0.769	0.521	0.309	4.20	0.832	1.08	0.171	4.07	17.3
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	2015-12-14 to 2022-04-28	Lognormal	Lognormal	1.31	1.07	0.561	4.64	0.917	0.701	0.389	2.85	9.37
37_3_130	MW-8	Supplemental	Sodium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	330	330	330	330	NA	NA	0	NA	NA
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	16.8	14.9	11.5	27.1	4.80	0.286	1.41	1.57	1.25
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	22	22.2	19.2	24.0	1.34	0.0611	1.63	-0.302	-0.752
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Lognormal	Nonparametric	672	70.0	9.60	7900	1841	2.74	71.1	3.77	14.9
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	2015-12-14 to 2022-04-28	Gamma; Lognormal; Normal	Gamma	34.9	18.6	2.02	100	35.3	1.01	20.5	1.01	-0.464

[a] Non-detects are excluded from goodness-of-fit tests.

Table 2: Summary Statistics, Non-Detects Excluded

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.407	0.375	0.330	0.770	0.0971	0.239	0.0519	2.96	10.7
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	84.9	85.0	72.0	98.0	7.0	0.0824	7.41	-0.214	-0.411
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	66.2	66.0	61.0	73.0	2.92	0.0440	2.22	0.177	0.387
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.370	0.360	0.200	0.580	0.0986	0.267	0.0889	0.501	0.00858
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.27	7.21	7.07	7.59	0.144	0.0199	0.119	0.908	0.0585
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.72	7.70	7.30	8.20	0.240	0.0311	0.222	0.0894	-0.239
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	294	295	170	400	42	0.143	37.0	-0.579	5.01
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	932	930	860	1100	55.9	0.0599	44.4	1.46	3.06
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000983	0.000800	0.000200	0.00240	0.000609	0.619	0.000289	1.47	2.86
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	2015-12-17 to 2022-10-05	Lognormal	Lognormal	0.00165	0.00130	0.000940	0.00430	0.000893	0.543	0.000474	1.97	4.06
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0840	0.0760	0.0310	0.190	0.0476	0.566	0.0533	0.749	-0.276
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	2015-12-17 to 2022-10-05	Gamma; Normal	Nonparametric	0.000429	0.000445	0.0000760	0.000680	0.000221	0.515	0.000259	-0.568	-0.857
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000313	0.000295	0.000150	0.000460	0.0000999	0.319	0.000111	0.120	-1.01
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00773	0.00345	0.000620	0.0300	0.00948	1.23	0.00364	1.62	1.54
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00156	0.00130	0.000180	0.00540	0.00156	1.00	0.00116	1.57	1.77
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.370	0.360	0.200	0.580	0.0986	0.267	0.0889	0.501	0.00858
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	2015-12-17 to 2022-10-05	Gamma; Lognormal	Gamma	0.00236	0.00110	0.000300	0.00860	0.00266	1.13	0.00117	1.73	2.09
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	0.0328	0.0310	0.0270	0.0490	0.00484	0.148	0.00296	2.18	5.90
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-17 to 2022-10-05		Nonparametric	0.0000270	0.0000270	0.0000270	0.0000270	NA	NA	0	NA	NA
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	2015-12-17 to 2022-10-05	Lognormal	Lognormal	0.0221	0.0150	0.00680	0.0910	0.0202	0.911	0.00741	2.50	6.70
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	1.09	0.958	0.566	2.27	0.498	0.457	0.447	1.16	1.09
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00148	0.00150	0.000270	0.00290	0.000652	0.440	0.000593	0.306	0.847
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	2015-12-17 to 2022-10-05		Nonparametric	0.000335	0.000335	0.000110	0.000560	0.000318	0.950	0.000333	NA	NA
11_3_101	MW-1	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
11_3_103	MW-1	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	1355	1381	1063	1510	138	0.102	135	-0.831	-0.308
11_3_119	MW-1	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	42.5	42.5	42.0	43.0	0.707	0.0166	0.741	NA	NA
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-17 to 2022-10-05	Normal	Normal	-32.9	-31.1	-130	75.7	49.6	-1.51	50.4	0.207	0.389
11_3_125	MW-1	Supplemental	Potassium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	4.30	4.30	4.10	4.50	0.283	0.0658	0.296	NA	NA
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.426	0.283	0.128	0.989	0.278	0.652	0.219	0.847	-0.513
11_3_128	MW-1	Supplemental	Radium-228	pci/l	21	12	57%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.798	0.719	0.413	1.61	0.347	0.435	0.293	1.74	3.95
11_3_130	MW-1	Supplemental	Sodium	mg/l	2	0	0%	2022-04-20 to 2022-10-05		Nonparametric	185	185	180	190	7.07	0.0382	7.41	NA	NA
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	15.4	15.2	13.7	17.0	1.10	0.0715	1.48	-0.0558	-1.25
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-17 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	21.8	22.0	19.4	24.1	1.37	0.0630	1.48	-0.0634	-0.689
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	135	50.0	6.00	450	161	1.20	64.6	0.962	-0.647
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	2015-12-17 to 2022-10-05	Nonparametric	Nonparametric	88.2	8.45	1.85	1000	274	3.11	2.13	3.59	12.9
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	1.17	1.10	1.10	1.40	0.106	0.0905	0	1.44	1.26
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	466	500	10.0	560	144	0.309	59.3	-3.05	10.1
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	67.2	67.0	60.0	72.0	3.83	0.0570	4.44	-0.618	-0.430
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-09 to 2022-10-04	Lognormal	Lognormal	0.823	0.795	0.460	1.90	0.407	0.495	0.133	2.35	6.62
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	6.96	6.90	6.73	7.44	0.210	0.0302	0.104	1.62	1.98
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	7.42	7.40	7.20	7.90	0.230	0.0310	0.222	1.14	0.451
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	2085	2100	1800	2300	152	0.0729	148	-0.201	-0.622

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	3969	4000	3800	4200	118	0.0298	148	0.349	-0.286
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00275	0.00255	0.00110	0.00430	0.00104	0.379	0.00126	0.0470	-1.03
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0291	0.0255	0.0210	0.0460	0.00941	0.323	0.00593	0.972	-0.546
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-09 to 2022-10-05		Nonparametric	0.000570	0.000570	0.000570	0.000570	NA	NA	0	NA	NA
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	2018-08-09 to 2022-10-05		Nonparametric	0.000370	0.000370	0.000340	0.000400	0.0000424	0.115	0.0000444	NA	NA
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00369	0.00310	0.00100	0.00810	0.00208	0.563	0.00133	1.16	1.83
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00118	0.000955	0.000430	0.00320	0.000812	0.690	0.000578	1.92	4.40
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-09 to 2022-10-04	Lognormal	Lognormal	0.823	0.795	0.460	1.90	0.407	0.495	0.133	2.35	6.62
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	2018-08-09 to 2022-10-05		Nonparametric	0.000900	0.000920	0.000460	0.00130	0.000463	0.514	0.000563	-0.0258	-5.85
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Nonparametric	Nonparametric	0.102	0.100	0.0930	0.110	0.00685	0.0671	0.00889	0.214	-1.83
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00472	0.00470	0.00340	0.00660	0.00109	0.230	0.00104	0.848	-0.131
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.879	0.866	0.307	1.57	0.429	0.488	0.293	0.497	0.794
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-09 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.311	0.320	0.230	0.420	0.0506	0.163	0.0296	0.472	0.685
12_3_101	MW-13	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-02 to 2022-10-04		Nonparametric	805	830	680	880	92.6	0.115	66.7	-1.06	-0.161
12_3_103	MW-13	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-20 to 2022-10-04		Nonparametric	735	735	680	790	77.8	0.106	81.5	NA	NA
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	4168	4309	3395	4647	396	0.0949	166	-1.01	-0.152
12_3_119	MW-13	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-02 to 2022-10-05	Normal	Nonparametric	145	180	14.0	190	74.9	0.518	14.8	-1.99	4.0
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal	Gamma	131	103	60.9	391	85.3	0.654	47.6	2.66	8.20
12_3_125	MW-13	Supplemental	Potassium	mg/l	5	0	0%	2021-12-02 to 2022-10-05		Nonparametric	10.6	11.0	9.90	11.0	0.576	0.0545	0	-0.626	-3.23
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	2018-08-09 to 2022-10-05	Gamma; Lognormal	Gamma	0.239	0.190	0.121	0.440	0.130	0.546	0.0533	1.09	-0.836
12_3_128	MW-13	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-09 to 2022-10-05		Nonparametric	0.842	0.614	0.583	1.33	0.423	0.502	0.0459	1.72	NA
12_3_130	MW-13	Supplemental	Sodium	mg/l	5	0	0%	2021-12-02 to 2022-10-05	Normal	Nonparametric	346	400	30.0	500	182	0.527	29.6	-1.87	3.93
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	15.1	14.8	12.1	17.7	1.70	0.112	1.19	-0.0896	-0.434
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	2018-08-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	21.6	21.8	19.8	23.0	1.07	0.0498	1.19	-0.420	-0.943
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	2018-08-09 to 2022-10-04	Gamma; Lognormal	Gamma	24.8	9.20	2.80	160	45.6	1.84	7.70	3.12	9.99
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	2018-08-09 to 2022-10-04	Nonparametric	Nonparametric	4.68	4.12	0.0200	22.0	5.78	1.24	3.41	2.46	7.47
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	1.36	1.30	1.20	1.70	0.165	0.121	0.0741	1.37	1.02
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	476	480	430	530	29.5	0.0620	29.6	0.231	-0.195
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Normal	Normal	197	205	160	220	22.6	0.115	14.8	-0.901	-0.615
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.757	0.680	0.360	1.60	0.403	0.531	0.333	1.44	2.28
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	7.35	7.30	7.14	7.82	0.194	0.0264	0.0815	1.83	3.94
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	7.65	7.70	7.30	8.10	0.207	0.0270	0.0741	0.659	2.47
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	3120	3100	2600	3500	253	0.0811	148	-0.537	1.09
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	5130	5250	3800	5900	570	0.111	296	-1.39	3.06
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.0113	0.0115	0.00840	0.0160	0.00253	0.224	0.00244	0.653	0.359
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.0205	0.0200	0.0150	0.0290	0.00484	0.236	0.00593	0.663	-0.732
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-13 to 2022-10-14		Nonparametric	0.000580	0.000580	0.000580	0.000580	NA	NA	0	NA	NA
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	2018-08-13 to 2022-10-14		Nonparametric	0.000230	0.000230	0.000230	0.000230	NA	NA	0	NA	NA
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00409	0.00260	0.00150	0.00810	0.00275	0.674	0.00163	0.750	-1.50
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.000530	0.000480	0.000130	0.000980	0.000297	0.561	0.000356	0.269	-1.12
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.757	0.680	0.360	1.60	0.403	0.531	0.333	1.44	2.28
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	2018-08-13 to 2022-10-14		Nonparametric	0.000580	0.000580	0.000460	0.000700	0.000170	0.293	0.000178	NA	NA
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.147	0.150	0.130	0.160	0.0116	0.0789	0.0148	-0.342	-1.23

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00283	0.00230	0.00160	0.00590	0.00137	0.485	0.000963	1.41	1.73
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	1.16	1.01	0.651	2.60	0.580	0.502	0.222	2.30	5.97
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.58	1.60	1.40	1.70	0.103	0.0654	0.148	-0.272	-0.896
13_3_101	MW-14	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	150	150	150	150	NA	NA	0	NA	NA
13_3_103	MW-14	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	150	150	150	150	NA	NA	0	NA	NA
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	5750	5733	5156	6183	338	0.0588	443	-0.400	-0.785
13_3_119	MW-14	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	320	320	300	340	28.3	0.0884	29.6	NA	NA
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2018-08-13 to 2022-10-14	Normal	Normal	75.2	79.1	-55.1	186	75.2	0.999	51.5	-0.346	-0.353
13_3_125	MW-14	Supplemental	Potassium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	10.5	10.5	10.0	11.0	0.707	0.0673	0.741	NA	NA
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.367	0.353	0.184	0.605	0.134	0.366	0.133	0.481	-0.552
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	2018-08-13 to 2022-10-14	Lognormal	Lognormal	0.790	0.597	0.340	2.29	0.621	0.786	0.107	2.57	6.93
13_3_130	MW-14	Supplemental	Sodium	mg/l	2	0	0%	2022-04-29 to 2022-10-14		Nonparametric	575	575	550	600	35.4	0.0615	37.0	NA	NA
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	15.6	15.8	12.9	18.6	2.20	0.141	3.14	0.0109	-1.72
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	21.1	20.9	19.0	23.4	1.48	0.0698	1.85	0.113	-1.14
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	2018-08-13 to 2022-10-14	Lognormal	Lognormal	12.7	7.60	4.80	29.0	10.2	0.810	2.96	1.20	-0.695
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Normal	Gamma	2.91	2.11	0.0200	7.47	2.76	0.951	2.87	0.621	-1.14
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.531	0.550	0.450	0.620	0.0608	0.115	0.0815	-0.113	-1.62
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	195	185	140	280	38.7	0.198	22.2	1.10	1.89
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	82.2	85.0	57.0	96.0	10.5	0.128	5.93	-1.55	3.61
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.715	0.680	0.450	1.30	0.254	0.356	0.222	1.29	2.46
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	7.17	7.14	6.93	7.59	0.189	0.0264	0.0741	1.60	4.10
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	7.69	7.70	7.30	8.10	0.213	0.0277	0.148	0.0757	1.29
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	1174	1150	940	1600	195	0.166	222	1.08	1.49
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Lognormal	Lognormal	2320	2200	2000	2700	253	0.109	148	0.698	-1.06
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.00176	0.00140	0.000330	0.00470	0.00127	0.721	0.000593	1.73	3.70
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	0.0353	0.0210	0.0160	0.130	0.0352	0.996	0.00370	2.64	7.22
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	7	88%	2018-08-13 to 2022-10-13		Nonparametric	0.000910	0.000910	0.000910	0.000910	NA	NA	0	NA	NA
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.0104	0.00520	0.00210	0.0370	0.0120	1.15	0.00444	1.91	3.70
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-10-13	Gamma; Lognormal	Gamma	0.00105	0.000555	0.000270	0.00390	0.00125	1.19	0.000311	2.13	4.48
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.715	0.680	0.450	1.30	0.254	0.356	0.222	1.29	2.46
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	2018-08-13 to 2022-10-13		Nonparametric	0.00254	0.00162	0.000320	0.00660	0.00285	1.12	0.00154	1.48	1.94
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	0.0503	0.0475	0.0460	0.0610	0.00512	0.102	0.00222	1.22	0.551
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.00454	0.00380	0.00200	0.00710	0.00174	0.383	0.00222	0.352	-0.894
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	1.02	0.920	0.422	1.82	0.565	0.555	0.684	0.472	-1.52
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	0.137	0.130	0.0750	0.190	0.0343	0.251	0.0296	-0.137	-0.244
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	2018-11-27 to 2022-10-13		Nonparametric	0.000210	0.000210	0.000210	0.000210	NA	NA	0	NA	NA
14_3_101	MW-15	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-13 to 2022-10-13		Nonparametric	430	430	430	430	NA	NA	0	NA	NA
14_3_103	MW-15	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-13 to 2022-10-13		Nonparametric	430	430	430	430	NA	NA	0	NA	NA
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	2810	2816	2171	3292	362	0.129	401	-0.544	0.0392
14_3_119	MW-15	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	140	140	120	160	28.3	0.202	29.6	NA	NA
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	76.4	76.5	32.5	129	36.8	0.482	51.9	0.293	-1.38
14_3_125	MW-15	Supplemental	Potassium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	7.40	7.40	7.10	7.70	0.424	0.0573	0.444	NA	NA
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	2018-08-13 to 2022-10-13	Gamma; Lognormal	Nonparametric	0.278	0.133	0.0879	0.864	0.330	1.19	0.0668	2.15	4.66

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
14_3_128	MW-15	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-13 to 2022-10-13		Nonparametric	0.993	0.855	0.443	1.68	0.630	0.635	0.610	0.937	NA
14_3_130	MW-15	Supplemental	Sodium	mg/l	2	0	0%	2022-04-21 to 2022-10-13		Nonparametric	370	370	330	410	56.6	0.153	59.3	NA	NA
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	2019-05-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	15.7	15.6	14.3	18.1	1.17	0.0746	0.667	1.06	1.98
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-13	Gamma; Lognormal; Normal	Gamma	21.7	21.5	19.4	23.6	1.18	0.0546	0.667	-0.132	0.717
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2018-08-13 to 2022-10-13	Nonparametric	Nonparametric	115	9.20	6.00	570	202	1.76	4.15	1.90	2.80
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	2019-05-13 to 2022-10-13	Normal	Normal	5.03	5.12	0.0200	9.93	3.01	0.599	2.27	-0.164	0.514
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.580	0.555	0.480	0.870	0.111	0.191	0.0519	2.29	6.22
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	93.0	48.0	41.0	490	140	1.50	5.19	3.15	9.96
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	62.7	62.5	54.0	71.0	6.11	0.0975	7.41	0.0254	-1.82
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.22	1.25	1.00	1.40	0.140	0.115	0.222	-0.134	-1.38
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	2019-05-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	7.56	7.56	7.48	7.64	0.0587	0.00776	0.0667	0.176	-0.972
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-10-14	Nonparametric	Nonparametric	7.99	8.00	7.80	8.50	0.197	0.0246	0.0741	2.14	5.88
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	191	195	170	210	15.2	0.0798	22.2	-0.207	-1.51
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	717	725	660	780	38.3	0.0534	44.4	-0.0391	-0.892
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	2018-11-28 to 2022-10-14	Gamma; Lognormal	Gamma	0.00271	0.00200	0.00160	0.00670	0.00180	0.663	0.000593	2.40	5.98
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.00335	0.00180	0.000910	0.0130	0.00383	1.14	0.000889	2.47	6.36
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.0677	0.0470	0.0160	0.200	0.0523	0.773	0.0163	2.13	4.94
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	2018-08-13 to 2022-10-14		Nonparametric	0.000575	0.000575	0.000310	0.000840	0.000375	0.652	0.000393	NA	NA
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	2018-08-13 to 2022-10-14		Nonparametric	0.000280	0.000280	0.000280	0.000280	NA	NA	0	NA	NA
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	2018-08-13 to 2022-10-14		Nonparametric	0.0315	0.0315	0.0240	0.0390	0.0106	0.337	0.0111	NA	NA
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	2018-08-13 to 2022-10-14		Nonparametric	0.00228	0.00204	0.000140	0.00490	0.00243	1.07	0.00271	0.171	-4.99
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	1.22	1.25	1.00	1.40	0.140	0.115	0.222	-0.134	-1.38
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	2018-08-13 to 2022-10-14		Nonparametric	0.00443	0.00530	0.000180	0.00780	0.00388	0.877	0.00370	-0.961	NA
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.0551	0.0540	0.0430	0.0780	0.00985	0.179	0.00519	1.46	2.84
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.0379	0.0310	0.0240	0.0920	0.0212	0.560	0.00889	2.54	6.86
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.943	0.950	0.462	1.60	0.383	0.406	0.239	0.828	1.67
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	0.00315	0.00195	0.000510	0.00820	0.00293	0.928	0.00155	1.25	0.735
15_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	370	370	370	370	NA	NA	0	NA	NA
15_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-14 to 2022-10-14		Nonparametric	370	370	370	370	NA	NA	0	NA	NA
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	2019-05-13 to 2022-10-14	Nonparametric	Nonparametric	1119	1152	915	1186	92.5	0.0827	34.8	-1.93	3.56
15_3_119	MW-16	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	34.5	34.5	34.0	35.0	0.707	0.0205	0.741	NA	NA
15_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2019-05-13 to 2022-10-14	Normal	Normal	37.4	65.6	-222	195	125	3.35	74.1	-1.26	2.35
15_3_125	MW-16	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	3.75	3.75	3.60	3.90	0.212	0.0566	0.222	NA	NA
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	0.268	0.206	0.113	0.772	0.230	0.857	0.114	2.30	5.61
15_3_128	MW-16	Supplemental	Radium-228	pci/l	10	7	70%	2018-08-13 to 2022-10-14		Nonparametric	0.843	0.827	0.809	0.894	0.0448	0.0531	0.0267	1.42	NA
15_3_130	MW-16	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-14		Nonparametric	170	170	150	190	28.3	0.166	29.6	NA	NA
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	2019-05-13 to 2022-10-14	Nonparametric	Nonparametric	13.4	13.1	12.0	17.9	1.89	0.140	0.593	2.31	5.98
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.5	23.2	1.31	0.0613	1.70	-0.284	-1.30
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2018-08-13 to 2022-10-14	Gamma; Lognormal	Gamma	212	14.0	1.60	870	343	1.62	18.4	1.49	0.606
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	2019-05-13 to 2022-10-14	Gamma; Normal	Gamma	4.16	2.86	0.0200	9.84	3.68	0.883	2.62	0.865	-0.723
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Lognormal; Normal	Lognormal	1.33	1.30	1.20	1.50	0.0866	0.0650	0	0.660	0.825
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	488	485	380	570	49.7	0.102	37.0	-0.614	1.08
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	415	420	330	490	42.5	0.103	29.6	-0.252	1.01

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.834	0.690	0.450	1.60	0.378	0.453	0.193	1.63	3.03
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	7.25	7.25	7.02	7.44	0.109	0.0151	0.0963	-0.398	0.909
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	7.60	7.60	7.50	7.80	0.105	0.0139	0.148	0.712	-0.450
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	2991	3000	2400	3300	247	0.0825	148	-1.34	2.58
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	5308	5400	4800	5800	275	0.0517	296	-0.294	0.432
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	2019-03-22 to 2022-10-07	Normal	Normal	0.00850	0.00880	0.000340	0.0120	0.00343	0.404	0.00207	-1.87	4.46
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.0177	0.0160	0.0130	0.0260	0.00458	0.259	0.00444	0.827	-0.572
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	8	89%	2019-03-22 to 2022-10-07		Nonparametric	0.00120	0.00120	0.00120	0.00120	NA	NA	0	NA	NA
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.000390	0.000320	0.000180	0.000850	0.000218	0.558	0.000178	1.51	2.52
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.834	0.690	0.450	1.60	0.378	0.453	0.193	1.63	3.03
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.197	0.190	0.170	0.230	0.0197	0.100	0.0222	0.301	-0.938
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.00598	0.00600	0.00360	0.00790	0.00139	0.233	0.00133	-0.282	-0.753
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	1.08	0.994	0.745	1.81	0.384	0.355	0.292	1.38	1.28
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	1.27	1.30	1.10	1.50	0.106	0.0828	0.148	0.592	0.888
16_3_101	MW-21	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-11-30 to 2022-10-07		Nonparametric	260	265	240	270	14.1	0.0544	7.41	-1.41	1.50
16_3_103	MW-21	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-20 to 2022-10-07		Nonparametric	255	255	240	270	21.2	0.0832	22.2	NA	NA
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	5422	5680	4095	6130	640	0.118	563	-0.917	-0.102
16_3_119	MW-21	Supplemental	Magnesium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	254	250	220	280	23.0	0.0906	29.6	-0.606	0.274
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal	Gamma	140	148	13.6	370	87.6	0.625	39.6	1.51	4.36
16_3_125	MW-21	Supplemental	Potassium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	10.3	9.90	9.10	12.0	1.19	0.115	1.19	0.739	-0.971
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.288	0.297	0.157	0.409	0.0941	0.326	0.130	-0.119	-1.48
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	0.837	0.721	0.456	1.40	0.377	0.450	0.333	0.753	-1.18
16_3_130	MW-21	Supplemental	Sodium	mg/l	5	0	0%	2021-11-30 to 2022-10-07	Gamma; Lognormal; Normal	Nonparametric	706	710	640	760	45.1	0.0638	29.6	-0.548	0.455
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	13.1	12.9	11.3	15.9	1.34	0.102	1.48	0.647	0.326
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	2019-05-14 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	20.8	20.9	18.3	23.0	1.17	0.0560	0.593	-0.461	3.14
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	2019-03-22 to 2022-10-07	Lognormal	Lognormal	5.98	2.80	1.20	31.0	8.72	1.46	1.78	2.81	8.32
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	2019-03-22 to 2022-10-07	Gamma; Lognormal; Normal	Gamma	2.30	2.15	0.0200	5.56	2.15	0.934	3.13	0.271	-1.62
17_1_108	MW-25B	Appendix III	Boron	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.565	0.565	0.480	0.660	0.0660	0.117	0.0741	0.176	-0.812
17_1_110	MW-25B	Appendix III	Calcium	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	133	130	120	160	13.7	0.102	0	1.93	4.55
17_1_111	MW-25B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	93.2	88.0	78.0	110	13.6	0.146	9.63	0.626	-1.70
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.485	0.505	0.350	0.620	0.0940	0.194	0.0815	-0.130	0.0156
17_1_123	MW-25B	Appendix III	pH (field)	su	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	7.15	7.15	7.00	7.29	0.107	0.0150	0.126	-0.0671	-0.980
17_1_124	MW-25B	Appendix III	pH (lab)	su	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	7.58	7.55	7.40	7.80	0.147	0.0194	0.148	0.418	-0.859
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	615	620	560	680	45.1	0.0733	51.9	0.118	-0.892
17_1_135	MW-25B	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	1400	1400	1300	1500	63.2	0.0452	0	0	2.50
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	1	20%	2019-10-23 to 2022-04-29		Nonparametric	0.000730	0.000670	0.000580	0.00100	0.000189	0.259	0.000104	1.47	1.96
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.00253	0.00260	0.00160	0.00330	0.000565	0.223	0.000370	-0.593	1.42
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0	0%	2019-10-23 to 2022-04-29		Nonparametric	0.0210	0.0205	0.0200	0.0240	0.00155	0.0738	0.000741	1.94	3.96
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	4	3	75%	2020-04-28 to 2022-04-29		Nonparametric	0.000630	0.000630	0.000630	0.000630	NA	NA	0	NA	NA
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	5	83%	2019-10-23 to 2022-04-29		Nonparametric	0.00120	0.00120	0.00120	0.00120	NA	NA	0	NA	NA
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.000537	0.000495	0.000370	0.000790	0.000156	0.291	0.000141	0.860	-0.101
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.485	0.505	0.350	0.620	0.0940	0.194	0.0815	-0.130	0.0156
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	5	83%	2019-10-23 to 2022-04-29		Nonparametric	0.000510	0.000510	0.000510	0.000510	NA	NA	0	NA	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.0482	0.0475	0.0450	0.0550	0.00354	0.0736	0.00148	1.86	3.97
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.0692	0.0625	0.0500	0.0960	0.0193	0.278	0.0148	0.628	-1.78
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	3	50%	2019-10-23 to 2022-04-29		Nonparametric	0.545	0.527	0.524	0.583	0.0332	0.0610	0.00444	1.72	NA
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	0.00537	0.00520	0.00360	0.00800	0.00147	0.274	0.000741	1.17	2.52
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	4	2	50%	2020-04-28 to 2022-04-29		Nonparametric	0.000810	0.000810	0.000420	0.00120	0.000552	0.681	0.000578	NA	NA
17_3_101	MW-25B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	390	390	390	390	NA	NA	0	NA	NA
17_3_114	MW-25B	Supplemental	Conductivity (field)	us/cm	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	1958	1979	1794	2070	96.4	0.0492	77.8	-0.946	0.995
17_3_119	MW-25B	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	65.0	65.0	65.0	65.0	NA	NA	0	NA	NA
17_3_122	MW-25B	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2019-10-23 to 2022-04-29	Normal	Nonparametric	46.5	51.4	-2.40	92.3	42.4	0.912	56.5	-0.192	-2.39
17_3_125	MW-25B	Supplemental	Potassium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	7.50	7.50	7.50	7.50	NA	NA	0	NA	NA
17_3_126	MW-25B	Supplemental	Radium-226	pci/l	6	3	50%	2019-10-23 to 2022-04-29		Nonparametric	0.218	0.151	0.146	0.358	0.121	0.554	0.00741	1.73	NA
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	6	4	67%	2019-10-23 to 2022-04-29		Nonparametric	0.482	0.482	0.419	0.545	0.0891	0.185	0.0933	NA	NA
17_3_130	MW-25B	Supplemental	Sodium	mg/l	1	0	0%	2022-04-29 to 2022-04-29		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
17_3_132	MW-25B	Supplemental	Temperature (field)	deg c	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	13.4	13.2	12.8	14.4	0.672	0.0502	0.667	0.569	-1.50
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	20.6	20.4	18.9	22.9	1.50	0.0726	1.63	0.471	-0.940
17_3_136	MW-25B	Supplemental	Total Suspended Solids	mg/l	5	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	10.5	10.0	5.20	18.0	5.19	0.493	5.33	0.636	-0.652
17_3_137	MW-25B	Supplemental	Turbidity (field)	ntu	6	0	0%	2019-10-23 to 2022-04-29	Gamma; Lognormal; Normal	Nonparametric	5.45	5.77	0.700	9.89	3.92	0.718	5.68	-0.168	-2.0
18_1_108	MW-26	Appendix III	Boron	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.670	0.660	0.630	0.740	0.0396	0.0591	0.0296	0.948	0.118
18_1_110	MW-26	Appendix III	Calcium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Nonparametric	Nonparametric	451	500	48.0	580	183	0.405	74.1	-2.35	5.80
18_1_111	MW-26	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	184	180	160	210	19.9	0.108	14.8	0.415	-1.50
18_1_115	MW-26	Appendix III	Fluoride	mg/l	7	3	43%	2019-10-23 to 2022-10-17		Nonparametric	2.08	1.83	0.170	4.50	2.25	1.08	2.47	0.168	-5.04
18_1_123	MW-26	Appendix III	pH (field)	su	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	6.87	6.89	6.76	6.95	0.0741	0.0108	0.0444	-0.768	-1.07
18_1_124	MW-26	Appendix III	pH (lab)	su	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	7.37	7.30	7.20	7.60	0.138	0.0187	0.148	0.706	-0.325
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	2057	2000	1900	2300	127	0.0619	148	1.14	1.95
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	2019-10-23 to 2022-10-17		Nonparametric	3414	3400	3300	3500	90	0.0264	148	-0.353	-1.82
18_2_104	MW-26	Appendix IV	Antimony	mg/l	6	5	83%	2019-10-23 to 2022-10-17		Nonparametric	0.00220	0.00220	0.00220	0.00220	NA	NA	0	NA	NA
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	7	6	86%	2019-10-23 to 2022-10-17		Nonparametric	0.00220	0.00220	0.00220	0.00220	NA	NA	0	NA	NA
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Nonparametric	Nonparametric	0.0219	0.0140	0.0120	0.0680	0.0204	0.934	0.00296	2.60	6.83
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	7	5	71%	2019-10-23 to 2022-10-17		Nonparametric	0.00449	0.00449	0.000980	0.00800	0.00496	1.11	0.00520	NA	NA
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.000514	0.000480	0.000120	0.000810	0.000292	0.568	0.000459	-0.289	-1.46
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	3	43%	2019-10-23 to 2022-10-17		Nonparametric	2.08	1.83	0.170	4.50	2.25	1.08	2.47	0.168	-5.04
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	6	86%	2019-10-23 to 2022-10-17		Nonparametric	0.00130	0.00130	0.00130	0.00130	NA	NA	0	NA	NA
18_2_118	MW-26	Appendix IV	Lithium	mg/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.0724	0.0720	0.0520	0.0870	0.0108	0.148	0.00593	-0.961	2.33
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	7	4	57%	2019-10-23 to 2022-10-17		Nonparametric	0.0127	0.00170	0.000530	0.0360	0.0201	1.58	0.00173	1.73	NA
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	1.02	1.00	0.543	1.42	0.300	0.294	0.160	-0.0623	-0.0598
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.00478	0.00400	0.00230	0.00950	0.00295	0.618	0.00237	1.26	1.22
18_3_101	MW-26	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	265	265	260	270	7.07	0.0267	7.41	NA	NA
18_3_103	MW-26	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-17 to 2022-10-17		Nonparametric	270	270	270	270	NA	NA	0	NA	NA
18_3_114	MW-26	Supplemental	Conductivity (field)	us/cm	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	3616	3705	3135	4039	321	0.0889	153	-0.600	-0.601
18_3_119	MW-26	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	190	190	180	200	14.1	0.0744	14.8	NA	NA
18_3_122	MW-26	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	2019-10-23 to 2022-10-17	Normal	Nonparametric	80.1	108	-42.4	138	64.0	0.799	45.0	-1.37	1.46
18_3_125	MW-26	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	9.55	9.55	9.10	10.0	0.636	0.0666	0.667	NA	NA
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.332	0.279	0.211	0.471	0.120	0.360	0.101	0.440	-2.94

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
18_3_128	MW-26	Supplemental	Radium-228	pci/l	7	1	14%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	0.794	0.702	0.442	1.21	0.285	0.359	0.230	0.544	-0.857
18_3_130	MW-26	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-17		Nonparametric	195	195	170	220	35.4	0.181	37.0	NA	NA
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	7	0	0%	2019-10-23 to 2022-10-17	Lognormal; Normal	Nonparametric	13.8	13.3	13.1	15.1	0.858	0.0620	0.311	0.541	-2.03
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	21.6	21.9	19.6	22.9	1.38	0.0636	1.48	-0.759	-1.23
18_3_136	MW-26	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal	Nonparametric	3.67	2.20	1.60	9.60	3.14	0.857	0.889	1.80	2.98
18_3_137	MW-26	Supplemental	Turbidity (field)	ntu	7	0	0%	2019-10-23 to 2022-10-17	Gamma; Lognormal; Normal	Nonparametric	2.30	2.43	0.180	6.72	2.22	0.967	2.34	1.45	2.53
19_1_108	MW-27	Appendix III	Boron	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.0789	0.0820	0.0580	0.0950	0.0116	0.147	0.00593	-0.741	1.44
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	48.6	49.0	37.0	58.0	5.52	0.114	4.44	-0.583	1.87
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	21.0	20.0	14.0	31.0	5.40	0.257	7.41	0.472	-0.523
19_1_115	MW-27	Appendix III	Fluoride	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.780	0.780	0.690	0.910	0.0770	0.0988	0.0889	0.607	-0.307
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	7.56	7.53	7.41	7.80	0.116	0.0153	0.0741	1.08	0.965
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	7.89	7.90	7.80	8.10	0.105	0.0134	0.148	1.09	0.611
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	45.1	45.0	38.0	51.0	4.56	0.101	5.19	-0.292	-1.26
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	403	385	360	530	51.0	0.127	29.6	1.99	4.35
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	2019-10-24 to 2022-10-18		Nonparametric	0.00103	0.00103	0.000350	0.00170	0.000955	0.931	0.00100	NA	NA
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.0864	0.0830	0.0740	0.110	0.0123	0.142	0.0119	1.22	1.73
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.00306	0.00230	0.00110	0.00680	0.00210	0.687	0.00119	1.20	0.264
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	4	50%	2019-10-24 to 2022-10-18		Nonparametric	0.000401	0.000275	0.0000950	0.000960	0.000390	0.972	0.000204	1.52	2.18
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.780	0.780	0.690	0.910	0.0770	0.0988	0.0889	0.607	-0.307
19_2_117	MW-27	Appendix IV	Lead	mg/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.00145	0.000670	0.000180	0.00350	0.00179	1.24	0.000726	1.59	NA
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	0.0281	0.0280	0.0240	0.0310	0.00281	0.0999	0.00444	-0.127	-1.88
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	0.00364	0.00340	0.00250	0.00520	0.000981	0.269	0.000889	0.594	-0.858
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.747	0.749	0.516	0.975	0.230	0.307	0.335	-0.0457	NA
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	0.00446	0.00435	0.00330	0.00600	0.000763	0.171	0.000593	0.728	0.791
19_3_101	MW-27	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-02 to 2022-10-18		Nonparametric	242	245	220	260	20.6	0.0850	22.2	-0.200	-4.86
19_3_103	MW-27	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-21 to 2022-10-18		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	603	621	485	658	51.4	0.0851	45	-1.42	2.28
19_3_119	MW-27	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-02 to 2022-10-18		Nonparametric	22.8	22.0	22.0	24.0	1.10	0.0480	0	0.609	-3.33
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2019-10-24 to 2022-10-18	Normal	Normal	99.2	96.0	-53.7	269	80.3	0.809	39	0.348	2.98
19_3_125	MW-27	Supplemental	Potassium	mg/l	5	0	0%	2021-12-02 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	2.14	2.10	2.00	2.30	0.114	0.0533	0.148	0.405	-0.178
19_3_126	MW-27	Supplemental	Radium-226	pci/l	7	4	57%	2019-10-24 to 2022-10-18		Nonparametric	0.128	0.125	0.108	0.151	0.0217	0.169	0.0252	0.611	NA
19_3_128	MW-27	Supplemental	Radium-228	pci/l	7	6	86%	2019-10-24 to 2022-10-18		Nonparametric	0.849	0.849	0.849	0.849	NA	NA	0	NA	NA
19_3_130	MW-27	Supplemental	Sodium	mg/l	5	0	0%	2021-12-02 to 2022-10-18	Gamma; Lognormal; Normal	Nonparametric	55.0	56.0	50.0	58.0	3.16	0.0575	2.96	-1.19	1.05
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	15.3	16.0	10.8	20.2	3.33	0.217	3.04	-0.289	-1.22
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal; Normal	Gamma	21.2	21.3	19.8	22.8	0.985	0.0464	0.889	-0.0595	-0.471
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2019-10-24 to 2022-10-18	Lognormal	Nonparametric	17.5	6.80	2.40	93.0	28.9	1.65	4.15	2.79	7.96
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	2019-10-24 to 2022-10-18	Gamma; Lognormal	Gamma	22	4.38	0.0200	94.3	35.5	1.61	6.44	1.73	1.41
20_1_108	MW-28	Appendix III	Boron	mg/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.74	1.70	1.50	1.90	0.140	0.0802	0.148	-0.566	0.377
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	540	540	400	630	63.8	0.118	51.9	-0.964	1.86
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	63.6	65.0	58.0	69.0	3.86	0.0608	3.70	-0.414	-1.21
20_1_115	MW-28	Appendix III	Fluoride	mg/l	7	1	14%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	2.82	0.315	0.200	8.80	3.98	1.41	0.111	1.06	-1.35
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	6.93	6.88	6.80	7.32	0.156	0.0224	0.0889	1.94	4.24
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	7.38	7.40	7.10	7.70	0.211	0.0286	0.296	0.168	-1.50

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	3130	3200	2700	3400	245	0.0783	296	-0.659	-0.778
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	7160	7350	6000	7600	484	0.0675	148	-1.83	3.32
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	2019-10-24 to 2022-10-11	Normal	Normal	0.0188	0.0220	0.000340	0.0290	0.00912	0.486	0.00593	-1.54	3.17
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.0139	0.0140	0.0110	0.0170	0.00186	0.135	0.00148	0.287	1.05
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	2	29%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.00226	0.00210	0.00130	0.00380	0.000940	0.416	0.000444	1.34	2.45
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	0.000417	0.000250	0.000120	0.000890	0.000301	0.722	0.000193	0.637	-1.46
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	7	1	14%	2019-10-24 to 2022-10-11	Nonparametric	Nonparametric	2.82	0.315	0.200	8.80	3.98	1.41	0.111	1.06	-1.35
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	0.244	0.245	0.220	0.280	0.0201	0.0824	0.0222	0.541	-0.495
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	5	71%	2019-10-24 to 2022-10-11		Nonparametric	0.00110	0.00110	0.000900	0.00130	0.000283	0.257	0.000296	NA	NA
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.65	1.65	0.966	2.34	0.487	0.295	0.593	0.0374	-1.12
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	2.85	2.80	2.60	3.10	0.151	0.0530	0.148	0.121	-0.401
20_3_101	MW-28	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	2021-12-03 to 2022-10-11		Nonparametric	650	655	590	700	53.5	0.0824	59.3	-0.235	-4.34
20_3_103	MW-28	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-22 to 2022-10-11		Nonparametric	605	605	590	620	21.2	0.0351	22.2	NA	NA
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	7108	7237	6096	7922	670	0.0942	710	-0.362	-1.56
20_3_119	MW-28	Supplemental	Magnesium	mg/l	5	0	0%	2021-12-03 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	344	350	300	400	40.4	0.117	59.3	0.351	-0.950
20_3_122	MW-28	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	2019-10-24 to 2022-10-11	Normal	Normal	98.1	101	-4.40	169	60.6	0.618	71.4	-0.498	-0.999
20_3_125	MW-28	Supplemental	Potassium	mg/l	5	0	0%	2021-12-03 to 2022-10-11		Nonparametric	17.8	18.0	15.0	19.0	1.64	0.0923	1.48	-1.74	3.25
20_3_126	MW-28	Supplemental	Radium-226	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	0.599	0.560	0.460	0.725	0.112	0.187	0.148	0.0606	-2.27
20_3_128	MW-28	Supplemental	Radium-228	pci/l	7	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	1.05	0.945	0.506	1.78	0.428	0.407	0.319	0.659	0.0404
20_3_130	MW-28	Supplemental	Sodium	mg/l	5	0	0%	2021-12-03 to 2022-10-11	Gamma; Lognormal; Normal	Nonparametric	986	1000	830	1100	120	0.122	148	-0.351	-2.13
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	15.1	14.1	10.4	22.3	3.92	0.259	2.07	1.17	0.491
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal; Normal	Gamma	21	20.9	19.1	23.0	1.14	0.0544	1.19	0.192	0.324
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	9	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	26.7	15.0	4.80	74.0	25.2	0.943	11.6	1.35	0.394
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	2019-10-24 to 2022-10-11	Gamma; Lognormal	Gamma	8.48	8.15	1.09	28.4	7.64	0.901	3.38	2.21	6.10
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Nonparametric	Nonparametric	520	535	400	570	61.6	0.119	29.6	-1.96	4.24
21_1_111	MW-29	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-28		Nonparametric	105	105	100	110	5.48	0.0522	7.41	0	-3.33
21_1_123	MW-29	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6.85	6.83	6.68	7.03	0.118	0.0172	0.0889	0.266	0.686
21_1_124	MW-29	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	7.34	7.30	7.20	7.50	0.114	0.0155	0.148	0.405	-0.178
21_1_131	MW-29	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	3567	3650	3200	3700	197	0.0551	74.1	-1.67	2.67
21_1_135	MW-29	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-03 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6700	6700	6500	6900	158	0.0236	148	0	-1.20
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-15 to 2022-10-28		Nonparametric	0.0121	0.0109	0.000620	0.0260	0.0133	1.10	0.0151	0.121	-5.31
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-22 to 2022-07-22		Nonparametric	0.000920	0.000920	0.000920	0.000920	NA	NA	0	NA	NA
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.310	0.315	0.270	0.350	0.0341	0.110	0.0444	-0.273	-1.83
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	2.38	2.35	2.10	2.90	0.279	0.117	0.148	1.50	2.90
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	798	805	750	830	36.0	0.0451	37.0	-0.299	-2.41
21_3_103	MW-29	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-28		Nonparametric	793	780	770	830	32.1	0.0405	14.8	1.55	NA
21_3_114	MW-29	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6797	6654	5785	8522	1064	0.157	1050	0.796	-0.315
21_3_119	MW-29	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	327	330	270	370	39.3	0.120	44.4	-0.367	-1.58
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	136	117	76.2	266	74.0	0.543	58.9	1.24	1.15
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Nonparametric	Nonparametric	17.2	16.0	15.0	23.0	2.93	0.170	0.741	2.20	5.06
21_3_130	MW-29	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	983	965	840	1200	120	0.122	51.9	1.23	2.71
21_3_132	MW-29	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	13.6	13.1	10.9	16.9	2.0	0.147	1.19	0.691	1.43
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.0	20.5	19.4	23.3	1.61	0.0764	1.63	0.705	-1.13

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	229	141	6.40	680	258	1.12	170	1.27	1.07
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	178	77.8	2.86	668	250	1.41	84.8	2.06	4.40
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Lognormal; Normal	Lognormal	1.49	1.50	1.30	1.70	0.118	0.0796	0.148	0.319	-0.697
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	518	520	460	600	39.2	0.0756	44.4	0.547	-0.280
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	45.1	45.0	40.0	52.0	3.39	0.0751	3.70	0.230	-0.637
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.956	0.130	0.0690	5.20	1.89	1.97	0.0622	1.97	2.40
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	6.79	6.77	6.58	7.30	0.139	0.0205	0.0593	2.39	8.94
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	7.34	7.28	6.96	8.10	0.288	0.0393	0.178	1.43	2.33
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	2320	2300	2100	2500	95.1	0.0410	148	-0.440	0.253
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	3885	3900	3800	4200	104	0.0268	148	1.58	3.16
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	2015-12-10 to 2022-10-06		Nonparametric	0.000575	0.000575	0.000280	0.000870	0.000417	0.726	0.000437	NA	NA
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.00103	0.000920	0.000560	0.00190	0.000434	0.423	0.000370	1.21	1.45
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.0138	0.0130	0.0110	0.0200	0.00262	0.191	0.00148	1.26	0.611
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	2015-12-10 to 2022-10-06		Nonparametric	0.000325	0.000325	0.000220	0.000430	0.000148	0.457	0.000156	NA	NA
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.000220	0.000230	0.000110	0.000310	0.0000767	0.349	0.0000889	-0.363	-1.38
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	2015-12-10 to 2022-10-06	Lognormal	Nonparametric	0.00375	0.00205	0.000350	0.0290	0.00733	1.95	0.00133	3.64	13.4
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.000758	0.000700	0.000230	0.00150	0.000337	0.445	0.000289	0.776	0.184
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.956	0.130	0.0690	5.20	1.89	1.97	0.0622	1.97	2.40
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Nonparametric	0.000532	0.000540	0.000120	0.00120	0.000362	0.681	0.000459	0.656	-0.353
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.0796	0.0790	0.0600	0.0990	0.0111	0.139	0.0119	-0.00691	-0.493
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	0.00279	0.00110	0.000740	0.0100	0.00310	1.11	0.000296	1.47	0.727
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	1.32	1.23	0.927	1.92	0.281	0.213	0.237	0.655	-0.448
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.00138	0.00120	0.000530	0.00240	0.000617	0.448	0.000719	0.374	-1.26
22_3_101	MW-3	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-06 to 2022-10-06		Nonparametric	580	580	580	580	NA	NA	0	NA	NA
22_3_103	MW-3	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-06 to 2022-10-06		Nonparametric	580	580	580	580	NA	NA	0	NA	NA
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	2015-12-10 to 2022-10-06	Normal	Normal	3946	4065	3116	4427	389	0.0986	376	-0.730	-0.544
22_3_119	MW-3	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	135	135	130	140	7.07	0.0524	7.41	NA	NA
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	2015-12-10 to 2022-10-06	Normal	Normal	45	43.8	-26.2	168	49.5	1.10	70.5	0.680	0.180
22_3_125	MW-3	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	11.9	11.9	9.90	14.0	2.90	0.243	3.04	NA	NA
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.466	0.454	0.239	0.696	0.125	0.268	0.0911	0.220	-0.298
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	0.858	0.832	0.479	1.46	0.254	0.297	0.188	1.12	1.27
22_3_130	MW-3	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-06		Nonparametric	485	485	450	520	49.5	0.102	51.9	NA	NA
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	15.2	15.0	12.3	18.3	1.40	0.0924	1.04	0.448	0.451
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-10 to 2022-10-06	Gamma; Lognormal; Normal	Gamma	21.6	21.6	19.3	24.2	1.32	0.0612	1.63	0.132	-0.754
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	2015-12-10 to 2022-10-06	Lognormal	Lognormal	18.9	10.0	2.80	51.0	17.1	0.905	7.70	0.925	-0.903
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	2015-12-10 to 2022-10-06	Nonparametric	Nonparametric	17.3	6.02	0.0200	237	51.7	2.99	3.76	4.45	19.8
23_1_110	MW-30	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	263	275	180	300	45.9	0.174	37.0	-1.44	2.01
23_1_111	MW-30	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	163	155	150	190	17.5	0.107	7.41	0.919	-1.21
23_1_123	MW-30	Appendix III	pH (field)	su	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	6.97	6.92	6.86	7.16	0.112	0.0161	0.0444	1.27	0.780
23_1_124	MW-30	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-10-26		Nonparametric	7.34	7.30	7.30	7.50	0.0894	0.0122	0	2.24	5.00
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	5983	5950	5600	6400	286	0.0478	296	0.250	-0.465
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-11-29 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	9560	9500	8500	11000	926	0.0969	593	0.891	1.52
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	1	17%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.00406	0.00280	0.00100	0.0110	0.00412	1.02	0.00252	1.65	2.76

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-21 to 2022-07-21		Nonparametric	0.00920	0.00920	0.00920	0.00920	NA	NA	0	NA	NA
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.428	0.440	0.330	0.520	0.0719	0.168	0.0889	-0.283	-1.20
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.00523	0.00390	0.00170	0.0140	0.00473	0.905	0.00326	1.58	2.53
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	1060	1050	960	1200	89.4	0.0844	74.1	0.604	-0.615
23_3_103	MW-30	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-10-26		Nonparametric	1053	1000	960	1200	129	0.122	59.3	1.55	NA
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	10237	10428	9075	11560	871	0.0851	719	0.154	0.102
23_3_119	MW-30	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	320	325	250	370	40.0	0.125	22.2	-0.984	2.07
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-20 to 2022-10-26	Normal	Nonparametric	87.2	88.6	-7.90	170	61.8	0.709	49.9	-0.328	0.0623
23_3_125	MW-30	Supplemental	Potassium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	19.2	18.0	16.0	23.0	3.06	0.160	2.22	0.707	-1.80
23_3_130	MW-30	Supplemental	Sodium	mg/l	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	2283	2300	1900	2600	232	0.101	148	-0.568	1.50
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	16.7	16.2	12.5	22.3	3.55	0.213	3.85	0.616	-0.108
23_3_133	MW-30	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	20.9	21.2	19.5	22.7	1.38	0.0659	2.22	0.0819	-1.97
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	6	1	17%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	710	220	2.80	1700	863	1.22	322	0.574	-3.24
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-20 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	250	111	7.10	687	309	1.23	153	0.773	-1.75
24_1_110	MW-31	Appendix III	Calcium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	347	370	270	400	57.2	0.165	37.0	-0.762	-1.84
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	198	195	170	220	19.4	0.0979	22.2	-0.146	-0.848
24_1_123	MW-31	Appendix III	pH (field)	su	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6.93	6.91	6.81	7.13	0.121	0.0174	0.133	0.888	0.253
24_1_124	MW-31	Appendix III	pH (lab)	su	5	0	0%	2021-10-18 to 2022-10-28		Nonparametric	7.40	7.40	7.30	7.60	0.122	0.0166	0.148	1.36	2.0
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	3933	3950	3600	4200	216	0.0549	222	-0.463	-0.300
24_1_135	MW-31	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6420	6500	6000	6700	277	0.0432	296	-0.927	0.130
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-18 to 2022-10-28		Nonparametric	0.00162	0.00116	0.000380	0.00380	0.00158	0.975	0.00105	1.18	0.392
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-22 to 2022-07-22		Nonparametric	0.000430	0.000430	0.000430	0.000430	NA	NA	0	NA	NA
24_2_118	MW-31	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.155	0.155	0.120	0.180	0.0235	0.151	0.0296	-0.349	-0.850
24_2_129	MW-31	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	0.317	0.330	0.210	0.390	0.0599	0.189	0.0296	-1.13	2.39
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	625	630	580	650	24.3	0.0389	14.8	-1.51	2.89
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-18 to 2022-10-28		Nonparametric	637	630	630	650	11.5	0.0181	0	1.73	NA
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	6739	6481	5457	8091	1172	0.174	1219	0.263	-2.43
24_3_119	MW-31	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	303	310	230	370	58.9	0.194	81.5	-0.243	-1.87
24_3_122	MW-31	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	156	155	58.3	252	62.2	0.400	24.7	-0.0368	1.97
24_3_125	MW-31	Supplemental	Potassium	mg/l	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	12.8	12.5	10.0	16.0	2.04	0.159	1.48	0.333	0.516
24_3_130	MW-31	Supplemental	Sodium	mg/l	6	0	0%	2021-10-18 to 2022-10-28		Nonparametric	1108	1200	910	1200	142	0.128	0	-0.988	-1.76
24_3_132	MW-31	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	13.7	13.4	10.7	16.7	2.08	0.152	1.93	0.0656	0.0521
24_3_133	MW-31	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.7	21.9	20.2	22.4	0.915	0.0423	0.741	-1.25	1.17
24_3_136	MW-31	Supplemental	Total Suspended Solids	mg/l	6	1	17%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	15.6	19.0	3.20	22.0	8.07	0.516	4.44	-1.13	0.131
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-18 to 2022-10-28	Gamma; Lognormal; Normal	Nonparametric	21.4	17.5	8.34	40.4	13.7	0.643	13.5	0.643	-1.65
25_1_110	MW-32	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	467	470	370	550	72.6	0.156	74.1	-0.176	-2.18
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	45.3	45.5	37.0	54.0	6.62	0.146	7.41	0.0356	-1.87
25_1_123	MW-32	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	6.86	6.83	6.79	7.00	0.0782	0.0114	0.0444	1.42	1.59
25_1_124	MW-32	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-26		Nonparametric	7.30	7.30	7.20	7.50	0.122	0.0168	0.148	1.36	2.00
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	2400	2400	2300	2600	110	0.0456	74.1	1.37	2.50
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-26		Nonparametric	3580	3500	3500	3700	110	0.0306	0	0.609	-3.33
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	5	83%	2021-10-15 to 2022-10-26		Nonparametric	0.000860	0.000860	0.000860	0.000860	NA	NA	0	NA	NA
25_2_118	MW-32	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.0532	0.0520	0.0440	0.0630	0.00662	0.124	0.00593	0.261	-0.00879

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
25_2_129	MW-32	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	0.0705	0.0725	0.0500	0.0830	0.0125	0.177	0.0126	-0.854	0.0259
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	395	400	370	410	17.6	0.0446	14.8	-0.495	-1.93
25_3_103	MW-32	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-26		Nonparametric	393	390	380	410	15.3	0.0388	14.8	0.935	NA
25_3_114	MW-32	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	3820	4010	3186	4272	434	0.114	236	-0.807	-1.31
25_3_119	MW-32	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	147	150	130	160	13.7	0.0932	14.8	-0.523	-1.88
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	115	111	50.7	187	52	0.453	65.9	0.231	-1.28
25_3_125	MW-32	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	11.1	11.0	9.50	12.0	0.917	0.0828	0.741	-0.944	1.36
25_3_130	MW-32	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	367	375	310	400	36.7	0.100	37.0	-0.695	-1.01
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	16	14.5	13.2	22.3	3.37	0.211	1.19	1.74	2.97
25_3_133	MW-32	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-26	Gamma; Lognormal; Normal	Nonparametric	20.4	20.8	18.1	21.3	1.33	0.0652	0.741	-1.88	3.70
25_3_136	MW-32	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-26	Lognormal	Nonparametric	5.33	1.80	1.20	18.0	6.66	1.25	0.593	1.86	3.22
25_3_137	MW-32	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-26		Nonparametric	0.413	0.0200	0.0200	1.53	0.644	1.56	0	1.40	0.640
26_1_110	MW-33A	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	432	445	350	480	51.2	0.119	44.4	-0.790	-0.598
26_1_111	MW-33A	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	71.7	67.5	62.0	90.0	11.3	0.157	7.41	0.997	-0.333
26_1_123	MW-33A	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	7.00	6.96	6.85	7.28	0.159	0.0227	0.126	1.17	1.08
26_1_124	MW-33A	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-27		Nonparametric	7.28	7.30	7.20	7.40	0.0837	0.0115	0.148	0.512	-0.612
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	3150	3150	2900	3400	164	0.0522	74.1	0	1.28
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-01 to 2022-10-27		Nonparametric	4740	4600	4500	5000	241	0.0508	148	0.473	-3.09
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	4	67%	2021-10-15 to 2022-10-27		Nonparametric	0.00145	0.00145	0.00110	0.00180	0.000495	0.341	0.000519	NA	NA
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-25 to 2022-07-25		Nonparametric	0.000190	0.000190	0.000190	0.000190	NA	NA	0	NA	NA
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.138	0.135	0.120	0.160	0.0147	0.106	0.0148	0.418	-0.859
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	0.225	0.240	0.170	0.250	0.0302	0.134	0.00741	-1.57	1.99
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	463	465	440	490	20.7	0.0446	29.6	-0.0530	-1.72
26_3_103	MW-33A	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	457	460	440	470	15.3	0.0334	14.8	-0.935	NA
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	4719	4752	4076	5333	560	0.119	733	-0.0574	-2.85
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	300	305	260	340	31.6	0.105	37.0	-0.114	-1.87
26_3_122	MW-33A	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	143	133	68.0	234	58	0.405	53.9	0.521	0.153
26_3_125	MW-33A	Supplemental	Potassium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	15.5	15.5	14.0	18.0	1.52	0.0978	1.48	0.774	0.284
26_3_130	MW-33A	Supplemental	Sodium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	517	510	460	570	41.8	0.0809	51.9	0.130	-1.10
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	13.2	13.9	10.8	14.2	1.36	0.103	0.444	-1.53	1.63
26_3_133	MW-33A	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	21.4	21.5	19.3	23.1	1.40	0.0653	0.889	-0.753	1.38
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	6	2	33%	2021-10-15 to 2022-10-27		Nonparametric	2.20	2.20	1.20	3.20	0.952	0.433	1.19	-0.000000000000000900	-4.34
26_3_137	MW-33A	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal	Nonparametric	1.01	0.0650	0.0200	3.95	1.63	1.61	0.0667	1.56	1.55
27_1_110	MW-33B	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal	Nonparametric	192	105	52.0	530	189	0.986	74.1	1.49	1.46
27_1_111	MW-33B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-12-01		Nonparametric	120	120	120	120	0	0	0	NA	NA
27_1_123	MW-33B	Appendix III	pH (field)	su	5	0	0%	2021-10-20 to 2022-12-01	Nonparametric	Nonparametric	7.23	7.67	5.22	8.01	1.14	0.157	0.148	-2.11	4.61
27_1_124	MW-33B	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-12-01		Nonparametric	7.92	8.00	7.80	8.00	0.110	0.0138	0	-0.609	-3.33
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-12-01		Nonparametric	1450	1500	1300	1600	122	0.0845	74.1	-0.490	-1.47
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	2021-12-08 to 2022-12-01		Nonparametric	2500	2500	2400	2600	100	0.0400	148	0	-3.00
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.0223	0.0123	0.00420	0.0560	0.0223	1.00	0.0116	0.924	-1.25
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-26 to 2022-07-26		Nonparametric	0.0140	0.0140	0.0140	0.0140	NA	NA	0	NA	NA
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.149	0.125	0.0870	0.240	0.0651	0.435	0.0467	0.723	-1.74
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	0.0227	0.0195	0.00920	0.0430	0.0115	0.505	0.00667	1.16	2.05

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
27_3_101	MW-33B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	313	315	280	340	21.6	0.0689	22.2	-0.463	-0.300
27_3_103	MW-33B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-12-01		Nonparametric	317	330	280	340	32.1	0.102	14.8	-1.55	NA
27_3_114	MW-33B	Supplemental	Conductivity (field)	us/cm	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	3569	3502	3042	4200	512	0.143	681	0.263	-2.46
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	88.8	55.0	31.0	220	75.8	0.853	34.8	1.34	0.703
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2021-10-20 to 2022-12-01	Nonparametric	Nonparametric	183	148	115	371	106	0.582	24.3	2.14	4.68
27_3_125	MW-33B	Supplemental	Potassium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	12.8	7.25	4.20	27.0	11.2	0.870	4.37	0.819	-1.95
27_3_130	MW-33B	Supplemental	Sodium	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	733	730	630	820	77.1	0.105	111	-0.0363	-1.44
27_3_132	MW-33B	Supplemental	Temperature (field)	deg c	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	13.5	14.5	11.6	15.1	1.61	0.119	0.889	-0.535	-2.94
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	21.2	21.4	19.0	23.6	1.79	0.0846	2.07	0.102	-0.873
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal	Nonparametric	1132	475	290	3000	1168	1.03	230	1.14	-0.704
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	5	0	0%	2021-10-20 to 2022-12-01	Gamma; Lognormal; Normal	Nonparametric	420	458	25.2	860	382	0.911	596	-0.0386	-2.69
28_1_108	MW-34	Appendix III	Boron	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	2.10	2.10	2.00	2.20	0.100	0.0476	0.148	0	NA
28_1_110	MW-34	Appendix III	Calcium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	37.5	36.5	22.0	63.0	14.3	0.381	9.63	1.20	2.02
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1.43	1.40	1.10	1.90	0.294	0.205	0.296	0.640	-0.300
28_1_115	MW-34	Appendix III	Fluoride	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.687	0.610	0.570	0.880	0.169	0.246	0.0593	1.62	NA
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	2021-10-20 to 2022-10-27	Nonparametric	Nonparametric	7.78	7.64	7.59	8.31	0.301	0.0387	0.0741	2.14	4.67
28_1_124	MW-34	Appendix III	pH (lab)	su	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	8.08	8.00	7.90	8.30	0.164	0.0203	0.148	0.518	-1.69
28_1_131	MW-34	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	330	320	270	410	46.9	0.142	29.6	0.855	1.60
28_1_135	MW-34	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	787	755	720	960	89.8	0.114	44.4	1.92	3.84
28_2_104	MW-34	Appendix IV	Antimony	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00293	0.00240	0.00210	0.00430	0.00119	0.407	0.000444	1.61	NA
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Lognormal	Nonparametric	0.00604	0.00145	0.000840	0.0220	0.00844	1.40	0.000563	1.82	3.0
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.0743	0.0420	0.0410	0.140	0.0569	0.765	0.00148	1.73	NA
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	3	2	67%	2021-10-20 to 2022-10-27		Nonparametric	0.000920	0.000920	0.000920	0.000920	NA	NA	0	NA	NA
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00983	0.00130	0.00120	0.0270	0.0149	1.51	0.000148	1.73	NA
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00296	0.00111	0.000810	0.00880	0.00390	1.32	0.000363	1.98	3.94
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.687	0.610	0.570	0.880	0.169	0.246	0.0593	1.62	NA
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.00578	0.000720	0.000630	0.0160	0.00885	1.53	0.000133	1.73	NA
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.0582	0.0485	0.0430	0.100	0.0218	0.375	0.00667	1.90	3.54
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	0.0240	0.0170	0.0100	0.0450	0.0185	0.772	0.0104	1.46	NA
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	0.0159	0.0126	0.00130	0.0400	0.0147	0.927	0.0150	0.886	-0.0649
28_2_134	MW-34	Appendix IV	Thallium	mg/l	3	2	67%	2021-10-20 to 2022-10-27		Nonparametric	0.000230	0.000230	0.000230	0.000230	NA	NA	0	NA	NA
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	260	265	210	290	29.7	0.114	22.2	-0.965	0.439
28_3_103	MW-34	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-20 to 2022-10-27		Nonparametric	260	280	210	290	43.6	0.168	14.8	-1.63	NA
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1127	1110	914	1364	163	0.144	88.9	0.342	1.28
28_3_119	MW-34	Supplemental	Magnesium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	27.3	17.0	15.0	50.0	19.7	0.719	2.96	1.71	NA
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2021-10-20 to 2022-10-27	Nonparametric	Nonparametric	115	126	58.5	139	32.1	0.280	5.78	-2.01	4.30
28_3_125	MW-34	Supplemental	Potassium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	6.47	3.50	2.90	13.0	5.67	0.876	0.889	1.71	NA
28_3_130	MW-34	Supplemental	Sodium	mg/l	3	0	0%	2021-12-08 to 2022-07-27		Nonparametric	220	220	200	240	20.0	0.0909	29.6	0	NA
28_3_132	MW-34	Supplemental	Temperature (field)	deg c	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	15.0	12.0	8.30	30.6	9.10	0.606	4.44	1.80	3.36
28_3_133	MW-34	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	21.4	21.7	19.0	22.4	1.40	0.0655	1.04	-1.78	3.39
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal	Nonparametric	107	39.5	5.20	360	139	1.30	41.3	1.58	1.86
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	5	0	0%	2021-10-20 to 2022-10-27	Gamma; Lognormal	Nonparametric	28.9	12.6	5.61	99.3	39.7	1.37	8.89	2.15	4.69
29_1_108	MW-35	Appendix III	Boron	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	1.07	1.00	0.900	1.30	0.208	0.195	0.148	1.29	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Nonparametric	Nonparametric	500	525	380	540	60.3	0.121	14.8	-2.19	4.93
29_1_111	MW-35	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	685	685	640	720	32.1	0.0469	44.4	-0.191	-1.31
29_1_115	MW-35	Appendix III	Fluoride	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	2.98	0.650	0.500	7.80	4.17	1.40	0.222	1.73	NA
29_1_123	MW-35	Appendix III	pH (field)	su	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	7.30	7.30	7.12	7.51	0.128	0.0175	0.0667	0.560	1.74
29_1_124	MW-35	Appendix III	pH (lab)	su	5	0	0%	2021-10-15 to 2022-10-27		Nonparametric	7.52	7.50	7.40	7.70	0.110	0.0146	0	1.29	2.92
29_1_131	MW-35	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	3233	3200	3100	3400	103	0.0319	74.1	0.666	0.586
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	5867	5900	5600	6200	207	0.0352	148	0.461	0.740
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	2	33%	2021-10-15 to 2022-10-27		Nonparametric	0.00508	0.00390	0.000510	0.0120	0.00558	1.10	0.00496	0.601	-2.64
29_2_106	MW-35	Appendix IV	Barium	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	0.0183	0.0180	0.0140	0.0230	0.00451	0.246	0.00593	0.331	NA
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	3	2	67%	2021-10-15 to 2022-10-27		Nonparametric	0.00130	0.00130	0.00130	0.00130	NA	NA	0	NA	NA
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	4	1	25%	2021-10-15 to 2022-10-27		Nonparametric	0.000757	0.000520	0.000450	0.00130	0.000472	0.624	0.000104	1.69	NA
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	2.98	0.650	0.500	7.80	4.17	1.40	0.222	1.73	NA
29_2_117	MW-35	Appendix IV	Lead	mg/l	3	1	33%	2021-10-15 to 2022-10-27		Nonparametric	0.000450	0.000450	0.000400	0.000500	0.0000707	0.157	0.0000741	NA	NA
29_2_118	MW-35	Appendix IV	Lithium	mg/l	6	0	0%	2021-10-15 to 2022-10-27		Nonparametric	0.168	0.175	0.150	0.180	0.0147	0.0874	0.00741	-0.711	-2.05
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	3	1	33%	2021-10-15 to 2022-10-27		Nonparametric	0.00245	0.00245	0.00220	0.00270	0.000354	0.144	0.000370	NA	NA
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	3	0	0%	2021-10-15 to 2022-11-03		Nonparametric	1.10	0.925	0.745	1.62	0.462	0.421	0.267	1.44	NA
29_2_129	MW-35	Appendix IV	Selenium	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	1.63	1.60	1.50	1.90	0.151	0.0922	0.148	1.27	1.53
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	2021-10-15 to 2022-10-27		Nonparametric	188	190	180	200	7.53	0.0400	7.41	0.313	-0.104
29_3_103	MW-35	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	2021-10-15 to 2022-10-27		Nonparametric	190	190	180	200	10.0	0.0526	14.8	0	NA
29_3_114	MW-35	Supplemental	Conductivity (field)	us/cm	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	6052	6128	4516	7398	989	0.163	836	-0.351	0.375
29_3_119	MW-35	Supplemental	Magnesium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	288	300	240	310	33.0	0.115	14.8	-1.56	2.17
29_3_122	MW-35	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	133	128	77.2	216	47.3	0.355	30.6	1.08	2.01
29_3_125	MW-35	Supplemental	Potassium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	11.2	11.5	10.0	12.0	0.957	0.0851	0.741	-0.855	-1.29
29_3_126	MW-35	Supplemental	Radium-226	pci/l	3	0	0%	2021-10-15 to 2022-11-03		Nonparametric	0.557	0.466	0.371	0.833	0.244	0.438	0.141	1.44	NA
29_3_128	MW-35	Supplemental	Radium-228	pci/l	3	2	67%	2021-10-15 to 2022-11-03		Nonparametric	0.785	0.785	0.785	0.785	NA	NA	0	NA	NA
29_3_130	MW-35	Supplemental	Sodium	mg/l	4	0	0%	2021-10-15 to 2022-07-27		Nonparametric	842	825	780	940	71.4	0.0847	51.9	1.11	0.501
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	12.5	12.3	9.40	15.6	2.43	0.194	3.11	0.0948	-1.68
29_3_133	MW-35	Supplemental	Temperature (lab)	deg c	5	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	20.9	21.5	19.1	22.2	1.35	0.0645	1.04	-0.653	-2.06
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	14.1	14.0	7.60	22.0	5.51	0.390	6.52	0.255	-1.32
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	6	0	0%	2021-10-15 to 2022-10-27	Gamma; Lognormal; Normal	Nonparametric	20.8	14.5	7.23	40.0	15.1	0.727	9.24	0.698	-2.02
30_1_108	MW-36	Appendix III	Boron	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.430	0.430	0.350	0.510	0.113	0.263	0.119	NA	NA
30_1_110	MW-36	Appendix III	Calcium	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	303	320	250	340	47.3	0.156	29.6	-1.39	NA
30_1_111	MW-36	Appendix III	Chloride (as Cl)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	26.7	24.0	23.0	33.0	5.51	0.207	1.48	1.67	NA
30_1_115	MW-36	Appendix III	Fluoride	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.610	0.610	0.530	0.690	0.113	0.185	0.119	NA	NA
30_1_123	MW-36	Appendix III	pH (field)	su	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	7.09	7.11	7.01	7.16	0.0764	0.0108	0.0741	-0.935	NA
30_1_124	MW-36	Appendix III	pH (lab)	su	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	7.50	7.50	7.50	7.50	0	0	0	NA	NA
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	1500	1600	1300	1600	173	0.115	0	-1.73	NA
30_1_135	MW-36	Appendix III	Total Dissolved Solids	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	2367	2500	2000	2600	321	0.136	148	-1.55	NA
30_2_106	MW-36	Appendix IV	Barium	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.0170	0.0170	0.0170	0.0170	0	0	0	NA	NA
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	2	1	50%	2022-04-29 to 2022-10-21		Nonparametric	0.000870	0.000870	0.000870	0.000870	NA	NA	0	NA	NA
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	3	1	33%	2022-04-29 to 2022-10-21		Nonparametric	0.000290	0.000290	0.000210	0.000370	0.000113	0.390	0.000119	NA	NA
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.610	0.610	0.530	0.690	0.113	0.185	0.119	NA	NA
30_2_118	MW-36	Appendix IV	Lithium	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.114	0.120	0.0910	0.130	0.0203	0.178	0.0148	-1.27	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	2	1	50%	2022-04-29 to 2022-10-21		Nonparametric	0.00130	0.00130	0.00130	0.00130	NA	NA	0	NA	NA
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.903	0.903	0.747	1.06	0.221	0.245	0.232	NA	NA
30_2_129	MW-36	Appendix IV	Selenium	mg/l	3	1	33%	2022-04-29 to 2022-10-21		Nonparametric	0.000550	0.000550	0.000470	0.000630	0.000113	0.206	0.000119	NA	NA
30_3_101	MW-36	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	293	300	270	310	20.8	0.0710	14.8	-1.29	NA
30_3_103	MW-36	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	305	305	300	310	7.07	0.0232	7.41	NA	NA
30_3_114	MW-36	Supplemental	Conductivity (field)	us/cm	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	2441	2479	2358	2486	72	0.0295	10.4	-1.71	NA
30_3_119	MW-36	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	140	140	130	150	14.1	0.101	14.8	NA	NA
30_3_122	MW-36	Supplemental	Oxidation-reduction Potential (field)	mV	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	93.4	118	-50.4	213	133	1.43	141	-0.794	NA
30_3_125	MW-36	Supplemental	Potassium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	5.20	5.20	5.00	5.40	0.283	0.0544	0.296	NA	NA
30_3_128	MW-36	Supplemental	Radium-228	pci/l	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	0.811	0.811	0.592	1.03	0.310	0.382	0.324	NA	NA
30_3_130	MW-36	Supplemental	Sodium	mg/l	2	0	0%	2022-07-21 to 2022-10-21		Nonparametric	260	260	240	280	28.3	0.109	29.6	NA	NA
30_3_132	MW-36	Supplemental	Temperature (field)	deg c	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	13.9	12.9	12.0	16.8	2.55	0.184	1.33	1.49	NA
30_3_133	MW-36	Supplemental	Temperature (lab)	deg c	2	0	0%	2022-04-29 to 2022-10-21		Nonparametric	19.2	19.2	18.8	19.7	0.636	0.0331	0.667	NA	NA
30_3_136	MW-36	Supplemental	Total Suspended Solids	mg/l	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	8.67	7.20	2.80	16.0	6.72	0.776	6.52	0.935	NA
30_3_137	MW-36	Supplemental	Turbidity (field)	ntu	3	0	0%	2022-04-29 to 2022-10-21		Nonparametric	8.00	8.68	4.43	10.9	3.29	0.411	3.29	-0.887	NA
31_1_108	MW-37	Appendix III	Boron	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.570	0.570	0.570	0.570	NA	NA	0	NA	NA
31_1_110	MW-37	Appendix III	Calcium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	380	380	340	420	56.6	0.149	59.3	NA	NA
31_1_111	MW-37	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	61.5	61.5	59.0	64.0	3.54	0.0575	3.70	NA	NA
31_1_115	MW-37	Appendix III	Fluoride	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.790	0.790	0.790	0.790	NA	NA	0	NA	NA
31_1_123	MW-37	Appendix III	pH (field)	su	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	7.14	7.14	7.14	7.15	0.00707	0.000990	0.00741	NA	NA
31_1_124	MW-37	Appendix III	pH (lab)	su	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	7.40	7.40	7.40	7.40	NA	NA	0	NA	NA
31_1_131	MW-37	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	1800	1800	1800	1800	0	0	0	NA	NA
31_1_135	MW-37	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	2900	2900	2600	3200	424	0.146	444	NA	NA
31_2_104	MW-37	Appendix IV	Antimony	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.00290	0.00290	0.00200	0.00380	0.00127	0.439	0.00133	NA	NA
31_2_106	MW-37	Appendix IV	Barium	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.0490	0.0490	0.0490	0.0490	NA	NA	0	NA	NA
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00190	0.00190	0.00190	0.00190	NA	NA	0	NA	NA
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.00220	0.00220	0.00190	0.00250	0.000424	0.193	0.000444	NA	NA
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.790	0.790	0.790	0.790	NA	NA	0	NA	NA
31_2_117	MW-37	Appendix IV	Lead	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.000920	0.000920	0.000920	0.000920	NA	NA	0	NA	NA
31_2_118	MW-37	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.0815	0.0815	0.0770	0.0860	0.00636	0.0781	0.00667	NA	NA
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	0.00750	0.00750	0.00750	0.00750	NA	NA	0	NA	NA
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	5.39	5.39	5.39	5.39	NA	NA	0	NA	NA
31_2_129	MW-37	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	0.205	0.205	0.190	0.220	0.0212	0.103	0.0222	NA	NA
31_3_101	MW-37	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA
31_3_103	MW-37	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	225	225	220	230	7.07	0.0314	7.41	NA	NA
31_3_114	MW-37	Supplemental	Conductivity (field)	us/cm	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	2901	2901	2598	3204	429	0.148	449	NA	NA
31_3_119	MW-37	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	145	145	130	160	21.2	0.146	22.2	NA	NA
31_3_122	MW-37	Supplemental	Oxidation-reduction Potential (field)	mV	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	121	121	17.9	223	145	1.20	152	NA	NA
31_3_125	MW-37	Supplemental	Potassium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	8.00	8.00	7.50	8.50	0.707	0.0884	0.741	NA	NA
31_3_128	MW-37	Supplemental	Radium-228	pci/l	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	4.95	4.95	4.95	4.95	NA	NA	0	NA	NA
31_3_130	MW-37	Supplemental	Sodium	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	310	310	300	320	14.1	0.0456	14.8	NA	NA
31_3_132	MW-37	Supplemental	Temperature (field)	deg c	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	22.9	22.9	18.2	27.6	6.65	0.290	6.96	NA	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
31_3_133	MW-37	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-10-21 to 2022-10-21		Nonparametric	19.8	19.8	19.8	19.8	NA	NA	0	NA	NA
31_3_136	MW-37	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	6.60	6.60	4.00	9.20	3.68	0.557	3.85	NA	NA
31_3_137	MW-37	Supplemental	Turbidity (field)	ntu	2	0	0%	2022-07-26 to 2022-10-21		Nonparametric	7.08	7.08	5.08	9.09	2.84	0.400	2.97	NA	NA
32_1_110	MW-38B	Appendix III	Calcium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	350	350	330	370	28.3	0.0808	29.6	NA	NA
32_1_111	MW-38B	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	57.0	57.0	30.0	84.0	38.2	0.670	40.0	NA	NA
32_1_123	MW-38B	Appendix III	pH (field)	su	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	7.16	7.16	7.16	7.16	NA	NA	0	NA	NA
32_1_124	MW-38B	Appendix III	pH (lab)	su	1	0	0%	2022-11-01 to 2022-11-01		Nonparametric	7.60	7.60	7.60	7.60	NA	NA	0	NA	NA
32_1_131	MW-38B	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	1310	1310	820	1800	693	0.529	726	NA	NA
32_1_135	MW-38B	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	2650	2650	2600	2700	70.7	0.0267	74.1	NA	NA
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.00185	0.00185	0.00170	0.00200	0.000212	0.115	0.000222	NA	NA
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	0.00320	0.00320	0.00320	0.00320	NA	NA	0	NA	NA
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.0410	0.0410	0.0400	0.0420	0.00141	0.0345	0.00148	NA	NA
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	0.0355	0.0355	0.0170	0.0540	0.0262	0.737	0.0274	NA	NA
32_3_101	MW-38B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	270	270	250	290	28.3	0.105	29.6	NA	NA
32_3_103	MW-38B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	270	270	250	290	28.3	0.105	29.6	NA	NA
32_3_114	MW-38B	Supplemental	Conductivity (field)	us/cm	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	1908	1908	1908	1908	NA	NA	0	NA	NA
32_3_119	MW-38B	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	145	145	140	150	7.07	0.0488	7.41	NA	NA
32_3_122	MW-38B	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	232	232	232	232	NA	NA	0	NA	NA
32_3_125	MW-38B	Supplemental	Potassium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	5.05	5.05	4.60	5.50	0.636	0.126	0.667	NA	NA
32_3_130	MW-38B	Supplemental	Sodium	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	290	290	280	300	14.1	0.0488	14.8	NA	NA
32_3_132	MW-38B	Supplemental	Temperature (field)	deg c	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	13.2	13.2	13.2	13.2	NA	NA	0	NA	NA
32_3_133	MW-38B	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-11-01 to 2022-11-01		Nonparametric	23.4	23.4	23.4	23.4	NA	NA	0	NA	NA
32_3_136	MW-38B	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-28 to 2022-11-01		Nonparametric	10.1	10.1	5.20	15.0	6.93	0.686	7.26	NA	NA
32_3_137	MW-38B	Supplemental	Turbidity (field)	ntu	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	9.78	9.78	9.78	9.78	NA	NA	0	NA	NA
33_1_110	MW-38C	Appendix III	Calcium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	335	335	320	350	21.2	0.0633	22.2	NA	NA
33_1_111	MW-38C	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	54.0	54.0	28.0	80.0	36.8	0.681	38.5	NA	NA
33_1_123	MW-38C	Appendix III	pH (field)	su	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	7.04	7.04	7.04	7.04	NA	NA	0	NA	NA
33_1_124	MW-38C	Appendix III	pH (lab)	su	1	0	0%	2022-10-31 to 2022-10-31		Nonparametric	7.50	7.50	7.50	7.50	NA	NA	0	NA	NA
33_1_131	MW-38C	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	1950	1950	1900	2000	70.7	0.0363	74.1	NA	NA
33_1_135	MW-38C	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	2950	2950	2900	3000	70.7	0.0240	74.1	NA	NA
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.000670	0.000670	0.000520	0.000820	0.000212	0.317	0.000222	NA	NA
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	0.000530	0.000530	0.000530	0.000530	NA	NA	0	NA	NA
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.0375	0.0375	0.0340	0.0410	0.00495	0.132	0.00519	NA	NA
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	0.101	0.101	0.0920	0.110	0.0127	0.126	0.0133	NA	NA
33_3_101	MW-38C	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	350	350	350	350	0	0	0	NA	NA
33_3_103	MW-38C	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	350	350	350	350	0	0	0	NA	NA
33_3_114	MW-38C	Supplemental	Conductivity (field)	us/cm	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	2043	2043	2043	2043	NA	NA	0	NA	NA
33_3_119	MW-38C	Supplemental	Magnesium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	180	180	170	190	14.1	0.0786	14.8	NA	NA
33_3_122	MW-38C	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	227	227	227	227	NA	NA	0	NA	NA
33_3_125	MW-38C	Supplemental	Potassium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	5.80	5.80	5.70	5.90	0.141	0.0244	0.148	NA	NA
33_3_130	MW-38C	Supplemental	Sodium	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	380	380	370	390	14.1	0.0372	14.8	NA	NA
33_3_132	MW-38C	Supplemental	Temperature (field)	deg c	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	12.5	12.5	12.5	12.5	NA	NA	0	NA	NA
33_3_133	MW-38C	Supplemental	Temperature (lab)	deg c	1	0	0%	2022-10-31 to 2022-10-31		Nonparametric	23.4	23.4	23.4	23.4	NA	NA	0	NA	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
33_3_136	MW-38C	Supplemental	Total Suspended Solids	mg/l	2	0	0%	2022-07-28 to 2022-10-31		Nonparametric	9.70	9.70	6.40	13.0	4.67	0.481	4.89	NA	NA
33_3_137	MW-38C	Supplemental	Turbidity (field)	ntu	1	0	0%	2022-07-28 to 2022-07-28		Nonparametric	6.39	6.39	6.39	6.39	NA	NA	0	NA	NA
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	1.22	1.20	0.940	1.80	0.215	0.176	0.296	0.781	1.13
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	398	390	360	470	26.5	0.0665	29.6	1.05	1.53
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	498	505	370	560	51.1	0.103	37.0	-1.17	1.20
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	3.77	3.50	2.20	9.00	1.35	0.359	0.593	3.44	13.9
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	7.47	7.46	7.28	7.76	0.103	0.0137	0.0444	1.15	3.75
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	7.72	7.70	7.50	8.40	0.227	0.0294	0.148	1.87	3.80
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	5720	5750	5300	6100	174	0.0303	74.1	-0.341	1.22
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	9375	9450	7700	11000	733	0.0782	519	-0.534	1.87
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000456	0.000405	0.000180	0.000880	0.000222	0.486	0.000104	1.08	0.962
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.0103	0.00680	0.000680	0.0290	0.00937	0.910	0.00892	0.558	-1.26
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	0.0430	0.0310	0.0100	0.170	0.0432	1.01	0.0163	2.40	5.28
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000432	0.000270	0.000250	0.000970	0.000307	0.710	0.0000296	2.04	4.20
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Nonparametric	0.000312	0.000275	0.0000550	0.000670	0.000236	0.754	0.000241	0.620	-1.01
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.00810	0.00475	0.00130	0.0390	0.00940	1.16	0.00333	2.47	6.17
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	0.00345	0.00240	0.000660	0.0140	0.00338	0.980	0.00193	2.21	4.78
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	3.77	3.50	2.20	9.00	1.35	0.359	0.593	3.44	13.9
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	0.00333	0.00200	0.000410	0.0170	0.00416	1.25	0.000815	2.72	7.01
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Lognormal; Normal	Lognormal	0.211	0.210	0.180	0.230	0.0170	0.0806	0.0296	-0.366	-1.32
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	0.0160	0.0160	0.0120	0.0230	0.00272	0.170	0.00296	0.840	0.922
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	2.50	1.23	0.672	20.7	4.64	1.86	0.630	3.97	16.2
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	0.240	0.240	0.200	0.300	0.0283	0.118	0.0444	0.308	-0.693
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	2015-12-09 to 2022-10-04		Nonparametric	0.000117	0.0000940	0.0000810	0.000200	0.0000557	0.475	0.0000133	1.90	3.65
34_3_101	MW-4	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-04 to 2022-10-04		Nonparametric	180	180	180	180	NA	NA	0	NA	NA
34_3_103	MW-4	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-04 to 2022-10-04		Nonparametric	180	180	180	180	NA	NA	0	NA	NA
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	7618	8820	922	9684	2800	0.368	1150	-1.79	2.48
34_3_119	MW-4	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	765	765	760	770	7.07	0.00924	7.41	NA	NA
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-09 to 2022-10-04	Normal	Normal	76.9	97.2	-39.7	156	66.7	0.867	60.1	-0.667	-1.03
34_3_125	MW-4	Supplemental	Potassium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	9.75	9.75	9.70	9.80	0.0707	0.00725	0.0741	NA	NA
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	2015-12-09 to 2022-10-04	Nonparametric	Nonparametric	1.02	0.403	0.238	9.67	2.19	2.15	0.192	4.03	16.6
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	2015-12-09 to 2022-10-04	Lognormal	Lognormal	1.74	0.787	0.333	11.1	2.77	1.60	0.427	3.40	12.1
34_3_130	MW-4	Supplemental	Sodium	mg/l	2	0	0%	2022-04-29 to 2022-10-04		Nonparametric	1200	1200	1100	1300	141	0.118	148	NA	NA
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	15.5	14.9	13.4	19.8	1.89	0.122	1.63	0.845	-0.185
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.5	24.1	1.26	0.0586	1.48	0.195	-0.503
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-09 to 2022-10-04	Lognormal	Nonparametric	211	68.0	17.0	1100	338	1.60	44.4	2.25	4.01
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	2015-12-09 to 2022-10-04	Gamma; Lognormal	Gamma	39.9	42.1	8.30	118	31.1	0.779	13.8	1.57	3.66
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Normal	Normal	1.34	1.30	0.470	1.90	0.397	0.297	0.222	-0.836	1.97
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	75.4	79.0	49.0	90.0	14.5	0.193	14.1	-0.786	-0.617
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	29.7	29.5	12.0	44.0	10.3	0.345	11.1	-0.313	-0.789
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.323	0.330	0.230	0.430	0.0598	0.185	0.0444	-0.0656	0.130
35_1_123	MW-5	Appendix III	pH (field)	su	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	7.40	7.38	7.29	7.62	0.117	0.0158	0.119	1.12	0.916
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	7.88	7.80	7.60	8.40	0.253	0.0321	0.222	0.949	0.524

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	402	410	150	570	145	0.360	156	-0.566	-0.811
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	1033	1020	610	1400	249	0.241	267	-0.204	-0.782
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	2018-08-13 to 2022-12-15		Nonparametric	0.000753	0.000740	0.000740	0.000780	0.0000231	0.0307	0	1.73	NA
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	2018-08-13 to 2022-12-15		Nonparametric	0.00101	0.000925	0.000880	0.00130	0.000198	0.197	0.0000593	1.82	3.30
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal	Gamma	0.0216	0.0190	0.0140	0.0510	0.0109	0.503	0.00444	2.61	7.46
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	2018-08-13 to 2022-12-15		Nonparametric	0.000415	0.000415	0.000330	0.000500	0.000120	0.290	0.000126	NA	NA
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.00432	0.00265	0.000640	0.0100	0.00408	0.945	0.00256	0.757	-1.78
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.000711	0.000570	0.000240	0.00190	0.000527	0.741	0.000378	1.93	4.39
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.323	0.330	0.230	0.430	0.0598	0.185	0.0444	-0.0656	0.130
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	2018-08-13 to 2022-12-15	Lognormal	Lognormal	0.00121	0.000710	0.000290	0.00410	0.00143	1.18	0.000252	2.33	5.58
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.0602	0.0615	0.0430	0.0710	0.00892	0.148	0.0111	-0.604	-0.245
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal	Gamma	0.00399	0.00320	0.00270	0.00740	0.00161	0.404	0.000667	1.32	0.702
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	5	0	0%	2018-11-29 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	1.14	1.14	0.437	1.85	0.532	0.465	0.385	0.00924	-0.0703
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	2018-08-13 to 2022-12-15	Nonparametric	Nonparametric	0.00694	0.00505	0.00360	0.0180	0.00482	0.694	0.00193	1.78	2.44
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	2018-08-13 to 2022-12-15		Nonparametric	0.000200	0.000200	0.000200	0.000200	NA	NA	0	NA	NA
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	1086	1042	660	1684	312	0.287	138	1.02	2.58
35_3_119	MW-5	Supplemental	Magnesium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	42.0	42.0	42.0	42.0	NA	NA	0	NA	NA
35_3_122	MW-5	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	66.4	57.1	35.1	112	34.4	0.517	31.3	0.433	-2.23
35_3_125	MW-5	Supplemental	Potassium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	4.10	4.10	4.10	4.10	NA	NA	0	NA	NA
35_3_126	MW-5	Supplemental	Radium-226	pci/l	5	0	0%	2018-11-29 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	0.334	0.370	0.120	0.482	0.138	0.412	0.116	-0.985	1.07
35_3_128	MW-5	Supplemental	Radium-228	pci/l	5	2	40%	2018-11-29 to 2022-05-09		Nonparametric	0.999	0.922	0.594	1.48	0.448	0.449	0.486	0.748	NA
35_3_130	MW-5	Supplemental	Sodium	mg/l	1	0	0%	2022-05-09 to 2022-05-09		Nonparametric	260	260	260	260	NA	NA	0	NA	NA
35_3_132	MW-5	Supplemental	Temperature (field)	deg c	7	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	13.6	13.4	12.0	16.1	1.68	0.123	2.07	0.674	-1.24
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	20.7	20.9	18.3	22.8	1.34	0.0649	1.26	-0.108	0.0533
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	2018-08-13 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	24.2	26.0	2.40	49.0	17.3	0.715	24.4	0.101	-1.31
35_3_137	MW-5	Supplemental	Turbidity (field)	ntu	6	0	0%	2019-05-13 to 2022-05-09	Gamma; Lognormal; Normal	Nonparametric	3.26	1.27	0.0200	11.4	4.42	1.36	1.59	1.62	2.24
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.428	0.430	0.360	0.510	0.0480	0.112	0.0593	0.104	-1.21
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	330	330	270	390	37	0.112	44.4	-0.155	-1.00
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	540	570	260	730	142	0.264	141	-0.674	-0.509
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.167	0.140	0.0790	0.610	0.137	0.824	0.0444	3.24	11.1
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	7.07	7.09	6.74	7.34	0.167	0.0236	0.178	-0.132	-0.387
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	2015-12-14 to 2022-10-05	Lognormal; Normal	Lognormal	7.59	7.50	7.30	8.10	0.218	0.0287	0.148	0.748	-0.304
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	714	660	490	1200	171	0.239	111	1.36	2.33
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	2220	2150	1600	3500	381	0.171	222	1.97	6.52
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.000460	0.000460	0.000290	0.000770	0.000194	0.422	0.000237	1.18	1.41
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.00313	0.00250	0.000420	0.00690	0.00190	0.605	0.00178	0.626	-0.303
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	0.0707	0.0490	0.0240	0.180	0.0495	0.700	0.0193	1.51	1.04
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Nonparametric	0.000524	0.000420	0.000230	0.00110	0.000342	0.652	0.000178	1.64	2.92
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.000386	0.000330	0.0000810	0.000690	0.000201	0.520	0.000222	0.242	-1.19
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	0.0114	0.00555	0.00150	0.0520	0.0131	1.14	0.00422	2.11	4.68
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.00267	0.00100	0.000460	0.0110	0.00328	1.23	0.000681	1.80	2.04
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	2015-12-14 to 2022-10-05	Nonparametric	Nonparametric	0.167	0.140	0.0790	0.610	0.137	0.824	0.0444	3.24	11.1
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.00587	0.00265	0.000680	0.0240	0.00746	1.27	0.00255	1.81	2.04

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0643	0.0640	0.0460	0.0870	0.0120	0.186	0.0148	0.399	-1.04
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-14 to 2022-10-05		Nonparametric	0.0000900	0.0000900	0.0000900	0.0000900	NA	NA	0	NA	NA
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.00243	0.00200	0.00120	0.00740	0.00154	0.635	0.000889	2.38	5.80
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	1.35	1.14	0.450	2.69	0.653	0.485	0.479	0.924	-0.169
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	0.0157	0.0150	0.0100	0.0220	0.00254	0.162	0.00148	0.252	1.47
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	2015-12-14 to 2022-10-05		Nonparametric	0.000213	0.000210	0.000170	0.000260	0.0000451	0.211	0.0000593	0.331	NA
36_3_101	MW-6	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
36_3_103	MW-6	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-10-05 to 2022-10-05		Nonparametric	230	230	230	230	NA	NA	0	NA	NA
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	2829	2929	1706	4251	623	0.220	483	0.0395	0.775
36_3_119	MW-6	Supplemental	Magnesium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	102	102	93.0	110	12.0	0.118	12.6	NA	NA
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	2015-12-14 to 2022-10-05	Normal	Normal	93.0	95.3	-17.4	204	66.0	0.710	66.2	0.0603	-0.433
36_3_125	MW-6	Supplemental	Potassium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	9.15	9.15	9.00	9.30	0.212	0.0232	0.222	NA	NA
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	2015-12-14 to 2022-10-05	Gamma; Lognormal	Gamma	0.439	0.324	0.190	1.37	0.310	0.706	0.182	1.94	4.28
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	1.09	1.01	0.509	1.84	0.445	0.407	0.389	0.488	-0.854
36_3_130	MW-6	Supplemental	Sodium	mg/l	2	0	0%	2022-04-25 to 2022-10-05		Nonparametric	185	185	180	190	7.07	0.0382	7.41	NA	NA
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	15.7	14.9	11.9	21.4	2.48	0.158	1.48	0.913	0.607
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	2015-12-14 to 2022-10-05	Gamma; Lognormal; Normal	Gamma	21.5	21.2	19.5	23.9	1.29	0.0602	1.41	0.277	-0.856
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-14 to 2022-10-05	Lognormal	Nonparametric	182	69.0	2.40	2000	445	2.44	69.6	4.19	18
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	2015-12-14 to 2022-10-05	Lognormal	Lognormal	29.9	15.2	6.24	160	42.4	1.42	12	2.79	8.42
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	0.870	0.900	0.610	1.30	0.163	0.187	0.0593	0.506	1.62
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	482	480	430	580	30.5	0.0632	14.8	1.80	5.63
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	186	160	110	320	67.4	0.363	59.3	0.737	-0.640
37_1_115	MW-8	Appendix III	Fluoride	mg/l	20	9	45%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	1.68	0.140	0.0640	9.00	3.0	1.78	0.0889	1.90	2.95
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	2015-12-14 to 2022-04-28	Gamma; Lognormal; Normal	Gamma	6.90	6.87	6.67	7.27	0.161	0.0234	0.141	0.820	0.347
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	7.44	7.40	7.20	8.10	0.245	0.0329	0.296	1.15	1.36
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	2732	2700	2300	3700	298	0.109	148	1.90	5.63
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	4146	4150	520	5500	967	0.233	370	-2.77	11.2
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000547	0.000375	0.000210	0.00120	0.000382	0.699	0.000170	1.25	0.499
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00230	0.00200	0.000830	0.00630	0.00134	0.581	0.000741	2.12	5.52
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.0414	0.0250	0.0130	0.210	0.0444	1.07	0.0148	3.06	10.8
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000416	0.000330	0.000110	0.000880	0.000293	0.704	0.000237	1.13	1.46
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Nonparametric	0.000324	0.000285	0.000140	0.000710	0.000183	0.566	0.000133	1.46	2.55
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	2015-12-14 to 2022-12-15	Lognormal	Nonparametric	0.0112	0.00510	0.00120	0.0640	0.0162	1.45	0.00444	2.54	6.31
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Lognormal	Lognormal	0.00268	0.00150	0.000350	0.0120	0.00295	1.10	0.000889	2.25	4.89
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	9	45%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	1.68	0.140	0.0640	9.00	3.0	1.78	0.0889	1.90	2.95
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00348	0.00145	0.000390	0.0190	0.00482	1.38	0.00144	2.34	5.49
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Nonparametric	Nonparametric	0.126	0.120	0.0920	0.230	0.0311	0.246	0.0148	2.08	5.70
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	2015-12-14 to 2022-12-15		Nonparametric	0.0000420	0.0000420	0.0000420	0.0000420	NA	NA	0	NA	NA
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	2015-12-14 to 2022-12-15	Gamma; Lognormal	Gamma	0.00187	0.00115	0.000450	0.00870	0.00226	1.21	0.000896	2.89	9.10
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	2.07	1.60	1.00	8.84	1.70	0.823	0.496	3.67	14.6
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	0.0104	0.00990	0.00360	0.0200	0.00380	0.364	0.00163	0.801	1.24
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	2015-12-14 to 2022-12-15		Nonparametric	0.000128	0.000110	0.0000930	0.000180	0.0000461	0.361	0.0000252	1.47	NA
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	2015-12-14 to 2022-04-28	Normal	Normal	4293	4454	2752	5228	725	0.169	515	-0.974	0.203

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	MAD/0.675	Skewness	Kurtosis
37_3_119	MW-8	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	280	280	280	280	NA	NA	0	NA	NA
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	16	0	0%	2015-12-14 to 2022-04-28	Normal	Normal	79.5	53.8	-36.6	312	98.1	1.23	81.9	0.903	0.512
37_3_125	MW-8	Supplemental	Potassium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	11.0	11.0	11.0	11.0	NA	NA	0	NA	NA
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	0.769	0.521	0.309	4.20	0.832	1.08	0.171	4.07	17.3
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	2015-12-14 to 2022-04-28	Lognormal	Lognormal	1.34	1.11	0.561	4.64	0.931	0.695	0.441	2.80	8.99
37_3_130	MW-8	Supplemental	Sodium	mg/l	1	0	0%	2022-04-28 to 2022-04-28		Nonparametric	330	330	330	330	NA	NA	0	NA	NA
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	2015-12-14 to 2022-04-28	Nonparametric	Nonparametric	16.8	14.9	11.5	27.1	4.80	0.286	1.41	1.57	1.25
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	2015-12-14 to 2022-12-15	Gamma; Lognormal; Normal	Gamma	22	22.2	19.2	24.0	1.34	0.0611	1.63	-0.302	-0.752
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	2015-12-14 to 2022-12-15	Lognormal	Nonparametric	672	70.0	9.60	7900	1841	2.74	71.1	3.77	14.9
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	2015-12-14 to 2022-04-28	Gamma; Lognormal; Normal	Gamma	34.9	18.6	2.02	100	35.3	1.01	20.5	1.01	-0.464

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	0.663	0.000	0.214	0.017	0.778	0.000	0.164	0.170	0.174	>= 0.10	1.390	< 0.01	0.194	Gamma; Lognormal	Gamma
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	0.978	0.916	0.090	0.954	0.970	0.786	0.099	0.894	0.100	>= 0.10	0.227	>= 0.10	0.084	Gamma; Lognormal; Normal	Gamma
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.969	0.726	0.134	0.452	0.969	0.743	0.140	0.383	0.134	>= 0.10	0.313	>= 0.10	0.044	Gamma; Lognormal; Normal	Gamma
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	0.969	0.716	0.124	0.540	0.985	0.979	0.099	0.854	0.089	>= 0.10	0.150	>= 0.10	0.270	Gamma; Lognormal; Normal	Gamma
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	0.912	0.110	0.240	0.010	0.916	0.127	0.239	0.011	0.243	< 0.01	0.657	0.05 <= p < 0.10	0.020	Gamma; Lognormal; Normal	Gamma
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	0.954	0.437	0.168	0.149	0.954	0.433	0.173	0.119	0.171	>= 0.10	0.482	>= 0.10	0.031	Gamma; Lognormal; Normal	Gamma
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.839	0.004	0.230	0.007	0.774	0.000	0.265	0.001	0.248	< 0.01	1.306	< 0.01	0.158	Nonparametric	Nonparametric
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.888	0.025	0.168	0.147	0.910	0.065	0.157	0.218	0.161	>= 0.10	0.571	>= 0.10	0.058	Gamma; Lognormal; Normal	Gamma
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	0.876	0.118	0.228	0.148	0.936	0.511	0.186	0.423	0.154	>= 0.10	0.319	>= 0.10	0.656	Gamma; Lognormal; Normal	Gamma
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	0.756	0.001	0.240	0.010	0.875	0.026	0.207	0.050	0.227	0.01 <= p < 0.05	1.032	< 0.01	0.437	Lognormal	Lognormal
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	0.907	0.048	0.145	0.297	0.929	0.130	0.152	0.229	0.160	>= 0.10	0.492	>= 0.10	0.587	Gamma; Lognormal; Normal	Gamma
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	0.923	0.453	0.179	0.632	0.822	0.049	0.301	0.031	0.270	>= 0.10	0.550	>= 0.10	0.773	Gamma; Normal	Nonparametric
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	0.949	0.617	0.140	0.739	0.949	0.623	0.140	0.746	0.152	>= 0.10	0.257	>= 0.10	0.341	Gamma; Lognormal; Normal	Gamma
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.735	0.000	0.249	0.004	0.940	0.285	0.125	0.643	0.178	>= 0.10	0.678	0.05 <= p < 0.10	1.234	Gamma; Lognormal	Gamma
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	0.790	0.000	0.223	0.008	0.957	0.458	0.134	0.416	0.127	>= 0.10	0.424	>= 0.10	1.030	Gamma; Lognormal	Gamma
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	0.969	0.716	0.124	0.540	0.985	0.979	0.099	0.854	0.089	>= 0.10	0.150	>= 0.10	0.270	Gamma; Lognormal; Normal	Gamma
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	0.732	0.001	0.272	0.004	0.955	0.602	0.123	0.780	0.178	>= 0.10	0.539	>= 0.10	1.054	Gamma; Lognormal	Gamma
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	0.776	0.000	0.261	0.001	0.841	0.003	0.256	0.001	0.249	< 0.01	1.341	< 0.01	0.132	Nonparametric	Nonparametric
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		Nonparametric
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	0.682	0.000	0.267	0.000	0.928	0.123	0.174	0.097	0.220	0.01 <= p < 0.05	1.079	< 0.01	0.665	Lognormal	Lognormal
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	0.887	0.073	0.175	0.290	0.947	0.509	0.158	0.451	0.164	>= 0.10	0.363	>= 0.10	0.428	Gamma; Lognormal; Normal	Gamma
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	0.981	0.981	0.118	0.859	0.873	0.046	0.187	0.205	0.160	>= 0.10	0.364	>= 0.10	0.574	Gamma; Lognormal; Normal	Gamma
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.151		Nonparametric
11_3_101	MW-1	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		Nonparametric
11_3_102	MW-1	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		Nonparametric
11_3_103	MW-1	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		Nonparametric
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.902	0.073	0.165	0.248	0.885	0.039	0.164	0.259	0.177	>= 0.10	0.728	0.05 <= p < 0.10	0.106	Gamma; Lognormal; Normal	Gamma
11_3_119	MW-1	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.017		Nonparametric
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.981	0.968	0.119	0.751	NA	NA	NA	NA	NA	NA	NA	NA	NA	Normal	Normal
11_3_125	MW-1	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.066		Nonparametric
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	0.885	0.056	0.230	0.032	0.947	0.479	0.156	0.417	0.192	>= 0.10	0.413	>= 0.10	0.663	Gamma; Lognormal; Normal	Gamma
11_3_128	MW-1	Supplemental	Radium-228	pci/l	21	12	57%	0.841	0.060	0.234	0.167	0.959	0.788	0.164	0.689	0.180	>= 0.10	0.344	>= 0.10	0.387	Gamma; Lognormal; Normal	Nonparametric
11_3_130	MW-1	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038		Nonparametric
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	0.940	0.317	0.095	0.950	0.938	0.301	0.099	0.927	0.104	>= 0.10	0.355	>= 0.10	0.072	Gamma; Lognormal; Normal	Gamma
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	0.970	0.752	0.092	0.927	0.968	0.711	0.103	0.840	0.102	>= 0.10	0.220	>= 0.10	0.063	Gamma; Lognormal; Normal	Gamma
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.779	0.001	0.271	0.001	0.855	0.008	0.240	0.005	0.244	0.01 <= p < 0.05	1.077	0.01 <= p < 0.05	1.682	Nonparametric	Nonparametric
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	0.341	0.000	0.476	0.000	0.747	0.002	0.334	0.000	0.409	< 0.01	2.817	< 0.01	1.516	Nonparametric	Nonparametric
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	0.730	0.002	0.346	0.001	0.737	0.002	0.350	0.001	0.352	< 0.01	1.225	< 0.01	0.086	Nonparametric	Nonparametric
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	0.588	0.000	0.329	0.000	0.383	0.000	0.450	0.000	0.425	< 0.01	3.419	< 0.01	1.090	Nonparametric	Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal			Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	0.918	0.235	0.150	0.591	0.911	0.188	0.150	0.592	0.161	>= 0.10	0.466	>= 0.10	0.058	Gamma; Lognormal; Normal	Gamma
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	0.709	0.001	0.344	0.001	0.868	0.094	0.255	0.064	0.281	0.01 <= p < 0.05	0.750	0.01 <= p < 0.05	0.398	Lognormal	Lognormal
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	0.788	0.005	0.295	0.003	0.797	0.006	0.289	0.004	0.289	< 0.01	1.176	< 0.01	0.030	Nonparametric	Nonparametric
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	0.845	0.032	0.293	0.005	0.851	0.038	0.288	0.007	0.291	< 0.01	0.777	0.01 <= p < 0.05	0.031	Nonparametric	Nonparametric
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	0.942	0.483	0.173	0.359	0.939	0.449	0.163	0.451	0.175	>= 0.10	0.399	>= 0.10	0.074	Gamma; Lognormal; Normal	Gamma
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	0.934	0.386	0.182	0.278	0.936	0.402	0.180	0.295	0.188	>= 0.10	0.447	>= 0.10	0.030	Gamma; Lognormal; Normal	Gamma
12_2_104	MW-13	Appendix IV	Antimony	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	0.966	0.852	0.157	0.690	0.948	0.650	0.150	0.753	0.159	>= 0.10	0.213	>= 0.10	0.424	Gamma; Lognormal; Normal	Gamma
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	0.825	0.029	0.242	0.100	0.851	0.060	0.239	0.109	0.252	0.05 <= p < 0.10	0.711	0.05 <= p < 0.10	0.301	Gamma; Lognormal; Normal	Gamma
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.115		Nonparametric
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	0.924	0.422	0.184	0.513	0.971	0.907	0.155	0.773	0.125	>= 0.10	0.181	>= 0.10	0.594	Gamma; Lognormal; Normal	Gamma
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	0.809	0.018	0.201	0.299	0.972	0.906	0.112	0.976	0.133	>= 0.10	0.274	>= 0.10	0.601	Gamma; Lognormal; Normal	Gamma
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.709	0.001	0.344	0.001	0.868	0.094	0.255	0.064	0.281	0.01 <= p < 0.05	0.750	0.01 <= p < 0.05	0.398	Lognormal	Lognormal
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.557		Nonparametric
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	0.818	0.011	0.261	0.016	0.826	0.014	0.259	0.017	0.269	0.01 <= p < 0.05	1.063	< 0.01	0.067	Nonparametric	Nonparametric
12_2_120	MW-13	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	0.888	0.189	0.286	0.033	0.925	0.437	0.246	0.120	0.259	0.05 <= p < 0.10	0.435	>= 0.10	0.221	Gamma; Lognormal; Normal	Gamma
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	0.972	0.907	0.196	0.669	0.953	0.764	0.186	0.745	0.161	>= 0.10	0.214	>= 0.10	0.555	Gamma; Lognormal; Normal	Gamma
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	0.958	0.729	0.198	0.176	0.970	0.889	0.174	0.346	0.176	>= 0.10	0.279	>= 0.10	0.162	Gamma; Lognormal; Normal	Gamma
12_2_134	MW-13	Appendix IV	Thallium	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_3_101	MW-13	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.119		Nonparametric
12_3_102	MW-13	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_3_103	MW-13	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.106		Nonparametric
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	0.863	0.043	0.281	0.006	0.845	0.025	0.293	0.003	0.296	< 0.01	0.980	0.01 <= p < 0.05	0.100	Nonparametric	Nonparametric
12_3_119	MW-13	Supplemental	Magnesium	mg/l	5	0	0%	0.714	0.013	0.328	0.085	0.619	0.001	0.419	0.004	0.418	< 0.01	1.050	< 0.01	1.138	Normal	Nonparametric
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	0.682	0.000	0.275	0.008	0.904	0.150	0.158	0.508	0.188	>= 0.10	0.699	0.05 <= p < 0.10	0.486	Gamma; Lognormal	Gamma
12_3_125	MW-13	Supplemental	Potassium	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.055		Nonparametric
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	0.780	0.026	0.342	0.013	0.859	0.148	0.280	0.099	0.312	0.05 <= p < 0.10	0.675	0.05 <= p < 0.10	0.499	Gamma; Lognormal	Gamma
12_3_128	MW-13	Supplemental	Radium-228	pci/l	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.462		Nonparametric
12_3_130	MW-13	Supplemental	Sodium	mg/l	5	0	0%	0.779	0.054	0.374	0.021	0.636	0.002	0.439	0.002	0.449	< 0.01	1.005	< 0.01	1.188	Normal	Nonparametric
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	0.933	0.374	0.169	0.390	0.930	0.337	0.190	0.227	0.178	>= 0.10	0.463	>= 0.10	0.114	Gamma; Lognormal; Normal	Gamma
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	0.936	0.453	0.154	0.603	0.932	0.397	0.159	0.547	0.165	>= 0.10	0.353	>= 0.10	0.050	Gamma; Lognormal; Normal	Gamma
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	0.502	0.000	0.369	0.000	0.918	0.305	0.143	0.765	0.251	0.05 <= p < 0.10	0.991	0.01 <= p < 0.05	1.140	Gamma; Lognormal	Gamma
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	0.704	0.001	0.254	0.021	0.727	0.001	0.350	0.000	0.295	0.01 <= p < 0.05	1.295	< 0.01	2.744	Nonparametric	Nonparametric
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	0.793	0.012	0.342	0.002	0.815	0.022	0.333	0.002	0.337	< 0.01	0.952	0.01 <= p < 0.05	0.115	Nonparametric	Nonparametric
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	0.963	0.817	0.182	0.453	0.965	0.844	0.190	0.385	0.197	>= 0.10	0.280	>= 0.10	0.062	Gamma; Lognormal; Normal	Gamma
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.840	0.044	0.253	0.070	0.821	0.026	0.271	0.037	0.270	0.01 <= p < 0.05	0.844	0.01 <= p < 0.05	0.121	Normal	Normal
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	0.874	0.166	0.179	0.637	0.967	0.873	0.163	0.767	0.176	>= 0.10	0.255	>= 0.10	0.488	Gamma; Lognormal; Normal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	0.810	0.019	0.314	0.006	0.820	0.025	0.310	0.007	0.312	< 0.01	0.811	0.01 <= p < 0.05	0.026	Nonparametric	Nonparametric
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	0.874	0.110	0.304	0.009	0.879	0.126	0.300	0.011	0.296	0.01 <= p < 0.05	0.702	0.05 <= p < 0.10	0.027	Gamma; Lognormal; Normal	Gamma
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.942	0.581	0.218	0.197	0.926	0.411	0.232	0.133	0.215	>= 0.10	0.356	>= 0.10	0.083	Gamma; Lognormal; Normal	Gamma
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.893	0.184	0.210	0.243	0.847	0.053	0.236	0.119	0.218	>= 0.10	0.603	>= 0.10	0.120	Gamma; Lognormal; Normal	Gamma
13_2_104	MW-14	Appendix IV	Antimony	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	0.936	0.576	0.145	0.890	0.949	0.705	0.141	0.912	0.146	>= 0.10	0.256	>= 0.10	0.220	Gamma; Lognormal; Normal	Gamma
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	0.912	0.296	0.165	0.612	0.931	0.457	0.162	0.646	0.175	>= 0.10	0.361	>= 0.10	0.229	Gamma; Lognormal; Normal	Gamma
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	0.838	0.096	0.277	0.108	0.899	0.324	0.217	0.406	0.255	>= 0.10	0.471	>= 0.10	0.679	Gamma; Lognormal; Normal	Gamma
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	0.961	0.820	0.178	0.637	0.945	0.659	0.156	0.817	0.148	>= 0.10	0.197	>= 0.10	0.679	Gamma; Lognormal; Normal	Gamma
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	0.874	0.166	0.179	0.637	0.967	0.873	0.163	0.767	0.176	>= 0.10	0.255	>= 0.10	0.488	Gamma; Lognormal; Normal	Gamma
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.297		Nonparametric
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	0.878	0.124	0.202	0.294	0.874	0.112	0.213	0.221	0.216	>= 0.10	0.556	>= 0.10	0.080	Gamma; Lognormal; Normal	Gamma
13_2_120	MW-14	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	0.841	0.046	0.228	0.150	0.912	0.297	0.224	0.167	0.239	>= 0.10	0.490	>= 0.10	0.432	Gamma; Lognormal; Normal	Gamma
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	0.730	0.003	0.275	0.049	0.890	0.198	0.210	0.304	0.235	>= 0.10	0.639	0.05 <= p < 0.10	0.399	Gamma; Lognormal	Gamma
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	0.895	0.191	0.181	0.468	0.894	0.189	0.187	0.412	0.191	>= 0.10	0.536	>= 0.10	0.066	Gamma; Lognormal; Normal	Gamma
13_2_134	MW-14	Appendix IV	Thallium	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_3_101	MW-14	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_3_102	MW-14	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_3_103	MW-14	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	0.947	0.637	0.154	0.723	0.944	0.594	0.155	0.708	0.168	>= 0.10	0.291	>= 0.10	0.060	Gamma; Lognormal; Normal	Gamma
13_3_119	MW-14	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.089		Nonparametric
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	0.962	0.804	0.156	0.699	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
13_3_125	MW-14	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.067		Nonparametric
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	0.961	0.800	0.163	0.636	0.978	0.956	0.139	0.841	0.136	>= 0.10	0.169	>= 0.10	0.376	Gamma; Lognormal; Normal	Gamma
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	0.624	0.000	0.359	0.003	0.826	0.054	0.287	0.051	0.323	0.01 <= p < 0.05	0.967	< 0.01	0.557	Lognormal	Lognormal
13_3_130	MW-14	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.062		Nonparametric
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	0.904	0.240	0.164	0.626	0.898	0.209	0.164	0.623	0.177	>= 0.10	0.449	>= 0.10	0.143	Gamma; Lognormal; Normal	Gamma
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	0.951	0.677	0.155	0.713	0.952	0.696	0.153	0.725	0.166	>= 0.10	0.277	>= 0.10	0.070	Gamma; Lognormal; Normal	Gamma
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	0.729	0.008	0.375	0.003	0.825	0.071	0.304	0.049	0.345	0.01 <= p < 0.05	0.819	0.01 <= p < 0.05	0.723	Lognormal	Lognormal
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	0.888	0.161	0.207	0.262	0.804	0.016	0.267	0.042	0.192	>= 0.10	0.503	>= 0.10	2.241	Gamma; Normal	Gamma
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	0.906	0.257	0.223	0.172	0.899	0.214	0.239	0.109	0.241	>= 0.10	0.547	>= 0.10	0.116	Gamma; Lognormal; Normal	Gamma
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	0.924	0.393	0.159	0.674	0.964	0.829	0.162	0.645	0.149	>= 0.10	0.299	>= 0.10	0.189	Gamma; Lognormal; Normal	Gamma
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.868	0.095	0.205	0.274	0.810	0.019	0.217	0.201	0.225	>= 0.10	0.727	0.01 <= p < 0.05	0.142	Gamma; Lognormal; Normal	Gamma
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	0.869	0.096	0.212	0.231	0.924	0.389	0.161	0.649	0.166	>= 0.10	0.382	>= 0.10	0.333	Gamma; Lognormal; Normal	Gamma
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	0.829	0.058	0.279	0.067	0.838	0.072	0.275	0.076	0.278	0.05 <= p < 0.10	0.702	0.05 <= p < 0.10	0.026	Gamma; Lognormal; Normal	Gamma
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	0.955	0.732	0.203	0.288	0.956	0.739	0.200	0.310	0.191	>= 0.10	0.316	>= 0.10	0.028	Gamma; Lognormal; Normal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.913	0.304	0.159	0.676	0.946	0.616	0.137	0.861	0.145	>= 0.10	0.309	>= 0.10	0.158	Gamma; Lognormal; Normal	Gamma
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.843	0.048	0.282	0.023	0.859	0.075	0.274	0.032	0.282	0.01 <= p < 0.05	0.770	0.01 <= p < 0.05	0.106	Lognormal	Lognormal
14_2_104	MW-15	Appendix IV	Antimony	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	0.838	0.055	0.248	0.115	0.950	0.686	0.206	0.328	0.177	>= 0.10	0.304	>= 0.10	0.729	Gamma; Lognormal; Normal	Gamma
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	0.581	0.000	0.349	0.001	0.745	0.003	0.331	0.003	0.355	< 0.01	1.441	< 0.01	0.651	Nonparametric	Nonparametric
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	0.750	0.008	0.288	0.050	0.915	0.394	0.185	0.579	0.244	>= 0.10	0.466	>= 0.10	1.043	Gamma; Lognormal; Normal	Gamma
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	0.680	0.001	0.376	0.001	0.878	0.179	0.265	0.101	0.326	0.01 <= p < 0.05	0.722	0.05 <= p < 0.10	0.932	Gamma; Lognormal	Gamma
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.869	0.096	0.212	0.231	0.924	0.389	0.161	0.649	0.166	>= 0.10	0.382	>= 0.10	0.333	Gamma; Lognormal; Normal	Gamma
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.306		Nonparametric
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	0.822	0.026	0.273	0.033	0.833	0.037	0.268	0.040	0.273	0.01 <= p < 0.05	0.769	0.01 <= p < 0.05	0.098	Nonparametric	Nonparametric
14_2_120	MW-15	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	0.918	0.379	0.221	0.232	0.931	0.495	0.161	0.715	0.191	>= 0.10	0.353	>= 0.10	0.406	Gamma; Lognormal; Normal	Gamma
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	0.924	0.536	0.157	0.912	0.938	0.645	0.171	0.840	0.190	>= 0.10	0.263	>= 0.10	0.593	Gamma; Lognormal; Normal	Gamma
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	0.963	0.817	0.175	0.520	0.934	0.489	0.174	0.527	0.156	>= 0.10	0.302	>= 0.10	0.272	Gamma; Lognormal; Normal	Gamma
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_3_101	MW-15	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_3_102	MW-15	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_3_103	MW-15	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	0.972	0.913	0.161	0.784	0.952	0.731	0.186	0.576	0.170	>= 0.10	0.232	>= 0.10	0.134	Gamma; Lognormal; Normal	Gamma
14_3_119	MW-15	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.203		Nonparametric
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	0.913	0.375	0.203	0.433	0.913	0.377	0.203	0.426	0.221	>= 0.10	0.366	>= 0.10	0.522	Gamma; Lognormal; Normal	Gamma
14_3_125	MW-15	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.057		Nonparametric
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	0.665	0.004	0.394	0.011	0.834	0.149	0.266	0.291	0.328	>= 0.10	0.679	0.05 <= p < 0.10	0.914	Gamma; Lognormal	Nonparametric
14_3_128	MW-15	Supplemental	Radium-228	pci/l	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.667		Nonparametric
14_3_130	MW-15	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.153		Nonparametric
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	0.907	0.334	0.240	0.191	0.923	0.458	0.227	0.263	0.222	>= 0.10	0.350	>= 0.10	0.073	Gamma; Lognormal; Normal	Gamma
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	0.949	0.654	0.190	0.388	0.945	0.609	0.192	0.369	0.182	>= 0.10	0.348	>= 0.10	0.055	Gamma; Lognormal; Normal	Gamma
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	0.630	0.000	0.365	0.001	0.757	0.006	0.359	0.001	0.392	< 0.01	1.263	< 0.01	1.808	Nonparametric	Nonparametric
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	0.972	0.914	0.195	0.496	0.616	0.000	0.360	0.003	0.359	< 0.01	1.065	< 0.01	2.020	Normal	Normal
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	0.740	0.003	0.293	0.015	0.814	0.022	0.251	0.075	0.258	0.05 <= p < 0.10	0.811	0.01 <= p < 0.05	0.167	Gamma; Lognormal	Gamma
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	0.401	0.000	0.488	0.000	0.500	0.000	0.393	0.000	0.456	< 0.01	2.708	< 0.01	0.739	Nonparametric	Nonparametric
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.893	0.182	0.228	0.150	0.894	0.188	0.218	0.193	0.232	>= 0.10	0.603	>= 0.10	0.098	Gamma; Lognormal; Normal	Gamma
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	0.907	0.263	0.216	0.204	0.906	0.254	0.225	0.160	0.234	>= 0.10	0.519	>= 0.10	0.116	Gamma; Lognormal; Normal	Gamma
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	0.932	0.536	0.160	0.788	0.933	0.542	0.160	0.792	0.174	>= 0.10	0.296	>= 0.10	0.008	Gamma; Lognormal; Normal	Gamma
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	0.720	0.002	0.380	0.000	0.729	0.002	0.375	0.000	0.376	< 0.01	1.162	< 0.01	0.024	Nonparametric	Nonparametric
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.895	0.193	0.223	0.172	0.892	0.177	0.228	0.147	0.237	>= 0.10	0.500	>= 0.10	0.081	Gamma; Lognormal; Normal	Gamma
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.957	0.748	0.160	0.668	0.955	0.727	0.156	0.704	0.169	>= 0.10	0.299	>= 0.10	0.054	Gamma; Lognormal; Normal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	0.649	0.001	0.360	0.006	0.789	0.032	0.260	0.164	0.296	0.05 <= p < 0.10	0.872	0.01 <= p < 0.05	0.490	Gamma; Lognormal	Gamma
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	0.643	0.000	0.324	0.007	0.893	0.215	0.238	0.148	0.284	0.05 <= p < 0.10	0.791	0.01 <= p < 0.05	0.816	Gamma; Lognormal	Gamma
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	0.735	0.002	0.336	0.002	0.911	0.285	0.228	0.149	0.262	0.05 <= p < 0.10	0.709	0.05 <= p < 0.10	0.661	Gamma; Lognormal	Gamma
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.705		Nonparametric
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.343		Nonparametric
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.805		Nonparametric
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.907	0.263	0.216	0.204	0.906	0.254	0.225	0.160	0.234	>= 0.10	0.519	>= 0.10	0.116	Gamma; Lognormal; Normal	Gamma
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.073		Nonparametric
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	0.861	0.079	0.304	0.009	0.911	0.290	0.273	0.033	0.283	0.01 <= p < 0.05	0.540	>= 0.10	0.167	Gamma; Lognormal; Normal	Gamma
15_2_120	MW-16	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	0.656	0.000	0.294	0.024	0.806	0.024	0.210	0.303	0.236	>= 0.10	0.900	0.01 <= p < 0.05	0.415	Gamma; Lognormal	Gamma
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	0.931	0.589	0.264	0.210	0.960	0.818	0.214	0.529	0.212	>= 0.10	0.276	>= 0.10	0.416	Gamma; Lognormal; Normal	Gamma
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	0.864	0.202	0.255	0.257	0.975	0.922	0.163	0.885	0.212	>= 0.10	0.249	>= 0.10	1.003	Gamma; Lognormal; Normal	Gamma
15_2_134	MW-16	Appendix IV	Thallium	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	0.740	0.006	0.351	0.004	0.720	0.004	0.358	0.003	0.363	< 0.01	1.028	< 0.01	0.088	Nonparametric	Nonparametric
15_3_119	MW-16	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.020		Nonparametric
15_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	0.910	0.357	0.200	0.450	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
15_3_125	MW-16	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.057		Nonparametric
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	0.686	0.003	0.331	0.020	0.881	0.229	0.223	0.362	0.267	>= 0.10	0.622	0.05 <= p < 0.10	0.647	Gamma; Lognormal	Gamma
15_3_128	MW-16	Supplemental	Radium-228	pci/l	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.052		Nonparametric
15_3_130	MW-16	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.167		Nonparametric
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	0.699	0.002	0.364	0.002	0.743	0.007	0.340	0.007	0.347	< 0.01	0.972	< 0.01	0.127	Nonparametric	Nonparametric
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	0.933	0.480	0.143	0.816	0.929	0.434	0.150	0.753	0.156	>= 0.10	0.343	>= 0.10	0.062	Gamma; Lognormal; Normal	Gamma
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	0.671	0.001	0.363	0.001	0.907	0.292	0.187	0.482	0.256	>= 0.10	0.693	0.05 <= p < 0.10	2.332	Gamma; Lognormal	Gamma
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	0.864	0.130	0.262	0.107	0.748	0.008	0.314	0.020	0.220	>= 0.10	0.452	>= 0.10	1.977	Gamma; Normal	Gamma
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	0.873	0.132	0.317	0.010	0.879	0.153	0.309	0.013	0.319	0.01 <= p < 0.05	0.733	0.01 <= p < 0.05	0.064	Lognormal; Normal	Lognormal
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	0.957	0.744	0.196	0.230	0.934	0.421	0.217	0.125	0.201	>= 0.10	0.352	>= 0.10	0.106	Gamma; Lognormal; Normal	Gamma
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	0.965	0.829	0.184	0.371	0.951	0.659	0.203	0.234	0.189	>= 0.10	0.324	>= 0.10	0.105	Gamma; Lognormal; Normal	Gamma
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	0.847	0.116	0.229	0.322	0.950	0.731	0.184	0.674	0.209	>= 0.10	0.362	>= 0.10	0.403	Gamma; Lognormal; Normal	Gamma
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	0.978	0.975	0.127	0.854	0.976	0.963	0.130	0.832	0.127	>= 0.10	0.189	>= 0.10	0.015	Gamma; Lognormal; Normal	Gamma
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	0.859	0.074	0.229	0.146	0.859	0.075	0.230	0.142	0.241	>= 0.10	0.654	0.05 <= p < 0.10	0.014	Gamma; Lognormal; Normal	Gamma
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	0.899	0.181	0.174	0.459	0.867	0.072	0.194	0.293	0.176	>= 0.10	0.503	>= 0.10	0.087	Gamma; Lognormal; Normal	Gamma
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	0.928	0.364	0.214	0.134	0.923	0.314	0.221	0.109	0.225	>= 0.10	0.561	>= 0.10	0.052	Gamma; Lognormal; Normal	Gamma
16_2_104	MW-21	Appendix IV	Antimony	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	0.813	0.029	0.263	0.074	0.530	0.000	0.435	0.000	0.408	< 0.01	1.669	< 0.01	1.118	Normal	Normal

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	0.878	0.151	0.225	0.213	0.904	0.274	0.183	0.517	0.200	>= 0.10	0.489	>= 0.10	0.248	Gamma; Lognormal; Normal	Gamma
16_2_107	MW-21	Appendix IV	Beryllium	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	0.861	0.123	0.234	0.223	0.963	0.835	0.163	0.766	0.196	>= 0.10	0.278	>= 0.10	0.508	Gamma; Lognormal; Normal	Gamma
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	0.847	0.116	0.229	0.322	0.950	0.731	0.184	0.674	0.209	>= 0.10	0.362	>= 0.10	0.403	Gamma; Lognormal; Normal	Gamma
16_2_117	MW-21	Appendix IV	Lead	mg/l	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	0.929	0.370	0.216	0.127	0.933	0.410	0.201	0.196	0.211	>= 0.10	0.403	>= 0.10	0.100	Gamma; Lognormal; Normal	Gamma
16_2_120	MW-21	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	0.967	0.869	0.167	0.665	0.944	0.628	0.177	0.571	0.187	>= 0.10	0.249	>= 0.10	0.250	Gamma; Lognormal; Normal	Gamma
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	0.844	0.109	0.289	0.079	0.901	0.337	0.242	0.246	0.263	>= 0.10	0.452	>= 0.10	0.320	Gamma; Lognormal; Normal	Gamma
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	0.911	0.220	0.240	0.055	0.920	0.288	0.225	0.095	0.226	>= 0.10	0.605	>= 0.10	0.082	Gamma; Lognormal; Normal	Gamma
16_2_134	MW-21	Appendix IV	Thallium	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_3_101	MW-21	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.056		Nonparametric
16_3_102	MW-21	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_3_103	MW-21	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.083		Nonparametric
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	0.899	0.154	0.231	0.076	0.878	0.084	0.241	0.053	0.249	0.01 <= p < 0.05	0.638	0.05 <= p < 0.10	0.125	Gamma; Lognormal; Normal	Gamma
16_3_119	MW-21	Supplemental	Magnesium	mg/l	5	0	0%	0.943	0.685	0.231	0.511	0.932	0.610	0.246	0.407	0.233	>= 0.10	0.318	>= 0.10	0.093	Gamma; Lognormal; Normal	Nonparametric
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	0.843	0.030	0.276	0.012	0.833	0.023	0.219	0.115	0.212	>= 0.10	0.645	0.05 <= p < 0.10	0.809	Gamma; Lognormal	Gamma
16_3_125	MW-21	Supplemental	Potassium	mg/l	5	0	0%	0.933	0.615	0.232	0.504	0.943	0.687	0.220	0.592	0.236	>= 0.10	0.278	>= 0.10	0.113	Gamma; Lognormal; Normal	Nonparametric
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	0.942	0.631	0.142	0.907	0.929	0.507	0.185	0.580	0.170	>= 0.10	0.289	>= 0.10	0.353	Gamma; Lognormal; Normal	Gamma
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	0.901	0.381	0.233	0.388	0.944	0.688	0.171	0.844	0.190	>= 0.10	0.302	>= 0.10	0.441	Gamma; Lognormal; Normal	Gamma
16_3_130	MW-21	Supplemental	Sodium	mg/l	5	0	0%	0.985	0.957	0.161	0.939	0.977	0.917	0.171	0.901	0.153	>= 0.10	0.203	>= 0.10	0.065	Gamma; Lognormal; Normal	Nonparametric
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	0.951	0.650	0.113	0.941	0.963	0.823	0.106	0.969	0.107	>= 0.10	0.215	>= 0.10	0.101	Gamma; Lognormal; Normal	Gamma
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	0.885	0.150	0.259	0.055	0.875	0.113	0.270	0.038	0.258	0.05 <= p < 0.10	0.671	0.05 <= p < 0.10	0.057	Gamma; Lognormal; Normal	Gamma
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	0.585	0.000	0.317	0.003	0.897	0.171	0.216	0.163	0.267	0.01 <= p < 0.05	0.892	0.01 <= p < 0.05	0.988	Lognormal	Lognormal
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	0.875	0.075	0.186	0.301	0.769	0.004	0.238	0.059	0.234	>= 0.10	0.972	0.01 <= p < 0.05	2.416	Gamma; Lognormal; Normal	Gamma
17_1_108	MW-25B	Appendix III	Boron	mg/l	6	0	0%	0.986	0.978	0.131	0.987	0.987	0.982	0.129	0.989	0.152	>= 0.10	0.158	>= 0.10	0.117	Gamma; Lognormal; Normal	Nonparametric
17_1_110	MW-25B	Appendix III	Calcium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.097		Nonparametric
17_1_111	MW-25B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.839	0.129	0.287	0.125	0.860	0.189	0.270	0.187	0.284	>= 0.10	0.538	>= 0.10	0.142	Gamma; Lognormal; Normal	Nonparametric
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	6	0	0%	0.955	0.782	0.230	0.409	0.943	0.685	0.259	0.236	0.258	>= 0.10	0.325	>= 0.10	0.201	Gamma; Lognormal; Normal	Nonparametric
17_1_123	MW-25B	Appendix III	pH (field)	su	6	0	0%	0.986	0.976	0.124	0.994	0.985	0.975	0.124	0.995	0.145	>= 0.10	0.162	>= 0.10	0.015	Gamma; Lognormal; Normal	Nonparametric
17_1_124	MW-25B	Appendix III	pH (lab)	su	6	0	0%	0.958	0.804	0.214	0.525	0.959	0.814	0.213	0.534	0.231	>= 0.10	0.255	>= 0.10	0.019	Gamma; Lognormal; Normal	Nonparametric
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.957	0.799	0.174	0.821	0.956	0.787	0.176	0.809	0.198	>= 0.10	0.242	>= 0.10	0.073	Gamma; Lognormal; Normal	Nonparametric
17_1_135	MW-25B	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.045		Nonparametric
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	1	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.243		Nonparametric
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0	0%	0.955	0.779	0.214	0.530	0.908	0.424	0.247	0.303	0.243	>= 0.10	0.352	>= 0.10	0.244	Gamma; Lognormal; Normal	Nonparametric
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.071		Nonparametric
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	4	3	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
17_2_109	MW-25B	Appendix IV	Cadmium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	5	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	6	0	0%	0.934	0.612	0.211	0.551	0.966	0.862	0.195	0.676	0.218	>= 0.10	0.243	>= 0.10	0.280	Gamma; Lognormal; Normal	Nonparametric
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0	0%	0.955	0.782	0.230	0.409	0.943	0.685	0.259	0.236	0.258	>= 0.10	0.325	>= 0.10	0.201	Gamma; Lognormal; Normal	Nonparametric
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	5	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	0.798	0.056	0.352	0.019	0.818	0.085	0.341	0.028	0.346	0.01 <= p < 0.05	0.627	0.05 <= p < 0.10	0.071	Gamma; Lognormal; Normal	Nonparametric
17_2_120	MW-25B	Appendix IV	Mercury	mg/l	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	6	0	0%	0.874	0.244	0.253	0.267	0.893	0.334	0.247	0.303	0.269	>= 0.10	0.434	>= 0.10	0.271	Gamma; Lognormal; Normal	Nonparametric
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	3	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.060		Nonparametric
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	6	0	0%	0.908	0.423	0.270	0.185	0.957	0.794	0.225	0.443	0.231	>= 0.10	0.308	>= 0.10	0.262	Gamma; Lognormal; Normal	Nonparametric
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	4	2	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.742		Nonparametric
17_3_101	MW-25B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_3_114	MW-25B	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.949	0.733	0.185	0.747	0.939	0.653	0.193	0.688	0.193	>= 0.10	0.282	>= 0.10	0.050	Gamma; Lognormal; Normal	Nonparametric
17_3_119	MW-25B	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_3_122	MW-25B	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.871	0.231	0.205	0.600	NA	NA	NA	NA	NA		NA		NA	Normal	Nonparametric
17_3_125	MW-25B	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_3_126	MW-25B	Supplemental	Radium-226	pci/l	6	3	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.508		Nonparametric
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	6	4	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.186		Nonparametric
17_3_130	MW-25B	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_3_132	MW-25B	Supplemental	Temperature (field)	deg c	6	0	0%	0.866	0.212	0.271	0.179	0.866	0.211	0.271	0.180	0.291	>= 0.10	0.473	>= 0.10	0.050	Gamma; Lognormal; Normal	Nonparametric
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	6	0	0%	0.961	0.830	0.192	0.700	0.966	0.865	0.186	0.744	0.203	>= 0.10	0.217	>= 0.10	0.072	Gamma; Lognormal; Normal	Nonparametric
17_3_136	MW-25B	Supplemental	Total Suspended Solids	mg/l	5	0	0%	0.948	0.721	0.186	0.821	0.965	0.843	0.183	0.842	0.212	>= 0.10	0.224	>= 0.10	0.507	Gamma; Lognormal; Normal	Nonparametric
17_3_137	MW-25B	Supplemental	Turbidity (field)	ntu	6	0	0%	0.906	0.408	0.191	0.708	0.852	0.164	0.259	0.236	0.221	>= 0.10	0.444	>= 0.10	1.110	Gamma; Lognormal; Normal	Nonparametric
18_1_108	MW-26	Appendix III	Boron	mg/l	7	0	0%	0.908	0.380	0.204	0.506	0.915	0.431	0.206	0.491	0.220	>= 0.10	0.347	>= 0.10	0.058	Gamma; Lognormal; Normal	Nonparametric
18_1_110	MW-26	Appendix III	Calcium	mg/l	7	0	0%	0.678	0.002	0.355	0.008	0.542	0.000	0.446	0.000	0.438	< 0.01	1.551	< 0.01	0.902	Nonparametric	Nonparametric
18_1_111	MW-26	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	0.896	0.308	0.192	0.603	0.907	0.377	0.190	0.627	0.208	>= 0.10	0.390	>= 0.10	0.107	Gamma; Lognormal; Normal	Nonparametric
18_1_115	MW-26	Appendix III	Fluoride	mg/l	7	3	43%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.822		Nonparametric
18_1_123	MW-26	Appendix III	pH (field)	su	7	0	0%	0.872	0.193	0.230	0.320	0.870	0.187	0.231	0.308	0.232	>= 0.10	0.523	>= 0.10	0.011	Gamma; Lognormal; Normal	Nonparametric
18_1_124	MW-26	Appendix III	pH (lab)	su	7	0	0%	0.918	0.456	0.269	0.130	0.920	0.472	0.268	0.134	0.282	>= 0.10	0.410	>= 0.10	0.019	Gamma; Lognormal; Normal	Nonparametric
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	0.888	0.263	0.245	0.232	0.901	0.336	0.241	0.251	0.252	>= 0.10	0.466	>= 0.10	0.061	Gamma; Lognormal; Normal	Nonparametric
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.026		Nonparametric
18_2_104	MW-26	Appendix IV	Antimony	mg/l	6	5	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	7	6	86%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	0.533	0.000	0.451	0.000	0.639	0.001	0.380	0.003	0.421	< 0.01	1.441	< 0.01	0.608	Nonparametric	Nonparametric
18_2_107	MW-26	Appendix IV	Beryllium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_109	MW-26	Appendix IV	Cadmium	mg/l	6	6	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	7	5	71%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.485		Nonparametric
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	2	29%	0.920	0.528	0.228	0.535	0.867	0.253	0.231	0.510	0.232	>= 0.10	0.355	>= 0.10	0.780	Gamma; Lognormal; Normal	Nonparametric
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	3	43%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.822		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	6	86%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_118	MW-26	Appendix IV	Lithium	mg/l	7	0	0%	0.918	0.457	0.268	0.134	0.874	0.200	0.298	0.059	0.283	>= 0.10	0.461	>= 0.10	0.160	Gamma; Lognormal; Normal	Nonparametric
18_2_120	MW-26	Appendix IV	Mercury	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	7	4	57%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.178		Nonparametric
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	7	0	0%	0.927	0.525	0.216	0.417	0.904	0.356	0.242	0.248	0.214	>= 0.10	0.370	>= 0.10	0.320	Gamma; Lognormal; Normal	Nonparametric
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	2	29%	0.877	0.297	0.204	0.706	0.936	0.637	0.205	0.698	0.226	>= 0.10	0.300	>= 0.10	0.588	Gamma; Lognormal; Normal	Nonparametric
18_2_134	MW-26	Appendix IV	Thallium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_3_101	MW-26	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.027		Nonparametric
18_3_102	MW-26	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_3_103	MW-26	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_3_114	MW-26	Supplemental	Conductivity (field)	us/cm	7	0	0%	0.892	0.285	0.296	0.063	0.879	0.224	0.309	0.042	0.313	0.01 <= p < 0.05	0.559	>= 0.10	0.091	Gamma; Lognormal; Normal	Nonparametric
18_3_119	MW-26	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.075		Nonparametric
18_3_122	MW-26	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	0.857	0.144	0.238	0.267	NA	NA	NA	NA	NA		NA		NA	Normal	Nonparametric
18_3_125	MW-26	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.067		Nonparametric
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	0.852	0.200	0.272	0.257	0.882	0.319	0.238	0.460	0.265	>= 0.10	0.454	>= 0.10	0.359	Gamma; Lognormal; Normal	Nonparametric
18_3_128	MW-26	Supplemental	Radium-228	pci/l	7	1	14%	0.924	0.532	0.264	0.211	0.947	0.715	0.209	0.567	0.234	>= 0.10	0.316	>= 0.10	0.363	Gamma; Lognormal; Normal	Nonparametric
18_3_130	MW-26	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.182		Nonparametric
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	7	0	0%	0.810	0.051	0.308	0.044	0.809	0.051	0.305	0.048	0.321	0.01 <= p < 0.05	0.742	0.01 <= p < 0.05	0.061	Lognormal; Normal	Nonparametric
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	7	0	0%	0.850	0.123	0.206	0.492	0.844	0.108	0.217	0.407	0.213	>= 0.10	0.570	>= 0.10	0.065	Gamma; Lognormal; Normal	Nonparametric
18_3_136	MW-26	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.747	0.019	0.323	0.050	0.849	0.155	0.266	0.201	0.306	>= 0.10	0.595	>= 0.10	0.717	Gamma; Lognormal	Nonparametric
18_3_137	MW-26	Supplemental	Turbidity (field)	ntu	7	0	0%	0.850	0.122	0.260	0.163	0.944	0.678	0.249	0.210	0.218	>= 0.10	0.268	>= 0.10	1.230	Gamma; Lognormal; Normal	Nonparametric
19_1_108	MW-27	Appendix III	Boron	mg/l	7	0	0%	0.948	0.715	0.185	0.666	0.915	0.432	0.212	0.447	0.202	>= 0.10	0.358	>= 0.10	0.156	Gamma; Lognormal; Normal	Nonparametric
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	0.948	0.644	0.169	0.577	0.920	0.359	0.175	0.516	0.152	>= 0.10	0.369	>= 0.10	0.119	Gamma; Lognormal; Normal	Gamma
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.940	0.558	0.171	0.561	0.956	0.738	0.187	0.413	0.195	>= 0.10	0.293	>= 0.10	0.256	Gamma; Lognormal; Normal	Gamma
19_1_115	MW-27	Appendix III	Fluoride	mg/l	7	0	0%	0.942	0.656	0.211	0.456	0.949	0.723	0.211	0.452	0.229	>= 0.10	0.277	>= 0.10	0.097	Gamma; Lognormal; Normal	Nonparametric
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	0.903	0.236	0.218	0.193	0.906	0.256	0.218	0.194	0.228	>= 0.10	0.493	>= 0.10	0.015	Gamma; Lognormal; Normal	Gamma
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	0.825	0.039	0.245	0.124	0.826	0.041	0.246	0.121	0.259	0.05 <= p < 0.10	0.726	0.01 <= p < 0.05	0.013	Gamma; Lognormal; Normal	Gamma
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.923	0.387	0.178	0.497	0.917	0.334	0.172	0.544	0.179	>= 0.10	0.425	>= 0.10	0.103	Gamma; Lognormal; Normal	Gamma
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.772	0.007	0.245	0.089	0.810	0.019	0.219	0.188	0.227	>= 0.10	0.794	0.01 <= p < 0.05	0.116	Gamma; Lognormal; Normal	Gamma
19_2_104	MW-27	Appendix IV	Antimony	mg/l	6	6	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.118		Nonparametric
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0	0%	0.897	0.315	0.183	0.684	0.925	0.506	0.165	0.815	0.179	>= 0.10	0.321	>= 0.10	0.136	Gamma; Lognormal; Normal	Nonparametric
19_2_107	MW-27	Appendix IV	Beryllium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_109	MW-27	Appendix IV	Cadmium	mg/l	6	6	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	7	0	0%	0.854	0.134	0.282	0.098	0.956	0.783	0.176	0.737	0.216	>= 0.10	0.333	>= 0.10	0.650	Gamma; Lognormal; Normal	Nonparametric
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	4	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.993		Nonparametric
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	0.942	0.656	0.211	0.456	0.949	0.723	0.211	0.452	0.229	>= 0.10	0.277	>= 0.10	0.097	Gamma; Lognormal; Normal	Nonparametric
19_2_117	MW-27	Appendix IV	Lead	mg/l	7	4	57%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.487		Nonparametric
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	0.848	0.056	0.249	0.079	0.855	0.066	0.246	0.088	0.260	0.05 <= p < 0.10	0.704	0.05 <= p < 0.10	0.101	Gamma; Lognormal; Normal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
19_2_120	MW-27	Appendix IV	Mercury	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	0.948	0.715	0.169	0.789	0.970	0.900	0.129	0.977	0.149	>= 0.10	0.206	>= 0.10	0.265	Gamma; Lognormal; Normal	Nonparametric
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	4	57%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.320		Nonparametric
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	0.950	0.667	0.231	0.135	0.971	0.901	0.202	0.295	0.213	>= 0.10	0.273	>= 0.10	0.167	Gamma; Lognormal; Normal	Gamma
19_2_134	MW-27	Appendix IV	Thallium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_3_101	MW-27	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.086		Nonparametric
19_3_102	MW-27	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_3_103	MW-27	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.031		Nonparametric
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	0.870	0.101	0.189	0.395	0.842	0.047	0.199	0.320	0.201	>= 0.10	0.589	>= 0.10	0.090	Gamma; Lognormal; Normal	Gamma
19_3_119	MW-27	Supplemental	Magnesium	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.048		Nonparametric
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	0.903	0.239	0.220	0.186	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
19_3_125	MW-27	Supplemental	Potassium	mg/l	5	0	0%	0.961	0.814	0.237	0.469	0.964	0.835	0.231	0.511	0.248	>= 0.10	0.263	>= 0.10	0.053	Gamma; Lognormal; Normal	Nonparametric
19_3_126	MW-27	Supplemental	Radium-226	pci/l	7	4	57%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.168		Nonparametric
19_3_128	MW-27	Supplemental	Radium-228	pci/l	7	6	86%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_3_130	MW-27	Supplemental	Sodium	mg/l	5	0	0%	0.912	0.482	0.224	0.561	0.902	0.421	0.229	0.525	0.244	>= 0.10	0.358	>= 0.10	0.059	Gamma; Lognormal; Normal	Nonparametric
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	0.912	0.293	0.188	0.403	0.882	0.139	0.199	0.313	0.203	>= 0.10	0.542	>= 0.10	0.229	Gamma; Lognormal; Normal	Gamma
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	0.960	0.801	0.158	0.748	0.958	0.772	0.166	0.675	0.163	>= 0.10	0.240	>= 0.10	0.047	Gamma; Lognormal; Normal	Gamma
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	0.550	0.000	0.381	0.000	0.896	0.232	0.231	0.178	0.317	0.01 <= p < 0.05	0.937	0.01 <= p < 0.05	1.086	Lognormal	Nonparametric
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	0.634	0.000	0.355	0.001	0.863	0.082	0.308	0.008	0.201	>= 0.10	0.481	>= 0.10	2.772	Gamma; Lognormal	Gamma
20_1_108	MW-28	Appendix III	Boron	mg/l	7	0	0%	0.896	0.307	0.237	0.276	0.888	0.263	0.251	0.201	0.238	>= 0.10	0.444	>= 0.10	0.082	Gamma; Lognormal; Normal	Nonparametric
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	0.941	0.563	0.165	0.613	0.901	0.224	0.189	0.398	0.161	>= 0.10	0.363	>= 0.10	0.126	Gamma; Lognormal; Normal	Gamma
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.908	0.270	0.241	0.101	0.901	0.227	0.249	0.080	0.255	0.05 <= p < 0.10	0.514	>= 0.10	0.062	Gamma; Lognormal; Normal	Gamma
20_1_115	MW-28	Appendix III	Fluoride	mg/l	7	1	14%	0.696	0.006	0.399	0.003	0.739	0.015	0.357	0.016	0.401	0.01 <= p < 0.05	0.963	0.01 <= p < 0.05	1.747	Nonparametric	Nonparametric
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	0.788	0.010	0.211	0.233	0.796	0.013	0.210	0.243	0.215	>= 0.10	0.796	0.01 <= p < 0.05	0.022	Gamma; Lognormal; Normal	Gamma
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	0.917	0.365	0.245	0.124	0.916	0.364	0.245	0.125	0.258	0.05 <= p < 0.10	0.457	>= 0.10	0.029	Gamma; Lognormal; Normal	Gamma
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.906	0.255	0.212	0.227	0.898	0.207	0.222	0.175	0.227	>= 0.10	0.483	>= 0.10	0.080	Gamma; Lognormal; Normal	Gamma
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.783	0.009	0.314	0.006	0.762	0.005	0.319	0.005	0.327	< 0.01	1.050	< 0.01	0.071	Nonparametric	Nonparametric
20_2_104	MW-28	Appendix IV	Antimony	mg/l	6	6	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	0.858	0.145	0.238	0.268	0.569	0.000	0.432	0.000	0.411	< 0.01	1.356	< 0.01	1.578	Normal	Normal
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0	0%	0.965	0.859	0.184	0.674	0.967	0.873	0.196	0.573	0.178	>= 0.10	0.254	>= 0.10	0.135	Gamma; Lognormal; Normal	Nonparametric
20_2_107	MW-28	Appendix IV	Beryllium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_2_109	MW-28	Appendix IV	Cadmium	mg/l	6	6	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	2	29%	0.899	0.406	0.283	0.208	0.972	0.888	0.218	0.604	0.233	>= 0.10	0.272	>= 0.10	0.392	Gamma; Lognormal; Normal	Nonparametric
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	0.865	0.167	0.282	0.098	0.909	0.389	0.220	0.388	0.249	>= 0.10	0.465	>= 0.10	0.773	Gamma; Lognormal; Normal	Gamma
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	7	1	14%	0.696	0.006	0.399	0.003	0.739	0.015	0.357	0.016	0.401	0.01 <= p < 0.05	0.963	0.01 <= p < 0.05	1.747	Nonparametric	Nonparametric
20_2_117	MW-28	Appendix IV	Lead	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0	0%	0.925	0.397	0.183	0.450	0.931	0.456	0.169	0.581	0.168	>= 0.10	0.343	>= 0.10	0.081	Gamma; Lognormal; Normal	Gamma
20_2_120	MW-28	Appendix IV	Mercury	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	5	71%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.260		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	7	0	0%	0.980	0.961	0.140	0.948	0.972	0.912	0.136	0.959	0.143	>= 0.10	0.173	>= 0.10	0.311	Gamma; Lognormal; Normal	Nonparametric
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	0.947	0.638	0.230	0.141	0.948	0.650	0.222	0.176	0.231	>= 0.10	0.382	>= 0.10	0.053	Gamma; Lognormal; Normal	Gamma
20_2_134	MW-28	Appendix IV	Thallium	mg/l	5	5	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_3_101	MW-28	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.083		Nonparametric
20_3_102	MW-28	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_3_103	MW-28	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.035		Nonparametric
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	0.910	0.282	0.195	0.348	0.905	0.250	0.202	0.292	0.212	>= 0.10	0.466	>= 0.10	0.096	Gamma; Lognormal; Normal	Gamma
20_3_119	MW-28	Supplemental	Magnesium	mg/l	5	0	0%	0.946	0.708	0.200	0.733	0.948	0.719	0.201	0.729	0.226	>= 0.10	0.270	>= 0.10	0.117	Gamma; Lognormal; Normal	Nonparametric
20_3_122	MW-28	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	0.925	0.397	0.181	0.470	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
20_3_125	MW-28	Supplemental	Potassium	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.097		Nonparametric
20_3_126	MW-28	Supplemental	Radium-226	pci/l	7	0	0%	0.861	0.154	0.260	0.164	0.873	0.196	0.258	0.169	0.279	>= 0.10	0.531	>= 0.10	0.189	Gamma; Lognormal; Normal	Nonparametric
20_3_128	MW-28	Supplemental	Radium-228	pci/l	7	0	0%	0.968	0.882	0.171	0.774	0.992	0.996	0.124	0.987	0.134	>= 0.10	0.146	>= 0.10	0.416	Gamma; Lognormal; Normal	Nonparametric
20_3_130	MW-28	Supplemental	Sodium	mg/l	5	0	0%	0.895	0.385	0.228	0.531	0.896	0.390	0.223	0.566	0.255	>= 0.10	0.375	>= 0.10	0.124	Gamma; Lognormal; Normal	Nonparametric
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	0.837	0.041	0.294	0.014	0.897	0.202	0.248	0.081	0.262	0.05 <= p < 0.10	0.630	0.05 <= p < 0.10	0.241	Gamma; Lognormal	Gamma
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	0.992	0.998	0.110	0.990	0.993	0.999	0.112	0.987	0.098	>= 0.10	0.132	>= 0.10	0.054	Gamma; Lognormal; Normal	Gamma
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	9	0	0%	0.782	0.013	0.301	0.018	0.946	0.643	0.176	0.581	0.233	>= 0.10	0.466	>= 0.10	0.912	Gamma; Lognormal	Gamma
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	0.737	0.002	0.328	0.003	0.892	0.181	0.223	0.169	0.223	>= 0.10	0.554	>= 0.10	0.946	Gamma; Lognormal	Gamma
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	0.776	0.035	0.333	0.036	0.743	0.017	0.354	0.018	0.348	0.01 <= p < 0.05	0.818	0.01 <= p < 0.05	0.130	Nonparametric	Nonparametric
21_1_111	MW-29	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.052		Nonparametric
21_1_123	MW-29	Appendix III	pH (field)	su	6	0	0%	0.974	0.917	0.195	0.676	0.975	0.922	0.192	0.697	0.195	>= 0.10	0.229	>= 0.10	0.017	Gamma; Lognormal; Normal	Nonparametric
21_1_124	MW-29	Appendix III	pH (lab)	su	5	0	0%	0.961	0.814	0.237	0.469	0.962	0.821	0.235	0.481	0.251	>= 0.10	0.267	>= 0.10	0.016	Gamma; Lognormal; Normal	Nonparametric
21_1_131	MW-29	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.772	0.033	0.251	0.277	0.764	0.027	0.252	0.270	0.274	>= 0.10	0.734	0.01 <= p < 0.05	0.057	Gamma; Lognormal; Normal	Nonparametric
21_1_135	MW-29	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	0.987	0.967	0.136	0.991	0.987	0.967	0.138	0.990	0.161	>= 0.10	0.180	>= 0.10	0.024	Gamma; Lognormal; Normal	Nonparametric
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	2	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.020		Nonparametric
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0	0%	0.893	0.334	0.213	0.533	0.882	0.278	0.217	0.507	0.239	>= 0.10	0.417	>= 0.10	0.112	Gamma; Lognormal; Normal	Nonparametric
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0	0%	0.864	0.204	0.309	0.075	0.894	0.342	0.289	0.119	0.293	>= 0.10	0.429	>= 0.10	0.111	Gamma; Lognormal; Normal	Nonparametric
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.815	0.080	0.310	0.073	0.818	0.085	0.310	0.074	0.333	0.01 <= p < 0.05	0.654	0.05 <= p < 0.10	0.045	Gamma; Lognormal; Normal	Nonparametric
21_3_102	MW-29	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
21_3_103	MW-29	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.040		Nonparametric
21_3_114	MW-29	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.892	0.331	0.232	0.397	0.902	0.388	0.227	0.429	0.248	>= 0.10	0.389	>= 0.10	0.152	Gamma; Lognormal; Normal	Nonparametric
21_3_119	MW-29	Supplemental	Magnesium	mg/l	6	0	0%	0.927	0.557	0.224	0.456	0.923	0.528	0.229	0.414	0.249	>= 0.10	0.344	>= 0.10	0.123	Gamma; Lognormal; Normal	Nonparametric
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.843	0.138	0.253	0.266	0.880	0.271	0.257	0.246	0.279	>= 0.10	0.452	>= 0.10	0.506	Gamma; Lognormal; Normal	Nonparametric
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	0.687	0.004	0.356	0.017	0.721	0.010	0.331	0.038	0.338	0.01 <= p < 0.05	0.911	0.01 <= p < 0.05	0.154	Nonparametric	Nonparametric
21_3_130	MW-29	Supplemental	Sodium	mg/l	6	0	0%	0.898	0.361	0.278	0.155	0.926	0.546	0.257	0.247	0.259	>= 0.10	0.370	>= 0.10	0.117	Gamma; Lognormal; Normal	Nonparametric
21_3_132	MW-29	Supplemental	Temperature (field)	deg c	6	0	0%	0.929	0.570	0.259	0.235	0.943	0.682	0.238	0.354	0.251	>= 0.10	0.346	>= 0.10	0.145	Gamma; Lognormal; Normal	Nonparametric
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	5	0	0%	0.932	0.608	0.227	0.540	0.938	0.652	0.219	0.600	0.234	>= 0.10	0.287	>= 0.10	0.075	Gamma; Lognormal; Normal	Nonparametric
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.864	0.203	0.242	0.332	0.950	0.742	0.180	0.786	0.189	>= 0.10	0.195	>= 0.10	1.693	Gamma; Lognormal; Normal	Nonparametric
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	6	0	0%	0.732	0.013	0.295	0.105	0.956	0.788	0.219	0.491	0.148	>= 0.10	0.204	>= 0.10	1.844	Gamma; Lognormal; Normal	Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	0.915	0.078	0.214	0.017	0.919	0.093	0.210	0.021	0.216	0.01 <= p < 0.05	0.770	0.01 <= p < 0.05	0.079	Lognormal; Normal	Lognormal
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	0.955	0.479	0.121	0.661	0.964	0.648	0.107	0.822	0.109	>= 0.10	0.273	>= 0.10	0.075	Gamma; Lognormal; Normal	Gamma
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.966	0.664	0.112	0.738	0.967	0.692	0.107	0.789	0.112	>= 0.10	0.254	>= 0.10	0.075	Gamma; Lognormal; Normal	Gamma
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	0.520	0.000	0.478	0.000	0.659	0.000	0.364	0.000	0.448	< 0.01	2.303	< 0.01	1.554	Nonparametric	Nonparametric
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	0.768	0.000	0.217	0.011	0.782	0.000	0.211	0.015	0.211	0.01 <= p < 0.05	1.370	< 0.01	0.020	Nonparametric	Nonparametric
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	0.848	0.005	0.192	0.050	0.863	0.009	0.189	0.060	0.191	0.05 <= p < 0.10	1.045	< 0.01	0.038	Gamma; Lognormal; Normal	Gamma
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.902	0.046	0.217	0.015	0.898	0.038	0.225	0.009	0.220	0.01 <= p < 0.05	1.070	< 0.01	0.041	Nonparametric	Nonparametric
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.772	0.000	0.243	0.003	0.778	0.000	0.246	0.002	0.248	< 0.01	1.602	< 0.01	0.026	Nonparametric	Nonparametric
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.802		Nonparametric
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	0.903	0.310	0.177	0.654	0.971	0.908	0.148	0.870	0.164	>= 0.10	0.241	>= 0.10	0.396	Gamma; Lognormal; Normal	Nonparametric
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	0.822	0.001	0.226	0.007	0.857	0.006	0.231	0.005	0.235	< 0.01	1.367	< 0.01	0.176	Nonparametric	Nonparametric
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.474		Nonparametric
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	0.955	0.782	0.199	0.643	0.926	0.551	0.218	0.501	0.231	>= 0.10	0.280	>= 0.10	0.393	Gamma; Lognormal; Normal	Nonparametric
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	0.414	0.000	0.464	0.000	0.891	0.083	0.239	0.029	0.348	< 0.01	1.495	< 0.01	1.041	Lognormal	Nonparametric
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	0.937	0.212	0.209	0.022	0.965	0.655	0.134	0.452	0.151	>= 0.10	0.265	>= 0.10	0.467	Gamma; Lognormal; Normal	Gamma
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	0.520	0.000	0.478	0.000	0.659	0.000	0.364	0.000	0.448	< 0.01	2.303	< 0.01	1.554	Nonparametric	Nonparametric
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	0.938	0.558	0.165	0.680	0.954	0.738	0.185	0.501	0.154	>= 0.10	0.218	>= 0.10	0.788	Gamma; Lognormal; Normal	Nonparametric
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	0.973	0.808	0.070	0.997	0.967	0.667	0.082	0.970	0.084	>= 0.10	0.194	>= 0.10	0.142	Gamma; Lognormal; Normal	Gamma
22_2_120	MW-3	Appendix IV	Mercury	mg/l	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	0.663	0.000	0.418	0.000	0.738	0.001	0.364	0.000	0.401	< 0.01	2.231	< 0.01	0.912	Nonparametric	Nonparametric
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	0.938	0.198	0.144	0.305	0.960	0.525	0.123	0.557	0.134	>= 0.10	0.391	>= 0.10	0.207	Gamma; Lognormal; Normal	Gamma
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	0.918	0.118	0.174	0.157	0.942	0.313	0.147	0.387	0.149	>= 0.10	0.457	>= 0.10	0.471	Gamma; Lognormal; Normal	Gamma
22_2_134	MW-3	Appendix IV	Thallium	mg/l	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_3_101	MW-3	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_3_102	MW-3	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_3_103	MW-3	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	0.912	0.061	0.183	0.063	0.898	0.032	0.196	0.035	0.197	0.01 <= p < 0.05	0.834	0.01 <= p < 0.05	0.103	Normal	Normal
22_3_119	MW-3	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.052		Nonparametric
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	0.944	0.258	0.123	0.552	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
22_3_125	MW-3	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.245		Nonparametric
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	0.961	0.564	0.153	0.255	0.954	0.424	0.156	0.230	0.138	>= 0.10	0.332	>= 0.10	0.281	Gamma; Lognormal; Normal	Gamma
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	0.907	0.048	0.156	0.199	0.973	0.801	0.107	0.768	0.118	>= 0.10	0.328	>= 0.10	0.280	Gamma; Lognormal; Normal	Gamma
22_3_130	MW-3	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.102		Nonparametric
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	0.961	0.529	0.150	0.254	0.969	0.705	0.132	0.439	0.136	>= 0.10	0.386	>= 0.10	0.092	Gamma; Lognormal; Normal	Gamma
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	0.980	0.938	0.103	0.837	0.981	0.950	0.100	0.867	0.106	>= 0.10	0.202	>= 0.10	0.061	Gamma; Lognormal; Normal	Gamma
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	0.784	0.001	0.323	0.000	0.910	0.087	0.187	0.098	0.245	< 0.01	0.992	0.01 <= p < 0.05	0.944	Lognormal	Lognormal
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	0.287	0.000	0.507	0.000	0.764	0.000	0.277	0.000	0.393	< 0.01	2.769	< 0.01	1.720	Nonparametric	Nonparametric
23_1_110	MW-30	Appendix III	Calcium	mg/l	6	0	0%	0.836	0.121	0.219	0.487	0.799	0.058	0.257	0.243	0.237	>= 0.10	0.579	>= 0.10	0.195	Gamma; Lognormal; Normal	Nonparametric
23_1_111	MW-30	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.800	0.059	0.277	0.159	0.802	0.062	0.280	0.148	0.295	>= 0.10	0.647	0.05 <= p < 0.10	0.104	Gamma; Lognormal; Normal	Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal			Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
23_1_123	MW-30	Appendix III	pH (field)	su	6	0	0%	0.845	0.144	0.328	0.042	0.848	0.151	0.327	0.044	0.341	0.01 <= p < 0.05	0.579	>= 0.10	0.016	Gamma; Lognormal; Normal	Nonparametric
23_1_124	MW-30	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.012		Nonparametric
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.989	0.987	0.143	0.962	0.991	0.992	0.135	0.980	0.135	>= 0.10	0.158	>= 0.10	0.048	Gamma; Lognormal; Normal	Nonparametric
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	0.951	0.743	0.240	0.449	0.966	0.849	0.224	0.561	0.222	>= 0.10	0.246	>= 0.10	0.095	Gamma; Lognormal; Normal	Nonparametric
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	1	17%	0.815	0.106	0.267	0.284	0.928	0.585	0.217	0.611	0.232	>= 0.10	0.326	>= 0.10	1.001	Gamma; Lognormal; Normal	Nonparametric
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0	0%	0.960	0.818	0.176	0.811	0.946	0.708	0.204	0.606	0.197	>= 0.10	0.262	>= 0.10	0.173	Gamma; Lognormal; Normal	Nonparametric
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0	0%	0.800	0.059	0.252	0.269	0.881	0.274	0.240	0.346	0.267	>= 0.10	0.457	>= 0.10	0.858	Gamma; Lognormal; Normal	Nonparametric
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.914	0.463	0.249	0.290	0.920	0.505	0.247	0.301	0.265	>= 0.10	0.377	>= 0.10	0.083	Gamma; Lognormal; Normal	Nonparametric
23_3_102	MW-30	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
23_3_103	MW-30	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.119		Nonparametric
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.925	0.542	0.247	0.301	0.926	0.552	0.260	0.231	0.264	>= 0.10	0.390	>= 0.10	0.085	Gamma; Lognormal; Normal	Nonparametric
23_3_119	MW-30	Supplemental	Magnesium	mg/l	6	0	0%	0.934	0.615	0.235	0.378	0.902	0.387	0.259	0.235	0.239	>= 0.10	0.382	>= 0.10	0.132	Gamma; Lognormal; Normal	Nonparametric
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.982	0.959	0.154	0.927	NA	NA	NA	NA	NA		NA		NA	Normal	Nonparametric
23_3_125	MW-30	Supplemental	Potassium	mg/l	6	0	0%	0.817	0.083	0.315	0.063	0.839	0.127	0.299	0.095	0.317	0.05 <= p < 0.10	0.613	0.05 <= p < 0.10	0.155	Gamma; Lognormal; Normal	Nonparametric
23_3_130	MW-30	Supplemental	Sodium	mg/l	6	0	0%	0.955	0.781	0.195	0.672	0.938	0.644	0.211	0.547	0.210	>= 0.10	0.314	>= 0.10	0.104	Gamma; Lognormal; Normal	Nonparametric
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	6	0	0%	0.960	0.822	0.198	0.648	0.977	0.936	0.164	0.881	0.176	>= 0.10	0.196	>= 0.10	0.210	Gamma; Lognormal; Normal	Nonparametric
23_3_133	MW-30	Supplemental	Temperature (lab)	deg c	5	0	0%	0.911	0.475	0.234	0.488	0.908	0.453	0.236	0.478	0.262	>= 0.10	0.354	>= 0.10	0.066	Gamma; Lognormal; Normal	Nonparametric
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	6	1	17%	0.763	0.039	0.315	0.106	0.905	0.441	0.215	0.627	0.263	>= 0.10	0.361	>= 0.10	2.756	Gamma; Lognormal; Normal	Nonparametric
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	6	0	0%	0.795	0.053	0.283	0.138	0.785	0.043	0.299	0.094	0.322	0.05 <= p < 0.10	0.648	0.05 <= p < 0.10	2.235	Gamma; Lognormal; Normal	Nonparametric
24_1_110	MW-31	Appendix III	Calcium	mg/l	6	0	0%	0.827	0.102	0.259	0.236	0.811	0.074	0.280	0.149	0.285	>= 0.10	0.684	0.05 <= p < 0.10	0.174	Gamma; Lognormal; Normal	Nonparametric
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.912	0.452	0.201	0.626	0.914	0.464	0.195	0.672	0.220	>= 0.10	0.357	>= 0.10	0.099	Gamma; Lognormal; Normal	Nonparametric
24_1_123	MW-31	Appendix III	pH (field)	su	6	0	0%	0.925	0.540	0.167	0.867	0.927	0.556	0.164	0.882	0.174	>= 0.10	0.285	>= 0.10	0.017	Gamma; Lognormal; Normal	Nonparametric
24_1_124	MW-31	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.016		Nonparametric
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.983	0.964	0.121	0.996	0.977	0.937	0.128	0.991	0.138	>= 0.10	0.178	>= 0.10	0.056	Gamma; Lognormal; Normal	Nonparametric
24_1_135	MW-31	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	0.939	0.656	0.213	0.639	0.932	0.612	0.218	0.606	0.231	>= 0.10	0.294	>= 0.10	0.044	Gamma; Lognormal; Normal	Nonparametric
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	2	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.075		Nonparametric
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
24_2_118	MW-31	Appendix IV	Lithium	mg/l	6	0	0%	0.934	0.614	0.190	0.712	0.930	0.581	0.180	0.788	0.209	>= 0.10	0.285	>= 0.10	0.156	Gamma; Lognormal; Normal	Nonparametric
24_2_129	MW-31	Appendix IV	Selenium	mg/l	6	0	0%	0.899	0.367	0.255	0.257	0.846	0.147	0.276	0.162	0.279	>= 0.10	0.525	>= 0.10	0.211	Gamma; Lognormal; Normal	Nonparametric
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.869	0.221	0.252	0.273	0.858	0.181	0.260	0.233	0.260	>= 0.10	0.502	>= 0.10	0.040	Gamma; Lognormal; Normal	Nonparametric
24_3_102	MW-31	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.018		Nonparametric
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.852	0.164	0.269	0.188	0.860	0.191	0.264	0.212	0.286	>= 0.10	0.509	>= 0.10	0.173	Gamma; Lognormal; Normal	Nonparametric
24_3_119	MW-31	Supplemental	Magnesium	mg/l	6	0	0%	0.908	0.425	0.192	0.695	0.897	0.355	0.194	0.680	0.215	>= 0.10	0.366	>= 0.10	0.201	Gamma; Lognormal; Normal	Nonparametric
24_3_122	MW-31	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.937	0.634	0.236	0.366	0.859	0.185	0.318	0.058	0.288	>= 0.10	0.457	>= 0.10	0.485	Gamma; Lognormal; Normal	Nonparametric
24_3_125	MW-31	Supplemental	Potassium	mg/l	6	0	0%	0.975	0.926	0.175	0.818	0.979	0.946	0.195	0.678	0.175	>= 0.10	0.211	>= 0.10	0.159	Gamma; Lognormal; Normal	Nonparametric
24_3_130	MW-31	Supplemental	Sodium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.135		Nonparametric
24_3_132	MW-31	Supplemental	Temperature (field)	deg c	6	0	0%	0.974	0.919	0.208	0.573	0.971	0.897	0.183	0.767	0.194	>= 0.10	0.229	>= 0.10	0.154	Gamma; Lognormal; Normal	Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal			Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
24_3_133	MW-31	Supplemental	Temperature (lab)	deg c	5	0	0%	0.866	0.250	0.209	0.668	0.860	0.228	0.212	0.647	0.220	>= 0.10	0.435	>= 0.10	0.043	Gamma; Lognormal; Normal	Nonparametric
24_3_136	MW-31	Supplemental	Total Suspended Solids	mg/l	6	1	17%	0.854	0.208	0.262	0.314	0.764	0.040	0.283	0.207	0.303	>= 0.10	0.597	0.05 <= p < 0.10	0.817	Gamma; Lognormal; Normal	Nonparametric
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	6	0	0%	0.854	0.168	0.272	0.176	0.882	0.277	0.196	0.667	0.210	>= 0.10	0.429	>= 0.10	0.678	Gamma; Lognormal; Normal	Nonparametric
25_1_110	MW-32	Appendix III	Calcium	mg/l	6	0	0%	0.885	0.291	0.269	0.190	0.885	0.292	0.273	0.175	0.295	>= 0.10	0.504	>= 0.10	0.159	Gamma; Lognormal; Normal	Nonparametric
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.940	0.656	0.210	0.557	0.940	0.656	0.222	0.467	0.237	>= 0.10	0.313	>= 0.10	0.147	Gamma; Lognormal; Normal	Nonparametric
25_1_123	MW-32	Appendix III	pH (field)	su	6	0	0%	0.858	0.183	0.268	0.196	0.860	0.191	0.266	0.201	0.276	>= 0.10	0.486	>= 0.10	0.011	Gamma; Lognormal; Normal	Nonparametric
25_1_124	MW-32	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.017		Nonparametric
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.045		Nonparametric
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.030		Nonparametric
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	5	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
25_2_113	MW-32	Appendix IV	Cobalt	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
25_2_118	MW-32	Appendix IV	Lithium	mg/l	6	0	0%	0.979	0.948	0.177	0.806	0.983	0.963	0.163	0.888	0.163	>= 0.10	0.196	>= 0.10	0.124	Gamma; Lognormal; Normal	Nonparametric
25_2_129	MW-32	Appendix IV	Selenium	mg/l	6	0	0%	0.923	0.525	0.199	0.644	0.896	0.352	0.205	0.597	0.221	>= 0.10	0.344	>= 0.10	0.190	Gamma; Lognormal; Normal	Nonparametric
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.832	0.111	0.303	0.090	0.833	0.115	0.302	0.093	0.325	0.05 <= p < 0.10	0.588	>= 0.10	0.045	Gamma; Lognormal; Normal	Nonparametric
25_3_102	MW-32	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
25_3_103	MW-32	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.039		Nonparametric
25_3_114	MW-32	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.861	0.193	0.299	0.096	0.850	0.156	0.310	0.074	0.322	0.05 <= p < 0.10	0.601	0.05 <= p < 0.10	0.118	Gamma; Lognormal; Normal	Nonparametric
25_3_119	MW-32	Supplemental	Magnesium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.095		Nonparametric
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.968	0.882	0.138	0.975	0.965	0.859	0.137	0.976	0.160	>= 0.10	0.189	>= 0.10	0.494	Gamma; Lognormal; Normal	Nonparametric
25_3_125	MW-32	Supplemental	Potassium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.085		Nonparametric
25_3_130	MW-32	Supplemental	Sodium	mg/l	6	0	0%	0.889	0.312	0.238	0.359	0.884	0.288	0.239	0.348	0.262	>= 0.10	0.419	>= 0.10	0.103	Gamma; Lognormal; Normal	Nonparametric
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	6	0	0%	0.797	0.055	0.302	0.092	0.838	0.127	0.288	0.122	0.305	>= 0.10	0.600	0.05 <= p < 0.10	0.192	Gamma; Lognormal; Normal	Nonparametric
25_3_133	MW-32	Supplemental	Temperature (lab)	deg c	5	0	0%	0.760	0.037	0.330	0.079	0.749	0.029	0.339	0.061	0.341	0.05 <= p < 0.10	0.727	0.01 <= p < 0.05	0.068	Gamma; Lognormal; Normal	Nonparametric
25_3_136	MW-32	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.707	0.007	0.358	0.015	0.824	0.095	0.321	0.053	0.363	0.01 <= p < 0.05	0.730	0.01 <= p < 0.05	1.083	Lognormal	Nonparametric
25_3_137	MW-32	Supplemental	Turbidity (field)	ntu	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.102		Nonparametric
26_1_110	MW-33A	Appendix III	Calcium	mg/l	6	0	0%	0.886	0.296	0.273	0.173	0.877	0.256	0.270	0.184	0.298	>= 0.10	0.461	>= 0.10	0.123	Gamma; Lognormal; Normal	Nonparametric
26_1_111	MW-33A	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.864	0.204	0.252	0.271	0.876	0.250	0.253	0.265	0.273	>= 0.10	0.455	>= 0.10	0.151	Gamma; Lognormal; Normal	Nonparametric
26_1_123	MW-33A	Appendix III	pH (field)	su	6	0	0%	0.889	0.311	0.242	0.328	0.892	0.331	0.243	0.326	0.261	>= 0.10	0.400	>= 0.10	0.022	Gamma; Lognormal; Normal	Nonparametric
26_1_124	MW-33A	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.011		Nonparametric
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.951	0.752	0.214	0.529	0.950	0.744	0.221	0.471	0.208	>= 0.10	0.310	>= 0.10	0.052	Gamma; Lognormal; Normal	Nonparametric
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.050		Nonparametric
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	4	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.348		Nonparametric
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	6	0	0%	0.958	0.804	0.214	0.525	0.964	0.851	0.207	0.581	0.226	>= 0.10	0.244	>= 0.10	0.106	Gamma; Lognormal; Normal	Nonparametric
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0	0%	0.787	0.045	0.357	0.016	0.765	0.028	0.358	0.016	0.375	0.01 <= p < 0.05	0.776	0.01 <= p < 0.05	0.146	Nonparametric	Nonparametric
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.918	0.493	0.204	0.604	0.915	0.471	0.206	0.590	0.227	>= 0.10	0.324	>= 0.10	0.045	Gamma; Lognormal; Normal	Nonparametric
26_3_102	MW-33A	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
26_3_103	MW-33A	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.034		Nonparametric
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.848	0.152	0.267	0.196	0.849	0.156	0.272	0.178	0.292	>= 0.10	0.566	>= 0.10	0.119	Gamma; Lognormal; Normal	Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	6	0	0%	0.928	0.565	0.236	0.366	0.926	0.546	0.242	0.328	0.261	>= 0.10	0.346	>= 0.10	0.106	Gamma; Lognormal; Normal	Nonparametric
26_3_122	MW-33A	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.972	0.904	0.214	0.529	0.978	0.941	0.158	0.910	0.168	>= 0.10	0.186	>= 0.10	0.426	Gamma; Lognormal; Normal	Nonparametric
26_3_125	MW-33A	Supplemental	Potassium	mg/l	6	0	0%	0.902	0.389	0.204	0.603	0.910	0.436	0.189	0.723	0.196	>= 0.10	0.342	>= 0.10	0.096	Gamma; Lognormal; Normal	Nonparametric
26_3_130	MW-33A	Supplemental	Sodium	mg/l	6	0	0%	0.935	0.621	0.230	0.409	0.939	0.653	0.217	0.503	0.227	>= 0.10	0.310	>= 0.10	0.081	Gamma; Lognormal; Normal	Nonparametric
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	6	0	0%	0.778	0.037	0.324	0.049	0.765	0.028	0.328	0.042	0.341	0.01 <= p < 0.05	0.741	0.01 <= p < 0.05	0.109	Nonparametric	Nonparametric
26_3_133	MW-33A	Supplemental	Temperature (lab)	deg c	5	0	0%	0.961	0.812	0.232	0.505	0.950	0.734	0.243	0.428	0.231	>= 0.10	0.274	>= 0.10	0.066	Gamma; Lognormal; Normal	Nonparametric
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	6	2	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.463		Nonparametric
26_3_137	MW-33A	Supplemental	Turbidity (field)	ntu	6	0	0%	0.713	0.008	0.377	0.008	0.792	0.050	0.286	0.128	0.304	>= 0.10	0.721	0.05 <= p < 0.10	2.430	Gamma; Lognormal	Nonparametric
27_1_110	MW-33B	Appendix III	Calcium	mg/l	6	0	0%	0.792	0.050	0.334	0.035	0.904	0.397	0.245	0.314	0.297	>= 0.10	0.461	>= 0.10	0.923	Gamma; Lognormal	Nonparametric
27_1_111	MW-33B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
27_1_123	MW-33B	Appendix III	pH (field)	su	5	0	0%	0.686	0.007	0.418	0.005	0.663	0.004	0.427	0.003	0.447	< 0.01	1.070	< 0.01	0.177	Nonparametric	Nonparametric
27_1_124	MW-33B	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.014		Nonparametric
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.086		Nonparametric
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.040		Nonparametric
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0	0%	0.821	0.090	0.260	0.228	0.893	0.336	0.196	0.664	0.240	>= 0.10	0.432	>= 0.10	1.115	Gamma; Lognormal; Normal	Nonparametric
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0	0%	0.857	0.180	0.228	0.423	0.898	0.364	0.208	0.577	0.234	>= 0.10	0.431	>= 0.10	0.422	Gamma; Lognormal; Normal	Nonparametric
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0	0%	0.904	0.397	0.260	0.231	0.955	0.780	0.234	0.380	0.216	>= 0.10	0.300	>= 0.10	0.508	Gamma; Lognormal; Normal	Nonparametric
27_3_101	MW-33B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.983	0.964	0.121	0.996	0.976	0.928	0.129	0.989	0.139	>= 0.10	0.181	>= 0.10	0.070	Gamma; Lognormal; Normal	Nonparametric
27_3_102	MW-33B	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
27_3_103	MW-33B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.105		Nonparametric
27_3_114	MW-33B	Supplemental	Conductivity (field)	us/cm	5	0	0%	0.910	0.468	0.209	0.673	0.911	0.476	0.210	0.662	0.236	>= 0.10	0.336	>= 0.10	0.143	Gamma; Lognormal; Normal	Nonparametric
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	6	0	0%	0.807	0.068	0.330	0.041	0.889	0.313	0.249	0.291	0.295	>= 0.10	0.478	>= 0.10	0.797	Gamma; Lognormal; Normal	Nonparametric
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	0.674	0.005	0.426	0.003	0.758	0.035	0.390	0.012	0.418	< 0.01	0.821	0.01 <= p < 0.05	0.465	Nonparametric	Nonparametric
27_3_125	MW-33B	Supplemental	Potassium	mg/l	6	0	0%	0.739	0.016	0.273	0.175	0.790	0.047	0.288	0.123	0.307	>= 0.10	0.727	0.01 <= p < 0.05	0.894	Gamma; Lognormal; Normal	Nonparametric
27_3_130	MW-33B	Supplemental	Sodium	mg/l	6	0	0%	0.908	0.421	0.203	0.614	0.912	0.450	0.197	0.656	0.221	>= 0.10	0.354	>= 0.10	0.106	Gamma; Lognormal; Normal	Nonparametric
27_3_132	MW-33B	Supplemental	Temperature (field)	deg c	5	0	0%	0.824	0.126	0.324	0.093	0.819	0.115	0.329	0.082	0.353	0.05 <= p < 0.10	0.626	0.05 <= p < 0.10	0.122	Gamma; Lognormal; Normal	Nonparametric
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	5	0	0%	0.986	0.963	0.152	0.966	0.986	0.963	0.153	0.963	0.173	>= 0.10	0.187	>= 0.10	0.085	Gamma; Lognormal; Normal	Nonparametric
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.758	0.024	0.357	0.016	0.829	0.106	0.276	0.162	0.327	0.05 <= p < 0.10	0.691	0.05 <= p < 0.10	1.005	Gamma; Lognormal	Nonparametric
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	5	0	0%	0.883	0.324	0.241	0.444	0.813	0.104	0.294	0.164	0.277	>= 0.10	0.533	>= 0.10	1.693	Gamma; Lognormal; Normal	Nonparametric
28_1_108	MW-34	Appendix III	Boron	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.048		Nonparametric
28_1_110	MW-34	Appendix III	Calcium	mg/l	6	0	0%	0.908	0.422	0.264	0.212	0.970	0.894	0.203	0.613	0.213	>= 0.10	0.253	>= 0.10	0.363	Gamma; Lognormal; Normal	Nonparametric
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.958	0.804	0.175	0.819	0.975	0.921	0.155	0.922	0.173	>= 0.10	0.194	>= 0.10	0.202	Gamma; Lognormal; Normal	Nonparametric
28_1_115	MW-34	Appendix III	Fluoride	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.234		Nonparametric
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	0.671	0.005	0.400	0.009	0.675	0.005	0.397	0.010	0.407	0.01 <= p < 0.05	0.942	< 0.01	0.038	Nonparametric	Nonparametric
28_1_124	MW-34	Appendix III	pH (lab)	su	5	0	0%	0.914	0.490	0.287	0.193	0.915	0.498	0.285	0.199	0.305	>= 0.10	0.379	>= 0.10	0.020	Gamma; Lognormal; Normal	Nonparametric
28_1_131	MW-34	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.932	0.595	0.251	0.277	0.952	0.754	0.231	0.400	0.243	>= 0.10	0.310	>= 0.10	0.139	Gamma; Lognormal; Normal	Nonparametric
28_1_135	MW-34	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	0.773	0.033	0.274	0.168	0.799	0.058	0.253	0.268	0.255	>= 0.10	0.626	0.05 <= p < 0.10	0.107	Gamma; Lognormal; Normal	Nonparametric
28_2_104	MW-34	Appendix IV	Antimony	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.381		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0	0%	0.705	0.007	0.367	0.011	0.827	0.101	0.330	0.040	0.374	0.01 <= p < 0.05	0.737	0.01 <= p < 0.05	1.312	Lognormal	Nonparametric
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.702		Nonparametric
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	3	2	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_2_109	MW-34	Appendix IV	Cadmium	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.775		Nonparametric
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.111		Nonparametric
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.234		Nonparametric
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.830		Nonparametric
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0	0%	0.750	0.020	0.313	0.068	0.813	0.077	0.293	0.108	0.314	0.05 <= p < 0.10	0.667	0.05 <= p < 0.10	0.321	Gamma; Lognormal; Normal	Nonparametric
28_2_120	MW-34	Appendix IV	Mercury	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.763		Nonparametric
28_2_127	MW-34	Appendix IV	Radium-226+228	pci/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0	0%	0.922	0.523	0.197	0.661	0.958	0.801	0.179	0.792	0.153	>= 0.10	0.175	>= 0.10	1.281	Gamma; Lognormal; Normal	Nonparametric
28_2_134	MW-34	Appendix IV	Thallium	mg/l	3	2	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.888	0.308	0.250	0.283	0.871	0.229	0.248	0.294	0.275	>= 0.10	0.481	>= 0.10	0.119	Gamma; Lognormal; Normal	Nonparametric
28_3_102	MW-34	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_3_103	MW-34	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.177		Nonparametric
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	5	0	0%	0.973	0.895	0.196	0.759	0.978	0.921	0.201	0.728	0.182	>= 0.10	0.230	>= 0.10	0.145	Gamma; Lognormal; Normal	Nonparametric
28_3_119	MW-34	Supplemental	Magnesium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.662		Nonparametric
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	0.733	0.021	0.393	0.011	0.679	0.006	0.418	0.005	0.425	< 0.01	0.916	< 0.01	0.356	Nonparametric	Nonparametric
28_3_125	MW-34	Supplemental	Potassium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.817		Nonparametric
28_3_126	MW-34	Supplemental	Radium-226	pci/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_3_128	MW-34	Supplemental	Radium-228	pci/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_3_130	MW-34	Supplemental	Sodium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.091		Nonparametric
28_3_132	MW-34	Supplemental	Temperature (field)	deg c	5	0	0%	0.795	0.074	0.301	0.143	0.901	0.414	0.210	0.664	0.237	>= 0.10	0.428	>= 0.10	0.519	Gamma; Lognormal; Normal	Nonparametric
28_3_133	MW-34	Supplemental	Temperature (lab)	deg c	5	0	0%	0.781	0.056	0.328	0.083	0.769	0.044	0.338	0.064	0.339	0.05 <= p < 0.10	0.675	0.05 <= p < 0.10	0.068	Gamma; Lognormal; Normal	Nonparametric
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.774	0.034	0.352	0.019	0.966	0.867	0.203	0.613	0.283	>= 0.10	0.325	>= 0.10	1.535	Gamma; Lognormal	Nonparametric
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	5	0	0%	0.666	0.004	0.402	0.008	0.896	0.390	0.248	0.395	0.323	>= 0.10	0.576	>= 0.10	1.112	Gamma; Lognormal	Nonparametric
29_1_108	MW-35	Appendix III	Boron	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.189		Nonparametric
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	0.691	0.005	0.333	0.036	0.667	0.003	0.354	0.018	0.348	0.01 <= p < 0.05	1.092	< 0.01	0.134	Nonparametric	Nonparametric
29_1_111	MW-35	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.929	0.571	0.196	0.670	0.930	0.579	0.193	0.690	0.216	>= 0.10	0.287	>= 0.10	0.047	Gamma; Lognormal; Normal	Nonparametric
29_1_115	MW-35	Appendix III	Fluoride	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.516		Nonparametric
29_1_123	MW-35	Appendix III	pH (field)	su	6	0	0%	0.942	0.674	0.261	0.225	0.944	0.692	0.258	0.240	0.252	>= 0.10	0.322	>= 0.10	0.017	Gamma; Lognormal; Normal	Nonparametric
29_1_124	MW-35	Appendix III	pH (lab)	su	5	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.014		Nonparametric
29_1_131	MW-35	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.915	0.473	0.293	0.109	0.919	0.497	0.290	0.118	0.302	>= 0.10	0.419	>= 0.10	0.032	Gamma; Lognormal; Normal	Nonparametric
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	0.915	0.473	0.269	0.189	0.919	0.496	0.263	0.214	0.259	>= 0.10	0.408	>= 0.10	0.035	Gamma; Lognormal; Normal	Nonparametric
29_2_104	MW-35	Appendix IV	Antimony	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	2	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.639		Nonparametric
29_2_106	MW-35	Appendix IV	Barium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.248		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
29_2_107	MW-35	Appendix IV	Beryllium	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_2_109	MW-35	Appendix IV	Cadmium	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	3	2	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	4	1	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.575		Nonparametric
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.516		Nonparametric
29_2_117	MW-35	Appendix IV	Lead	mg/l	3	1	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.158		Nonparametric
29_2_118	MW-35	Appendix IV	Lithium	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.090		Nonparametric
29_2_120	MW-35	Appendix IV	Mercury	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	3	1	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.145		Nonparametric
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.401		Nonparametric
29_2_129	MW-35	Appendix IV	Selenium	mg/l	6	0	0%	0.866	0.212	0.254	0.259	0.881	0.273	0.243	0.322	0.252	>= 0.10	0.412	>= 0.10	0.089	Gamma; Lognormal; Normal	Nonparametric
29_2_134	MW-35	Appendix IV	Thallium	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.040		Nonparametric
29_3_102	MW-35	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_3_103	MW-35	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.053		Nonparametric
29_3_114	MW-35	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.992	0.994	0.124	0.995	0.972	0.906	0.150	0.940	0.139	>= 0.10	0.185	>= 0.10	0.170	Gamma; Lognormal; Normal	Nonparametric
29_3_119	MW-35	Supplemental	Magnesium	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.121		Nonparametric
29_3_122	MW-35	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.929	0.570	0.237	0.360	0.980	0.953	0.183	0.762	0.188	>= 0.10	0.227	>= 0.10	0.345	Gamma; Lognormal; Normal	Nonparametric
29_3_125	MW-35	Supplemental	Potassium	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.087		Nonparametric
29_3_126	MW-35	Supplemental	Radium-226	pci/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.417		Nonparametric
29_3_128	MW-35	Supplemental	Radium-228	pci/l	3	2	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_3_130	MW-35	Supplemental	Sodium	mg/l	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.083		Nonparametric
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	6	0	0%	0.955	0.782	0.162	0.893	0.959	0.811	0.160	0.903	0.184	>= 0.10	0.232	>= 0.10	0.197	Gamma; Lognormal; Normal	Nonparametric
29_3_133	MW-35	Supplemental	Temperature (lab)	deg c	5	0	0%	0.887	0.344	0.266	0.288	0.884	0.327	0.271	0.262	0.290	>= 0.10	0.428	>= 0.10	0.065	Gamma; Lognormal; Normal	Nonparametric
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.961	0.828	0.151	0.940	0.960	0.821	0.180	0.785	0.180	>= 0.10	0.221	>= 0.10	0.409	Gamma; Lognormal; Normal	Nonparametric
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	6	0	0%	0.803	0.062	0.262	0.219	0.866	0.212	0.247	0.298	0.276	>= 0.10	0.529	>= 0.10	0.749	Gamma; Lognormal; Normal	Nonparametric
30_1_108	MW-36	Appendix III	Boron	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.266		Nonparametric
30_1_110	MW-36	Appendix III	Calcium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.163		Nonparametric
30_1_111	MW-36	Appendix III	Chloride (as Cl)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.197		Nonparametric
30_1_115	MW-36	Appendix III	Fluoride	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.187		Nonparametric
30_1_123	MW-36	Appendix III	pH (field)	su	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.011		Nonparametric
30_1_124	MW-36	Appendix III	pH (lab)	su	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.120		Nonparametric
30_1_135	MW-36	Appendix III	Total Dissolved Solids	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.142		Nonparametric
30_2_104	MW-36	Appendix IV	Antimony	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_105	MW-36	Appendix IV	Arsenic	mg/l	3	3	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_106	MW-36	Appendix IV	Barium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
30_2_107	MW-36	Appendix IV	Beryllium	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_109	MW-36	Appendix IV	Cadmium	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	2	1	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	3	1	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.401		Nonparametric
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.187		Nonparametric
30_2_117	MW-36	Appendix IV	Lead	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_118	MW-36	Appendix IV	Lithium	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.187		Nonparametric
30_2_120	MW-36	Appendix IV	Mercury	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	2	1	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.247		Nonparametric
30_2_129	MW-36	Appendix IV	Selenium	mg/l	3	1	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.207		Nonparametric
30_2_134	MW-36	Appendix IV	Thallium	mg/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_3_101	MW-36	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.072		Nonparametric
30_3_102	MW-36	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_3_103	MW-36	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.023		Nonparametric
30_3_114	MW-36	Supplemental	Conductivity (field)	us/cm	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.030		Nonparametric
30_3_119	MW-36	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.101		Nonparametric
30_3_122	MW-36	Supplemental	Oxidation-reduction Potential (field)	mV	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_3_125	MW-36	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.054		Nonparametric
30_3_126	MW-36	Supplemental	Radium-226	pci/l	2	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_3_128	MW-36	Supplemental	Radium-228	pci/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.392		Nonparametric
30_3_130	MW-36	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.109		Nonparametric
30_3_132	MW-36	Supplemental	Temperature (field)	deg c	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.177		Nonparametric
30_3_133	MW-36	Supplemental	Temperature (lab)	deg c	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.033		Nonparametric
30_3_136	MW-36	Supplemental	Total Suspended Solids	mg/l	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.873		Nonparametric
30_3_137	MW-36	Supplemental	Turbidity (field)	ntu	3	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.468		Nonparametric
31_1_108	MW-37	Appendix III	Boron	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_1_110	MW-37	Appendix III	Calcium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.149		Nonparametric
31_1_111	MW-37	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.058		Nonparametric
31_1_115	MW-37	Appendix III	Fluoride	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_1_123	MW-37	Appendix III	pH (field)	su	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.001		Nonparametric
31_1_124	MW-37	Appendix III	pH (lab)	su	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_1_131	MW-37	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
31_1_135	MW-37	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.147		Nonparametric
31_2_104	MW-37	Appendix IV	Antimony	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.454		Nonparametric
31_2_106	MW-37	Appendix IV	Barium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_107	MW-37	Appendix IV	Beryllium	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_109	MW-37	Appendix IV	Cadmium	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.194		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

							Normal				Lognormal				Gamma						
							S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_117	MW-37	Appendix IV	Lead	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_118	MW-37	Appendix IV	Lithium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.078		Nonparametric
31_2_120	MW-37	Appendix IV	Mercury	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_2_129	MW-37	Appendix IV	Selenium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.104		Nonparametric
31_2_134	MW-37	Appendix IV	Thallium	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_3_101	MW-37	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.031		Nonparametric
31_3_102	MW-37	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_3_103	MW-37	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.031		Nonparametric
31_3_114	MW-37	Supplemental	Conductivity (field)	us/cm	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.148		Nonparametric
31_3_119	MW-37	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.147		Nonparametric
31_3_122	MW-37	Supplemental	Oxidation-reduction Potential (field)	mV	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.785		Nonparametric
31_3_125	MW-37	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.089		Nonparametric
31_3_126	MW-37	Supplemental	Radium-226	pci/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_3_128	MW-37	Supplemental	Radium-228	pci/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_3_130	MW-37	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.046		Nonparametric
31_3_132	MW-37	Supplemental	Temperature (field)	deg c	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.294		Nonparametric
31_3_133	MW-37	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
31_3_136	MW-37	Supplemental	Total Suspended Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.589		Nonparametric
31_3_137	MW-37	Supplemental	Turbidity (field)	ntu	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.411		Nonparametric
32_1_110	MW-38B	Appendix III	Calcium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.081		Nonparametric
32_1_111	MW-38B	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.728		Nonparametric
32_1_123	MW-38B	Appendix III	pH (field)	su	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_1_124	MW-38B	Appendix III	pH (lab)	su	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_1_131	MW-38B	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.556		Nonparametric
32_1_135	MW-38B	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.027		Nonparametric
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.115		Nonparametric
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.034		Nonparametric
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.817		Nonparametric
32_3_101	MW-38B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.105		Nonparametric
32_3_103	MW-38B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.105		Nonparametric
32_3_114	MW-38B	Supplemental	Conductivity (field)	us/cm	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_3_119	MW-38B	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.049		Nonparametric
32_3_122	MW-38B	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_3_125	MW-38B	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.126		Nonparametric
32_3_130	MW-38B	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.049		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal			Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
32_3_132	MW-38B	Supplemental	Temperature (field)	deg c	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_3_133	MW-38B	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
32_3_136	MW-38B	Supplemental	Total Suspended Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.749		Nonparametric
32_3_137	MW-38B	Supplemental	Turbidity (field)	ntu	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_1_110	MW-38C	Appendix III	Calcium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.063		Nonparametric
33_1_111	MW-38C	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.742		Nonparametric
33_1_123	MW-38C	Appendix III	pH (field)	su	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_1_124	MW-38C	Appendix III	pH (lab)	su	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_1_131	MW-38C	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.036		Nonparametric
33_1_135	MW-38C	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.024		Nonparametric
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.322		Nonparametric
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.132		Nonparametric
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.126		Nonparametric
33_3_101	MW-38C	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
33_3_103	MW-38C	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
33_3_114	MW-38C	Supplemental	Conductivity (field)	us/cm	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_3_119	MW-38C	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.079		Nonparametric
33_3_122	MW-38C	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_3_125	MW-38C	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.024		Nonparametric
33_3_130	MW-38C	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.037		Nonparametric
33_3_132	MW-38C	Supplemental	Temperature (field)	deg c	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_3_133	MW-38C	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
33_3_136	MW-38C	Supplemental	Total Suspended Solids	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.501		Nonparametric
33_3_137	MW-38C	Supplemental	Turbidity (field)	ntu	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	0.910	0.063	0.154	0.242	0.932	0.170	0.141	0.377	0.143	>= 0.10	0.499	>= 0.10	0.171	Gamma; Lognormal; Normal	Gamma
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	0.927	0.154	0.151	0.305	0.944	0.314	0.144	0.382	0.147	>= 0.10	0.405	>= 0.10	0.065	Gamma; Lognormal; Normal	Gamma
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.883	0.020	0.212	0.019	0.849	0.005	0.238	0.004	0.220	0.01 <= p < 0.05	1.032	< 0.01	0.110	Nonparametric	Nonparametric
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	0.579	0.000	0.351	0.000	0.768	0.000	0.268	0.001	0.293	< 0.01	1.810	< 0.01	0.267	Nonparametric	Nonparametric
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	0.897	0.061	0.194	0.087	0.902	0.075	0.192	0.097	0.192	0.05 <= p < 0.10	0.654	0.05 <= p < 0.10	0.014	Gamma; Lognormal; Normal	Gamma
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	0.795	0.001	0.244	0.003	0.807	0.001	0.239	0.004	0.241	< 0.01	1.344	< 0.01	0.029	Nonparametric	Nonparametric
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.944	0.280	0.178	0.098	0.940	0.243	0.181	0.086	0.185	0.05 <= p < 0.10	0.618	>= 0.10	0.031	Gamma; Lognormal; Normal	Gamma
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.914	0.077	0.159	0.208	0.895	0.033	0.172	0.128	0.158	>= 0.10	0.786	0.01 <= p < 0.05	0.081	Gamma; Lognormal; Normal	Gamma
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	0.895	0.262	0.297	0.036	0.955	0.762	0.216	0.330	0.244	>= 0.10	0.342	>= 0.10	0.482	Gamma; Lognormal; Normal	Nonparametric
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	0.850	0.004	0.242	0.002	0.903	0.040	0.174	0.097	0.184	0.05 <= p < 0.10	0.836	0.01 <= p < 0.05	1.246	Gamma; Lognormal	Gamma
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	0.651	0.000	0.309	0.000	0.932	0.150	0.148	0.263	0.208	0.01 <= p < 0.05	1.058	< 0.01	0.755	Lognormal	Lognormal
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	0.691	0.008	0.342	0.057	0.771	0.046	0.313	0.110	0.334	>= 0.10	0.749	0.01 <= p < 0.05	0.567	Gamma; Lognormal; Normal	Nonparametric
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	0.901	0.296	0.161	0.782	0.932	0.538	0.145	0.891	0.150	>= 0.10	0.242	>= 0.10	0.926	Gamma; Lognormal; Normal	Nonparametric
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	0.666	0.000	0.292	0.000	0.958	0.512	0.117	0.673	0.182	>= 0.10	0.841	0.01 <= p < 0.05	0.897	Gamma; Lognormal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	0.714	0.000	0.293	0.000	0.964	0.604	0.132	0.442	0.182	0.05 <= p < 0.10	0.687	0.05 <= p < 0.10	0.800	Gamma; Lognormal	Gamma
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	0.579	0.000	0.351	0.000	0.768	0.000	0.268	0.001	0.293	< 0.01	1.810	< 0.01	0.267	Nonparametric	Nonparametric
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	0.581	0.000	0.372	0.000	0.912	0.069	0.191	0.054	0.263	< 0.01	1.459	< 0.01	0.897	Lognormal	Lognormal
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	0.871	0.010	0.179	0.078	0.868	0.009	0.185	0.058	0.190	0.01 <= p < 0.05	1.126	< 0.01	0.082	Lognormal; Normal	Lognormal
34_2_120	MW-4	Appendix IV	Mercury	mg/l	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	0.941	0.228	0.167	0.133	0.968	0.680	0.135	0.408	0.145	>= 0.10	0.333	>= 0.10	0.165	Gamma; Lognormal; Normal	Gamma
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	0.396	0.000	0.408	0.000	0.769	0.001	0.193	0.074	0.295	< 0.01	2.513	< 0.01	0.830	Lognormal	Lognormal
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	0.951	0.361	0.141	0.335	0.953	0.393	0.146	0.283	0.149	>= 0.10	0.378	>= 0.10	0.117	Gamma; Lognormal; Normal	Gamma
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.411		Nonparametric
34_3_101	MW-4	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
34_3_102	MW-4	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
34_3_103	MW-4	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.725	0.000	0.230	0.017	0.553	0.000	0.330	0.000	0.294	< 0.01	2.871	< 0.01	0.751	Nonparametric	Nonparametric
34_3_119	MW-4	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.009		Nonparametric
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.881	0.033	0.173	0.196	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
34_3_125	MW-4	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.007		Nonparametric
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	0.359	0.000	0.460	0.000	0.704	0.000	0.305	0.000	0.409	< 0.01	3.245	< 0.01	0.875	Nonparametric	Nonparametric
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	0.492	0.000	0.371	0.000	0.875	0.050	0.168	0.350	0.252	0.01 <= p < 0.05	1.322	< 0.01	0.905	Lognormal	Lognormal
34_3_130	MW-4	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.118		Nonparametric
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	0.902	0.074	0.163	0.271	0.917	0.130	0.154	0.354	0.162	>= 0.10	0.613	>= 0.10	0.117	Gamma; Lognormal; Normal	Gamma
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	0.968	0.722	0.088	0.954	0.969	0.734	0.091	0.932	0.096	>= 0.10	0.218	>= 0.10	0.059	Gamma; Lognormal; Normal	Gamma
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.576	0.000	0.373	0.000	0.897	0.044	0.187	0.080	0.260	< 0.01	1.751	< 0.01	1.194	Lognormal	Nonparametric
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	0.825	0.020	0.265	0.030	0.906	0.220	0.218	0.154	0.183	>= 0.10	0.485	>= 0.10	0.847	Gamma; Lognormal	Gamma
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	0.897	0.205	0.265	0.045	0.765	0.005	0.346	0.001	0.316	< 0.01	0.779	0.01 <= p < 0.05	0.387	Normal	Normal
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	0.888	0.161	0.198	0.325	0.865	0.087	0.222	0.175	0.221	>= 0.10	0.562	>= 0.10	0.211	Gamma; Lognormal; Normal	Gamma
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.964	0.828	0.141	0.830	0.915	0.320	0.164	0.626	0.162	>= 0.10	0.309	>= 0.10	0.404	Gamma; Lognormal; Normal	Gamma
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	0.937	0.522	0.247	0.086	0.920	0.360	0.278	0.028	0.272	0.01 <= p < 0.05	0.477	>= 0.10	0.192	Gamma; Lognormal; Normal	Gamma
35_1_123	MW-5	Appendix III	pH (field)	su	7	0	0%	0.902	0.344	0.168	0.796	0.905	0.361	0.166	0.808	0.177	>= 0.10	0.345	>= 0.10	0.016	Gamma; Lognormal; Normal	Nonparametric
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	0.904	0.240	0.224	0.165	0.909	0.275	0.221	0.182	0.227	>= 0.10	0.436	>= 0.10	0.032	Gamma; Lognormal; Normal	Gamma
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.920	0.353	0.156	0.702	0.863	0.082	0.218	0.196	0.186	>= 0.10	0.510	>= 0.10	0.442	Gamma; Lognormal; Normal	Gamma
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.971	0.897	0.149	0.769	0.950	0.669	0.155	0.708	0.166	>= 0.10	0.247	>= 0.10	0.258	Gamma; Lognormal; Normal	Gamma
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.030		Nonparametric
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.183		Nonparametric
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	0.660	0.000	0.313	0.006	0.817	0.023	0.215	0.214	0.243	>= 0.10	0.889	0.01 <= p < 0.05	0.378	Gamma; Lognormal	Gamma
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.294		Nonparametric
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	0.833	0.115	0.248	0.297	0.928	0.562	0.188	0.730	0.231	>= 0.10	0.364	>= 0.10	1.115	Gamma; Lognormal; Normal	Gamma
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	0.793	0.024	0.286	0.053	0.956	0.769	0.171	0.704	0.197	>= 0.10	0.333	>= 0.10	0.655	Gamma; Lognormal; Normal	Gamma
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.937	0.522	0.247	0.086	0.920	0.360	0.278	0.028	0.272	0.01 <= p < 0.05	0.477	>= 0.10	0.192	Gamma; Lognormal; Normal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	0.636	0.001	0.418	0.002	0.875	0.248	0.288	0.124	0.350	0.01 <= p < 0.05	0.736	0.01 <= p < 0.05	0.878	Lognormal	Lognormal
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	0.937	0.517	0.138	0.850	0.915	0.321	0.140	0.838	0.151	>= 0.10	0.367	>= 0.10	0.157	Gamma; Lognormal; Normal	Gamma
35_2_120	MW-5	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	0.793	0.012	0.271	0.036	0.836	0.039	0.232	0.131	0.244	>= 0.10	0.855	0.01 <= p < 0.05	0.359	Gamma; Lognormal	Gamma
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	5	0	0%	1.000	1.000	0.114	1.000	0.949	0.732	0.193	0.780	0.159	>= 0.10	0.205	>= 0.10	0.549	Gamma; Lognormal; Normal	Nonparametric
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	0.729	0.002	0.325	0.004	0.835	0.038	0.263	0.048	0.296	0.01 <= p < 0.05	0.905	0.01 <= p < 0.05	0.557	Nonparametric	Nonparametric
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	7	0	0%	0.909	0.390	0.254	0.188	0.946	0.695	0.216	0.417	0.213	>= 0.10	0.341	>= 0.10	0.281	Gamma; Lognormal; Normal	Nonparametric
35_3_119	MW-5	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_3_122	MW-5	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.843	0.138	0.287	0.127	0.836	0.120	0.282	0.142	0.306	>= 0.10	0.565	>= 0.10	0.531	Gamma; Lognormal; Normal	Nonparametric
35_3_125	MW-5	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_3_126	MW-5	Supplemental	Radium-226	pci/l	5	0	0%	0.947	0.714	0.204	0.704	0.839	0.163	0.275	0.245	0.250	>= 0.10	0.426	>= 0.10	0.547	Gamma; Lognormal; Normal	Nonparametric
35_3_128	MW-5	Supplemental	Radium-228	pci/l	5	2	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.457		Nonparametric
35_3_130	MW-5	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
35_3_132	MW-5	Supplemental	Temperature (field)	deg c	7	0	0%	0.871	0.191	0.200	0.543	0.882	0.236	0.179	0.716	0.190	>= 0.10	0.427	>= 0.10	0.120	Gamma; Lognormal; Normal	Nonparametric
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	0.967	0.863	0.161	0.658	0.965	0.844	0.152	0.737	0.147	>= 0.10	0.231	>= 0.10	0.065	Gamma; Lognormal; Normal	Gamma
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	0.931	0.523	0.166	0.745	0.871	0.155	0.286	0.053	0.268	>= 0.10	0.419	>= 0.10	1.108	Gamma; Lognormal; Normal	Gamma
35_3_137	MW-5	Supplemental	Turbidity (field)	ntu	6	0	0%	0.792	0.050	0.278	0.155	0.947	0.718	0.187	0.732	0.179	>= 0.10	0.180	>= 0.10	2.266	Gamma; Lognormal; Normal	Nonparametric
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	0.947	0.344	0.119	0.682	0.945	0.327	0.113	0.758	0.113	>= 0.10	0.360	>= 0.10	0.113	Gamma; Lognormal; Normal	Gamma
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	0.959	0.552	0.107	0.818	0.952	0.419	0.109	0.802	0.117	>= 0.10	0.305	>= 0.10	0.114	Gamma; Lognormal; Normal	Gamma
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.919	0.095	0.165	0.165	0.863	0.009	0.183	0.077	0.183	0.05 <= p < 0.10	0.847	0.01 <= p < 0.05	0.307	Gamma; Lognormal; Normal	Gamma
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	0.541	0.000	0.365	0.000	0.807	0.008	0.252	0.024	0.300	< 0.01	1.320	< 0.01	0.514	Nonparametric	Nonparametric
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	0.964	0.698	0.143	0.472	0.963	0.689	0.147	0.422	0.146	>= 0.10	0.294	>= 0.10	0.024	Gamma; Lognormal; Normal	Gamma
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	0.912	0.071	0.216	0.015	0.916	0.083	0.213	0.018	0.217	0.01 <= p < 0.05	0.750	0.01 <= p < 0.05	0.028	Lognormal; Normal	Lognormal
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.896	0.035	0.166	0.155	0.958	0.513	0.149	0.290	0.160	>= 0.10	0.429	>= 0.10	0.221	Gamma; Lognormal; Normal	Gamma
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.806	0.001	0.267	0.001	0.883	0.020	0.230	0.007	0.240	< 0.01	0.990	0.01 <= p < 0.05	0.156	Nonparametric	Nonparametric
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	0.870	0.267	0.259	0.329	0.907	0.451	0.217	0.616	0.237	>= 0.10	0.370	>= 0.10	0.400	Gamma; Lognormal; Normal	Nonparametric
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	0.948	0.493	0.164	0.338	0.942	0.406	0.149	0.500	0.135	>= 0.10	0.180	>= 0.10	0.743	Gamma; Lognormal; Normal	Gamma
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	0.752	0.000	0.251	0.001	0.898	0.032	0.177	0.085	0.212	0.01 <= p < 0.05	1.262	< 0.01	0.587	Lognormal	Lognormal
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	0.847	0.186	0.281	0.215	0.971	0.882	0.182	0.849	0.207	>= 0.10	0.290	>= 0.10	0.588	Gamma; Lognormal; Normal	Nonparametric
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	0.932	0.431	0.169	0.511	0.911	0.252	0.193	0.303	0.170	>= 0.10	0.330	>= 0.10	0.636	Gamma; Lognormal; Normal	Gamma
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.706	0.000	0.291	0.000	0.947	0.377	0.164	0.226	0.220	0.01 <= p < 0.05	0.940	0.01 <= p < 0.05	0.955	Lognormal	Lognormal
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	0.673	0.000	0.292	0.000	0.884	0.017	0.215	0.012	0.264	< 0.01	1.528	< 0.01	1.010	Nonparametric	Nonparametric
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	0.541	0.000	0.365	0.000	0.807	0.008	0.252	0.024	0.300	< 0.01	1.320	< 0.01	0.514	Nonparametric	Nonparametric
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	0.681	0.000	0.294	0.000	0.934	0.183	0.103	0.837	0.185	0.05 <= p < 0.10	0.920	0.01 <= p < 0.05	1.135	Gamma; Lognormal	Gamma
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	0.935	0.170	0.139	0.358	0.948	0.311	0.139	0.359	0.145	>= 0.10	0.503	>= 0.10	0.184	Gamma; Lognormal; Normal	Gamma
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	0.694	0.000	0.234	0.006	0.878	0.016	0.139	0.391	0.178	>= 0.10	1.193	< 0.01	0.473	Gamma; Lognormal	Gamma
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	0.889	0.037	0.231	0.012	0.965	0.691	0.146	0.395	0.177	>= 0.10	0.441	>= 0.10	0.477	Gamma; Lognormal	Gamma

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	0.951	0.357	0.175	0.092	0.942	0.234	0.179	0.079	0.166	>= 0.10	0.536	>= 0.10	0.166	Gamma; Lognormal; Normal	Gamma
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.212		Nonparametric
36_3_101	MW-6	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
36_3_102	MW-6	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	1	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
36_3_103	MW-6	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.942	0.344	0.158	0.312	0.923	0.167	0.165	0.252	0.155	>= 0.10	0.580	>= 0.10	0.233	Gamma; Lognormal; Normal	Gamma
36_3_119	MW-6	Supplemental	Magnesium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.119		Nonparametric
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.959	0.617	0.134	0.572	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
36_3_125	MW-6	Supplemental	Potassium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.023		Nonparametric
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	0.778	0.001	0.211	0.043	0.917	0.131	0.164	0.257	0.171	>= 0.10	0.681	0.05 <= p < 0.10	0.585	Gamma; Lognormal	Gamma
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	0.937	0.458	0.148	0.665	0.960	0.786	0.103	0.977	0.117	>= 0.10	0.211	>= 0.10	0.420	Gamma; Lognormal; Normal	Gamma
36_3_130	MW-6	Supplemental	Sodium	mg/l	2	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.038		Nonparametric
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	0.914	0.117	0.183	0.134	0.944	0.373	0.159	0.300	0.170	>= 0.10	0.576	>= 0.10	0.152	Gamma; Lognormal; Normal	Gamma
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	0.957	0.487	0.139	0.399	0.960	0.549	0.129	0.523	0.134	>= 0.10	0.321	>= 0.10	0.060	Gamma; Lognormal; Normal	Gamma
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.373	0.000	0.396	0.000	0.965	0.672	0.116	0.715	0.221	0.01 <= p < 0.05	1.248	< 0.01	1.426	Lognormal	Nonparametric
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	0.602	0.000	0.326	0.000	0.872	0.055	0.232	0.053	0.294	< 0.01	1.048	< 0.01	0.998	Lognormal	Lognormal
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	0.891	0.028	0.212	0.019	0.896	0.035	0.211	0.020	0.199	0.01 <= p < 0.05	1.024	< 0.01	0.188	Nonparametric	Nonparametric
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	0.828	0.003	0.212	0.025	0.858	0.009	0.201	0.041	0.205	0.01 <= p < 0.05	1.029	< 0.01	0.061	Nonparametric	Nonparametric
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	0.895	0.039	0.175	0.129	0.924	0.137	0.129	0.561	0.149	>= 0.10	0.563	>= 0.10	0.349	Gamma; Lognormal; Normal	Gamma
37_1_115	MW-8	Appendix III	Fluoride	mg/l	20	9	45%	0.627	0.000	0.417	0.000	0.759	0.003	0.316	0.003	0.390	< 0.01	1.570	< 0.01	1.887	Nonparametric	Nonparametric
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	0.949	0.471	0.125	0.719	0.953	0.544	0.121	0.770	0.119	>= 0.10	0.316	>= 0.10	0.023	Gamma; Lognormal; Normal	Gamma
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	0.881	0.023	0.161	0.219	0.888	0.030	0.157	0.252	0.154	>= 0.10	0.647	0.05 <= p < 0.10	0.032	Gamma; Lognormal; Normal	Gamma
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	0.831	0.003	0.199	0.047	0.882	0.024	0.174	0.136	0.183	0.05 <= p < 0.10	0.797	0.01 <= p < 0.05	0.102	Gamma; Lognormal	Gamma
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.666	0.000	0.310	0.000	0.418	0.000	0.432	0.000	0.403	< 0.01	3.769	< 0.01	0.483	Nonparametric	Nonparametric
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	0.847	0.149	0.287	0.127	0.935	0.621	0.203	0.614	0.240	>= 0.10	0.387	>= 0.10	0.655	Gamma; Lognormal; Normal	Nonparametric
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	0.795	0.003	0.241	0.019	0.973	0.895	0.139	0.605	0.169	>= 0.10	0.408	>= 0.10	0.493	Gamma; Lognormal	Gamma
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	0.621	0.000	0.261	0.001	0.899	0.034	0.164	0.147	0.168	>= 0.10	1.120	< 0.01	0.736	Gamma; Lognormal	Gamma
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	0.930	0.596	0.215	0.624	0.985	0.959	0.189	0.804	0.153	>= 0.10	0.185	>= 0.10	0.769	Gamma; Lognormal; Normal	Nonparametric
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	0.866	0.136	0.236	0.209	0.953	0.746	0.152	0.848	0.169	>= 0.10	0.290	>= 0.10	0.532	Gamma; Lognormal; Normal	Nonparametric
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	0.607	0.000	0.374	0.000	0.940	0.267	0.158	0.239	0.248	< 0.01	1.203	< 0.01	1.063	Lognormal	Nonparametric
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	0.693	0.000	0.286	0.000	0.950	0.343	0.138	0.372	0.196	0.01 <= p < 0.05	0.947	0.01 <= p < 0.05	0.900	Lognormal	Lognormal
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	9	45%	0.627	0.000	0.417	0.000	0.759	0.003	0.316	0.003	0.390	< 0.01	1.570	< 0.01	1.887	Nonparametric	Nonparametric
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	0.669	0.000	0.265	0.001	0.941	0.252	0.132	0.479	0.185	0.05 <= p < 0.10	0.886	0.01 <= p < 0.05	1.154	Gamma; Lognormal	Gamma
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	0.782	0.000	0.311	0.000	0.878	0.013	0.261	0.001	0.277	< 0.01	1.058	< 0.01	0.214	Nonparametric	Nonparametric
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	0.604	0.000	0.308	0.003	0.904	0.178	0.202	0.195	0.218	>= 0.10	0.792	0.01 <= p < 0.05	0.843	Gamma; Lognormal	Gamma
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	0.516	0.000	0.349	0.000	0.801	0.001	0.224	0.010	0.277	< 0.01	1.921	< 0.01	0.482	Nonparametric	Nonparametric
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	0.921	0.091	0.251	0.001	0.925	0.111	0.189	0.048	0.205	0.01 <= p < 0.05	0.640	0.05 <= p < 0.10	0.385	Gamma; Lognormal; Normal	Gamma
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.343		Nonparametric

(Table continues on next page)

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	0.890	0.055	0.211	0.056	0.846	0.012	0.247	0.010	0.235	0.01 <= p < 0.05	0.971	0.01 <= p < 0.05	0.187	Normal	Normal
37_3_119	MW-8	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	16	0	0%	0.924	0.194	0.184	0.155	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
37_3_125	MW-8	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	0.437	0.000	0.355	0.000	0.769	0.000	0.204	0.029	0.273	< 0.01	2.338	< 0.01	0.546	Nonparametric	Nonparametric
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	0.672	0.000	0.260	0.002	0.910	0.074	0.179	0.111	0.215	0.01 <= p < 0.05	1.042	< 0.01	0.497	Lognormal	Lognormal
37_3_130	MW-8	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	0.730	0.000	0.311	0.000	0.799	0.003	0.262	0.004	0.277	< 0.01	1.725	< 0.01	0.250	Nonparametric	Nonparametric
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	0.957	0.509	0.155	0.271	0.952	0.433	0.161	0.220	0.165	>= 0.10	0.393	>= 0.10	0.062	Gamma; Lognormal; Normal	Gamma
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.406	0.000	0.418	0.000	0.880	0.021	0.184	0.090	0.289	< 0.01	2.297	< 0.01	1.796	Lognormal	Nonparametric
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	0.819	0.015	0.233	0.070	0.932	0.406	0.181	0.344	0.208	>= 0.10	0.465	>= 0.10	1.222	Gamma; Lognormal; Normal	Gamma

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 4: Autocorrelation Tests, Non-Detects Excluded

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	-0.146	0.482	
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	0.383	0.071	
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	-0.099	0.633	
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	0.539	0.008	**
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	-0.166	0.456	
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	0.013	0.949	
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.214	0.303	
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.378	0.069	
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	-0.585	0.033	*
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	0.036	0.873	
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	0.421	0.039	*
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	0.157	0.595	
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	0.246	0.337	
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	-0.051	0.814	
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	0.100	0.625	
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	0.539	0.008	**
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	-0.223	0.342	
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	-0.200	0.326	
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	0.095	0.641	
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	-0.066	0.785	
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	0.014	0.952	
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	-0.500	0.157	
11_3_101	MW-1	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
11_3_103	MW-1	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.044	0.842	
11_3_119	MW-1	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.439	0.049	*
11_3_125	MW-1	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	0.299	0.202	
11_3_128	MW-1	Supplemental	Radium-228	pci/l	21	12	57%	-0.417	0.142	
11_3_130	MW-1	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	-0.168	0.450	
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.109	0.599	
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.384	0.071	
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	-0.093	0.709	
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	0.169	0.536	
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	-0.351	0.157	
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	0.001	0.998	
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	0.037	0.892	
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	-0.088	0.724	
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	-0.091	0.722	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	-0.131	0.596	
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	-0.258	0.298	
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	-0.206	0.453	
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	0.473	0.084	
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	-0.500	0.157	
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	0.257	0.365	
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	0.278	0.310	
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.037	0.892	
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	-0.771	0.029	*
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	0.065	0.794	
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	0.579	0.042	*
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	-0.271	0.401	
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	-0.260	0.295	
12_3_101	MW-13	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	0.225	0.525	
12_3_103	MW-13	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	0.415	0.095	
12_3_119	MW-13	Supplemental	Magnesium	mg/l	5	0	0%	-0.450	0.184	
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	0.262	0.291	
12_3_125	MW-13	Supplemental	Potassium	mg/l	5	0	0%	0.031	0.926	
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	-0.235	0.447	
12_3_128	MW-13	Supplemental	Radium-228	pci/l	10	7	70%	-0.188	0.606	
12_3_130	MW-13	Supplemental	Sodium	mg/l	5	0	0%	-0.461	0.173	
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	-0.248	0.318	
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	0.147	0.567	
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	-0.058	0.826	
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	0.045	0.855	
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	-0.187	0.495	
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	0.266	0.332	
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.360	0.189	
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	-0.026	0.929	
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	0.221	0.420	
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	0.136	0.619	
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.084	0.759	
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.004	0.987	
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	0.499	0.091	
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	0.600	0.029	*
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	NA	NA	
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	0.634	0.040	*
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	-0.037	0.900	
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	-0.026	0.929	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	-0.500	0.157	
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	0.166	0.544	
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	0.536	0.050	
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	0.233	0.413	
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	0.162	0.553	
13_3_101	MW-14	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
13_3_103	MW-14	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	-0.487	0.075	
13_3_119	MW-14	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	0.220	0.423	
13_3_125	MW-14	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	-0.019	0.945	
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	0.124	0.675	
13_3_130	MW-14	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	-0.103	0.707	
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.478	0.081	
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	0.354	0.251	
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	0.191	0.485	
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	0.078	0.775	
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	0.251	0.360	
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.025	0.927	
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	-0.200	0.466	
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	0.168	0.570	
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	0.274	0.318	
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.490	0.073	
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.301	0.271	
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	0.261	0.359	
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	0.304	0.268	
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	7	88%	NA	NA	
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	0.105	0.724	
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	0.342	0.247	
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.200	0.466	
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	0.141	0.690	
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	0.026	0.925	
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	0.106	0.709	
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	-0.104	0.748	
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	0.249	0.364	
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	NA	NA	
14_3_101	MW-15	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
14_3_103	MW-15	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	-0.383	0.195	
14_3_119	MW-15	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	-0.136	0.645	
14_3_125	MW-15	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	0.064	0.850	
14_3_128	MW-15	Supplemental	Radium-228	pci/l	10	7	70%	-0.381	0.297	
14_3_130	MW-15	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	-0.132	0.655	
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.162	0.555	
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.051	0.857	
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	-0.264	0.372	
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	0.144	0.598	
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	-0.116	0.671	
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.133	0.627	
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	-0.627	0.022	*
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	-0.096	0.745	
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	-0.026	0.924	
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.023	0.932	
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.276	0.313	
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	0.136	0.660	
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	0.263	0.354	
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	0.357	0.193	
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	-0.500	0.157	
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	NA	NA	
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	-0.500	0.157	
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	0.294	0.405	
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.627	0.022	*
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	-0.025	0.945	
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	-0.174	0.524	
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	0.211	0.458	
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	0.189	0.558	
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	-0.206	0.523	
15_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
15_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	-0.056	0.850	
15_3_119	MW-16	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
15_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	-0.135	0.647	
15_3_125	MW-16	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	0.011	0.971	
15_3_128	MW-16	Supplemental	Radium-228	pci/l	10	7	70%	-0.640	0.080	
15_3_130	MW-16	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	-0.151	0.611	
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	0.035	0.899	
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	0.426	0.134	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	-0.503	0.089	
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	0.204	0.474	
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	0.118	0.644	
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	0.097	0.712	
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	-0.244	0.429	
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	-0.612	0.017	*
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	0.200	0.465	
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	0.176	0.506	
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	0.156	0.543	
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	-0.015	0.958	
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	0.481	0.090	
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	8	89%	NA	NA	
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	-0.153	0.604	
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	-0.244	0.429	
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	0.380	0.137	
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	0.586	0.039	*
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	-0.477	0.122	
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	-0.005	0.984	
16_3_101	MW-21	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	-0.333	0.346	
16_3_103	MW-21	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	0.437	0.088	
16_3_119	MW-21	Supplemental	Magnesium	mg/l	5	0	0%	0.275	0.415	
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	-0.012	0.961	
16_3_125	MW-21	Supplemental	Potassium	mg/l	5	0	0%	0.347	0.305	
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	-0.459	0.121	
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	-0.584	0.070	
16_3_130	MW-21	Supplemental	Sodium	mg/l	5	0	0%	0.269	0.426	
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	-0.325	0.204	
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	0.089	0.745	
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	-0.238	0.367	
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	0.121	0.637	
17_1_108	MW-25B	Appendix III	Boron	mg/l	6	0	0%	-0.578	0.073	
17_1_110	MW-25B	Appendix III	Calcium	mg/l	6	0	0%	-0.012	0.971	
17_1_111	MW-25B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.552	0.087	
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	6	0	0%	0.039	0.904	
17_1_123	MW-25B	Appendix III	pH (field)	su	6	0	0%	-0.368	0.254	
17_1_124	MW-25B	Appendix III	pH (lab)	su	6	0	0%	-0.218	0.499	
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.337	0.296	
17_1_135	MW-25B	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	0.000	1.000	
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	1	20%	-0.109	0.758	
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0	0%	-0.716	0.026	*
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0	0%	-0.167	0.606	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	4	3	75%	NA	NA	
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	5	83%	NA	NA	
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	6	0	0%	-0.246	0.445	
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0	0%	0.039	0.904	
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	5	83%	NA	NA	
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	0.095	0.768	
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	6	0	0%	-0.536	0.097	
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	3	50%	-0.193	0.596	
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	6	0	0%	-0.071	0.826	
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	4	2	50%	-0.500	0.157	
17_3_101	MW-25B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
17_3_114	MW-25B	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.481	0.136	
17_3_119	MW-25B	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
17_3_122	MW-25B	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.202	0.532	
17_3_125	MW-25B	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
17_3_126	MW-25B	Supplemental	Radium-226	pci/l	6	3	50%	-0.179	0.624	
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	6	4	67%	-0.500	0.157	
17_3_130	MW-25B	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
17_3_132	MW-25B	Supplemental	Temperature (field)	deg c	6	0	0%	0.080	0.805	
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	6	0	0%	0.260	0.420	
17_3_136	MW-25B	Supplemental	Total Suspended Solids	mg/l	5	0	0%	-0.540	0.110	
17_3_137	MW-25B	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.455	0.159	
18_1_108	MW-26	Appendix III	Boron	mg/l	7	0	0%	0.064	0.836	
18_1_110	MW-26	Appendix III	Calcium	mg/l	7	0	0%	-0.270	0.382	
18_1_111	MW-26	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	-0.773	0.012	*
18_1_115	MW-26	Appendix III	Fluoride	mg/l	7	3	43%	-0.258	0.465	
18_1_123	MW-26	Appendix III	pH (field)	su	7	0	0%	-0.431	0.162	
18_1_124	MW-26	Appendix III	pH (lab)	su	7	0	0%	0.418	0.176	
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	0.069	0.822	
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	-0.445	0.149	
18_2_104	MW-26	Appendix IV	Antimony	mg/l	6	5	83%	NA	NA	
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	7	6	86%	NA	NA	
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	-0.160	0.603	
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	7	5	71%	-0.500	0.157	
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	2	29%	-0.457	0.176	
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	3	43%	-0.258	0.465	
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	6	86%	NA	NA	
18_2_118	MW-26	Appendix IV	Lithium	mg/l	7	0	0%	-0.158	0.610	
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	7	4	57%	-0.666	0.068	
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	7	0	0%	-0.228	0.460	
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	2	29%	-0.607	0.073	
18_3_101	MW-26	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
18_3_103	MW-26	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
18_3_114	MW-26	Supplemental	Conductivity (field)	us/cm	7	0	0%	-0.325	0.292	
18_3_119	MW-26	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
18_3_122	MW-26	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	-0.209	0.498	
18_3_125	MW-26	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	-0.018	0.957	
18_3_128	MW-26	Supplemental	Radium-228	pci/l	7	1	14%	-0.351	0.277	
18_3_130	MW-26	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	7	0	0%	-0.086	0.779	
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	7	0	0%	0.033	0.915	
18_3_136	MW-26	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-0.047	0.884	
18_3_137	MW-26	Supplemental	Turbidity (field)	ntu	7	0	0%	-0.519	0.093	
19_1_108	MW-27	Appendix III	Boron	mg/l	7	0	0%	-0.150	0.626	
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	-0.286	0.297	
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.332	0.225	
19_1_115	MW-27	Appendix III	Fluoride	mg/l	7	0	0%	-0.430	0.164	
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	-0.059	0.830	
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	0.311	0.274	
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.234	0.393	
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.256	0.349	
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	-0.500	0.157	
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0	0%	-0.010	0.975	
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	7	0	0%	-0.312	0.312	
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	4	50%	0.125	0.723	
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	-0.430	0.164	
19_2_117	MW-27	Appendix IV	Lead	mg/l	7	4	57%	-0.095	0.795	
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	-0.148	0.588	
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	-0.120	0.697	
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	4	57%	-0.495	0.175	
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	-0.070	0.799	
19_3_101	MW-27	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	0.152	0.667	
19_3_103	MW-27	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	-0.040	0.883	
19_3_119	MW-27	Supplemental	Magnesium	mg/l	5	0	0%	-0.133	0.693	
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	-0.597	0.029	*
19_3_125	MW-27	Supplemental	Potassium	mg/l	5	0	0%	-0.223	0.509	
19_3_126	MW-27	Supplemental	Radium-226	pci/l	7	4	57%	-0.010	0.979	
19_3_128	MW-27	Supplemental	Radium-228	pci/l	7	6	86%	NA	NA	
19_3_130	MW-27	Supplemental	Sodium	mg/l	5	0	0%	-0.575	0.089	
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	-0.277	0.311	
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	0.233	0.412	
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.010	0.971	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	-0.001	0.996	
20_1_108	MW-28	Appendix III	Boron	mg/l	7	0	0%	0.314	0.310	
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	0.109	0.690	
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.391	0.153	
20_1_115	MW-28	Appendix III	Fluoride	mg/l	7	1	14%	-0.578	0.073	
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	-0.171	0.533	
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	0.245	0.388	
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.035	0.898	
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.119	0.665	
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	0.225	0.467	
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0	0%	0.088	0.775	
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	2	29%	0.181	0.593	
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	0.240	0.436	
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	7	1	14%	-0.578	0.073	
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0	0%	0.056	0.838	
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	5	71%	-0.500	0.157	
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	7	0	0%	-0.227	0.462	
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	-0.110	0.689	
20_3_101	MW-28	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	4	0	0%	0.302	0.392	
20_3_103	MW-28	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	-0.091	0.741	
20_3_119	MW-28	Supplemental	Magnesium	mg/l	5	0	0%	-0.303	0.370	
20_3_122	MW-28	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	-0.358	0.191	
20_3_125	MW-28	Supplemental	Potassium	mg/l	5	0	0%	-0.152	0.653	
20_3_126	MW-28	Supplemental	Radium-226	pci/l	7	0	0%	-0.399	0.196	
20_3_128	MW-28	Supplemental	Radium-228	pci/l	7	0	0%	-0.141	0.649	
20_3_130	MW-28	Supplemental	Sodium	mg/l	5	0	0%	-0.273	0.420	
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	-0.125	0.648	
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	0.148	0.602	
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.435	0.126	
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	0.003	0.992	
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	0.032	0.922	
21_1_111	MW-29	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.833	0.010	**
21_1_123	MW-29	Appendix III	pH (field)	su	6	0	0%	0.273	0.397	
21_1_124	MW-29	Appendix III	pH (lab)	su	5	0	0%	0.008	0.982	
21_1_131	MW-29	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.299	0.354	
21_1_135	MW-29	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-0.200	0.554	
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	2	33%	0.288	0.416	
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0	0%	0.138	0.669	
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0	0%	-0.125	0.698	
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.098	0.761	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
21_3_103	MW-29	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.263	0.471	
21_3_114	MW-29	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.389	0.228	
21_3_119	MW-29	Supplemental	Magnesium	mg/l	6	0	0%	0.210	0.516	
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.061	0.851	
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	0.132	0.683	
21_3_130	MW-29	Supplemental	Sodium	mg/l	6	0	0%	0.148	0.647	
21_3_132	MW-29	Supplemental	Temperature (field)	deg c	6	0	0%	0.058	0.858	
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.571	0.091	
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.414	0.199	
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.208	0.519	
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	0.187	0.367	
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	0.128	0.546	
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.188	0.366	
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	0.372	0.159	
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	0.026	0.897	
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	0.081	0.697	
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.207	0.319	
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.082	0.694	
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	-0.500	0.157	
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	0.369	0.212	
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	-0.056	0.783	
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	-0.500	0.157	
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	0.463	0.152	
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	-0.084	0.729	
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	0.103	0.622	
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	0.372	0.159	
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	-0.781	0.006	**
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	0.429	0.035	*
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	0.246	0.294	
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	0.074	0.716	
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	0.265	0.222	
22_3_101	MW-3	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
22_3_103	MW-3	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	-0.088	0.664	
22_3_119	MW-3	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	0.036	0.860	
22_3_125	MW-3	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	0.065	0.753	
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	0.081	0.689	
22_3_130	MW-3	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	0.098	0.631	
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.065	0.753	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	-0.220	0.312	
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	-0.065	0.756	
23_1_110	MW-30	Appendix III	Calcium	mg/l	6	0	0%	0.205	0.526	
23_1_111	MW-30	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.355	0.271	
23_1_123	MW-30	Appendix III	pH (field)	su	6	0	0%	0.278	0.389	
23_1_124	MW-30	Appendix III	pH (lab)	su	5	0	0%	-0.300	0.375	
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.046	0.888	
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	0.005	0.987	
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	1	17%	-0.119	0.726	
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0	0%	0.179	0.579	
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0	0%	0.074	0.820	
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.420	0.193	
23_3_103	MW-30	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.263	0.471	
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.197	0.542	
23_3_119	MW-30	Supplemental	Magnesium	mg/l	6	0	0%	0.150	0.642	
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	0.058	0.859	
23_3_125	MW-30	Supplemental	Potassium	mg/l	6	0	0%	-0.061	0.850	
23_3_130	MW-30	Supplemental	Sodium	mg/l	6	0	0%	-0.312	0.334	
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	6	0	0%	-0.231	0.475	
23_3_133	MW-30	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.452	0.181	
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	6	1	17%	-0.210	0.534	
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.228	0.480	
24_1_110	MW-31	Appendix III	Calcium	mg/l	6	0	0%	0.103	0.749	
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.246	0.445	
24_1_123	MW-31	Appendix III	pH (field)	su	6	0	0%	-0.034	0.915	
24_1_124	MW-31	Appendix III	pH (lab)	su	5	0	0%	-0.333	0.324	
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.148	0.647	
24_1_135	MW-31	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-0.352	0.298	
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	2	33%	0.204	0.563	
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
24_2_118	MW-31	Appendix IV	Lithium	mg/l	6	0	0%	-0.100	0.757	
24_2_129	MW-31	Appendix IV	Selenium	mg/l	6	0	0%	-0.322	0.318	
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.110	0.733	
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.167	0.648	
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.420	0.193	
24_3_119	MW-31	Supplemental	Magnesium	mg/l	6	0	0%	0.082	0.799	
24_3_122	MW-31	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.138	0.668	
24_3_125	MW-31	Supplemental	Potassium	mg/l	6	0	0%	-0.361	0.263	
24_3_130	MW-31	Supplemental	Sodium	mg/l	6	0	0%	0.164	0.612	
24_3_132	MW-31	Supplemental	Temperature (field)	deg c	6	0	0%	-0.095	0.768	
24_3_133	MW-31	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.235	0.487	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
24_3_136	MW-31	Supplemental	Total Suspended Solids	mg/l	6	1	17%	-0.356	0.292	
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.462	0.152	
25_1_110	MW-32	Appendix III	Calcium	mg/l	6	0	0%	0.225	0.486	
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.436	0.177	
25_1_123	MW-32	Appendix III	pH (field)	su	6	0	0%	-0.278	0.389	
25_1_124	MW-32	Appendix III	pH (lab)	su	5	0	0%	-0.167	0.622	
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.000	1.000	
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	0.367	0.278	
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	5	83%	NA	NA	
25_2_118	MW-32	Appendix IV	Lithium	mg/l	6	0	0%	0.311	0.336	
25_2_129	MW-32	Appendix IV	Selenium	mg/l	6	0	0%	0.325	0.314	
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.339	0.294	
25_3_103	MW-32	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.381	0.297	
25_3_114	MW-32	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.620	0.055	
25_3_119	MW-32	Supplemental	Magnesium	mg/l	6	0	0%	0.238	0.461	
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.013	0.967	
25_3_125	MW-32	Supplemental	Potassium	mg/l	6	0	0%	-0.348	0.281	
25_3_130	MW-32	Supplemental	Sodium	mg/l	6	0	0%	0.469	0.146	
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	6	0	0%	-0.003	0.991	
25_3_133	MW-32	Supplemental	Temperature (lab)	deg c	5	0	0%	0.003	0.993	
25_3_136	MW-32	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-0.466	0.149	
25_3_137	MW-32	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.522	0.106	
26_1_110	MW-33A	Appendix III	Calcium	mg/l	6	0	0%	0.270	0.403	
26_1_111	MW-33A	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.108	0.737	
26_1_123	MW-33A	Appendix III	pH (field)	su	6	0	0%	0.033	0.919	
26_1_124	MW-33A	Appendix III	pH (lab)	su	5	0	0%	-0.371	0.272	
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.130	0.688	
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-0.050	0.882	
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	4	67%	-0.500	0.157	
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	6	0	0%	0.521	0.107	
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0	0%	0.214	0.507	
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.401	0.214	
26_3_103	MW-33A	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.595	0.103	
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.345	0.285	
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	6	0	0%	0.280	0.386	
26_3_122	MW-33A	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.408	0.206	
26_3_125	MW-33A	Supplemental	Potassium	mg/l	6	0	0%	-0.413	0.201	
26_3_130	MW-33A	Supplemental	Sodium	mg/l	6	0	0%	0.468	0.147	
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	6	0	0%	-0.394	0.222	
26_3_133	MW-33A	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.108	0.750	
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	6	2	33%	-0.721	0.042	*

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
26_3_137	MW-33A	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.480	0.137	
27_1_110	MW-33B	Appendix III	Calcium	mg/l	6	0	0%	0.156	0.630	
27_1_111	MW-33B	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	NA	NA	
27_1_123	MW-33B	Appendix III	pH (field)	su	5	0	0%	-0.266	0.432	
27_1_124	MW-33B	Appendix III	pH (lab)	su	5	0	0%	0.367	0.278	
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.167	0.606	
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-0.500	0.139	
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0	0%	0.254	0.430	
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0	0%	0.220	0.495	
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0	0%	0.210	0.515	
27_3_101	MW-33B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.095	0.768	
27_3_103	MW-33B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.086	0.814	
27_3_114	MW-33B	Supplemental	Conductivity (field)	us/cm	5	0	0%	-0.016	0.963	
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	6	0	0%	0.193	0.551	
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	-0.173	0.610	
27_3_125	MW-33B	Supplemental	Potassium	mg/l	6	0	0%	0.325	0.314	
27_3_130	MW-33B	Supplemental	Sodium	mg/l	6	0	0%	0.482	0.136	
27_3_132	MW-33B	Supplemental	Temperature (field)	deg c	5	0	0%	-0.463	0.171	
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.566	0.094	
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.148	0.647	
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	5	0	0%	0.213	0.528	
28_1_108	MW-34	Appendix III	Boron	mg/l	3	0	0%	-0.500	0.171	
28_1_110	MW-34	Appendix III	Calcium	mg/l	6	0	0%	-0.163	0.614	
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.374	0.246	
28_1_115	MW-34	Appendix III	Fluoride	mg/l	3	0	0%	-0.239	0.512	
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	0.037	0.912	
28_1_124	MW-34	Appendix III	pH (lab)	su	5	0	0%	0.422	0.212	
28_1_131	MW-34	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.527	0.102	
28_1_135	MW-34	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	0.060	0.852	
28_2_104	MW-34	Appendix IV	Antimony	mg/l	3	0	0%	-0.100	0.784	
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0	0%	0.134	0.678	
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0	0%	-0.162	0.658	
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	3	2	67%	NA	NA	
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0	0%	-0.165	0.652	
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0	0%	-0.123	0.728	
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	-0.239	0.512	
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0	0%	-0.164	0.654	
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0	0%	0.137	0.671	
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	3	0	0%	-0.071	0.845	
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0	0%	0.453	0.160	
28_2_134	MW-34	Appendix IV	Thallium	mg/l	3	2	67%	NA	NA	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.114	0.725	
28_3_103	MW-34	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.105	0.773	
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	5	0	0%	0.116	0.731	
28_3_119	MW-34	Supplemental	Magnesium	mg/l	3	0	0%	-0.197	0.590	
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	-0.037	0.913	
28_3_125	MW-34	Supplemental	Potassium	mg/l	3	0	0%	-0.198	0.587	
28_3_130	MW-34	Supplemental	Sodium	mg/l	3	0	0%	0.000	1.000	
28_3_132	MW-34	Supplemental	Temperature (field)	deg c	5	0	0%	-0.213	0.528	
28_3_133	MW-34	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.346	0.306	
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	6	0	0%	0.294	0.362	
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	5	0	0%	-0.113	0.739	
29_1_108	MW-35	Appendix III	Boron	mg/l	3	0	0%	-0.321	0.380	
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	-0.319	0.323	
29_1_111	MW-35	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.306	0.343	
29_1_115	MW-35	Appendix III	Fluoride	mg/l	3	0	0%	-0.177	0.628	
29_1_123	MW-35	Appendix III	pH (field)	su	6	0	0%	-0.145	0.652	
29_1_124	MW-35	Appendix III	pH (lab)	su	5	0	0%	-0.050	0.882	
29_1_131	MW-35	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.208	0.519	
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	0.292	0.366	
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	2	33%	0.275	0.437	
29_2_106	MW-35	Appendix IV	Barium	mg/l	3	0	0%	-0.462	0.206	
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	3	2	67%	NA	NA	
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	4	1	25%	-0.126	0.730	
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	3	0	0%	-0.177	0.628	
29_2_117	MW-35	Appendix IV	Lead	mg/l	3	1	33%	-0.500	0.157	
29_2_118	MW-35	Appendix IV	Lithium	mg/l	6	0	0%	0.228	0.480	
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	3	1	33%	-0.500	0.157	
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	3	0	0%	-0.069	0.850	
29_2_129	MW-35	Appendix IV	Selenium	mg/l	6	0	0%	0.196	0.544	
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.225	0.485	
29_3_103	MW-35	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	-0.500	0.171	
29_3_114	MW-35	Supplemental	Conductivity (field)	us/cm	6	0	0%	-0.021	0.949	
29_3_119	MW-35	Supplemental	Magnesium	mg/l	4	0	0%	-0.345	0.329	
29_3_122	MW-35	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.427	0.185	
29_3_125	MW-35	Supplemental	Potassium	mg/l	4	0	0%	-0.295	0.403	
29_3_126	MW-35	Supplemental	Radium-226	pci/l	3	0	0%	-0.290	0.428	
29_3_128	MW-35	Supplemental	Radium-228	pci/l	3	2	67%	NA	NA	
29_3_130	MW-35	Supplemental	Sodium	mg/l	4	0	0%	-0.450	0.203	
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	6	0	0%	-0.316	0.328	
29_3_133	MW-35	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.524	0.121	
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-0.064	0.844	
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	6	0	0%	0.187	0.561	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
30_1_108	MW-36	Appendix III	Boron	mg/l	2	0	0%	-0.500	0.157	
30_1_110	MW-36	Appendix III	Calcium	mg/l	3	0	0%	-0.062	0.865	
30_1_111	MW-36	Appendix III	Chloride (as Cl)	mg/l	3	0	0%	-0.117	0.748	
30_1_115	MW-36	Appendix III	Fluoride	mg/l	2	0	0%	-0.500	0.157	
30_1_123	MW-36	Appendix III	pH (field)	su	3	0	0%	-0.595	0.103	
30_1_124	MW-36	Appendix III	pH (lab)	su	2	0	0%	NA	NA	
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	3	0	0%	-0.167	0.648	
30_1_135	MW-36	Appendix III	Total Dissolved Solids	mg/l	3	0	0%	-0.086	0.814	
30_2_106	MW-36	Appendix IV	Barium	mg/l	2	0	0%	NA	NA	
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	2	1	50%	NA	NA	
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	3	1	33%	-0.500	0.157	
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	2	0	0%	-0.500	0.157	
30_2_118	MW-36	Appendix IV	Lithium	mg/l	3	0	0%	-0.049	0.894	
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	2	1	50%	NA	NA	
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	2	0	0%	-0.500	0.157	
30_2_129	MW-36	Appendix IV	Selenium	mg/l	3	1	33%	-0.500	0.157	
30_3_101	MW-36	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	3	0	0%	-0.051	0.888	
30_3_103	MW-36	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
30_3_114	MW-36	Supplemental	Conductivity (field)	us/cm	3	0	0%	-0.139	0.703	
30_3_119	MW-36	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
30_3_122	MW-36	Supplemental	Oxidation-reduction Potential (field)	mV	3	0	0%	-0.402	0.271	
30_3_125	MW-36	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
30_3_128	MW-36	Supplemental	Radium-228	pci/l	2	0	0%	-0.500	0.157	
30_3_130	MW-36	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
30_3_132	MW-36	Supplemental	Temperature (field)	deg c	3	0	0%	-0.646	0.077	
30_3_133	MW-36	Supplemental	Temperature (lab)	deg c	2	0	0%	-0.500	0.157	
30_3_136	MW-36	Supplemental	Total Suspended Solids	mg/l	3	0	0%	-0.024	0.948	
30_3_137	MW-36	Supplemental	Turbidity (field)	ntu	3	0	0%	-0.591	0.106	
31_1_108	MW-37	Appendix III	Boron	mg/l	1	0	0%	NA	NA	
31_1_110	MW-37	Appendix III	Calcium	mg/l	2	0	0%	-0.500	0.157	
31_1_111	MW-37	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	-0.500	0.157	
31_1_115	MW-37	Appendix III	Fluoride	mg/l	1	0	0%	NA	NA	
31_1_123	MW-37	Appendix III	pH (field)	su	2	0	0%	-0.500	0.157	
31_1_124	MW-37	Appendix III	pH (lab)	su	1	0	0%	NA	NA	
31_1_131	MW-37	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	NA	NA	
31_1_135	MW-37	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	-0.500	0.157	
31_2_104	MW-37	Appendix IV	Antimony	mg/l	1	0	0%	NA	NA	
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	2	0	0%	-0.500	0.157	
31_2_106	MW-37	Appendix IV	Barium	mg/l	1	0	0%	NA	NA	
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	1	0	0%	NA	NA	
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	2	0	0%	-0.500	0.157	
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	1	0	0%	NA	NA	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
31_2_117	MW-37	Appendix IV	Lead	mg/l	1	0	0%	NA	NA	
31_2_118	MW-37	Appendix IV	Lithium	mg/l	2	0	0%	-0.500	0.157	
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	1	0	0%	NA	NA	
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	1	0	0%	NA	NA	
31_2_129	MW-37	Appendix IV	Selenium	mg/l	2	0	0%	-0.500	0.157	
31_3_101	MW-37	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
31_3_103	MW-37	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
31_3_114	MW-37	Supplemental	Conductivity (field)	us/cm	2	0	0%	-0.500	0.157	
31_3_119	MW-37	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
31_3_122	MW-37	Supplemental	Oxidation-reduction Potential (field)	mV	2	0	0%	-0.500	0.157	
31_3_125	MW-37	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
31_3_128	MW-37	Supplemental	Radium-228	pci/l	1	0	0%	NA	NA	
31_3_130	MW-37	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
31_3_132	MW-37	Supplemental	Temperature (field)	deg c	2	0	0%	-0.500	0.157	
31_3_133	MW-37	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	
31_3_136	MW-37	Supplemental	Total Suspended Solids	mg/l	2	0	0%	-0.500	0.157	
31_3_137	MW-37	Supplemental	Turbidity (field)	ntu	2	0	0%	-0.500	0.157	
32_1_110	MW-38B	Appendix III	Calcium	mg/l	2	0	0%	-0.500	0.157	
32_1_111	MW-38B	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	-0.500	0.157	
32_1_123	MW-38B	Appendix III	pH (field)	su	1	0	0%	NA	NA	
32_1_124	MW-38B	Appendix III	pH (lab)	su	1	0	0%	NA	NA	
32_1_131	MW-38B	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	-0.500	0.157	
32_1_135	MW-38B	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	-0.500	0.157	
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	2	0	0%	-0.500	0.157	
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	2	0	0%	-0.500	0.157	
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	2	0	0%	-0.500	0.157	
32_3_101	MW-38B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
32_3_103	MW-38B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	-0.500	0.157	
32_3_114	MW-38B	Supplemental	Conductivity (field)	us/cm	1	0	0%	NA	NA	
32_3_119	MW-38B	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
32_3_122	MW-38B	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	NA	NA	
32_3_125	MW-38B	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
32_3_130	MW-38B	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
32_3_132	MW-38B	Supplemental	Temperature (field)	deg c	1	0	0%	NA	NA	
32_3_133	MW-38B	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	
32_3_136	MW-38B	Supplemental	Total Suspended Solids	mg/l	2	0	0%	-0.500	0.157	
32_3_137	MW-38B	Supplemental	Turbidity (field)	ntu	1	0	0%	NA	NA	
33_1_110	MW-38C	Appendix III	Calcium	mg/l	2	0	0%	-0.500	0.157	
33_1_111	MW-38C	Appendix III	Chloride (as Cl)	mg/l	2	0	0%	-0.500	0.157	
33_1_123	MW-38C	Appendix III	pH (field)	su	1	0	0%	NA	NA	
33_1_124	MW-38C	Appendix III	pH (lab)	su	1	0	0%	NA	NA	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
33_1_131	MW-38C	Appendix III	Sulfate (as SO4)	mg/l	2	0	0%	-0.500	0.157	
33_1_135	MW-38C	Appendix III	Total Dissolved Solids	mg/l	2	0	0%	-0.500	0.157	
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	2	0	0%	-0.500	0.157	
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	1	0	0%	NA	NA	
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	2	0	0%	-0.500	0.157	
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	2	0	0%	-0.500	0.157	
33_3_101	MW-38C	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	2	0	0%	NA	NA	
33_3_103	MW-38C	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	2	0	0%	NA	NA	
33_3_114	MW-38C	Supplemental	Conductivity (field)	us/cm	1	0	0%	NA	NA	
33_3_119	MW-38C	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
33_3_122	MW-38C	Supplemental	Oxidation-reduction Potential (field)	mV	1	0	0%	NA	NA	
33_3_125	MW-38C	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
33_3_130	MW-38C	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
33_3_132	MW-38C	Supplemental	Temperature (field)	deg c	1	0	0%	NA	NA	
33_3_133	MW-38C	Supplemental	Temperature (lab)	deg c	1	0	0%	NA	NA	
33_3_136	MW-38C	Supplemental	Total Suspended Solids	mg/l	2	0	0%	-0.500	0.157	
33_3_137	MW-38C	Supplemental	Turbidity (field)	ntu	1	0	0%	NA	NA	
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	0.392	0.059	
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	0.248	0.243	
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.048	0.816	
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	-0.126	0.553	
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	0.259	0.245	
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	0.295	0.156	
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	-0.256	0.218	
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.042	0.841	
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	0.417	0.158	
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	0.706	0.001	***
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	-0.125	0.540	
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	0.125	0.712	
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	0.343	0.246	
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	-0.150	0.471	
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	-0.110	0.590	
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	-0.126	0.553	
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	-0.221	0.287	
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	-0.107	0.598	
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	0.054	0.791	
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	-0.102	0.638	
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	-0.019	0.927	
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	-0.343	0.332	
34_3_101	MW-4	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
34_3_103	MW-4	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.433	0.051	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
34_3_119	MW-4	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.179	0.420	
34_3_125	MW-4	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	-0.086	0.692	
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	-0.152	0.528	
34_3_130	MW-4	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	-0.024	0.912	
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	0.060	0.771	
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.384	0.070	
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	-0.314	0.236	
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	-0.130	0.634	
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	0.179	0.514	
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.036	0.896	
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	-0.354	0.197	
35_1_123	MW-5	Appendix III	pH (field)	su	7	0	0%	-0.552	0.074	
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	0.267	0.330	
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.050	0.855	
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.056	0.837	
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	-0.167	0.648	
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	-0.561	0.113	
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	-0.057	0.836	
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	-0.500	0.157	
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	-0.249	0.441	
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	0.134	0.650	
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.354	0.197	
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	-0.188	0.559	
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	-0.100	0.715	
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	0.426	0.120	
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	5	0	0%	-0.763	0.024	*
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	-0.012	0.966	
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	NA	NA	
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	7	0	0%	0.081	0.793	
35_3_119	MW-5	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
35_3_122	MW-5	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.466	0.148	
35_3_125	MW-5	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
35_3_126	MW-5	Supplemental	Radium-226	pci/l	5	0	0%	-0.580	0.086	
35_3_128	MW-5	Supplemental	Radium-228	pci/l	5	2	40%	-0.577	0.114	
35_3_130	MW-5	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
35_3_132	MW-5	Supplemental	Temperature (field)	deg c	7	0	0%	-0.475	0.124	
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.480	0.079	
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	0.064	0.830	
35_3_137	MW-5	Supplemental	Turbidity (field)	ntu	6	0	0%	-0.017	0.957	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	0.412	0.053	
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	0.297	0.162	
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.656	0.002	**
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	0.102	0.681	
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	-0.078	0.725	
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	0.359	0.084	
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.488	0.019	*
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.393	0.059	
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	-0.190	0.574	
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	-0.291	0.214	
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	-0.193	0.344	
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	-0.234	0.488	
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	0.140	0.598	
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	-0.140	0.519	
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	-0.140	0.491	
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	0.102	0.681	
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	-0.205	0.323	
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	0.151	0.458	
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	0.425	0.041	*
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	-0.169	0.438	
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	0.478	0.019	*
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	-0.536	0.142	
36_3_101	MW-6	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
36_3_103	MW-6	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.386	0.083	
36_3_119	MW-6	Supplemental	Magnesium	mg/l	2	0	0%	-0.500	0.157	
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	-0.222	0.318	
36_3_125	MW-6	Supplemental	Potassium	mg/l	2	0	0%	-0.500	0.157	
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	-0.320	0.151	
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	-0.328	0.199	
36_3_130	MW-6	Supplemental	Sodium	mg/l	2	0	0%	-0.500	0.157	
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	0.129	0.563	
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	0.240	0.248	
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.054	0.798	
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	-0.068	0.783	
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	0.354	0.089	
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	0.144	0.499	
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	0.703	0.001	***
37_1_115	MW-8	Appendix III	Fluoride	mg/l	20	9	45%	0.593	0.025	*
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	0.143	0.531	
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	-0.110	0.606	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	0.153	0.471	
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-0.084	0.686	
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	0.256	0.429	
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	0.084	0.720	
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	-0.267	0.189	
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	-0.009	0.979	
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	-0.300	0.310	
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	-0.305	0.150	
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	-0.076	0.709	
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	9	45%	0.593	0.025	*
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	0.203	0.330	
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	0.119	0.560	
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	NA	NA	
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	0.255	0.319	
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	-0.056	0.787	
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	-0.143	0.483	
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	-0.283	0.439	
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	0.417	0.067	
37_3_119	MW-8	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	16	0	0%	-0.032	0.889	
37_3_125	MW-8	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	-0.126	0.546	
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	-0.001	0.998	
37_3_130	MW-8	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	0.292	0.201	
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	0.070	0.740	
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	-0.101	0.634	
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	-0.082	0.748	

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 5: Outlier Counts by Date

Date	Count
2015-12-14	1
2015-12-17	2
2016-03-04	2
2016-03-07	2
2016-08-30	1
2016-11-07	1
2017-05-22	1
2017-09-12	2
2017-09-14	1
2018-05-23	2
2018-08-09	1
2018-08-13	4
2018-08-14	5
2018-11-27	1
2018-11-28	5
2018-11-29	3
2019-10-22	1
2019-10-23	6
2019-10-24	1
2020-04-21	2
2020-04-22	2
2020-04-23	2
2020-04-24	1
2020-10-20	2
2020-10-21	7
2020-10-22	2
2021-04-30	1
2021-10-13	2
2021-10-15	3
2021-10-18	1
2021-10-19	2
2021-10-20	6
2021-11-29	1
2021-11-30	1
2022-01-07	2
2022-01-10	1
2022-01-11	3
2022-04-21	1
2022-04-29	2
2022-07-20	3
2022-07-21	1
2022-10-04	1
2022-10-07	1

(Table continues on next page)

Table 5: Outlier Counts by Date *(continued)*

Date	Count
2022-10-14	2
2022-10-27	1
2022-12-15	3

Table 6: Outliers Identified at the 1% Significance Level, Non-Detects Excluded

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	20	2015-12-17	10	0.770
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	20	2015-12-17	1	170
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	21	2016-08-30	1	0.0490
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	21	2016-03-07	1	0.0910
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	13	2016-03-07	NA	1000
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	13	2022-07-20	50	10.0
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	10	2021-10-13	1	1.90
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	13	2022-10-04	NA	7.44
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	10	2021-10-13	1	1.90
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	13	2022-07-20	NA	391
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	11	2020-04-22	1	160
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	13	2020-04-22	NA	22.0
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	10	2018-11-27	1	8.10
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	9	2022-10-14	1	2.60
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	8	2022-10-14	1	2.29
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	8	2019-10-23	NA	7.59
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	10	2018-08-13	1	0.130
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	5	2018-08-13	1	0.864
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	10	2018-11-28	1	0.870
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	10	2020-04-24	1	490
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	10	2018-11-28	1	8.50
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	7	2018-11-28	1	0.00670
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	9	2018-11-28	1	0.0130
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	9	2018-11-28	1	0.0920
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	7	2018-08-13	1	0.772
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	8	2021-04-30	NA	17.9
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	9	2022-10-07	1	0.000340
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	12	2022-04-21	4	1.50
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	12	2022-07-20	NA	370
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	10	2021-11-30	1	18.3
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	11	2019-10-22	1	31.0
17_1_110	MW-25B	Appendix III	Calcium	mg/l	6	0	0%	6	2022-04-29	1	160
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0	0%	6	2021-10-15	1	0.0240
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	6	2019-10-23	1	0.0550
18_1_110	MW-26	Appendix III	Calcium	mg/l	7	0	0%	7	2020-04-23	1	48.0

(Table continues on next page)

Table 6: Outliers Identified at the 1% Significance Level, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	7	2020-04-23	1	0.0680
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	10	2022-07-21	NA	269
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	9	2019-10-24	1	93.0
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	10	2022-01-07	NA	7.32
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	10	2022-01-07	NA	28.4
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	6	2022-01-10	1	400
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	6	2021-10-15	1	23.0
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	6	0	0%	6	2021-10-15	NA	668
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	11	2020-10-20	1	5.20
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	21	2019-10-23	NA	7.30
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	20	2017-09-12	1	8.10
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	14	2017-09-12	1	0.0290
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	11	2020-10-20	1	5.20
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	20	2016-11-07	NA	237
23_1_124	MW-30	Appendix III	pH (lab)	su	5	0	0%	5	2021-11-29	1	7.50
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	3	0	0%	3	2021-10-18	1	650
27_1_123	MW-33B	Appendix III	pH (field)	su	5	0	0%	5	2022-01-11	NA	5.22
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	5	2022-01-11	NA	371
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	5	2021-10-20	NA	8.31
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0	0%	3	2021-10-20	1	0.140
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0	0%	3	2021-10-20	1	0.0270
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0	0%	4	2021-10-20	1	0.00880
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0	0%	3	2021-10-20	1	0.0160
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	5	2022-10-27	NA	58.5
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	5	0	0%	5	2021-10-20	NA	99.3
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	6	2022-01-11	1	380
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	3	0	0%	3	2022-04-29	10	1300
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	19	2020-04-21	1	9.00
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	17	2017-05-22	NA	7.76
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	20	2017-09-14	1	8.40
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	21	2020-10-21	1	0.170
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	5	2018-08-14	1	0.000970
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	20	2018-08-14	1	0.0390
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	21	2020-10-21	1	0.0140
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	19	2020-04-21	1	9.00
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	20	2020-10-21	1	0.0170
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	18	2018-08-14	1	20.7
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	18	2018-08-14	1	9.67
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	14	2018-08-14	1	11.1
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	3	2018-08-13	1	0.000780
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	10	2020-10-22	1	0.0510
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	6	2020-10-22	1	0.00410
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	13	2021-10-19	1	0.610

(Table continues on next page)

Table 6: Outliers Identified at the 1% Significance Level, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	20	2018-05-23	1	3500
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	13	2021-10-19	1	0.610
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	20	2018-05-23	1	0.00740
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	17	2016-03-04	1	1.37
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	19	2018-11-29	1	2000
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	13	2015-12-14	NA	160
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	19	2022-12-15	50	580
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	19	2022-12-15	50	3700
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	20	2018-08-09	1	520
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	15	2019-10-23	1	0.00630
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	21	2019-10-23	1	0.210
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	19	2018-11-29	1	0.0640
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	21	2020-10-21	1	0.0120
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	20	2019-10-23	1	0.0190
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	21	2022-12-15	1	0.230
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	12	2018-11-29	1	0.00870
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	20	2020-10-21	1	8.84
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	20	2020-10-21	1	4.20
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	19	2020-10-21	1	4.64
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	19	2016-03-04	1	7900

Table 7: Seasonality Tests

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
11_1_108	MW-1	Appendix III	Boron	mg/l	0%	2	8	3	7	20	0.163	0.003 **	0.005 **	2	8	3	7	20	0.163	0.003 **	0.005 **
11_1_110	MW-1	Appendix III	Calcium	mg/l	0%	2	7	3	7	19	0.144	0.169	0.168	2	7	3	7	19	0.144	0.169	0.168
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	0%	2	8	3	7	20	0.636	0.542	0.549	2	8	3	7	20	0.636	0.542	0.549
11_1_115	MW-1	Appendix III	Fluoride	mg/l	0%	3	8	3	7	21	0.358	0.329	0.371	3	8	3	7	21	0.358	0.329	0.371
11_1_123	MW-1	Appendix III	pH (field)	su	0%	2	7	2	6	17	0.048 *	0.031 *	0.030 *	2	7	2	6	17	0.048 *	0.031 *	0.030 *
11_1_124	MW-1	Appendix III	pH (lab)	su	0%	2	8	3	7	20	0.644	0.867	0.862	2	8	3	7	20	0.644	0.867	0.862
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	0%	2	8	3	7	20	0.153	0.019 *	0.013 *	2	8	3	7	20	0.153	0.019 *	0.013 *
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	0%	2	8	3	7	20	0.883	0.877	0.885	2	8	3	7	20	0.883	0.877	0.885
11_2_104	MW-1	Appendix IV	Antimony	mg/l	47%	3	8	2	6	19	0.631	0.494	0.312	2	4	1	3	10	0.309	0.436	0.279
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	19%	3	8	3	7	21	0.463	0.311	0.307	1	6	3	7	17	0.415	0.494	0.549
11_2_106	MW-1	Appendix IV	Barium	mg/l	0%	3	8	3	7	21	0.718	0.623	0.672	3	8	3	7	21	0.718	0.623	0.672
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	58%	3	8	3	5	19	0.484	0.641	0.831	1	3	2	2	8	0.689	0.660	0.676
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	40%	3	8	3	6	20	0.146	0.097	0.228	2	5	2	3	12	0.186	0.175	0.323
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	14%	3	8	3	7	21	0.297	0.449	0.302	3	6	3	6	18	0.259	0.513	0.330
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	0%	3	8	3	7	21	0.169	0.347	0.203	3	8	3	7	21	0.169	0.347	0.203
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	0%	3	8	3	7	21	0.358	0.329	0.371	3	8	3	7	21	0.358	0.329	0.371
11_2_117	MW-1	Appendix IV	Lead	mg/l	29%	3	8	3	7	21	0.373	0.458	0.342	3	5	3	4	15	0.326	0.587	0.344
11_2_118	MW-1	Appendix IV	Lithium	mg/l	0%	3	8	3	7	21	0.259	0.218	0.217	3	8	3	7	21	0.259	0.218	0.217
11_2_120	MW-1	Appendix IV	Mercury	mg/l	94%	3	7	2	5	17	0.221	0.245	0.222	0	0	1	0	1	NA	NA	NA
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	0%	3	8	3	7	21	0.543	0.625	0.559	3	8	3	7	21	0.543	0.625	0.559
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	33%	3	8	3	7	21	0.414	0.366	0.429	3	5	2	4	14	0.182	0.157	0.137
11_2_129	MW-1	Appendix IV	Selenium	mg/l	33%	3	8	3	7	21	0.068	0.043 *	0.036 *	3	5	3	3	14	0.070	0.044 *	0.016 *
11_2_134	MW-1	Appendix IV	Thallium	mg/l	89%	3	8	2	5	18	0.594	0.570	0.695	0	1	0	1	2	0.317	NA	NA
11_3_101	MW-1	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
11_3_102	MW-1	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11_3_103	MW-1	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	0%	2	7	2	6	17	0.534	0.634	0.643	2	7	2	6	17	0.534	0.634	0.643
11_3_119	MW-1	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	7	2	6	17	0.718	0.594	NA	2	7	2	6	17	0.718	0.594	NA
11_3_125	MW-1	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
11_3_126	MW-1	Supplemental	Radium-226	pci/l	29%	3	8	3	7	21	0.296	0.120	0.306	3	6	3	3	15	0.225	0.170	0.250
11_3_128	MW-1	Supplemental	Radium-228	pci/l	57%	3	8	3	7	21	0.085	0.087	0.075	1	4	1	3	9	0.423	0.685	0.491
11_3_130	MW-1	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	0%	2	7	2	6	17	0.181	0.169	0.163	2	7	2	6	17	0.181	0.169	0.163
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	0%	2	8	3	7	20	0.137	0.065	0.084	2	8	3	7	20	0.137	0.065	0.084
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	0%	3	7	3	6	19	0.389	0.591	0.431	3	7	3	6	19	0.389	0.591	0.431
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	0%	2	5	1	5	13	0.293	0.686	0.399	2	5	1	5	13	0.293	0.686	0.399
12_1_108	MW-13	Appendix III	Boron	mg/l	0%	0	4	1	5	10	0.206	0.046 *	0.059	0	4	1	5	10	0.206	0.046 *	0.059
12_1_110	MW-13	Appendix III	Calcium	mg/l	0%	2	4	2	5	13	0.889	0.241	0.143	2	4	2	5	13	0.889	0.241	0.143

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	0%	2	4	2	5	13	0.613	0.712	0.710	2	4	2	5	13	0.613	0.712	0.710
12_1_115	MW-13	Appendix III	Fluoride	mg/l	0%	0	4	1	5	10	0.230	0.539	0.475	0	4	1	5	10	0.230	0.539	0.475
12_1_123	MW-13	Appendix III	pH (field)	su	0%	2	4	2	5	13	0.134	0.275	0.271	2	4	2	5	13	0.134	0.275	0.271
12_1_124	MW-13	Appendix III	pH (lab)	su	0%	2	4	1	5	12	0.114	0.125	0.121	2	4	1	5	12	0.114	0.125	0.121
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	0%	2	4	2	5	13	0.048 *	0.019 *	0.024 *	2	4	2	5	13	0.048 *	0.019 *	0.024 *
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	0%	2	4	2	5	13	0.354	0.339	0.339	2	4	2	5	13	0.354	0.339	0.339
12_2_104	MW-13	Appendix IV	Antimony	mg/l	100%	0	4	0	4	8	0.186	0.324	0.278	NA	NA	NA	NA	NA	NA	NA	NA
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	23%	2	4	2	5	13	0.379	0.430	0.376	1	3	1	5	10	0.468	0.560	0.735
12_2_106	MW-13	Appendix IV	Barium	mg/l	0%	0	4	1	5	10	0.168	0.134	0.139	0	4	1	5	10	0.168	0.134	0.139
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	88%	0	4	1	3	8	0.708	0.775	0.611	0	0	1	0	1	NA	NA	NA
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	78%	0	4	1	4	9	0.234	0.032 *	0.051	0	0	1	1	2	0.317	NA	NA
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10%	0	4	1	5	10	0.381	0.506	0.421	0	3	1	5	9	0.278	0.397	0.263
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	9%	0	4	2	5	11	0.089	0.084	0.068	0	3	2	5	10	0.119	0.123	0.090
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	0%	0	4	1	5	10	0.230	0.539	0.475	0	4	1	5	10	0.230	0.539	0.475
12_2_117	MW-13	Appendix IV	Lead	mg/l	60%	0	4	1	5	10	0.504	0.677	0.758	0	0	1	3	4	0.637	0.482	0.523
12_2_118	MW-13	Appendix IV	Lithium	mg/l	0%	2	4	2	5	13	0.677	0.684	0.693	2	4	2	5	13	0.677	0.684	0.693
12_2_120	MW-13	Appendix IV	Mercury	mg/l	100%	0	4	0	3	7	0.659	0.412	0.376	NA	NA	NA	NA	NA	NA	NA	NA
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10%	0	4	1	5	10	0.257	0.102	0.143	0	3	1	5	9	0.184	0.107	0.134
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	40%	0	4	1	5	10	0.672	0.754	0.668	0	3	1	2	6	0.807	0.668	0.683
12_2_129	MW-13	Appendix IV	Selenium	mg/l	0%	2	4	2	5	13	0.188	0.186	0.180	2	4	2	5	13	0.188	0.186	0.180
12_2_134	MW-13	Appendix IV	Thallium	mg/l	100%	0	4	0	3	7	0.186	0.366	0.258	NA	NA	NA	NA	NA	NA	NA	NA
12_3_101	MW-13	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	0	1	1	4	0.259	0.044 *	0.039 *	2	0	1	1	4	0.259	0.044 *	0.039 *
12_3_102	MW-13	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
12_3_103	MW-13	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	0%	2	4	2	5	13	0.664	0.944	0.957	2	4	2	5	13	0.664	0.944	0.957
12_3_119	MW-13	Supplemental	Magnesium	mg/l	0%	2	1	1	1	5	0.443	0.239	0.093	2	1	1	1	5	0.443	0.239	0.093
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	4	2	5	13	0.379	0.189	0.235	2	4	2	5	13	0.379	0.189	0.235
12_3_125	MW-13	Supplemental	Potassium	mg/l	0%	2	1	1	1	5	0.392	0.729	0.727	2	1	1	1	5	0.392	0.729	0.727
12_3_126	MW-13	Supplemental	Radium-226	pci/l	30%	0	4	1	5	10	0.159	0.212	0.225	0	4	1	2	7	0.235	0.282	0.345
12_3_128	MW-13	Supplemental	Radium-228	pci/l	70%	0	4	1	5	10	0.411	0.717	0.670	0	2	0	1	3	0.221	0.023 *	0.036 *
12_3_130	MW-13	Supplemental	Sodium	mg/l	0%	2	1	1	1	5	0.362	0.099	0.038 *	2	1	1	1	5	0.362	0.099	0.038 *
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	0%	2	4	2	5	13	0.053	0.017 *	0.025 *	2	4	2	5	13	0.053	0.017 *	0.025 *
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	0%	2	4	1	5	12	0.211	0.260	0.262	2	4	1	5	12	0.211	0.260	0.262
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	8%	2	4	2	4	12	0.380	0.664	0.368	1	4	2	4	11	0.790	0.750	0.810
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	0%	2	4	2	5	13	0.456	0.582	0.704	2	4	2	5	13	0.456	0.582	0.704
13_1_108	MW-14	Appendix III	Boron	mg/l	0%	0	4	1	5	10	0.270	0.207	0.206	0	4	1	5	10	0.270	0.207	0.206
13_1_110	MW-14	Appendix III	Calcium	mg/l	0%	0	4	1	5	10	0.798	0.770	0.758	0	4	1	5	10	0.798	0.770	0.758
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	0%	0	4	1	5	10	0.426	0.317	0.304	0	4	1	5	10	0.426	0.317	0.304
13_1_115	MW-14	Appendix III	Fluoride	mg/l	20%	0	4	1	5	10	0.684	0.824	0.845	0	3	1	4	8	0.213	0.364	0.257

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
13_1_123	MW-14	Appendix III	pH (field)	su	0%	0	4	1	5	10	0.514	0.851	0.848	0	4	1	5	10	0.514	0.851	0.848
13_1_124	MW-14	Appendix III	pH (lab)	su	0%	0	4	1	5	10	0.586	0.916	0.903	0	4	1	5	10	0.586	0.916	0.903
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	0%	0	4	1	5	10	0.656	0.903	0.921	0	4	1	5	10	0.656	0.903	0.921
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	0%	0	4	1	5	10	0.641	0.977	0.981	0	4	1	5	10	0.641	0.977	0.981
13_2_104	MW-14	Appendix IV	Antimony	mg/l	100%	0	4	0	4	8	0.186	0.213	0.224	NA	NA	NA	NA	NA	NA	NA	NA
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	20%	0	4	1	5	10	0.783	0.844	0.755	0	3	1	4	8	0.908	0.963	0.948
13_2_106	MW-14	Appendix IV	Barium	mg/l	0%	0	4	1	5	10	0.273	0.179	0.237	0	4	1	5	10	0.273	0.179	0.237
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	88%	0	4	1	3	8	0.708	0.760	0.623	0	0	1	0	1	NA	NA	NA
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	89%	0	4	1	4	9	0.712	0.836	0.878	0	0	1	0	1	NA	NA	NA
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	30%	0	4	1	5	10	0.235	0.276	0.352	0	3	1	3	7	0.319	0.314	0.440
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	20%	0	4	1	5	10	0.449	0.499	0.595	0	2	1	5	8	0.311	0.309	0.534
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	20%	0	4	1	5	10	0.684	0.824	0.845	0	3	1	4	8	0.213	0.364	0.257
13_2_117	MW-14	Appendix IV	Lead	mg/l	80%	0	4	1	5	10	0.346	0.878	0.929	0	0	1	1	2	0.317	NA	NA
13_2_118	MW-14	Appendix IV	Lithium	mg/l	0%	0	4	1	5	10	0.621	0.716	0.732	0	4	1	5	10	0.621	0.716	0.732
13_2_120	MW-14	Appendix IV	Mercury	mg/l	100%	0	4	0	3	7	0.659	0.412	0.376	NA	NA	NA	NA	NA	NA	NA	NA
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	0%	0	4	1	5	10	0.284	0.032 *	0.119	0	4	1	5	10	0.284	0.032 *	0.119
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10%	0	4	1	5	10	0.684	0.869	0.917	0	4	1	4	9	0.648	0.654	0.621
13_2_129	MW-14	Appendix IV	Selenium	mg/l	0%	0	4	1	5	10	0.478	0.517	0.511	0	4	1	5	10	0.478	0.517	0.511
13_2_134	MW-14	Appendix IV	Thallium	mg/l	100%	0	4	0	3	7	0.186	0.205	0.219	NA	NA	NA	NA	NA	NA	NA	NA
13_3_101	MW-14	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
13_3_102	MW-14	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13_3_103	MW-14	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	0%	0	4	1	5	10	0.063	0.070	0.075	0	4	1	5	10	0.063	0.070	0.075
13_3_119	MW-14	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	4	1	5	10	0.950	0.928	NA	0	4	1	5	10	0.950	0.928	NA
13_3_125	MW-14	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
13_3_126	MW-14	Supplemental	Radium-226	pci/l	0%	0	4	1	5	10	0.159	0.101	0.186	0	4	1	5	10	0.159	0.101	0.186
13_3_128	MW-14	Supplemental	Radium-228	pci/l	20%	0	4	1	5	10	0.511	0.660	0.656	0	4	1	3	8	0.256	0.455	0.412
13_3_130	MW-14	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	0%	0	4	1	5	10	0.349	0.295	0.319	0	4	1	5	10	0.349	0.295	0.319
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	0%	0	4	1	5	10	0.118	0.141	0.134	0	4	1	5	10	0.118	0.141	0.134
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	22%	0	4	1	4	9	0.443	0.205	0.431	0	3	1	3	7	0.456	0.297	0.311
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	0%	0	4	1	5	10	0.376	0.331	0.693	0	4	1	5	10	0.376	0.331	0.693
14_1_108	MW-15	Appendix III	Boron	mg/l	0%	0	4	1	5	10	0.192	0.189	0.194	0	4	1	5	10	0.192	0.189	0.194
14_1_110	MW-15	Appendix III	Calcium	mg/l	0%	0	4	1	5	10	0.430	0.404	0.387	0	4	1	5	10	0.430	0.404	0.387
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	0%	0	4	1	5	10	0.625	0.578	0.589	0	4	1	5	10	0.625	0.578	0.589
14_1_115	MW-15	Appendix III	Fluoride	mg/l	0%	0	4	1	5	10	0.606	0.576	0.551	0	4	1	5	10	0.606	0.576	0.551
14_1_123	MW-15	Appendix III	pH (field)	su	0%	0	4	0	4	8	0.663	0.803	0.820	0	4	0	4	8	0.663	0.803	0.820
14_1_124	MW-15	Appendix III	pH (lab)	su	0%	0	4	1	5	10	0.546	0.847	0.851	0	4	1	5	10	0.546	0.847	0.851

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	0%	0	4	1	5	10	0.432	0.691	0.642	0	4	1	5	10	0.432	0.691	0.642
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	0%	0	4	1	5	10	0.746	0.775	0.769	0	4	1	5	10	0.746	0.775	0.769
14_2_104	MW-15	Appendix IV	Antimony	mg/l	100%	0	4	0	4	8	0.186	0.324	0.278	NA	NA	NA	NA	NA	NA	NA	NA
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10%	0	4	1	5	10	0.235	0.029 *	0.223	0	3	1	5	9	0.299	0.014 *	0.228
14_2_106	MW-15	Appendix IV	Barium	mg/l	0%	0	4	1	5	10	0.215	0.000 ***	0.011 *	0	4	1	5	10	0.215	0.000 ***	0.011 *
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	88%	0	4	1	3	8	0.414	0.429	0.430	0	0	1	0	1	NA	NA	NA
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	100%	0	4	1	4	9	0.910	0.776	0.796	NA	NA	NA	NA	NA	NA	NA	NA
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	20%	0	4	1	5	10	0.266	0.003 **	0.088	0	3	1	4	8	0.297	0.014 *	0.189
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	20%	0	4	1	5	10	0.275	0.002 **	0.080	0	3	1	4	8	0.275	0.007 **	0.087
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	0%	0	4	1	5	10	0.606	0.576	0.551	0	4	1	5	10	0.606	0.576	0.551
14_2_117	MW-15	Appendix IV	Lead	mg/l	60%	0	4	1	5	10	0.192	0.000 ***	0.032 *	0	1	1	2	4	0.407	0.298	0.630
14_2_118	MW-15	Appendix IV	Lithium	mg/l	0%	0	4	1	5	10	0.114	0.156	0.140	0	4	1	5	10	0.114	0.156	0.140
14_2_120	MW-15	Appendix IV	Mercury	mg/l	100%	0	4	0	3	7	0.659	0.412	0.376	NA	NA	NA	NA	NA	NA	NA	NA
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10%	0	4	1	5	10	0.102	0.074	0.115	0	3	1	5	9	0.122	0.103	0.159
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	40%	0	4	1	5	10	0.356	0.283	0.289	0	3	1	2	6	0.304	0.332	0.321
14_2_129	MW-15	Appendix IV	Selenium	mg/l	0%	0	4	1	5	10	0.313	0.421	0.375	0	4	1	5	10	0.313	0.421	0.375
14_2_134	MW-15	Appendix IV	Thallium	mg/l	86%	0	4	0	3	7	0.558	0.373	0.271	0	0	0	1	1	NA	NA	NA
14_3_101	MW-15	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
14_3_102	MW-15	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14_3_103	MW-15	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	0%	0	4	0	4	8	0.149	0.185	0.177	0	4	0	4	8	0.149	0.185	0.177
14_3_119	MW-15	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	4	0	4	8	1.000	0.877	0.882	0	4	0	4	8	1.000	0.877	0.882
14_3_125	MW-15	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
14_3_126	MW-15	Supplemental	Radium-226	pci/l	50%	0	4	1	5	10	0.198	0.007 **	0.095	0	2	1	2	5	0.368	0.015 *	0.108
14_3_128	MW-15	Supplemental	Radium-228	pci/l	70%	0	4	1	5	10	0.292	0.803	0.747	0	2	0	1	3	0.221	0.212	0.328
14_3_130	MW-15	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	0%	0	4	0	4	8	0.245	0.699	0.636	0	4	0	4	8	0.245	0.699	0.636
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	0%	0	4	1	5	10	0.286	0.095	0.077	0	4	1	5	10	0.286	0.095	0.077
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	0%	0	4	1	4	9	0.469	0.395	0.317	0	4	1	4	9	0.469	0.395	0.317
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	0%	0	4	0	4	8	0.248	0.459	0.295	0	4	0	4	8	0.248	0.459	0.295
15_1_108	MW-16	Appendix III	Boron	mg/l	0%	0	4	1	5	10	0.677	0.873	0.902	0	4	1	5	10	0.677	0.873	0.902
15_1_110	MW-16	Appendix III	Calcium	mg/l	0%	0	4	1	5	10	0.468	0.548	0.584	0	4	1	5	10	0.468	0.548	0.584
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	0%	0	4	1	5	10	0.279	0.324	0.288	0	4	1	5	10	0.279	0.324	0.288
15_1_115	MW-16	Appendix III	Fluoride	mg/l	0%	0	4	1	5	10	0.090	0.063	0.064	0	4	1	5	10	0.090	0.063	0.064
15_1_123	MW-16	Appendix III	pH (field)	su	0%	0	4	0	4	8	0.884	0.957	0.957	0	4	0	4	8	0.884	0.957	0.957
15_1_124	MW-16	Appendix III	pH (lab)	su	0%	0	4	1	5	10	0.852	0.894	0.900	0	4	1	5	10	0.852	0.894	0.900
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	0%	0	4	1	5	10	0.350	0.376	0.355	0	4	1	5	10	0.350	0.376	0.355
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	0%	0	4	1	5	10	0.866	0.871	0.850	0	4	1	5	10	0.866	0.871	0.850

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
15_2_104	MW-16	Appendix IV	Antimony	mg/l	12%	0	4	0	4	8	0.386	0.293	0.253	0	3	0	4	7	0.724	0.485	0.532
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10%	0	4	1	5	10	0.293	0.611	0.399	0	3	1	5	9	0.449	0.743	0.584
15_2_106	MW-16	Appendix IV	Barium	mg/l	0%	0	4	1	5	10	0.169	0.002 **	0.048 *	0	4	1	5	10	0.169	0.002 **	0.048 *
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	75%	0	4	1	3	8	0.262	0.088	0.350	0	0	1	1	2	0.317	NA	NA
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	89%	0	4	1	4	9	0.170	0.233	0.391	0	0	1	0	1	NA	NA	NA
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	80%	0	4	1	5	10	0.241	0.009 **	0.067	0	0	1	1	2	0.317	NA	NA
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	60%	0	4	1	5	10	0.186	0.030 *	0.068	0	0	1	3	4	0.180	0.282	0.384
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	0%	0	4	1	5	10	0.090	0.063	0.064	0	4	1	5	10	0.090	0.063	0.064
15_2_117	MW-16	Appendix IV	Lead	mg/l	70%	0	4	1	5	10	0.196	0.015 *	0.077	0	0	1	2	3	0.221	0.458	0.607
15_2_118	MW-16	Appendix IV	Lithium	mg/l	0%	0	4	1	5	10	0.775	0.925	0.951	0	4	1	5	10	0.775	0.925	0.951
15_2_120	MW-16	Appendix IV	Mercury	mg/l	100%	0	4	0	3	7	0.659	0.412	0.376	NA	NA	NA	NA	NA	NA	NA	NA
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10%	0	4	1	5	10	0.558	0.628	0.487	0	3	1	5	9	0.739	0.895	0.926
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	40%	0	4	1	5	10	0.289	0.021 *	0.098	0	2	1	3	6	0.304	0.155	0.340
15_2_129	MW-16	Appendix IV	Selenium	mg/l	40%	0	4	1	5	10	0.062	0.003 **	0.016 *	0	3	1	2	6	0.117	0.068	0.124
15_2_134	MW-16	Appendix IV	Thallium	mg/l	100%	0	4	0	3	7	0.186	0.205	0.219	NA	NA	NA	NA	NA	NA	NA	NA
15_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
15_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	0%	0	4	0	4	8	0.248	0.450	0.447	0	4	0	4	8	0.248	0.450	0.447
15_3_119	MW-16	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
15_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	4	0	4	8	0.564	0.434	NA	0	4	0	4	8	0.564	0.434	NA
15_3_125	MW-16	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
15_3_126	MW-16	Supplemental	Radium-226	pci/l	30%	0	4	1	5	10	0.293	0.007 **	0.110	0	3	1	3	7	0.276	0.003 **	0.054
15_3_128	MW-16	Supplemental	Radium-228	pci/l	70%	0	4	1	5	10	0.472	0.602	0.635	0	1	1	1	3	0.368	NA	NA
15_3_130	MW-16	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	0%	0	4	0	4	8	0.772	0.613	0.675	0	4	0	4	8	0.772	0.613	0.675
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	0%	0	4	1	5	10	0.221	0.191	0.186	0	4	1	5	10	0.221	0.191	0.186
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	0%	0	4	1	4	9	0.301	0.094	0.356	0	4	1	4	9	0.301	0.094	0.356
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	0%	0	4	0	4	8	0.149	0.075	0.186	0	4	0	4	8	0.149	0.075	0.186
16_1_108	MW-21	Appendix III	Boron	mg/l	0%	0	5	0	4	9	0.893	0.815	0.852	0	5	0	4	9	0.893	0.815	0.852
16_1_110	MW-21	Appendix III	Calcium	mg/l	0%	1	5	1	5	12	0.300	0.103	0.065	1	5	1	5	12	0.300	0.103	0.065
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	0%	1	4	1	5	11	0.360	0.422	0.436	1	4	1	5	11	0.360	0.422	0.436
16_1_115	MW-21	Appendix III	Fluoride	mg/l	12%	0	4	0	4	8	0.149	0.155	0.133	0	4	0	3	7	0.289	0.155	0.155
16_1_123	MW-21	Appendix III	pH (field)	su	0%	1	5	1	5	12	0.188	0.314	0.313	1	5	1	5	12	0.188	0.314	0.313
16_1_124	MW-21	Appendix III	pH (lab)	su	0%	1	4	0	5	10	0.231	0.419	0.412	1	4	0	5	10	0.231	0.419	0.412
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	0%	1	4	1	5	11	0.423	0.673	0.689	1	4	1	5	11	0.423	0.673	0.689
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	0%	1	5	1	5	12	0.868	0.974	0.976	1	5	1	5	12	0.868	0.974	0.976
16_2_104	MW-21	Appendix IV	Antimony	mg/l	100%	0	5	0	3	8	0.172	0.431	0.353	NA	NA	NA	NA	NA	NA	NA	NA
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	25%	1	5	1	5	12	0.210	0.182	0.107	0	4	0	5	9	0.389	0.890	0.539

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
16_2_106	MW-21	Appendix IV	Barium	mg/l	0%	0	5	0	4	9	0.620	0.930	0.940	0	5	0	4	9	0.620	0.930	0.940
16_2_107	MW-21	Appendix IV	Beryllium	mg/l	100%	0	5	0	2	7	0.669	0.711	0.435	NA	NA	NA	NA	NA	NA	NA	NA
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	100%	0	5	0	3	8	0.873	0.421	0.454	NA	NA	NA	NA	NA	NA	NA	NA
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	89%	0	5	0	4	9	0.561	0.775	0.969	0	0	0	1	1	NA	NA	NA
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	20%	0	5	1	4	10	0.235	0.532	0.369	0	3	1	4	8	0.256	0.410	0.274
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	12%	0	4	0	4	8	0.149	0.155	0.133	0	4	0	3	7	0.289	0.155	0.155
16_2_117	MW-21	Appendix IV	Lead	mg/l	100%	0	5	0	4	9	0.180	0.233	0.193	NA	NA	NA	NA	NA	NA	NA	NA
16_2_118	MW-21	Appendix IV	Lithium	mg/l	0%	1	5	1	5	12	0.428	0.395	0.443	1	5	1	5	12	0.428	0.395	0.443
16_2_120	MW-21	Appendix IV	Mercury	mg/l	100%	0	5	0	2	7	0.334	0.178	0.158	NA	NA	NA	NA	NA	NA	NA	NA
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	0%	0	5	0	4	9	0.806	0.626	0.556	0	5	0	4	9	0.806	0.626	0.556
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	12%	0	4	0	4	8	0.083	0.096	0.107	0	3	0	4	7	0.157	0.209	0.197
16_2_129	MW-21	Appendix IV	Selenium	mg/l	0%	1	5	1	5	12	0.800	0.927	0.925	1	5	1	5	12	0.800	0.927	0.925
16_2_134	MW-21	Appendix IV	Thallium	mg/l	100%	0	5	0	2	7	0.147	0.460	0.265	NA	NA	NA	NA	NA	NA	NA	NA
16_3_101	MW-21	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	1	0	1	2	4	0.223	0.000 ***	0.000 ***	1	0	1	2	4	0.223	0.000 ***	0.000 ***
16_3_102	MW-21	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	1	0	0	2	3	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
16_3_103	MW-21	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	0%	1	5	1	5	12	0.779	0.765	0.777	1	5	1	5	12	0.779	0.765	0.777
16_3_119	MW-21	Supplemental	Magnesium	mg/l	0%	1	1	1	2	5	0.317	0.385	0.369	1	1	1	2	5	0.317	0.385	0.369
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	5	1	5	12	0.302	0.017 *	0.448	1	5	1	5	12	0.302	0.017 *	0.448
16_3_125	MW-21	Supplemental	Potassium	mg/l	0%	1	1	1	2	5	0.362	0.550	0.563	1	1	1	2	5	0.362	0.550	0.563
16_3_126	MW-21	Supplemental	Radium-226	pci/l	0%	0	4	0	4	8	0.149	0.190	0.247	0	4	0	4	8	0.149	0.190	0.247
16_3_128	MW-21	Supplemental	Radium-228	pci/l	25%	0	4	0	4	8	0.149	0.124	0.117	0	3	0	3	6	0.127	0.105	0.098
16_3_130	MW-21	Supplemental	Sodium	mg/l	0%	1	1	1	2	5	0.532	0.662	0.640	1	1	1	2	5	0.532	0.662	0.640
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	0%	1	5	1	5	12	0.063	0.005 **	0.008 **	1	5	1	5	12	0.063	0.005 **	0.008 **
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	0%	1	4	0	5	10	0.537	0.938	0.937	1	4	0	5	10	0.537	0.938	0.937
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	0%	1	5	1	4	11	0.259	0.664	0.412	1	5	1	4	11	0.259	0.664	0.412
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	0%	1	5	1	5	12	0.603	0.694	0.607	1	5	1	5	12	0.603	0.694	0.607
17_1_108	MW-25B	Appendix III	Boron	mg/l	0%	0	3	0	3	6	0.050 *	0.029 *	0.028 *	0	3	0	3	6	0.050 *	0.029 *	0.028 *
17_1_110	MW-25B	Appendix III	Calcium	mg/l	0%	0	3	0	3	6	0.197	0.275	0.266	0	3	0	3	6	0.197	0.275	0.266
17_1_111	MW-25B	Appendix III	Chloride (as Cl)	mg/l	0%	0	3	0	3	6	0.121	0.092	0.091	0	3	0	3	6	0.121	0.092	0.091
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	0%	0	3	0	3	6	0.827	0.913	0.997	0	3	0	3	6	0.827	0.913	0.997
17_1_123	MW-25B	Appendix III	pH (field)	su	0%	0	3	0	3	6	0.513	0.601	0.608	0	3	0	3	6	0.513	0.601	0.608
17_1_124	MW-25B	Appendix III	pH (lab)	su	0%	0	3	0	3	6	0.658	0.815	0.806	0	3	0	3	6	0.658	0.815	0.806
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	0%	0	3	0	3	6	0.127	0.130	0.128	0	3	0	3	6	0.127	0.130	0.128
17_1_135	MW-25B	Appendix III	Total Dissolved Solids	mg/l	0%	0	3	0	3	6	0.197	0.230	0.230	0	3	0	3	6	0.197	0.230	0.230
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	20%	0	3	0	2	5	1.000	0.454	0.507	0	3	0	1	4	0.180	0.050 *	0.072
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	0%	0	3	0	3	6	0.077	0.113	0.131	0	3	0	3	6	0.077	0.113	0.131
17_2_106	MW-25B	Appendix IV	Barium	mg/l	0%	0	3	0	3	6	0.346	0.345	0.345	0	3	0	3	6	0.346	0.345	0.345
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	75%	0	3	0	1	4	0.655	0.442	0.439	0	1	0	0	1	NA	NA	NA

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
17_2_109	MW-25B	Appendix IV	Cadmium	mg/l	100%	0	3	0	2	5	0.414	0.495	0.495	NA	NA	NA	NA	NA	NA	NA	NA
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	83%	0	3	0	3	6	0.246	0.320	0.300	0	0	0	1	1	NA	NA	NA
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	0%	0	3	0	3	6	0.275	0.222	0.232	0	3	0	3	6	0.275	0.222	0.232
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	0%	0	3	0	3	6	0.827	0.913	0.997	0	3	0	3	6	0.827	0.913	0.997
17_2_117	MW-25B	Appendix IV	Lead	mg/l	83%	0	3	0	3	6	0.197	0.284	0.305	0	0	0	1	1	NA	NA	NA
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	0%	0	3	0	3	6	0.507	0.770	0.807	0	3	0	3	6	0.507	0.770	0.807
17_2_120	MW-25B	Appendix IV	Mercury	mg/l	100%	0	3	0	1	4	0.564	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	0%	0	3	0	3	6	0.127	0.175	0.187	0	3	0	3	6	0.127	0.175	0.187
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	50%	0	3	0	3	6	0.513	0.384	0.384	0	2	0	1	3	0.221	0.638	0.636
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	0%	0	3	0	3	6	0.275	0.235	0.217	0	3	0	3	6	0.275	0.235	0.217
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	50%	0	3	0	1	4	0.346	0.572	0.502	0	2	0	0	2	NA	NA	NA
17_3_101	MW-25B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
17_3_114	MW-25B	Supplemental	Conductivity (field)	us/cm	0%	0	3	0	3	6	0.050 *	0.064	0.068	0	3	0	3	6	0.050 *	0.064	0.068
17_3_119	MW-25B	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
17_3_122	MW-25B	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	3	0	3	6	0.127	0.182	NA	0	3	0	3	6	0.127	0.182	NA
17_3_125	MW-25B	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
17_3_126	MW-25B	Supplemental	Radium-226	pci/l	50%	0	3	0	3	6	0.275	0.204	0.232	0	1	0	2	3	0.221	0.654	0.646
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	67%	0	3	0	3	6	0.827	0.802	0.814	0	2	0	0	2	NA	NA	NA
17_3_130	MW-25B	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
17_3_132	MW-25B	Supplemental	Temperature (field)	deg c	0%	0	3	0	3	6	0.268	0.457	0.457	0	3	0	3	6	0.268	0.457	0.457
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	0%	0	3	0	3	6	0.827	0.872	0.881	0	3	0	3	6	0.827	0.872	0.881
17_3_136	MW-25B	Supplemental	Total Suspended Solids	mg/l	0%	0	3	0	2	5	0.564	0.782	0.592	0	3	0	2	5	0.564	0.782	0.592
17_3_137	MW-25B	Supplemental	Turbidity (field)	ntu	0%	0	3	0	3	6	0.827	0.947	0.920	0	3	0	3	6	0.827	0.947	0.920
18_1_108	MW-26	Appendix III	Boron	mg/l	0%	0	3	0	4	7	0.212	0.284	0.283	0	3	0	4	7	0.212	0.284	0.283
18_1_110	MW-26	Appendix III	Calcium	mg/l	0%	0	3	0	4	7	0.289	0.231	0.258	0	3	0	4	7	0.289	0.231	0.258
18_1_111	MW-26	Appendix III	Chloride (as Cl)	mg/l	0%	0	3	0	4	7	0.031 *	0.006 **	0.006 **	0	3	0	4	7	0.031 *	0.006 **	0.006 **
18_1_115	MW-26	Appendix III	Fluoride	mg/l	43%	0	3	0	4	7	0.028 *	0.027 *	0.002 **	0	2	0	2	4	0.102	0.017 *	0.002 **
18_1_123	MW-26	Appendix III	pH (field)	su	0%	0	3	0	4	7	0.480	0.241	0.238	0	3	0	4	7	0.480	0.241	0.238
18_1_124	MW-26	Appendix III	pH (lab)	su	0%	0	3	0	4	7	0.463	0.576	0.574	0	3	0	4	7	0.463	0.576	0.574
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	0%	0	3	0	4	7	0.853	0.707	0.733	0	3	0	4	7	0.853	0.707	0.733
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	0%	0	3	0	4	7	0.190	0.259	0.265	0	3	0	4	7	0.190	0.259	0.265
18_2_104	MW-26	Appendix IV	Antimony	mg/l	83%	0	3	0	3	6	0.105	0.292	0.223	0	1	0	0	1	NA	NA	NA
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	86%	0	3	0	4	7	0.079	0.064	0.061	0	1	0	0	1	NA	NA	NA
18_2_106	MW-26	Appendix IV	Barium	mg/l	0%	0	3	0	4	7	0.593	0.350	0.455	0	3	0	4	7	0.593	0.350	0.455
18_2_107	MW-26	Appendix IV	Beryllium	mg/l	100%	0	3	0	2	5	0.554	0.611	0.481	NA	NA	NA	NA	NA	NA	NA	NA
18_2_109	MW-26	Appendix IV	Cadmium	mg/l	100%	0	3	0	3	6	0.796	0.530	0.551	NA	NA	NA	NA	NA	NA	NA	NA
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	71%	0	3	0	4	7	0.172	0.137	0.163	0	1	0	1	2	0.317	NA	NA
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	29%	0	3	0	4	7	0.157	0.171	0.154	0	2	0	3	5	0.248	0.493	0.444
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	43%	0	3	0	4	7	0.028 *	0.027 *	0.002 **	0	2	0	2	4	0.102	0.017 *	0.002 **

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
18_2_117	MW-26	Appendix IV	Lead	mg/l	86%	0	3	0	4	7	0.558	0.366	0.484	0	1	0	0	1	NA	NA	NA
18_2_118	MW-26	Appendix IV	Lithium	mg/l	0%	0	3	0	4	7	0.034 *	0.077	0.087	0	3	0	4	7	0.034 *	0.077	0.087
18_2_120	MW-26	Appendix IV	Mercury	mg/l	100%	0	3	0	2	5	0.519	0.380	0.348	NA	NA	NA	NA	NA	NA	NA	NA
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	57%	0	3	0	4	7	0.271	0.284	0.263	0	1	0	2	3	0.221	0.018 *	0.172
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	0%	0	3	0	4	7	0.289	0.545	0.746	0	3	0	4	7	0.289	0.545	0.746
18_2_129	MW-26	Appendix IV	Selenium	mg/l	29%	0	3	0	4	7	0.077	0.170	0.129	0	1	0	4	5	0.157	0.425	0.326
18_2_134	MW-26	Appendix IV	Thallium	mg/l	100%	0	3	0	2	5	0.197	0.219	0.224	NA	NA	NA	NA	NA	NA	NA	NA
18_3_101	MW-26	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
18_3_102	MW-26	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18_3_103	MW-26	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
18_3_114	MW-26	Supplemental	Conductivity (field)	us/cm	0%	0	3	0	4	7	0.724	0.788	0.809	0	3	0	4	7	0.724	0.788	0.809
18_3_119	MW-26	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
18_3_122	MW-26	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	3	0	4	7	0.724	0.648	NA	0	3	0	4	7	0.724	0.648	NA
18_3_125	MW-26	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
18_3_126	MW-26	Supplemental	Radium-226	pci/l	29%	0	3	0	4	7	1.000	0.834	0.934	0	2	0	3	5	0.564	0.691	0.631
18_3_128	MW-26	Supplemental	Radium-228	pci/l	14%	0	3	0	4	7	0.289	0.265	0.290	0	3	0	3	6	0.127	0.103	0.107
18_3_130	MW-26	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	0%	0	3	0	4	7	0.289	0.563	0.562	0	3	0	4	7	0.289	0.563	0.562
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	0%	0	3	0	4	7	0.593	0.702	0.700	0	3	0	4	7	0.593	0.702	0.700
18_3_136	MW-26	Supplemental	Total Suspended Solids	mg/l	0%	0	3	0	3	6	0.121	0.183	0.129	0	3	0	3	6	0.121	0.183	0.129
18_3_137	MW-26	Supplemental	Turbidity (field)	ntu	0%	0	3	0	4	7	0.157	0.097	0.079	0	3	0	4	7	0.157	0.097	0.079
19_1_108	MW-27	Appendix III	Boron	mg/l	0%	0	3	0	4	7	0.212	0.252	0.254	0	3	0	4	7	0.212	0.252	0.254
19_1_110	MW-27	Appendix III	Calcium	mg/l	0%	2	3	1	4	10	0.751	0.630	0.603	2	3	1	4	10	0.751	0.630	0.603
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	0%	2	3	1	4	10	0.376	0.521	0.468	2	3	1	4	10	0.376	0.521	0.468
19_1_115	MW-27	Appendix III	Fluoride	mg/l	0%	0	3	0	4	7	0.032 *	0.015 *	0.012 *	0	3	0	4	7	0.032 *	0.015 *	0.012 *
19_1_123	MW-27	Appendix III	pH (field)	su	0%	2	3	1	4	10	0.382	0.515	0.519	2	3	1	4	10	0.382	0.515	0.519
19_1_124	MW-27	Appendix III	pH (lab)	su	0%	2	3	0	4	9	0.770	0.706	0.709	2	3	0	4	9	0.770	0.706	0.709
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	0%	2	3	1	4	10	0.621	0.748	0.755	2	3	1	4	10	0.621	0.748	0.755
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	0%	2	3	1	4	10	0.337	0.455	0.471	2	3	1	4	10	0.337	0.455	0.471
19_2_104	MW-27	Appendix IV	Antimony	mg/l	100%	0	3	0	3	6	0.197	0.236	0.247	NA	NA	NA	NA	NA	NA	NA	NA
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	80%	2	3	1	4	10	0.518	0.725	0.548	0	0	1	1	2	0.317	NA	NA
19_2_106	MW-27	Appendix IV	Barium	mg/l	0%	0	3	0	4	7	0.157	0.238	0.239	0	3	0	4	7	0.157	0.238	0.239
19_2_107	MW-27	Appendix IV	Beryllium	mg/l	100%	0	3	0	2	5	1.000	0.809	0.735	NA	NA	NA	NA	NA	NA	NA	NA
19_2_109	MW-27	Appendix IV	Cadmium	mg/l	100%	0	3	0	3	6	0.197	0.253	0.296	NA	NA	NA	NA	NA	NA	NA	NA
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	0%	0	3	0	4	7	0.034 *	0.084	0.034 *	0	3	0	4	7	0.034 *	0.084	0.034 *
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	50%	0	3	1	4	8	0.478	0.624	0.758	0	0	1	3	4	0.655	0.622	0.705
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	0%	0	3	0	4	7	0.032 *	0.015 *	0.012 *	0	3	0	4	7	0.032 *	0.015 *	0.012 *
19_2_117	MW-27	Appendix IV	Lead	mg/l	57%	0	3	0	4	7	0.463	0.412	0.468	0	0	0	3	3	NA	NA	NA
19_2_118	MW-27	Appendix IV	Lithium	mg/l	0%	2	3	1	4	10	0.312	0.286	0.288	2	3	1	4	10	0.312	0.286	0.288

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full									Without Non-Detects							
						Sample Size					p-Value				Sample Size					p-Value			
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA	
19_2_120	MW-27	Appendix IV	Mercury	mg/l	100%	0	3	0	2	5	0.519	0.380		0.348		NA	NA	NA	NA	NA	NA	NA		NA	
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	0%	0	3	0	4	7	0.289	0.306		0.316		0	3	0	4	7	0.289	0.306		0.316	
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	57%	0	3	0	4	7	0.480	0.637		0.507		0	1	0	2	3	0.221	0.339		0.396	
19_2_129	MW-27	Appendix IV	Selenium	mg/l	0%	2	3	1	4	10	0.902	0.896		0.926		2	3	1	4	10	0.902	0.896		0.926	
19_2_134	MW-27	Appendix IV	Thallium	mg/l	100%	0	3	0	2	5	0.197	0.219		0.224		NA	NA	NA	NA	NA	NA	NA		NA	
19_3_101	MW-27	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	0	1	1	4	0.223	0.000	***	0.000	***	2	0	1	1	4	0.223	0.000	***	0.000	***
19_3_102	MW-27	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.667		0.667		NA	NA	NA	NA	NA	NA	NA		NA	
19_3_103	MW-27	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA		NA		0	0	1	1	2	0.317	NA		NA	
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	0%	2	3	1	4	10	0.359	0.620		0.628		2	3	1	4	10	0.359	0.620		0.628	
19_3_119	MW-27	Supplemental	Magnesium	mg/l	0%	2	1	1	1	5	0.506	0.761		0.761		2	1	1	1	5	0.506	0.761		0.761	
19_3_122	MW-27	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	3	1	4	10	0.351	0.118		NA		2	3	1	4	10	0.351	0.118		NA	
19_3_125	MW-27	Supplemental	Potassium	mg/l	0%	2	1	1	1	5	0.443	0.736		0.722		2	1	1	1	5	0.443	0.736		0.722	
19_3_126	MW-27	Supplemental	Radium-226	pci/l	57%	0	3	0	4	7	0.157	0.270		0.218		0	2	0	1	3	0.221	0.257		0.286	
19_3_128	MW-27	Supplemental	Radium-228	pci/l	86%	0	3	0	4	7	0.480	0.641		0.591		0	1	0	0	1	NA	NA		NA	
19_3_130	MW-27	Supplemental	Sodium	mg/l	0%	2	1	1	1	5	0.362	0.419		0.406		2	1	1	1	5	0.362	0.419		0.406	
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	0%	2	3	1	4	10	0.193	0.182		0.214		2	3	1	4	10	0.193	0.182		0.214	
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	0%	2	3	0	4	9	0.819	0.777		0.772		2	3	0	4	9	0.819	0.777		0.772	
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	0%	2	3	1	3	9	0.634	0.724		0.738		2	3	1	3	9	0.634	0.724		0.738	
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	0%	2	3	1	4	10	0.998	0.525		0.942		2	3	1	4	10	0.998	0.525		0.942	
20_1_108	MW-28	Appendix III	Boron	mg/l	0%	0	3	0	4	7	0.354	0.397		0.388		0	3	0	4	7	0.354	0.397		0.388	
20_1_110	MW-28	Appendix III	Calcium	mg/l	0%	2	3	1	4	10	0.394	0.300		0.281		2	3	1	4	10	0.394	0.300		0.281	
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	0%	2	3	1	4	10	0.946	0.864		0.855		2	3	1	4	10	0.946	0.864		0.855	
20_1_115	MW-28	Appendix III	Fluoride	mg/l	14%	0	3	0	4	7	0.721	0.992		0.944		0	3	0	3	6	0.825	0.876		0.946	
20_1_123	MW-28	Appendix III	pH (field)	su	0%	2	3	1	4	10	0.246	0.241		0.241		2	3	1	4	10	0.246	0.241		0.241	
20_1_124	MW-28	Appendix III	pH (lab)	su	0%	2	3	0	4	9	0.225	0.219		0.220		2	3	0	4	9	0.225	0.219		0.220	
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	0%	2	3	1	4	10	0.145	0.143		0.148		2	3	1	4	10	0.145	0.143		0.148	
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	0%	2	3	1	4	10	0.171	0.236		0.256		2	3	1	4	10	0.171	0.236		0.256	
20_2_104	MW-28	Appendix IV	Antimony	mg/l	100%	0	3	0	3	6	0.197	0.236		0.247		NA	NA	NA	NA	NA	NA	NA		NA	
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	30%	2	3	1	4	10	0.469	0.567		0.459		1	2	1	3	7	0.269	0.070		0.001	**
20_2_106	MW-28	Appendix IV	Barium	mg/l	0%	0	3	0	4	7	0.280	0.606		0.537		0	3	0	4	7	0.280	0.606		0.537	
20_2_107	MW-28	Appendix IV	Beryllium	mg/l	100%	0	3	0	2	5	0.554	0.611		0.481		NA	NA	NA	NA	NA	NA	NA		NA	
20_2_109	MW-28	Appendix IV	Cadmium	mg/l	100%	0	3	0	3	6	0.796	0.530		0.551		NA	NA	NA	NA	NA	NA	NA		NA	
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	29%	0	3	0	4	7	1.000	0.905		0.922		0	2	0	3	5	0.564	0.451		0.417	
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	12%	0	3	1	4	8	0.414	0.632		0.576		0	2	1	4	7	0.526	0.773		0.759	
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	14%	0	3	0	4	7	0.721	0.992		0.944		0	3	0	3	6	0.825	0.876		0.946	
20_2_117	MW-28	Appendix IV	Lead	mg/l	100%	0	3	0	4	7	0.186	0.205		0.220		NA	NA	NA	NA	NA	NA	NA		NA	
20_2_118	MW-28	Appendix IV	Lithium	mg/l	0%	2	3	1	4	10	0.155	0.088		0.098		2	3	1	4	10	0.155	0.088		0.098	
20_2_120	MW-28	Appendix IV	Mercury	mg/l	100%	0	3	0	2	5	0.519	0.380		0.348		NA	NA	NA	NA	NA	NA	NA		NA	
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	71%	0	3	0	4	7	0.696	0.754		0.702		0	0	0	2	2	NA	NA		NA	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full									Without Non-Detects								
						Sample Size					p-Value				Sample Size					p-Value			
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA	
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	0%	0	3	0	4	7	0.724	0.819		0.705		0	3	0	4	7	0.724	0.819		0.705	
20_2_129	MW-28	Appendix IV	Selenium	mg/l	0%	2	3	1	4	10	0.382	0.401		0.390		2	3	1	4	10	0.382	0.401		0.390	
20_2_134	MW-28	Appendix IV	Thallium	mg/l	100%	0	3	0	2	5	0.197	0.421		0.301		NA	NA	NA	NA	NA	NA	NA		NA	
20_3_101	MW-28	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	0	1	1	4	0.259	0.076		0.071		2	0	1	1	4	0.259	0.076		0.071	
20_3_102	MW-28	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.667		0.667		NA	NA	NA	NA	NA	NA	NA		NA	
20_3_103	MW-28	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA		NA		0	0	1	1	2	0.317	NA		NA	
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	0%	2	3	1	4	10	0.938	0.949		0.948		2	3	1	4	10	0.938	0.949		0.948	
20_3_119	MW-28	Supplemental	Magnesium	mg/l	0%	2	1	1	1	5	0.362	0.539		0.572		2	1	1	1	5	0.362	0.539		0.572	
20_3_122	MW-28	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	3	1	4	10	0.819	0.785		NA		2	3	1	4	10	0.819	0.785		NA	
20_3_125	MW-28	Supplemental	Potassium	mg/l	0%	2	1	1	1	5	0.261	0.000	***	0.000	***	2	1	1	1	5	0.261	0.000	***	0.000	***
20_3_126	MW-28	Supplemental	Radium-226	pci/l	0%	0	3	0	4	7	0.480	0.317		0.300		0	3	0	4	7	0.480	0.317		0.300	
20_3_128	MW-28	Supplemental	Radium-228	pci/l	0%	0	3	0	4	7	0.724	0.987		0.805		0	3	0	4	7	0.724	0.987		0.805	
20_3_130	MW-28	Supplemental	Sodium	mg/l	0%	2	1	1	1	5	0.285	0.369		0.375		2	1	1	1	5	0.285	0.369		0.375	
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	0%	2	3	1	4	10	0.147	0.078		0.074		2	3	1	4	10	0.147	0.078		0.074	
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	0%	2	3	0	4	9	0.885	0.950		0.936		2	3	0	4	9	0.885	0.950		0.936	
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	0%	2	3	1	3	9	0.161	0.157		0.113		2	3	1	3	9	0.161	0.157		0.113	
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	0%	2	3	1	4	10	0.354	0.348		0.200		2	3	1	4	10	0.354	0.348		0.200	
21_1_110	MW-29	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.232	0.538		0.566		2	1	1	2	6	0.232	0.538		0.566	
21_1_111	MW-29	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.644	0.808		0.808		2	1	1	2	6	0.644	0.808		0.808	
21_1_123	MW-29	Appendix III	pH (field)	su	0%	2	1	1	2	6	0.370	0.491		0.484		2	1	1	2	6	0.370	0.491		0.484	
21_1_124	MW-29	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.150	0.096		0.094		2	1	0	2	5	0.150	0.096		0.094	
21_1_131	MW-29	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.809	0.875		0.870		2	1	1	2	6	0.809	0.875		0.870	
21_1_135	MW-29	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	1	5	0.284	0.282		0.280		2	1	1	1	5	0.284	0.282		0.280	
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	33%	2	1	1	2	6	0.986	0.916		0.939		1	0	1	2	4	0.861	0.778		0.755	
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA		NA		0	0	1	0	1	NA	NA		NA	
21_2_118	MW-29	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.183	0.013	*	0.010	*	2	1	1	2	6	0.183	0.013	*	0.010	*
21_2_129	MW-29	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.317	0.621		0.592		2	1	1	2	6	0.317	0.621		0.592	
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.226	0.275		0.268		2	1	1	2	6	0.226	0.275		0.268	
21_3_102	MW-29	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
21_3_103	MW-29	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.221	0.567		0.564		0	0	1	2	3	0.221	0.567		0.564	
21_3_114	MW-29	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	2	6	0.370	0.463		0.452		2	1	1	2	6	0.370	0.463		0.452	
21_3_119	MW-29	Supplemental	Magnesium	mg/l	0%	2	1	1	2	6	0.277	0.188		0.211		2	1	1	2	6	0.277	0.188		0.211	
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	2	6	0.194	0.009	**	0.011	*	2	1	1	2	6	0.194	0.009	**	0.011	*
21_3_125	MW-29	Supplemental	Potassium	mg/l	0%	2	1	1	2	6	0.407	0.731		0.721		2	1	1	2	6	0.407	0.731		0.721	
21_3_130	MW-29	Supplemental	Sodium	mg/l	0%	2	1	1	2	6	0.543	0.740		0.729		2	1	1	2	6	0.543	0.740		0.729	
21_3_132	MW-29	Supplemental	Temperature (field)	deg c	0%	2	1	1	2	6	0.183	0.146		0.196		2	1	1	2	6	0.183	0.146		0.196	
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.301	0.594		0.582		2	1	0	2	5	0.301	0.594		0.582	
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	0%	2	1	1	2	6	0.463	0.780		0.366		2	1	1	2	6	0.463	0.780		0.366	
21_3_137	MW-29	Supplemental	Turbidity (field)	ntu	0%	2	1	1	2	6	0.934	0.834		0.892		2	1	1	2	6	0.934	0.834		0.892	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
22_1_108	MW-3	Appendix III	Boron	mg/l	0%	2	8	3	7	20	0.831	0.877	0.865	2	8	3	7	20	0.831	0.877	0.865
22_1_110	MW-3	Appendix III	Calcium	mg/l	0%	2	7	3	7	19	0.603	0.575	0.589	2	7	3	7	19	0.603	0.575	0.589
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	0%	2	8	3	7	20	0.320	0.358	0.352	2	8	3	7	20	0.320	0.358	0.352
22_1_115	MW-3	Appendix III	Fluoride	mg/l	48%	3	8	3	7	21	0.184	0.260	0.243	2	4	1	4	11	0.454	0.313	0.368
22_1_123	MW-3	Appendix III	pH (field)	su	0%	3	8	3	7	21	0.156	0.286	0.275	3	8	3	7	21	0.156	0.286	0.275
22_1_124	MW-3	Appendix III	pH (lab)	su	0%	2	8	3	7	20	0.574	0.442	0.449	2	8	3	7	20	0.574	0.442	0.449
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	0%	2	8	3	7	20	0.798	0.557	0.529	2	8	3	7	20	0.798	0.557	0.529
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	0%	2	8	3	7	20	0.586	0.839	0.832	2	8	3	7	20	0.586	0.839	0.832
22_2_104	MW-3	Appendix IV	Antimony	mg/l	90%	3	8	3	6	20	0.644	0.564	0.560	1	0	0	1	2	0.317	NA	NA
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	62%	3	8	3	7	21	0.269	0.855	0.807	2	1	2	3	8	0.256	0.547	0.432
22_2_106	MW-3	Appendix IV	Barium	mg/l	0%	3	8	3	7	21	0.872	0.842	0.845	3	8	3	7	21	0.872	0.842	0.845
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	89%	3	8	3	5	19	0.972	0.954	0.991	1	1	0	0	2	0.317	NA	NA
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	70%	3	8	3	6	20	0.306	0.305	0.319	1	3	1	1	6	0.438	0.638	0.727
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	33%	3	8	3	7	21	0.666	0.596	0.618	3	4	2	5	14	0.673	0.665	0.704
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	5%	3	8	3	7	21	0.580	0.283	0.346	3	7	3	7	20	0.466	0.287	0.314
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	48%	3	8	3	7	21	0.184	0.260	0.243	2	4	1	4	11	0.454	0.313	0.368
22_2_117	MW-3	Appendix IV	Lead	mg/l	57%	3	8	3	7	21	0.768	0.853	0.776	2	3	1	3	9	0.695	0.828	0.768
22_2_118	MW-3	Appendix IV	Lithium	mg/l	0%	3	8	3	7	21	0.836	0.760	0.743	3	8	3	7	21	0.836	0.760	0.743
22_2_120	MW-3	Appendix IV	Mercury	mg/l	100%	3	7	2	5	17	0.221	0.245	0.222	NA	NA	NA	NA	NA	NA	NA	NA
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	29%	3	8	3	7	21	0.906	0.152	0.233	3	4	3	5	15	0.826	0.137	0.243
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	0%	3	8	3	7	21	0.819	0.971	0.945	3	8	3	7	21	0.819	0.971	0.945
22_2_129	MW-3	Appendix IV	Selenium	mg/l	14%	3	8	3	7	21	0.179	0.143	0.196	3	7	3	5	18	0.286	0.279	0.329
22_2_134	MW-3	Appendix IV	Thallium	mg/l	100%	3	8	2	5	18	0.633	0.739	0.781	NA	NA	NA	NA	NA	NA	NA	NA
22_3_101	MW-3	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
22_3_102	MW-3	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22_3_103	MW-3	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	0%	3	8	3	7	21	0.398	0.487	0.497	3	8	3	7	21	0.398	0.487	0.497
22_3_119	MW-3	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	0%	3	8	3	7	21	0.346	0.385	NA	3	8	3	7	21	0.346	0.385	NA
22_3_125	MW-3	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
22_3_126	MW-3	Supplemental	Radium-226	pci/l	5%	3	8	3	7	21	0.988	0.934	0.925	3	8	3	6	20	0.962	0.954	0.938
22_3_128	MW-3	Supplemental	Radium-228	pci/l	0%	3	8	3	7	21	0.815	0.876	0.834	3	8	3	7	21	0.815	0.876	0.834
22_3_130	MW-3	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	0%	3	8	3	7	21	0.025 *	0.007 **	0.009 **	3	8	3	7	21	0.025 *	0.007 **	0.009 **
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	0%	2	8	3	7	20	0.086	0.040 *	0.049 *	2	8	3	7	20	0.086	0.040 *	0.049 *
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	5%	3	7	3	6	19	0.505	0.362	0.339	2	7	3	6	18	0.823	0.518	0.780
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	0%	3	7	3	7	20	0.555	0.600	0.392	3	7	3	7	20	0.555	0.600	0.392
23_1_110	MW-30	Appendix III	Calcium	mg/l	0%	1	1	1	3	6	0.254	0.121	0.087	1	1	1	3	6	0.254	0.121	0.087
23_1_111	MW-30	Appendix III	Chloride (as Cl)	mg/l	0%	1	1	1	3	6	0.321	0.420	0.432	1	1	1	3	6	0.321	0.420	0.432

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
23_1_123	MW-30	Appendix III	pH (field)	su	0%	1	1	1	3	6	0.220	0.602	0.598	1	1	1	3	6	0.220	0.602	0.598
23_1_124	MW-30	Appendix III	pH (lab)	su	0%	1	1	0	3	5	0.717	0.833	0.833	1	1	0	3	5	0.717	0.833	0.833
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	0%	1	1	1	3	6	0.219	0.073	0.075	1	1	1	3	6	0.219	0.073	0.075
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	0%	1	1	1	2	5	0.362	0.474	0.511	1	1	1	2	5	0.362	0.474	0.511
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	17%	1	1	1	3	6	0.300	0.696	0.340	1	0	1	3	5	0.202	0.556	0.243
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
23_2_118	MW-30	Appendix IV	Lithium	mg/l	0%	1	1	1	3	6	0.471	0.643	0.592	1	1	1	3	6	0.471	0.643	0.592
23_2_129	MW-30	Appendix IV	Selenium	mg/l	0%	1	1	1	3	6	0.570	0.840	0.754	1	1	1	3	6	0.570	0.840	0.754
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	1	1	1	3	6	0.372	0.646	0.624	1	1	1	3	6	0.372	0.646	0.624
23_3_102	MW-30	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	1	0	0	2	3	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
23_3_103	MW-30	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.221	0.567	0.557	0	0	1	2	3	0.221	0.567	0.557
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	0%	1	1	1	3	6	0.300	0.318	0.279	1	1	1	3	6	0.300	0.318	0.279
23_3_119	MW-30	Supplemental	Magnesium	mg/l	0%	1	1	1	3	6	0.219	0.037 *	0.031 *	1	1	1	3	6	0.219	0.037 *	0.031 *
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	1	1	3	6	0.471	0.451	NA	1	1	1	3	6	0.471	0.451	NA
23_3_125	MW-30	Supplemental	Potassium	mg/l	0%	1	1	1	3	6	0.471	0.660	0.651	1	1	1	3	6	0.471	0.660	0.651
23_3_130	MW-30	Supplemental	Sodium	mg/l	0%	1	1	1	3	6	0.299	0.110	0.102	1	1	1	3	6	0.299	0.110	0.102
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	0%	1	1	1	3	6	0.219	0.095	0.120	1	1	1	3	6	0.219	0.095	0.120
23_3_133	MW-30	Supplemental	Temperature (lab)	deg c	0%	1	1	0	3	5	0.766	0.704	0.701	1	1	0	3	5	0.766	0.704	0.701
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	17%	1	1	1	3	6	0.300	0.666	0.320	0	1	1	3	5	0.344	0.591	0.371
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	0%	1	1	1	3	6	0.300	0.705	0.626	1	1	1	3	6	0.300	0.705	0.626
24_1_110	MW-31	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.194	0.023 *	0.021 *	2	1	1	2	6	0.194	0.023 *	0.021 *
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.518	0.623	0.635	2	1	1	2	6	0.518	0.623	0.635
24_1_123	MW-31	Appendix III	pH (field)	su	0%	2	1	1	2	6	0.277	0.437	0.432	2	1	1	2	6	0.277	0.437	0.432
24_1_124	MW-31	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.135	0.000 ***	0.000 ***	2	1	0	2	5	0.135	0.000 ***	0.000 ***
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.370	0.519	0.530	2	1	1	2	6	0.370	0.519	0.530
24_1_135	MW-31	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	1	5	0.362	0.321	0.308	2	1	1	1	5	0.362	0.321	0.308
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	33%	2	1	1	2	6	0.509	0.830	0.791	1	0	1	2	4	0.407	0.845	0.755
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
24_2_118	MW-31	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.210	0.210	0.222	2	1	1	2	6	0.210	0.210	0.222
24_2_129	MW-31	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.195	0.409	0.451	2	1	1	2	6	0.195	0.409	0.451
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.431	0.196	0.183	2	1	1	2	6	0.431	0.196	0.183
24_3_102	MW-31	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000 ***	0.000 ***	NA	NA	NA	NA	NA	NA	NA	NA
24_3_103	MW-31	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.480	0.667	0.667	0	0	1	2	3	0.480	0.667	0.667
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	2	6	0.312	0.276	0.321	2	1	1	2	6	0.312	0.276	0.321
24_3_119	MW-31	Supplemental	Magnesium	mg/l	0%	2	1	1	2	6	0.232	0.110	0.084	2	1	1	2	6	0.232	0.110	0.084
24_3_122	MW-31	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	2	6	0.463	0.472	0.655	2	1	1	2	6	0.463	0.472	0.655
24_3_125	MW-31	Supplemental	Potassium	mg/l	0%	2	1	1	2	6	0.412	0.625	0.600	2	1	1	2	6	0.412	0.625	0.600
24_3_130	MW-31	Supplemental	Sodium	mg/l	0%	2	1	1	2	6	0.187	0.007 **	0.009 **	2	1	1	2	6	0.187	0.007 **	0.009 **
24_3_132	MW-31	Supplemental	Temperature (field)	deg c	0%	2	1	1	2	6	0.277	0.261	0.323	2	1	1	2	6	0.277	0.261	0.323

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full									Without Non-Detects								
						Sample Size					p-Value				Sample Size					p-Value			
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA	
24_3_133	MW-31	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.206	0.431		0.442		2	1	0	2	5	0.206	0.431		0.442	
24_3_136	MW-31	Supplemental	Total Suspended Solids	mg/l	17%	2	1	1	2	6	0.322	0.536		0.324		2	1	0	2	5	0.398	0.672		0.663	
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	0%	2	1	1	2	6	0.463	0.544		0.611		2	1	1	2	6	0.463	0.544		0.611	
25_1_110	MW-32	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.256	0.334		0.344		2	1	1	2	6	0.256	0.334		0.344	
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.733	0.809		0.810		2	1	1	2	6	0.733	0.809		0.810	
25_1_123	MW-32	Appendix III	pH (field)	su	0%	2	1	1	2	6	0.543	0.831		0.831		2	1	1	2	6	0.543	0.831		0.831	
25_1_124	MW-32	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.135	0.000	***	0.000	***	2	1	0	2	5	0.135	0.000	***	0.000	***
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.900	0.932		0.936		2	1	1	2	6	0.900	0.932		0.936	
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	1	5	0.261	0.000	***	0.000	***	2	1	1	1	5	0.261	0.000	***	0.000	***
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	83%	2	1	1	2	6	0.654	0.656		0.607		0	0	0	1	1	NA	NA		NA	
25_2_113	MW-32	Appendix IV	Cobalt	mg/l	100%	0	0	1	0	1	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
25_2_118	MW-32	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.699	0.719		0.716		2	1	1	2	6	0.699	0.719		0.716	
25_2_129	MW-32	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.232	0.331		0.354		2	1	1	2	6	0.232	0.331		0.354	
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.226	0.187		0.180		2	1	1	2	6	0.226	0.187		0.180	
25_3_102	MW-32	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
25_3_103	MW-32	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.221	0.454		0.448		0	0	1	2	3	0.221	0.454		0.448	
25_3_114	MW-32	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	2	6	0.543	0.578		0.591		2	1	1	2	6	0.543	0.578		0.591	
25_3_119	MW-32	Supplemental	Magnesium	mg/l	0%	2	1	1	2	6	0.172	0.000	***	0.000	***	2	1	1	2	6	0.172	0.000	***	0.000	***
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	2	6	0.194	0.128		0.123		2	1	1	2	6	0.194	0.128		0.123	
25_3_125	MW-32	Supplemental	Potassium	mg/l	0%	2	1	1	2	6	0.349	0.519		0.533		2	1	1	2	6	0.349	0.519		0.533	
25_3_130	MW-32	Supplemental	Sodium	mg/l	0%	2	1	1	2	6	0.269	0.265		0.264		2	1	1	2	6	0.269	0.265		0.264	
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	0%	2	1	1	2	6	0.227	0.018	*	0.029	*	2	1	1	2	6	0.227	0.018	*	0.029	*
25_3_133	MW-32	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.398	0.560		0.564		2	1	0	2	5	0.398	0.560		0.564	
25_3_136	MW-32	Supplemental	Total Suspended Solids	mg/l	0%	2	1	1	2	6	0.210	0.105		0.229		2	1	1	2	6	0.210	0.105		0.229	
25_3_137	MW-32	Supplemental	Turbidity (field)	ntu	0%	2	1	1	2	6	0.290	0.250		0.442		2	1	1	2	6	0.290	0.250		0.442	
26_1_110	MW-33A	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.210	0.272		0.285		2	1	1	2	6	0.210	0.272		0.285	
26_1_111	MW-33A	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.733	0.766		0.757		2	1	1	2	6	0.733	0.766		0.757	
26_1_123	MW-33A	Appendix III	pH (field)	su	0%	2	1	1	2	6	0.516	0.825		0.824		2	1	1	2	6	0.516	0.825		0.824	
26_1_124	MW-33A	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.271	0.357		0.356		2	1	0	2	5	0.271	0.357		0.356	
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.370	0.456		0.481		2	1	1	2	6	0.370	0.456		0.481	
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	1	5	0.734	0.842		0.845		2	1	1	1	5	0.734	0.842		0.845	
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	67%	2	1	1	2	6	0.322	0.229		0.384		1	0	0	1	2	0.317	NA		NA	
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA		NA		0	0	1	0	1	NA	NA		NA	
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.412	0.605		0.586		2	1	1	2	6	0.412	0.605		0.586	
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.407	0.782		0.786		2	1	1	2	6	0.407	0.782		0.786	
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.195	0.069		0.066		2	1	1	2	6	0.195	0.069		0.066	
26_3_102	MW-33A	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
26_3_103	MW-33A	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.221	0.212		0.207		0	0	1	2	3	0.221	0.212		0.207	
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	2	6	0.699	0.830		0.825		2	1	1	2	6	0.699	0.830		0.825	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	0%	2	1	1	2	6	0.183	0.015 *	0.019 *	2	1	1	2	6	0.183	0.015 *	0.019 *
26_3_122	MW-33A	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	2	6	0.463	0.527	0.687	2	1	1	2	6	0.463	0.527	0.687
26_3_125	MW-33A	Supplemental	Potassium	mg/l	0%	2	1	1	2	6	0.348	0.473	0.469	2	1	1	2	6	0.348	0.473	0.469
26_3_130	MW-33A	Supplemental	Sodium	mg/l	0%	2	1	1	2	6	0.269	0.360	0.350	2	1	1	2	6	0.269	0.360	0.350
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	0%	2	1	1	2	6	0.599	0.850	0.847	2	1	1	2	6	0.599	0.850	0.847
26_3_133	MW-33A	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.165	0.070	0.061	2	1	0	2	5	0.165	0.070	0.061
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	33%	2	1	1	2	6	0.277	0.718	0.626	1	0	1	2	4	0.407	0.686	0.611
26_3_137	MW-33A	Supplemental	Turbidity (field)	ntu	0%	2	1	1	2	6	0.315	0.205	0.483	2	1	1	2	6	0.315	0.205	0.483
27_1_110	MW-33B	Appendix III	Calcium	mg/l	0%	3	1	1	1	6	0.710	0.884	0.801	3	1	1	1	6	0.710	0.884	0.801
27_1_111	MW-33B	Appendix III	Chloride (as Cl)	mg/l	0%	3	1	1	1	6	NA	NA	0.000 ***	3	1	1	1	6	NA	NA	0.000 ***
27_1_123	MW-33B	Appendix III	pH (field)	su	0%	2	1	1	1	5	0.849	0.944	0.936	2	1	1	1	5	0.849	0.944	0.936
27_1_124	MW-33B	Appendix III	pH (lab)	su	0%	3	1	0	1	5	0.411	0.556	0.556	3	1	0	1	5	0.411	0.556	0.556
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	0%	3	1	1	1	6	0.307	0.483	0.500	3	1	1	1	6	0.307	0.483	0.500
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	0%	3	1	1	0	5	0.368	0.500	0.500	3	1	1	0	5	0.368	0.500	0.500
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	0%	3	1	1	1	6	0.471	0.807	0.694	3	1	1	1	6	0.471	0.807	0.694
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	0%	3	1	1	1	6	0.710	0.787	0.778	3	1	1	1	6	0.710	0.787	0.778
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	0%	3	1	1	1	6	0.438	0.341	0.611	3	1	1	1	6	0.438	0.341	0.611
27_3_101	MW-33B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	3	1	1	1	6	0.300	0.284	0.258	3	1	1	1	6	0.300	0.284	0.258
27_3_102	MW-33B	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000 ***	0.000 ***	NA	NA	NA	NA	NA	NA	NA	NA
27_3_103	MW-33B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	1	0	1	1	3	0.368	NA	NA	1	0	1	1	3	0.368	NA	NA
27_3_114	MW-33B	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	1	5	0.362	0.398	0.434	2	1	1	1	5	0.362	0.398	0.434
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	0%	3	1	1	1	6	0.471	0.867	0.774	3	1	1	1	6	0.471	0.867	0.774
27_3_122	MW-33B	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	1	5	0.849	0.934	0.958	2	1	1	1	5	0.849	0.934	0.958
27_3_125	MW-33B	Supplemental	Potassium	mg/l	0%	3	1	1	1	6	0.378	0.691	0.691	3	1	1	1	6	0.378	0.691	0.691
27_3_130	MW-33B	Supplemental	Sodium	mg/l	0%	3	1	1	1	6	0.656	0.815	0.817	3	1	1	1	6	0.656	0.815	0.817
27_3_132	MW-33B	Supplemental	Temperature (field)	deg c	0%	2	1	1	1	5	0.285	0.111	0.125	2	1	1	1	5	0.285	0.111	0.125
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	0%	3	1	0	1	5	0.202	0.196	0.173	3	1	0	1	5	0.202	0.196	0.173
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	0%	3	1	1	1	6	0.471	0.689	0.682	3	1	1	1	6	0.471	0.689	0.682
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	0%	2	1	1	1	5	0.532	0.755	0.811	2	1	1	1	5	0.532	0.755	0.811
28_1_108	MW-34	Appendix III	Boron	mg/l	0%	0	1	0	2	3	0.221	0.333	0.325	0	1	0	2	3	0.221	0.333	0.325
28_1_110	MW-34	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.733	0.926	0.937	2	1	1	2	6	0.733	0.926	0.937
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.277	0.400	0.342	2	1	1	2	6	0.277	0.400	0.342
28_1_115	MW-34	Appendix III	Fluoride	mg/l	0%	0	1	0	2	3	0.221	0.591	0.574	0	1	0	2	3	0.221	0.591	0.574
28_1_123	MW-34	Appendix III	pH (field)	su	0%	1	1	1	2	5	0.889	0.929	0.930	1	1	1	2	5	0.889	0.929	0.930
28_1_124	MW-34	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.331	0.602	0.597	2	1	0	2	5	0.331	0.602	0.597
28_1_131	MW-34	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.631	0.801	0.809	2	1	1	2	6	0.631	0.801	0.809
28_1_135	MW-34	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	2	6	0.312	0.758	0.750	2	1	1	2	6	0.312	0.758	0.750
28_2_104	MW-34	Appendix IV	Antimony	mg/l	0%	0	1	0	2	3	1.000	0.747	0.779	0	1	0	2	3	1.000	0.747	0.779

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full									Without Non-Detects							
						Sample Size					p-Value				Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	0%	2	1	1	2	6	0.560	0.821		0.861		2	1	1	2	6	0.560	0.821	0.861
28_2_106	MW-34	Appendix IV	Barium	mg/l	0%	0	1	0	2	3	1.000	0.672		0.678		0	1	0	2	3	1.000	0.672	0.678
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	67%	0	1	0	2	3	1.000	0.805		0.999		0	0	0	1	1	NA	NA	NA
28_2_109	MW-34	Appendix IV	Cadmium	mg/l	100%	0	1	0	2	3	0.221	0.207		0.114		NA	NA	NA	NA	NA	NA	NA	NA
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	0%	0	1	0	2	3	1.000	0.669		0.681		0	1	0	2	3	1.000	0.669	0.681
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	0%	0	1	1	2	4	0.407	0.825		0.830		0	1	1	2	4	0.407	0.825	0.830
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	0%	0	1	0	2	3	0.221	0.591		0.574		0	1	0	2	3	0.221	0.591	0.574
28_2_117	MW-34	Appendix IV	Lead	mg/l	0%	0	1	0	2	3	1.000	0.670		0.690		0	1	0	2	3	1.000	0.670	0.690
28_2_118	MW-34	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.543	0.764		0.766		2	1	1	2	6	0.543	0.764	0.766
28_2_120	MW-34	Appendix IV	Mercury	mg/l	100%	0	1	0	2	3	1.000	0.848		0.801		NA	NA	NA	NA	NA	NA	NA	NA
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	0%	0	1	0	2	3	1.000	0.788		0.893		0	1	0	2	3	1.000	0.788	0.893
28_2_127	MW-34	Appendix IV	Radium-226+228	pci/l	100%	0	1	0	2	3	0.221	0.634		0.609		NA	NA	NA	NA	NA	NA	NA	NA
28_2_129	MW-34	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.733	0.852		0.856		2	1	1	2	6	0.733	0.852	0.856
28_2_134	MW-34	Appendix IV	Thallium	mg/l	67%	0	1	0	2	3	0.221	0.562		0.600		0	0	0	1	1	NA	NA	NA
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.895	0.930		0.923		2	1	1	2	6	0.895	0.930	0.923
28_3_102	MW-34	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA	NA
28_3_103	MW-34	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	1.000	0.740		0.730		0	0	1	2	3	1.000	0.740	0.730
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	0%	1	1	1	2	5	0.362	0.665		0.613		1	1	1	2	5	0.362	0.665	0.613
28_3_119	MW-34	Supplemental	Magnesium	mg/l	0%	2	0	1	0	3	1.000	0.699		0.727		2	0	1	0	3	1.000	0.699	0.727
28_3_122	MW-34	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	1	1	2	5	0.849	0.957		0.940		1	1	1	2	5	0.849	0.957	0.940
28_3_125	MW-34	Supplemental	Potassium	mg/l	0%	2	0	1	0	3	1.000	0.700		0.740		2	0	1	0	3	1.000	0.700	0.740
28_3_126	MW-34	Supplemental	Radium-226	pci/l	100%	0	1	0	2	3	0.221	0.627		0.585		NA	NA	NA	NA	NA	NA	NA	NA
28_3_128	MW-34	Supplemental	Radium-228	pci/l	100%	0	1	0	2	3	0.221	0.634		0.609		NA	NA	NA	NA	NA	NA	NA	NA
28_3_130	MW-34	Supplemental	Sodium	mg/l	0%	2	0	1	0	3	0.221	0.333		0.350		2	0	1	0	3	0.221	0.333	0.350
28_3_132	MW-34	Supplemental	Temperature (field)	deg c	0%	1	1	1	2	5	0.284	0.138		0.229		1	1	1	2	5	0.284	0.138	0.229
28_3_133	MW-34	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.331	0.083		0.073		2	1	0	2	5	0.331	0.083	0.073
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	0%	2	1	1	2	6	0.934	0.884		0.975		2	1	1	2	6	0.934	0.884	0.975
28_3_137	MW-34	Supplemental	Turbidity (field)	ntu	0%	1	1	1	2	5	0.849	0.922		0.970		1	1	1	2	5	0.849	0.922	0.970
29_1_108	MW-35	Appendix III	Boron	mg/l	0%	0	1	0	2	3	0.221	0.512		0.487		0	1	0	2	3	0.221	0.512	0.487
29_1_110	MW-35	Appendix III	Calcium	mg/l	0%	2	1	1	2	6	0.839	0.804		0.796		2	1	1	2	6	0.839	0.804	0.796
29_1_111	MW-35	Appendix III	Chloride (as Cl)	mg/l	0%	2	1	1	2	6	0.698	0.843		0.849		2	1	1	2	6	0.698	0.843	0.849
29_1_115	MW-35	Appendix III	Fluoride	mg/l	0%	0	1	0	2	3	0.221	0.655		0.612		0	1	0	2	3	0.221	0.655	0.612
29_1_123	MW-35	Appendix III	pH (field)	su	0%	2	1	1	2	6	0.699	0.835		0.835		2	1	1	2	6	0.699	0.835	0.835
29_1_124	MW-35	Appendix III	pH (lab)	su	0%	2	1	0	2	5	0.223	0.417		0.412		2	1	0	2	5	0.223	0.417	0.412
29_1_131	MW-35	Appendix III	Sulfate (as SO4)	mg/l	0%	2	1	1	2	6	0.295	0.268		0.276		2	1	1	2	6	0.295	0.268	0.276
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	0%	2	1	1	2	6	0.407	0.560		0.560		2	1	1	2	6	0.407	0.560	0.560
29_2_104	MW-35	Appendix IV	Antimony	mg/l	100%	0	1	0	2	3	0.221	0.040	*	0.109		NA	NA	NA	NA	NA	NA	NA	NA
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	33%	2	1	1	2	6	0.836	0.906		0.921		1	0	1	2	4	0.861	0.841	0.787
29_2_106	MW-35	Appendix IV	Barium	mg/l	0%	0	1	0	2	3	0.221	0.374		0.329		0	1	0	2	3	0.221	0.374	0.329

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full									Without Non-Detects							
						Sample Size					p-Value				Sample Size					p-Value			
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA		Log ANOVA	
29_2_107	MW-35	Appendix IV	Beryllium	mg/l	100%	0	1	0	2	3	0.221	0.355		0.533		NA	NA	NA	NA	NA	NA	NA		NA	
29_2_109	MW-35	Appendix IV	Cadmium	mg/l	100%	0	1	0	2	3	1.000	0.846		0.868		NA	NA	NA	NA	NA	NA	NA		NA	
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	67%	0	1	0	2	3	0.221	0.251		0.360		0	0	0	1	1	NA	NA		NA	
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	25%	0	1	1	2	4	0.861	0.901		0.914		0	0	1	2	3	1.000	0.714		0.747	
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	0%	0	1	0	2	3	0.221	0.655		0.612		0	1	0	2	3	0.221	0.655		0.612	
29_2_117	MW-35	Appendix IV	Lead	mg/l	33%	0	1	0	2	3	0.221	0.107		0.158		0	0	0	2	2	NA	NA		NA	
29_2_118	MW-35	Appendix IV	Lithium	mg/l	0%	2	1	1	2	6	0.172	0.000	***	0.000	***	2	1	1	2	6	0.172	0.000	***	0.000	***
29_2_120	MW-35	Appendix IV	Mercury	mg/l	100%	0	1	0	2	3	1.000	0.848		0.801		NA	NA	NA	NA	NA	NA	NA		NA	
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	33%	0	1	0	2	3	0.221	0.116		0.163		0	0	0	2	2	NA	NA		NA	
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	0%	0	1	0	2	3	1.000	0.791		0.841		0	1	0	2	3	1.000	0.791		0.841	
29_2_129	MW-35	Appendix IV	Selenium	mg/l	0%	2	1	1	2	6	0.172	0.000	***	0.000	***	2	1	1	2	6	0.172	0.000	***	0.000	***
29_2_134	MW-35	Appendix IV	Thallium	mg/l	100%	0	1	0	2	3	0.221	0.071		0.213		NA	NA	NA	NA	NA	NA	NA		NA	
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	2	1	1	2	6	0.228	0.253		0.238		2	1	1	2	6	0.228	0.253		0.238	
29_3_102	MW-35	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	2	0	0	1	3	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
29_3_103	MW-35	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	2	3	0.221	0.333		0.324		0	0	1	2	3	0.221	0.333		0.324	
29_3_114	MW-35	Supplemental	Conductivity (field)	us/cm	0%	2	1	1	2	6	0.277	0.243		0.187		2	1	1	2	6	0.277	0.243		0.187	
29_3_119	MW-35	Supplemental	Magnesium	mg/l	0%	2	0	1	1	4	0.264	0.618		0.638		2	0	1	1	4	0.264	0.618		0.638	
29_3_122	MW-35	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	1	1	2	6	0.370	0.251		0.396		2	1	1	2	6	0.370	0.251		0.396	
29_3_125	MW-35	Supplemental	Potassium	mg/l	0%	2	0	1	1	4	0.264	0.426		0.448		2	0	1	1	4	0.264	0.426		0.448	
29_3_126	MW-35	Supplemental	Radium-226	pci/l	0%	0	1	0	2	3	0.221	0.542		0.490		0	1	0	2	3	0.221	0.542		0.490	
29_3_128	MW-35	Supplemental	Radium-228	pci/l	67%	0	1	0	2	3	1.000	0.953		0.993		0	0	0	1	1	NA	NA		NA	
29_3_130	MW-35	Supplemental	Sodium	mg/l	0%	2	0	1	1	4	0.407	0.400		0.423		2	0	1	1	4	0.407	0.400		0.423	
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	0%	2	1	1	2	6	0.312	0.345		0.416		2	1	1	2	6	0.312	0.345		0.416	
29_3_133	MW-35	Supplemental	Temperature (lab)	deg c	0%	2	1	0	2	5	0.368	0.374		0.359		2	1	0	2	5	0.368	0.374		0.359	
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	0%	2	1	1	2	6	0.277	0.334		0.228		2	1	1	2	6	0.277	0.334		0.228	
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	0%	2	1	1	2	6	0.194	0.056		0.124		2	1	1	2	6	0.194	0.056		0.124	
30_1_108	MW-36	Appendix III	Boron	mg/l	0%	0	1	0	1	2	0.317	NA		NA		0	1	0	1	2	0.317	NA		NA	
30_1_110	MW-36	Appendix III	Calcium	mg/l	0%	0	1	1	1	3	0.368	NA		NA		0	1	1	1	3	0.368	NA		NA	
30_1_111	MW-36	Appendix III	Chloride (as Cl)	mg/l	0%	0	1	1	1	3	0.368	NA		NA		0	1	1	1	3	0.368	NA		NA	
30_1_115	MW-36	Appendix III	Fluoride	mg/l	0%	0	1	0	1	2	0.317	NA		NA		0	1	0	1	2	0.317	NA		NA	
30_1_123	MW-36	Appendix III	pH (field)	su	0%	0	1	1	1	3	0.368	NA		NA		0	1	1	1	3	0.368	NA		NA	
30_1_124	MW-36	Appendix III	pH (lab)	su	0%	0	1	0	1	2	NA	NA		NA		0	1	0	1	2	NA	NA		NA	
30_1_131	MW-36	Appendix III	Sulfate (as SO4)	mg/l	0%	0	1	1	1	3	0.368	NA		NA		0	1	1	1	3	0.368	NA		NA	
30_1_135	MW-36	Appendix III	Total Dissolved Solids	mg/l	0%	0	1	1	1	3	0.368	NA		NA		0	1	1	1	3	0.368	NA		NA	
30_2_104	MW-36	Appendix IV	Antimony	mg/l	100%	0	1	0	1	2	0.317	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
30_2_105	MW-36	Appendix IV	Arsenic	mg/l	100%	0	1	1	1	3	0.368	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
30_2_106	MW-36	Appendix IV	Barium	mg/l	0%	0	1	0	1	2	NA	NA		NA		0	1	0	1	2	NA	NA		NA	
30_2_107	MW-36	Appendix IV	Beryllium	mg/l	100%	0	1	0	1	2	0.317	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
30_2_109	MW-36	Appendix IV	Cadmium	mg/l	100%	0	1	0	1	2	0.317	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	50%	0	1	0	1	2	0.317	NA	NA	0	0	0	1	1	NA	NA	NA
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	33%	0	1	1	1	3	0.368	NA	NA	0	0	1	1	2	0.317	NA	NA
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
30_2_117	MW-36	Appendix IV	Lead	mg/l	100%	0	1	0	1	2	0.317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30_2_118	MW-36	Appendix IV	Lithium	mg/l	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_2_120	MW-36	Appendix IV	Mercury	mg/l	100%	0	1	0	1	2	0.317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	50%	0	1	0	1	2	0.317	NA	NA	0	0	0	1	1	NA	NA	NA
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
30_2_129	MW-36	Appendix IV	Selenium	mg/l	33%	0	1	1	1	3	0.368	NA	NA	0	0	1	1	2	0.317	NA	NA
30_2_134	MW-36	Appendix IV	Thallium	mg/l	100%	0	1	0	1	2	0.317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30_3_101	MW-36	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_3_102	MW-36	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30_3_103	MW-36	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
30_3_114	MW-36	Supplemental	Conductivity (field)	us/cm	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_3_119	MW-36	Supplemental	Magnesium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
30_3_122	MW-36	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_3_125	MW-36	Supplemental	Potassium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
30_3_126	MW-36	Supplemental	Radium-226	pci/l	100%	0	1	0	1	2	0.317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30_3_128	MW-36	Supplemental	Radium-228	pci/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
30_3_130	MW-36	Supplemental	Sodium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
30_3_132	MW-36	Supplemental	Temperature (field)	deg c	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_3_133	MW-36	Supplemental	Temperature (lab)	deg c	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
30_3_136	MW-36	Supplemental	Total Suspended Solids	mg/l	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
30_3_137	MW-36	Supplemental	Turbidity (field)	ntu	0%	0	1	1	1	3	0.368	NA	NA	0	1	1	1	3	0.368	NA	NA
31_1_108	MW-37	Appendix III	Boron	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_1_110	MW-37	Appendix III	Calcium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_1_111	MW-37	Appendix III	Chloride (as Cl)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_1_115	MW-37	Appendix III	Fluoride	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_1_123	MW-37	Appendix III	pH (field)	su	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_1_124	MW-37	Appendix III	pH (lab)	su	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_1_131	MW-37	Appendix III	Sulfate (as SO4)	mg/l	0%	0	0	1	1	2	NA	NA	NA	0	0	1	1	2	NA	NA	NA
31_1_135	MW-37	Appendix III	Total Dissolved Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_2_104	MW-37	Appendix IV	Antimony	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_2_106	MW-37	Appendix IV	Barium	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_107	MW-37	Appendix IV	Beryllium	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_2_109	MW-37	Appendix IV	Cadmium	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_117	MW-37	Appendix IV	Lead	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_118	MW-37	Appendix IV	Lithium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_2_120	MW-37	Appendix IV	Mercury	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_2_129	MW-37	Appendix IV	Selenium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_2_134	MW-37	Appendix IV	Thallium	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_3_101	MW-37	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_102	MW-37	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_3_103	MW-37	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_114	MW-37	Supplemental	Conductivity (field)	us/cm	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_119	MW-37	Supplemental	Magnesium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_122	MW-37	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_125	MW-37	Supplemental	Potassium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_126	MW-37	Supplemental	Radium-226	pci/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31_3_128	MW-37	Supplemental	Radium-228	pci/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_3_130	MW-37	Supplemental	Sodium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_132	MW-37	Supplemental	Temperature (field)	deg c	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_133	MW-37	Supplemental	Temperature (lab)	deg c	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
31_3_136	MW-37	Supplemental	Total Suspended Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
31_3_137	MW-37	Supplemental	Turbidity (field)	ntu	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_1_110	MW-38B	Appendix III	Calcium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_1_111	MW-38B	Appendix III	Chloride (as Cl)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_1_123	MW-38B	Appendix III	pH (field)	su	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
32_1_124	MW-38B	Appendix III	pH (lab)	su	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
32_1_131	MW-38B	Appendix III	Sulfate (as SO4)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_1_135	MW-38B	Appendix III	Total Dissolved Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_101	MW-38B	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_103	MW-38B	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_114	MW-38B	Supplemental	Conductivity (field)	us/cm	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
32_3_119	MW-38B	Supplemental	Magnesium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_122	MW-38B	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
32_3_125	MW-38B	Supplemental	Potassium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_130	MW-38B	Supplemental	Sodium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
32_3_132	MW-38B	Supplemental	Temperature (field)	deg c	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
32_3_133	MW-38B	Supplemental	Temperature (lab)	deg c	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
32_3_136	MW-38B	Supplemental	Total Suspended Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
32_3_137	MW-38B	Supplemental	Turbidity (field)	ntu	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_1_110	MW-38C	Appendix III	Calcium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_1_111	MW-38C	Appendix III	Chloride (as Cl)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_1_123	MW-38C	Appendix III	pH (field)	su	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_1_124	MW-38C	Appendix III	pH (lab)	su	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
33_1_131	MW-38C	Appendix III	Sulfate (as SO4)	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_1_135	MW-38C	Appendix III	Total Dissolved Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_3_101	MW-38C	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	1	1	2	NA	NA	NA	0	0	1	1	2	NA	NA	NA
33_3_103	MW-38C	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	1	1	2	NA	NA	NA	0	0	1	1	2	NA	NA	NA
33_3_114	MW-38C	Supplemental	Conductivity (field)	us/cm	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_3_119	MW-38C	Supplemental	Magnesium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_3_122	MW-38C	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_3_125	MW-38C	Supplemental	Potassium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_3_130	MW-38C	Supplemental	Sodium	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_3_132	MW-38C	Supplemental	Temperature (field)	deg c	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
33_3_133	MW-38C	Supplemental	Temperature (lab)	deg c	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
33_3_136	MW-38C	Supplemental	Total Suspended Solids	mg/l	0%	0	0	1	1	2	0.317	NA	NA	0	0	1	1	2	0.317	NA	NA
33_3_137	MW-38C	Supplemental	Turbidity (field)	ntu	0%	0	0	1	0	1	NA	NA	NA	0	0	1	0	1	NA	NA	NA
34_1_108	MW-4	Appendix III	Boron	mg/l	0%	1	9	3	7	20	0.664	0.745	0.703	1	9	3	7	20	0.664	0.745	0.703
34_1_110	MW-4	Appendix III	Calcium	mg/l	0%	1	8	3	7	19	0.410	0.557	0.540	1	8	3	7	19	0.410	0.557	0.540
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	0%	1	9	3	7	20	0.144	0.218	0.258	1	9	3	7	20	0.144	0.218	0.258
34_1_115	MW-4	Appendix III	Fluoride	mg/l	10%	2	9	3	7	21	0.758	0.823	0.859	2	8	3	6	19	0.770	0.791	0.869
34_1_123	MW-4	Appendix III	pH (field)	su	0%	1	7	3	6	17	0.086	0.119	0.117	1	7	3	6	17	0.086	0.119	0.117
34_1_124	MW-4	Appendix III	pH (lab)	su	0%	1	9	3	7	20	0.778	0.783	0.795	1	9	3	7	20	0.778	0.783	0.795
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	0%	1	9	3	7	20	0.226	0.327	0.332	1	9	3	7	20	0.226	0.327	0.332
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	0%	1	9	3	7	20	0.888	0.864	0.872	1	9	3	7	20	0.888	0.864	0.872
34_2_104	MW-4	Appendix IV	Antimony	mg/l	60%	2	9	3	6	20	0.801	0.667	0.757	1	4	2	1	8	0.361	0.651	0.685
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	0%	2	9	3	7	21	0.496	0.708	0.558	2	9	3	7	21	0.496	0.708	0.558
34_2_106	MW-4	Appendix IV	Barium	mg/l	0%	2	9	3	7	21	0.265	0.314	0.317	2	9	3	7	21	0.265	0.314	0.317
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	74%	2	9	3	5	19	0.629	0.866	0.702	2	2	1	0	5	0.217	0.023 *	0.062
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	60%	2	9	3	6	20	0.580	0.493	0.578	2	4	1	1	8	0.506	0.538	0.749
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	5%	2	9	3	7	21	0.031 *	0.133	0.049 *	2	9	3	6	20	0.020 *	0.129	0.037 *

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	0%	2	9	3	7	21	0.430	0.429	0.385	2	9	3	7	21	0.430	0.429	0.385
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	10%	2	9	3	7	21	0.758	0.823	0.859	2	8	3	6	19	0.770	0.791	0.869
34_2_117	MW-4	Appendix IV	Lead	mg/l	5%	2	9	3	7	21	0.501	0.478	0.473	2	9	3	6	20	0.331	0.421	0.377
34_2_118	MW-4	Appendix IV	Lithium	mg/l	0%	2	9	3	7	21	0.807	0.840	0.852	2	9	3	7	21	0.807	0.840	0.852
34_2_120	MW-4	Appendix IV	Mercury	mg/l	100%	2	8	2	5	17	0.349	0.411	0.380	NA	NA	NA	NA	NA	NA	NA	NA
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	0%	2	9	3	7	21	0.071	0.020 *	0.031 *	2	9	3	7	21	0.071	0.020 *	0.031 *
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	14%	2	9	3	7	21	0.783	0.166	0.535	2	8	3	5	18	0.896	0.255	0.678
34_2_129	MW-4	Appendix IV	Selenium	mg/l	0%	2	9	3	7	21	0.079	0.051	0.051	2	9	3	7	21	0.079	0.051	0.051
34_2_134	MW-4	Appendix IV	Thallium	mg/l	79%	2	9	3	5	19	0.550	0.574	0.566	1	1	1	1	4	0.392	NA	NA
34_3_101	MW-4	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
34_3_102	MW-4	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
34_3_103	MW-4	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	0%	1	7	3	6	17	0.714	0.864	0.730	1	7	3	6	17	0.714	0.864	0.730
34_3_119	MW-4	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	7	3	6	17	0.324	0.522	NA	1	7	3	6	17	0.324	0.522	NA
34_3_125	MW-4	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
34_3_126	MW-4	Supplemental	Radium-226	pci/l	14%	2	9	3	7	21	0.888	0.143	0.369	2	8	3	5	18	0.761	0.196	0.307
34_3_128	MW-4	Supplemental	Radium-228	pci/l	33%	2	9	3	7	21	0.586	0.193	0.615	1	7	2	4	14	0.892	0.177	0.730
34_3_130	MW-4	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	0%	1	7	3	6	17	0.112	0.058	0.064	1	7	3	6	17	0.112	0.058	0.064
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	0%	1	9	3	7	20	0.406	0.577	0.561	1	9	3	7	20	0.406	0.577	0.561
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	0%	2	8	3	6	19	0.063	0.005 **	0.007 **	2	8	3	6	19	0.063	0.005 **	0.007 **
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	0%	1	4	2	4	11	0.774	0.896	0.912	1	4	2	4	11	0.774	0.896	0.912
35_1_108	MW-5	Appendix III	Boron	mg/l	0%	1	4	1	4	10	0.197	0.301	0.428	1	4	1	4	10	0.197	0.301	0.428
35_1_110	MW-5	Appendix III	Calcium	mg/l	0%	1	4	1	4	10	0.475	0.438	0.444	1	4	1	4	10	0.475	0.438	0.444
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	0%	1	4	1	4	10	0.242	0.317	0.345	1	4	1	4	10	0.242	0.317	0.345
35_1_115	MW-5	Appendix III	Fluoride	mg/l	0%	1	4	1	4	10	0.448	0.546	0.517	1	4	1	4	10	0.448	0.546	0.517
35_1_123	MW-5	Appendix III	pH (field)	su	0%	0	4	0	3	7	0.034 *	0.021 *	0.021 *	0	4	0	3	7	0.034 *	0.021 *	0.021 *
35_1_124	MW-5	Appendix III	pH (lab)	su	0%	1	4	1	4	10	0.540	0.557	0.558	1	4	1	4	10	0.540	0.557	0.558
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	0%	1	4	1	4	10	0.207	0.208	0.259	1	4	1	4	10	0.207	0.208	0.259
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	0%	1	4	1	4	10	0.242	0.256	0.278	1	4	1	4	10	0.242	0.256	0.278
35_2_104	MW-5	Appendix IV	Antimony	mg/l	70%	1	4	1	4	10	0.158	0.091	0.051	0	1	1	1	3	0.368	NA	NA
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	60%	1	4	1	4	10	0.606	0.664	0.656	1	1	0	2	4	0.259	0.700	0.677
35_2_106	MW-5	Appendix IV	Barium	mg/l	0%	1	4	1	4	10	0.334	0.728	0.633	1	4	1	4	10	0.334	0.728	0.633
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	78%	1	4	1	3	9	0.336	0.332	0.038 *	0	1	1	0	2	0.317	NA	NA
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	100%	1	4	1	4	10	0.230	0.410	0.620	NA	NA	NA	NA	NA	NA	NA	NA
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	40%	1	4	1	4	10	0.206	0.143	0.207	1	2	1	2	6	0.312	0.503	0.507
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	20%	1	4	1	4	10	0.622	0.789	0.754	1	3	1	3	8	0.506	0.738	0.603
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	0%	1	4	1	4	10	0.448	0.546	0.517	1	4	1	4	10	0.448	0.546	0.517

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
35_2_117	MW-5	Appendix IV	Lead	mg/l	40%	1	4	1	4	10	0.247	0.697	0.444	1	1	1	3	6	0.471	0.901	0.757
35_2_118	MW-5	Appendix IV	Lithium	mg/l	0%	1	4	1	4	10	0.456	0.424	0.412	1	4	1	4	10	0.456	0.424	0.412
35_2_120	MW-5	Appendix IV	Mercury	mg/l	100%	1	3	0	3	7	0.050 *	0.000 ***	0.000 ***	NA	NA	NA	NA	NA	NA	NA	NA
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	0%	1	4	1	4	10	0.188	0.115	0.189	1	4	1	4	10	0.188	0.115	0.189
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	0%	0	3	0	2	5	0.083	0.083	0.147	0	3	0	2	5	0.083	0.083	0.147
35_2_129	MW-5	Appendix IV	Selenium	mg/l	0%	1	4	1	4	10	0.056	0.013 *	0.016 *	1	4	1	4	10	0.056	0.013 *	0.016 *
35_2_134	MW-5	Appendix IV	Thallium	mg/l	89%	1	4	1	3	9	0.172	0.024 *	0.003 **	0	1	0	0	1	NA	NA	NA
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	0%	0	4	0	3	7	0.480	0.943	0.823	0	4	0	3	7	0.480	0.943	0.823
35_3_119	MW-5	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
35_3_122	MW-5	Supplemental	Oxidation-reduction Potential (field)	mV	0%	0	4	0	2	6	0.643	0.897	0.879	0	4	0	2	6	0.643	0.897	0.879
35_3_125	MW-5	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
35_3_126	MW-5	Supplemental	Radium-226	pci/l	0%	0	3	0	2	5	0.248	0.271	0.329	0	3	0	2	5	0.248	0.271	0.329
35_3_128	MW-5	Supplemental	Radium-228	pci/l	40%	0	3	0	2	5	0.083	0.089	0.098	0	1	0	2	3	0.221	0.428	0.347
35_3_130	MW-5	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
35_3_132	MW-5	Supplemental	Temperature (field)	deg c	0%	0	4	0	3	7	0.032 *	0.028 *	0.022 *	0	4	0	3	7	0.032 *	0.028 *	0.022 *
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	0%	1	4	1	4	10	0.143	0.140	0.143	1	4	1	4	10	0.143	0.140	0.143
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	0%	1	4	1	2	8	0.104	0.077	0.114	1	4	1	2	8	0.104	0.077	0.114
35_3_137	MW-5	Supplemental	Turbidity (field)	ntu	0%	0	4	0	2	6	0.165	0.205	0.232	0	4	0	2	6	0.165	0.205	0.232
36_1_108	MW-6	Appendix III	Boron	mg/l	0%	1	9	2	7	19	0.663	0.709	0.688	1	9	2	7	19	0.663	0.709	0.688
36_1_110	MW-6	Appendix III	Calcium	mg/l	0%	1	8	3	7	19	0.251	0.220	0.188	1	8	3	7	19	0.251	0.220	0.188
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	0%	1	9	3	7	20	0.221	0.135	0.070	1	9	3	7	20	0.221	0.135	0.070
36_1_115	MW-6	Appendix III	Fluoride	mg/l	38%	2	9	3	7	21	0.337	0.364	0.332	1	5	3	4	13	0.773	0.691	0.801
36_1_123	MW-6	Appendix III	pH (field)	su	0%	1	8	2	6	17	0.078	0.022 *	0.020 *	1	8	2	6	17	0.078	0.022 *	0.020 *
36_1_124	MW-6	Appendix III	pH (lab)	su	0%	1	9	3	7	20	0.893	0.857	0.856	1	9	3	7	20	0.893	0.857	0.856
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	0%	1	9	3	7	20	0.264	0.165	0.189	1	9	3	7	20	0.264	0.165	0.189
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	0%	1	9	3	7	20	0.306	0.418	0.216	1	9	3	7	20	0.306	0.418	0.216
36_2_104	MW-6	Appendix IV	Antimony	mg/l	75%	2	9	3	6	20	0.972	0.983	0.985	1	2	1	1	5	0.532	0.431	0.547
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	29%	2	9	3	7	21	0.504	0.697	0.533	1	5	3	6	15	0.604	0.718	0.648
36_2_106	MW-6	Appendix IV	Barium	mg/l	0%	2	9	3	7	21	0.473	0.695	0.585	2	9	3	7	21	0.473	0.695	0.585
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	74%	2	9	3	5	19	0.859	0.551	0.559	1	3	0	1	5	0.670	0.896	0.901
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	45%	2	9	3	6	20	0.947	0.959	0.965	1	7	1	2	11	0.890	0.804	0.802
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	14%	2	9	3	7	21	0.508	0.307	0.475	2	7	3	6	18	0.545	0.411	0.465
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	0%	2	9	3	7	21	0.365	0.559	0.422	2	9	3	7	21	0.365	0.559	0.422
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	38%	2	9	3	7	21	0.337	0.364	0.332	1	5	3	4	13	0.773	0.691	0.801
36_2_117	MW-6	Appendix IV	Lead	mg/l	5%	2	9	3	7	21	0.576	0.779	0.584	2	8	3	7	20	0.563	0.796	0.591
36_2_118	MW-6	Appendix IV	Lithium	mg/l	0%	2	9	3	7	21	0.681	0.727	0.755	2	9	3	7	21	0.681	0.727	0.755
36_2_120	MW-6	Appendix IV	Mercury	mg/l	94%	2	8	2	5	17	0.263	0.285	0.250	0	1	0	0	1	NA	NA	NA
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	5%	2	9	3	7	21	0.464	0.535	0.442	2	8	3	7	20	0.437	0.514	0.416
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	10%	3	9	2	6	20	0.703	0.622	0.672	2	9	2	5	18	0.619	0.587	0.600

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
36_2_129	MW-6	Appendix IV	Selenium	mg/l	0%	2	9	3	7	21	0.694	0.559	0.574	2	9	3	7	21	0.694	0.559	0.574
36_2_134	MW-6	Appendix IV	Thallium	mg/l	84%	2	9	3	5	19	0.410	0.805	0.861	1	1	1	0	3	0.368	NA	NA
36_3_101	MW-6	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
36_3_102	MW-6	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	0	0	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
36_3_103	MW-6	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	0	0	1	1	NA	NA	NA	0	0	0	1	1	NA	NA	NA
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	0%	1	8	2	6	17	0.449	0.709	0.567	1	8	2	6	17	0.449	0.709	0.567
36_3_119	MW-6	Supplemental	Magnesium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	8	2	6	17	0.551	0.410	NA	1	8	2	6	17	0.551	0.410	NA
36_3_125	MW-6	Supplemental	Potassium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
36_3_126	MW-6	Supplemental	Radium-226	pci/l	15%	3	9	2	6	20	0.404	0.682	0.495	3	8	2	4	17	0.413	0.660	0.510
36_3_128	MW-6	Supplemental	Radium-228	pci/l	40%	3	9	2	6	20	0.571	0.558	0.500	2	6	1	3	12	0.115	0.077	0.124
36_3_130	MW-6	Supplemental	Sodium	mg/l	0%	0	1	0	1	2	0.317	NA	NA	0	1	0	1	2	0.317	NA	NA
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	0%	1	8	2	6	17	0.078	0.004 **	0.005 **	1	8	2	6	17	0.078	0.004 **	0.005 **
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	0%	1	9	3	7	20	0.402	0.408	0.411	1	9	3	7	20	0.402	0.408	0.411
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	0%	2	8	3	6	19	0.927	0.691	0.989	2	8	3	6	19	0.927	0.691	0.989
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	0%	1	5	2	5	13	0.285	0.000 ***	0.074	1	5	2	5	13	0.285	0.000 ***	0.074
37_1_108	MW-8	Appendix III	Boron	mg/l	0%	2	9	3	6	20	0.942	0.794	0.880	2	9	3	6	20	0.942	0.794	0.880
37_1_110	MW-8	Appendix III	Calcium	mg/l	0%	2	8	3	6	19	0.832	0.220	0.262	2	8	3	6	19	0.832	0.220	0.262
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	0%	2	9	3	5	19	0.823	0.754	0.827	2	9	3	5	19	0.823	0.754	0.827
37_1_115	MW-8	Appendix III	Fluoride	mg/l	45%	3	9	3	5	20	0.216	0.400	0.239	1	5	2	3	11	0.383	0.192	0.381
37_1_123	MW-8	Appendix III	pH (field)	su	0%	1	8	2	5	16	0.400	0.492	0.481	1	8	2	5	16	0.400	0.492	0.481
37_1_124	MW-8	Appendix III	pH (lab)	su	0%	2	9	3	5	19	0.760	0.744	0.751	2	9	3	5	19	0.760	0.744	0.751
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	0%	2	9	3	5	19	0.841	0.286	0.371	2	9	3	5	19	0.841	0.286	0.371
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	0%	2	9	3	6	20	0.138	0.047 *	0.074	2	9	3	6	20	0.138	0.047 *	0.074
37_2_104	MW-8	Appendix IV	Antimony	mg/l	68%	3	9	2	5	19	0.624	0.491	0.529	2	2	0	2	6	0.180	0.507	0.392
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	29%	3	9	3	6	21	0.492	0.255	0.372	2	4	3	6	15	0.389	0.520	0.490
37_2_106	MW-8	Appendix IV	Barium	mg/l	0%	3	9	3	6	21	0.055	0.092	0.045 *	3	9	3	6	21	0.055	0.092	0.045 *
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	74%	3	9	3	4	19	0.286	0.675	0.549	2	2	0	1	5	0.165	0.259	0.243
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	60%	3	9	3	5	20	0.135	0.149	0.097	1	3	1	3	8	0.142	0.393	0.238
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	10%	3	9	3	6	21	0.355	0.060	0.103	3	8	3	5	19	0.175	0.025 *	0.031 *
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	0%	3	9	3	6	21	0.126	0.135	0.089	3	9	3	6	21	0.126	0.135	0.089
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	45%	3	9	3	5	20	0.216	0.400	0.239	1	5	2	3	11	0.383	0.192	0.381
37_2_117	MW-8	Appendix IV	Lead	mg/l	5%	3	9	3	6	21	0.100	0.036 *	0.046 *	3	8	3	6	20	0.130	0.050 *	0.065
37_2_118	MW-8	Appendix IV	Lithium	mg/l	0%	3	9	3	6	21	0.620	0.325	0.418	3	9	3	6	21	0.620	0.325	0.418
37_2_120	MW-8	Appendix IV	Mercury	mg/l	94%	3	8	2	4	17	0.413	0.409	0.444	0	1	0	0	1	NA	NA	NA
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	43%	3	9	3	6	21	0.369	0.335	0.279	2	4	1	5	12	0.458	0.623	0.439
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	0%	2	9	3	6	20	0.009 **	0.103	0.012 *	2	9	3	6	20	0.009 **	0.103	0.012 *
37_2_129	MW-8	Appendix IV	Selenium	mg/l	0%	3	9	3	6	21	0.772	0.477	0.483	3	9	3	6	21	0.772	0.477	0.483
37_2_134	MW-8	Appendix IV	Thallium	mg/l	83%	3	9	2	4	18	0.275	0.454	0.532	2	1	0	0	3	0.221	0.549	0.509

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	0%	1	8	2	5	16	0.400	0.469	0.459	1	8	2	5	16	0.400	0.469	0.459
37_3_119	MW-8	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	8	2	5	16	0.811	0.911	NA	1	8	2	5	16	0.811	0.911	NA
37_3_125	MW-8	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
37_3_126	MW-8	Supplemental	Radium-226	pci/l	0%	2	9	3	6	20	0.284	0.305	0.175	2	9	3	6	20	0.284	0.305	0.175
37_3_128	MW-8	Supplemental	Radium-228	pci/l	5%	2	9	3	6	20	0.010 *	0.039 *	0.007 **	2	9	2	6	19	0.015 *	0.057	0.013 *
37_3_130	MW-8	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	0%	1	8	2	5	16	0.093	0.009 **	0.006 **	1	8	2	5	16	0.093	0.009 **	0.006 **
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	0%	2	9	3	5	19	0.356	0.489	0.491	2	9	3	5	19	0.356	0.489	0.491
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	0%	3	8	3	5	19	0.649	0.903	0.796	3	8	3	5	19	0.649	0.903	0.796
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	0%	1	5	2	4	12	0.229	0.147	0.326	1	5	2	4	12	0.229	0.147	0.326

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 8: Trend Tests: Lognormal MLE and MK

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	Parametric	Lognormal MLE	-0.0000225	0.682	↔
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.00000716	0.763	↔
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	Parametric	Lognormal MLE	-0.00000922	0.455	↔
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000176	0.008	↓
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.000000235	0.967	↔
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	Parametric	Lognormal MLE	-0.0000124	0.141	↔
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	Nonparametric	MK	0.0111	0.198	↔
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	Parametric	Lognormal MLE	-0.000000472	0.977	↔
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	Parametric	Lognormal MLE	-0.000779	0.032	↔
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	Parametric	Lognormal MLE	-0.000248	0.134	↔
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000633	0.000	↓
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	Parametric	Lognormal MLE	-0.000555	0.006	↓
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	Parametric	Lognormal MLE	-0.000983	0.008	↓
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000463	0.092	↔
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000176	0.008	↓
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	Parametric	Lognormal MLE	-0.00108	0.006	↓
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	Nonparametric	MK	-0.000000727	0.293	↔
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000493	0.002	↓
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	Parametric	Lognormal MLE	-0.000320	0.111	↔
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	Parametric	Lognormal MLE	-0.000713	0.008	↓
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	Parametric	Lognormal MLE	0.0000137	0.648	↔
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	Parametric	Lognormal MLE	-0.000635	0.003	↓
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	Parametric	Lognormal MLE	0.00000877	0.666	↔
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	Parametric	Lognormal MLE	-0.0000261	0.127	↔
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	Nonparametric	MK	-0.0173	0.293	↔
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	Nonparametric	MK	-0.00186	0.428	↔
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	Nonparametric	MK	-0.000112	0.024	↔
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	Nonparametric	MK	0.0172	0.580	↔
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	Parametric	Lognormal MLE	0.00000655	0.831	↔
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000199	0.388	↔
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	Nonparametric	MK	-0.0000117	0.951	↔
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	Nonparametric	MK	0	0.723	↔
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	Parametric	Lognormal MLE	0.0000235	0.543	↔
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.0000162	0.284	↔
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	Parametric	Lognormal MLE	-0.00112	0.002	↓
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000318	0.035	↔
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.000687	0.028	↔
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	Parametric	Lognormal MLE	-0.000214	0.534	↔
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000199	0.388	↔
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	Nonparametric	MK	0	0.751	↔
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.000279	0.011	↔
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	Parametric	Lognormal MLE	0.000804	0.056	↔
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.0000359	0.674	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	Nonparametric	MK	-0.510	0.161	↔
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	Parametric	Lognormal MLE	0.000217	0.388	↔
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	Parametric	Lognormal MLE	-0.000247	0.452	↔
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	Parametric	Lognormal MLE	-0.0000278	0.644	↔
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	Parametric	Lognormal MLE	0.00000404	0.886	↔
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	Parametric	Lognormal MLE	-0.000922	0.176	↔
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	Nonparametric	MK	0.000297	0.664	↔
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	Nonparametric	MK	0	0.385	↔
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000497	0.139	↔
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.00000198	0.978	↔
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.000598	0.194	↔
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	Nonparametric	MK	0.0000460	0.653	↔
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	Parametric	Lognormal MLE	-0.0000382	0.000	↓
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000156	0.753	↔
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000701	0.307	↔
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.00164	0.020	↔
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000403	0.000	↓
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	Parametric	Lognormal MLE	-0.00189	0.000	↓
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.000314	0.514	↔
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.000598	0.194	↔
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.00000242	0.960	↔
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000770	0.000	↓
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	Parametric	Lognormal MLE	0.000686	0.003	↑
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000371	0.328	↔
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	Parametric	Lognormal MLE	-0.0000316	0.357	↔
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	Parametric	Lognormal MLE	0.000226	0.291	↔
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	Parametric	Lognormal MLE	0.000721	0.007	↑
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	Parametric	Lognormal MLE	0.0000191	0.823	↔
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	0.00000324	0.938	↔
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	Parametric	Lognormal MLE	-0.00211	0.000	↓
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	Parametric	Lognormal MLE	-0.00105	0.418	↔
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000933	0.139	↔
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000255	0.001	↑
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000120	0.118	↔
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000578	0.772	↔
14_1_123	MW-15	Appendix III	pH (field)	su	8	0	0%	Parametric	Lognormal MLE	-0.0000416	0.005	↓
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	Parametric	Lognormal MLE	-0.0000437	0.000	↓
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000248	0.000	↑
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000128	0.010	↑
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.00126	0.000	↓
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	Nonparametric	MK	-0.0000140	0.015	↔
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.00171	0.000	↓
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	Parametric	Lognormal MLE	-0.000991	0.087	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000578	0.772	↔
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	Nonparametric	MK	0	1.000	↔
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.000662	0.000	↓
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	Parametric	Lognormal MLE	0.000300	0.585	↔
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000386	0.000	↓
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	Parametric	Lognormal MLE	0.0000745	0.476	↔
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	Parametric	Lognormal MLE	-0.000150	0.717	↔
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	Parametric	Lognormal MLE	0.0000573	0.296	↔
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	-0.0000104	0.751	↔
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	Nonparametric	MK	-0.0529	0.142	↔
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	Parametric	Lognormal MLE	-0.00143	0.353	↔
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000117	0.210	↔
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	Nonparametric	MK	0	1.000	↔
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000721	0.183	↔
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000599	0.372	↔
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	Parametric	Lognormal MLE	-0.00000121	0.845	↔
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	Nonparametric	MK	-0.000131	0.052	↔
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000297	0.532	↔
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000670	0.006	↓
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	Parametric	Lognormal MLE	-0.000550	0.240	↔
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.000992	0.023	↔
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000716	0.028	↔
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000599	0.372	↔
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000119	0.198	↔
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	Parametric	Lognormal MLE	-0.000387	0.608	↔
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	Parametric	Lognormal MLE	-0.000265	0.448	↔
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	Parametric	Lognormal MLE	-0.00101	0.139	↔
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	Nonparametric	MK	-0.0271	0.536	↔
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	Parametric	Lognormal MLE	-0.000461	0.243	↔
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	Nonparametric	MK	0.000776	0.454	↔
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	-0.0000348	0.327	↔
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	Parametric	Lognormal MLE	-0.00362	0.000	↓
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	Parametric	Lognormal MLE	-0.000303	0.848	↔
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	Parametric	Lognormal MLE	-0.0000946	0.004	↓
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	Parametric	Lognormal MLE	0.0000242	0.717	↔
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	Parametric	Lognormal MLE	-0.0000785	0.277	↔
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	Parametric	Lognormal MLE	-0.0000415	0.905	↔
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	Parametric	Lognormal MLE	-0.00000177	0.853	↔
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	Parametric	Lognormal MLE	-0.0000226	0.004	↓
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	Parametric	Lognormal MLE	0.000126	0.012	↔
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	Parametric	Lognormal MLE	-0.0000298	0.350	↔
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	Parametric	Lognormal MLE	-0.00261	0.001	↓
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	Parametric	Lognormal MLE	-0.000422	0.000	↓

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	Parametric	Lognormal MLE	0.000245	0.522	↔
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	Parametric	Lognormal MLE	-0.0000415	0.905	↔
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	Parametric	Lognormal MLE	0.0000904	0.114	↔
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	Parametric	Lognormal MLE	-0.000486	0.000	↓
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	Parametric	Lognormal MLE	0.000519	0.194	↔
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	Parametric	Lognormal MLE	0.0000485	0.329	↔
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	Parametric	Lognormal MLE	-0.000152	0.021	↔
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	Parametric	Lognormal MLE	0.000260	0.607	↔
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	Parametric	Lognormal MLE	0.0000149	0.958	↔
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	Parametric	Lognormal MLE	0.000682	0.132	↔
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	Parametric	Lognormal MLE	0.0000476	0.443	↔
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	-0.0000369	0.381	↔
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	Parametric	Lognormal MLE	-0.000205	0.742	↔
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	Parametric	Lognormal MLE	0.00110	0.461	↔
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000533	0.606	↔
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000538	0.000	↑
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	Parametric	Lognormal MLE	-0.0000107	0.410	↔
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	Parametric	Lognormal MLE	0.0000000480	0.997	↔
19_1_131	MW-27	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000530	0.552	↔
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000202	0.844	↔
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000946	0.258	↔
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000366	0.803	↔
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	Parametric	Lognormal MLE	-0.000119	0.087	↔
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	Parametric	Lognormal MLE	0.000301	0.090	↔
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	Parametric	Lognormal MLE	-0.0000345	0.412	↔
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	Nonparametric	MK	-0.00644	0.466	↔
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	Parametric	Lognormal MLE	-0.00519	0.004	↓
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000000888	0.994	↔
20_1_111	MW-28	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000181	0.738	↔
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	Parametric	Lognormal MLE	0.00000289	0.882	↔
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	Parametric	Lognormal MLE	-0.0000169	0.518	↔
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000144	0.008	↑
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Nonparametric	MK	0.169	0.715	↔
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	Parametric	Lognormal MLE	-0.00483	0.001	↓
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	Parametric	Lognormal MLE	-0.000414	0.545	↔
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000878	0.185	↔
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.0000289	0.529	↔
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	Parametric	Lognormal MLE	-0.000119	0.118	↔
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	Parametric	Lognormal MLE	0.000167	0.417	↔
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	Parametric	Lognormal MLE	-0.0000345	0.487	↔
20_3_136	MW-28	Supplemental	Total Suspended Solids	mg/l	9	0	0%	Parametric	Lognormal MLE	-0.000145	0.861	↔
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	Parametric	Lognormal MLE	-0.000555	0.497	↔
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	Parametric	Lognormal MLE	0.0000130	0.561	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.0000126	0.548	↔
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	Parametric	Lognormal MLE	0.0000235	0.254	↔
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	Nonparametric	MK	0.0000441	0.042	↔
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	Parametric	Lognormal MLE	-0.0000118	0.266	↔
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	Nonparametric	MK	0	0.511	↔
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	Nonparametric	MK	0	0.246	↔
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	Nonparametric	MK	-0.00000118	0.019	↔
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	Parametric	Lognormal MLE	0.0000406	0.764	↔
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	Parametric	Lognormal MLE	0.00000522	0.897	↔
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	Parametric	Lognormal MLE	-0.0000284	0.628	↔
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	Parametric	Lognormal MLE	-0.000169	0.355	↔
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	Parametric	Lognormal MLE	-0.00000945	0.745	↔
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	Parametric	Lognormal MLE	-0.000134	0.101	↔
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	Parametric	Lognormal MLE	0.0000155	0.845	↔
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	Parametric	Lognormal MLE	-0.00000582	0.823	↔
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	Parametric	Lognormal MLE	-0.0000322	0.042	↔
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	Parametric	Lognormal MLE	0.0000285	0.931	↔
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	Nonparametric	MK	0.000283	0.795	↔
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	Parametric	Lognormal MLE	0.0000428	0.371	↔
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.00000192	0.917	↔
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	Nonparametric	MK	-0.0254	0.036	↔
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.00000516	0.179	↔
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	Nonparametric	MK	-0.0000520	0.277	↔
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	Parametric	Lognormal MLE	0.00000202	0.815	↔
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	Parametric	Lognormal MLE	0.0000263	0.235	↔
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.00135	0.000	↓
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000366	0.066	↔
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	Parametric	Lognormal MLE	-0.000543	0.024	↔
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000409	0.050	↔
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	Parametric	Lognormal MLE	-0.000387	0.150	↔
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	Parametric	Lognormal MLE	0.00000524	0.822	↔
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000121	0.002	↓
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	Parametric	Lognormal MLE	0.0000598	0.824	↔
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.0000434	0.174	↔
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	Nonparametric	MK	0.0225	0.869	↔
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	Parametric	Lognormal MLE	0.000424	0.152	↔
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	Parametric	Lognormal MLE	-0.00000790	0.820	↔
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	Parametric	Lognormal MLE	-0.0000320	0.033	↔
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	Nonparametric	MK	-0.0266	0.050	↔
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	Parametric	Lognormal MLE	0.0000700	0.821	↔
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000334	0.096	↔
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000254	0.006	↑
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000293	0.177	↔

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Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000726	0.510	↔
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	Parametric	Lognormal MLE	-0.0000357	0.015	↔
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000399	0.078	↔
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000209	0.125	↔
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000282	0.165	↔
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	Parametric	Lognormal MLE	-0.000763	0.338	↔
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	Parametric	Lognormal MLE	0.000191	0.728	↔
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.0000726	0.510	↔
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	Parametric	Lognormal MLE	-0.000348	0.615	↔
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000172	0.020	↔
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000532	0.000	↓
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	Nonparametric	MK	0.00000248	0.059	↔
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	-0.0000232	0.536	↔
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.00118	0.018	↔
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.0000444	0.143	↔
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	Parametric	Lognormal MLE	0.0000781	0.004	↑
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	Parametric	Lognormal MLE	0.000270	0.000	↑
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	0.00000294	0.658	↔
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	Parametric	Lognormal MLE	-0.0000117	0.126	↔
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	Parametric	Lognormal MLE	-0.0000377	0.544	↔
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	Nonparametric	MK	0.144	0.036	↔
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	Parametric	Lognormal MLE	-0.000923	0.000	↓
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.000224	0.159	↔
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	Parametric	Lognormal MLE	-0.000287	0.237	↔
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	Parametric	Lognormal MLE	-0.000850	0.008	↓
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	Nonparametric	MK	-0.000000296	0.139	↔
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	Parametric	Lognormal MLE	-0.000717	0.024	↔
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	Parametric	Lognormal MLE	0.00000414	0.937	↔
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	Parametric	Lognormal MLE	-0.000183	0.189	↔
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	Parametric	Lognormal MLE	0.000143	0.312	↔
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.0000208	0.657	↔
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	Parametric	Lognormal MLE	0.000116	0.051	↔
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	Parametric	Lognormal MLE	-0.000173	0.332	↔
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	Parametric	Lognormal MLE	0.000398	0.018	↔
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	Parametric	Lognormal MLE	-0.0000180	0.675	↔
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	Parametric	Lognormal MLE	-0.0000471	0.000	↓
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	Nonparametric	MK	-0.0292	0.086	↔
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	Parametric	Lognormal MLE	-0.0000616	0.845	↔
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	Nonparametric	MK	0.000147	0.008	↑
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	Nonparametric	MK	0.00468	0.454	↔
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	Parametric	Lognormal MLE	0.000403	0.000	↑
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	Parametric	Lognormal MLE	-0.0000109	0.125	↔
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	Parametric	Lognormal MLE	0.000000104	0.991	↔

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Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	Parametric	Lognormal MLE	0.0000901	0.000	↑
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	Nonparametric	MK	0.292	0.007	↑
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	Parametric	Lognormal MLE	-0.000222	0.342	↔
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	Parametric	Lognormal MLE	0.0000763	0.712	↔
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	Parametric	Lognormal MLE	0.000537	0.017	↔
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	Parametric	Lognormal MLE	0.0000602	0.860	↔
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	Nonparametric	MK	0.0000191	0.004	↑
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	Parametric	Lognormal MLE	0.000204	0.417	↔
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	Nonparametric	MK	0.000226	0.205	↔
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	Parametric	Lognormal MLE	-0.0000857	0.422	↔
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	Parametric	Lognormal MLE	0.000154	0.001	↑
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	Nonparametric	MK	0.0000704	0.256	↔
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	Parametric	Lognormal MLE	0.000254	0.094	↔
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	Nonparametric	MK	-0.000185	0.821	↔
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	Parametric	Lognormal MLE	-0.0000212	0.208	↔
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	Nonparametric	MK	-0.00451	0.726	↔
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	Parametric	Lognormal MLE	0.000256	0.576	↔

Table 9: Trend Tests: Piecewise Linear-Linear

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
11_1_108	MW-1	Appendix III	Boron	mg/l	20	0	0%	-0.000978	0.215	↔	0.0000240	0.410	↔	2016-08-23	0.392	↔
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	0.0213	0.047	↔	-0.00634	0.133	↔	2017-09-14	0.325	↔
11_1_111	MW-1	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	-0.00675	0.431	↔	0.000173	0.894	↔	2017-02-27	0.087	↔
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	-0.000174	0.005	↓	0.0000841	0.303	↔	2019-08-19	0.499	↔
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	0.000239	0.587	↔	-0.0000340	0.625	↔	2017-03-22	0.049	↔
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	0.000575	0.099	↔	-0.000266	0.041	↔	2017-09-17	0.355	↔
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.104	0.098	↔	-0.0208	0.352	↔	2018-02-13	0.309	↔
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.0682	0.169	↔	-0.0557	0.258	↔	2018-11-27	0.179	↔
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	9	47%	-0.000000621	0.418	↔	-0.0000000895	0.738	↔	2018-02-26	0.192	↔
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	0.0000200	0.173	↔	-0.000000596	0.035	↔	2016-03-07	0.303	↔
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	0.000787	0.189	↔	-0.0000500	0.000	↓	2016-03-07	0.593	↔
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	0.00000208	0.183	↔	-0.0000000721	0.224	↔	2016-06-19	0.280	↔
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	0.000000275	0.143	↔	-0.000000114	0.007	↓	2017-05-27	0.434	↔
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.0000108	0.435	↔	-0.00000881	0.067	↔	2018-02-01	0.219	↔
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	0.00000246	0.303	↔	-0.00000142	0.083	↔	2017-09-22	0.232	↔
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	-0.000174	0.005	↓	0.0000841	0.303	↔	2019-08-19	0.499	↔
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	0.00000216	0.405	↔	-0.00000244	0.116	↔	2018-05-23	0.205	↔
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	-0.00000830	0.359	↔	-0.000000179	0.939	↔	2017-09-13	0.140	↔
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	0.0000000809	0.000	↑	-0.000000131	0.052	↔	2021-01-28	0.805	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	-0.0000551	0.093	↔	-0.00000432	0.600	↔	2017-08-12	0.390	↔
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	0.00632	0.483	↔	-0.000297	0.086	↔	2016-03-20	0.184	↔
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	0.00000803	0.058	↔	-0.000000641	0.000	↓	2016-07-05	0.594	↔
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	0.0000000968	0.021	↔	-0.00000102	0.220	↔	2022-01-17	0.385	↔
11_3_114	MW-1	Supplemental	Conductivity (field)	us/cm	17	0	0%	0.0550	0.288	↔	-1.56	0.194	↔	2022-04-05	0.218	↔
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	0.115	0.019	↔	-0.116	0.008	↓	2019-05-31	0.586	↔
11_3_126	MW-1	Supplemental	Radium-226	pci/l	21	6	29%	0.00374	0.393	↔	-0.000161	0.058	↔	2016-03-10	0.224	↔
11_3_128	MW-1	Supplemental	Radium-228	pci/l	21	12	57%	0.00291	0.665	↔	-0.000184	0.150	↔	2016-05-18	0.139	↔
11_3_132	MW-1	Supplemental	Temperature (field)	deg c	17	0	0%	0.00226	0.296	↔	-0.000296	0.654	↔	2017-07-20	0.118	↔
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.0210	0.380	↔	-0.000361	0.415	↔	2016-03-26	0.209	↔
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.157	0.318	↔	-0.235	0.042	↔	2018-11-26	0.316	↔
11_3_137	MW-1	Supplemental	Turbidity (field)	ntu	13	0	0%	-1.19	0.267	↔	-0.0101	0.944	↔	2016-12-11	0.293	↔
12_1_108	MW-13	Appendix III	Boron	mg/l	10	0	0%	-0.000493	0.198	↔	-0.0000362	0.628	↔	2019-10-23	0.728	↔
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	0.000951	0.995	↔	-0.436	0.485	↔	2021-10-13	0.137	↔
12_1_111	MW-13	Appendix III	Chloride (as Cl)	mg/l	13	0	0%	-0.0120	0.124	↔	0.00835	0.180	↔	2020-05-21	0.358	↔
12_1_115	MW-13	Appendix III	Fluoride	mg/l	10	0	0%	-0.000406	0.774	↔	0.000625	0.338	↔	2020-04-21	0.181	↔
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	-0.000128	0.261	↔	0.00605	0.078	↔	2022-06-25	0.544	↔
12_1_124	MW-13	Appendix III	pH (lab)	su	12	0	0%	-0.000242	0.126	↔	0.00241	0.191	↔	2022-02-15	0.461	↔
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	-2.70	0.156	↔	0.175	0.126	↔	2018-12-27	0.391	↔
12_1_135	MW-13	Appendix III	Total Dissolved Solids	mg/l	13	0	0%	0.00974	0.909	↔	-0.712	0.491	↔	2022-01-07	0.273	↔
12_2_104	MW-13	Appendix IV	Antimony	mg/l	8	8	100%	0.00000000000200	1.000	↔	0.00000108	0.687	↔	2020-09-27	0.158	↔
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	0.0000000760	0.961	↔	-0.00000326	0.204	↔	2020-11-03	0.484	↔
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	-0.0000365	0.014	↔	0.0000154	0.152	↔	2020-08-09	0.789	↔
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	7	88%	-0.00000234	0.661	↔	0.000000202	0.618	↔	2018-12-10	0.115	↔
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	-0.000000689	0.001	↓	0.0000000481	0.080	↔	2019-06-30	0.952	↔
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	1	10%	-0.00000496	0.078	↔	0.00000442	0.322	↔	2021-03-14	0.563	↔
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	-0.00000959	0.026	↔	0.000000665	0.016	↔	2019-05-08	0.918	↔
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.000406	0.774	↔	0.000625	0.338	↔	2020-04-21	0.181	↔
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	-0.000000428	0.215	↔	0.00000239	0.072	↔	2021-08-10	0.612	↔
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	-0.0000144	0.193	↔	0.00000889	0.597	↔	2020-10-19	0.219	↔
12_2_120	MW-13	Appendix IV	Mercury	mg/l	7	7	100%	0.000000000000000000000781	0.494	↔	-0.000000293	0.000	↓	2022-02-11	1.000	↔
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	-0.00000430	0.001	↓	0.00000189	0.033	↔	2020-08-07	0.905	↔
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	4	40%	-0.00227	0.174	↔	0.000865	0.030	↔	2019-06-05	0.656	↔
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0	0%	0.000264	0.336	↔	-0.0000579	0.259	↔	2019-07-06	0.222	↔
12_2_134	MW-13	Appendix IV	Thallium	mg/l	7	7	100%	0.00000000000251	1.000	↔	0.000000301	0.796	↔	2020-06-25	0.111	↔
12_3_114	MW-13	Supplemental	Conductivity (field)	us/cm	13	0	0%	0.193	0.416	↔	-2.82	0.002	↓	2021-08-23	0.804	↔
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	-0.0299	0.615	↔	0.624	0.119	↔	2021-12-07	0.452	↔
12_3_125	MW-13	Supplemental	Potassium	mg/l	5	0	0%	-0.0278	0.337	↔	0.00674	0.305	↔	2022-01-25	0.871	↔
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	-0.00225	0.150	↔	0.0000825	0.405	↔	2018-12-02	0.414	↔
12_3_128	MW-13	Supplemental	Radium-228	pci/l	10	7	70%	-0.0000787	0.805	↔	0.00122	0.063	↔	2021-02-20	0.674	↔
12_3_132	MW-13	Supplemental	Temperature (field)	deg c	13	0	0%	-0.00599	0.522	↔	0.00114	0.513	↔	2019-10-23	0.170	↔
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	-0.000919	0.622	↔	0.00125	0.701	↔	2020-10-19	0.056	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	0.148	0.244	↔	-0.108	0.076	↔	2020-04-21	0.418	↔
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	0.0159	0.375	↔	-0.0106	0.156	↔	2020-04-21	0.272	↔
13_1_108	MW-14	Appendix III	Boron	mg/l	10	0	0%	0.000943	0.710	↔	-0.000174	0.307	↔	2019-02-23	0.190	↔
13_1_110	MW-14	Appendix III	Calcium	mg/l	10	0	0%	-0.0280	0.253	↔	0.153	0.091	↔	2021-04-27	0.702	↔
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.0195	0.410	↔	0.119	0.581	↔	2021-11-21	0.235	↔
13_1_115	MW-14	Appendix III	Fluoride	mg/l	10	2	20%	-0.00245	0.862	↔	0.000979	0.304	↔	2019-05-02	0.180	↔
13_1_123	MW-14	Appendix III	pH (field)	su	10	0	0%	0.000971	0.311	↔	-0.000303	0.141	↔	2019-10-23	0.474	↔
13_1_124	MW-14	Appendix III	pH (lab)	su	10	0	0%	-0.000243	0.157	↔	-0.000645	0.660	↔	2021-12-29	0.573	↔
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.281	0.187	↔	1.78	0.349	↔	2021-10-12	0.550	↔
13_1_135	MW-14	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.737	0.230	↔	1.73	0.747	↔	2021-10-12	0.241	↔
13_2_104	MW-14	Appendix IV	Antimony	mg/l	8	8	100%	0.0000000688	0.384	↔	-0.000000961	0.151	↔	2022-03-10	0.614	↔
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	0.00000307	0.299	↔	-0.0000347	0.010	↓	2021-09-29	0.800	↔
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	-0.0000182	0.005	↓	-0.00000438	0.059	↔	2019-12-27	0.942	↔
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	7	88%	-0.00000255	0.799	↔	0.000000472	0.521	↔	2019-01-11	0.136	↔
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	-0.0000000427	0.719	↔	0.000000231	0.156	↔	2021-02-01	0.505	↔
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	3	30%	-0.0000131	0.100	↔	0.00000197	0.530	↔	2020-01-13	0.589	↔
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	-0.00000462	0.400	↔	0.000000425	0.242	↔	2019-01-23	0.330	↔
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	2	20%	-0.00245	0.862	↔	0.000979	0.304	↔	2019-05-02	0.180	↔
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	-0.000000104	0.327	↔	-0.000000701	0.080	↔	2021-10-11	0.742	↔
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	-0.0000231	0.365	↔	0.0000272	0.232	↔	2020-10-20	0.318	↔
13_2_120	MW-14	Appendix IV	Mercury	mg/l	7	7	100%	0.000000000000000000000572	0.466	↔	-0.000000292	0.000	↓	2022-02-19	1.000	↔
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	-0.0000160	0.007	↓	-0.00000139	0.002	↓	2019-01-22	0.969	↓
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	1	10%	0.000192	0.423	↔	0.00744	0.012	↔	2022-03-13	0.886	↔
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	-0.000126	0.563	↔	0.000277	0.172	↔	2020-10-11	0.345	↔
13_2_134	MW-14	Appendix IV	Thallium	mg/l	7	7	100%	0.0000000367	0.512	↔	-0.000000526	0.254	↔	2022-02-17	0.619	↔
13_3_114	MW-14	Supplemental	Conductivity (field)	us/cm	10	0	0%	0.0299	0.947	↔	-1.05	0.501	↔	2021-09-17	0.157	↔
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	-0.194	0.410	↔	0.00361	0.971	↔	2020-04-20	0.373	↔
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	-0.00150	0.383	↔	0.000193	0.110	↔	2019-03-03	0.471	↔
13_3_128	MW-14	Supplemental	Radium-228	pci/l	10	2	20%	0.0000960	0.356	↔	0.00878	0.000	↑	2022-04-05	0.976	↔
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	-0.00258	0.302	↔	0.0127	0.155	↔	2021-09-08	0.432	↔
13_3_133	MW-14	Supplemental	Temperature (lab)	deg c	10	0	0%	0.00805	0.738	↔	-0.000677	0.662	↔	2019-03-01	0.093	↔
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	-0.0758	0.236	↔	-0.00611	0.153	↔	2019-05-14	0.894	↔
13_3_137	MW-14	Supplemental	Turbidity (field)	ntu	10	0	0%	0.00241	0.768	↔	-0.00595	0.132	↔	2020-04-20	0.411	↔
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	-0.000420	0.119	↔	0.000123	0.040	↔	2019-05-30	0.634	↔
14_1_110	MW-15	Appendix III	Calcium	mg/l	10	0	0%	-0.176	0.594	↔	0.0845	0.006	↑	2019-05-12	0.756	↔
14_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.0168	0.113	↔	0.0514	0.549	↔	2022-01-11	0.395	↔
14_1_115	MW-15	Appendix III	Fluoride	mg/l	10	0	0%	-0.000318	0.618	↔	0.000192	0.729	↔	2020-04-23	0.064	↔
14_1_124	MW-15	Appendix III	pH (lab)	su	10	0	0%	-0.000214	0.338	↔	-0.000483	0.222	↔	2020-10-20	0.711	↔
14_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	-0.273	0.692	↔	0.378	0.030	↔	2019-05-13	0.713	↔
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.421	0.733	↔	0.402	0.144	↔	2019-05-13	0.451	↔
14_2_104	MW-15	Appendix IV	Antimony	mg/l	8	8	100%	0.00000000000334	1.000	↔	0.00000102	0.700	↔	2020-08-30	0.155	↔
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	1	10%	-0.0000208	0.120	↔	-0.000000192	0.803	↔	2019-01-09	0.690	↔

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Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	-0.000343	0.002	↓	-0.00000123	0.926	↔	2019-05-16	0.919	↔
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	7	88%	-0.00000250	0.672	↔	0.000000270	0.531	↔	2019-03-25	0.219	↔
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	9	9	100%	-0.0000000101	0.022	↔	0.000000286	0.000	↑	2022-01-29	0.986	↔
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	2	20%	-0.000236	0.011	↔	-0.00000443	0.334	↔	2018-12-11	0.866	↔
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	-0.0000115	0.000	↓	0.000000432	0.221	↔	2019-06-08	0.953	↔
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.000318	0.618	↔	0.000192	0.729	↔	2020-04-23	0.064	↔
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	-0.0000396	0.000	↓	-0.0000000726	0.739	↔	2019-01-11	0.990	↔
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0	0%	-0.0000147	0.104	↔	0.0000164	0.050	↔	2020-07-05	0.630	↔
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	1	10%	-0.000000332	0.965	↔	-0.00000245	0.150	↔	2019-05-13	0.501	↔
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	4	40%	-0.00141	0.162	↔	0.00153	0.096	↔	2020-08-16	0.518	↔
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0	0%	0.0000359	0.785	↔	-0.0000746	0.026	↔	2019-10-22	0.662	↔
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	0.00000000000106	1.000	↔	0.000000274	0.679	↔	2020-04-22	0.110	↔
14_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	8	0	0%	0.578	0.633	↔	-0.255	0.830	↔	2021-05-01	0.154	↔
14_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	-0.0915	0.832	↔	0.0284	0.670	↔	2020-04-22	0.080	↔
14_3_126	MW-15	Supplemental	Radium-226	pci/l	10	5	50%	-0.0000924	0.733	↔	-0.000389	0.872	↔	2021-10-12	0.103	↔
14_3_128	MW-15	Supplemental	Radium-228	pci/l	10	7	70%	-0.000205	0.191	↔	0.00707	0.001	↑	2022-04-09	0.900	↔
14_3_132	MW-15	Supplemental	Temperature (field)	deg c	8	0	0%	-0.000966	0.416	↔	0.0141	0.095	↔	2022-02-20	0.733	↔
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	0.00576	0.338	↔	-0.00203	0.121	↔	2019-10-04	0.447	↔
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.466	0.289	↔	0.00175	0.997	↔	2020-07-16	0.416	↔
14_3_137	MW-15	Supplemental	Turbidity (field)	ntu	8	0	0%	0.0192	0.521	↔	-0.00493	0.303	↔	2020-03-12	0.375	↔
15_1_108	MW-16	Appendix III	Boron	mg/l	10	0	0%	-0.000484	0.164	↔	0.0000729	0.604	↔	2019-12-08	0.444	↔
15_1_110	MW-16	Appendix III	Calcium	mg/l	10	0	0%	0.365	0.421	↔	-0.269	0.194	↔	2020-04-23	0.332	↔
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	-0.00382	0.773	↔	0.0141	0.248	↔	2020-10-08	0.290	↔
15_1_115	MW-16	Appendix III	Fluoride	mg/l	10	0	0%	-0.000409	0.852	↔	0.000135	0.359	↔	2019-05-01	0.146	↔
15_1_124	MW-16	Appendix III	pH (lab)	su	10	0	0%	-0.000578	0.570	↔	-0.000181	0.388	↔	2019-05-13	0.397	↔
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.0628	0.491	↔	-0.0172	0.359	↔	2019-06-10	0.203	↔
15_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.00894	0.896	↔	-0.0949	0.148	↔	2020-10-19	0.516	↔
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	-0.0000131	0.024	↔	0.00000107	0.439	↔	2019-12-30	0.872	↔
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	-0.0000149	0.141	↔	0.000000994	0.805	↔	2020-01-31	0.586	↔
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	-0.000483	0.002	↓	0.000000302	0.988	↔	2019-06-03	0.917	↔
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	-0.00000436	0.163	↔	-0.0000000337	0.864	↔	2018-12-05	0.617	↔
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	-0.000000234	0.555	↔	-0.0000000151	0.852	↔	2019-05-14	0.200	↔
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	-0.000140	0.000	↓	0.000000112	0.842	↔	2019-05-10	0.999	↔
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	-0.0000176	0.000	↓	-0.0000000123	0.964	↔	2019-05-23	0.987	↔
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.000409	0.852	↔	0.000135	0.359	↔	2019-05-01	0.146	↔
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	-0.0000271	0.000	↓	-0.000000240	0.162	↔	2019-05-13	0.998	↔
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0	0%	0.00000348	0.954	↔	-0.00000950	0.445	↔	2019-09-28	0.143	↔
15_2_120	MW-16	Appendix IV	Mercury	mg/l	7	7	100%	0.000000000000000000000230	0.414	↔	-0.000000285	0.000	↓	2022-02-13	1.000	↔
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	1	10%	-0.0000775	0.246	↔	0.0000130	0.640	↔	2020-04-23	0.503	↔
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	4	40%	-0.00179	0.288	↔	0.000268	0.423	↔	2019-10-22	0.500	↔
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	-0.0000347	0.220	↔	0.0000000743	0.965	↔	2019-01-31	0.598	↔
15_2_134	MW-16	Appendix IV	Thallium	mg/l	7	7	100%	0.0000000364	0.505	↔	-0.000000532	0.232	↔	2022-02-18	0.637	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	-0.00529	0.008	↓	0.000113	0.252	↔	2018-12-07	0.808	↔
15_3_128	MW-16	Supplemental	Radium-228	pci/l	10	7	70%	-0.000546	0.540	↔	0.0000945	0.599	↔	2019-10-22	0.231	↔
15_3_132	MW-16	Supplemental	Temperature (field)	deg c	8	0	0%	0.00500	0.208	↔	-0.00589	0.467	↔	2021-04-30	0.423	↔
15_3_133	MW-16	Supplemental	Temperature (lab)	deg c	10	0	0%	0.00582	0.109	↔	-0.00300	0.068	↔	2019-11-11	0.595	↔
15_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-3.05	0.086	↔	-0.0901	0.377	↔	2019-05-12	0.938	↔
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	0.0154	0.702	↔	-0.00253	0.680	↔	2020-04-23	0.209	↔
16_1_108	MW-21	Appendix III	Boron	mg/l	9	0	0%	-0.000532	0.790	↔	-0.0000707	0.385	↔	2019-10-21	0.579	↔
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	-0.0520	0.155	↔	0.460	0.183	↔	2022-01-04	0.583	↔
16_1_111	MW-21	Appendix III	Chloride (as Cl)	mg/l	11	0	0%	-0.261	0.126	↔	0.0573	0.363	↔	2020-07-17	0.482	↔
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	0.000420	0.506	↔	-0.000893	0.817	↔	2021-10-14	0.134	↔
16_1_123	MW-21	Appendix III	pH (field)	su	12	0	0%	0.0000254	0.896	↔	-0.000150	0.721	↔	2021-09-25	0.022	↔
16_1_124	MW-21	Appendix III	pH (lab)	su	10	0	0%	-0.000244	0.083	↔	0.000113	0.766	↔	2021-10-14	0.535	↔
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	-0.424	0.380	↔	0.862	0.072	↔	2020-10-20	0.636	↔
16_1_135	MW-21	Appendix III	Total Dissolved Solids	mg/l	12	0	0%	0.579	0.765	↔	-0.419	0.268	↔	2020-04-20	0.164	↔
16_2_104	MW-21	Appendix IV	Antimony	mg/l	8	8	100%	0.00000000000291	1.000	↔	0.00000106	0.688	↔	2020-09-16	0.158	↔
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	3	25%	-0.0000000997	0.980	↔	-0.0000241	0.020	↔	2021-07-25	0.747	↔
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	-0.0000238	0.016	↔	-0.00000123	0.748	↔	2020-05-04	0.876	↔
16_2_107	MW-21	Appendix IV	Beryllium	mg/l	7	7	100%	0.000000482	0.388	↔	-0.00000130	0.724	↔	2021-12-12	0.280	↔
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	8	8	100%	-0.00000000997	0.091	↔	0.000000296	0.001	↑	2022-02-01	0.985	↔
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	8	89%	-0.000000000000924	1.000	↔	0.00000220	0.346	↔	2020-07-04	0.353	↔
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	0.000000516	0.042	↔	-0.00000287	0.098	↔	2022-03-18	0.636	↔
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	0.000420	0.506	↔	-0.000893	0.817	↔	2021-10-14	0.134	↔
16_2_117	MW-21	Appendix IV	Lead	mg/l	9	9	100%	0.0000000456	0.995	↔	0.0000000467	0.867	↔	2019-09-14	0.012	↔
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	-0.000208	0.026	↔	0.0000532	0.006	↑	2019-11-18	0.726	↔
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0	0%	0.00000943	0.549	↔	-0.00000336	0.002	↓	2019-07-01	0.902	↔
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	-0.00122	0.778	↔	0.000898	0.217	↔	2020-04-01	0.370	↔
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	-0.000175	0.231	↔	0.000476	0.139	↔	2021-04-27	0.458	↔
16_2_134	MW-21	Appendix IV	Thallium	mg/l	7	7	100%	0.00000000000337	1.000	↔	0.000000296	0.796	↔	2020-06-13	0.111	↔
16_3_114	MW-21	Supplemental	Conductivity (field)	us/cm	12	0	0%	0.500	0.297	↔	-4.91	0.001	↓	2021-09-12	0.837	↔
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	-0.348	0.546	↔	0.171	0.139	↔	2020-04-20	0.285	↔
16_3_126	MW-21	Supplemental	Radium-226	pci/l	8	0	0%	0.000128	0.395	↔	-0.000710	0.448	↔	2022-01-17	0.343	↔
16_3_128	MW-21	Supplemental	Radium-228	pci/l	8	2	25%	-0.00168	0.648	↔	0.000744	0.221	↔	2020-01-17	0.385	↔
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	0.0264	0.503	↔	-0.000253	0.852	↔	2019-06-11	0.190	↔
16_3_133	MW-21	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.00205	0.160	↔	0.00613	0.323	↔	2021-11-30	0.386	↔
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	0.0575	0.815	↔	-0.0136	0.158	↔	2019-10-21	0.272	↔
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	0.0200	0.730	↔	-0.00176	0.394	↔	2019-10-21	0.308	↔
17_1_115	MW-25B	Appendix III	Fluoride	mg/l	6	0	0%	-0.000381	0.455	↔	0.000336	0.516	↔	2020-10-21	0.485	↔
17_1_123	MW-25B	Appendix III	pH (field)	su	6	0	0%	0.000175	0.584	↔	-0.000867	0.402	↔	2021-07-25	0.546	↔
17_1_124	MW-25B	Appendix III	pH (lab)	su	6	0	0%	-0.00106	0.451	↔	0.0000785	0.853	↔	2020-08-02	0.571	↔
17_1_131	MW-25B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-0.190	0.422	↔	0.216	0.386	↔	2021-01-18	0.532	↔
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	1	20%	-0.00000202	0.136	↔	0.000000416	0.327	↔	2020-07-29	0.973	↔
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0	0%	-0.00000145	0.838	↔	0.000000950	0.688	↔	2020-10-20	0.131	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
17_2_109	MW-25B	Appendix IV	Cadmium	mg/l	5	5	100%	0.000000000000000000342	0.608	↔	-0.000000740	0.000	↓	2021-10-14	1.000	↔
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	5	83%	-0.00000117	0.874	↔	0.000000925	0.707	↔	2020-05-03	0.159	↔
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0	0%	-0.000381	0.455	↔	0.000336	0.516	↔	2020-10-21	0.485	↔
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	5	83%	0.000000108	0.536	↔	-0.000000947	0.167	↔	2021-08-11	0.827	↔
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0	0%	-0.0000372	0.074	↔	0.00000239	0.565	↔	2020-07-02	0.936	↔
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	3	50%	0.000292	0.075	↔	-0.000152	0.227	↔	2021-03-06	0.925	↔
17_3_128	MW-25B	Supplemental	Radium-228	pci/l	6	4	67%	0.000292	0.058	↔	-0.000353	0.044	↔	2021-01-31	0.950	↔
17_3_133	MW-25B	Supplemental	Temperature (lab)	deg c	6	0	0%	-0.00935	0.004	↓	0.00805	0.006	↑	2021-03-01	0.996	↔
18_1_108	MW-26	Appendix III	Boron	mg/l	7	0	0%	-0.0000948	0.277	↔	0.000114	0.754	↔	2022-02-16	0.457	↔
18_1_115	MW-26	Appendix III	Fluoride	mg/l	7	3	43%	0.00627	0.760	↔	-0.000805	0.862	↔	2020-10-18	0.172	↔
18_1_124	MW-26	Appendix III	pH (lab)	su	7	0	0%	-0.000826	0.011	↔	0.000333	0.037	↔	2021-03-15	0.964	↔
18_1_131	MW-26	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	-1.64	0.006	↓	0.278	0.012	↔	2020-07-01	0.973	↔
18_1_135	MW-26	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	0.0515	0.790	↔	-0.571	0.537	↔	2022-01-05	0.359	↔
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0	0%	-0.0000331	0.514	↔	0.0000229	0.920	↔	2021-12-28	0.201	↔
18_2_109	MW-26	Appendix IV	Cadmium	mg/l	6	6	100%	-0.0000000000000000559	0.571	↔	0.000000286	0.000	↑	2022-02-13	1.000	↔
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	2	29%	0.000000538	0.336	↔	-0.00000333	0.226	↔	2022-03-24	0.565	↔
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	3	43%	0.00627	0.760	↔	-0.000805	0.862	↔	2020-10-18	0.172	↔
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	6	86%	-0.000000459	0.674	↔	-0.000000740	0.672	↔	2021-06-30	0.380	↔
18_2_120	MW-26	Appendix IV	Mercury	mg/l	5	5	100%	0.000000000000000000746	0.701	↔	-0.000000280	0.000	↓	2022-02-12	1.000	↔
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	2	29%	0.00000469	0.495	↔	-0.0000102	0.741	↔	2021-10-14	0.231	↔
18_2_134	MW-26	Appendix IV	Thallium	mg/l	5	5	100%	0.0000000910	0.696	↔	-0.000000596	0.478	↔	2022-02-19	0.693	↔
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	0.000421	0.067	↔	-0.000754	0.051	↔	2021-07-31	0.861	↔
18_3_133	MW-26	Supplemental	Temperature (lab)	deg c	7	0	0%	-0.00407	0.482	↔	-0.000695	0.846	↔	2021-05-04	0.550	↔
19_1_108	MW-27	Appendix III	Boron	mg/l	7	0	0%	-0.0000378	0.306	↔	0.0000271	0.618	↔	2021-05-26	0.388	↔
19_1_110	MW-27	Appendix III	Calcium	mg/l	10	0	0%	-0.00377	0.628	↔	0.0386	0.419	↔	2022-02-09	0.299	↔
19_1_111	MW-27	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.00766	0.116	↔	0.0674	0.283	↔	2022-06-14	0.703	↔
19_1_123	MW-27	Appendix III	pH (field)	su	10	0	0%	-0.00177	0.043	↔	0.000121	0.424	↔	2020-04-30	0.614	↔
19_1_124	MW-27	Appendix III	pH (lab)	su	9	0	0%	-0.000554	0.206	↔	0.000361	0.198	↔	2021-01-13	0.466	↔
19_1_135	MW-27	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.0577	0.476	↔	-0.182	0.705	↔	2022-01-07	0.132	↔
19_2_104	MW-27	Appendix IV	Antimony	mg/l	6	6	100%	0.000000110	0.520	↔	-0.00000103	0.250	↔	2022-03-11	0.689	↔
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	-0.000000708	0.067	↔	-0.00000175	0.701	↔	2022-04-21	0.637	↔
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0	0%	-0.000155	0.057	↔	0.0000200	0.181	↔	2020-06-20	0.857	↔
19_2_107	MW-27	Appendix IV	Beryllium	mg/l	5	5	100%	0.000000457	0.493	↔	-0.00000121	0.542	↔	2021-10-13	0.796	↔
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	4	50%	-0.00000171	0.316	↔	-0.0000000962	0.770	↔	2020-10-05	0.730	↔
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0	0%	-0.0000387	0.053	↔	0.00000717	0.073	↔	2020-04-22	0.640	↔
19_2_120	MW-27	Appendix IV	Mercury	mg/l	5	5	100%	0.000000000000000000653	0.707	↔	-0.000000272	0.000	↓	2022-02-06	1.000	↔
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	-0.00000718	0.396	↔	0.000000297	0.867	↔	2020-08-04	0.550	↔
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	4	57%	-0.00264	0.120	↔	0.000540	0.143	↔	2020-05-10	0.740	↔
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	-0.00000442	0.534	↔	0.000000770	0.595	↔	2020-07-24	0.160	↔
19_2_134	MW-27	Appendix IV	Thallium	mg/l	5	5	100%	0.0000000899	0.692	↔	-0.000000594	0.462	↔	2022-02-18	0.708	↔
19_3_114	MW-27	Supplemental	Conductivity (field)	us/cm	10	0	0%	0.00873	0.946	↔	-0.180	0.306	↔	2021-07-09	0.330	↔
19_3_119	MW-27	Supplemental	Magnesium	mg/l	5	0	0%	-0.0556	0.336	↔	0.0111	0.337	↔	2022-01-29	0.858	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
19_3_126	MW-27	Supplemental	Radium-226	pci/l	7	4	57%	0.000229	0.380	↔	-0.000620	0.583	↔	2021-10-13	0.419	↔
19_3_128	MW-27	Supplemental	Radium-228	pci/l	7	6	86%	-0.00264	0.093	↔	0.000410	0.189	↔	2020-05-09	0.752	↔
19_3_132	MW-27	Supplemental	Temperature (field)	deg c	10	0	0%	0.00243	0.617	↔	0.0116	0.690	↔	2022-01-07	0.250	↔
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	-0.00739	0.287	↔	0.00189	0.228	↔	2020-10-18	0.593	↔
19_3_136	MW-27	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.459	0.000	↓	0.00883	0.608	↔	2020-05-09	0.963	↔
19_3_137	MW-27	Supplemental	Turbidity (field)	ntu	10	0	0%	-0.0961	0.213	↔	-0.0104	0.912	↔	2021-10-12	0.561	↔
20_1_108	MW-28	Appendix III	Boron	mg/l	7	0	0%	0.000552	0.087	↔	-0.000677	0.018	↔	2021-01-16	0.919	↔
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	-0.129	0.072	↔	0.567	0.176	↔	2022-01-07	0.663	↔
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	-0.000718	0.634	↔	0.000136	0.663	↔	2020-05-26	0.073	↔
20_1_131	MW-28	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.864	0.337	↔	-0.0121	0.981	↔	2021-05-07	0.502	↔
20_2_104	MW-28	Appendix IV	Antimony	mg/l	6	6	100%	0.000000111	0.527	↔	-0.00000104	0.268	↔	2022-03-08	0.672	↔
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	0.00000988	0.517	↔	-0.0000573	0.023	↔	2021-05-08	0.810	↔
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0	0%	-0.0000110	0.332	↔	-0.00000216	0.391	↔	2020-07-23	0.784	↔
20_2_109	MW-28	Appendix IV	Cadmium	mg/l	6	6	100%	-0.0000000000000000559	0.573	↔	0.000000289	0.000	↑	2022-02-10	1.000	↔
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	2	29%	-0.00000829	0.442	↔	0.00000205	0.404	↔	2020-07-27	0.414	↔
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	0.000000986	0.009	↑	-0.00000376	0.019	↔	2022-01-31	0.909	↔
20_2_120	MW-28	Appendix IV	Mercury	mg/l	5	5	100%	0.00000000000000000000643	0.704	↔	-0.000000283	0.000	↓	2022-02-09	1.000	↔
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0	0%	-0.000552	0.688	↔	0.000284	0.335	↔	2020-09-11	0.175	↔
20_3_114	MW-28	Supplemental	Conductivity (field)	us/cm	10	0	0%	1.20	0.429	↔	-2.91	0.171	↔	2021-05-08	0.478	↔
20_3_125	MW-28	Supplemental	Potassium	mg/l	5	0	0%	0.00775	0.156	↔	-0.0494	0.044	↔	2022-07-10	0.996	↔
20_3_126	MW-28	Supplemental	Radium-226	pci/l	7	0	0%	0.000283	0.412	↔	-0.000462	0.409	↔	2021-09-12	0.382	↔
20_3_130	MW-28	Supplemental	Sodium	mg/l	5	0	0%	0.995	0.489	↔	-3.33	0.303	↔	2022-07-05	0.833	↔
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	0.0000401	0.995	↔	0.0143	0.709	↔	2022-01-07	0.138	↔
20_3_133	MW-28	Supplemental	Temperature (lab)	deg c	9	0	0%	-0.00994	0.184	↔	0.00257	0.136	↔	2020-09-28	0.673	↔
20_3_137	MW-28	Supplemental	Turbidity (field)	ntu	10	0	0%	0.00572	0.644	↔	-0.0220	0.776	↔	2022-01-07	0.073	↔
21_1_110	MW-29	Appendix III	Calcium	mg/l	6	0	0%	-1.08	0.368	↔	0.488	0.386	↔	2022-01-10	0.652	↔
21_1_123	MW-29	Appendix III	pH (field)	su	6	0	0%	-0.00136	0.206	↔	0.000555	0.750	↔	2022-04-28	0.681	↔
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	2	33%	-0.000272	0.095	↔	-0.0000148	0.764	↔	2022-01-10	0.904	↔
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0	0%	-0.00143	0.019	↔	0.000263	0.015	↔	2021-12-06	0.983	↔
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0	0%	-0.0143	0.073	↔	0.000655	0.427	↔	2021-12-04	0.896	↔
21_3_101	MW-29	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.235	0.507	↔	0.612	0.419	↔	2022-06-29	0.454	↔
21_3_119	MW-29	Supplemental	Magnesium	mg/l	6	0	0%	-1.22	0.192	↔	0.311	0.093	↔	2022-01-03	0.876	↔
21_3_122	MW-29	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-1.27	0.661	↔	0.454	0.376	↔	2021-12-16	0.458	↔
21_3_125	MW-29	Supplemental	Potassium	mg/l	6	0	0%	-0.0824	0.053	↔	0.00533	0.630	↔	2022-01-17	0.930	↔
21_3_130	MW-29	Supplemental	Sodium	mg/l	6	0	0%	-0.966	0.441	↔	1.22	0.127	↔	2022-01-31	0.891	↔
21_3_133	MW-29	Supplemental	Temperature (lab)	deg c	5	0	0%	0.0230	0.700	↔	-0.00186	0.945	↔	2022-01-10	0.242	↔
21_3_136	MW-29	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-5.35	0.018	↔	-0.0750	0.848	↔	2022-02-06	0.988	↔
22_1_108	MW-3	Appendix III	Boron	mg/l	20	0	0%	0.000612	0.004	↑	-0.0000869	0.037	↔	2017-05-27	0.576	↔
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	-0.0228	0.160	↔	0.202	0.195	↔	2021-09-13	0.225	↔
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.00544	0.186	↔	-0.00151	0.478	↔	2018-08-01	0.212	↔
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	0.00126	0.012	↔	-0.00664	0.542	↔	2021-10-12	0.332	↔
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	0.000187	0.029	↔	-0.000157	0.365	↔	2019-10-23	0.295	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	0.000764	0.072	↔	-0.000300	0.055	↔	2017-09-12	0.342	↔
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	-0.0472	0.313	↔	0.288	0.072	↔	2020-08-01	0.338	↔
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-0.0821	0.689	↔	0.00642	0.910	↔	2017-09-11	0.023	↔
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	0.000000742	0.000	↑	-0.0000000287	0.596	↔	2017-11-26	0.772	↔
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	0.0000000367	0.897	↔	0.000000699	0.655	↔	2020-11-09	0.070	↔
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	-0.00000400	0.294	↔	-0.000000868	0.490	↔	2018-02-20	0.305	↔
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	0.0000000338	0.832	↔	0.000000201	0.534	↔	2019-10-03	0.153	↔
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	0.000000537	0.196	↔	-0.0000000222	0.179	↔	2016-08-29	0.412	↔
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	0.00000917	0.358	↔	-0.00000298	0.370	↔	2017-09-12	0.093	↔
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	-0.000000414	0.052	↔	0.000000647	0.039	↔	2019-05-16	0.398	↔
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	0.00126	0.012	↔	-0.00664	0.542	↔	2021-10-12	0.332	↔
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	-0.00000215	0.586	↔	-0.0000000889	0.267	↔	2016-03-07	0.138	↔
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	0.0000235	0.009	↑	-0.0000183	0.008	↓	2018-11-27	0.514	↔
22_2_120	MW-3	Appendix IV	Mercury	mg/l	17	17	100%	0.0000000808	0.000	↑	-0.000000130	0.051	↔	2021-01-28	0.806	↔
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	0.00000427	0.055	↔	-0.00000324	0.150	↔	2018-11-28	0.277	↔
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	-0.000485	0.069	↔	0.000244	0.217	↔	2018-09-26	0.257	↔
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	3	14%	0.00000188	0.302	↔	-0.000000111	0.763	↔	2017-06-26	0.140	↔
22_2_134	MW-3	Appendix IV	Thallium	mg/l	18	18	100%	0.000000744	0.010	↔	-0.0000000285	0.135	↔	2016-09-09	0.592	↔
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	0.0788	0.638	↔	-1.19	0.461	↔	2021-07-05	0.093	↔
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	0.0894	0.199	↔	0.0158	0.488	↔	2018-01-19	0.361	↔
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	-0.000145	0.071	↔	0.000155	0.350	↔	2020-02-08	0.238	↔
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	-0.00136	0.116	↔	0.000154	0.083	↔	2017-02-16	0.374	↔
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	0.00887	0.232	↔	-0.000531	0.303	↔	2016-08-30	0.168	↔
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.0102	0.623	↔	-0.000521	0.223	↔	2016-05-05	0.226	↔
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	0.180	0.520	↔	-0.00672	0.251	↔	2016-05-18	0.175	↔
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	-0.0383	0.491	↔	0.00187	0.963	↔	2018-11-22	0.071	↔
23_1_110	MW-30	Appendix III	Calcium	mg/l	6	0	0%	-1.19	0.119	↔	0.414	0.179	↔	2022-01-10	0.869	↔
23_1_123	MW-30	Appendix III	pH (field)	su	6	0	0%	-0.00162	0.484	↔	0.0000666	0.945	↔	2022-03-01	0.611	↔
23_1_131	MW-30	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	3.50	0.566	↔	-1.23	0.647	↔	2022-04-10	0.567	↔
23_1_135	MW-30	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	8.72	0.742	↔	-13.4	0.214	↔	2022-04-25	0.894	↔
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	1	17%	-0.0000415	0.538	↔	0.0000450	0.217	↔	2022-03-06	0.691	↔
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0	0%	-0.00175	0.420	↔	0.000579	0.129	↔	2021-12-09	0.813	↔
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0	0%	-0.000210	0.143	↔	-0.00000565	0.681	↔	2021-12-06	0.886	↔
23_3_101	MW-30	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.957	0.051	↔	0.412	0.466	↔	2022-06-15	0.950	↔
23_3_114	MW-30	Supplemental	Conductivity (field)	us/cm	6	0	0%	-12.0	0.042	↔	9.92	0.196	↔	2022-05-14	0.933	↔
23_3_119	MW-30	Supplemental	Magnesium	mg/l	6	0	0%	-0.802	0.600	↔	0.324	0.201	↔	2022-01-09	0.662	↔
23_3_122	MW-30	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.707	0.304	↔	0.964	0.053	↔	2022-04-11	0.906	↔
23_3_125	MW-30	Supplemental	Potassium	mg/l	6	0	0%	-0.0603	0.251	↔	0.0385	0.150	↔	2022-03-05	0.796	↔
23_3_130	MW-30	Supplemental	Sodium	mg/l	6	0	0%	-2.50	0.835	↔	1.33	0.442	↔	2022-01-07	0.333	↔
23_3_132	MW-30	Supplemental	Temperature (field)	deg c	6	0	0%	0.0401	0.633	↔	-0.0325	0.419	↔	2022-04-10	0.449	↔
23_3_136	MW-30	Supplemental	Total Suspended Solids	mg/l	6	1	17%	-39.3	0.225	↔	5.12	0.231	↔	2021-12-10	0.758	↔
23_3_137	MW-30	Supplemental	Turbidity (field)	ntu	6	0	0%	-8.21	0.249	↔	2.08	0.458	↔	2022-01-13	0.632	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
24_1_111	MW-31	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.222	0.468	↔	0.164	0.278	↔	2022-01-10	0.765	↔
24_1_131	MW-31	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-4.55	0.673	↔	0.839	0.596	↔	2021-12-30	0.283	↔
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	2	33%	-0.0000455	0.011	↔	-0.00000109	0.259	↔	2021-12-23	0.995	↔
24_3_101	MW-31	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.355	0.303	↔	0.261	0.150	↔	2022-04-16	0.841	↔
24_3_114	MW-31	Supplemental	Conductivity (field)	us/cm	6	0	0%	-8.07	0.464	↔	22.5	0.334	↔	2022-06-24	0.555	↔
24_3_119	MW-31	Supplemental	Magnesium	mg/l	6	0	0%	-2.95	0.156	↔	0.343	0.215	↔	2021-12-01	0.803	↔
24_3_137	MW-31	Supplemental	Turbidity (field)	ntu	6	0	0%	0.113	0.737	↔	-0.0189	0.898	↔	2022-04-17	0.360	↔
25_1_110	MW-32	Appendix III	Calcium	mg/l	6	0	0%	0.709	0.260	↔	-0.000000142	1.000	↔	2022-04-26	0.694	↔
25_1_111	MW-32	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.0634	0.038	↔	0.0221	0.497	↔	2022-04-22	0.971	↔
25_1_123	MW-32	Appendix III	pH (field)	su	6	0	0%	-0.000483	0.601	↔	0.000645	0.736	↔	2022-05-12	0.217	↔
25_1_124	MW-32	Appendix III	pH (lab)	su	5	0	0%	0.00133	0.732	↔	-0.000617	0.732	↔	2022-04-07	0.445	↔
25_1_131	MW-32	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.0615	0.967	↔	1.07	0.227	↔	2022-03-28	0.777	↔
25_1_135	MW-32	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-1.52	0.176	↔	0.0000000261	1.000	↔	2022-04-28	0.959	↔
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	5	83%	-0.000000832	0.724	↔	-0.00000218	0.149	↔	2022-04-21	0.885	↔
25_3_101	MW-32	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.223	0.103	↔	0.108	0.581	↔	2022-05-10	0.849	↔
25_3_122	MW-32	Supplemental	Oxidation-reduction Potential (field)	mV	6	0	0%	-0.261	0.788	↔	0.581	0.281	↔	2022-03-31	0.591	↔
25_3_132	MW-32	Supplemental	Temperature (field)	deg c	6	0	0%	0.0277	0.739	↔	-0.00777	0.839	↔	2022-04-12	0.299	↔
26_1_110	MW-33A	Appendix III	Calcium	mg/l	6	0	0%	-0.426	0.787	↔	0.399	0.205	↔	2022-01-09	0.677	↔
26_1_123	MW-33A	Appendix III	pH (field)	su	6	0	0%	-0.000562	0.515	↔	0.00277	0.216	↔	2022-05-25	0.832	↔
26_1_131	MW-33A	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2.32	0.214	↔	-1.09	0.224	↔	2022-04-23	0.905	↔
26_1_135	MW-33A	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	12.2	0.283	↔	-2.17	0.345	↔	2022-01-22	0.877	↔
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	4	67%	0.00000669	0.734	↔	-0.0000131	0.255	↔	2022-04-27	0.573	↔
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0	0%	0.000312	0.610	↔	-0.0000543	0.849	↔	2022-04-13	0.537	↔
26_3_101	MW-33A	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.194	0.252	↔	0.213	0.505	↔	2022-07-03	0.711	↔
26_3_114	MW-33A	Supplemental	Conductivity (field)	us/cm	6	0	0%	0.0150	0.998	↔	-3.76	0.774	↔	2022-04-28	0.257	↔
26_3_119	MW-33A	Supplemental	Magnesium	mg/l	6	0	0%	-1.06	0.256	↔	0.242	0.148	↔	2021-12-11	0.798	↔
26_3_130	MW-33A	Supplemental	Sodium	mg/l	6	0	0%	-0.502	0.376	↔	0.395	0.029	↔	2022-01-10	0.950	↔
26_3_132	MW-33A	Supplemental	Temperature (field)	deg c	6	0	0%	-0.0213	0.744	↔	0.00426	0.678	↔	2022-01-10	0.223	↔
26_3_136	MW-33A	Supplemental	Total Suspended Solids	mg/l	6	2	33%	-0.00482	0.463	↔	0.0213	0.208	↔	2022-07-08	0.701	↔
27_1_110	MW-33B	Appendix III	Calcium	mg/l	6	0	0%	-2.45	0.573	↔	0.228	0.886	↔	2022-03-10	0.475	↔
27_1_124	MW-33B	Appendix III	pH (lab)	su	5	0	0%	-0.00116	0.537	↔	-0.000148	0.817	↔	2022-04-18	0.877	↔
27_1_131	MW-33B	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	-2.34	0.625	↔	-0.0542	0.936	↔	2022-01-10	0.466	↔
27_1_135	MW-33B	Appendix III	Total Dissolved Solids	mg/l	5	0	0%	-2.94	0.739	↔	-0.109	0.934	↔	2022-01-14	0.340	↔
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0	0%	-0.000422	0.361	↔	0.00000992	0.949	↔	2022-02-05	0.637	↔
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0	0%	-0.00146	0.289	↔	0.0000265	0.952	↔	2022-01-20	0.657	↔
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0	0%	-0.000327	0.104	↔	-0.0000274	0.242	↔	2021-12-25	0.952	↔
27_3_119	MW-33B	Supplemental	Magnesium	mg/l	6	0	0%	-1.09	0.518	↔	0.0921	0.880	↔	2022-03-02	0.518	↔
27_3_125	MW-33B	Supplemental	Potassium	mg/l	6	0	0%	-0.252	0.215	↔	-0.00220	0.971	↔	2022-01-23	0.779	↔
27_3_130	MW-33B	Supplemental	Sodium	mg/l	6	0	0%	-1.22	0.435	↔	0.606	0.082	↔	2021-12-27	0.871	↔
27_3_133	MW-33B	Supplemental	Temperature (lab)	deg c	5	0	0%	-0.00837	0.863	↔	0.0168	0.458	↔	2022-04-17	0.604	↔
27_3_136	MW-33B	Supplemental	Total Suspended Solids	mg/l	6	0	0%	39	0.290	↔	-7.49	0.201	↔	2021-12-14	0.737	↔
27_3_137	MW-33B	Supplemental	Turbidity (field)	ntu	5	0	0%	3.12	0.720	↔	-3.59	0.390	↔	2022-03-02	0.741	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
28_1_110	MW-34	Appendix III	Calcium	mg/l	6	0	0%	-0.137	0.743	↔	0.0707	0.690	↔	2022-03-28	0.224	↔
28_1_111	MW-34	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.00768	0.031	↔	0.00217	0.065	↔	2022-02-25	0.973	↔
28_1_123	MW-34	Appendix III	pH (field)	su	5	0	0%	-0.00803	0.030	↔	-0.000272	0.333	↔	2022-01-06	0.999	↔
28_1_124	MW-34	Appendix III	pH (lab)	su	5	0	0%	-0.00372	0.226	↔	0.000543	0.520	↔	2022-02-19	0.948	↔
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0	0%	-0.0000640	0.473	↔	-0.00000336	0.985	↔	2022-04-26	0.429	↔
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0	0%	-0.000159	0.487	↔	-0.0000204	0.964	↔	2022-04-26	0.434	↔
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0	0%	-0.000303	0.002	↓	-0.0000380	0.016	↔	2022-01-21	0.999	↔
28_3_101	MW-34	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	0.816	0.282	↔	0.0553	0.596	↔	2021-12-27	0.829	↔
28_3_114	MW-34	Supplemental	Conductivity (field)	us/cm	5	0	0%	-2.55	0.238	↔	1.07	0.236	↔	2022-04-11	0.973	↔
28_3_136	MW-34	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-4.45	0.016	↔	-0.0130	0.961	↔	2022-01-04	0.981	↔
29_1_110	MW-35	Appendix III	Calcium	mg/l	6	0	0%	-0.965	0.680	↔	0.409	0.329	↔	2022-01-10	0.482	↔
29_1_135	MW-35	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	3.02	0.212	↔	-1.92	0.138	↔	2022-01-11	0.899	↔
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	2	33%	-0.000118	0.113	↔	-0.00000401	0.619	↔	2022-01-10	0.960	↔
29_3_101	MW-35	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	6	0	0%	-0.0954	0.041	↔	0.109	0.129	↔	2022-06-11	0.944	↔
29_3_132	MW-35	Supplemental	Temperature (field)	deg c	6	0	0%	0.0191	0.399	↔	-0.0457	0.366	↔	2022-07-04	0.555	↔
29_3_136	MW-35	Supplemental	Total Suspended Solids	mg/l	6	0	0%	-0.0417	0.133	↔	0.157	0.052	↔	2022-07-15	0.923	↔
29_3_137	MW-35	Supplemental	Turbidity (field)	ntu	6	0	0%	0.170	0.027	↔	-0.345	0.031	↔	2022-06-27	0.971	↔
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	0.000451	0.002	↑	-0.000419	0.004	↓	2019-05-13	0.621	↔
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	-0.0171	0.018	↔	0.380	0.031	↔	2022-01-15	0.625	↔
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	-0.147	0.431	↔	-0.0106	0.586	↔	2017-03-01	0.237	↔
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	0.000706	0.782	↔	0.00366	0.178	↔	2019-05-13	0.268	↔
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	-0.000119	0.293	↔	0.0000846	0.436	↔	2019-10-22	0.214	↔
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	0.000622	0.051	↔	-0.000264	0.026	↔	2017-09-14	0.410	↔
34_1_131	MW-4	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	-0.0453	0.483	↔	0.888	0.577	↔	2021-10-19	0.151	↔
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	0.719	0.072	↔	-1.40	0.272	↔	2020-08-19	0.243	↔
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	0.000000432	0.001	↑	-0.000000113	0.091	↔	2018-07-17	0.646	↔
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0	0%	-0.0000144	0.006	↓	-0.00000165	0.806	↔	2019-08-01	0.610	↔
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0	0%	0.0000538	0.265	↔	-0.0000369	0.193	↔	2018-08-13	0.158	↔
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	0.0000000801	0.735	↔	0.000000445	0.669	↔	2020-04-27	0.162	↔
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	0.000000254	0.170	↔	-0.000000175	0.042	↔	2018-05-22	0.303	↔
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	0.0000103	0.254	↔	-0.00000817	0.238	↔	2018-08-14	0.150	↔
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0	0%	0.00000385	0.247	↔	-0.00000282	0.268	↔	2018-08-14	0.142	↔
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	0.000706	0.782	↔	0.00366	0.178	↔	2019-05-13	0.268	↔
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	0.00000283	0.154	↔	-0.00000953	0.375	↔	2020-10-21	0.170	↔
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0	0%	0.0000616	0.191	↔	-0.00000621	0.374	↔	2017-03-02	0.183	↔
34_2_120	MW-4	Appendix IV	Mercury	mg/l	17	17	100%	0.0000000808	0.000	↑	-0.000000130	0.054	↔	2021-01-30	0.804	↔
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	-0.0000543	0.108	↔	-0.00000133	0.064	↔	2016-03-30	0.502	↔
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	0.00566	0.245	↔	-0.00294	0.298	↔	2018-08-13	0.144	↔
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0	0%	0.000326	0.449	↔	-0.0000154	0.099	↔	2016-05-01	0.202	↔
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	0.000000738	0.007	↑	-0.0000000279	0.116	↔	2016-08-30	0.584	↔
34_3_114	MW-4	Supplemental	Conductivity (field)	us/cm	17	0	0%	-7.45	0.167	↔	2.47	0.092	↔	2017-07-12	0.308	↔
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	-0.191	0.128	↔	0.0639	0.062	↔	2017-08-04	0.350	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	0.00264	0.256	↔	-0.00131	0.331	↔	2018-08-13	0.136	↔
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	0.00270	0.239	↔	-0.00110	0.525	↔	2018-08-14	0.110	↔
34_3_132	MW-4	Supplemental	Temperature (field)	deg c	17	0	0%	0.00822	0.645	↔	-0.000467	0.511	↔	2016-08-28	0.082	↔
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	0.00167	0.714	↔	-0.000973	0.055	↔	2017-03-01	0.233	↔
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.416	0.334	↔	-0.370	0.094	↔	2018-07-08	0.222	↔
34_3_137	MW-4	Supplemental	Turbidity (field)	ntu	11	0	0%	0.0344	0.401	↔	-0.0422	0.244	↔	2019-10-22	0.267	↔
35_1_108	MW-5	Appendix III	Boron	mg/l	10	0	0%	0.000568	0.164	↔	-0.000513	0.848	↔	2021-10-20	0.327	↔
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	0.0524	0.178	↔	0.00259	0.863	↔	2020-01-19	0.582	↔
35_1_111	MW-5	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.0360	0.095	↔	-0.0124	0.438	↔	2020-05-03	0.479	↔
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	-0.000121	0.373	↔	0.0000815	0.460	↔	2020-10-25	0.266	↔
35_1_123	MW-5	Appendix III	pH (field)	su	7	0	0%	0.000375	0.514	↔	-0.000393	0.283	↔	2020-10-21	0.435	↔
35_1_124	MW-5	Appendix III	pH (lab)	su	10	0	0%	-0.00101	0.159	↔	-0.0000530	0.848	↔	2019-11-08	0.537	↔
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.558	0.191	↔	-0.0978	0.562	↔	2020-02-22	0.486	↔
35_1_135	MW-5	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.741	0.151	↔	-0.294	0.456	↔	2020-08-04	0.457	↔
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	-0.000000420	0.152	↔	-0.0000000751	0.512	↔	2019-10-29	0.632	↔
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	0.000000320	0.110	↔	-0.000000597	0.291	↔	2021-10-19	0.489	↔
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0	0%	0.0000171	0.304	↔	-0.0000295	0.263	↔	2020-10-22	0.389	↔
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	0.000000203	0.056	↔	-0.00000103	0.137	↔	2021-10-20	0.771	↔
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	10	10	100%	-0.0000000658	0.198	↔	0.000000453	0.213	↔	2022-04-05	0.409	↔
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	-0.0000351	0.458	↔	0.000000134	0.963	↔	2019-02-09	0.351	↔
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	0.00000116	0.144	↔	-0.00000137	0.252	↔	2020-10-22	0.440	↔
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.000121	0.373	↔	0.0000815	0.460	↔	2020-10-25	0.266	↔
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	0.00000227	0.214	↔	-0.00000285	0.310	↔	2020-10-22	0.366	↔
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	-0.0000151	0.894	↔	0.0000134	0.098	↔	2019-05-12	0.427	↔
35_2_120	MW-5	Appendix IV	Mercury	mg/l	7	7	100%	0.000000000000000000000760	0.341	↔	-0.000000164	0.000	↓	2021-10-19	1.000	↔
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	-0.00000851	0.004	↓	-0.000000472	0.565	↔	2019-10-29	0.902	↔
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	-0.000000862	0.785	↔	0.0000468	0.073	↔	2022-03-08	0.676	↔
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	0.0000000234	0.563	↔	-0.000000249	0.398	↔	2021-11-20	0.439	↔
35_3_114	MW-5	Supplemental	Conductivity (field)	us/cm	7	0	0%	-0.968	0.372	↔	0.474	0.761	↔	2020-11-19	0.318	↔
35_3_133	MW-5	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.00154	0.385	↔	0.00357	0.500	↔	2021-09-08	0.190	↔
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	-0.00191	0.906	↔	-0.0745	0.518	↔	2021-10-20	0.490	↔
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	0.000179	0.116	↔	-0.0000499	0.010	↓	2017-04-23	0.434	↔
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	0.154	0.017	↔	0.00260	0.840	↔	2017-05-22	0.561	↔
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.655	0.004	↑	0.0363	0.246	↔	2017-05-21	0.785	↔
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	0.0000674	0.251	↔	0.000853	0.014	↔	2021-05-05	0.630	↔
36_1_123	MW-6	Appendix III	pH (field)	su	17	0	0%	0.000222	0.313	↔	-0.0000827	0.662	↔	2018-05-23	0.095	↔
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	0.000586	0.092	↔	-0.000260	0.011	↔	2017-09-13	0.420	↔
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	0.261	0.189	↔	-0.208	0.054	↔	2018-08-12	0.279	↔
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	1.10	0.024	↔	-0.388	0.028	↔	2018-05-22	0.538	↔
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	0.000000343	0.016	↔	-0.0000000667	0.385	↔	2018-08-12	0.482	↔
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	0.0000249	0.440	↔	-0.00000133	0.036	↔	2016-03-04	0.258	↔
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0	0%	0.00000534	0.824	↔	-0.0000879	0.509	↔	2020-10-21	0.106	↔

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Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	-0.00000187	0.596	↔	0.0000000544	0.688	↔	2016-06-23	0.057	↔
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	0.000000260	0.074	↔	-0.000000247	0.031	↔	2018-11-28	0.368	↔
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.00000917	0.516	↔	-0.0000107	0.204	↔	2018-08-12	0.125	↔
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0	0%	0.000000627	0.735	↔	-0.00000566	0.361	↔	2020-10-20	0.088	↔
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	0.0000674	0.251	↔	0.000853	0.014	↔	2021-05-05	0.630	↔
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	0.000000845	0.838	↔	-0.0000123	0.376	↔	2020-10-20	0.091	↔
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	0.0000207	0.064	↔	-0.0000126	0.136	↔	2018-08-13	0.273	↔
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	0.0000000688	0.003	↑	-0.000000130	0.132	↔	2021-03-23	0.649	↔
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	0.00000264	0.090	↔	-0.00000195	0.036	↔	2018-06-24	0.335	↔
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	2	10%	0.000277	0.394	↔	-0.000592	0.737	↔	2020-10-21	0.052	↔
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	-0.00000415	0.048	↔	0.00000258	0.221	↔	2018-11-29	0.268	↔
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	0.00000000452	0.836	↔	-0.000000498	0.308	↔	2022-02-24	0.194	↔
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	1.79	0.010	↑	-0.472	0.378	↔	2018-05-23	0.492	↔
36_3_122	MW-6	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	-0.204	0.437	↔	0.0224	0.422	↔	2017-02-25	0.147	↔
36_3_126	MW-6	Supplemental	Radium-226	pci/l	20	3	15%	-0.000560	0.638	↔	-0.000000582	0.996	↔	2017-02-28	0.068	↔
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	-0.00139	0.577	↔	0.000200	0.253	↔	2016-09-27	0.099	↔
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	0.0251	0.253	↔	-0.00122	0.153	↔	2016-07-03	0.290	↔
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.00913	0.629	↔	-0.000853	0.025	↔	2016-05-17	0.432	↔
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.559	0.236	↔	-0.471	0.158	↔	2018-11-28	0.200	↔
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	-0.0649	0.279	↔	0.0160	0.737	↔	2018-08-02	0.190	↔
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	0.000630	0.051	↔	0.0000571	0.228	↔	2017-05-05	0.616	↔
37_1_110	MW-8	Appendix III	Calcium	mg/l	19	0	0%	-0.00812	0.254	↔	0.238	0.001	↑	2021-08-18	0.749	↔
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	0.0849	0.000	↑	0.0433	0.517	↔	2020-10-21	0.850	↔
37_1_115	MW-8	Appendix III	Fluoride	mg/l	20	9	45%	0.0000936	0.983	↔	0.00286	0.034	↔	2018-02-10	0.374	↔
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	0.000590	0.153	↔	-0.000186	0.013	↔	2017-05-21	0.474	↔
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	0.000496	0.296	↔	-0.000100	0.488	↔	2017-07-10	0.104	↔
37_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	19	0	0%	0.149	0.026	↔	2.79	0.015	↔	2022-03-04	0.745	↔
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-0.688	0.465	↔	1.10	0.107	↔	2018-08-09	0.246	↔
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	0.000000385	0.002	↑	-0.000000120	0.606	↔	2019-10-23	0.573	↔
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	-0.000000458	0.771	↔	0.000000387	0.666	↔	2018-05-23	0.018	↔
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	0.0000434	0.131	↔	-0.0000469	0.409	↔	2019-10-23	0.161	↔
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	-0.00000193	0.305	↔	0.000000180	0.020	↔	2016-07-24	0.367	↔
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	0.000000107	0.605	↔	-0.0000000657	0.339	↔	2017-09-14	0.084	↔
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	0.0000218	0.101	↔	-0.0000128	0.322	↔	2018-11-29	0.196	↔
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	0.00000295	0.058	↔	-0.00000351	0.441	↔	2020-10-20	0.278	↔
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	9	45%	0.0000936	0.983	↔	0.00286	0.034	↔	2018-02-10	0.374	↔
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	1	5%	0.00000337	0.206	↔	-0.00000730	0.364	↔	2020-10-20	0.138	↔
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	0.0000422	0.551	↔	0.0000235	0.035	↔	2017-05-19	0.429	↔
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	0.0000000779	0.000	↑	-0.000000120	0.053	↔	2021-02-03	0.785	↔
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	0.00000284	0.078	↔	-0.00000152	0.196	↔	2018-11-28	0.266	↔
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	0.00176	0.052	↔	-0.00490	0.220	↔	2020-10-20	0.286	↔
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	-0.00000243	0.117	↔	0.0000149	0.234	↔	2021-05-26	0.240	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared	Overall Trend
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	0.000000380	0.194	↔	-0.0000000251	0.220	↔	2016-10-30	0.318	↔
37_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	16	0	0%	-0.340	0.849	↔	0.748	0.023	↔	2017-03-01	0.469	↔
37_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	16	0	0%	0.0374	0.694	↔	-0.126	0.358	↔	2019-05-14	0.144	↔
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	-0.000169	0.915	↔	0.000474	0.324	↔	2017-07-10	0.102	↔
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	0.00101	0.019	↔	-0.00288	0.389	↔	2020-10-21	0.324	↔
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	0.0143	0.128	↔	-0.00470	0.114	↔	2017-07-10	0.326	↔
37_3_133	MW-8	Supplemental	Temperature (lab)	deg c	19	0	0%	-0.00135	0.454	↔	0.0000753	0.931	↔	2018-08-08	0.119	↔
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	-9.53	0.326	↔	0.143	0.830	↔	2016-10-25	0.206	↔
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	-0.186	0.342	↔	0.0238	0.231	↔	2017-02-02	0.327	↔

Table 10: Trend Tests: Piecewise Linear-Linear-Linear

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
11_1_110	MW-1	Appendix III	Calcium	mg/l	19	0	0%	0.0236	0.017	↔	-0.0164	0.020	↔	0.0243	0.295	↔	2018-01-17	2021-05-05	0.550	↔
11_1_115	MW-1	Appendix III	Fluoride	mg/l	21	0	0%	-0.000103	0.225	↔	-0.000532	0.180	↔	0.000121	0.143	↔	2018-08-08	2019-05-17	0.568	↔
11_1_123	MW-1	Appendix III	pH (field)	su	17	0	0%	0.000291	0.531	↔	-0.000178	0.446	↔	0.000109	0.627	↔	2017-05-21	2019-10-22	0.119	↔
11_1_124	MW-1	Appendix III	pH (lab)	su	20	0	0%	0.000549	0.140	↔	-0.000219	0.688	↔	-0.000301	0.330	↔	2017-09-14	2019-10-27	0.356	↔
11_1_131	MW-1	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	1.23	0.048	↔	0.0368	0.496	↔	-0.0170	0.423	↔	2016-03-19	2018-08-08	0.559	↔
11_1_135	MW-1	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-0.395	0.022	↔	0.217	0.024	↔	-0.0835	0.013	↔	2016-11-25	2018-10-26	0.615	↔
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	4	19%	0.0000222	0.143	↔	-0.000000918	0.057	↔	0.000000639	0.768	↔	2016-03-07	2020-10-27	0.355	↔
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0	0%	0.000852	0.173	↔	-0.0000600	0.005	↓	0.00000333	0.970	↔	2016-03-07	2021-02-19	0.615	↔
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	11	58%	0.00000111	0.228	↔	0.00000000433	0.967	↔	-0.000000639	0.356	↔	2016-09-06	2021-07-06	0.351	↔
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	8	40%	0.000000298	0.132	↔	-0.000000146	0.043	↔	0.0000000969	0.785	↔	2017-06-05	2021-08-16	0.464	↔
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.0000133	0.181	↔	-0.0000237	0.379	↔	0.000000505	0.966	↔	2018-05-23	2020-01-27	0.299	↔
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0	0%	0.00000178	0.223	↔	-0.00000719	0.274	↔	0.000000693	0.729	↔	2018-11-02	2019-12-19	0.329	↔
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0	0%	-0.000103	0.225	↔	-0.000532	0.180	↔	0.000121	0.143	↔	2018-08-08	2019-05-17	0.568	↔
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	6	29%	0.00000305	0.337	↔	-0.00000508	0.221	↔	0.000000238	0.956	↔	2018-05-22	2020-05-06	0.256	↔
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0	0%	-0.00000794	0.483	↔	-0.00000211	0.629	↔	0.00000386	0.774	↔	2017-06-01	2020-10-20	0.157	↔
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	16	94%	0.000000000000124	1.000	↔	0.000000377	0.000	↑	-0.0000000404	0.011	↔	2018-02-26	2019-01-15	0.945	↔
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0	0%	0.000670	0.010	↔	-0.000110	0.027	↔	-0.00000241	0.677	↔	2016-03-07	2017-06-19	0.686	↔
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	7	33%	-0.00141	0.139	↔	0.00230	0.595	↔	-0.000527	0.082	↔	2017-07-30	2018-05-22	0.303	↔
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	7	33%	0.00000760	0.073	↔	-0.00000187	0.174	↔	-0.000000431	0.072	↔	2016-08-25	2017-12-10	0.645	↔
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	16	89%	0.000000583	0.513	↔	0.0000000672	0.156	↔	-0.000000896	0.281	↔	2016-08-29	2022-01-15	0.472	↔
11_3_122	MW-1	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	-0.0894	0.795	↔	0.203	0.016	↔	-0.102	0.022	↔	2016-08-29	2018-09-29	0.627	↔
11_3_133	MW-1	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.0242	0.310	↔	0.00638	0.332	↔	-0.000775	0.182	↔	2016-05-14	2017-02-27	0.325	↔
11_3_136	MW-1	Supplemental	Total Suspended Solids	mg/l	19	0	0%	0.201	0.148	↔	-0.410	0.513	↔	0.162	0.679	↔	2018-11-27	2021-04-11	0.382	↔
12_1_110	MW-13	Appendix III	Calcium	mg/l	13	0	0%	-0.301	0.896	↔	0.0418	0.895	↔	-0.472	0.425	↔	2019-03-15	2021-10-12	0.148	↔
12_1_123	MW-13	Appendix III	pH (field)	su	13	0	0%	0.000378	0.670	↔	-0.000298	0.170	↔	0.00646	0.078	↔	2019-10-22	2022-06-22	0.624	↔
12_1_131	MW-13	Appendix III	Sulfate (as SO4)	mg/l	13	0	0%	-2.58	0.213	↔	-0.0626	0.873	↔	0.331	0.367	↔	2018-11-29	2020-10-19	0.448	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	3	23%	-0.00000440	0.774	↔	0.000000237	0.938	↔	-0.00000414	0.167	↔	2019-02-05	2021-04-10	0.491	↔
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0	0%	-0.0000581	0.049	↔	-0.00000885	0.285	↔	0.0000898	0.062	↔	2019-06-30	2022-03-27	0.914	↔
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	7	78%	-0.000000689	0.000	↓	-0.000000000000000720	1.000	↔	0.000000299	0.017	↔	2019-06-04	2022-02-13	0.996	↔
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	1	9%	-0.0000100	0.051	↔	0.000000774	0.786	↔	0.000000650	0.143	↔	2019-04-30	2019-12-10	0.922	↔
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	6	60%	-0.000000880	0.415	↔	-0.00000000000285	1.000	↔	0.00000239	0.136	↔	2019-11-29	2021-10-05	0.644	↔
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0	0%	0.0000329	0.315	↔	-0.0000884	0.104	↔	0.0000114	0.282	↔	2019-08-28	2020-04-26	0.545	↔
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	1	10%	-0.00000669	0.212	↔	-0.00000232	0.062	↔	0.00000244	0.055	↔	2019-05-14	2021-01-25	0.947	↔
12_3_122	MW-13	Supplemental	Oxidation-reduction Potential (field)	mV	13	0	0%	-0.0671	0.696	↔	0.00703	0.979	↔	0.623	0.170	↔	2020-04-22	2021-12-21	0.458	↔
12_3_126	MW-13	Supplemental	Radium-226	pci/l	10	3	30%	-0.00218	0.082	↔	0.000382	0.114	↔	-0.000385	0.113	↔	2019-01-27	2021-05-05	0.813	↔
12_3_133	MW-13	Supplemental	Temperature (lab)	deg c	12	0	0%	0.0214	0.136	↔	-0.00444	0.312	↔	0.00239	0.213	↔	2019-01-11	2020-10-18	0.551	↔
12_3_136	MW-13	Supplemental	Total Suspended Solids	mg/l	12	1	8%	0.190	0.131	↔	-0.191	0.052	↔	0.113	0.555	↔	2020-04-21	2021-12-08	0.628	↔
12_3_137	MW-13	Supplemental	Turbidity (field)	ntu	13	0	0%	0.0231	0.157	↔	-0.0274	0.175	↔	0.0210	0.221	↔	2020-04-21	2021-10-11	0.585	↔
13_1_111	MW-14	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.0547	0.699	↔	-0.0584	0.266	↔	0.136	0.567	↔	2019-10-18	2021-10-12	0.419	↔
13_1_131	MW-14	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.566	0.592	↔	-0.728	0.094	↔	2.16	0.249	↔	2019-10-23	2021-10-12	0.747	↔
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	2	20%	-0.00000815	0.002	↓	0.0000202	0.000	↑	-0.0000347	0.000	↓	2020-02-27	2021-06-14	0.997	↔
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0	0%	-0.0000190	0.019	↔	-0.00000150	0.825	↔	-0.00000654	0.364	↔	2020-01-20	2021-04-27	0.948	↔
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	8	89%	-0.0000000659	0.869	↔	0.000000000180	1.000	↔	0.000000231	0.285	↔	2019-08-28	2021-04-13	0.506	↔
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	2	20%	-0.00000150	0.236	↔	0.00000158	0.149	↔	-0.00000253	0.448	↔	2019-12-31	2021-12-05	0.608	↔
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	8	80%	-0.000000241	0.477	↔	-0.00000000000000431	1.000	↔	-0.000000745	0.132	↔	2019-11-29	2021-09-16	0.760	↔
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0	0%	0.000189	0.170	↔	-0.0000882	0.066	↔	0.0000273	0.139	↔	2019-01-25	2020-04-23	0.763	↔
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0	0%	-0.0000157	0.007	↓	-0.00000263	0.052	↔	-0.000000650	0.183	↔	2018-12-25	2020-09-20	0.987	↔
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0	0%	-0.000206	0.194	↔	0.000729	0.391	↔	-0.000623	0.457	↔	2020-10-21	2022-01-09	0.662	↔
13_2_134	MW-14	Appendix IV	Thallium	mg/l	7	7	100%	-0.0000000270	0.768	↔	0.000000140	0.638	↔	-0.000000950	0.145	↔	2021-01-14	2022-04-28	0.956	↔
13_3_122	MW-14	Supplemental	Oxidation-reduction Potential (field)	mV	10	0	0%	-0.259	0.075	↔	0.160	0.495	↔	-1.02	0.086	↔	2020-04-22	2022-04-18	0.772	↔
13_3_126	MW-14	Supplemental	Radium-226	pci/l	10	0	0%	-0.00109	0.199	↔	0.000388	0.317	↔	-0.000222	0.700	↔	2019-05-23	2021-07-05	0.521	↔
13_3_132	MW-14	Supplemental	Temperature (field)	deg c	10	0	0%	-0.0243	0.465	↔	-0.000901	0.781	↔	0.0122	0.555	↔	2018-12-13	2021-10-13	0.532	↔
13_3_136	MW-14	Supplemental	Total Suspended Solids	mg/l	9	2	22%	-0.0795	0.057	↔	-0.00156	0.972	↔	-0.0128	0.393	↔	2019-05-19	2021-04-26	0.904	↔
14_1_108	MW-15	Appendix III	Boron	mg/l	10	0	0%	-0.000430	0.189	↔	0.000223	0.615	↔	0.0000811	0.432	↔	2019-07-15	2020-10-19	0.664	↔
14_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.774	0.491	↔	0.645	0.136	↔	-2.29	0.228	↔	2019-05-13	2022-04-16	0.725	↔
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0	0%	-0.000708	0.000	↓	-0.0000613	0.043	↔	-0.000000391	0.908	↔	2018-12-18	2019-11-15	0.998	↔
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	9	9	100%	-0.0000000212	0.097	↔	0.000000000000548	1.000	↔	0.000000286	0.001	↑	2020-02-22	2022-02-10	0.994	↔
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	2	20%	-0.0000195	0.001	↓	-0.00000135	0.433	↔	0.000000504	0.101	↔	2019-01-23	2020-02-11	0.989	↔
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	6	60%	-0.0000396	0.000	↓	-0.00000245	0.314	↔	0.000000142	0.684	↔	2018-12-27	2019-11-02	0.993	↔
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	6	86%	-0.000000493	0.948	↔	0.000000484	0.834	↔	-0.000000277	0.969	↔	2019-10-02	2021-11-21	0.142	↔
14_3_133	MW-15	Supplemental	Temperature (lab)	deg c	10	0	0%	0.00622	0.170	↔	-0.00321	0.351	↔	0.00142	0.893	↔	2019-10-23	2021-11-10	0.519	↔
14_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	9	0	0%	-0.466	0.426	↔	-0.0200	0.993	↔	0.0206	0.993	↔	2020-06-28	2022-01-06	0.416	↔
15_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.140	0.085	↔	-0.0491	0.292	↔	0.0131	0.100	↔	2018-12-25	2019-12-10	0.741	↔
15_1_123	MW-16	Appendix III	pH (field)	su	8	0	0%	0.000238	0.291	↔	-0.000220	0.308	↔	0.000930	0.111	↔	2020-05-10	2022-04-12	0.859	↔
15_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.366	0.110	↔	-0.0749	0.245	↔	0.00313	0.901	↔	2018-12-30	2020-04-24	0.651	↔
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	1	12%	-0.0000131	0.102	↔	0.00000358	0.468	↔	-0.00000110	0.813	↔	2020-02-12	2021-06-23	0.905	↔
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	1	10%	-0.0000149	0.238	↔	0.00000203	0.888	↔	0.000000213	0.988	↔	2020-02-16	2021-05-31	0.587	↔
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0	0%	-0.000780	0.010	↔	-0.0000903	0.161	↔	0.0000167	0.501	↔	2019-01-17	2020-04-24	0.973	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	6	75%	-0.00000442	0.157	↔	0.000000283	0.327	↔	-0.00000147	0.357	↔	2019-01-02	2021-12-17	0.884	↔
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	8	89%	-0.0000000207	0.865	↔	-0.000000233	0.659	↔	0.00000101	0.117	↔	2020-11-30	2022-04-24	0.710	↔
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	8	80%	-0.000139	0.000	↓	0.00000170	0.118	↔	-0.00000382	0.399	↔	2019-05-17	2021-10-13	0.999	↔
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	6	60%	-0.0000176	0.000	↓	0.0000000976	0.863	↔	-0.000000291	0.913	↔	2019-05-25	2021-10-22	0.987	↔
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	7	70%	-0.0000271	0.000	↓	0.000000000000108	1.000	↔	-0.000000745	0.286	↔	2019-05-16	2021-09-14	0.998	↔
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	4	40%	-0.0000675	0.047	↔	0.00000459	0.783	↔	-0.00000181	0.488	↔	2018-12-02	2020-01-23	0.765	↔
15_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	8	0	0%	-0.305	0.449	↔	0.202	0.163	↔	-1.46	0.042	↔	2020-04-23	2022-03-16	0.953	↔
15_3_126	MW-16	Supplemental	Radium-226	pci/l	10	3	30%	-0.00529	0.006	↓	0.000291	0.043	↔	-0.000930	0.203	↔	2018-12-22	2022-02-01	0.935	↔
15_3_137	MW-16	Supplemental	Turbidity (field)	ntu	8	0	0%	0.0206	0.711	↔	-0.0108	0.660	↔	0.00828	0.737	↔	2020-04-23	2021-08-28	0.347	↔
16_1_110	MW-21	Appendix III	Calcium	mg/l	12	0	0%	0.0835	0.748	↔	-0.117	0.146	↔	0.508	0.171	↔	2020-04-04	2022-01-04	0.662	↔
16_1_115	MW-21	Appendix III	Fluoride	mg/l	8	1	12%	-0.00149	0.503	↔	0.00179	0.415	↔	-0.00169	0.695	↔	2020-06-08	2021-10-14	0.537	↔
16_1_131	MW-21	Appendix III	Sulfate (as SO4)	mg/l	11	0	0%	-0.567	0.518	↔	1.18	0.115	↔	0.339	0.739	↔	2020-10-19	2021-12-13	0.678	↔
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0	0%	-0.0000223	0.055	↔	-0.00000438	0.656	↔	0.0000151	0.484	↔	2020-04-21	2022-04-03	0.909	↔
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	8	8	100%	-0.0000000903	0.447	↔	0.00000000188	0.793	↔	0.000000318	0.009	↑	2019-07-29	2022-03-04	0.993	↔
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	2	20%	-0.000000104	0.932	↔	0.000000967	0.095	↔	-0.00000299	0.118	↔	2020-04-20	2022-02-11	0.742	↔
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	1	12%	-0.00149	0.503	↔	0.00179	0.415	↔	-0.00169	0.695	↔	2020-06-08	2021-10-14	0.537	↔
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0	0%	-0.000566	0.106	↔	0.0000338	0.059	↔	0.000123	0.235	↔	2019-06-26	2022-02-14	0.824	↔
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	1	12%	-0.00183	0.741	↔	0.00186	0.304	↔	-0.000796	0.878	↔	2020-04-14	2021-10-15	0.557	↔
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0	0%	0.000312	0.910	↔	-0.000309	0.248	↔	0.000537	0.141	↔	2019-10-13	2021-05-03	0.514	↔
16_3_122	MW-21	Supplemental	Oxidation-reduction Potential (field)	mV	12	0	0%	-0.135	0.546	↔	0.196	0.765	↔	0.351	0.502	↔	2021-02-19	2021-11-30	0.273	↔
16_3_132	MW-21	Supplemental	Temperature (field)	deg c	12	0	0%	0.0129	0.762	↔	-0.00326	0.602	↔	0.00262	0.482	↔	2019-10-11	2021-04-26	0.289	↔
16_3_136	MW-21	Supplemental	Total Suspended Solids	mg/l	11	0	0%	0.115	0.513	↔	-0.0990	0.091	↔	0.0199	0.212	↔	2019-10-21	2020-09-21	0.755	↔
16_3_137	MW-21	Supplemental	Turbidity (field)	ntu	12	0	0%	0.0260	0.510	↔	-0.00499	0.034	↔	0.0289	0.048	↔	2019-10-21	2022-04-17	0.771	↔
18_3_126	MW-26	Supplemental	Radium-226	pci/l	7	2	29%	0.000601	0.545	↔	0.0000554	0.945	↔	-0.000749	0.274	↔	2020-10-19	2021-10-13	0.904	↔
18_3_132	MW-26	Supplemental	Temperature (field)	deg c	7	0	0%	0.00710	0.352	↔	-0.00375	0.342	↔	0.0114	0.243	↔	2020-05-26	2022-02-26	0.927	↔
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	8	80%	-0.00000531	0.002	↓	0.0000000744	0.823	↔	-0.00000147	0.035	↔	2020-04-22	2021-12-10	0.968	↔
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0	0%	-0.00000686	0.388	↔	0.00000535	0.709	↔	-0.00000316	0.798	↔	2020-12-04	2021-10-13	0.741	↔
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0	0%	-0.00000587	0.277	↔	0.00000553	0.078	↔	-0.00000366	0.178	↔	2020-10-15	2021-10-13	0.728	↔
19_3_133	MW-27	Supplemental	Temperature (lab)	deg c	9	0	0%	-0.00847	0.013	↔	0.00882	0.095	↔	-0.00343	0.130	↔	2021-01-26	2021-12-01	0.934	↔
20_1_110	MW-28	Appendix III	Calcium	mg/l	10	0	0%	-0.264	0.564	↔	-0.0753	0.635	↔	0.538	0.287	↔	2020-08-05	2022-01-07	0.684	↔
20_1_123	MW-28	Appendix III	pH (field)	su	10	0	0%	-0.000299	0.580	↔	0.000963	0.873	↔	-0.000580	0.595	↔	2021-05-08	2022-01-06	0.208	↔
20_1_124	MW-28	Appendix III	pH (lab)	su	9	0	0%	-0.00111	0.155	↔	0.00180	0.110	↔	-0.00231	0.155	↔	2021-03-18	2022-02-18	0.811	↔
20_1_135	MW-28	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	-0.969	0.492	↔	12.1	0.236	↔	-3.69	0.447	↔	2021-10-11	2022-01-14	0.454	↔
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	3	30%	0.0000129	0.250	↔	-0.000229	0.024	↔	-0.0000128	0.715	↔	2021-09-19	2022-01-07	0.944	↔
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	1	12%	0.000000730	0.636	↔	0.00000108	0.247	↔	-0.00000373	0.114	↔	2020-05-26	2022-01-25	0.912	↔
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	5	71%	-0.00000125	0.413	↔	0.000000157	0.799	↔	-0.00000104	0.486	↔	2020-04-22	2022-02-11	0.834	↔
20_3_132	MW-28	Supplemental	Temperature (field)	deg c	10	0	0%	0.0146	0.203	↔	-0.0333	0.776	↔	0.0260	0.252	↔	2021-05-08	2022-01-03	0.532	↔
22_1_110	MW-3	Appendix III	Calcium	mg/l	19	0	0%	0.116	0.252	↔	-0.0514	0.044	↔	0.202	0.171	↔	2017-03-14	2021-06-20	0.412	↔
22_1_111	MW-3	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	-0.00327	0.799	↔	0.0181	0.449	↔	-0.00187	0.344	↔	2017-02-26	2018-01-11	0.273	↔
22_1_115	MW-3	Appendix III	Fluoride	mg/l	21	10	48%	-0.000217	0.852	↔	0.00270	0.053	↔	-0.00924	0.387	↔	2018-09-20	2021-10-12	0.443	↔
22_1_123	MW-3	Appendix III	pH (field)	su	21	0	0%	0.0000923	0.858	↔	0.000217	0.140	↔	-0.000171	0.354	↔	2017-02-23	2019-10-23	0.300	↔
22_1_124	MW-3	Appendix III	pH (lab)	su	20	0	0%	0.000721	0.111	↔	-0.000215	0.916	↔	-0.000335	0.175	↔	2017-09-12	2019-03-10	0.344	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
22_1_131	MW-3	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	-0.0536	0.192	↔	0.547	0.480	↔	-0.564	0.447	↔	2020-10-20	2022-03-12	0.431	↔
22_1_135	MW-3	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-0.115	0.251	↔	0.313	0.096	↔	-0.394	0.131	↔	2018-11-07	2020-10-20	0.376	↔
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	18	90%	0.000000724	0.001	↑	0.000000219	0.295	↔	-0.000000175	0.112	↔	2017-07-20	2019-10-22	0.821	↔
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	13	62%	0.000000899	0.365	↔	-0.000000752	0.678	↔	0.000000550	0.408	↔	2017-09-12	2019-06-05	0.125	↔
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0	0%	-0.00000505	0.061	↔	0.00000690	0.549	↔	-0.00000438	0.088	↔	2018-07-21	2019-10-18	0.427	↔
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	17	89%	-0.0000000328	0.923	↔	0.000000234	0.083	↔	-0.00000363	0.041	↔	2017-07-23	2022-04-24	0.466	↔
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	14	70%	0.000000642	0.001	↑	-0.000000392	0.355	↔	0.00000000519	0.788	↔	2016-11-11	2017-08-13	0.605	↔
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	7	33%	0.0000169	0.100	↔	-0.0000237	0.666	↔	0.00000121	0.791	↔	2017-09-12	2018-09-05	0.213	↔
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	1	5%	-0.000000403	0.075	↔	0.000000579	0.802	↔	0.000000701	0.198	↔	2019-05-16	2020-09-18	0.399	↔
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	10	48%	-0.000217	0.852	↔	0.00270	0.053	↔	-0.00924	0.387	↔	2018-09-20	2021-10-12	0.443	↔
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	12	57%	-0.000000310	0.505	↔	0.0000000129	0.947	↔	-0.000000631	0.534	↔	2017-08-12	2021-07-23	0.166	↔
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0	0%	0.0000241	0.003	↑	-0.0000362	0.021	↔	0.0000190	0.556	↔	2019-03-26	2021-06-23	0.604	↔
22_2_120	MW-3	Appendix IV	Mercury	mg/l	17	17	100%	0.000000000000122	1.000	↔	0.000000368	0.000	↑	-0.0000000405	0.011	↔	2018-02-20	2019-01-17	0.945	↔
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	6	29%	0.00000355	0.072	↔	-0.00000759	0.108	↔	0.00000334	0.882	↔	2019-10-22	2021-10-14	0.332	↔
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0	0%	-0.00136	0.175	↔	0.00000648	0.988	↔	0.000198	0.380	↔	2017-02-26	2019-05-15	0.388	↔
22_2_134	MW-3	Appendix IV	Thallium	mg/l	18	18	100%	0.000000831	0.006	↑	-0.000000278	0.300	↔	-0.0000000131	0.592	↔	2016-10-16	2017-07-13	0.654	↔
22_3_114	MW-3	Supplemental	Conductivity (field)	us/cm	21	0	0%	-8.48	0.207	↔	0.997	0.299	↔	-0.193	0.367	↔	2016-03-15	2017-09-12	0.206	↔
22_3_122	MW-3	Supplemental	Oxidation-reduction Potential (field)	mV	21	0	0%	0.141	0.267	↔	0.00752	0.912	↔	0.0276	0.565	↔	2017-05-21	2019-06-28	0.386	↔
22_3_126	MW-3	Supplemental	Radium-226	pci/l	21	1	5%	0.000855	0.435	↔	-0.000213	0.051	↔	0.000156	0.350	↔	2016-06-04	2019-10-23	0.320	↔
22_3_128	MW-3	Supplemental	Radium-228	pci/l	21	0	0%	-0.00152	0.086	↔	0.000289	0.078	↔	-0.000230	0.690	↔	2017-02-17	2020-10-20	0.434	↔
22_3_132	MW-3	Supplemental	Temperature (field)	deg c	21	0	0%	0.0109	0.110	↔	-0.00130	0.039	↔	0.00996	0.366	↔	2016-08-30	2021-11-15	0.414	↔
22_3_133	MW-3	Supplemental	Temperature (lab)	deg c	20	0	0%	-0.0118	0.580	↔	0.000149	0.880	↔	-0.00199	0.268	↔	2016-05-18	2020-04-22	0.289	↔
22_3_136	MW-3	Supplemental	Total Suspended Solids	mg/l	19	1	5%	0.255	0.123	↔	-0.0714	0.846	↔	-0.00298	0.676	↔	2016-05-29	2017-02-26	0.232	↔
22_3_137	MW-3	Supplemental	Turbidity (field)	ntu	20	0	0%	0.348	0.072	↔	-0.264	0.437	↔	0.0142	0.576	↔	2016-11-07	2017-12-26	0.373	↔
34_1_108	MW-4	Appendix III	Boron	mg/l	20	0	0%	0.000745	0.207	↔	0.000360	0.173	↔	-0.000389	0.009	↓	2017-01-14	2019-05-13	0.638	↔
34_1_110	MW-4	Appendix III	Calcium	mg/l	19	0	0%	0.0674	0.819	↔	-0.0196	0.024	↔	0.369	0.047	↔	2016-05-19	2022-01-03	0.638	↔
34_1_111	MW-4	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	-0.281	0.042	↔	0.317	0.586	↔	-0.0410	0.142	↔	2017-03-02	2017-10-31	0.391	↔
34_1_115	MW-4	Appendix III	Fluoride	mg/l	21	2	10%	0.000500	0.715	↔	0.0158	0.125	↔	-0.0439	0.069	↔	2020-06-26	2022-02-06	0.559	↔
34_1_123	MW-4	Appendix III	pH (field)	su	17	0	0%	0.000204	0.370	↔	-0.000404	0.181	↔	0.000126	0.226	↔	2017-05-22	2019-01-27	0.421	↔
34_1_124	MW-4	Appendix III	pH (lab)	su	20	0	0%	0.000710	0.033	↔	-0.000370	0.069	↔	0.000258	0.746	↔	2017-09-14	2021-06-09	0.466	↔
34_1_135	MW-4	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-1.72	0.067	↔	3.50	0.413	↔	-1.11	0.035	↔	2017-09-14	2019-04-14	0.577	↔
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	12	60%	0.000000471	0.003	↑	-0.0000000362	0.671	↔	-0.00000118	0.213	↔	2018-03-02	2022-04-26	0.677	↔
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	14	74%	0.000000269	0.507	↔	-0.000000450	0.901	↔	0.000000662	0.293	↔	2018-08-14	2020-02-22	0.191	↔
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	12	60%	0.000000284	0.135	↔	-0.000000245	0.052	↔	0.000000926	0.473	↔	2018-05-22	2022-03-17	0.375	↔
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	1	5%	-0.0000574	0.707	↔	0.0000127	0.383	↔	-0.00000866	0.180	↔	2016-03-12	2018-08-13	0.169	↔
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	2	10%	0.000500	0.715	↔	0.0158	0.125	↔	-0.0439	0.069	↔	2020-06-26	2022-02-06	0.559	↔
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	1	5%	0.00000163	0.862	↔	0.00000327	0.377	↔	-0.00000995	0.385	↔	2017-07-05	2020-10-21	0.172	↔
34_2_120	MW-4	Appendix IV	Mercury	mg/l	17	17	100%	0.000000000000121	1.000	↔	0.000000377	0.000	↑	-0.0000000401	0.011	↔	2018-02-27	2019-01-16	0.944	↔
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0	0%	-0.0000545	0.106	↔	0.000000163	0.917	↔	-0.00000453	0.118	↔	2016-04-14	2020-04-20	0.569	↔
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	3	14%	-0.00859	0.717	↔	0.00918	0.342	↔	-0.00357	0.229	↔	2016-09-26	2018-08-13	0.187	↔
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	15	79%	0.000000828	0.003	↑	-0.000000271	0.282	↔	-0.0000000131	0.548	↔	2016-10-07	2017-07-14	0.652	↔
34_3_122	MW-4	Supplemental	Oxidation-reduction Potential (field)	mV	17	0	0%	-0.230	0.039	↔	1.12	0.280	↔	0.00232	0.970	↔	2018-04-01	2018-08-22	0.487	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
34_3_126	MW-4	Supplemental	Radium-226	pci/l	21	3	14%	-0.00141	0.809	↔	0.00628	0.370	↔	-0.00183	0.192	↔	2017-05-12	2018-08-13	0.205	↔
34_3_128	MW-4	Supplemental	Radium-228	pci/l	21	7	33%	-0.00337	0.608	↔	0.00657	0.403	↔	-0.00170	0.277	↔	2017-03-07	2018-08-13	0.195	↔
34_3_133	MW-4	Supplemental	Temperature (lab)	deg c	20	0	0%	0.00313	0.361	↔	-0.00930	0.546	↔	-0.000450	0.529	↔	2017-05-07	2017-10-19	0.299	↔
34_3_136	MW-4	Supplemental	Total Suspended Solids	mg/l	19	0	0%	-1.57	0.170	↔	1.71	0.411	↔	-0.463	0.014	↔	2016-12-03	2018-02-27	0.470	↔
35_1_110	MW-5	Appendix III	Calcium	mg/l	10	0	0%	-0.0113	0.953	↔	0.0620	0.326	↔	-0.00369	0.877	↔	2019-03-01	2020-06-01	0.609	↔
35_1_115	MW-5	Appendix III	Fluoride	mg/l	10	0	0%	0.0000743	0.943	↔	-0.000175	0.599	↔	0.0000962	0.480	↔	2019-03-20	2020-10-25	0.299	↔
35_1_131	MW-5	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.615	0.247	↔	-0.254	0.838	↔	0.0193	0.959	↔	2020-02-28	2021-05-12	0.507	↔
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	7	70%	-0.000000491	0.061	↔	0.000000123	0.472	↔	-0.000000927	0.086	↔	2020-01-19	2022-04-05	0.865	↔
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	6	60%	-0.0000000973	0.855	↔	0.000000559	0.414	↔	-0.000000773	0.240	↔	2019-11-15	2021-10-19	0.598	↔
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	7	78%	-0.0000000227	0.825	↔	0.000000955	0.056	↔	-0.00000128	0.003	↓	2020-10-18	2021-09-20	0.968	↔
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	10	10	100%	0.0000000502	0.963	↔	-0.0000000581	0.686	↔	0.0000000723	0.793	↔	2019-03-12	2021-08-18	0.089	↔
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	4	40%	-0.0000806	0.045	↔	0.0000112	0.267	↔	-0.00000830	0.077	↔	2018-12-31	2020-10-21	0.826	↔
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	2	20%	-0.00000583	0.305	↔	0.00000248	0.184	↔	-0.00000173	0.049	↔	2019-02-01	2020-10-21	0.758	↔
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.0000743	0.943	↔	-0.000175	0.599	↔	0.0000962	0.480	↔	2019-03-20	2020-10-25	0.299	↔
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	4	40%	0.00000309	0.271	↔	-0.00000897	0.347	↔	-0.000000170	0.969	↔	2020-10-21	2021-06-14	0.505	↔
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0	0%	-0.0000397	0.760	↔	0.0000584	0.493	↔	0.00000718	0.569	↔	2019-05-12	2019-12-23	0.521	↔
35_2_120	MW-5	Appendix IV	Mercury	mg/l	7	7	100%	-0.00000000000185	0.868	↔	0.00000000000253	0.624	↔	-0.000000164	0.000	↓	2019-12-11	2021-10-19	1.000	↔
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0	0%	-0.00000853	0.020	↔	-0.000000444	0.822	↔	-0.000000611	0.906	↔	2019-10-29	2022-03-22	0.902	↔
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0	0%	0.0000190	0.691	↔	-0.00000422	0.400	↔	0.0000554	0.064	↔	2019-05-12	2022-03-26	0.780	↔
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	8	89%	-0.0000000679	0.743	↔	0.0000000669	0.510	↔	-0.000000509	0.120	↔	2019-09-12	2022-03-13	0.741	↔
35_3_136	MW-5	Supplemental	Total Suspended Solids	mg/l	8	0	0%	-0.177	0.394	↔	0.0246	0.308	↔	-0.0915	0.375	↔	2019-03-13	2021-10-20	0.850	↔
36_1_108	MW-6	Appendix III	Boron	mg/l	19	0	0%	-0.000741	0.200	↔	0.000643	0.024	↔	-0.0000529	0.001	↓	2016-05-11	2016-12-26	0.691	↔
36_1_110	MW-6	Appendix III	Calcium	mg/l	19	0	0%	0.168	0.048	↔	-0.0142	0.673	↔	0.0193	0.616	↔	2017-05-21	2019-10-29	0.578	↔
36_1_111	MW-6	Appendix III	Chloride (as Cl)	mg/l	20	0	0%	0.689	0.004	↑	0.00361	0.940	↔	0.213	0.483	↔	2017-05-21	2021-05-28	0.803	↔
36_1_115	MW-6	Appendix III	Fluoride	mg/l	21	8	38%	0.000121	0.265	↔	-0.000126	0.702	↔	0.000878	0.016	↔	2019-05-14	2021-02-08	0.647	↔
36_1_124	MW-6	Appendix III	pH (lab)	su	20	0	0%	0.000693	0.023	↔	-0.000417	0.075	↔	0.000390	0.399	↔	2017-09-29	2021-05-05	0.529	↔
36_1_131	MW-6	Appendix III	Sulfate (as SO4)	mg/l	20	0	0%	-0.511	0.350	↔	1.10	0.279	↔	-0.256	0.007	↓	2017-02-28	2018-03-10	0.499	↔
36_1_135	MW-6	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	1.57	0.000	↑	-2.87	0.350	↔	0.0593	0.766	↔	2018-05-23	2019-02-25	0.738	↔
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	15	75%	-0.00000176	0.069	↔	0.000000545	0.006	↑	-0.0000000904	0.170	↔	2016-05-18	2018-06-29	0.682	↔
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	6	29%	-0.00000207	0.267	↔	0.00000135	0.703	↔	-0.00000410	0.416	↔	2018-10-11	2020-10-21	0.272	↔
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	14	74%	-0.000000778	0.377	↔	0.000000800	0.513	↔	-0.000000107	0.728	↔	2017-06-02	2018-08-13	0.103	↔
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	9	45%	-0.000000114	0.590	↔	0.00000142	0.528	↔	-0.000000264	0.007	↓	2017-10-05	2018-05-23	0.532	↔
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	3	14%	0.0000137	0.293	↔	-0.0000390	0.734	↔	-0.00000332	0.816	↔	2018-08-13	2019-06-20	0.159	↔
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	8	38%	0.000121	0.265	↔	-0.000126	0.702	↔	0.000878	0.016	↔	2019-05-14	2021-02-08	0.647	↔
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	1	5%	-0.0000104	0.402	↔	0.0000570	0.400	↔	-0.00000669	0.254	↔	2018-02-24	2018-08-13	0.164	↔
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0	0%	0.0000224	0.055	↔	-0.0000166	0.192	↔	0.0000666	0.511	↔	2018-08-13	2022-04-15	0.319	↔
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	16	94%	-0.0000000387	0.268	↔	0.000000375	0.006	↑	-0.0000000404	0.074	↔	2018-01-30	2019-01-17	0.864	↔
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	1	5%	-0.00000409	0.418	↔	0.00000553	0.127	↔	-0.00000226	0.016	↔	2016-11-18	2018-05-23	0.449	↔
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0	0%	0.00000694	0.185	↔	-0.0000152	0.021	↔	0.00000352	0.009	↑	2017-05-21	2018-08-07	0.608	↔
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	16	84%	0.000000347	0.128	↔	-0.000000323	0.748	↔	-0.0000000137	0.596	↔	2016-11-20	2017-06-23	0.232	↔
36_3_114	MW-6	Supplemental	Conductivity (field)	us/cm	17	0	0%	-0.165	0.896	↔	6.30	0.283	↔	-0.740	0.047	↔	2017-04-09	2018-01-06	0.633	↔
36_3_128	MW-6	Supplemental	Radium-228	pci/l	20	8	40%	-0.00243	0.347	↔	0.00212	0.553	↔	0.0000782	0.719	↔	2016-11-06	2017-07-09	0.172	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
36_3_132	MW-6	Supplemental	Temperature (field)	deg c	17	0	0%	0.0242	0.305	↔	-0.00156	0.179	↔	0.00699	0.751	↔	2016-07-17	2022-03-01	0.313	↔
36_3_133	MW-6	Supplemental	Temperature (lab)	deg c	20	0	0%	0.000432	0.887	↔	-0.00267	0.124	↔	0.0000836	0.943	↔	2017-05-21	2019-06-30	0.467	↔
36_3_136	MW-6	Supplemental	Total Suspended Solids	mg/l	19	0	0%	-0.400	0.609	↔	1.78	0.340	↔	-0.670	0.048	↔	2017-09-05	2018-11-28	0.349	↔
36_3_137	MW-6	Supplemental	Turbidity (field)	ntu	13	0	0%	-1.86	0.000	↓	0.0168	0.136	↔	-0.0793	0.275	↔	2016-03-07	2021-09-02	0.910	↔
37_1_108	MW-8	Appendix III	Boron	mg/l	20	0	0%	0.000638	0.021	↔	-0.0000398	0.801	↔	0.000134	0.368	↔	2017-06-29	2019-11-01	0.633	↔
37_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	19	0	0%	0.00552	0.944	↔	0.105	0.003	↑	0.0266	0.578	↔	2017-04-04	2020-10-20	0.871	↔
37_1_123	MW-8	Appendix III	pH (field)	su	16	0	0%	0.000680	0.060	↔	-0.000361	0.548	↔	-0.0000728	0.623	↔	2017-05-22	2019-02-24	0.516	↔
37_1_124	MW-8	Appendix III	pH (lab)	su	19	0	0%	0.000313	0.119	↔	-0.000438	0.152	↔	0.00269	0.064	↔	2018-11-29	2022-04-04	0.430	↔
37_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	20	0	0%	-1.28	0.183	↔	3.93	0.622	↔	0.0932	0.920	↔	2018-08-14	2019-09-25	0.343	↔
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	13	68%	0.000000436	0.001	↑	-0.000000515	0.401	↔	0.000000652	0.241	↔	2019-10-23	2021-08-05	0.666	↔
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	6	29%	-0.00000122	0.357	↔	0.00000707	0.550	↔	-0.00000173	0.222	↔	2018-11-22	2019-10-22	0.214	↔
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0	0%	-0.00000972	0.840	↔	0.000153	0.497	↔	-0.0000791	0.090	↔	2018-06-09	2019-10-22	0.279	↔
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	14	74%	-0.00000638	0.054	↔	0.0000000105	0.946	↔	0.000000366	0.144	↔	2016-03-12	2019-09-27	0.595	↔
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	12	60%	0.000000194	0.373	↔	-0.000000248	0.715	↔	0.00000000331	0.977	↔	2017-09-14	2019-03-02	0.132	↔
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	2	10%	-0.00000276	0.880	↔	0.000149	0.567	↔	-0.0000243	0.027	↔	2018-05-10	2018-11-28	0.391	↔
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0	0%	0.00000358	0.009	↑	-0.0000145	0.518	↔	0.0000213	0.196	↔	2020-11-17	2022-02-23	0.432	↔
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0	0%	0.0000377	0.001	↑	-0.0000329	0.397	↔	0.000472	0.000	↑	2019-10-23	2022-04-21	0.816	↔
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	16	94%	-0.00000000922	0.674	↔	0.000000375	0.000	↑	-0.0000000408	0.008	↓	2018-02-20	2019-01-19	0.944	↔
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	9	43%	0.000000594	0.816	↔	0.00000871	0.543	↔	-0.00000223	0.068	↔	2018-01-25	2018-11-28	0.343	↔
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0	0%	-0.000866	0.655	↔	0.00415	0.042	↔	-0.00744	0.226	↔	2018-03-22	2020-10-21	0.439	↔
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0	0%	-0.00000624	0.367	↔	-0.000000319	0.895	↔	0.0000326	0.173	↔	2017-08-31	2022-04-09	0.283	↔
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	15	83%	0.000000524	0.024	↔	-0.000000350	0.713	↔	-0.00000000944	0.700	↔	2016-11-25	2017-06-24	0.403	↔
37_3_126	MW-8	Supplemental	Radium-226	pci/l	20	0	0%	-0.000279	0.644	↔	0.00334	0.086	↔	-0.00408	0.171	↔	2019-02-08	2020-10-21	0.459	↔
37_3_128	MW-8	Supplemental	Radium-228	pci/l	20	1	5%	-0.0000356	0.955	↔	0.00358	0.078	↔	-0.00489	0.118	↔	2019-02-06	2020-10-21	0.518	↔
37_3_132	MW-8	Supplemental	Temperature (field)	deg c	16	0	0%	0.0168	0.075	↔	-0.0132	0.212	↔	0.00273	0.634	↔	2017-09-13	2019-09-29	0.475	↔
37_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	19	0	0%	-10.2	0.329	↔	0.868	0.761	↔	-0.208	0.899	↔	2016-11-03	2018-11-29	0.213	↔
37_3_137	MW-8	Supplemental	Turbidity (field)	ntu	12	0	0%	-0.321	0.132	↔	0.0596	0.243	↔	-0.0206	0.736	↔	2016-11-08	2019-10-23	0.497	↔

Valmont Landfill – 95% Lower Confidence Limits for Assessment Monitoring

Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	LCL
2_105_01	MW-1	Appendix IV	Antimony	mg/l	18	44%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00057
2_106_01	MW-1	Appendix IV	Arsenic	mg/l	20	20%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00097
2_107_01	MW-1	Appendix IV	Barium	mg/l	20	0%	2015-12-17 to 2022-04-20	Adjusted Gamma LCL	0.070
2_108_01	MW-1	Appendix IV	Beryllium	mg/l	18	56%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00031
2_110_01	MW-1	Appendix IV	Cadmium	mg/l	19	37%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00020
2_113_01	MW-1	Appendix IV	Chromium, Total	mg/l	20	15%	2015-12-17 to 2022-04-20	Gamma MLE LCL	0.0046
2_114_01	MW-1	Appendix IV	Cobalt	mg/l	20	0%	2015-12-17 to 2022-04-20	Adjusted Gamma LCL	0.0011
2_117_01	MW-1	Appendix IV	Fluoride (App IV)	mg/l	20	0%	2015-12-17 to 2022-04-20	Adjusted Gamma LCL	0.33
2_118_01	MW-1	Appendix IV	Lead	mg/l	20	30%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00045
2_119_01	MW-1	Appendix IV	Lithium	mg/l	20	0%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.030
2_121_01	MW-1	Appendix IV	Mercury	mg/l	16	94%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.000027
2_122_01	MW-1	Appendix IV	Molybdenum	mg/l	20	0%	2015-12-17 to 2022-04-20	Lognormal H-LCL	0.017
2_128_01	MW-1	Appendix IV	Radium-226+228	pci/l	20	30%	2015-12-17 to 2022-04-20	Gamma MLE LCL	0.69
2_130_01	MW-1	Appendix IV	Selenium	mg/l	20	30%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00089
2_135_01	MW-1	Appendix IV	Thallium	mg/l	17	88%	2015-12-17 to 2022-04-20	Nonparametric LCL around the Median	0.00020
2_105_03	MW-3	Appendix IV	Antimony	mg/l	19	89%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00028
2_106_03	MW-3	Appendix IV	Arsenic	mg/l	20	60%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00075
2_107_03	MW-3	Appendix IV	Barium	mg/l	20	0%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.012
2_108_03	MW-3	Appendix IV	Beryllium	mg/l	18	89%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00031
2_110_03	MW-3	Appendix IV	Cadmium	mg/l	19	68%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_113_03	MW-3	Appendix IV	Chromium, Total	mg/l	20	35%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00098
2_114_03	MW-3	Appendix IV	Cobalt	mg/l	20	5%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00056
2_117_03	MW-3	Appendix IV	Fluoride (App IV)	mg/l	20	45%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.092
2_118_03	MW-3	Appendix IV	Lead	mg/l	20	60%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00045
2_119_03	MW-3	Appendix IV	Lithium	mg/l	20	0%	2015-12-10 to 2022-04-25	Adjusted Gamma LCL	0.075
2_121_03	MW-3	Appendix IV	Mercury	mg/l	16	100%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.000027
2_122_03	MW-3	Appendix IV	Molybdenum	mg/l	20	30%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.0011
2_128_03	MW-3	Appendix IV	Radium-226+228	pci/l	20	0%	2015-12-10 to 2022-04-25	Adjusted Gamma LCL	1.2
2_130_03	MW-3	Appendix IV	Selenium	mg/l	20	10%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00089
2_135_03	MW-3	Appendix IV	Thallium	mg/l	17	100%	2015-12-10 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_105_04	MW-4	Appendix IV	Antimony	mg/l	19	58%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.00043
2_106_04	MW-4	Appendix IV	Arsenic	mg/l	20	0%	2015-12-09 to 2022-04-29	Adjusted Gamma LCL	0.0075
2_107_04	MW-4	Appendix IV	Barium	mg/l	20	0%	2015-12-09 to 2022-04-29	Lognormal H-LCL	0.033
2_108_04	MW-4	Appendix IV	Beryllium	mg/l	18	72%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.00031
2_110_04	MW-4	Appendix IV	Cadmium	mg/l	19	58%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.00020
2_113_04	MW-4	Appendix IV	Chromium, Total	mg/l	20	5%	2015-12-09 to 2022-04-29	Gamma MLE LCL	0.0058
2_114_04	MW-4	Appendix IV	Cobalt	mg/l	20	0%	2015-12-09 to 2022-04-29	Adjusted Gamma LCL	0.0027
2_117_04	MW-4	Appendix IV	Fluoride (App IV)	mg/l	20	10%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	3.3
2_118_04	MW-4	Appendix IV	Lead	mg/l	20	5%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.0017
2_119_04	MW-4	Appendix IV	Lithium	mg/l	20	0%	2015-12-09 to 2022-04-29	Adjusted Gamma LCL	0.20
2_121_04	MW-4	Appendix IV	Mercury	mg/l	16	100%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.000027
2_122_04	MW-4	Appendix IV	Molybdenum	mg/l	20	0%	2015-12-09 to 2022-04-29	Adjusted Gamma LCL	0.015
2_128_04	MW-4	Appendix IV	Radium-226+228	pci/l	20	10%	2015-12-09 to 2022-04-29	Lognormal MLE LCL	1.3
2_130_04	MW-4	Appendix IV	Selenium	mg/l	20	0%	2015-12-09 to 2022-04-29	Adjusted Gamma LCL	0.23
2_135_04	MW-4	Appendix IV	Thallium	mg/l	18	83%	2015-12-09 to 2022-04-29	Nonparametric LCL around the Median	0.00020
2_105_05	MW-5	Appendix IV	Antimony	mg/l	9	67%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00057
2_106_05	MW-5	Appendix IV	Arsenic	mg/l	9	67%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00075
2_107_05	MW-5	Appendix IV	Barium	mg/l	9	0%	2018-08-13 to 2022-05-09	Adjusted Gamma LCL	0.017
2_108_05	MW-5	Appendix IV	Beryllium	mg/l	8	75%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00031
2_110_05	MW-5	Appendix IV	Cadmium	mg/l	9	100%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00020
2_113_05	MW-5	Appendix IV	Chromium, Total	mg/l	9	44%	2018-08-13 to 2022-05-09	Gamma MLE LCL	0.0011
2_114_05	MW-5	Appendix IV	Cobalt	mg/l	9	22%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00019
2_117_05	MW-5	Appendix IV	Fluoride (App IV)	mg/l	9	0%	2018-08-13 to 2022-05-09	Adjusted Gamma LCL	0.25
2_118_05	MW-5	Appendix IV	Lead	mg/l	9	44%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00045
2_119_05	MW-5	Appendix IV	Lithium	mg/l	9	0%	2018-08-13 to 2022-05-09	Adjusted Gamma LCL	0.053
2_121_05	MW-5	Appendix IV	Mercury	mg/l	6	100%	2018-11-29 to 2021-10-20	Nonparametric LCL around the Median	0.00013
2_122_05	MW-5	Appendix IV	Molybdenum	mg/l	9	0%	2018-08-13 to 2022-05-09	Adjusted Gamma LCL	0.0032
2_128_05	MW-5	Appendix IV	Radium-226+228	pci/l	5	0%	2018-11-29 to 2022-05-09	Nonparametric LCL around the Median	0.44
2_130_05	MW-5	Appendix IV	Selenium	mg/l	9	0%	2018-08-13 to 2022-05-09	Adjusted Gamma LCL	0.0041
2_135_05	MW-5	Appendix IV	Thallium	mg/l	8	88%	2018-08-13 to 2022-05-09	Nonparametric LCL around the Median	0.00020
2_105_06	MW-6	Appendix IV	Antimony	mg/l	19	74%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.00048
2_106_06	MW-6	Appendix IV	Arsenic	mg/l	20	30%	2015-12-14 to 2022-04-25	Gamma MLE LCL	0.0017
2_107_06	MW-6	Appendix IV	Barium	mg/l	20	0%	2015-12-14 to 2022-04-25	Lognormal H-LCL	0.058
2_108_06	MW-6	Appendix IV	Beryllium	mg/l	18	72%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.00031
2_110_06	MW-6	Appendix IV	Cadmium	mg/l	19	42%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.00021
2_113_06	MW-6	Appendix IV	Chromium, Total	mg/l	20	15%	2015-12-14 to 2022-04-25	Lognormal MLE LCL	0.0068
2_114_06	MW-6	Appendix IV	Cobalt	mg/l	20	0%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.00089
2_117_06	MW-6	Appendix IV	Fluoride (App IV)	mg/l	20	35%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.11
2_118_06	MW-6	Appendix IV	Lead	mg/l	20	5%	2015-12-14 to 2022-04-25	Gamma MLE LCL	0.0039
2_119_06	MW-6	Appendix IV	Lithium	mg/l	20	0%	2015-12-14 to 2022-04-25	Adjusted Gamma LCL	0.059
2_121_06	MW-6	Appendix IV	Mercury	mg/l	16	94%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.000027
2_122_06	MW-6	Appendix IV	Molybdenum	mg/l	20	5%	2015-12-14 to 2022-04-25	Gamma MLE LCL	0.0020
2_128_06	MW-6	Appendix IV	Radium-226+228	pci/l	19	11%	2015-12-14 to 2022-04-25	Gamma MLE LCL	1.0
2_130_06	MW-6	Appendix IV	Selenium	mg/l	20	0%	2015-12-14 to 2022-04-25	Adjusted Gamma LCL	0.015
2_135_06	MW-6	Appendix IV	Thallium	mg/l	18	83%	2015-12-14 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_105_08	MW-8	Appendix IV	Antimony	mg/l	18	72%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00043
2_106_08	MW-8	Appendix IV	Arsenic	mg/l	20	30%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00083
2_107_08	MW-8	Appendix IV	Barium	mg/l	20	0%	2015-12-14 to 2022-04-28	Adjusted Gamma LCL	0.030
2_108_08	MW-8	Appendix IV	Beryllium	mg/l	18	78%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00031
2_110_08	MW-8	Appendix IV	Cadmium	mg/l	19	58%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00021
2_113_08	MW-8	Appendix IV	Chromium, Total	mg/l	20	10%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.0025
2_114_08	MW-8	Appendix IV	Cobalt	mg/l	20	0%	2015-12-14 to 2022-04-28	Lognormal H-LCL	0.0017
2_117_08	MW-8	Appendix IV	Fluoride (App IV)	mg/l	19	42%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.085
2_118_08	MW-8	Appendix IV	Lead	mg/l	20	5%	2015-12-14 to 2022-04-28	Gamma MLE LCL	0.0021
2_119_08	MW-8	Appendix IV	Lithium	mg/l	20	0%	2015-12-14 to 2022-04-28	Adjusted Gamma LCL	0.11
2_121_08	MW-8	Appendix IV	Mercury	mg/l	16	94%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.000027
2_122_08	MW-8	Appendix IV	Molybdenum	mg/l	20	45%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00081
2_128_08	MW-8	Appendix IV	Radium-226+228	pci/l	20	0%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	1.4
2_130_08	MW-8	Appendix IV	Selenium	mg/l	20	0%	2015-12-14 to 2022-04-28	Adjusted Gamma LCL	0.0088
2_135_08	MW-8	Appendix IV	Thallium	mg/l	17	88%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	0.00020
2_105_13	MW-13	Appendix IV	Antimony	mg/l	7	100%	2018-11-28 to 2022-04-21	Nonparametric LCL around the Median	0.00057
2_106_13	MW-13	Appendix IV	Arsenic	mg/l	11	18%	2018-08-09 to 2022-04-21	Gamma MLE LCL	0.0020
2_107_13	MW-13	Appendix IV	Barium	mg/l	9	0%	2018-08-09 to 2022-04-21	Adjusted Gamma LCL	0.023
2_108_13	MW-13	Appendix IV	Beryllium	mg/l	7	86%	2018-08-09 to 2022-04-21	Nonparametric LCL around the Median	0.00031
2_110_13	MW-13	Appendix IV	Cadmium	mg/l	8	75%	2018-08-09 to 2022-04-21	Nonparametric LCL around the Median	0.00020

2_113_13	MW-13	Appendix IV	Chromium, Total	mg/l	9	11%	2018-08-09 to 2022-04-21	Gamma MLE LCL	0.0026
2_114_13	MW-13	Appendix IV	Cobalt	mg/l	9	11%	2018-08-09 to 2022-04-21	Nonparametric LCL around the Median	0.00049
2_117_13	MW-13	Appendix IV	Fluoride (App IV)	mg/l	9	0%	2018-08-09 to 2022-04-21	Adjusted Gamma LCL	0.60
2_118_13	MW-13	Appendix IV	Lead	mg/l	9	67%	2018-08-09 to 2022-04-21	Nonparametric LCL around the Median	0.00045
2_119_13	MW-13	Appendix IV	Lithium	mg/l	11	0%	2018-08-09 to 2022-04-21	Adjusted Gamma LCL	0.098
2_121_13	MW-13	Appendix IV	Mercury	mg/l	6	100%	2018-11-28 to 2022-04-21	Nonparametric LCL around the Median	0.00011
2_122_13	MW-13	Appendix IV	Molybdenum	mg/l	9	11%	2018-08-09 to 2022-04-21	Gamma MLE LCL	0.0040
2_128_13	MW-13	Appendix IV	Radium-226+228	pci/l	9	44%	2018-08-09 to 2022-04-21	Gamma MLE LCL	0.32
2_130_13	MW-13	Appendix IV	Selenium	mg/l	11	0%	2018-08-09 to 2022-04-21	Adjusted Gamma LCL	0.29
2_135_13	MW-13	Appendix IV	Thallium	mg/l	6	100%	2018-11-28 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_105_14	MW-14	Appendix IV	Antimony	mg/l	7	100%	2018-11-27 to 2022-04-29	Nonparametric LCL around the Median	0.00057
2_106_14	MW-14	Appendix IV	Arsenic	mg/l	9	11%	2018-08-13 to 2022-04-29	Gamma MLE LCL	0.0087
2_107_14	MW-14	Appendix IV	Barium	mg/l	9	0%	2018-08-13 to 2022-04-29	Adjusted Gamma LCL	0.018
2_108_14	MW-14	Appendix IV	Beryllium	mg/l	7	86%	2018-08-13 to 2022-04-29	Nonparametric LCL around the Median	0.00031
2_110_14	MW-14	Appendix IV	Cadmium	mg/l	8	88%	2018-08-13 to 2022-04-29	Nonparametric LCL around the Median	0.00020
2_113_14	MW-14	Appendix IV	Chromium, Total	mg/l	9	22%	2018-08-13 to 2022-04-29	Gamma MLE LCL	0.0025
2_114_14	MW-14	Appendix IV	Cobalt	mg/l	9	22%	2018-08-13 to 2022-04-29	Nonparametric LCL around the Median	0.00024
2_117_14	MW-14	Appendix IV	Fluoride (App IV)	mg/l	9	11%	2018-08-13 to 2022-04-29	Gamma MLE LCL	0.57
2_118_14	MW-14	Appendix IV	Lead	mg/l	9	78%	2018-08-13 to 2022-04-29	Nonparametric LCL around the Median	0.00045
2_119_14	MW-14	Appendix IV	Lithium	mg/l	9	0%	2018-08-13 to 2022-04-29	Adjusted Gamma LCL	0.14
2_121_14	MW-14	Appendix IV	Mercury	mg/l	6	100%	2018-11-27 to 2022-04-29	Nonparametric LCL around the Median	0.00011
2_122_14	MW-14	Appendix IV	Molybdenum	mg/l	9	0%	2018-08-13 to 2022-04-29	Adjusted Gamma LCL	0.0022
2_128_14	MW-14	Appendix IV	Radium-226+228	pci/l	9	11%	2018-08-13 to 2022-04-29	Gamma MLE LCL	0.74
2_130_14	MW-14	Appendix IV	Selenium	mg/l	9	0%	2018-08-13 to 2022-04-29	Adjusted Gamma LCL	1.5
2_135_14	MW-14	Appendix IV	Thallium	mg/l	6	100%	2018-11-27 to 2022-04-29	Nonparametric LCL around the Median	0.00020
2_105_15	MW-15	Appendix IV	Antimony	mg/l	7	100%	2018-11-27 to 2022-04-21	Nonparametric LCL around the Median	0.00057
2_106_15	MW-15	Appendix IV	Arsenic	mg/l	9	11%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.0011
2_107_15	MW-15	Appendix IV	Barium	mg/l	9	0%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.018
2_108_15	MW-15	Appendix IV	Beryllium	mg/l	7	86%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.00031
2_110_15	MW-15	Appendix IV	Cadmium	mg/l	8	100%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_113_15	MW-15	Appendix IV	Chromium, Total	mg/l	9	22%	2018-08-13 to 2022-04-21	Gamma MLE LCL	0.0051
2_114_15	MW-15	Appendix IV	Cobalt	mg/l	9	22%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.00027
2_117_15	MW-15	Appendix IV	Fluoride (App IV)	mg/l	9	0%	2018-08-13 to 2022-04-21	Adjusted Gamma LCL	0.56
2_118_15	MW-15	Appendix IV	Lead	mg/l	9	67%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.00045
2_119_15	MW-15	Appendix IV	Lithium	mg/l	9	0%	2018-08-13 to 2022-04-21	Nonparametric LCL around the Median	0.046
2_121_15	MW-15	Appendix IV	Mercury	mg/l	6	100%	2018-11-27 to 2022-04-21	Nonparametric LCL around the Median	0.00011
2_122_15	MW-15	Appendix IV	Molybdenum	mg/l	9	11%	2018-08-13 to 2022-04-21	Gamma MLE LCL	0.0040
2_128_15	MW-15	Appendix IV	Radium-226+228	pci/l	9	44%	2018-08-13 to 2022-04-21	Gamma MLE LCL	0.35
2_130_15	MW-15	Appendix IV	Selenium	mg/l	9	0%	2018-08-13 to 2022-04-21	Adjusted Gamma LCL	0.12
2_135_15	MW-15	Appendix IV	Thallium	mg/l	6	83%	2018-11-27 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_105_16	MW-16	Appendix IV	Antimony	mg/l	7	14%	2018-11-28 to 2022-04-25	Nonparametric LCL around the Median	0.00057
2_106_16	MW-16	Appendix IV	Arsenic	mg/l	9	11%	2018-08-13 to 2022-04-25	Gamma MLE LCL	0.0019
2_107_16	MW-16	Appendix IV	Barium	mg/l	9	0%	2018-08-13 to 2022-04-25	Adjusted Gamma LCL	0.045
2_108_16	MW-16	Appendix IV	Beryllium	mg/l	7	71%	2018-08-13 to 2022-04-25	Nonparametric LCL around the Median	0.00027
2_110_16	MW-16	Appendix IV	Cadmium	mg/l	8	88%	2018-08-13 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_113_16	MW-16	Appendix IV	Chromium, Total	mg/l	9	78%	2018-08-13 to 2022-04-25	Nonparametric LCL around the Median	0.00098
2_114_16	MW-16	Appendix IV	Cobalt	mg/l	9	67%	2018-08-13 to 2022-04-25	Nonparametric LCL around the Median	0.00019
2_117_16	MW-16	Appendix IV	Fluoride (App IV)	mg/l	9	0%	2018-08-13 to 2022-04-25	Adjusted Gamma LCL	1.1
2_118_16	MW-16	Appendix IV	Lead	mg/l	9	78%	2018-08-13 to 2022-04-25	Nonparametric LCL around the Median	0.00045
2_119_16	MW-16	Appendix IV	Lithium	mg/l	9	0%	2018-08-13 to 2022-04-25	Adjusted Gamma LCL	0.048
2_121_16	MW-16	Appendix IV	Mercury	mg/l	6	100%	2018-11-28 to 2022-04-25	Nonparametric LCL around the Median	0.00011
2_122_16	MW-16	Appendix IV	Molybdenum	mg/l	9	11%	2018-08-13 to 2022-04-25	Gamma MLE LCL	0.022
2_128_16	MW-16	Appendix IV	Radium-226+228	pci/l	9	44%	2018-08-13 to 2022-04-25	Gamma MLE LCL	0.44
2_130_16	MW-16	Appendix IV	Selenium	mg/l	9	44%	2018-08-13 to 2022-04-25	Gamma MLE LCL	0.0011
2_135_16	MW-16	Appendix IV	Thallium	mg/l	6	100%	2018-11-28 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_105_21	MW-21	Appendix IV	Antimony	mg/l	7	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00057
2_106_21	MW-21	Appendix IV	Arsenic	mg/l	10	20%	2019-03-22 to 2022-04-21	Gamma MLE LCL	0.0052
2_107_21	MW-21	Appendix IV	Barium	mg/l	8	0%	2019-03-22 to 2022-04-21	Adjusted Gamma LCL	0.014
2_108_21	MW-21	Appendix IV	Beryllium	mg/l	6	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00031
2_110_21	MW-21	Appendix IV	Cadmium	mg/l	7	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_113_21	MW-21	Appendix IV	Chromium, Total	mg/l	8	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00098
2_114_21	MW-21	Appendix IV	Cobalt	mg/l	8	25%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_117_21	MW-21	Appendix IV	Fluoride (App IV)	mg/l	7	0%	2019-05-14 to 2022-04-21	Nonparametric LCL around the Median	0.45
2_118_21	MW-21	Appendix IV	Lead	mg/l	8	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00045
2_119_21	MW-21	Appendix IV	Lithium	mg/l	10	0%	2019-03-22 to 2022-04-21	Adjusted Gamma LCL	0.18
2_121_21	MW-21	Appendix IV	Mercury	mg/l	6	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00011
2_122_21	MW-21	Appendix IV	Molybdenum	mg/l	8	0%	2019-03-22 to 2022-04-21	Adjusted Gamma LCL	0.0054
2_128_21	MW-21	Appendix IV	Radium-226+228	pci/l	7	14%	2019-05-14 to 2022-04-21	Nonparametric LCL around the Median	0.35
2_130_21	MW-21	Appendix IV	Selenium	mg/l	10	0%	2019-03-22 to 2022-04-21	Adjusted Gamma LCL	1.2
2_135_21	MW-21	Appendix IV	Thallium	mg/l	6	100%	2019-03-22 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_105_25I	MW-25B	Appendix IV	Antimony	mg/l	5	20%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00057
2_106_25I	MW-25B	Appendix IV	Arsenic	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.0016
2_107_25I	MW-25B	Appendix IV	Barium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.020
2_108_25I	MW-25B	Appendix IV	Beryllium	mg/l	4	75%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.00027
2_110_25I	MW-25B	Appendix IV	Cadmium	mg/l	5	100%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.000055
2_113_25I	MW-25B	Appendix IV	Chromium, Total	mg/l	6	83%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00098
2_114_25I	MW-25B	Appendix IV	Cobalt	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00037
2_117_25I	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.35
2_118_25I	MW-25B	Appendix IV	Lead	mg/l	6	83%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00024
2_119_25I	MW-25B	Appendix IV	Lithium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.045
2_121_25I	MW-25B	Appendix IV	Mercury	mg/l	4	100%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.00011
2_122_25I	MW-25B	Appendix IV	Molybdenum	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.050
2_128_25I	MW-25B	Appendix IV	Radium-226+228	pci/l	6	50%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.43
2_130_25I	MW-25B	Appendix IV	Selenium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.0036
2_135_25I	MW-25B	Appendix IV	Thallium	mg/l	4	50%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.00020
2_105_26	MW-26	Appendix IV	Antimony	mg/l	5	80%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00057
2_106_26	MW-26	Appendix IV	Arsenic	mg/l	6	83%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00075
2_107_26	MW-26	Appendix IV	Barium	mg/l	6	0%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.012
2_108_26	MW-26	Appendix IV	Beryllium	mg/l	4	100%	2020-04-23 to 2022-04-25	Nonparametric LCL around the Median	0.00031
2_110_26	MW-26	Appendix IV	Cadmium	mg/l	5	100%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_113_26	MW-26	Appendix IV	Chromium, Total	mg/l	6	83%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00098
2_114_26	MW-26	Appendix IV	Cobalt	mg/l	6	33%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00019
2_117_26	MW-26	Appendix IV	Fluoride (App IV)	mg/l	6	33%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.17
2_118_26	MW-26	Appendix IV	Lead	mg/l	6	83%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00024
2_119_26	MW-26	Appendix IV	Lithium	mg/l	6	0%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.052
2_121_26	MW-26	Appendix IV	Mercury	mg/l	4	100%	2020-04-23 to 2022-04-25	Nonparametric LCL around the Median	0.00011
2_122_26	MW-26	Appendix IV	Molybdenum	mg/l	6	67%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.0011
2_128_26	MW-26	Appendix IV	Radium-226+228	pci/l	6	0%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.54

2_130_26	MW-26	Appendix IV	Selenium	mg/l	6	33%	2019-10-23 to 2022-04-25	Nonparametric LCL around the Median	0.00089
2_135_26	MW-26	Appendix IV	Thallium	mg/l	4	100%	2020-04-23 to 2022-04-25	Nonparametric LCL around the Median	0.00020
2_105_27	MW-27	Appendix IV	Antimony	mg/l	5	100%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00057
2_106_27	MW-27	Appendix IV	Arsenic	mg/l	8	88%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00075
2_107_27	MW-27	Appendix IV	Barium	mg/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.074
2_108_27	MW-27	Appendix IV	Beryllium	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00027
2_110_27	MW-27	Appendix IV	Cadmium	mg/l	5	100%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.000055
2_113_27	MW-27	Appendix IV	Chromium, Total	mg/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.0011
2_114_27	MW-27	Appendix IV	Cobalt	mg/l	6	67%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00019
2_117_27	MW-27	Appendix IV	Fluoride (App IV)	mg/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.69
2_118_27	MW-27	Appendix IV	Lead	mg/l	6	67%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00024
2_119_27	MW-27	Appendix IV	Lithium	mg/l	8	0%	2019-10-24 to 2022-04-21	Adjusted Gamma LCL	0.025
2_121_27	MW-27	Appendix IV	Mercury	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00011
2_122_27	MW-27	Appendix IV	Molybdenum	mg/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.0025
2_128_27	MW-27	Appendix IV	Radium-226+228	pci/l	6	67%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.44
2_130_27	MW-27	Appendix IV	Selenium	mg/l	8	0%	2019-10-24 to 2022-04-21	Adjusted Gamma LCL	0.0039
2_135_27	MW-27	Appendix IV	Thallium	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_105_28	MW-28	Appendix IV	Antimony	mg/l	5	100%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00057
2_106_28	MW-28	Appendix IV	Arsenic	mg/l	8	25%	2019-10-24 to 2022-04-21	Gamma MLE LCL	0.0088
2_107_28	MW-28	Appendix IV	Barium	mg/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.013
2_108_28	MW-28	Appendix IV	Beryllium	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00031
2_110_28	MW-28	Appendix IV	Cadmium	mg/l	5	100%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_113_28	MW-28	Appendix IV	Chromium, Total	mg/l	6	33%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.0013
2_114_28	MW-28	Appendix IV	Cobalt	mg/l	6	17%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_117_28	MW-28	Appendix IV	Fluoride (App IV)	mg/l	6	17%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.20
2_118_28	MW-28	Appendix IV	Lead	mg/l	6	100%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.00045
2_119_28	MW-28	Appendix IV	Lithium	mg/l	8	0%	2019-10-24 to 2022-04-21	Adjusted Gamma LCL	0.22
2_121_28	MW-28	Appendix IV	Mercury	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00011
2_122_28	MW-28	Appendix IV	Molybdenum	mg/l	6	83%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.0011
2_128_28	MW-28	Appendix IV	Radium-226+228	pci/l	6	0%	2019-10-24 to 2022-04-21	Nonparametric LCL around the Median	0.97
2_130_28	MW-28	Appendix IV	Selenium	mg/l	8	0%	2019-10-24 to 2022-04-21	Adjusted Gamma LCL	2.7
2_135_28	MW-28	Appendix IV	Thallium	mg/l	4	100%	2020-04-22 to 2022-04-21	Nonparametric LCL around the Median	0.00020
2_106_29	MW-29	Appendix IV	Arsenic	mg/l	4	50%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	0.00075
2_119_29	MW-29	Appendix IV	Lithium	mg/l	4	0%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	0.27
2_130_29	MW-29	Appendix IV	Selenium	mg/l	4	0%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	2.1
2_106_30	MW-30	Appendix IV	Arsenic	mg/l	4	25%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0010
2_119_30	MW-30	Appendix IV	Lithium	mg/l	4	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.33
2_130_30	MW-30	Appendix IV	Selenium	mg/l	4	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0022
2_106_31	MW-31	Appendix IV	Arsenic	mg/l	4	50%	2021-10-18 to 2022-04-22	Nonparametric LCL around the Median	0.00075
2_119_31	MW-31	Appendix IV	Lithium	mg/l	4	0%	2021-10-18 to 2022-04-22	Nonparametric LCL around the Median	0.12
2_130_31	MW-31	Appendix IV	Selenium	mg/l	4	0%	2021-10-18 to 2022-04-22	Nonparametric LCL around the Median	0.21
2_106_32	MW-32	Appendix IV	Arsenic	mg/l	4	75%	2021-10-15 to 2022-04-22	Nonparametric LCL around the Median	0.00075
2_119_32	MW-32	Appendix IV	Lithium	mg/l	4	0%	2021-10-15 to 2022-04-22	Nonparametric LCL around the Median	0.044
2_130_32	MW-32	Appendix IV	Selenium	mg/l	4	0%	2021-10-15 to 2022-04-22	Nonparametric LCL around the Median	0.050
2_106_33A	MW-33A	Appendix IV	Arsenic	mg/l	4	50%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	0.00075
2_119_33A	MW-33A	Appendix IV	Lithium	mg/l	4	0%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	0.12
2_130_33A	MW-33A	Appendix IV	Selenium	mg/l	4	0%	2021-10-15 to 2022-04-28	Nonparametric LCL around the Median	0.17
2_106_33B	MW-33B	Appendix IV	Arsenic	mg/l	4	0%	2021-10-20 to 2022-04-28	Nonparametric LCL around the Median	0.0042
2_119_33B	MW-33B	Appendix IV	Lithium	mg/l	4	0%	2021-10-20 to 2022-04-28	Nonparametric LCL around the Median	0.087
2_130_33B	MW-33B	Appendix IV	Selenium	mg/l	4	0%	2021-10-20 to 2022-04-28	Nonparametric LCL around the Median	0.018
2_105_34	MW-34	Appendix IV	Antimony	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0024
2_106_34	MW-34	Appendix IV	Arsenic	mg/l	4	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0013
2_107_34	MW-34	Appendix IV	Barium	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.042
2_108_34	MW-34	Appendix IV	Beryllium	mg/l	2	50%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.00027
2_110_34	MW-34	Appendix IV	Cadmium	mg/l	2	100%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.000055
2_113_34	MW-34	Appendix IV	Chromium, Total	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0013
2_114_34	MW-34	Appendix IV	Cobalt	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.00081
2_117_34	MW-34	Appendix IV	Fluoride (App IV)	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.57
2_118_34	MW-34	Appendix IV	Lead	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.00072
2_119_34	MW-34	Appendix IV	Lithium	mg/l	4	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.045
2_121_34	MW-34	Appendix IV	Mercury	mg/l	2	100%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.00011
2_122_34	MW-34	Appendix IV	Molybdenum	mg/l	2	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.017
2_128_34	MW-34	Appendix IV	Radium-226+228	pci/l	2	100%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.61
2_130_34	MW-34	Appendix IV	Selenium	mg/l	4	0%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.0083
2_135_34	MW-34	Appendix IV	Thallium	mg/l	2	50%	2021-10-20 to 2022-04-26	Nonparametric LCL around the Median	0.00023
2_105_35	MW-35	Appendix IV	Antimony	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00057
2_106_35	MW-35	Appendix IV	Arsenic	mg/l	4	50%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00075
2_107_35	MW-35	Appendix IV	Barium	mg/l	2	0%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.014
2_108_35	MW-35	Appendix IV	Beryllium	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00062
2_110_35	MW-35	Appendix IV	Cadmium	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00020
2_113_35	MW-35	Appendix IV	Chromium, Total	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.0025
2_114_35	MW-35	Appendix IV	Cobalt	mg/l	2	50%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00076
2_117_35	MW-35	Appendix IV	Fluoride (App IV)	mg/l	2	0%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.50
2_118_35	MW-35	Appendix IV	Lead	mg/l	2	50%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00050
2_119_35	MW-35	Appendix IV	Lithium	mg/l	4	0%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.15
2_121_35	MW-35	Appendix IV	Mercury	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00011
2_122_35	MW-35	Appendix IV	Molybdenum	mg/l	2	50%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.0027
2_128_35	MW-35	Appendix IV	Radium-226+228	pci/l	2	0%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.75
2_130_35	MW-35	Appendix IV	Selenium	mg/l	4	0%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	1.5
2_135_35	MW-35	Appendix IV	Thallium	mg/l	2	100%	2021-10-15 to 2022-04-26	Nonparametric LCL around the Median	0.00020
2_105_36	MW-36	Appendix IV	Antimony	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0028
2_106_36	MW-36	Appendix IV	Arsenic	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0030
2_107_36	MW-36	Appendix IV	Barium	mg/l	1	0%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.017
2_108_36	MW-36	Appendix IV	Beryllium	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0011
2_110_36	MW-36	Appendix IV	Cadmium	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.00022
2_113_36	MW-36	Appendix IV	Chromium, Total	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0044
2_114_36	MW-36	Appendix IV	Cobalt	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.00076
2_117_36	MW-36	Appendix IV	Fluoride (App IV)	mg/l	1	0%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.69
2_118_36	MW-36	Appendix IV	Lead	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.00096
2_119_36	MW-36	Appendix IV	Lithium	mg/l	1	0%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.091
2_121_36	MW-36	Appendix IV	Mercury	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.00011
2_122_36	MW-36	Appendix IV	Molybdenum	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0048
2_128_36	MW-36	Appendix IV	Radium-226+228	pci/l	1	0%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.75
2_130_36	MW-36	Appendix IV	Selenium	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0038
2_135_36	MW-36	Appendix IV	Thallium	mg/l	1	100%	2022-04-29 to 2022-04-29	Nonparametric LCL around the Median	0.0010

* UTLs developed from March 2016 to May 2022 background samples from well MW-05 and MW-07

Valmont Landfill – 95% Lower Confidence Limits for Assessment Monitoring

Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	LCL
11_2_104	MW-1	Appendix IV	Antimony	mg/l	19	47%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00047
11_2_105	MW-1	Appendix IV	Arsenic	mg/l	21	19%	2015-12-17 to 2022-10-05	Lognormal MLE Likelihood Profile LCL	0.0012
11_2_106	MW-1	Appendix IV	Barium	mg/l	21	0%	2015-12-17 to 2022-10-05	Adjusted Gamma LCL	0.068
11_2_107	MW-1	Appendix IV	Beryllium	mg/l	19	58%	2015-12-17 to 2022-10-05	Nonparametric LCL around the Median	0.00031
11_2_109	MW-1	Appendix IV	Cadmium	mg/l	20	40%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00020
11_2_112	MW-1	Appendix IV	Chromium, Total	mg/l	21	14%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.0038
11_2_113	MW-1	Appendix IV	Cobalt	mg/l	21	0%	2015-12-17 to 2022-10-05	Adjusted Gamma LCL	0.0011
11_2_116	MW-1	Appendix IV	Fluoride (App IV)	mg/l	21	0%	2015-12-17 to 2022-10-05	Adjusted Gamma LCL	0.33
11_2_117	MW-1	Appendix IV	Lead	mg/l	21	29%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00098
11_2_118	MW-1	Appendix IV	Lithium	mg/l	21	0%	2015-12-17 to 2022-10-05	Nonparametric LCL around the Median	0.031
11_2_120	MW-1	Appendix IV	Mercury	mg/l	17	94%	2015-12-17 to 2022-10-05	Nonparametric LCL around the Median	0.000027
11_2_121	MW-1	Appendix IV	Molybdenum	mg/l	21	0%	2015-12-17 to 2022-10-05	Lognormal H-LCL	0.017
11_2_127	MW-1	Appendix IV	Radium-226+228	pci/l	21	33%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.64
11_2_129	MW-1	Appendix IV	Selenium	mg/l	21	33%	2015-12-17 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00089
11_2_134	MW-1	Appendix IV	Thallium	mg/l	18	89%	2015-12-17 to 2022-10-05	Nonparametric LCL around the Median	0.00020
12_2_104	MW-13	Appendix IV	Antimony	mg/l	8	100%	2018-11-28 to 2022-10-05	Nonparametric LCL around the Median	0.00057
12_2_105	MW-13	Appendix IV	Arsenic	mg/l	13	23%	2018-08-09 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00162
12_2_106	MW-13	Appendix IV	Barium	mg/l	10	0%	2018-08-09 to 2022-10-05	Adjusted Gamma LCL	0.024
12_2_107	MW-13	Appendix IV	Beryllium	mg/l	8	88%	2018-08-09 to 2022-10-05	Nonparametric LCL around the Median	0.00031
12_2_109	MW-13	Appendix IV	Cadmium	mg/l	9	78%	2018-08-09 to 2022-10-05	Nonparametric LCL around the Median	0.00020
12_2_112	MW-13	Appendix IV	Chromium, Total	mg/l	10	10%	2018-08-09 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00262
12_2_113	MW-13	Appendix IV	Cobalt	mg/l	11	9%	2018-08-09 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00077
12_2_116	MW-13	Appendix IV	Fluoride (App IV)	mg/l	10	0%	2018-08-09 to 2022-10-04	Lognormal H-LCL	0.66
12_2_117	MW-13	Appendix IV	Lead	mg/l	10	60%	2018-08-09 to 2022-10-05	Nonparametric LCL around the Median	0.00045
12_2_118	MW-13	Appendix IV	Lithium	mg/l	13	0%	2018-08-09 to 2022-10-05	Nonparametric LCL around the Median	0.097
12_2_120	MW-13	Appendix IV	Mercury	mg/l	7	100%	2018-11-28 to 2022-10-05	Nonparametric LCL around the Median	0.000061
12_2_121	MW-13	Appendix IV	Molybdenum	mg/l	10	10%	2018-08-09 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.0042
12_2_127	MW-13	Appendix IV	Radium-226+228	pci/l	10	40%	2018-08-09 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.4
12_2_129	MW-13	Appendix IV	Selenium	mg/l	13	0%	2018-08-09 to 2022-10-05	Adjusted Gamma LCL	0.2838
12_2_134	MW-13	Appendix IV	Thallium	mg/l	7	100%	2018-11-28 to 2022-10-05	Nonparametric LCL around the Median	0.00009
13_2_104	MW-14	Appendix IV	Antimony	mg/l	8	100%	2018-11-27 to 2022-10-14	Nonparametric LCL around the Median	0.00057
13_2_105	MW-14	Appendix IV	Arsenic	mg/l	10	20%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.0069
13_2_106	MW-14	Appendix IV	Barium	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	0.018
13_2_107	MW-14	Appendix IV	Beryllium	mg/l	8	88%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.00031
13_2_109	MW-14	Appendix IV	Cadmium	mg/l	9	89%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.00020
13_2_112	MW-14	Appendix IV	Chromium, Total	mg/l	10	30%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.0020
13_2_113	MW-14	Appendix IV	Cobalt	mg/l	10	20%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.0003
13_2_116	MW-14	Appendix IV	Fluoride (App IV)	mg/l	10	20%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.5
13_2_117	MW-14	Appendix IV	Lead	mg/l	10	80%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.0002
13_2_118	MW-14	Appendix IV	Lithium	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	0.14
13_2_120	MW-14	Appendix IV	Mercury	mg/l	7	100%	2018-11-27 to 2022-10-14	Nonparametric LCL around the Median	0.000061
13_2_121	MW-14	Appendix IV	Molybdenum	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	0.002
13_2_127	MW-14	Appendix IV	Radium-226+228	pci/l	10	10%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.8
13_2_129	MW-14	Appendix IV	Selenium	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	1.51
13_2_134	MW-14	Appendix IV	Thallium	mg/l	7	100%	2018-11-27 to 2022-10-14	Nonparametric LCL around the Median	0.00009
14_2_104	MW-15	Appendix IV	Antimony	mg/l	8	100%	2018-11-27 to 2022-10-13	Nonparametric LCL around the Median	0.00057
14_2_105	MW-15	Appendix IV	Arsenic	mg/l	10	10%	2018-08-13 to 2022-10-13	Gamma MLE Bootstrap. LCL	0.00116
14_2_106	MW-15	Appendix IV	Barium	mg/l	10	0%	2018-08-13 to 2022-10-13	Nonparametric LCL around the Median	0.018
14_2_107	MW-15	Appendix IV	Beryllium	mg/l	8	88%	2018-08-13 to 2022-10-13	Nonparametric LCL around the Median	0.00031
14_2_109	MW-15	Appendix IV	Cadmium	mg/l	9	100%	2018-08-13 to 2022-10-13	Nonparametric LCL around the Median	0.00020
14_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	10	20%	2018-08-13 to 2022-10-13	Gamma MLE Bootstrap. LCL	0.00394
14_2_113	MW-15	Appendix IV	Cobalt	mg/l	10	20%	2018-08-13 to 2022-10-13	Gamma MLE Bootstrap. LCL	0.00041
14_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	10	0%	2018-08-13 to 2022-10-13	Adjusted Gamma LCL	0.57
14_2_117	MW-15	Appendix IV	Lead	mg/l	10	60%	2018-08-13 to 2022-10-13	Nonparametric LCL around the Median	0.00045
14_2_118	MW-15	Appendix IV	Lithium	mg/l	10	0%	2018-08-13 to 2022-10-13	Nonparametric LCL around the Median	0.046
14_2_120	MW-15	Appendix IV	Mercury	mg/l	7	100%	2018-11-27 to 2022-10-13	Nonparametric LCL around the Median	0.000061
14_2_121	MW-15	Appendix IV	Molybdenum	mg/l	10	10%	2018-08-13 to 2022-10-13	Gamma MLE Bootstrap. LCL	0.0036
14_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	10	40%	2018-08-13 to 2022-10-13	Gamma MLE Bootstrap. LCL	0.43
14_2_129	MW-15	Appendix IV	Selenium	mg/l	10	0%	2018-08-13 to 2022-10-13	Adjusted Gamma LCL	0.1148
14_2_134	MW-15	Appendix IV	Thallium	mg/l	7	86%	2018-11-27 to 2022-10-13	Nonparametric LCL around the Median	0.00009
15_2_104	MW-16	Appendix IV	Antimony	mg/l	8	12%	2018-11-28 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.00154
15_2_105	MW-16	Appendix IV	Arsenic	mg/l	10	10%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.0016
15_2_106	MW-16	Appendix IV	Barium	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	0.045
15_2_107	MW-16	Appendix IV	Beryllium	mg/l	8	75%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.00027
15_2_109	MW-16	Appendix IV	Cadmium	mg/l	9	89%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.00020
15_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	10	80%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.0010
15_2_113	MW-16	Appendix IV	Cobalt	mg/l	10	60%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.00019
15_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	1.13
15_2_117	MW-16	Appendix IV	Lead	mg/l	10	70%	2018-08-13 to 2022-10-14	Nonparametric LCL around the Median	0.0002
15_2_118	MW-16	Appendix IV	Lithium	mg/l	10	0%	2018-08-13 to 2022-10-14	Adjusted Gamma LCL	0.049
15_2_120	MW-16	Appendix IV	Mercury	mg/l	7	100%	2018-11-28 to 2022-10-14	Nonparametric LCL around the Median	0.000061
15_2_121	MW-16	Appendix IV	Molybdenum	mg/l	10	10%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.0238
15_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	10	40%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.5
15_2_129	MW-16	Appendix IV	Selenium	mg/l	10	40%	2018-08-13 to 2022-10-14	Gamma MLE Bootstrap. LCL	0.001
15_2_134	MW-16	Appendix IV	Thallium	mg/l	7	100%	2018-11-28 to 2022-10-14	Nonparametric LCL around the Median	0.00009
16_2_104	MW-21	Appendix IV	Antimony	mg/l	8	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.00057
16_2_105	MW-21	Appendix IV	Arsenic	mg/l	12	25%	2019-03-22 to 2022-10-07	Normal MLE LCL	0.0028
16_2_106	MW-21	Appendix IV	Barium	mg/l	9	0%	2019-03-22 to 2022-10-07	Adjusted Gamma LCL	0.015
16_2_107	MW-21	Appendix IV	Beryllium	mg/l	7	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.00008
16_2_109	MW-21	Appendix IV	Cadmium	mg/l	8	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.00020
16_2_112	MW-21	Appendix IV	Chromium, Total	mg/l	9	89%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.0010
16_2_113	MW-21	Appendix IV	Cobalt	mg/l	10	20%	2019-03-22 to 2022-10-07	Gamma MLE Bootstrap. LCL	0.0003
16_2_116	MW-21	Appendix IV	Fluoride (App IV)	mg/l	8	12%	2019-05-14 to 2022-10-07	Gamma MLE Bootstrap. LCL	0.647
16_2_117	MW-21	Appendix IV	Lead	mg/l	9	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.0005
16_2_118	MW-21	Appendix IV	Lithium	mg/l	12	0%	2019-03-22 to 2022-10-07	Adjusted Gamma LCL	0.19
16_2_120	MW-21	Appendix IV	Mercury	mg/l	7	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.000061
16_2_121	MW-21	Appendix IV	Molybdenum	mg/l	9	0%	2019-03-22 to 2022-10-07	Adjusted Gamma LCL	0.00501
16_2_127	MW-21	Appendix IV	Radium-226+228	pci/l	8	12%	2019-05-14 to 2022-10-07	Gamma MLE Bootstrap. LCL	0.7
16_2_129	MW-21	Appendix IV	Selenium	mg/l	12	0%	2019-03-22 to 2022-10-07	Adjusted Gamma LCL	1.2135
16_2_134	MW-21	Appendix IV	Thallium	mg/l	7	100%	2019-03-22 to 2022-10-07	Nonparametric LCL around the Median	0.00009
17_2_104	MW-25B	Appendix IV	Antimony	mg/l	5	20%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00057
17_2_105	MW-25B	Appendix IV	Arsenic	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.0016
17_2_106	MW-25B	Appendix IV	Barium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.020
17_2_107	MW-25B	Appendix IV	Beryllium	mg/l	4	75%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.00027
17_2_109	MW-25B	Appendix IV	Cadmium	mg/l	5	100%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00006
17_2_112	MW-25B	Appendix IV	Chromium, Total	mg/l	6	83%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.0010
17_2_113	MW-25B	Appendix IV	Cobalt	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00037
17_2_116	MW-25B	Appendix IV	Fluoride (App IV)	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.35
17_2_117	MW-25B	Appendix IV	Lead	mg/l	6	83%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00024
17_2_118	MW-25B	Appendix IV	Lithium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.045
17_2_120	MW-25B	Appendix IV	Mercury	mg/l	4	100%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.000110
17_2_121	MW-25B	Appendix IV	Molybdenum	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.0500
17_2_127	MW-25B	Appendix IV	Radium-226+228	pci/l	6	50%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.43
17_2_129	MW-25B	Appendix IV	Selenium	mg/l	6	0%	2019-10-23 to 2022-04-29	Nonparametric LCL around the Median	0.00
17_2_134	MW-25B	Appendix IV	Thallium	mg/l	4	50%	2020-04-28 to 2022-04-29	Nonparametric LCL around the Median	0.000200

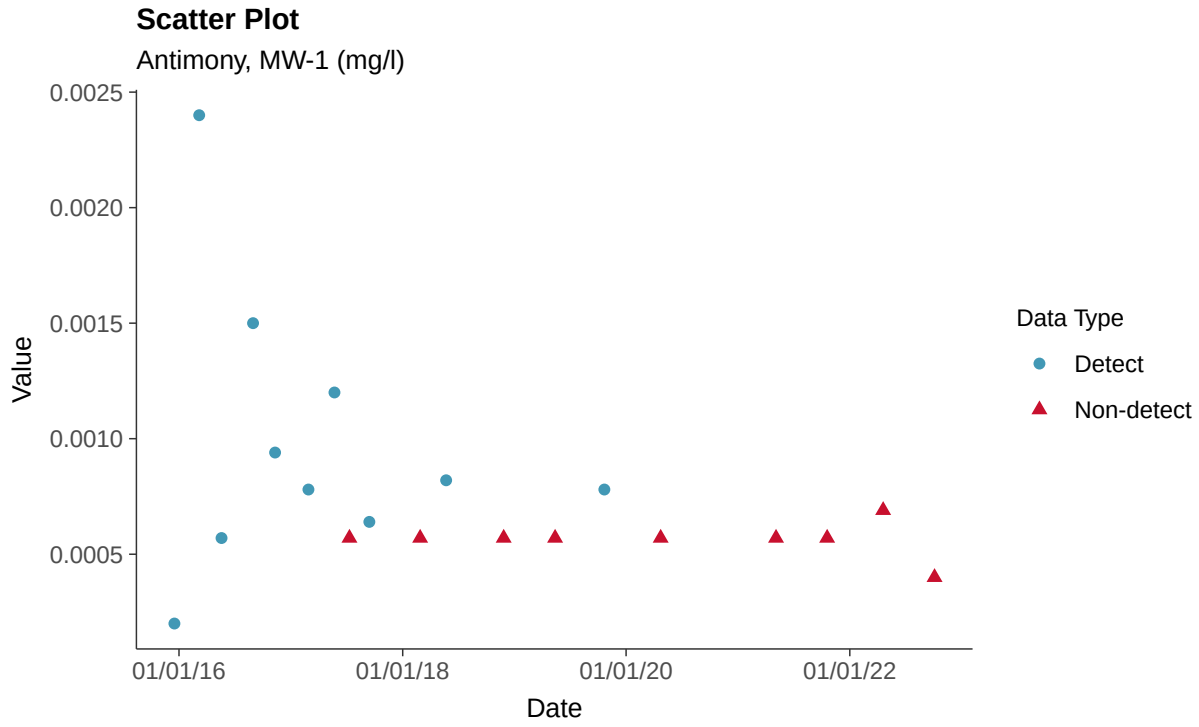
18_2_104	MW-26	Appendix IV	Antimony	mg/l	6	83%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.00040
18_2_105	MW-26	Appendix IV	Arsenic	mg/l	7	86%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.0003
18_2_106	MW-26	Appendix IV	Barium	mg/l	7	0%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.012
18_2_107	MW-26	Appendix IV	Beryllium	mg/l	5	100%	2020-04-23 to 2022-10-17	Nonparametric LCL around the Median	0.00008
18_2_109	MW-26	Appendix IV	Cadmium	mg/l	6	100%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.00020
18_2_112	MW-26	Appendix IV	Chromium, Total	mg/l	7	71%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.0010
18_2_113	MW-26	Appendix IV	Cobalt	mg/l	7	29%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.00012
18_2_116	MW-26	Appendix IV	Fluoride (App IV)	mg/l	7	43%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.17
18_2_117	MW-26	Appendix IV	Lead	mg/l	7	86%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.00018
18_2_118	MW-26	Appendix IV	Lithium	mg/l	7	0%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.05
18_2_120	MW-26	Appendix IV	Mercury	mg/l	5	100%	2020-04-23 to 2022-10-17	Nonparametric LCL around the Median	0.000061
18_2_121	MW-26	Appendix IV	Molybdenum	mg/l	7	57%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.0005
18_2_127	MW-26	Appendix IV	Radium-226+228	pci/l	7	0%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.54
18_2_129	MW-26	Appendix IV	Selenium	mg/l	7	29%	2019-10-23 to 2022-10-17	Nonparametric LCL around the Median	0.0
18_2_134	MW-26	Appendix IV	Thallium	mg/l	5	100%	2020-04-23 to 2022-10-17	Nonparametric LCL around the Median	0.000089
19_2_104	MW-27	Appendix IV	Antimony	mg/l	6	100%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.00040
19_2_105	MW-27	Appendix IV	Arsenic	mg/l	10	80%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.0004
19_2_106	MW-27	Appendix IV	Barium	mg/l	7	0%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.074
19_2_107	MW-27	Appendix IV	Beryllium	mg/l	5	100%	2020-04-22 to 2022-10-18	Nonparametric LCL around the Median	0.00008
19_2_109	MW-27	Appendix IV	Cadmium	mg/l	6	100%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.00006
19_2_112	MW-27	Appendix IV	Chromium, Total	mg/l	7	0%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.0011
19_2_113	MW-27	Appendix IV	Cobalt	mg/l	8	50%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.00018
19_2_116	MW-27	Appendix IV	Fluoride (App IV)	mg/l	7	0%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.69
19_2_117	MW-27	Appendix IV	Lead	mg/l	7	57%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.00018
19_2_118	MW-27	Appendix IV	Lithium	mg/l	10	0%	2019-10-24 to 2022-10-18	Adjusted Gamma LCL	0.026
19_2_120	MW-27	Appendix IV	Mercury	mg/l	5	100%	2020-04-22 to 2022-10-18	Nonparametric LCL around the Median	0.000061
19_2_121	MW-27	Appendix IV	Molybdenum	mg/l	7	0%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.0025
19_2_127	MW-27	Appendix IV	Radium-226+228	pci/l	7	57%	2019-10-24 to 2022-10-18	Nonparametric LCL around the Median	0.44
19_2_129	MW-27	Appendix IV	Selenium	mg/l	10	0%	2019-10-24 to 2022-10-18	Adjusted Gamma LCL	0.00
19_2_134	MW-27	Appendix IV	Thallium	mg/l	5	100%	2020-04-22 to 2022-10-18	Nonparametric LCL around the Median	0.000089
20_2_104	MW-28	Appendix IV	Antimony	mg/l	6	100%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.0004
20_2_105	MW-28	Appendix IV	Arsenic	mg/l	10	30%	2019-10-24 to 2022-10-11	Normal MLE LCL	0.0010
20_2_106	MW-28	Appendix IV	Barium	mg/l	7	0%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.011
20_2_107	MW-28	Appendix IV	Beryllium	mg/l	5	100%	2020-04-22 to 2022-10-11	Nonparametric LCL around the Median	0.00008
20_2_109	MW-28	Appendix IV	Cadmium	mg/l	6	100%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.00020
20_2_112	MW-28	Appendix IV	Chromium, Total	mg/l	7	29%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.00130
20_2_113	MW-28	Appendix IV	Cobalt	mg/l	8	12%	2019-10-24 to 2022-10-11	Gamma MLE Bootstrap. LCL	0.00025
20_2_116	MW-28	Appendix IV	Fluoride (App IV)	mg/l	7	14%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.2
20_2_117	MW-28	Appendix IV	Lead	mg/l	7	100%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.00018
20_2_118	MW-28	Appendix IV	Lithium	mg/l	10	0%	2019-10-24 to 2022-10-11	Adjusted Gamma LCL	0.231
20_2_120	MW-28	Appendix IV	Mercury	mg/l	5	100%	2020-04-22 to 2022-10-11	Nonparametric LCL around the Median	0.000061
20_2_121	MW-28	Appendix IV	Molybdenum	mg/l	7	71%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.001
20_2_127	MW-28	Appendix IV	Radium-226+228	pci/l	7	0%	2019-10-24 to 2022-10-11	Nonparametric LCL around the Median	0.97
20_2_129	MW-28	Appendix IV	Selenium	mg/l	10	0%	2019-10-24 to 2022-10-11	Adjusted Gamma LCL	2.74831
20_2_134	MW-28	Appendix IV	Thallium	mg/l	5	100%	2020-04-22 to 2022-10-11	Nonparametric LCL around the Median	0.000089
21_2_105	MW-29	Appendix IV	Arsenic	mg/l	6	33%	2021-10-15 to 2022-10-28	Nonparametric LCL around the Median	0.00062
21_2_113	MW-29	Appendix IV	Cobalt	mg/l	1	0%	2022-07-22 to 2022-07-22	Nonparametric LCL around the Median	0.0009
21_2_118	MW-29	Appendix IV	Lithium	mg/l	6	0%	2021-10-15 to 2022-10-28	Nonparametric LCL around the Median	0.270
21_2_129	MW-29	Appendix IV	Selenium	mg/l	6	0%	2021-10-15 to 2022-10-28	Nonparametric LCL around the Median	2.100000
22_2_104	MW-3	Appendix IV	Antimony	mg/l	20	90%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00028
22_2_105	MW-3	Appendix IV	Arsenic	mg/l	21	62%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00075
22_2_106	MW-3	Appendix IV	Barium	mg/l	21	0%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.01200
22_2_107	MW-3	Appendix IV	Beryllium	mg/l	19	89%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00
22_2_109	MW-3	Appendix IV	Cadmium	mg/l	20	70%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00020
22_2_112	MW-3	Appendix IV	Chromium, Total	mg/l	21	33%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00
22_2_113	MW-3	Appendix IV	Cobalt	mg/l	21	5%	2015-12-10 to 2022-10-06	Gamma MLE Bootstrap. LCL	0.000633
22_2_116	MW-3	Appendix IV	Fluoride (App IV)	mg/l	21	48%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.1000
22_2_117	MW-3	Appendix IV	Lead	mg/l	21	57%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00
22_2_118	MW-3	Appendix IV	Lithium	mg/l	21	0%	2015-12-10 to 2022-10-06	Adjusted Gamma LCL	0.1
22_2_120	MW-3	Appendix IV	Mercury	mg/l	17	100%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.000027
22_2_121	MW-3	Appendix IV	Molybdenum	mg/l	21	29%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00110
22_2_127	MW-3	Appendix IV	Radium-226+228	pci/l	21	0%	2015-12-10 to 2022-10-06	Adjusted Gamma LCL	1.2114
22_2_129	MW-3	Appendix IV	Selenium	mg/l	21	14%	2015-12-10 to 2022-10-06	Gamma MLE Bootstrap. LCL	0.001
22_2_134	MW-3	Appendix IV	Thallium	mg/l	18	100%	2015-12-10 to 2022-10-06	Nonparametric LCL around the Median	0.00020
23_2_105	MW-30	Appendix IV	Arsenic	mg/l	6	17%	2021-10-20 to 2022-10-26	Nonparametric LCL around the Median	0.001000
23_2_113	MW-30	Appendix IV	Cobalt	mg/l	1	0%	2022-07-21 to 2022-07-21	Nonparametric LCL around the Median	0.00920
23_2_118	MW-30	Appendix IV	Lithium	mg/l	6	0%	2021-10-20 to 2022-10-26	Nonparametric LCL around the Median	0.33000
23_2_129	MW-30	Appendix IV	Selenium	mg/l	6	0%	2021-10-20 to 2022-10-26	Nonparametric LCL around the Median	0.00
24_2_105	MW-31	Appendix IV	Arsenic	mg/l	6	33%	2021-10-18 to 2022-10-28	Nonparametric LCL around the Median	0.00038
24_2_113	MW-31	Appendix IV	Cobalt	mg/l	1	0%	2022-07-22 to 2022-07-22	Nonparametric LCL around the Median	0.000
24_2_118	MW-31	Appendix IV	Lithium	mg/l	6	0%	2021-10-18 to 2022-10-28	Nonparametric LCL around the Median	0.12000
24_2_129	MW-31	Appendix IV	Selenium	mg/l	6	0%	2021-10-18 to 2022-10-28	Nonparametric LCL around the Median	0.210
25_2_105	MW-32	Appendix IV	Arsenic	mg/l	6	83%	2021-10-15 to 2022-10-26	Nonparametric LCL around the Median	0.00
25_2_113	MW-32	Appendix IV	Cobalt	mg/l	1	100%	2022-07-25 to 2022-07-25	Nonparametric LCL around the Median	0.0001
25_2_118	MW-32	Appendix IV	Lithium	mg/l	6	0%	2021-10-15 to 2022-10-26	Nonparametric LCL around the Median	0.04400
25_2_129	MW-32	Appendix IV	Selenium	mg/l	6	0%	2021-10-15 to 2022-10-26	Nonparametric LCL around the Median	0.05000
26_2_105	MW-33A	Appendix IV	Arsenic	mg/l	6	67%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.00033
26_2_113	MW-33A	Appendix IV	Cobalt	mg/l	1	0%	2022-07-25 to 2022-07-25	Nonparametric LCL around the Median	0.000
26_2_118	MW-33A	Appendix IV	Lithium	mg/l	6	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.120000
26_2_129	MW-33A	Appendix IV	Selenium	mg/l	6	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.17000
27_2_105	MW-33B	Appendix IV	Arsenic	mg/l	6	0%	2021-10-20 to 2022-12-01	Nonparametric LCL around the Median	0.00420
27_2_113	MW-33B	Appendix IV	Cobalt	mg/l	1	0%	2022-07-26 to 2022-07-26	Nonparametric LCL around the Median	0.01400
27_2_118	MW-33B	Appendix IV	Lithium	mg/l	6	0%	2021-10-20 to 2022-12-01	Nonparametric LCL around the Median	0.09
27_2_129	MW-33B	Appendix IV	Selenium	mg/l	6	0%	2021-10-20 to 2022-12-01	Nonparametric LCL around the Median	0.00920
28_2_104	MW-34	Appendix IV	Antimony	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.002
28_2_105	MW-34	Appendix IV	Arsenic	mg/l	6	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.000840
28_2_106	MW-34	Appendix IV	Barium	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.04100
28_2_107	MW-34	Appendix IV	Beryllium	mg/l	3	67%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.00
28_2_109	MW-34	Appendix IV	Cadmium	mg/l	3	100%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.00006
28_2_112	MW-34	Appendix IV	Chromium, Total	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.001200
28_2_113	MW-34	Appendix IV	Cobalt	mg/l	4	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.00081
28_2_116	MW-34	Appendix IV	Fluoride (App IV)	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.57000
28_2_117	MW-34	Appendix IV	Lead	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.001
28_2_118	MW-34	Appendix IV	Lithium	mg/l	6	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.043000
28_2_120	MW-34	Appendix IV	Mercury	mg/l	3	100%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.000061
28_2_121	MW-34	Appendix IV	Molybdenum	mg/l	3	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.0100
28_2_127	MW-34	Appendix IV	Radium-226+228	pci/l	3	100%	2021-10-20 to 2022-11-03	Nonparametric LCL around the Median	0.61300
28_2_129	MW-34	Appendix IV	Selenium	mg/l	6	0%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.00
28_2_134	MW-34	Appendix IV	Thallium	mg/l	3	67%	2021-10-20 to 2022-10-27	Nonparametric LCL around the Median	0.00009
29_2_104	MW-35	Appendix IV	Antimony	mg/l	3	100%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.000
29_2_105	MW-35	Appendix IV	Arsenic	mg/l	6	33%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.000510
29_2_106	MW-35	Appendix IV	Barium	mg/l	3	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.0140
29_2_107	MW-35	Appendix IV	Beryllium	mg/l	3	100%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.00
29_2_109	MW-35	Appendix IV	Cadmium	mg/l	3	100%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.0002
29_2_112	MW-35	Appendix IV	Chromium, Total	mg/l	3	67%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.001300
29_2_113	MW-35	Appendix IV	Cobalt	mg/l	4	25%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.00045
29_2_116	MW-35	Appendix IV	Fluoride (App IV)	mg/l	3	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.5000

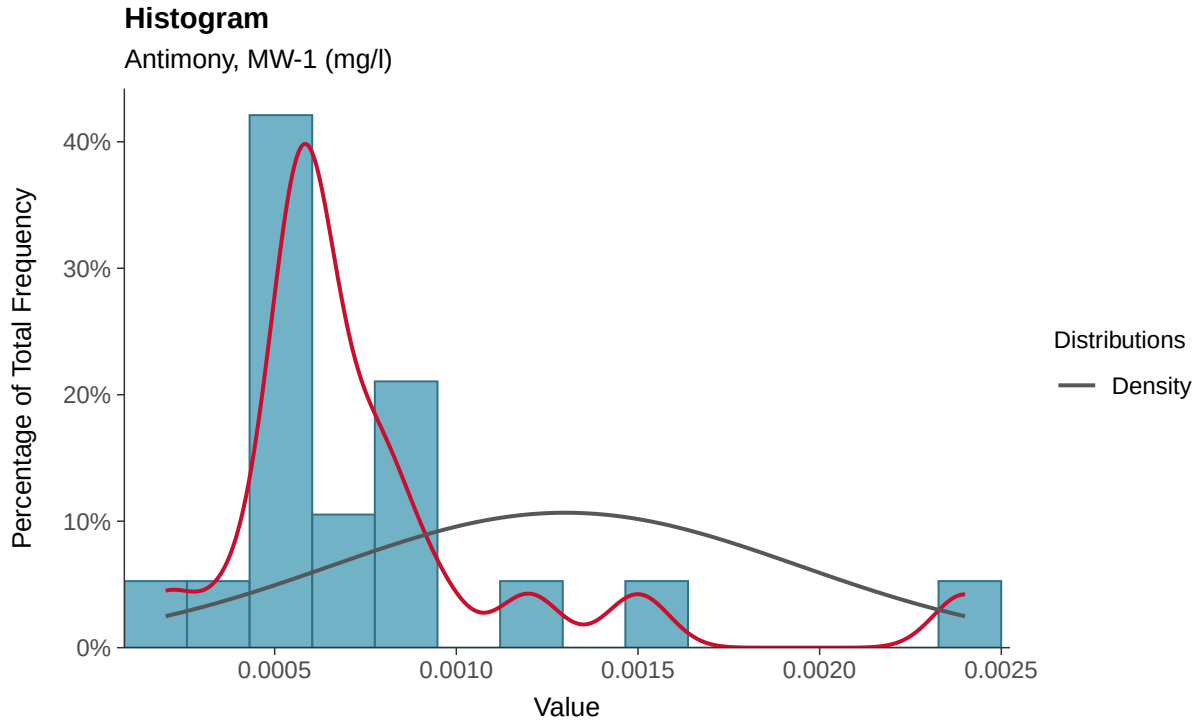
29_2_117	MW-35	Appendix IV	Lead	mg/l	3	33%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.000
29_2_118	MW-35	Appendix IV	Lithium	mg/l	6	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.150000
29_2_120	MW-35	Appendix IV	Mercury	mg/l	3	100%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.00006
29_2_121	MW-35	Appendix IV	Molybdenum	mg/l	3	33%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.0022
29_2_127	MW-35	Appendix IV	Radium-226+228	pci/l	3	0%	2021-10-15 to 2022-11-03	Nonparametric LCL around the Median	0.74500
29_2_129	MW-35	Appendix IV	Selenium	mg/l	6	0%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	1.50
29_2_134	MW-35	Appendix IV	Thallium	mg/l	3	100%	2021-10-15 to 2022-10-27	Nonparametric LCL around the Median	0.00009
30_2_104	MW-36	Appendix IV	Antimony	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.00
30_2_105	MW-36	Appendix IV	Arsenic	mg/l	3	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.000330
30_2_106	MW-36	Appendix IV	Barium	mg/l	2	0%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.01700
30_2_107	MW-36	Appendix IV	Beryllium	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.00
30_2_109	MW-36	Appendix IV	Cadmium	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.0
30_2_112	MW-36	Appendix IV	Chromium, Total	mg/l	2	50%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.000870
30_2_113	MW-36	Appendix IV	Cobalt	mg/l	3	33%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.00021
30_2_116	MW-36	Appendix IV	Fluoride (App IV)	mg/l	2	0%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.53000
30_2_117	MW-36	Appendix IV	Lead	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.00
30_2_118	MW-36	Appendix IV	Lithium	mg/l	3	0%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.1
30_2_120	MW-36	Appendix IV	Mercury	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.0001
30_2_121	MW-36	Appendix IV	Molybdenum	mg/l	2	50%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.0013
30_2_127	MW-36	Appendix IV	Radium-226+228	pci/l	2	0%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.75
30_2_129	MW-36	Appendix IV	Selenium	mg/l	3	33%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.0005
30_2_134	MW-36	Appendix IV	Thallium	mg/l	2	100%	2022-04-29 to 2022-10-21	Nonparametric LCL around the Median	0.00009
31_2_104	MW-37	Appendix IV	Antimony	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.00200
31_2_105	MW-37	Appendix IV	Arsenic	mg/l	2	0%	2022-07-26 to 2022-10-21	Nonparametric LCL around the Median	0.00
31_2_106	MW-37	Appendix IV	Barium	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.05
31_2_107	MW-37	Appendix IV	Beryllium	mg/l	1	100%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.00008
31_2_109	MW-37	Appendix IV	Cadmium	mg/l	1	100%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.000270
31_2_112	MW-37	Appendix IV	Chromium, Total	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.002
31_2_113	MW-37	Appendix IV	Cobalt	mg/l	2	0%	2022-07-26 to 2022-10-21	Nonparametric LCL around the Median	0.002
31_2_116	MW-37	Appendix IV	Fluoride (App IV)	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.79000
31_2_117	MW-37	Appendix IV	Lead	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.00092
31_2_118	MW-37	Appendix IV	Lithium	mg/l	2	0%	2022-07-26 to 2022-10-21	Nonparametric LCL around the Median	0.08
31_2_120	MW-37	Appendix IV	Mercury	mg/l	1	100%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.00
31_2_121	MW-37	Appendix IV	Molybdenum	mg/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.0075
31_2_127	MW-37	Appendix IV	Radium-226+228	pci/l	1	0%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	5.390
31_2_129	MW-37	Appendix IV	Selenium	mg/l	2	0%	2022-07-26 to 2022-10-21	Nonparametric LCL around the Median	0.190
31_2_134	MW-37	Appendix IV	Thallium	mg/l	1	100%	2022-10-21 to 2022-10-21	Nonparametric LCL around the Median	0.0001
32_2_105	MW-38B	Appendix IV	Arsenic	mg/l	2	0%	2022-07-28 to 2022-11-01	Nonparametric LCL around the Median	0.0017
32_2_113	MW-38B	Appendix IV	Cobalt	mg/l	1	0%	2022-07-28 to 2022-07-28	Nonparametric LCL around the Median	0.00320
32_2_118	MW-38B	Appendix IV	Lithium	mg/l	2	0%	2022-07-28 to 2022-11-01	Nonparametric LCL around the Median	0.040
32_2_129	MW-38B	Appendix IV	Selenium	mg/l	2	0%	2022-07-28 to 2022-11-01	Nonparametric LCL around the Median	0.017000
33_2_105	MW-38C	Appendix IV	Arsenic	mg/l	2	0%	2022-07-28 to 2022-10-31	Nonparametric LCL around the Median	0.000520
33_2_113	MW-38C	Appendix IV	Cobalt	mg/l	1	0%	2022-07-28 to 2022-07-28	Nonparametric LCL around the Median	0.0005
33_2_118	MW-38C	Appendix IV	Lithium	mg/l	2	0%	2022-07-28 to 2022-10-31	Nonparametric LCL around the Median	0.03400
33_2_129	MW-38C	Appendix IV	Selenium	mg/l	2	0%	2022-07-28 to 2022-10-31	Nonparametric LCL around the Median	0.09
34_2_104	MW-4	Appendix IV	Antimony	mg/l	20	60%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	0.00041
34_2_105	MW-4	Appendix IV	Arsenic	mg/l	21	0%	2015-12-09 to 2022-10-04	Adjusted Gamma LCL	0.007
34_2_106	MW-4	Appendix IV	Barium	mg/l	21	0%	2015-12-09 to 2022-10-04	Lognormal H-LCL	0.031505
34_2_107	MW-4	Appendix IV	Beryllium	mg/l	19	74%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	0.000
34_2_109	MW-4	Appendix IV	Cadmium	mg/l	20	60%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	0.00
34_2_112	MW-4	Appendix IV	Chromium, Total	mg/l	21	5%	2015-12-09 to 2022-10-04	Gamma MLE Bootstrap. LCL	0.0049
34_2_113	MW-4	Appendix IV	Cobalt	mg/l	21	0%	2015-12-09 to 2022-10-04	Adjusted Gamma LCL	0.002570
34_2_116	MW-4	Appendix IV	Fluoride (App IV)	mg/l	21	10%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	3.40000
34_2_117	MW-4	Appendix IV	Lead	mg/l	21	5%	2015-12-09 to 2022-10-04	Lognormal MLE Likelihood Profile LCL	0.00214
34_2_118	MW-4	Appendix IV	Lithium	mg/l	21	0%	2015-12-09 to 2022-10-04	Lognormal H-LCL	0.205
34_2_120	MW-4	Appendix IV	Mercury	mg/l	17	100%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	0.000027
34_2_121	MW-4	Appendix IV	Molybdenum	mg/l	21	0%	2015-12-09 to 2022-10-04	Adjusted Gamma LCL	0.01497
34_2_127	MW-4	Appendix IV	Radium-226+228	pci/l	21	14%	2015-12-09 to 2022-10-04	Lognormal MLE Likelihood Profile LCL	1.2964
34_2_129	MW-4	Appendix IV	Selenium	mg/l	21	0%	2015-12-09 to 2022-10-04	Adjusted Gamma LCL	0.22890
34_2_134	MW-4	Appendix IV	Thallium	mg/l	19	79%	2015-12-09 to 2022-10-04	Nonparametric LCL around the Median	0.00
35_2_104	MW-5	Appendix IV	Antimony	mg/l	10	70%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.00057
35_2_105	MW-5	Appendix IV	Arsenic	mg/l	10	60%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.00
35_2_106	MW-5	Appendix IV	Barium	mg/l	10	0%	2018-08-13 to 2022-12-15	Adjusted Gamma LCL	0.016614
35_2_107	MW-5	Appendix IV	Beryllium	mg/l	9	78%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.0003
35_2_109	MW-5	Appendix IV	Cadmium	mg/l	10	100%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.00
35_2_112	MW-5	Appendix IV	Chromium, Total	mg/l	10	40%	2018-08-13 to 2022-12-15	Gamma MLE Bootstrap. LCL	0.0
35_2_113	MW-5	Appendix IV	Cobalt	mg/l	10	20%	2018-08-13 to 2022-12-15	Gamma MLE Bootstrap. LCL	0.000362
35_2_116	MW-5	Appendix IV	Fluoride (App IV)	mg/l	10	0%	2018-08-13 to 2022-12-15	Adjusted Gamma LCL	0.28532
35_2_117	MW-5	Appendix IV	Lead	mg/l	10	40%	2018-08-13 to 2022-12-15	Lognormal MLE Likelihood Profile LCL	0.00042
35_2_118	MW-5	Appendix IV	Lithium	mg/l	10	0%	2018-08-13 to 2022-12-15	Adjusted Gamma LCL	0.054
35_2_120	MW-5	Appendix IV	Mercury	mg/l	7	100%	2018-11-29 to 2022-12-15	Nonparametric LCL around the Median	0.000061
35_2_121	MW-5	Appendix IV	Molybdenum	mg/l	10	0%	2018-08-13 to 2022-12-15	Adjusted Gamma LCL	0.00314
35_2_127	MW-5	Appendix IV	Radium-226+228	pci/l	5	0%	2018-11-29 to 2022-05-09	Nonparametric LCL around the Median	0.43700
35_2_129	MW-5	Appendix IV	Selenium	mg/l	10	0%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.00370
35_2_134	MW-5	Appendix IV	Thallium	mg/l	9	89%	2018-08-13 to 2022-12-15	Nonparametric LCL around the Median	0.00
36_2_104	MW-6	Appendix IV	Antimony	mg/l	20	75%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.00046
36_2_105	MW-6	Appendix IV	Arsenic	mg/l	21	29%	2015-12-14 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.002
36_2_106	MW-6	Appendix IV	Barium	mg/l	21	0%	2015-12-14 to 2022-10-05	Lognormal H-LCL	0.056339
36_2_107	MW-6	Appendix IV	Beryllium	mg/l	19	74%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.0003
36_2_109	MW-6	Appendix IV	Cadmium	mg/l	20	45%	2015-12-14 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00
36_2_112	MW-6	Appendix IV	Chromium, Total	mg/l	21	14%	2015-12-14 to 2022-10-05	Lognormal MLE Likelihood Profile LCL	0.00649
36_2_113	MW-6	Appendix IV	Cobalt	mg/l	21	0%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.000890
36_2_116	MW-6	Appendix IV	Fluoride (App IV)	mg/l	21	38%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.1300
36_2_117	MW-6	Appendix IV	Lead	mg/l	21	5%	2015-12-14 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.0032
36_2_118	MW-6	Appendix IV	Lithium	mg/l	21	0%	2015-12-14 to 2022-10-05	Adjusted Gamma LCL	0.060
36_2_120	MW-6	Appendix IV	Mercury	mg/l	17	94%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.000027
36_2_121	MW-6	Appendix IV	Molybdenum	mg/l	21	5%	2015-12-14 to 2022-10-05	Gamma MLE Bootstrap. LCL	0.00186
36_2_127	MW-6	Appendix IV	Radium-226+228	pci/l	20	10%	2015-12-14 to 2022-10-05	Gamma MLE Bootstrap. LCL	1.0469
36_2_129	MW-6	Appendix IV	Selenium	mg/l	21	0%	2015-12-14 to 2022-10-05	Adjusted Gamma LCL	0.0147
36_2_134	MW-6	Appendix IV	Thallium	mg/l	19	84%	2015-12-14 to 2022-10-05	Nonparametric LCL around the Median	0.00
37_2_104	MW-8	Appendix IV	Antimony	mg/l	19	68%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.00043
37_2_105	MW-8	Appendix IV	Arsenic	mg/l	21	29%	2015-12-14 to 2022-12-15	Gamma MLE Bootstrap. LCL	0.001
37_2_106	MW-8	Appendix IV	Barium	mg/l	21	0%	2015-12-14 to 2022-12-15	Adjusted Gamma LCL	0.031005
37_2_107	MW-8	Appendix IV	Beryllium	mg/l	19	74%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.0003
37_2_109	MW-8	Appendix IV	Cadmium	mg/l	20	60%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.0
37_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	21	10%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.00
37_2_113	MW-8	Appendix IV	Cobalt	mg/l	21	0%	2015-12-14 to 2022-12-15	Lognormal H-LCL	0.001884
37_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	20	45%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.0850
37_2_117	MW-8	Appendix IV	Lead	mg/l	21	5%	2015-12-14 to 2022-12-15	Gamma MLE Bootstrap. LCL	0.0018
37_2_118	MW-8	Appendix IV	Lithium	mg/l	21	0%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.110
37_2_120	MW-8	Appendix IV	Mercury	mg/l	17	94%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.000
37_2_121	MW-8	Appendix IV	Molybdenum	mg/l	21	43%	2015-12-14 to 2022-12-15	Gamma MLE Bootstrap. LCL	0.00081
37_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	20	0%	2015-12-14 to 2022-04-28	Nonparametric LCL around the Median	1.37000
37_2_129	MW-8	Appendix IV	Selenium	mg/l	21	0%	2015-12-14 to 2022-12-15	Adjusted Gamma LCL	0.009
37_2_134	MW-8	Appendix IV	Thallium	mg/l	18	83%	2015-12-14 to 2022-12-15	Nonparametric LCL around the Median	0.000

* UTLs developed from March 2016 to May 2022 background samples from well MW-05 and MW-07

Appendix IV: Antimony, MW-1

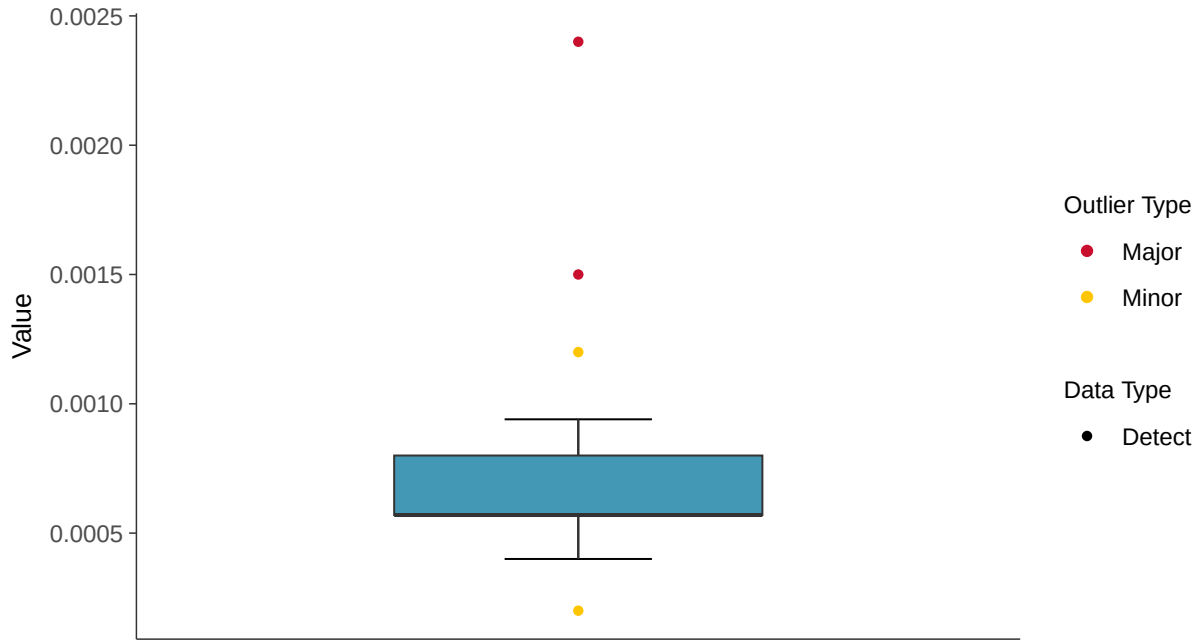
ID: 11_2_104





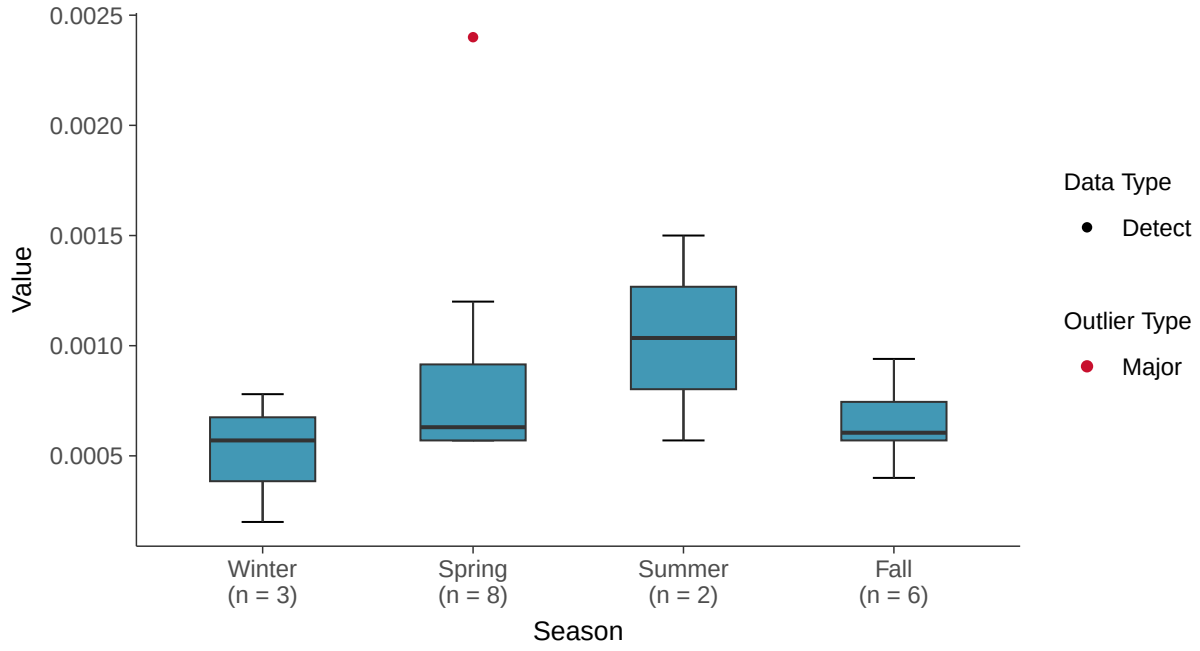
Boxplot

Antimony, MW-1 (mg/l)



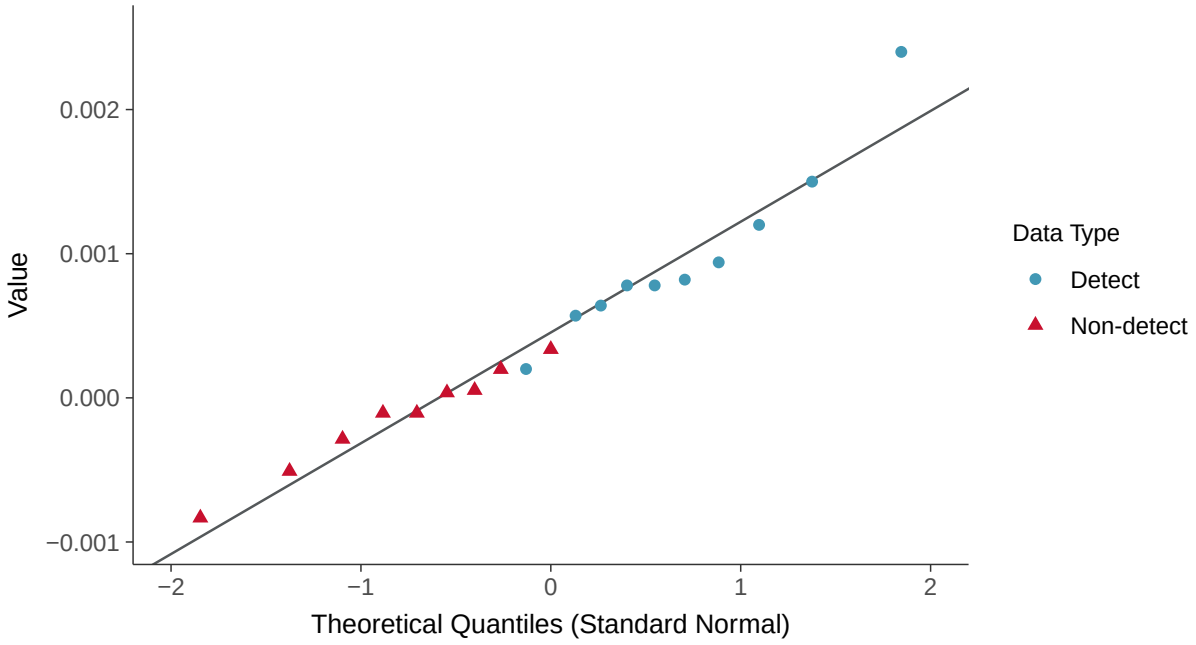
Boxplot by Season

Antimony, MW-1 (mg/l)



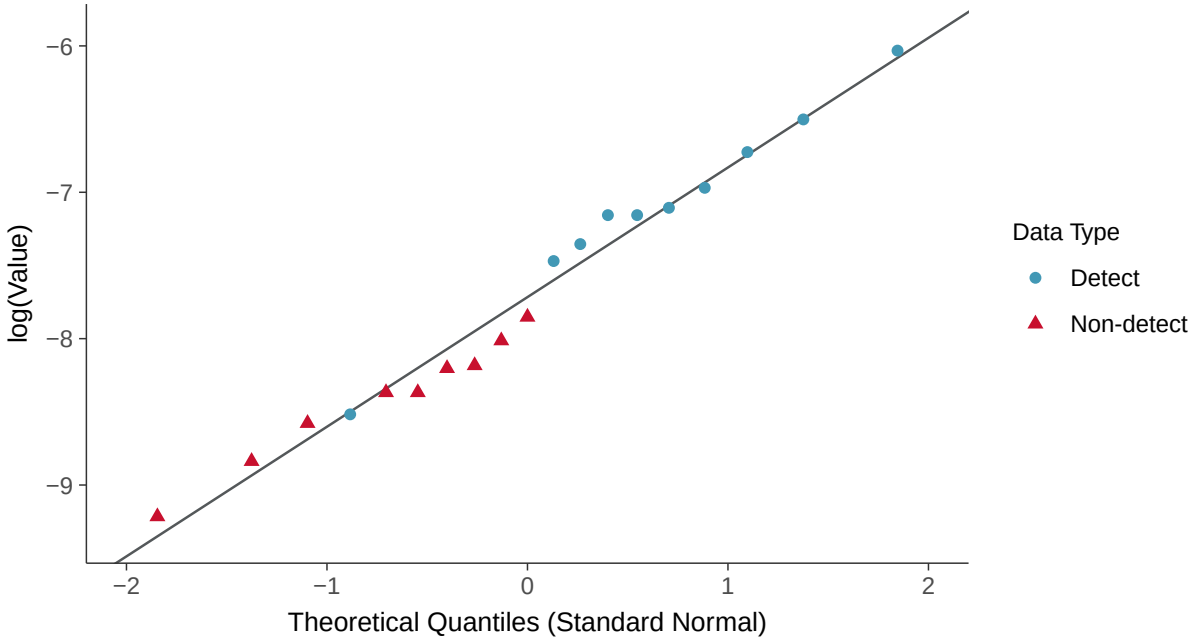
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-1 (mg/l)



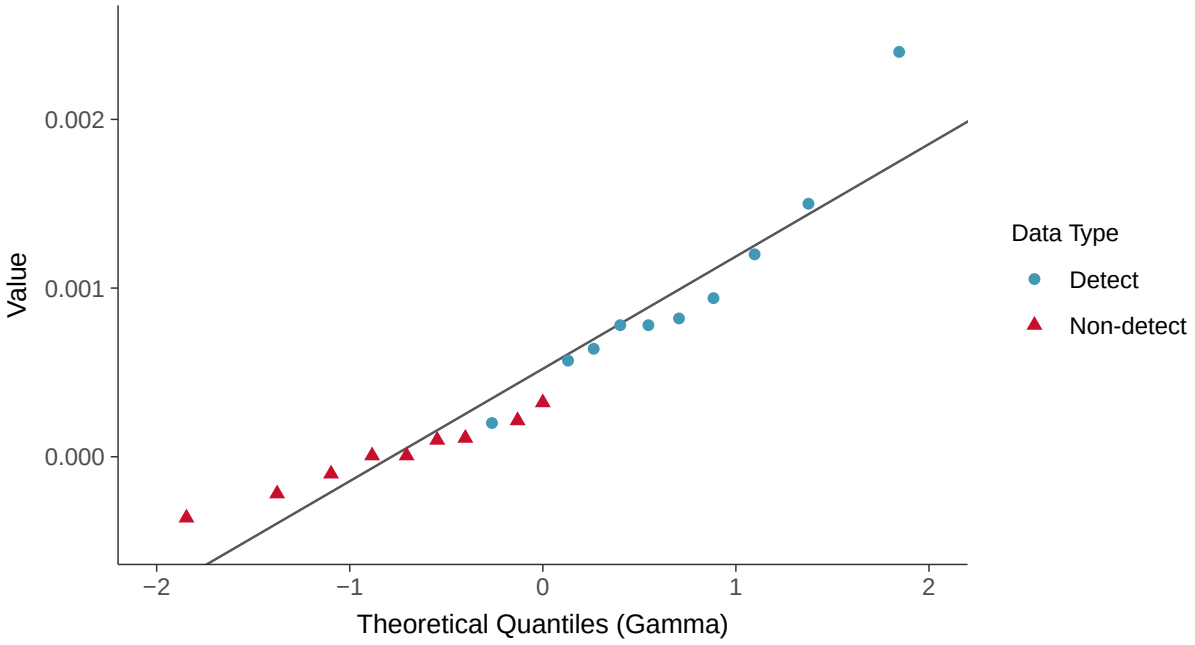
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-1 (mg/l)



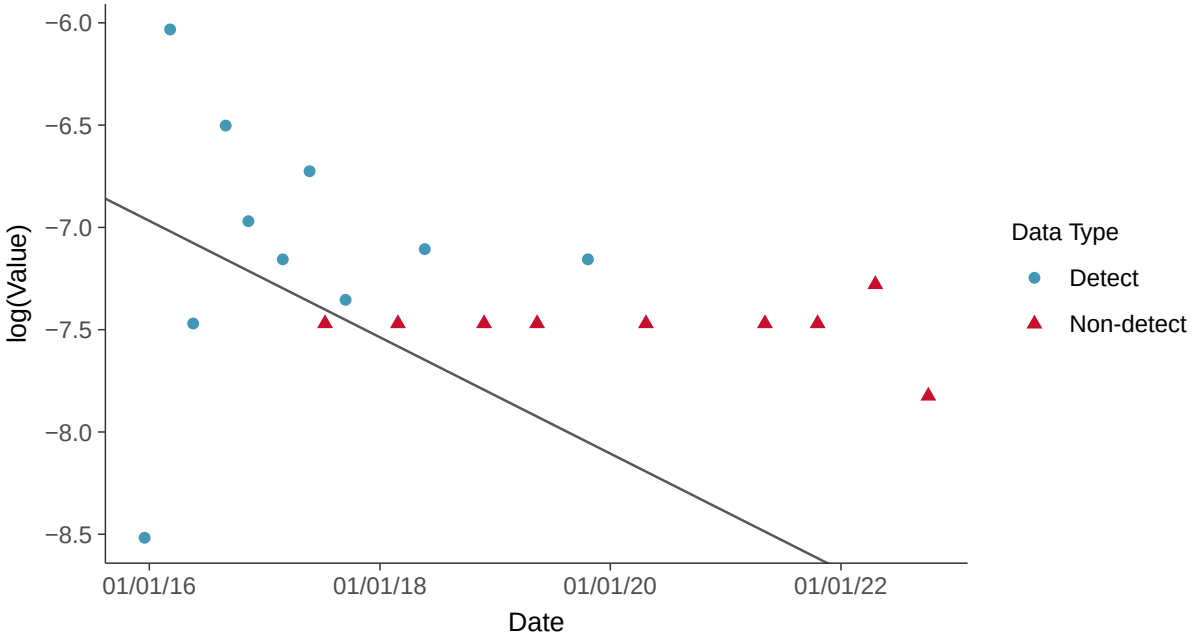
Gamma Q-Q plot using ROS Imputed Estimates

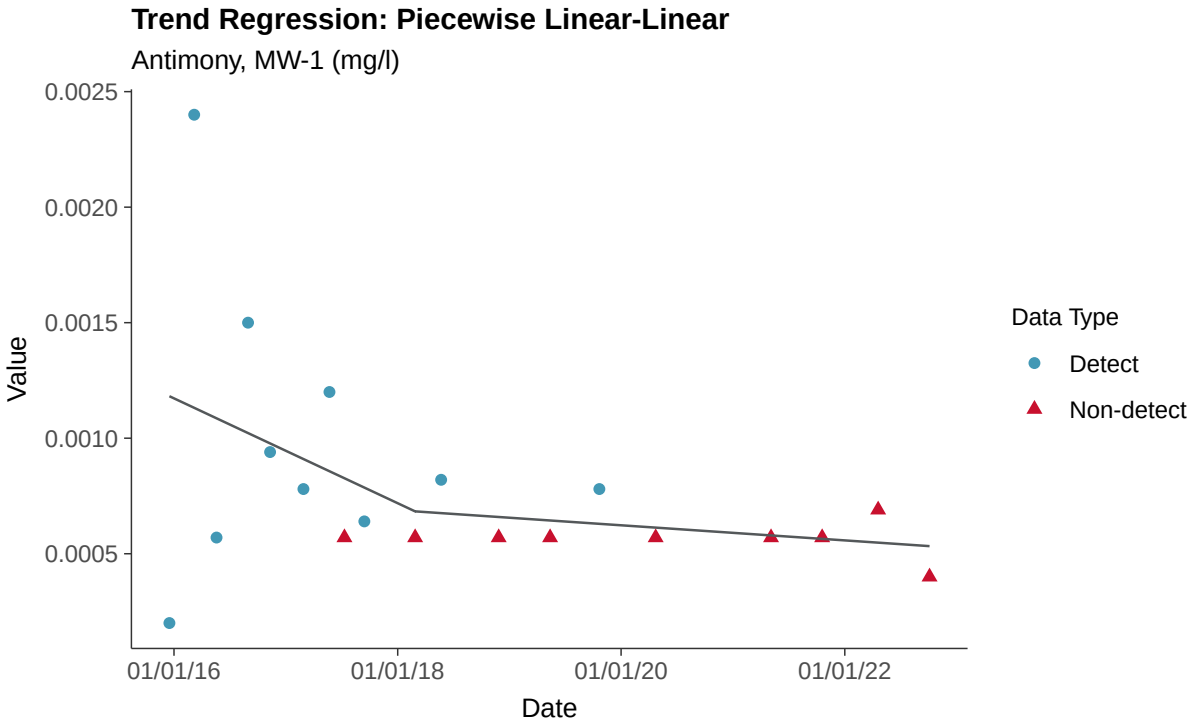
Antimony, MW-1 (mg/l)



Trend Regression: Lognormal MLE

Antimony, MW-1 (mg/l)



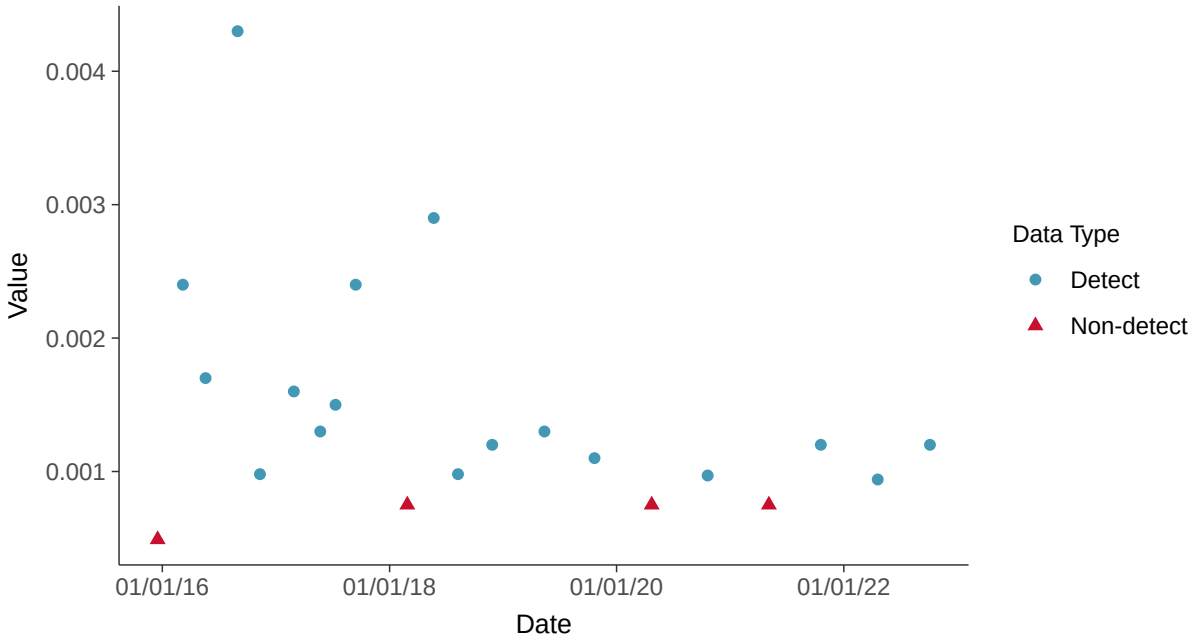

Trend Regression: Piecewise Linear-Linear
Antimony, MW-1 (mg/l)
Value
0.0025
0.0020
0.0015
0.0010
0.0005
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-1

ID: 11_2_105

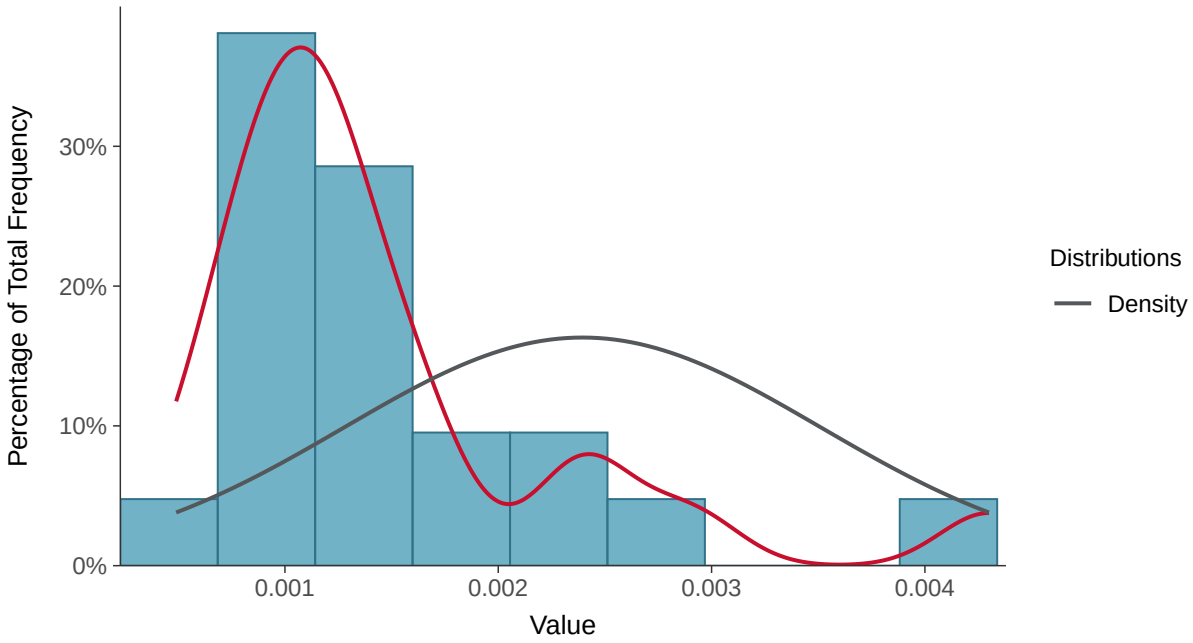
Scatter Plot

Arsenic, MW-1 (mg/l)



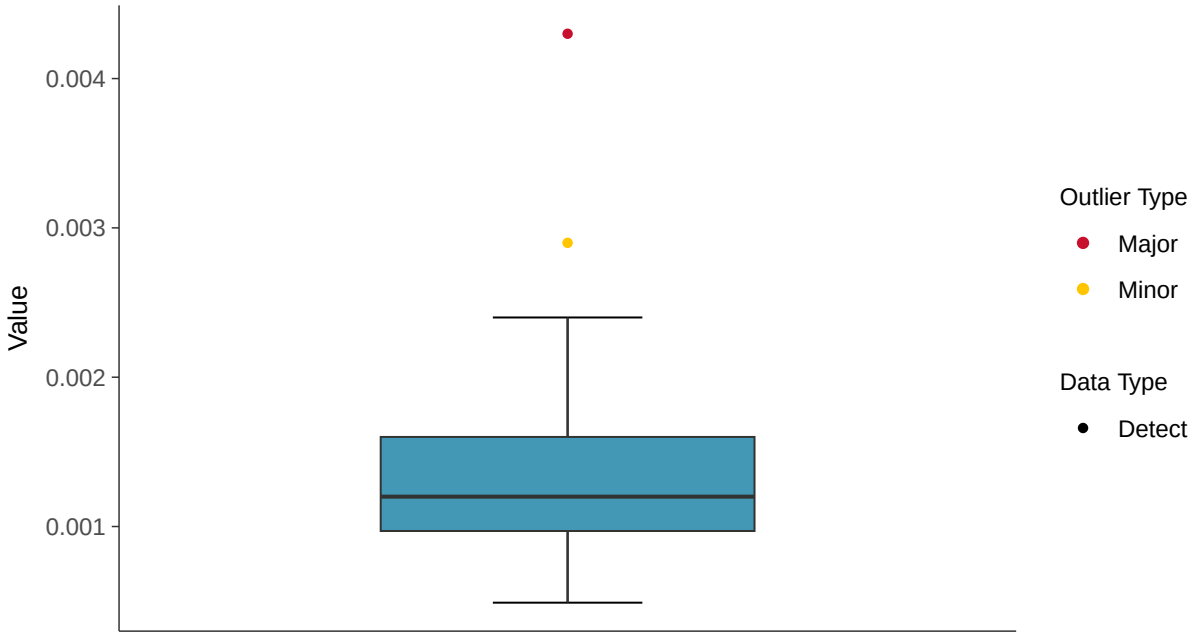
Histogram

Arsenic, MW-1 (mg/l)



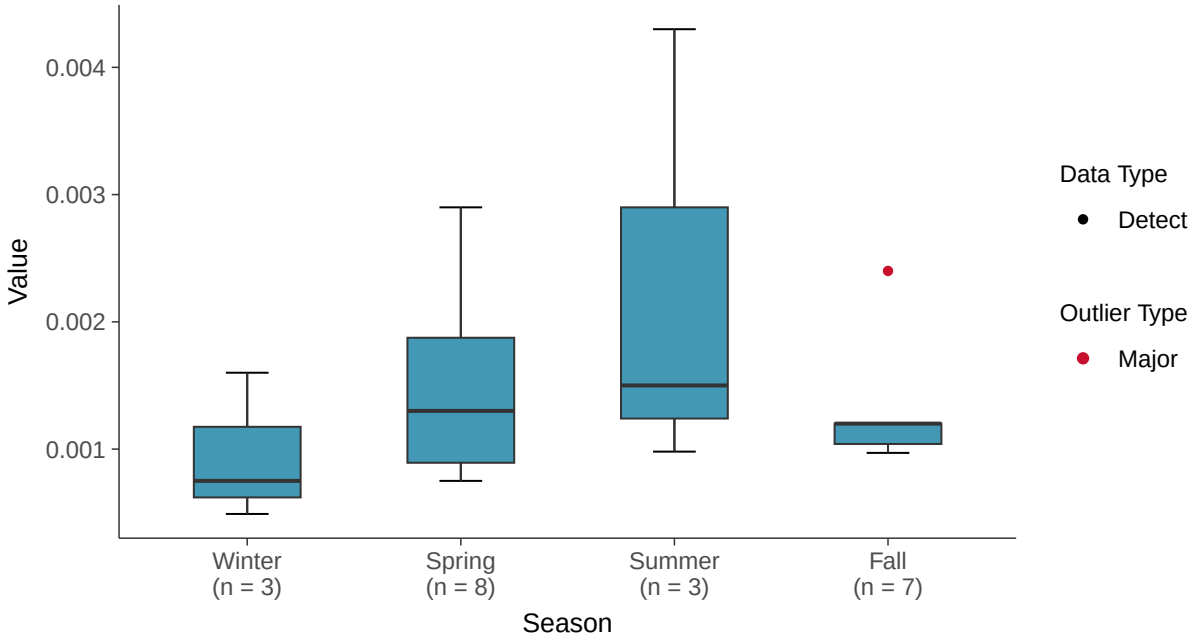
Boxplot

Arsenic, MW-1 (mg/l)



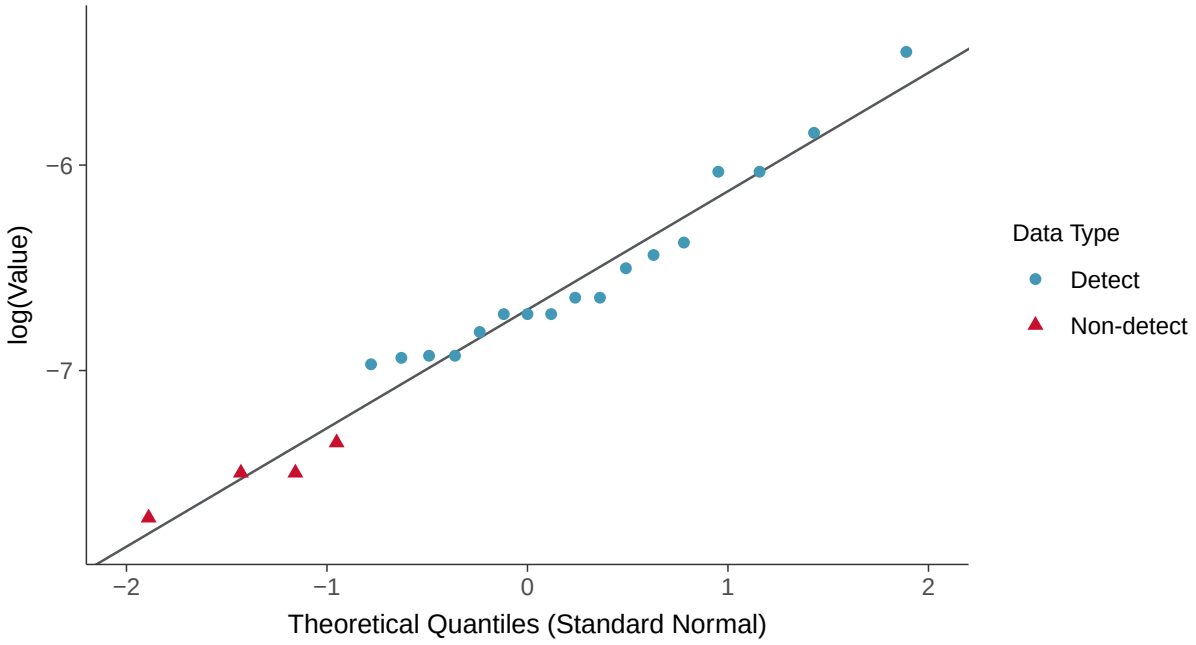
Boxplot by Season

Arsenic, MW-1 (mg/l)



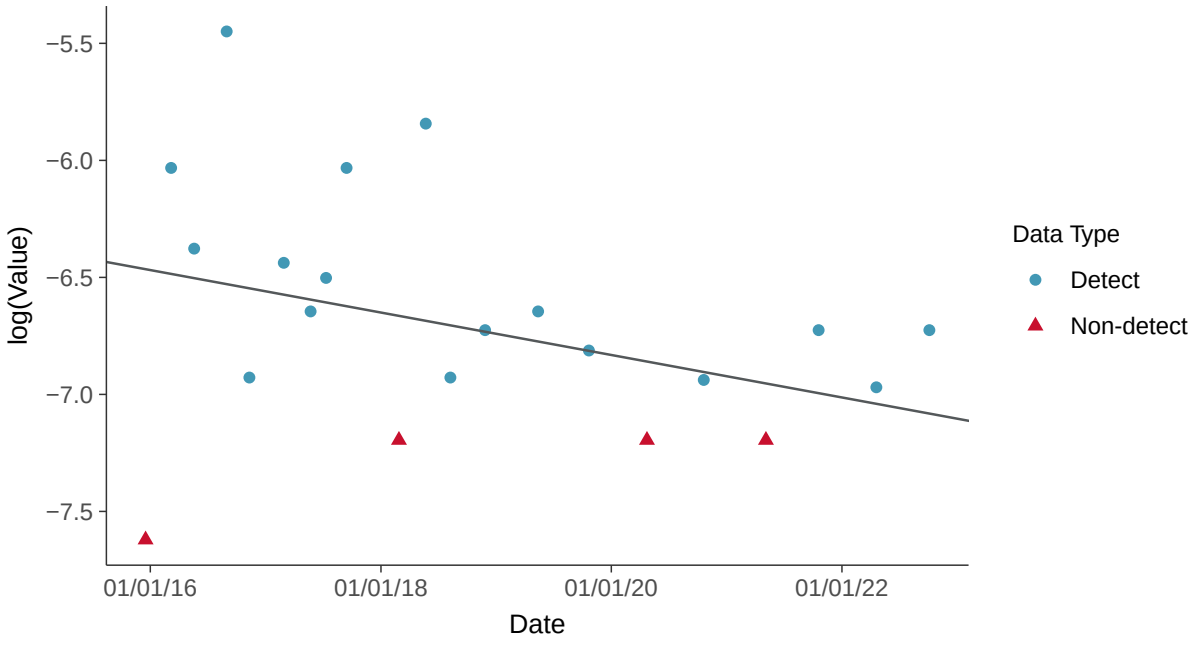
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-1 (mg/l)



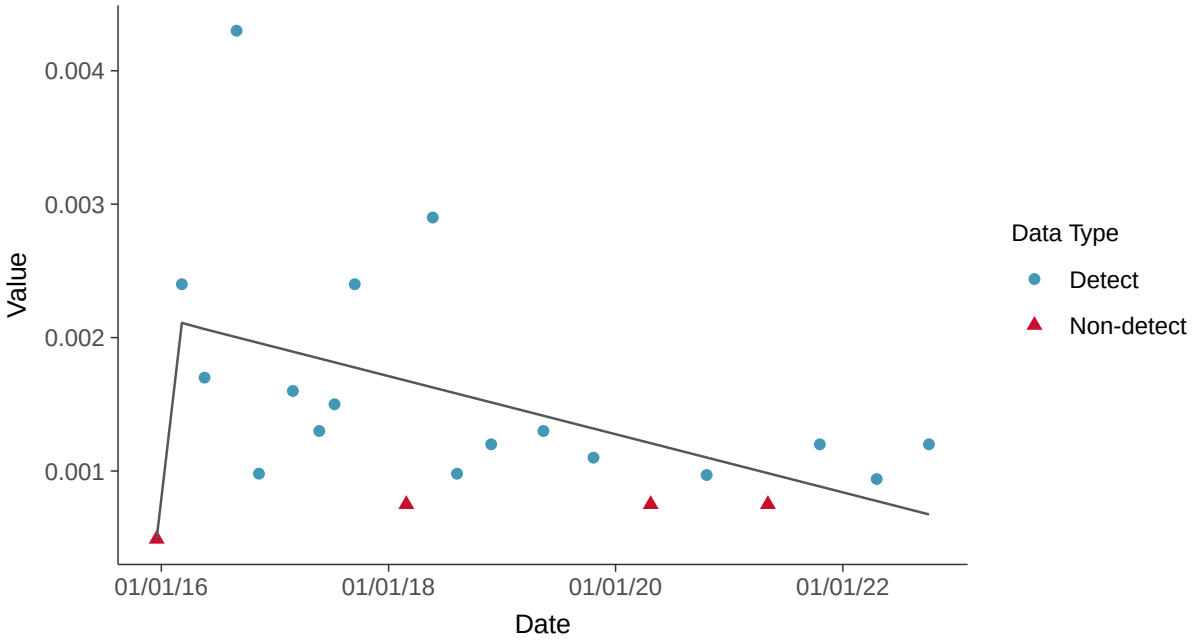
Trend Regression: Lognormal MLE

Arsenic, MW-1 (mg/l)



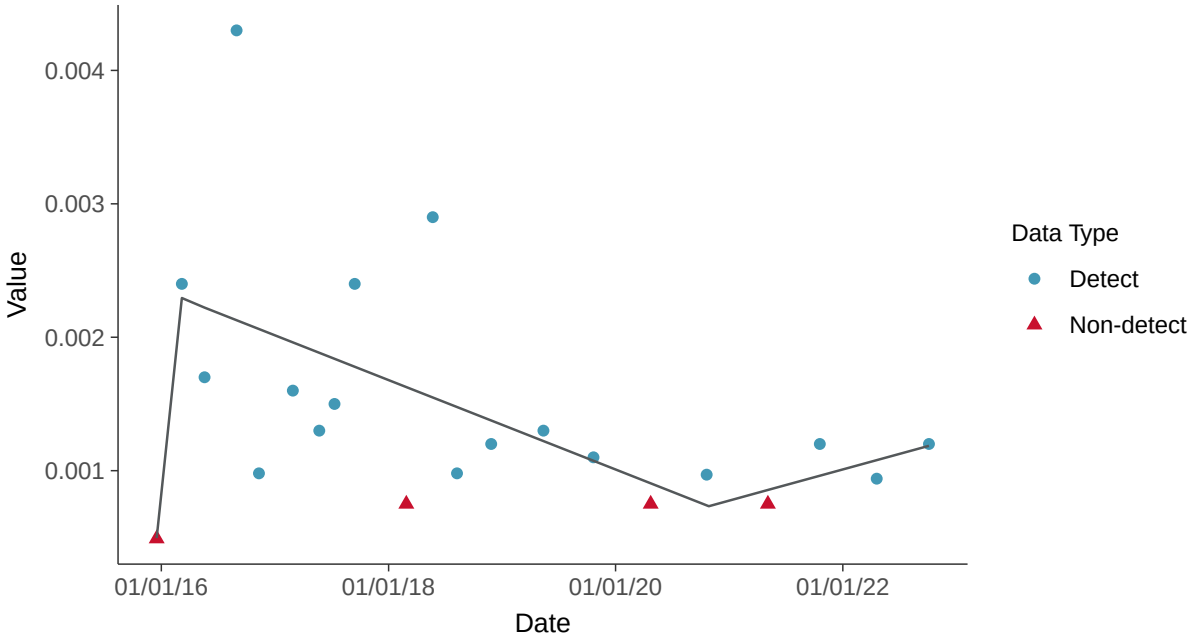
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-1 (mg/l)



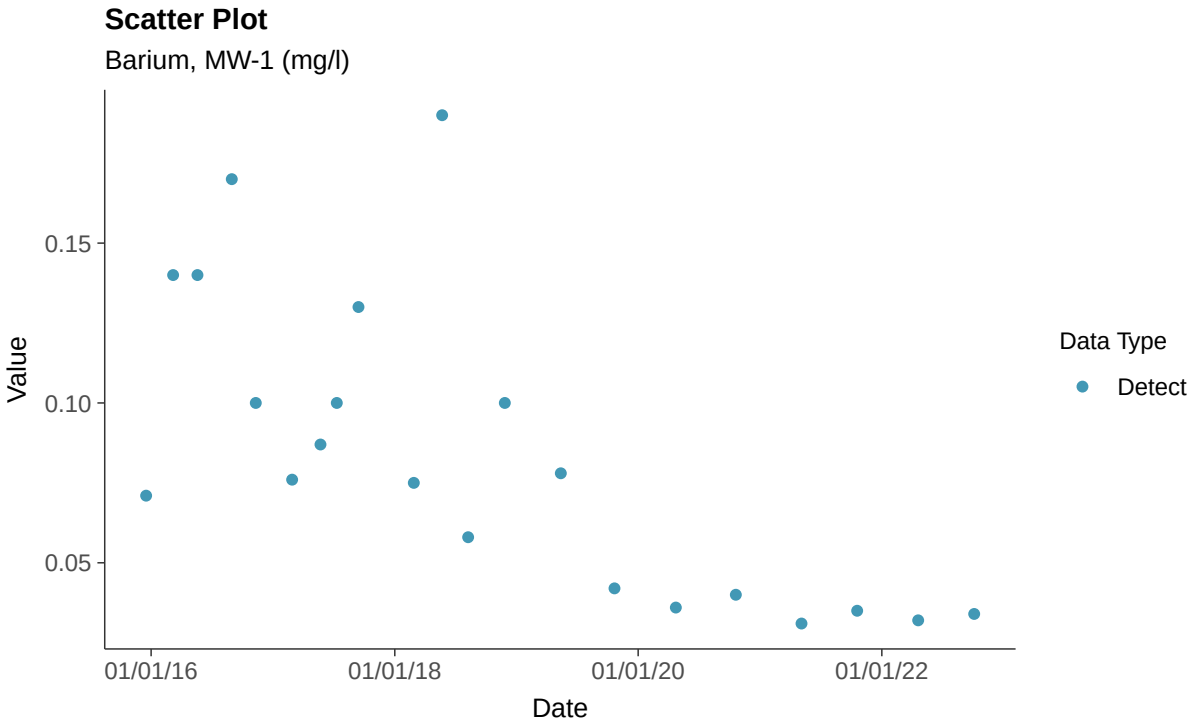
Trend Regression: Piecewise Linear-Linear-Linear

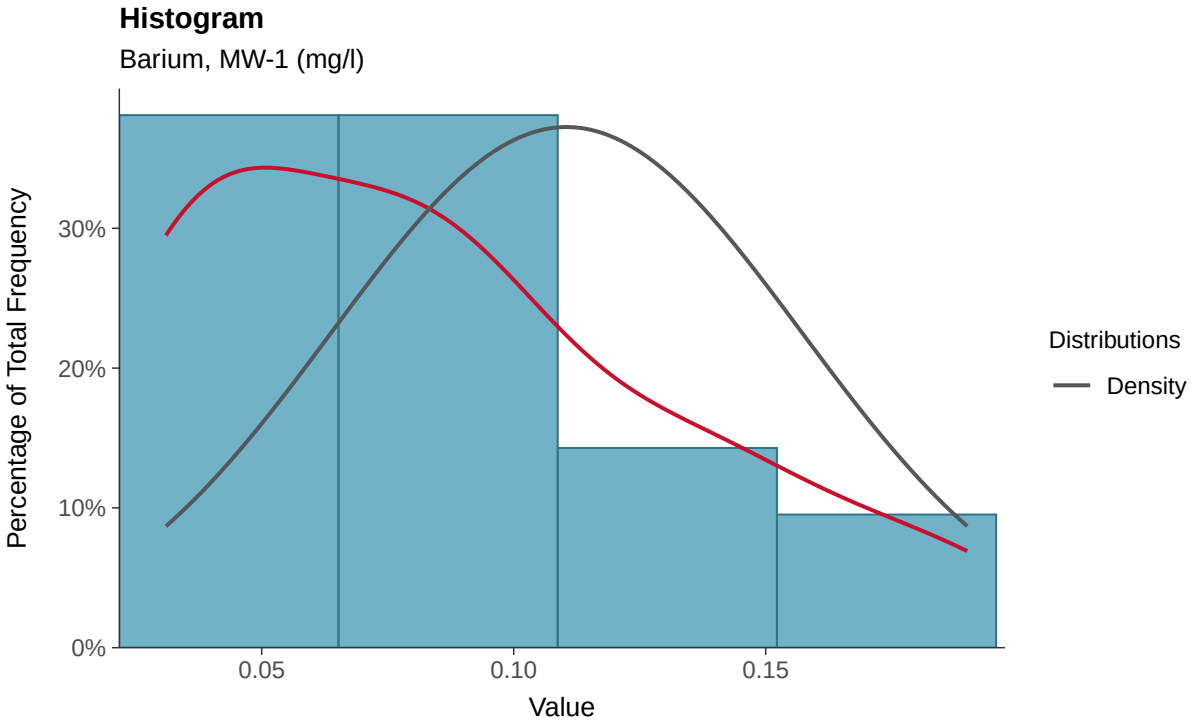
Arsenic, MW-1 (mg/l)



Appendix IV: Barium, MW-1

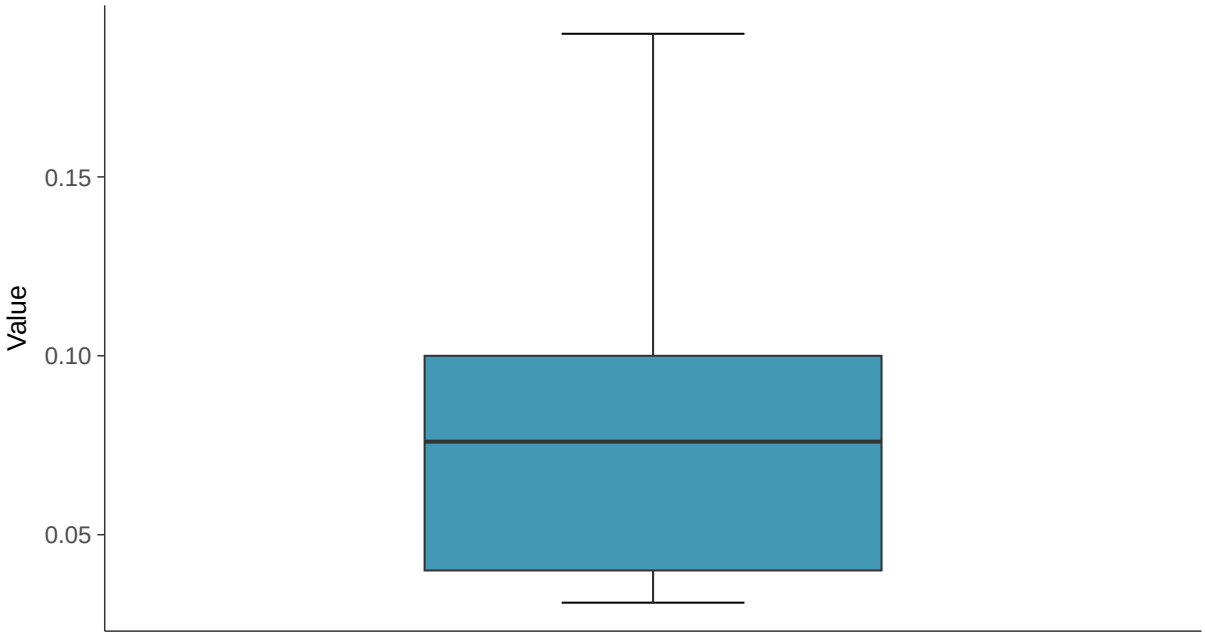
ID: 11_2_106





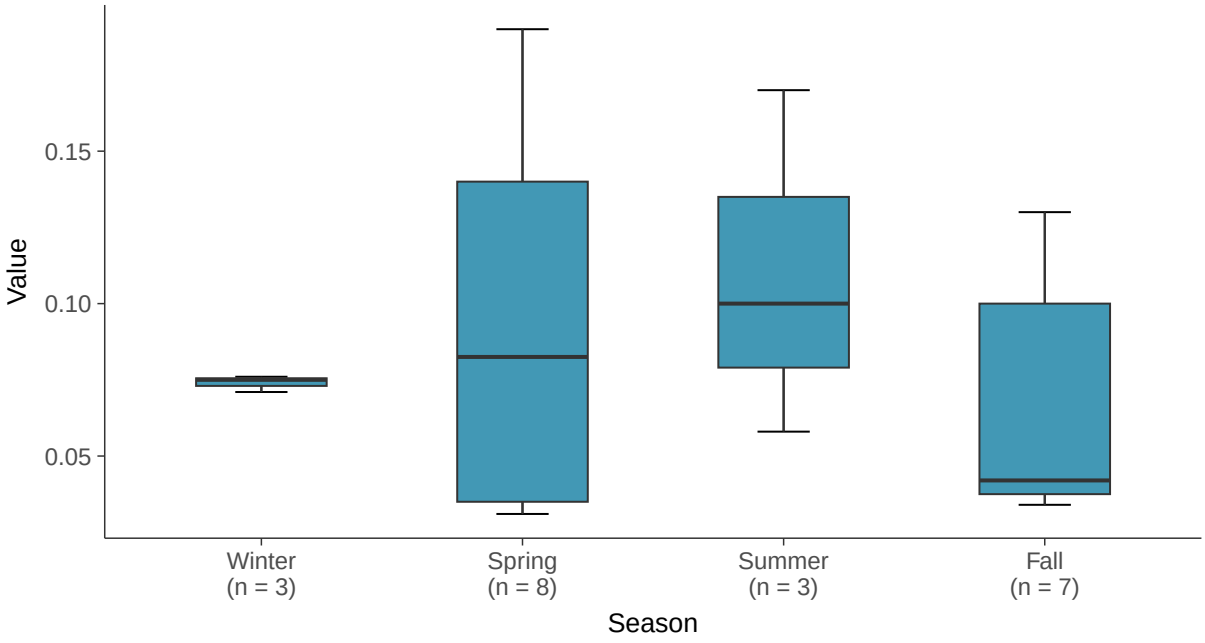
Boxplot

Barium, MW-1 (mg/l)



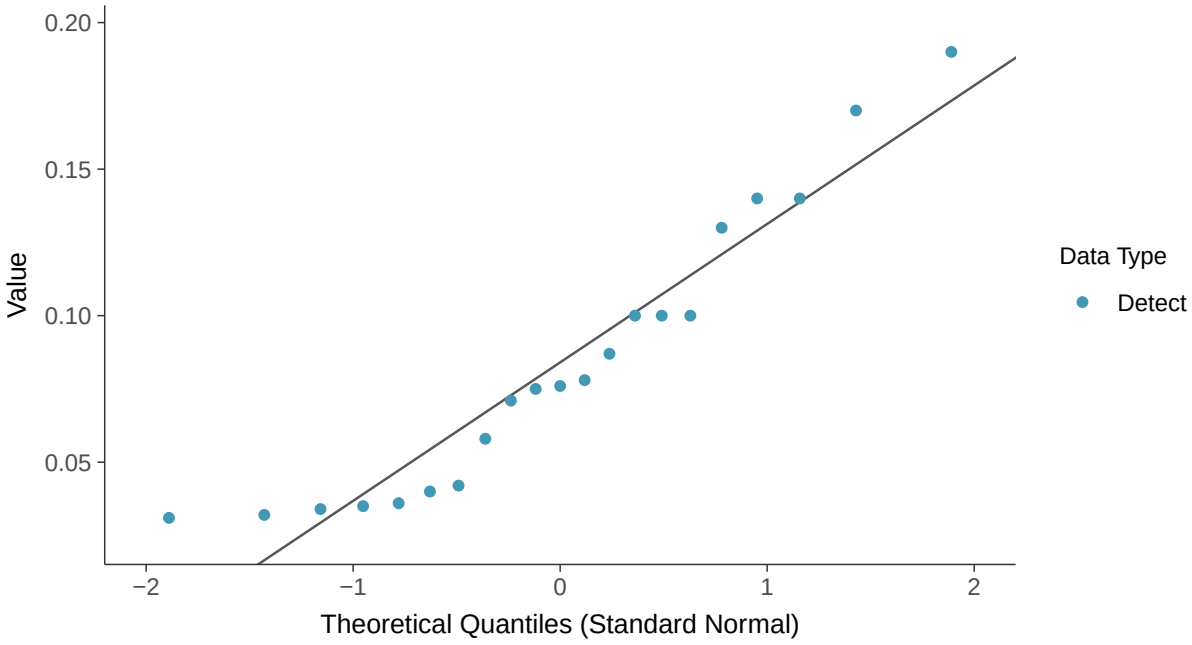
Boxplot by Season

Barium, MW-1 (mg/l)



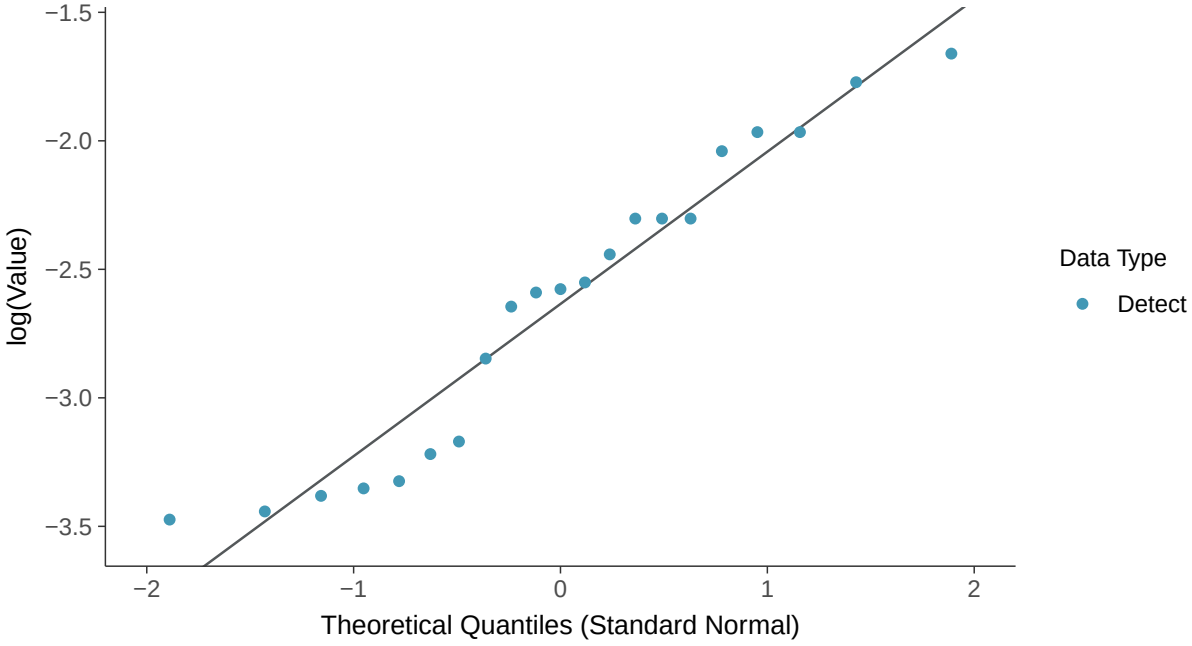
Normal Q-Q plot

Barium, MW-1 (mg/l)



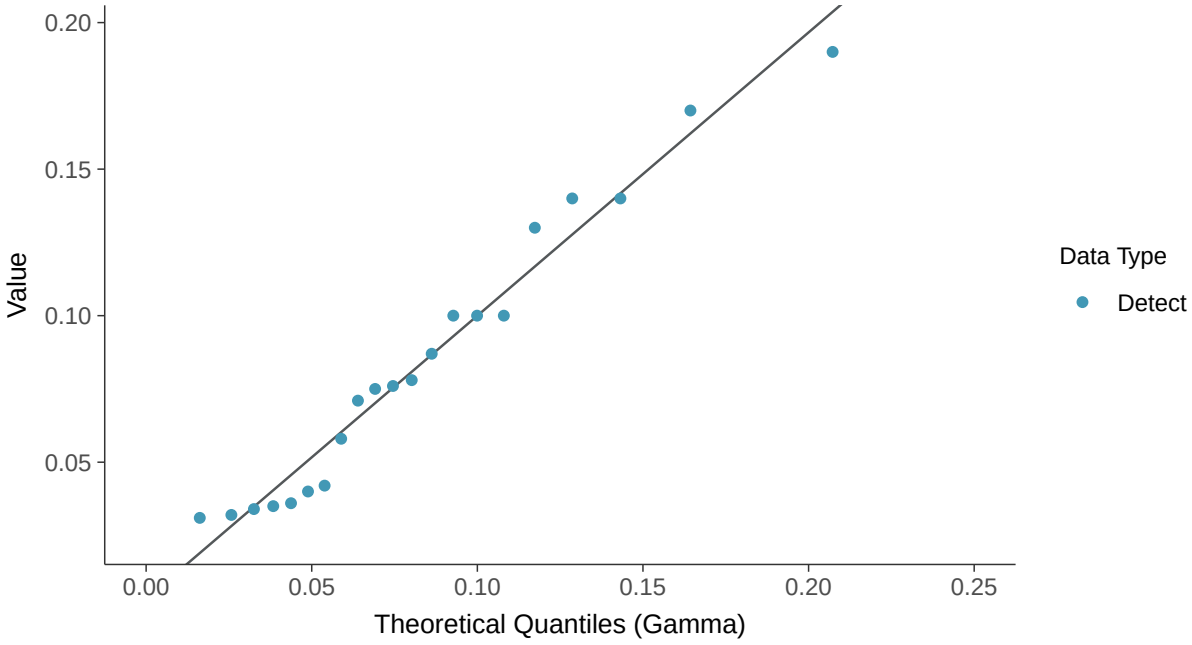
Lognormal Q-Q plot

Barium, MW-1 (mg/l)



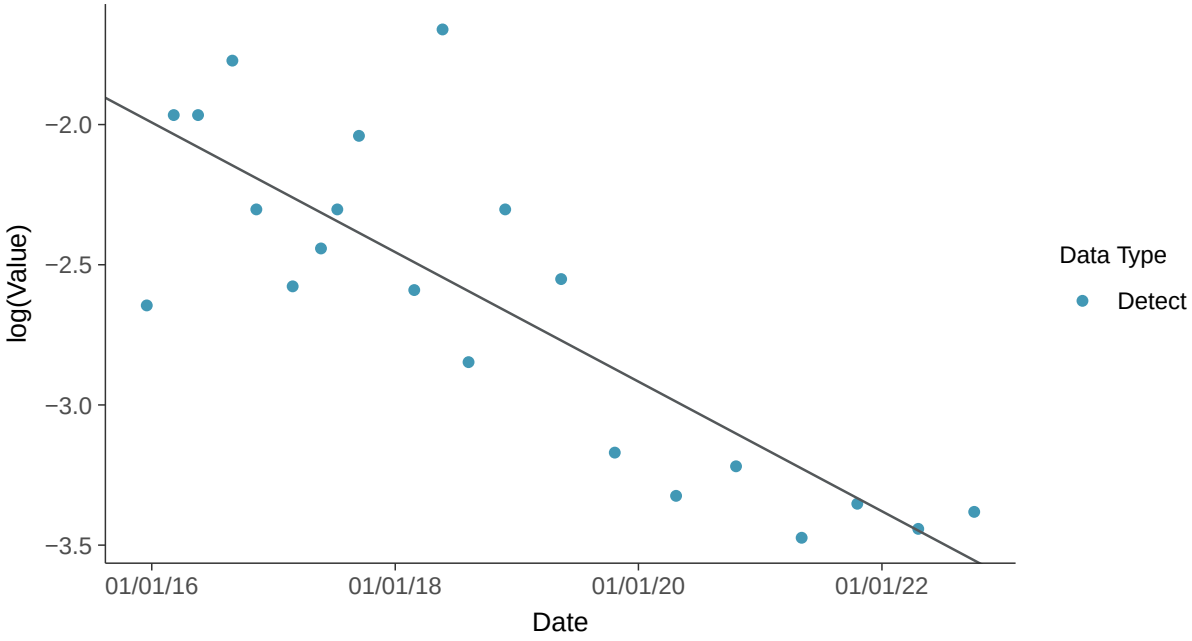
Gamma Q-Q plot

Barium, MW-1 (mg/l)



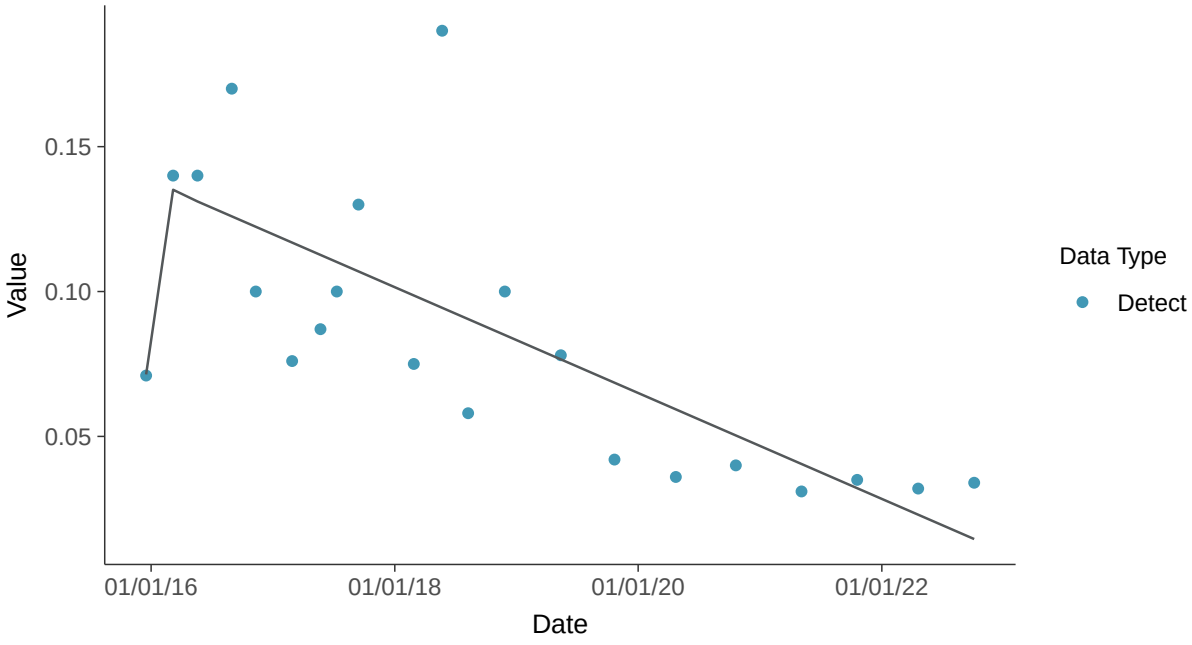
Trend Regression: Lognormal MLE

Barium, MW-1 (mg/l)



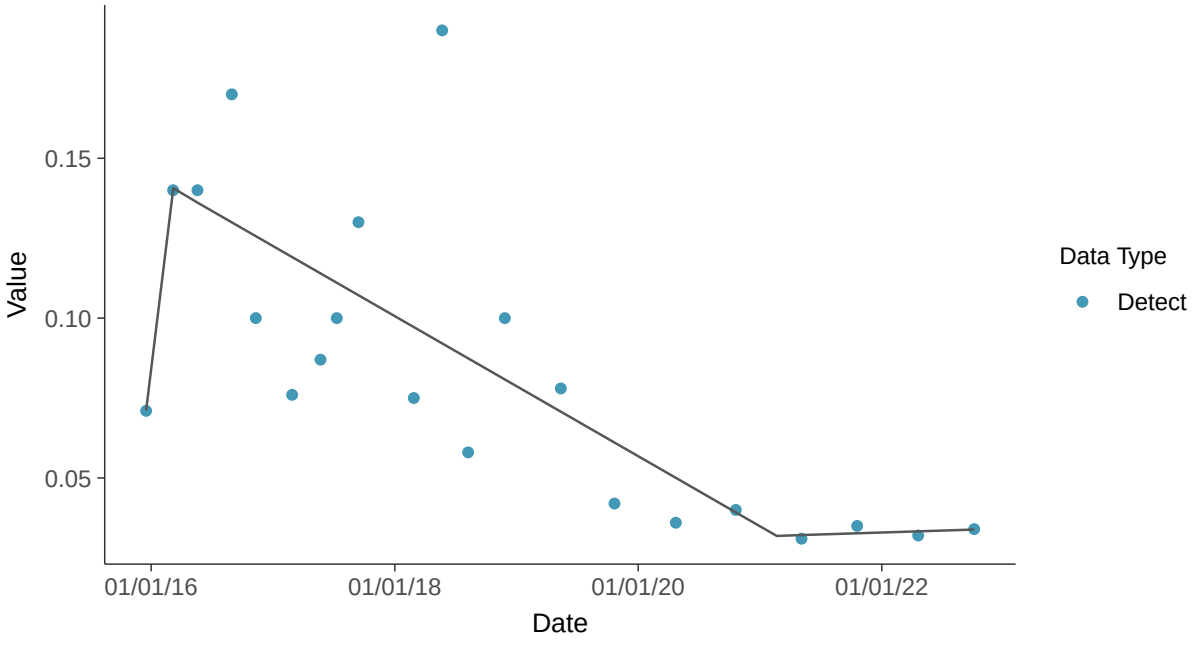
Trend Regression: Piecewise Linear-Linear

Barium, MW-1 (mg/l)



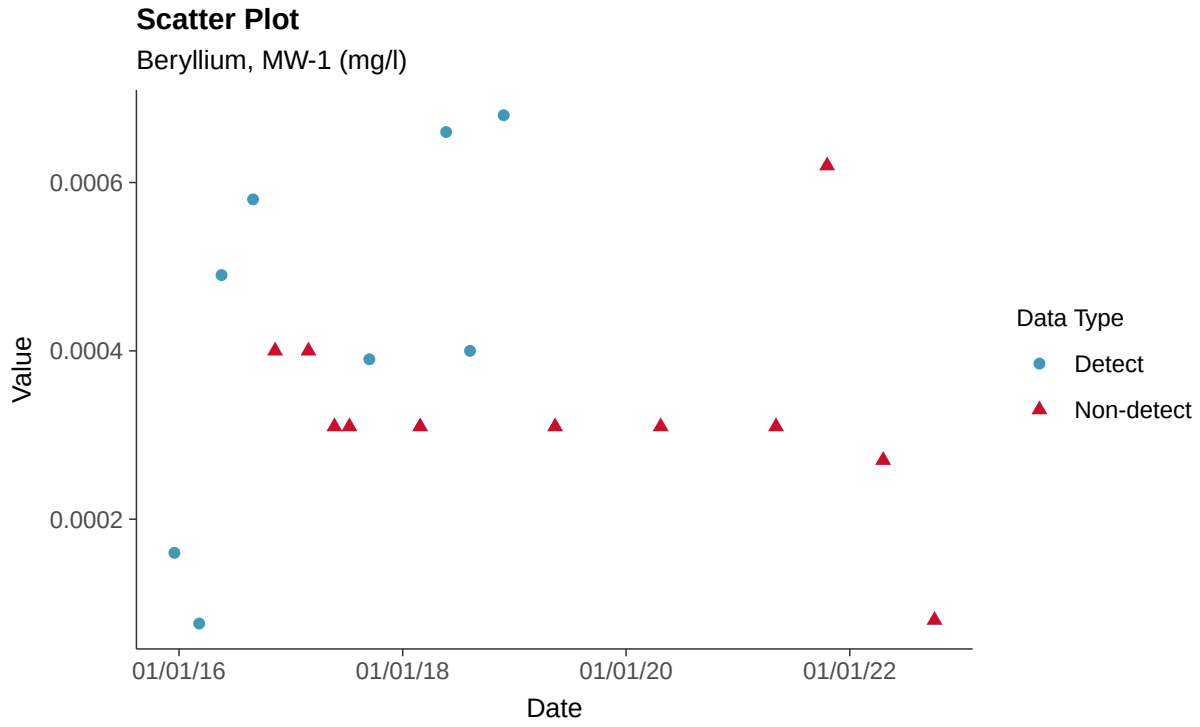
Trend Regression: Piecewise Linear-Linear-Linear

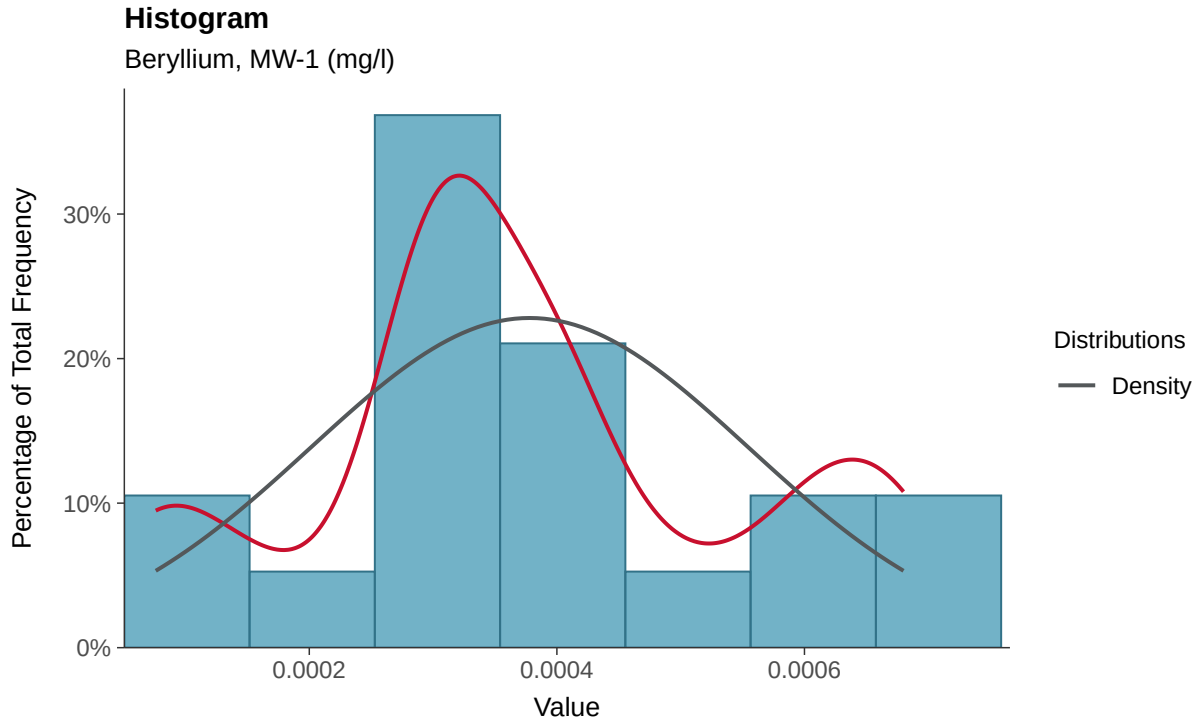
Barium, MW-1 (mg/l)



Appendix IV: Beryllium, MW-1

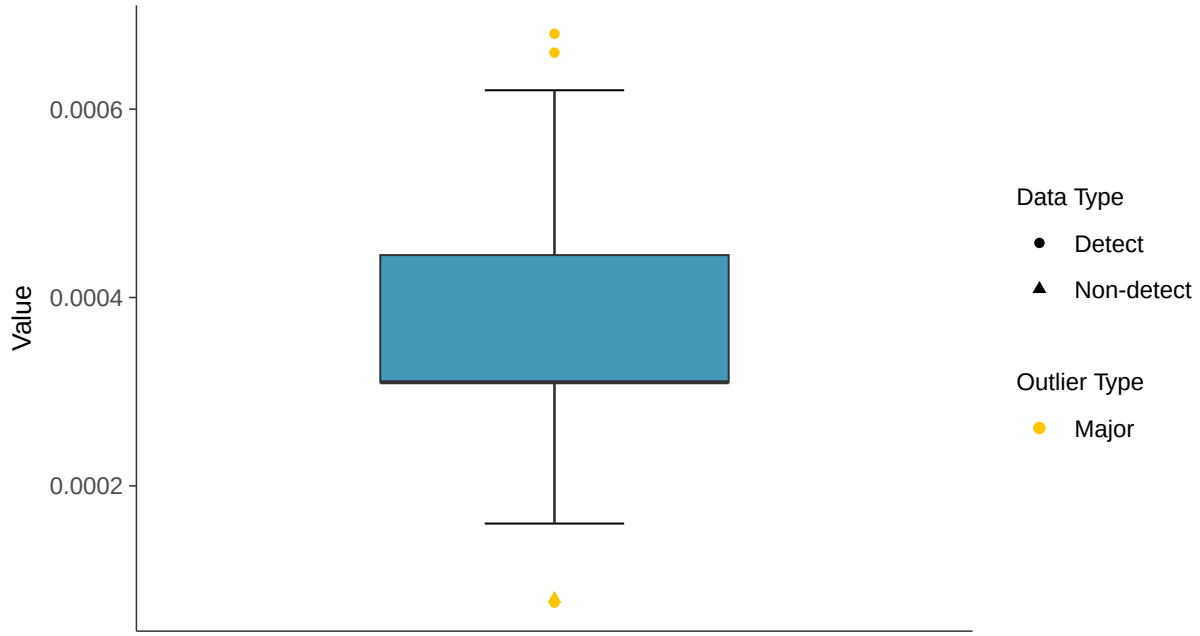
ID: 11_2_107





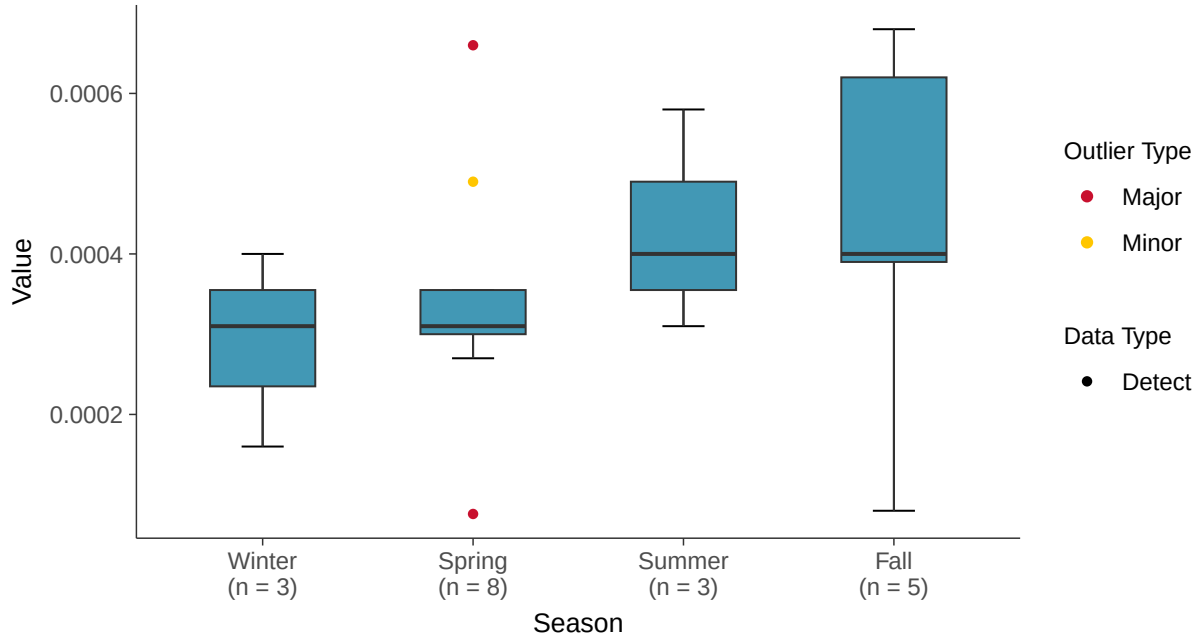
Boxplot

Beryllium, MW-1 (mg/l)



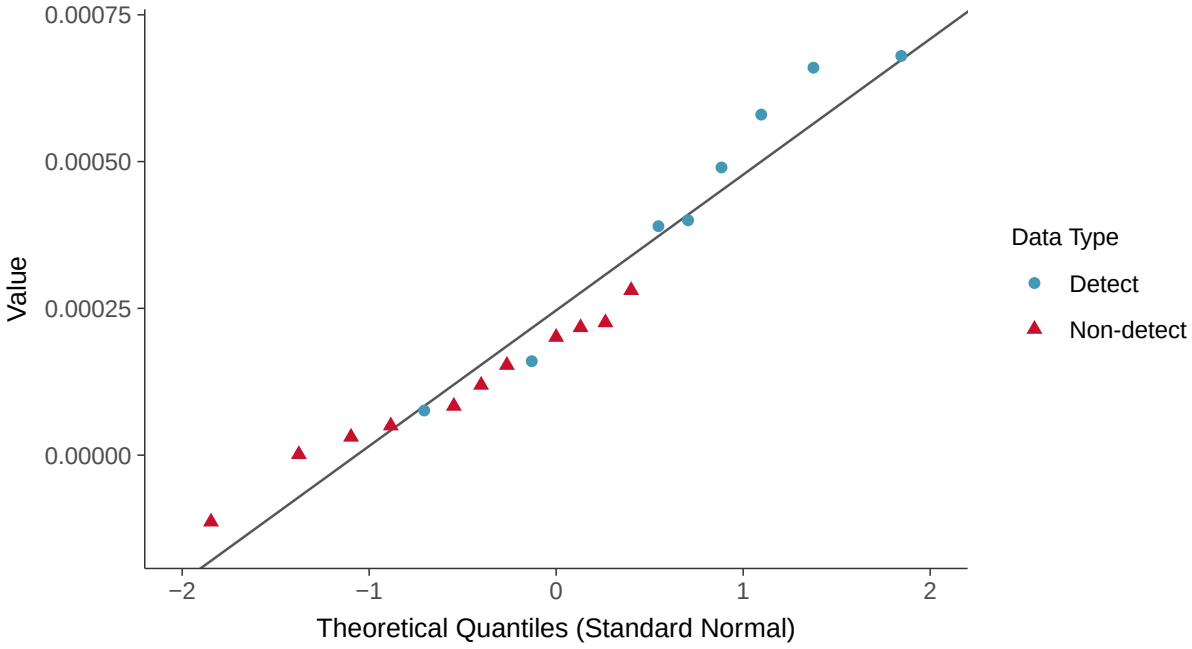
Boxplot by Season

Beryllium, MW-1 (mg/l)



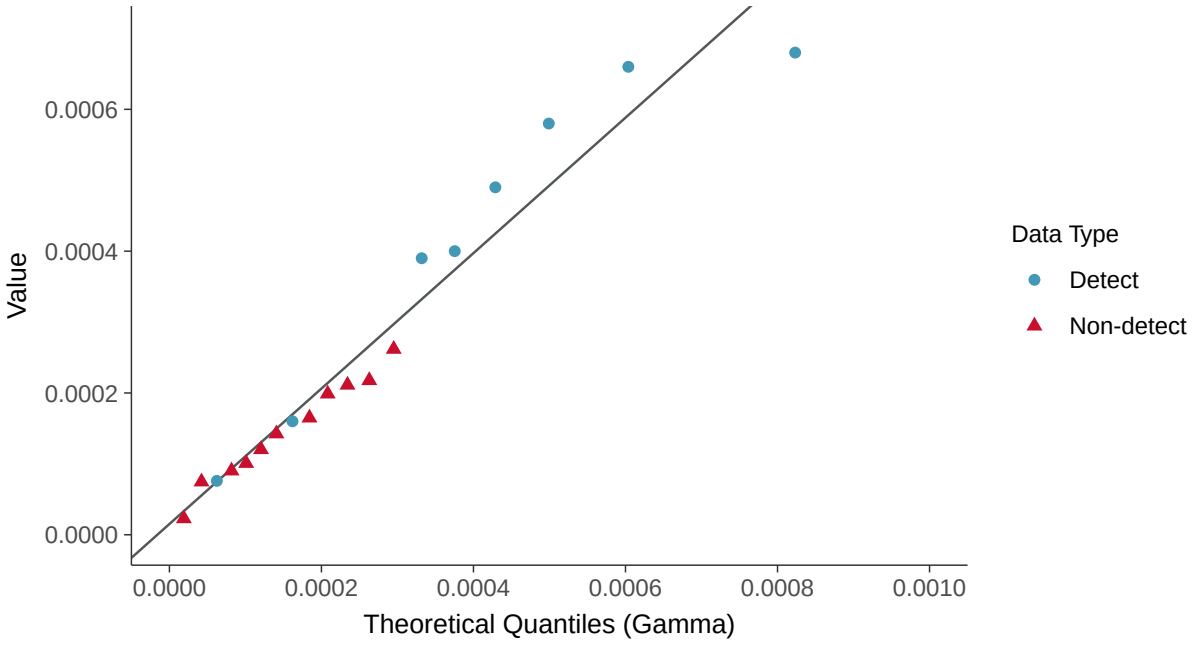
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-1 (mg/l)



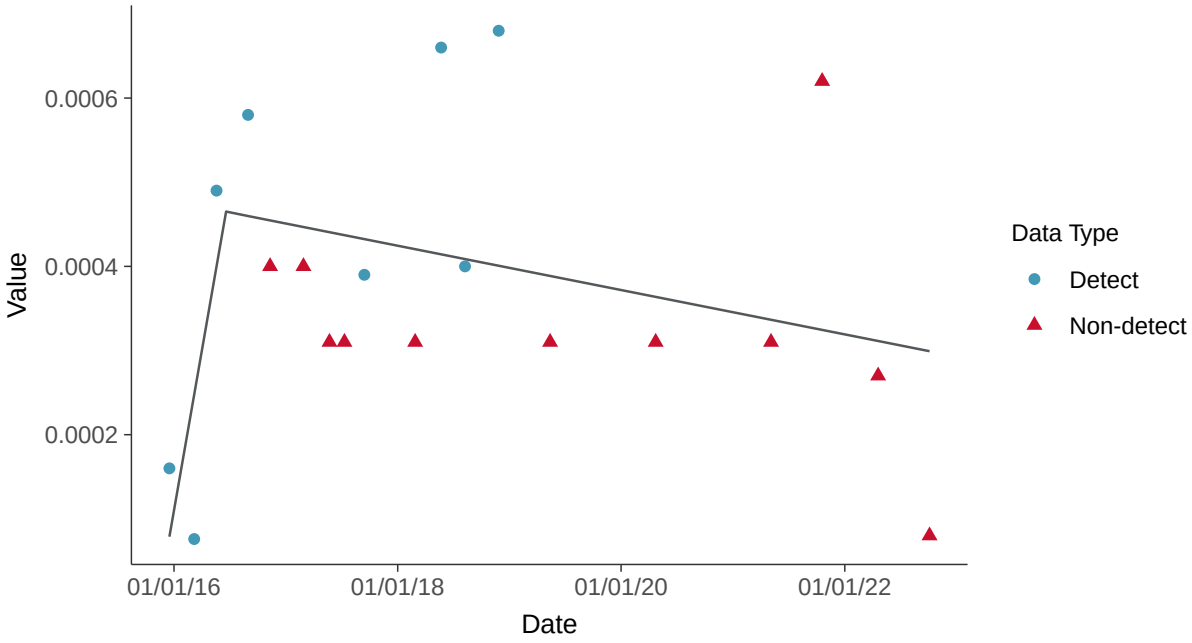
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-1 (mg/l)



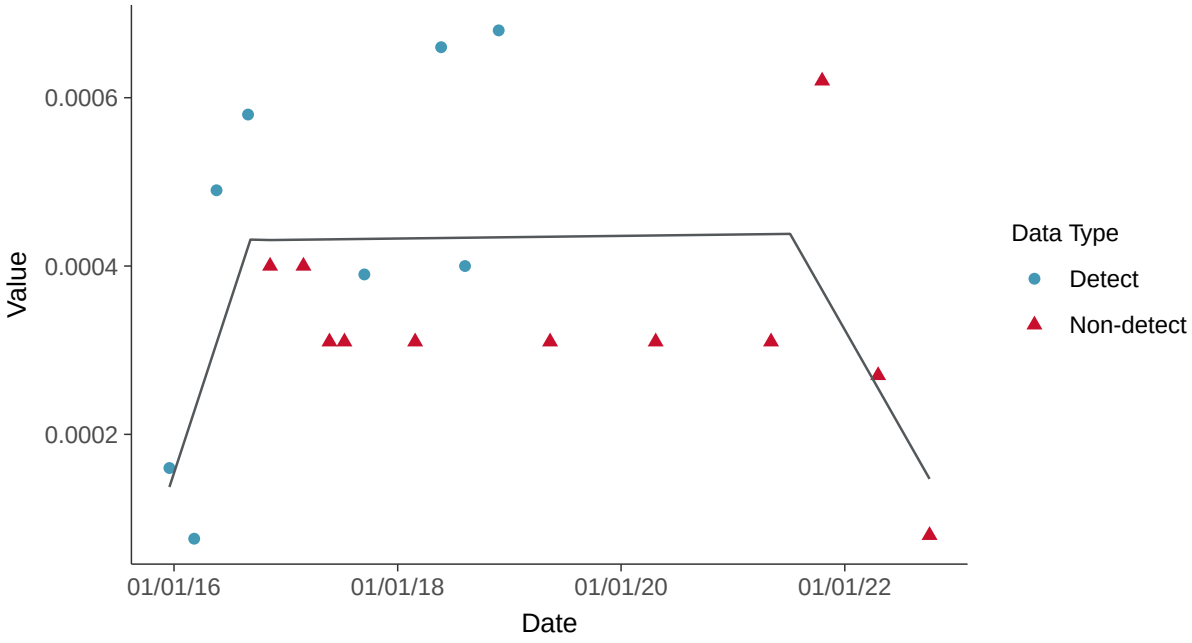
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-1 (mg/l)



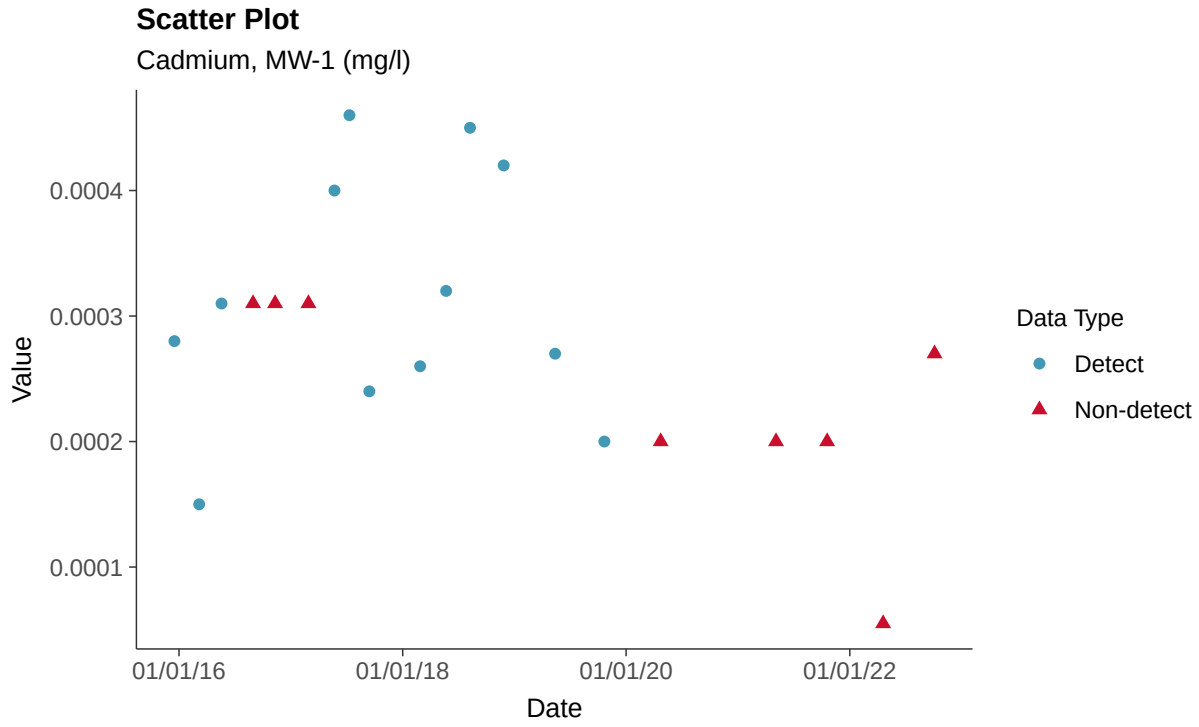
Trend Regression: Piecewise Linear-Linear-Linear

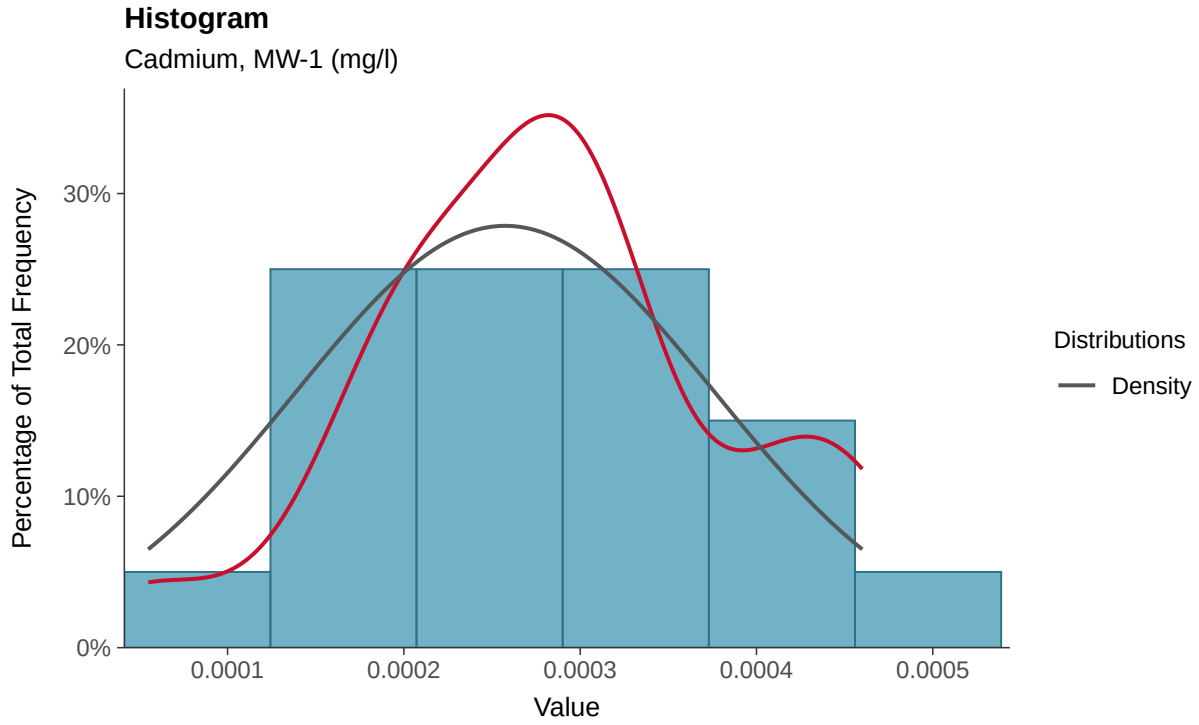
Beryllium, MW-1 (mg/l)



Appendix IV: Cadmium, MW-1

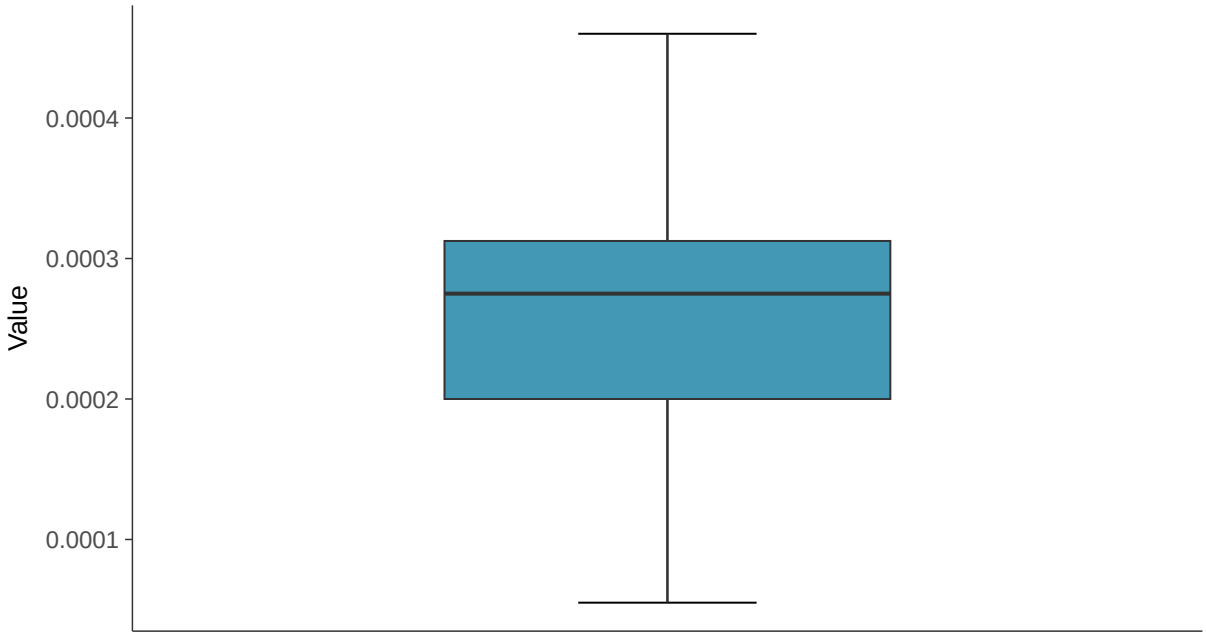
ID: 11_2_109





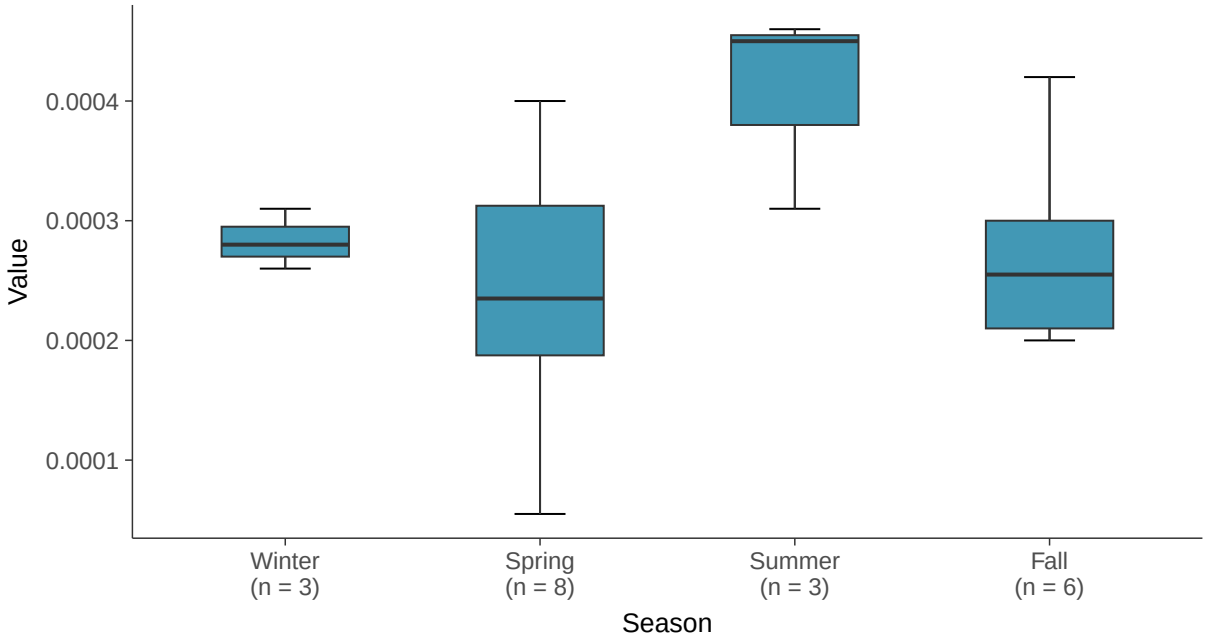
Boxplot

Cadmium, MW-1 (mg/l)



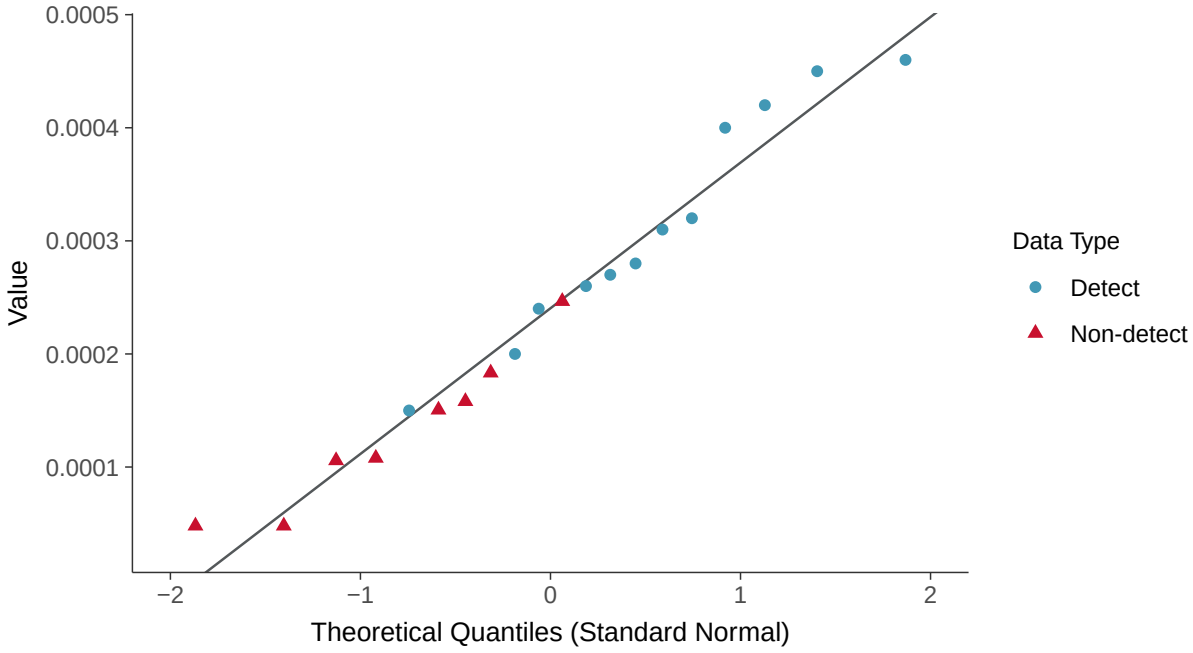
Boxplot by Season

Cadmium, MW-1 (mg/l)



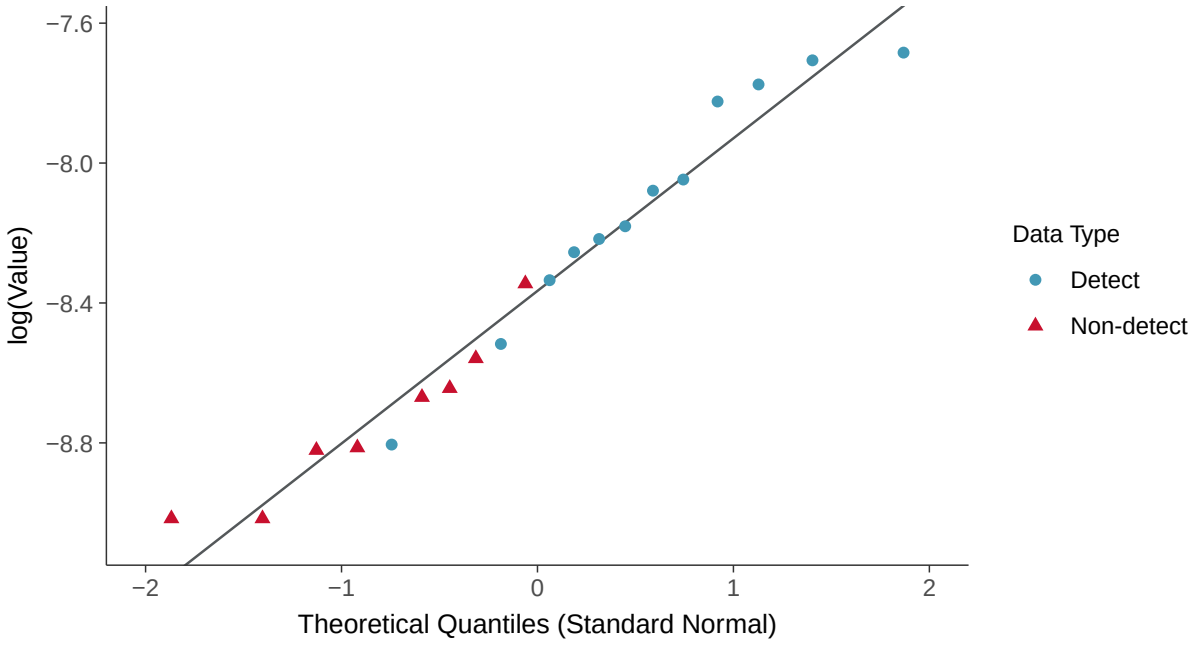
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-1 (mg/l)



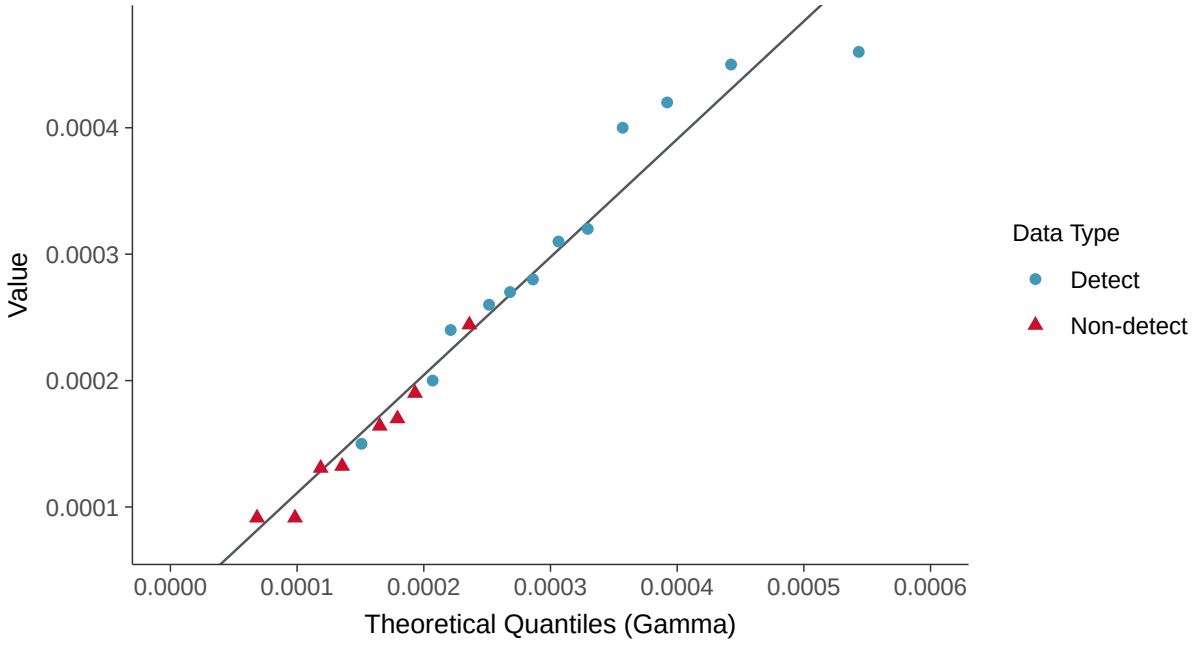
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-1 (mg/l)



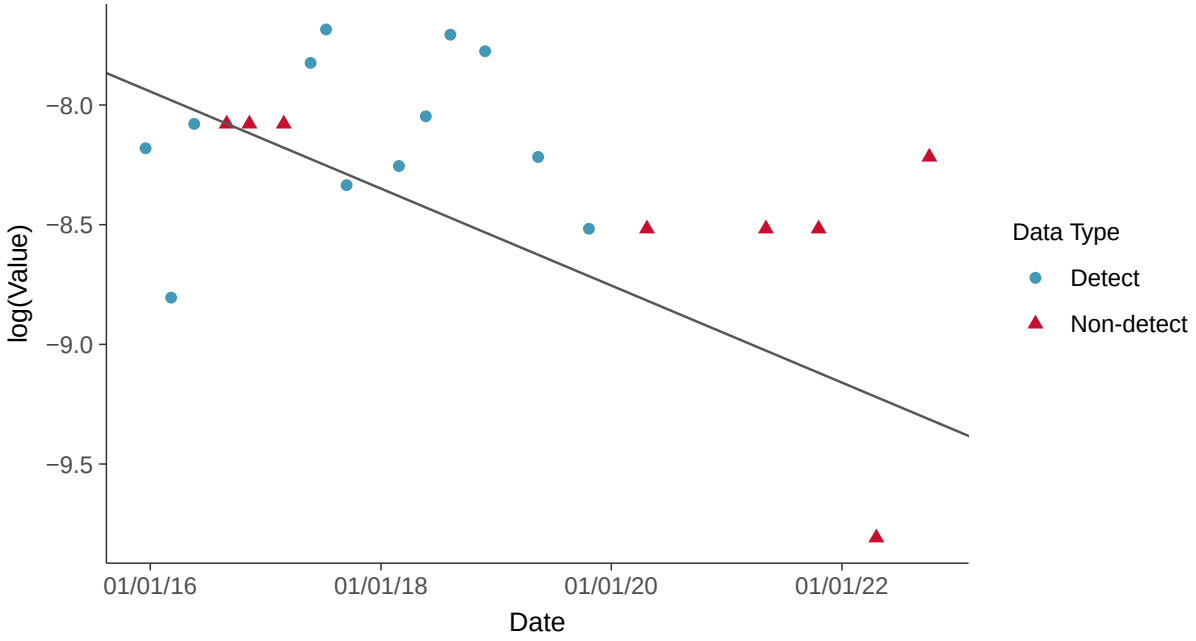
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-1 (mg/l)



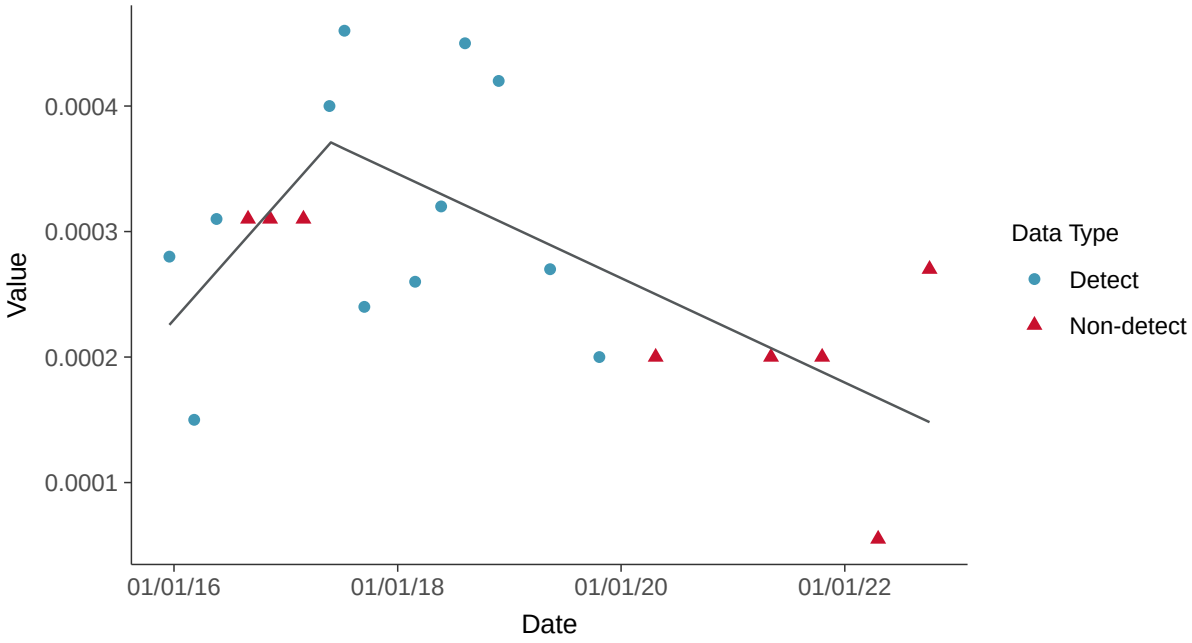
Trend Regression: Lognormal MLE

Cadmium, MW-1 (mg/l)



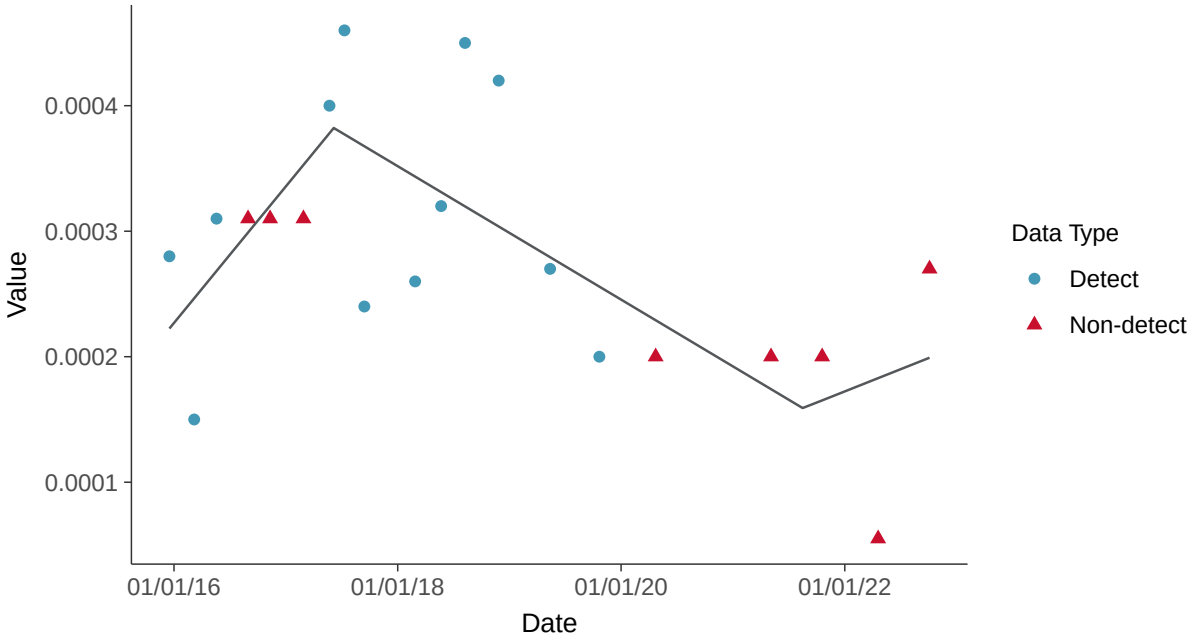
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-1 (mg/l)



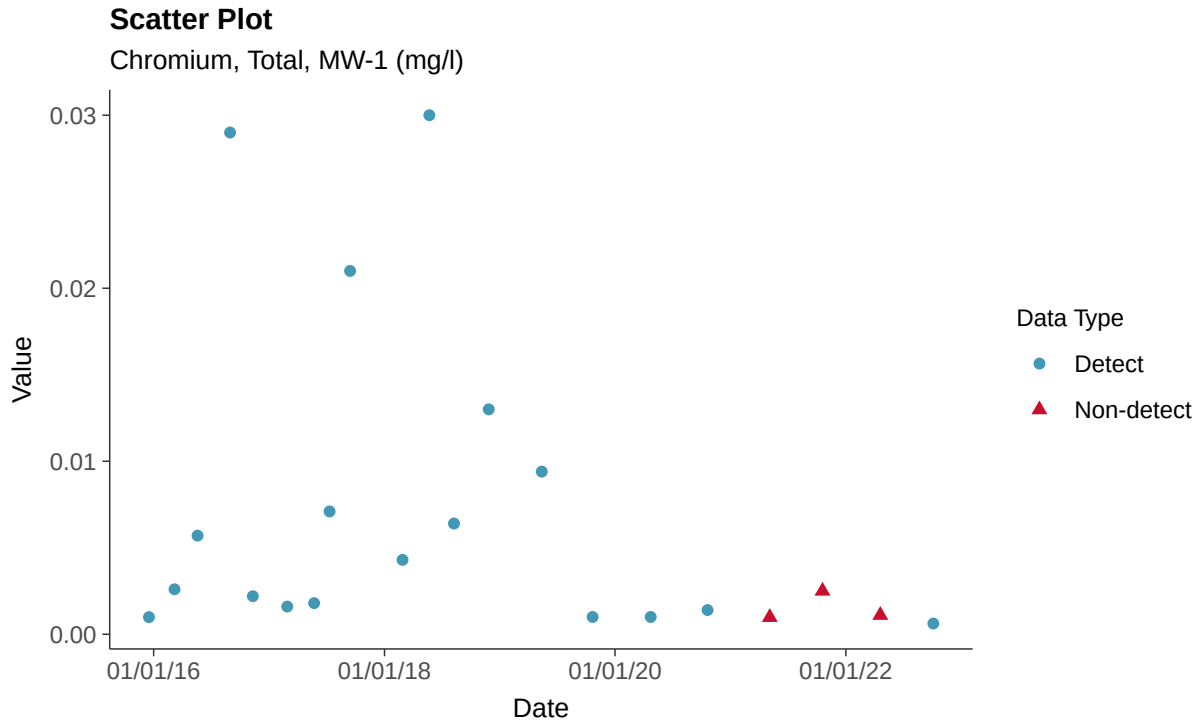
Trend Regression: Piecewise Linear-Linear-Linear

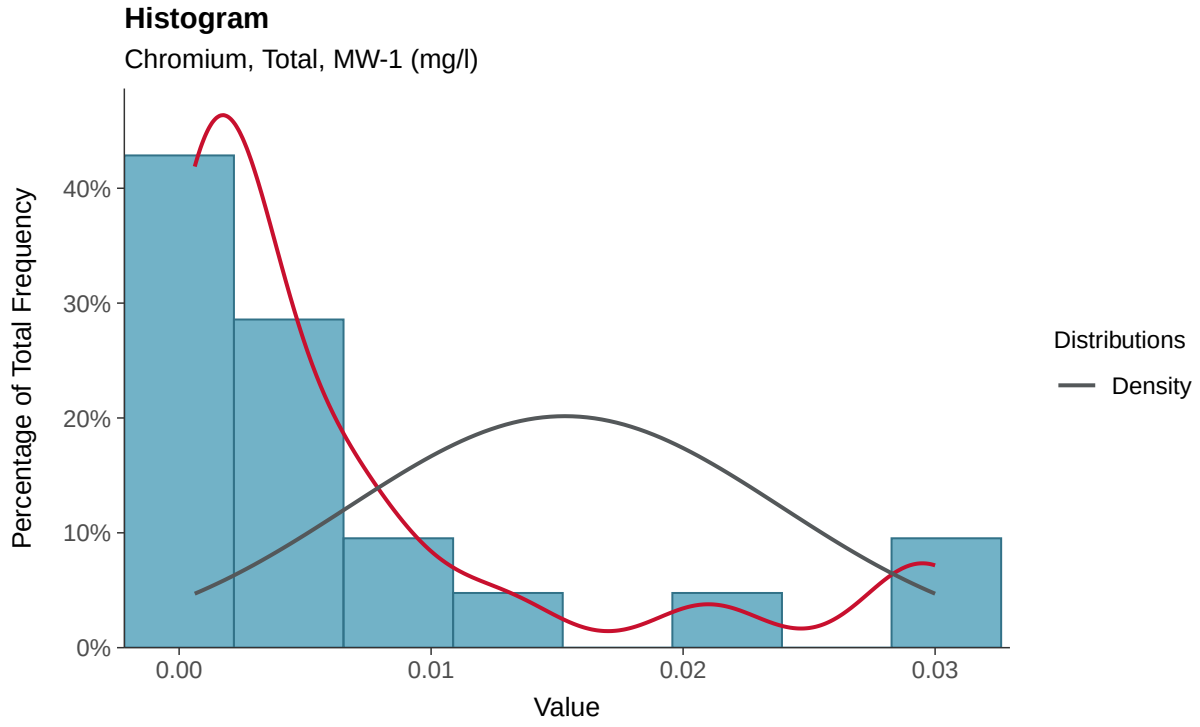
Cadmium, MW-1 (mg/l)



Appendix IV: Chromium, Total, MW-1

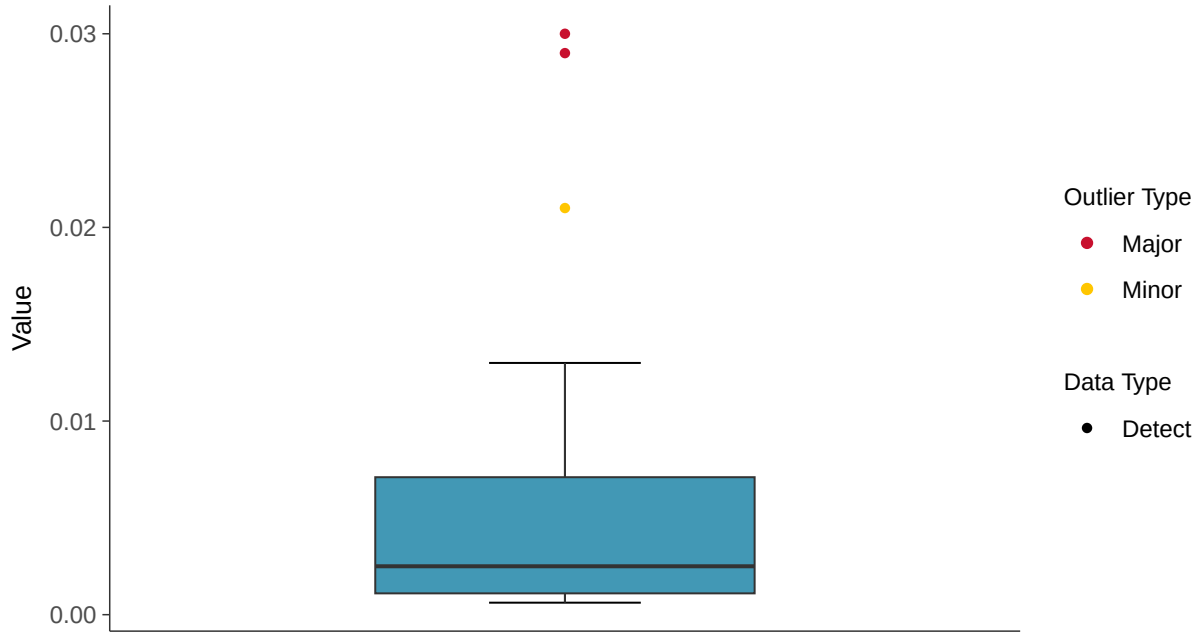
ID: 11_2_112





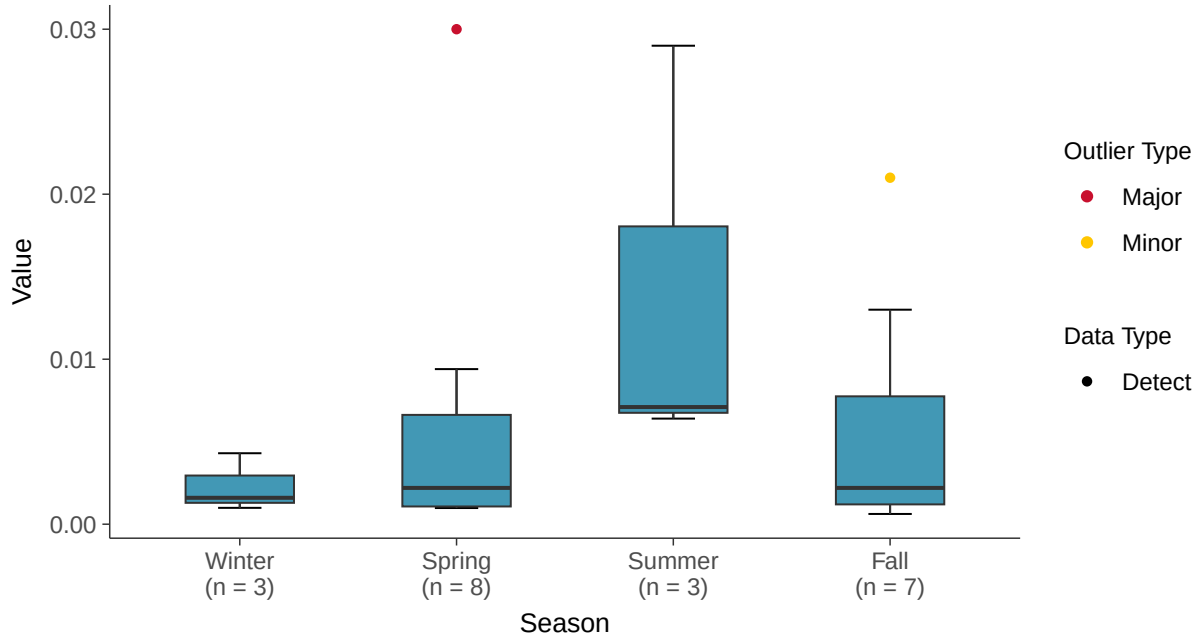
Boxplot

Chromium, Total, MW-1 (mg/l)



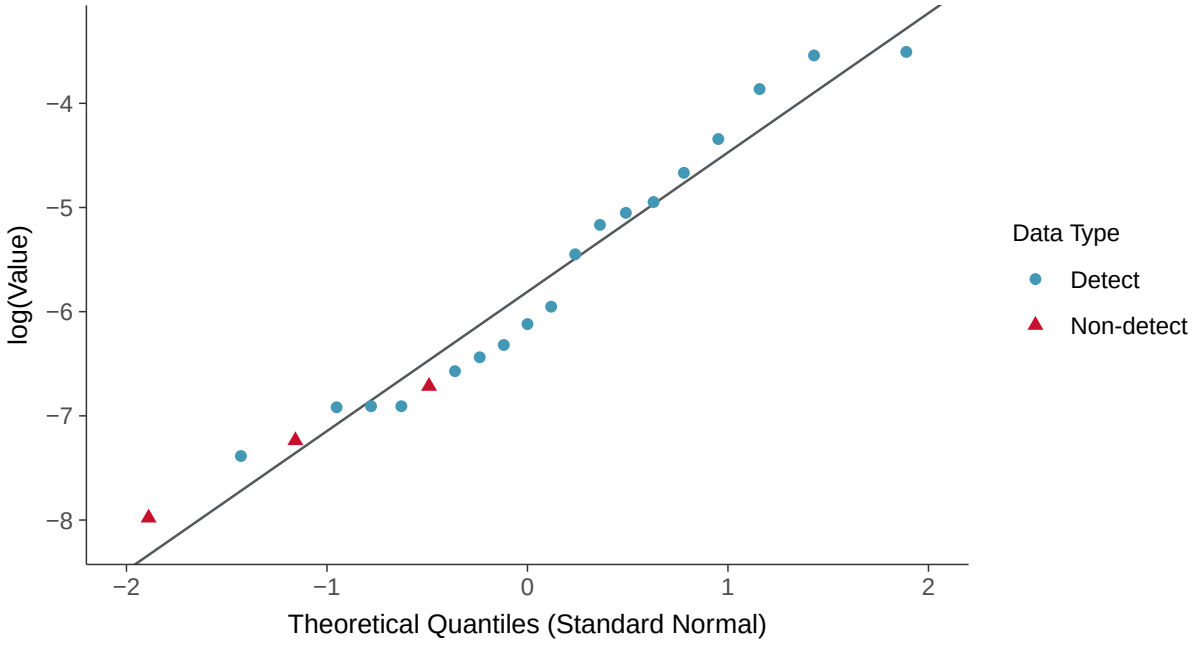
Boxplot by Season

Chromium, Total, MW-1 (mg/l)



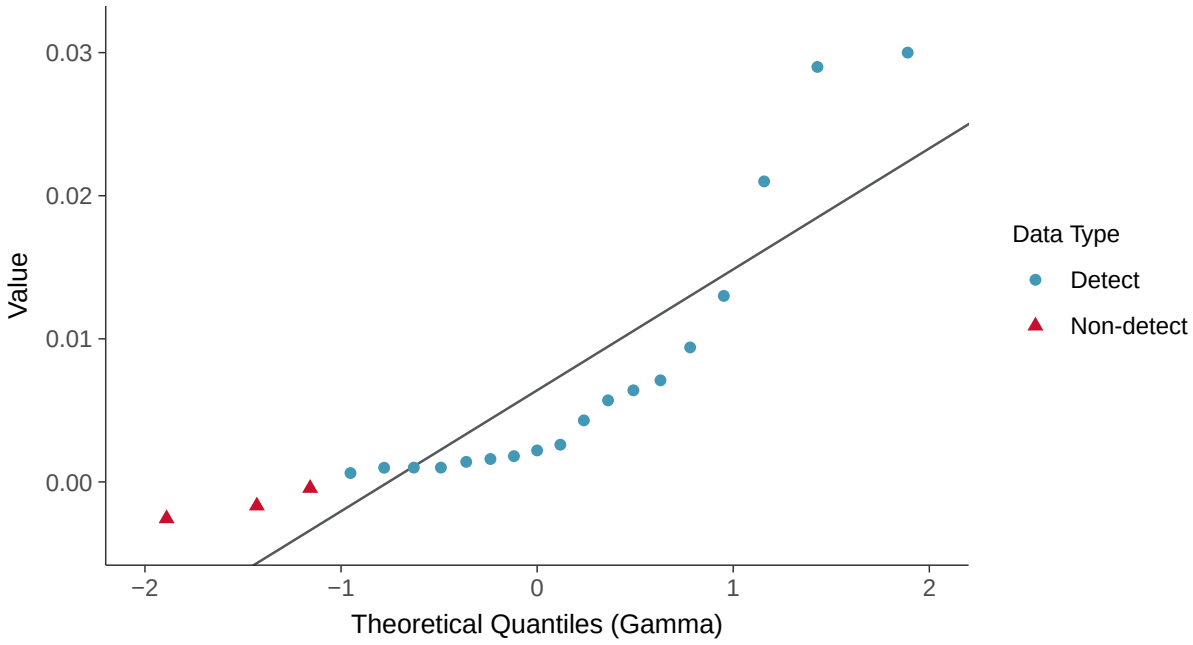
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-1 (mg/l)



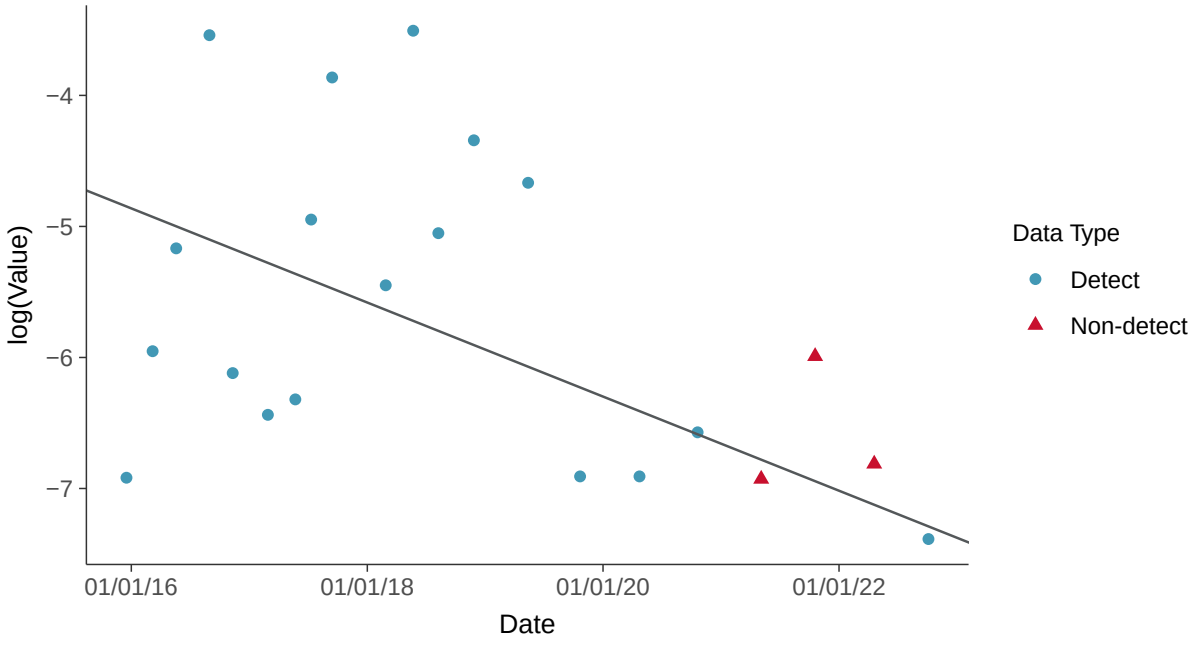
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-1 (mg/l)



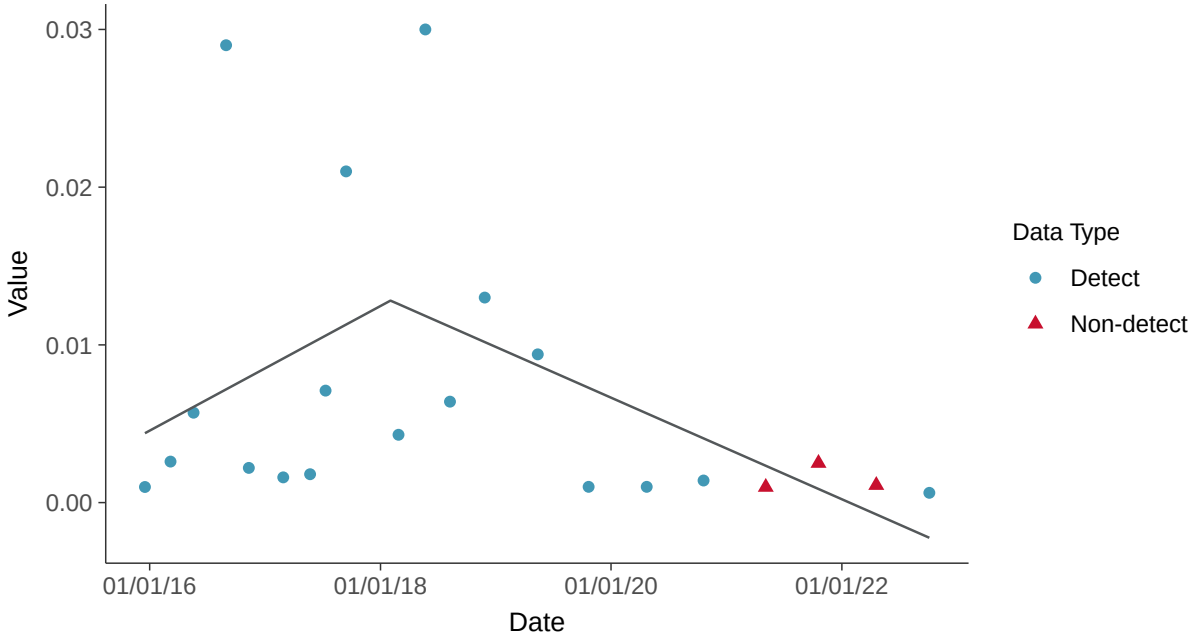
Trend Regression: Lognormal MLE

Chromium, Total, MW-1 (mg/l)



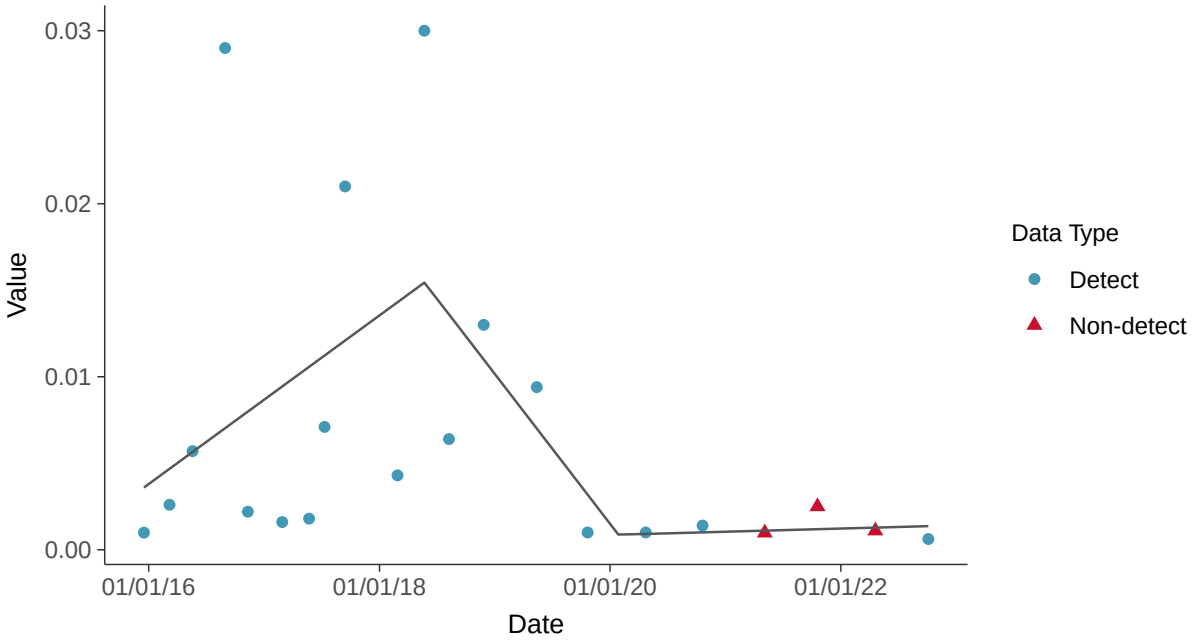
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-1 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-1 (mg/l)

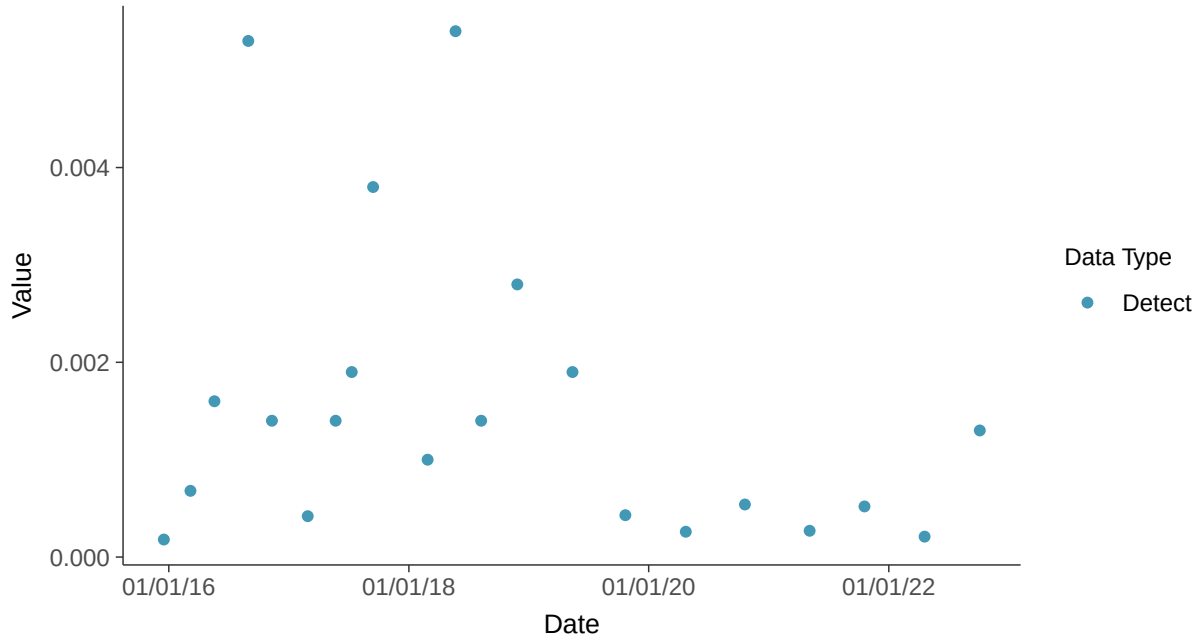


Appendix IV: Cobalt, MW-1

ID: 11_2_113

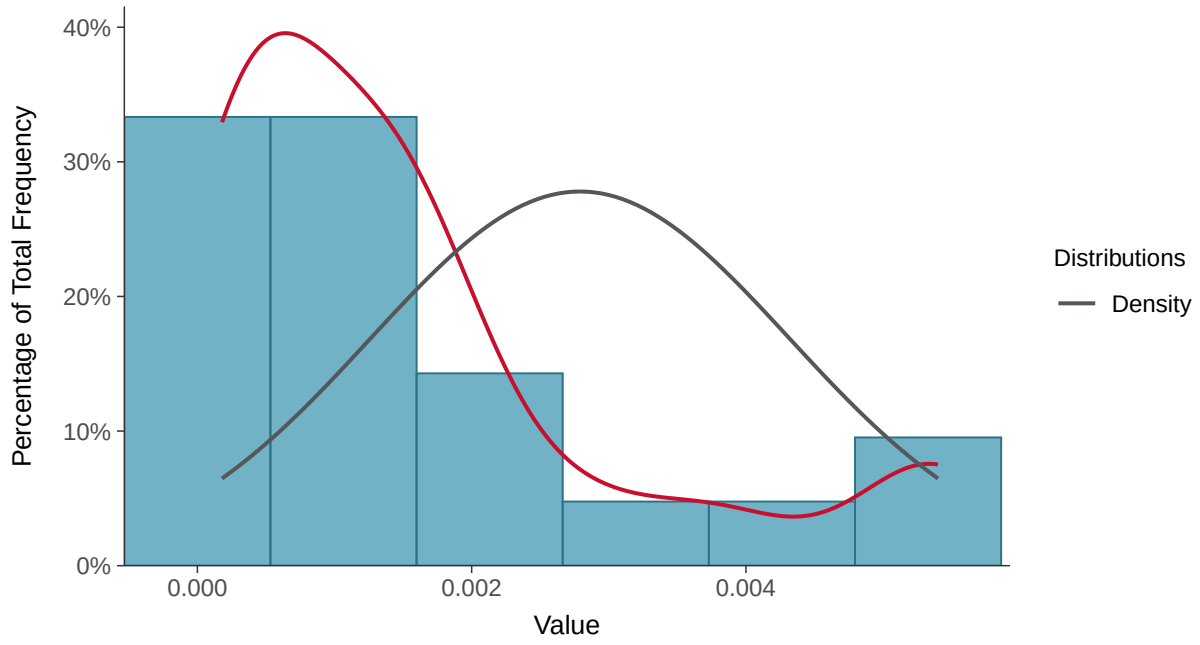
Scatter Plot

Cobalt, MW-1 (mg/l)



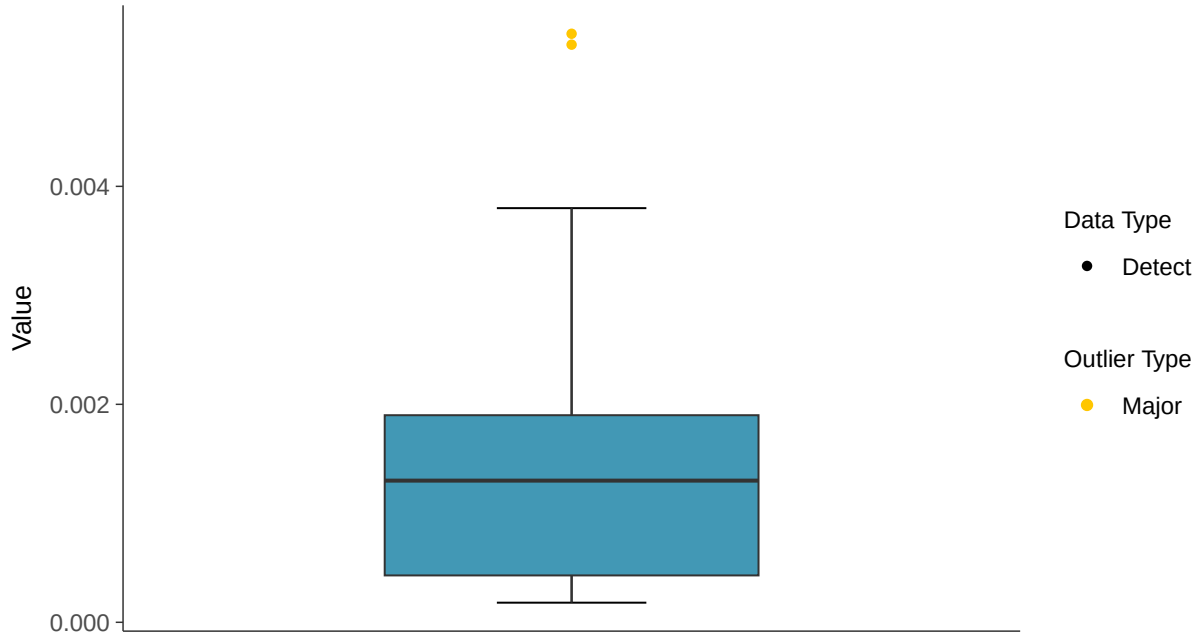
Histogram

Cobalt, MW-1 (mg/l)



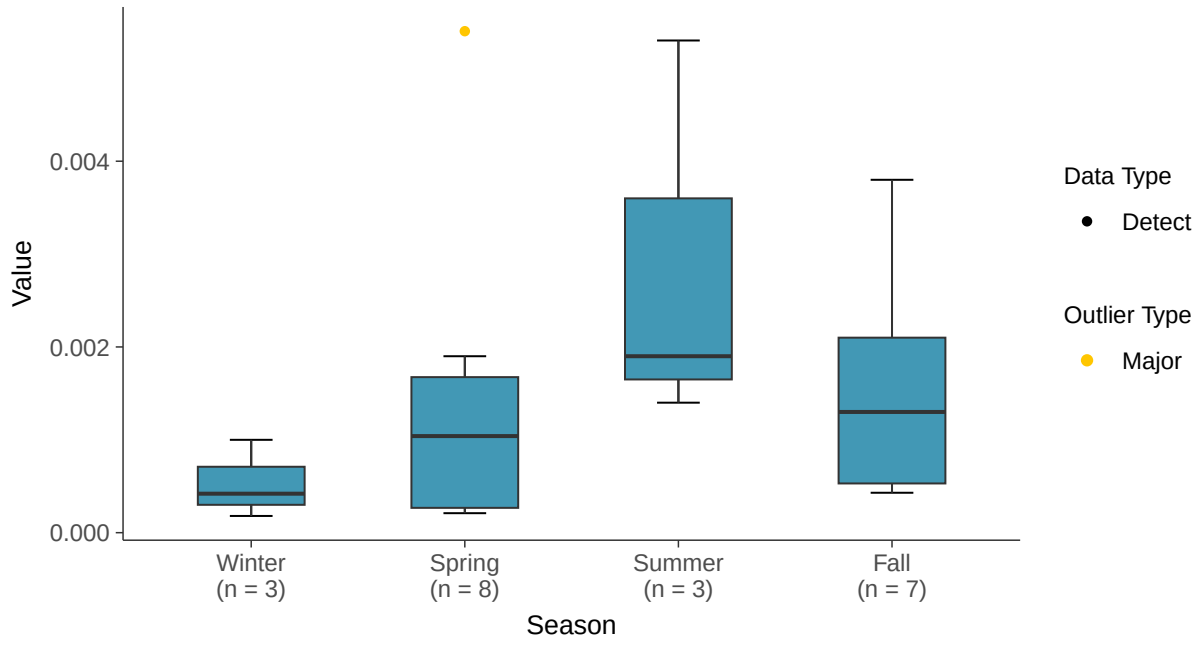
Boxplot

Cobalt, MW-1 (mg/l)



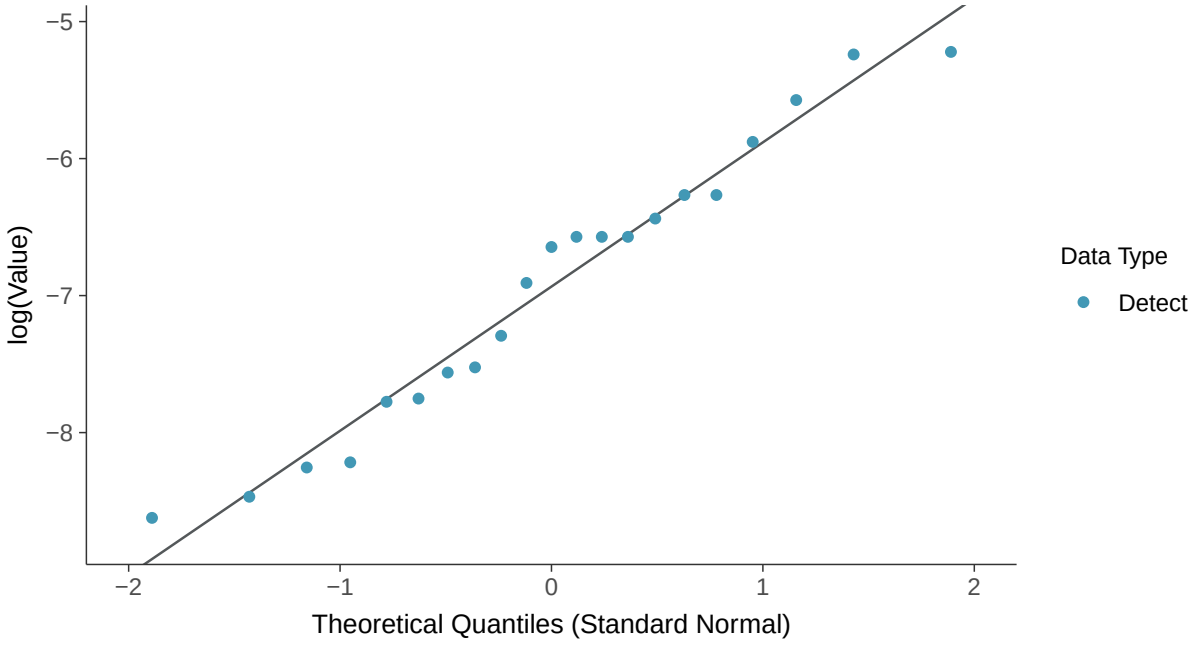
Boxplot by Season

Cobalt, MW-1 (mg/l)



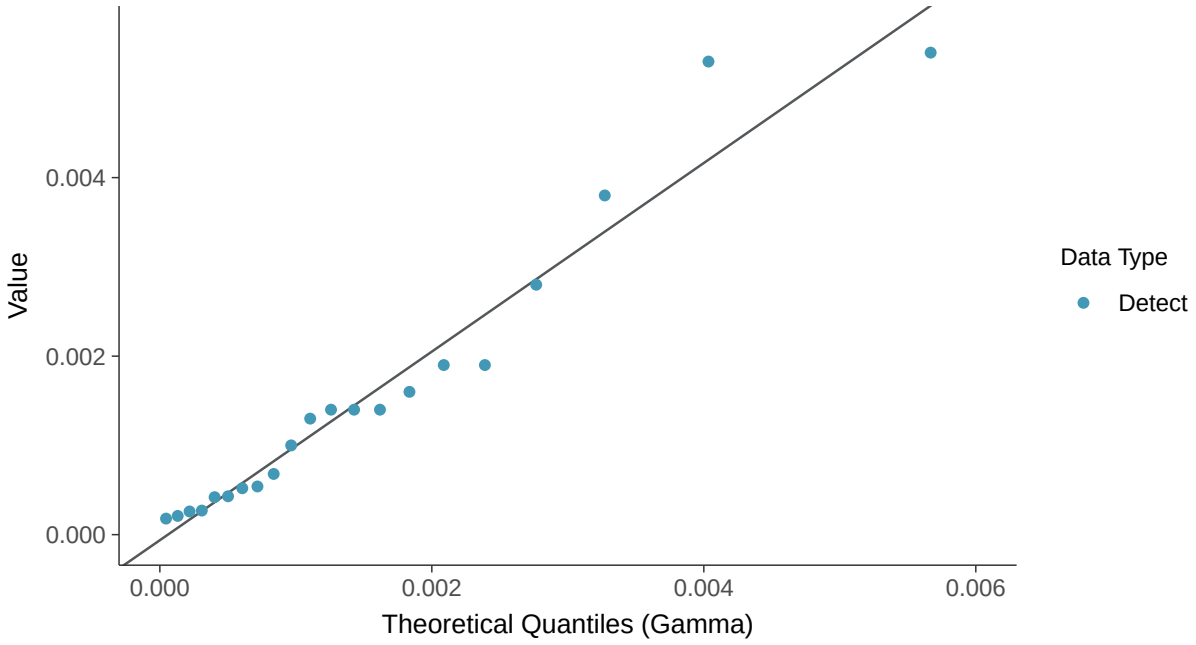
Lognormal Q-Q plot

Cobalt, MW-1 (mg/l)



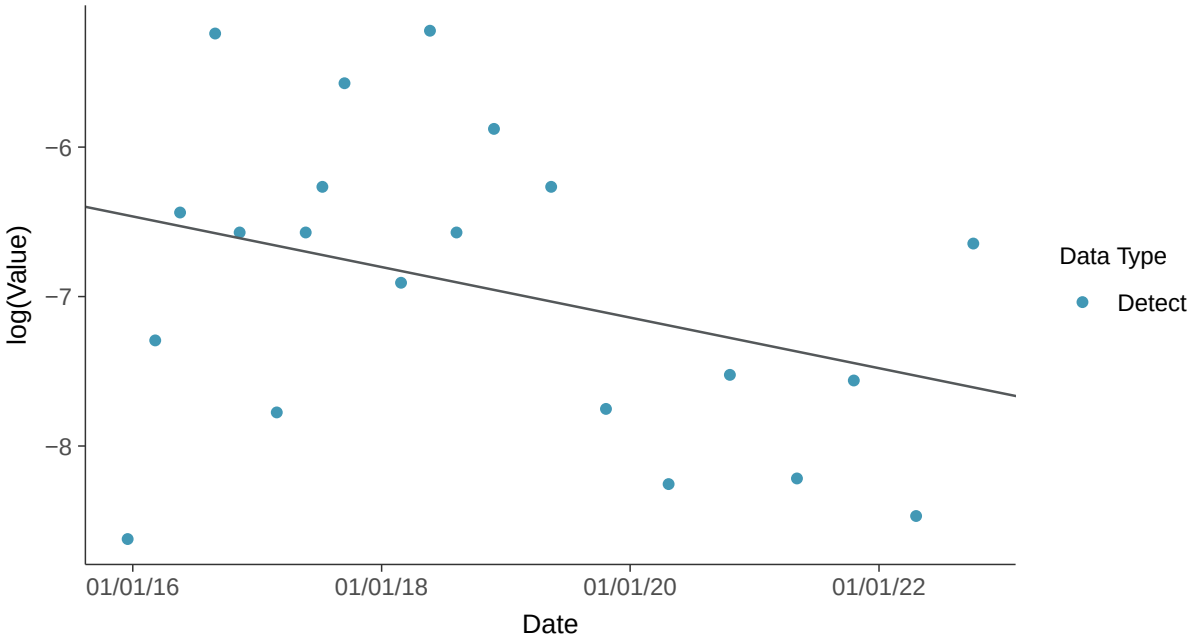
Gamma Q-Q plot

Cobalt, MW-1 (mg/l)



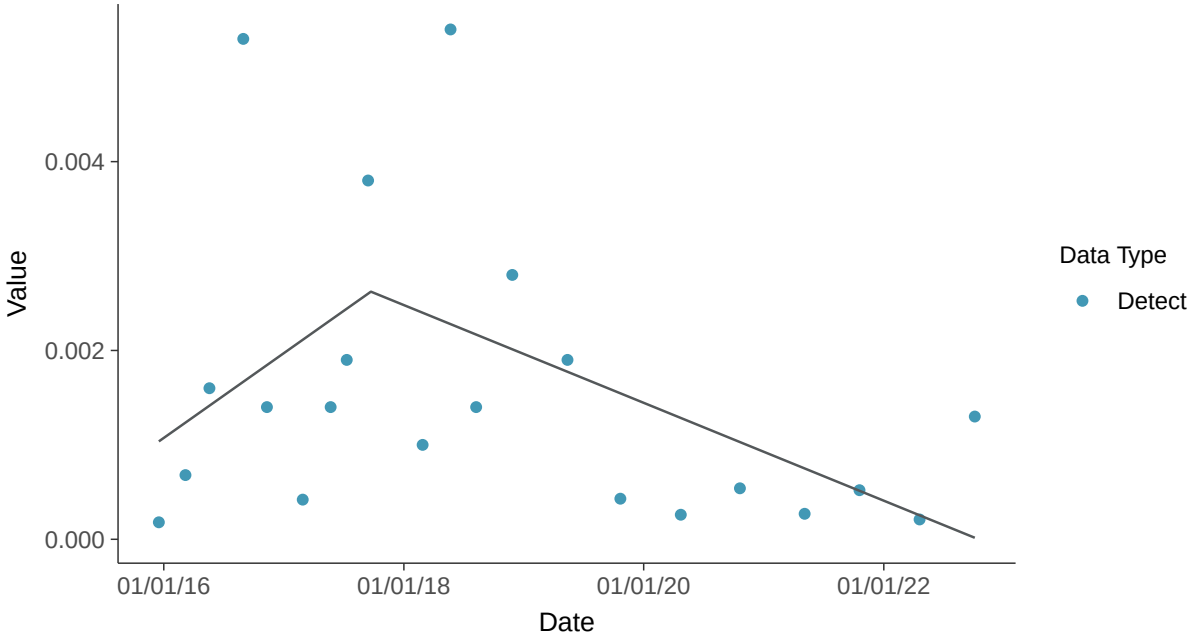
Trend Regression: Lognormal MLE

Cobalt, MW-1 (mg/l)



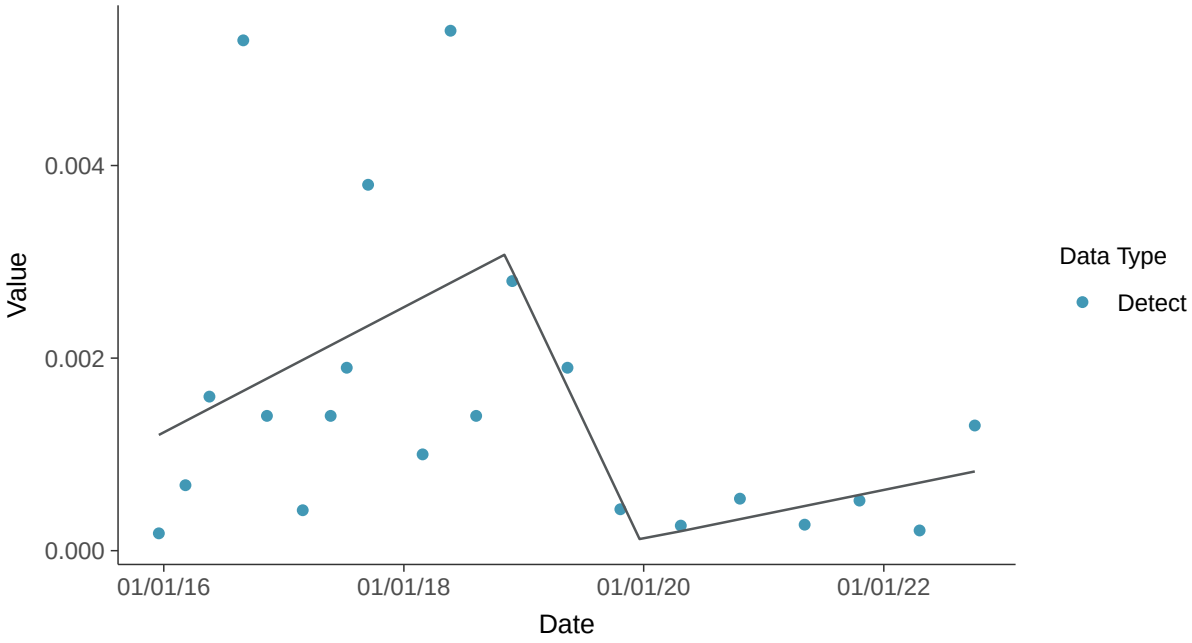
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-1 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-1 (mg/l)

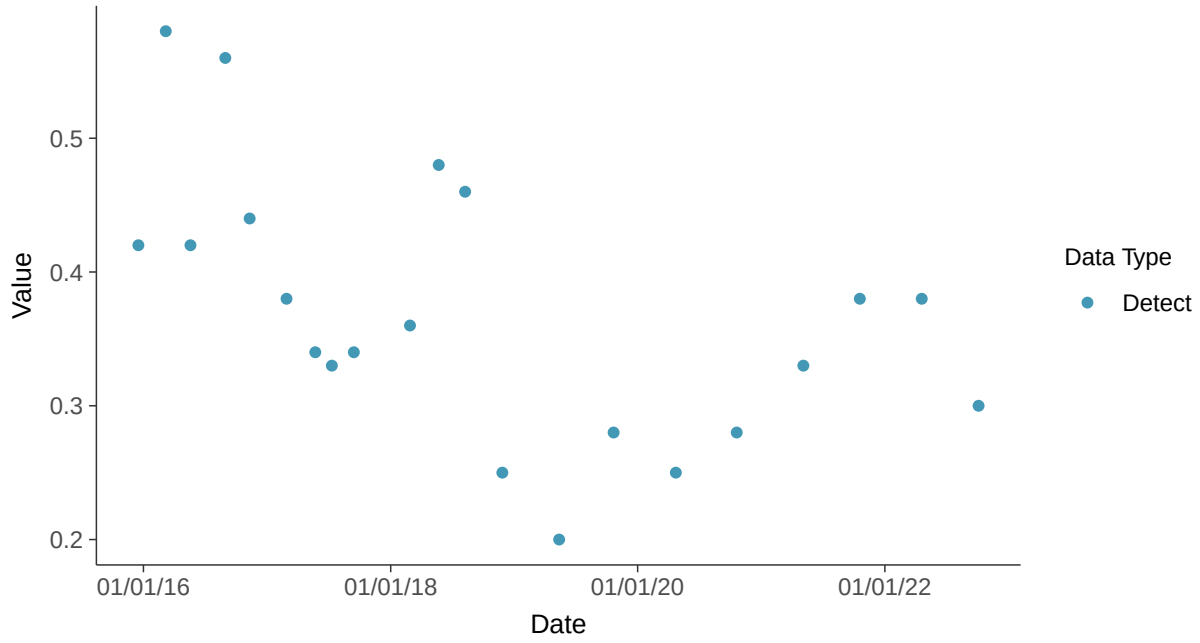


Appendix IV: Fluoride (App IV), MW-1

ID: 11_2_116

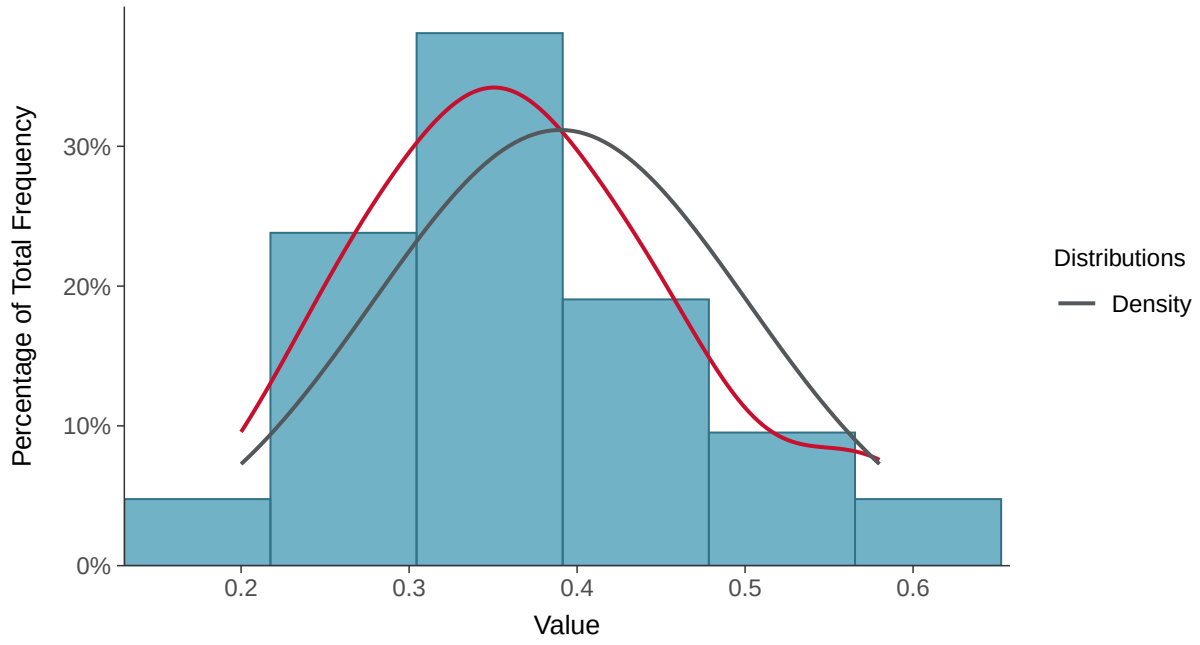
Scatter Plot

Fluoride (App IV), MW-1 (mg/l)



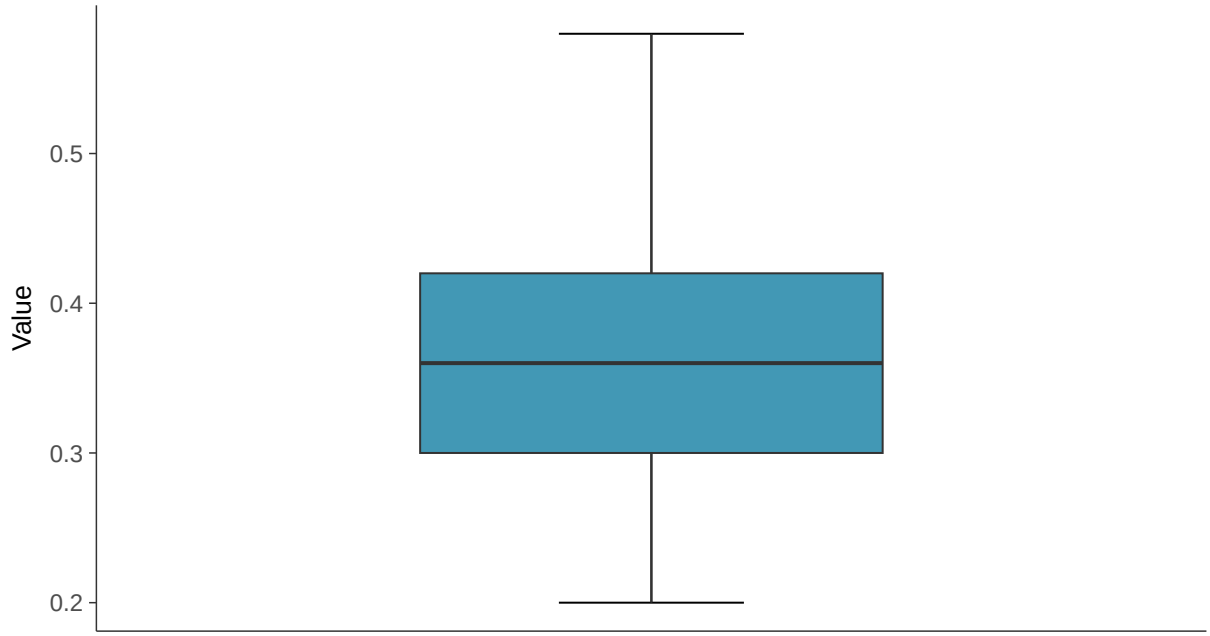
Histogram

Fluoride (App IV), MW-1 (mg/l)



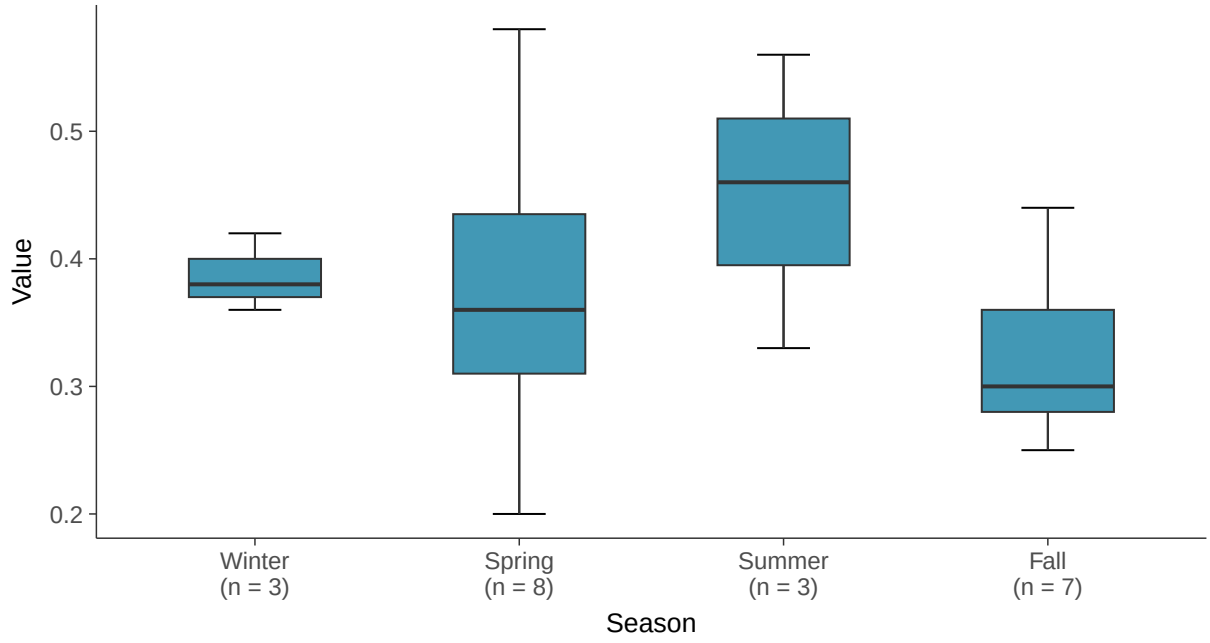
Boxplot

Fluoride (App IV), MW-1 (mg/l)



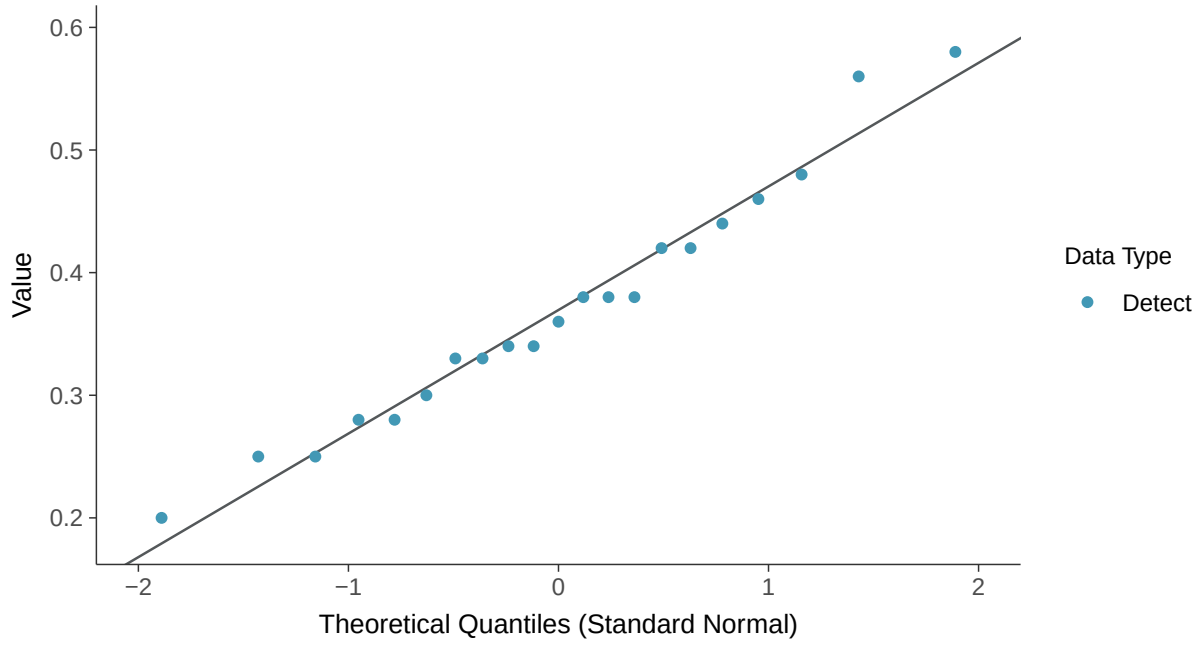
Boxplot by Season

Fluoride (App IV), MW-1 (mg/l)



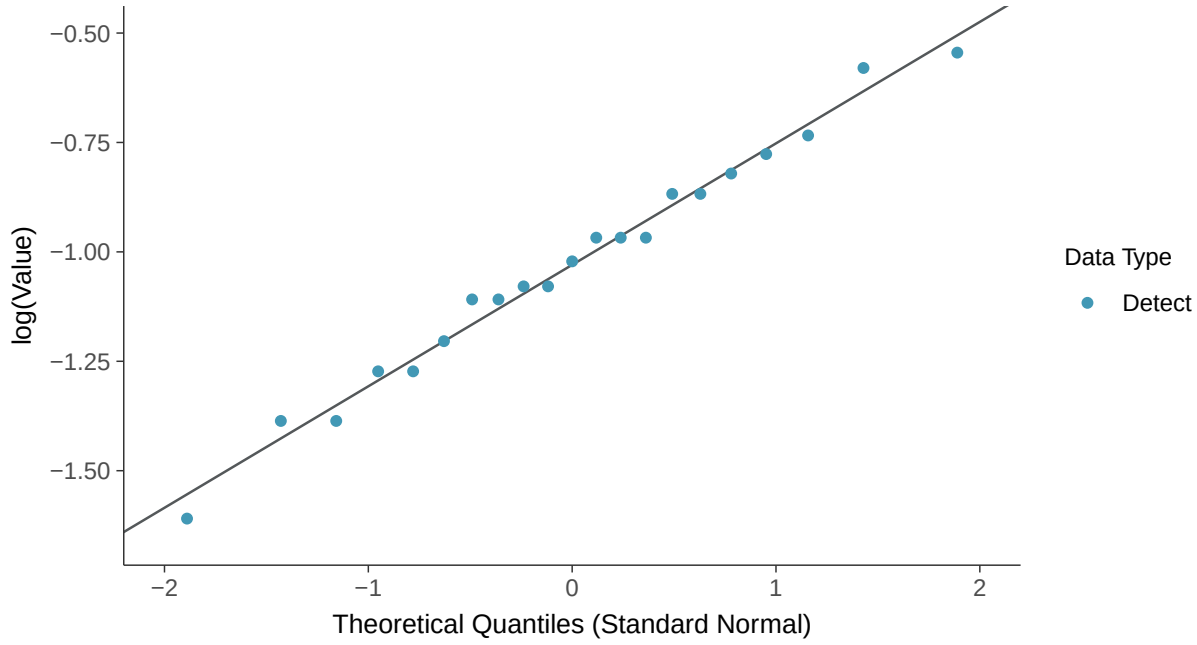
Normal Q-Q plot

Fluoride (App IV), MW-1 (mg/l)



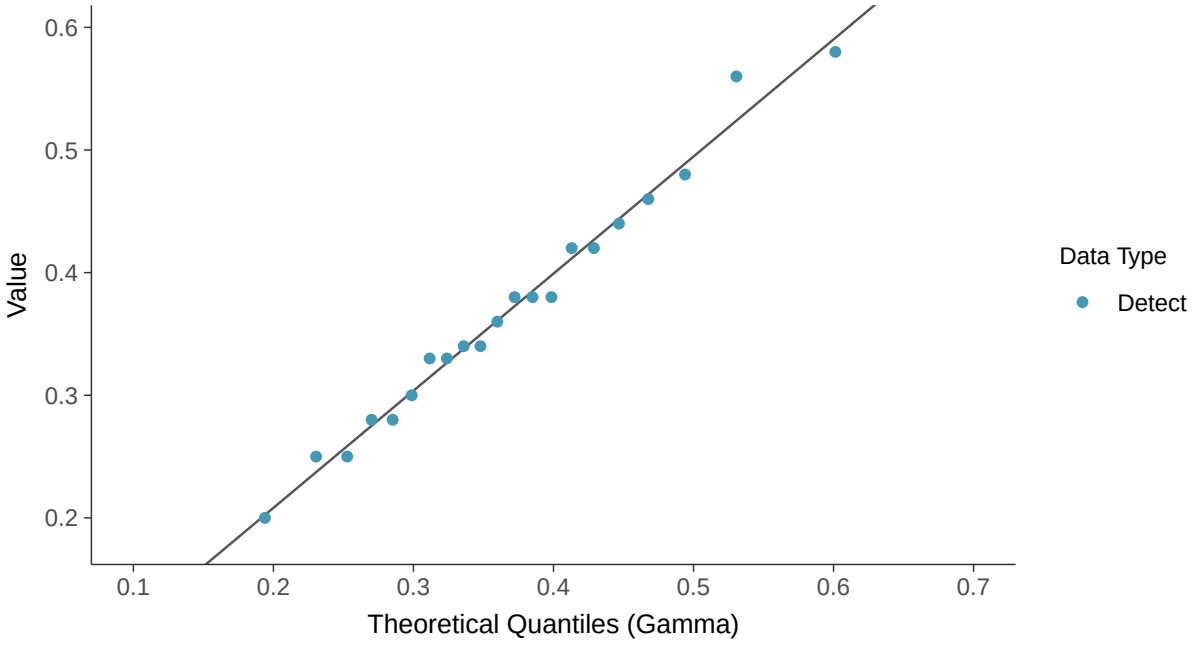
Lognormal Q-Q plot

Fluoride (App IV), MW-1 (mg/l)



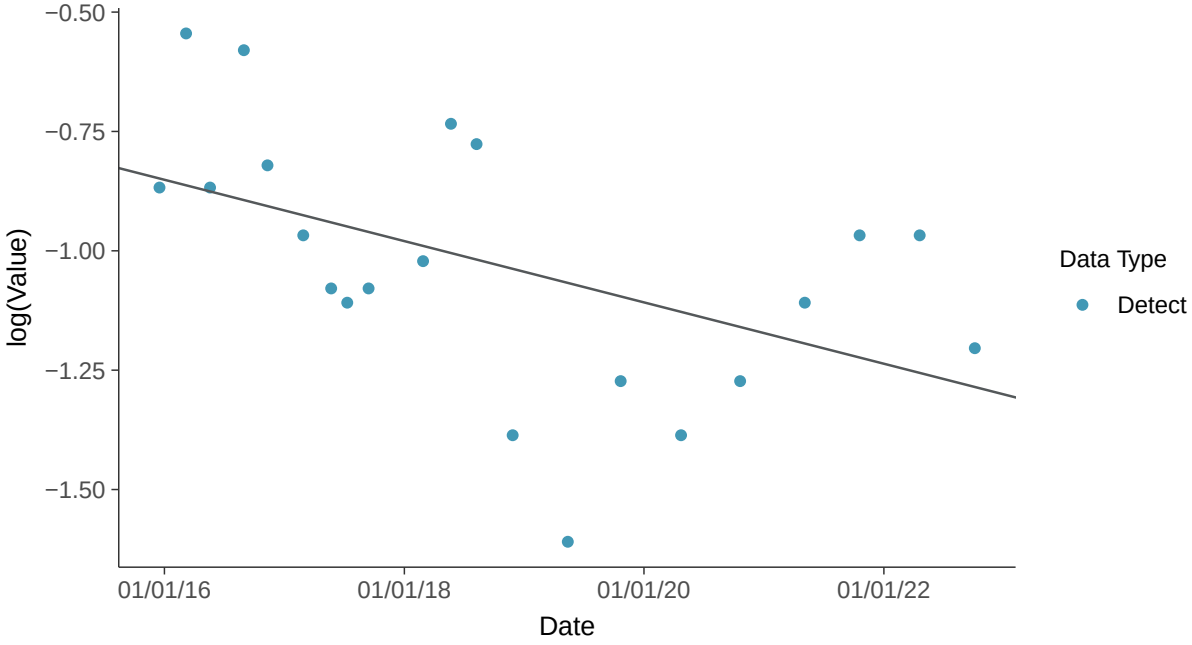
Gamma Q-Q plot

Fluoride (App IV), MW-1 (mg/l)



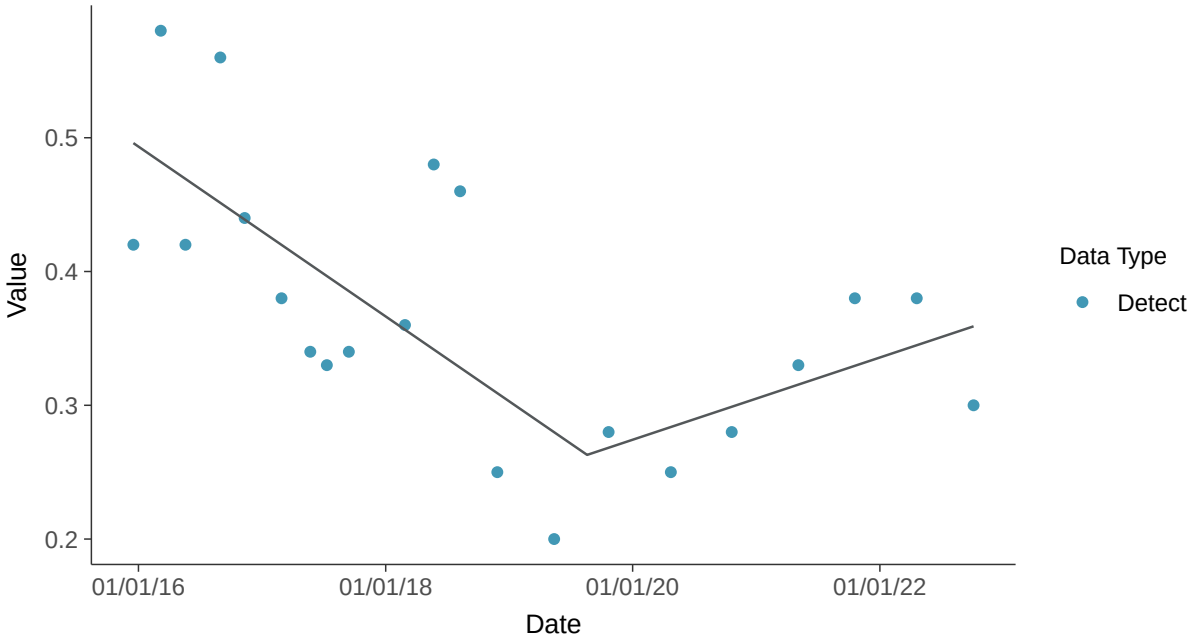
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-1 (mg/l)



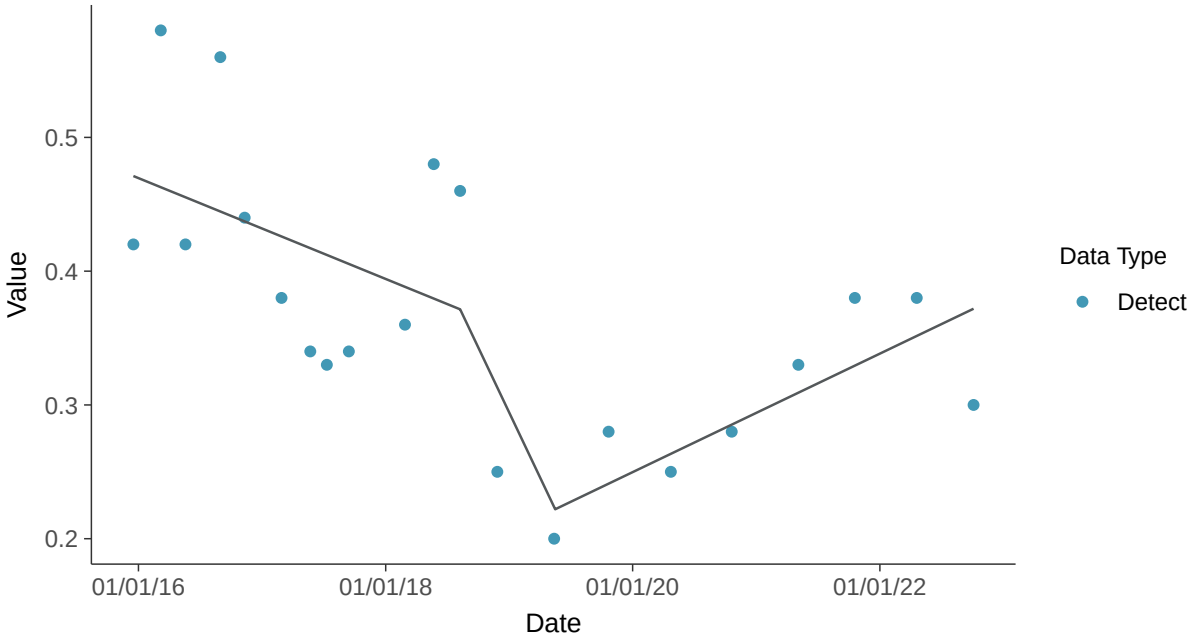
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-1 (mg/l)



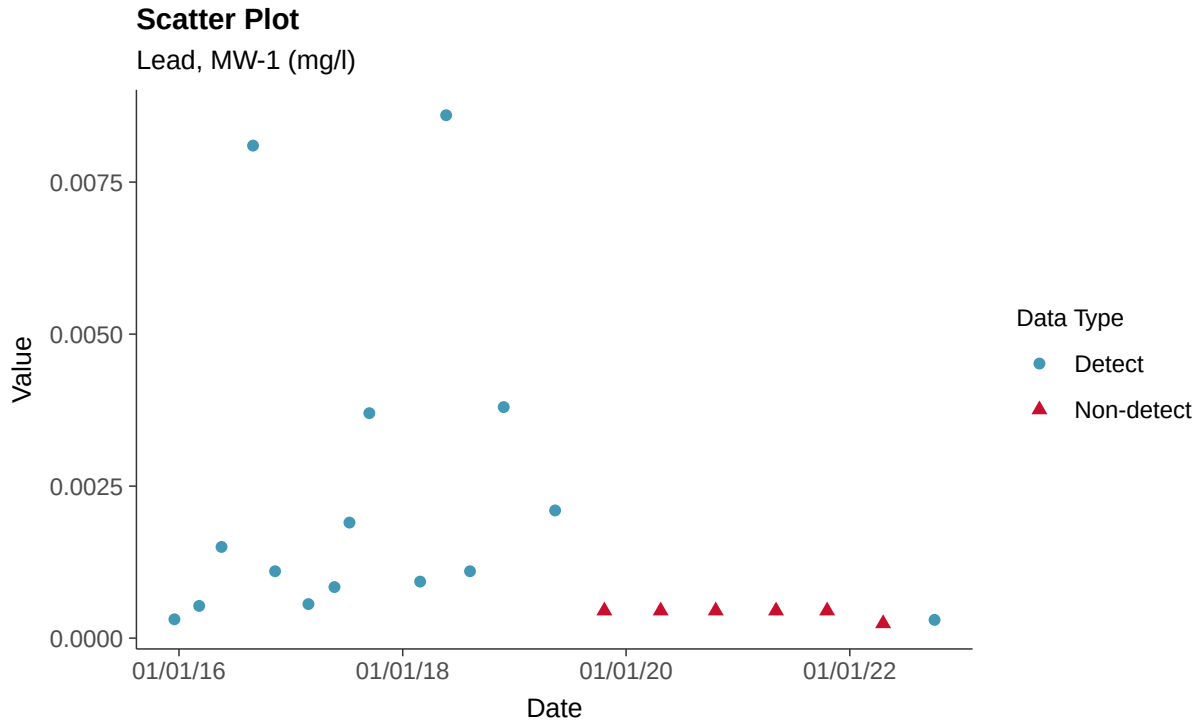
Trend Regression: Piecewise Linear-Linear-Linear

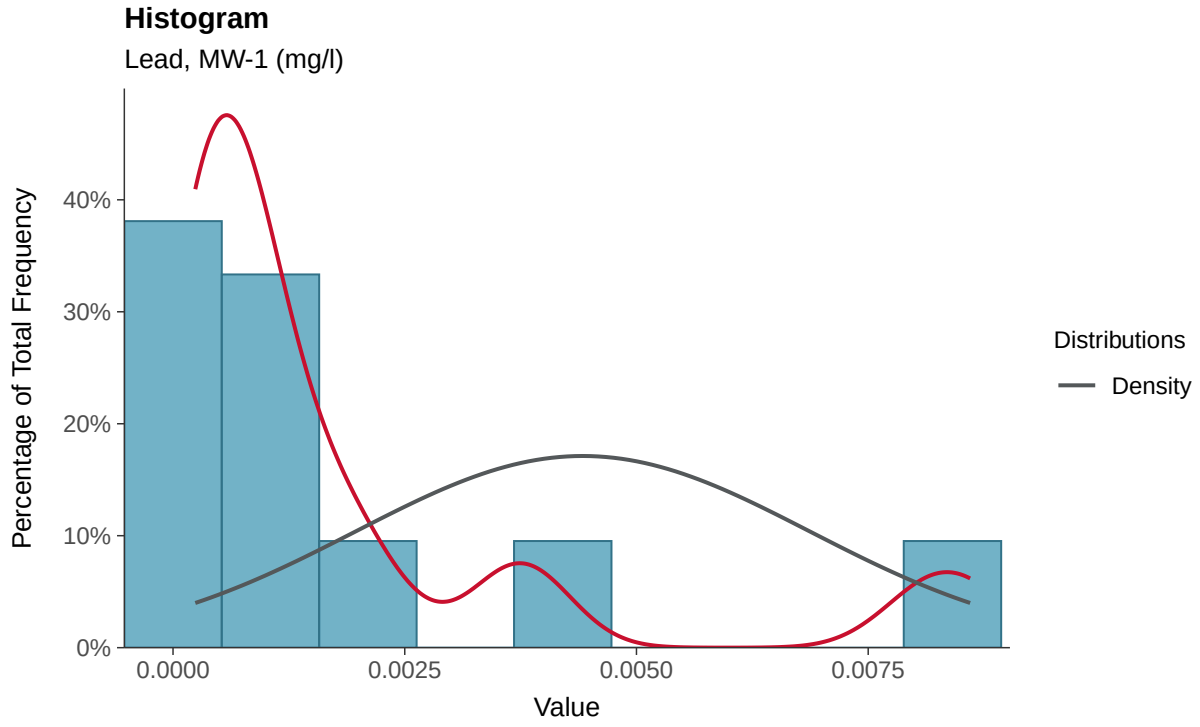
Fluoride (App IV), MW-1 (mg/l)



Appendix IV: Lead, MW-1

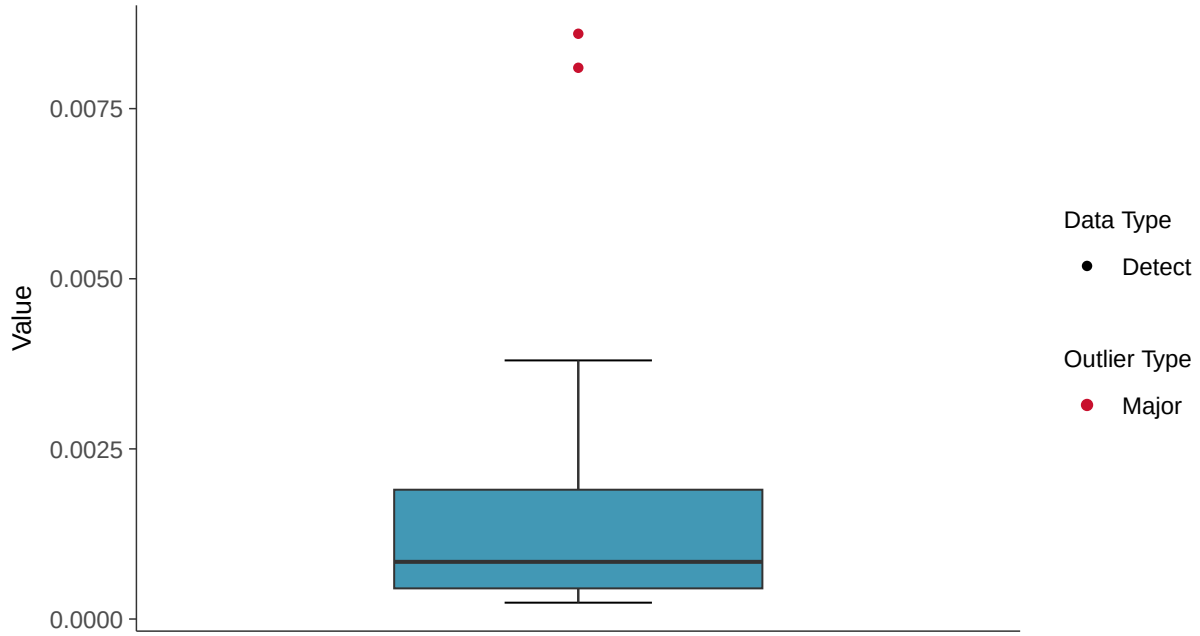
ID: 11_2_117





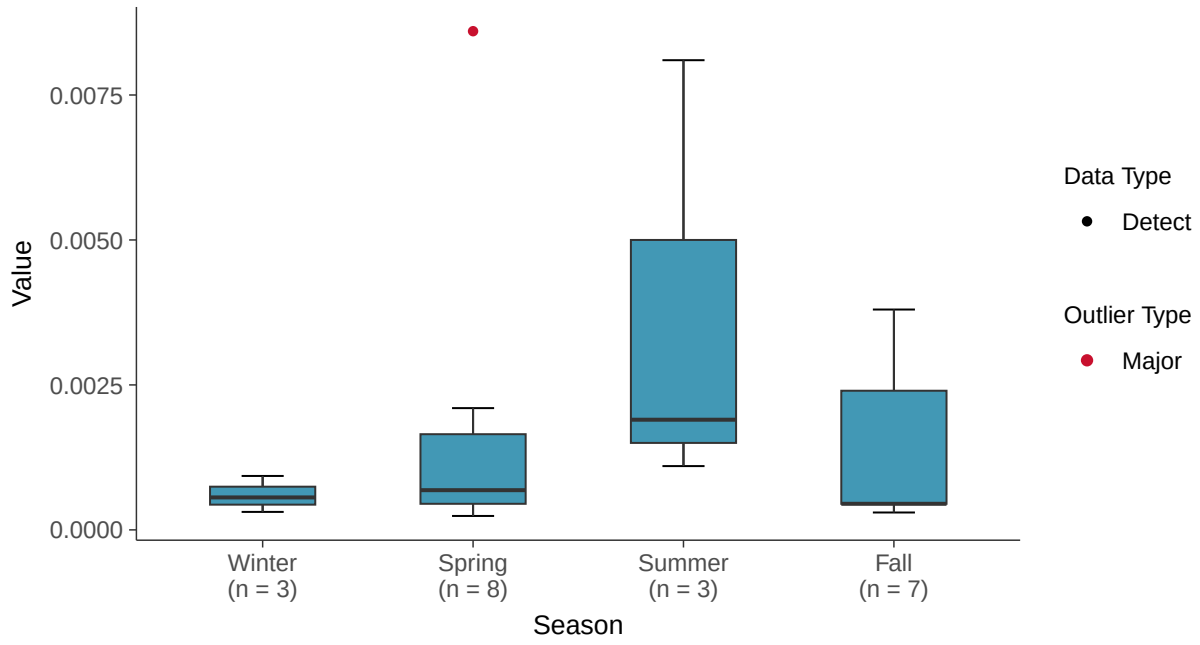
Boxplot

Lead, MW-1 (mg/l)



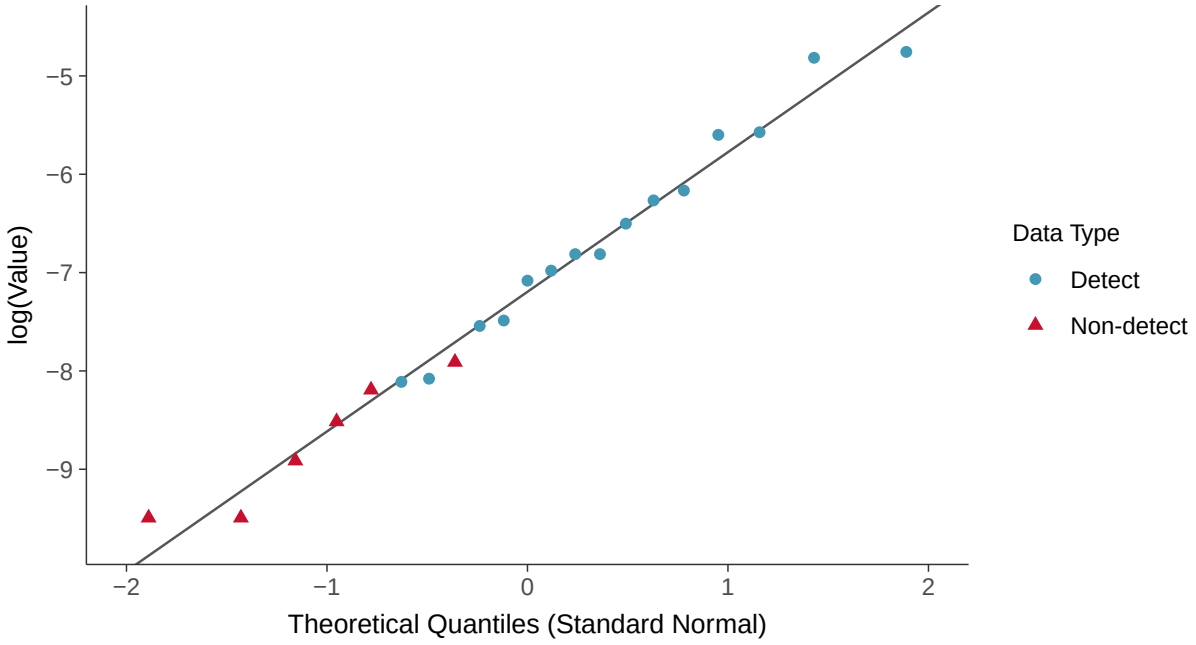
Boxplot by Season

Lead, MW-1 (mg/l)



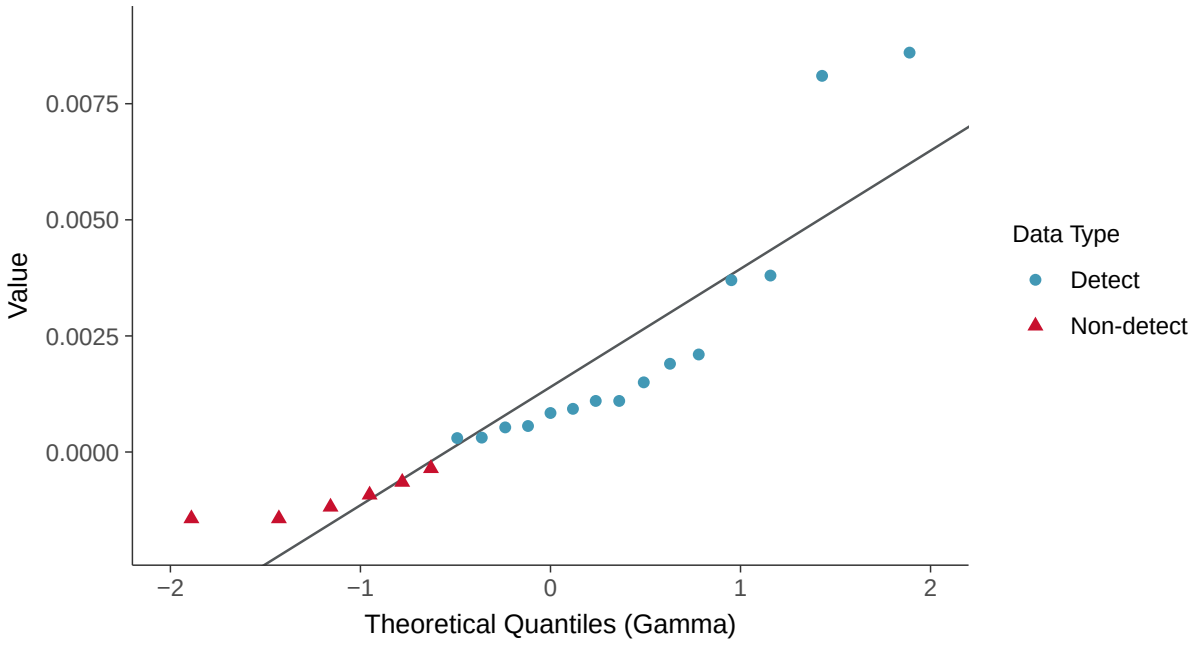
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-1 (mg/l)



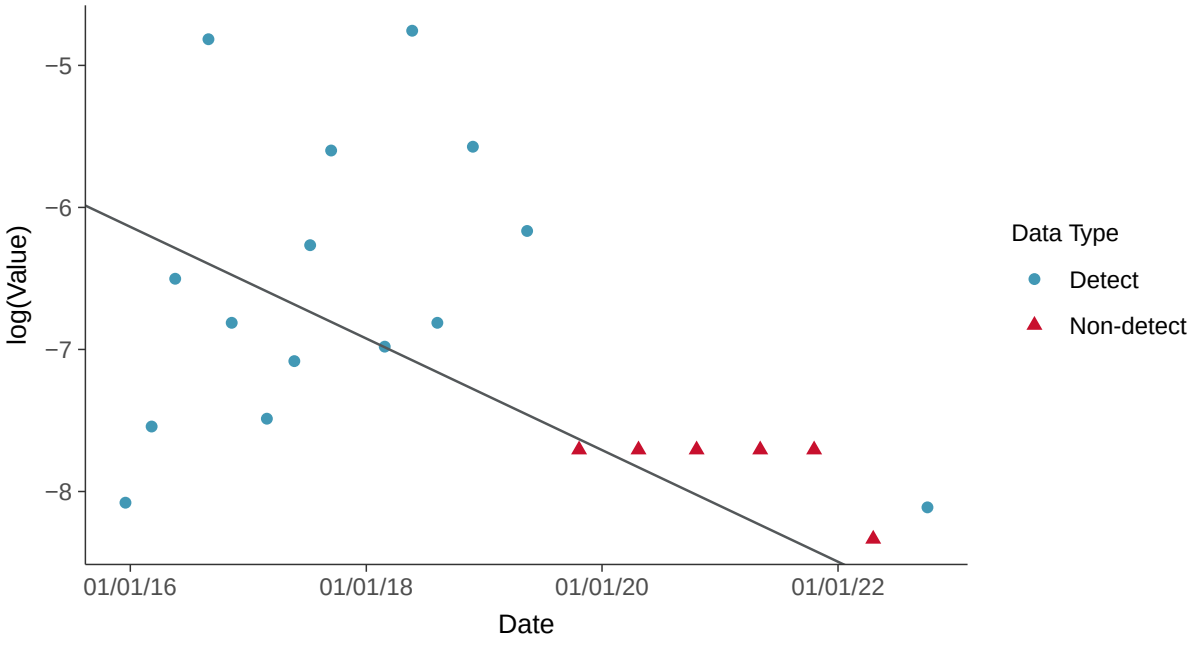
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-1 (mg/l)



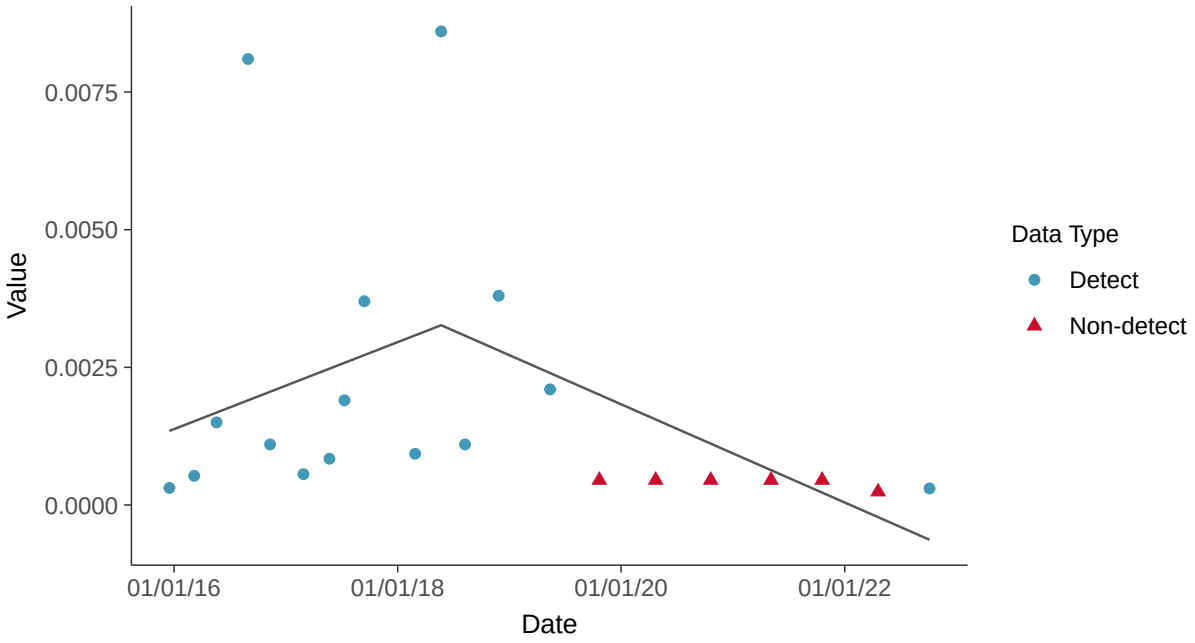
Trend Regression: Lognormal MLE

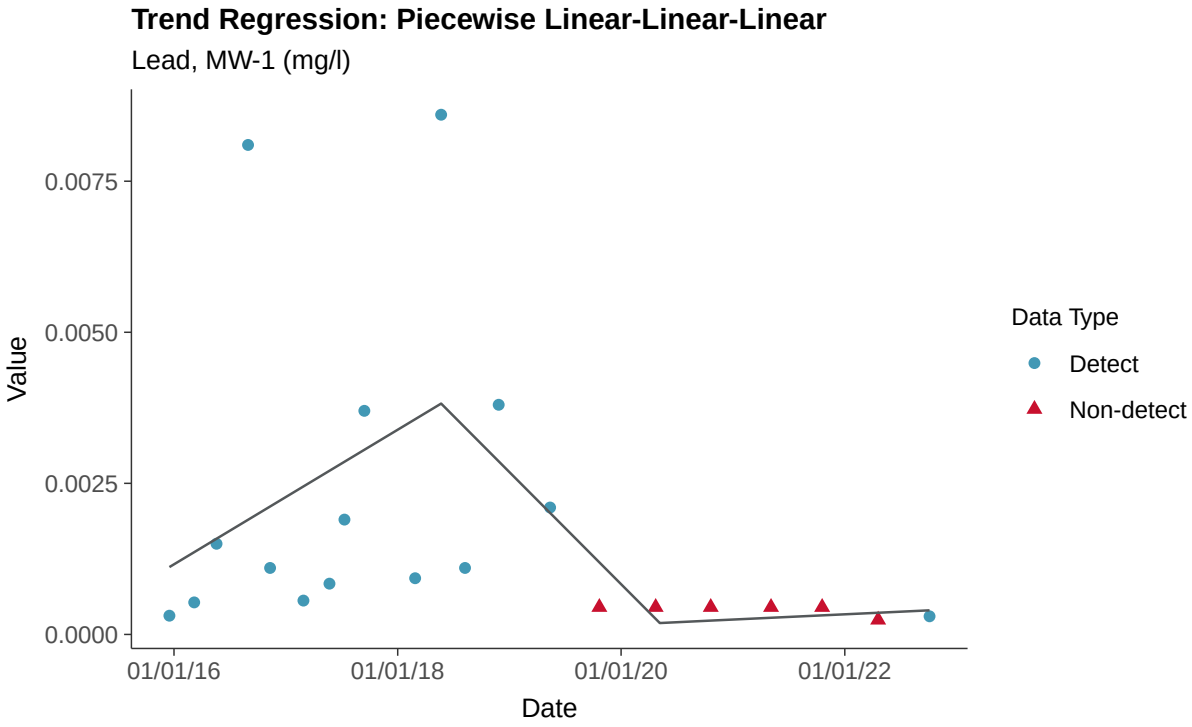
Lead, MW-1 (mg/l)



Trend Regression: Piecewise Linear-Linear

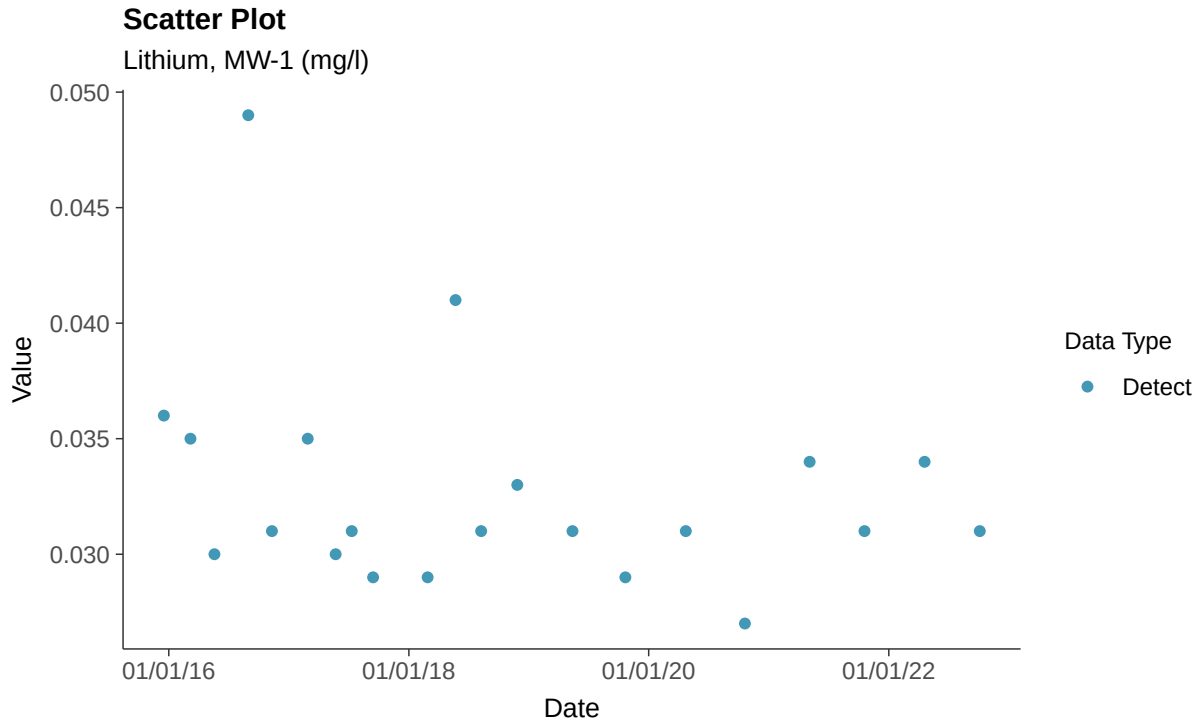
Lead, MW-1 (mg/l)

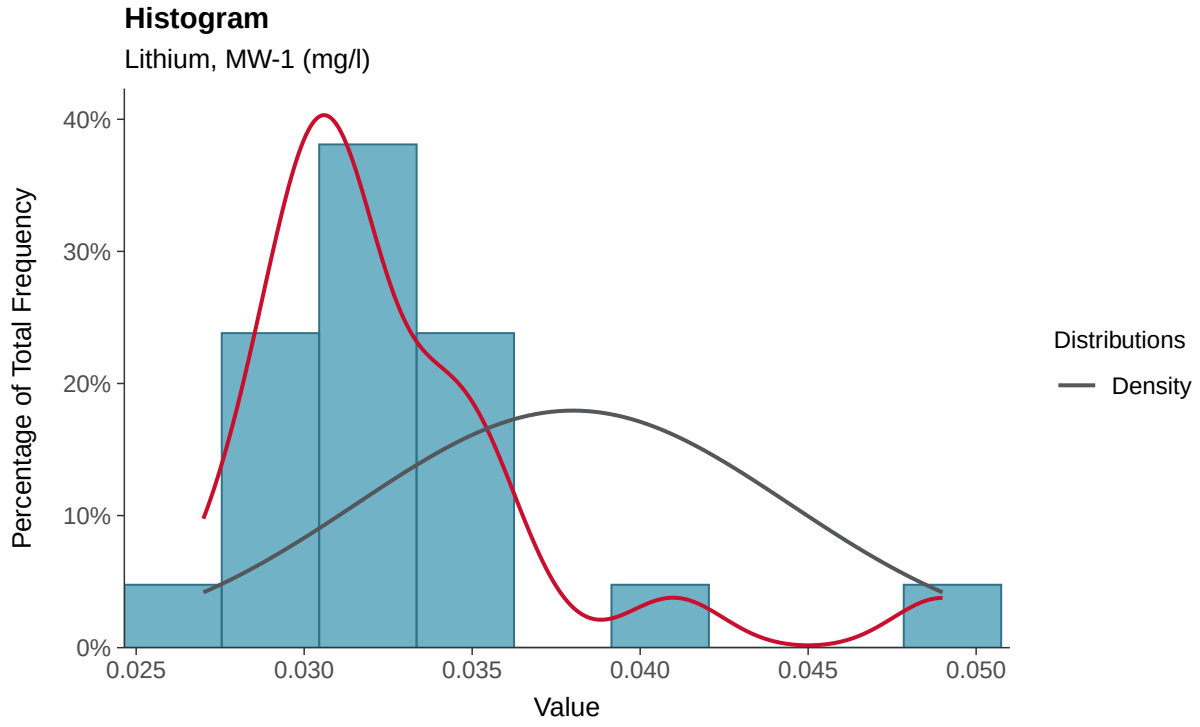



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-1 (mg/l)
Value
0.0075
0.0050
0.0025
0.0000
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-1

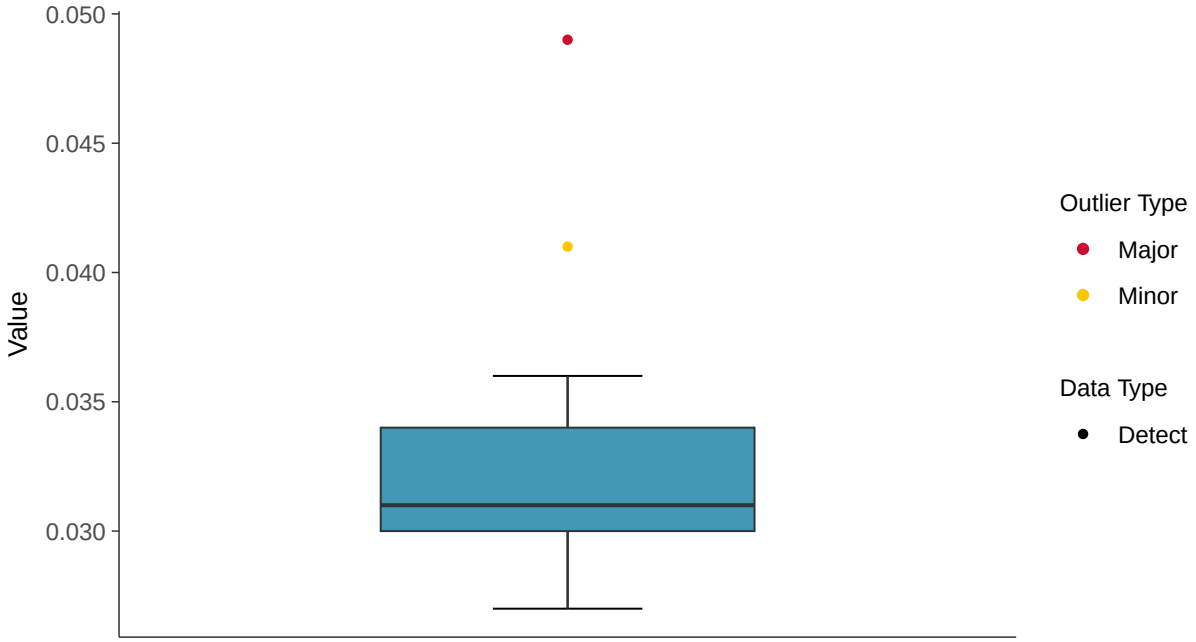
ID: 11_2_118





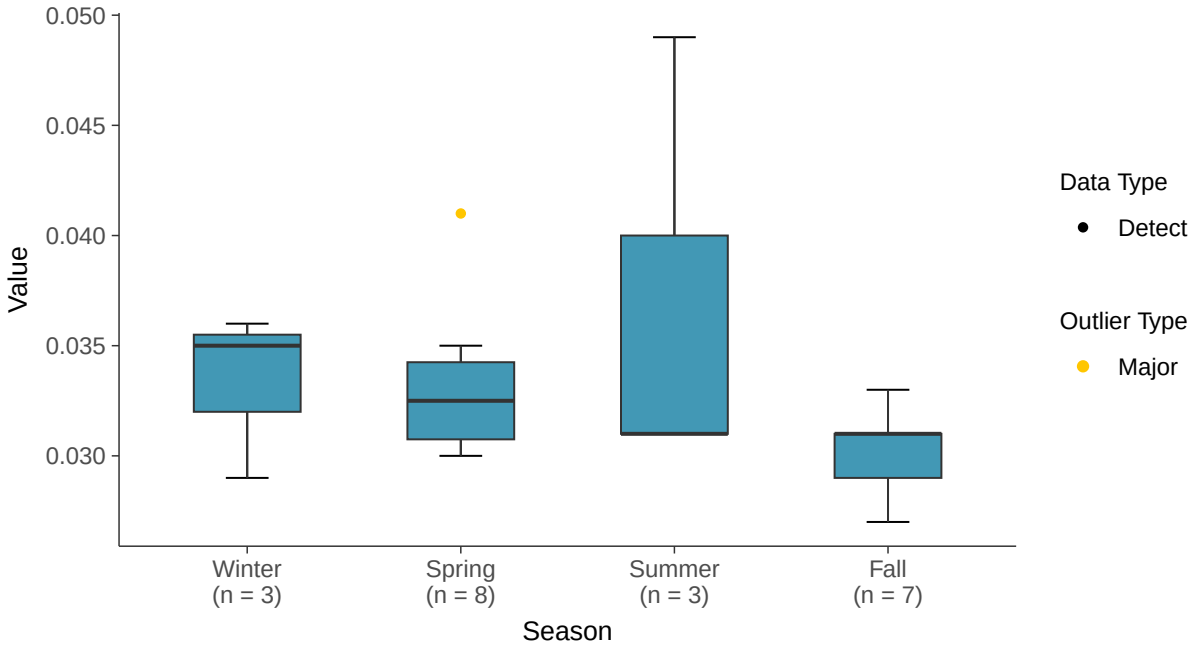
Boxplot

Lithium, MW-1 (mg/l)



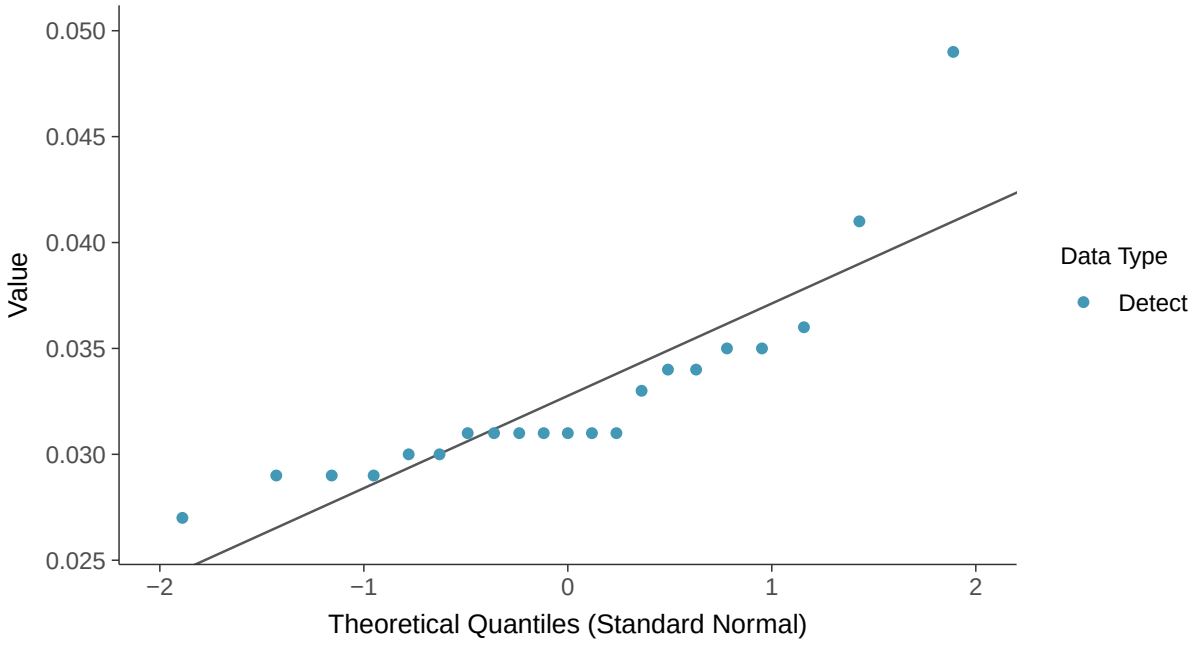
Boxplot by Season

Lithium, MW-1 (mg/l)



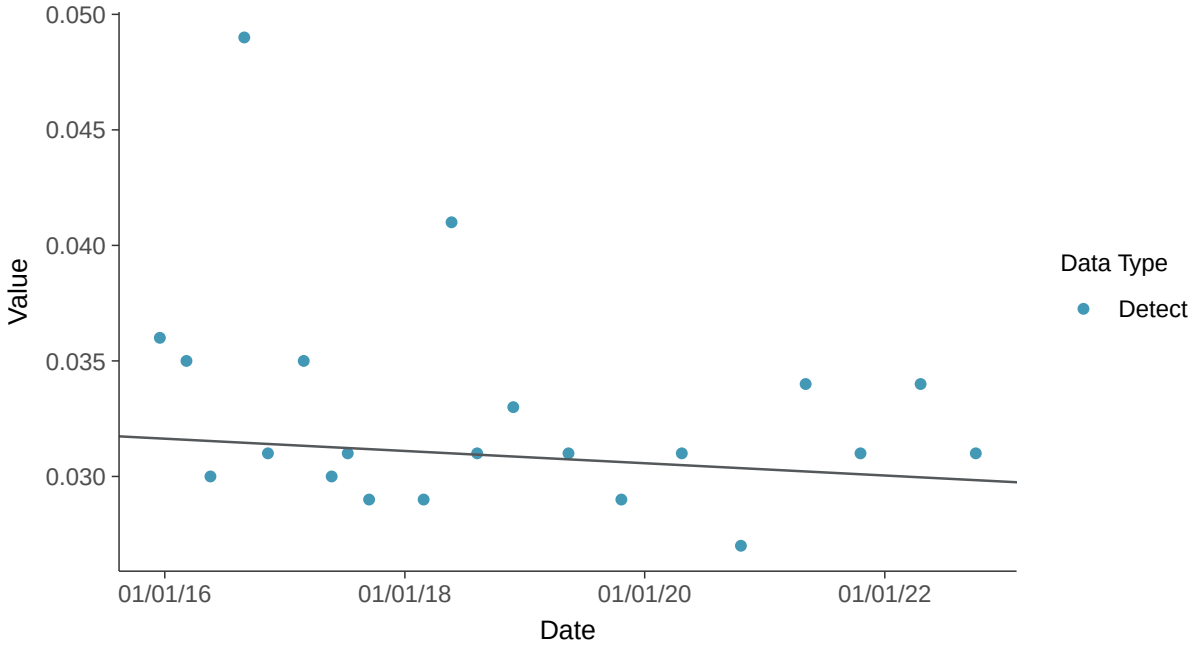
Normal Q-Q plot

Lithium, MW-1 (mg/l)



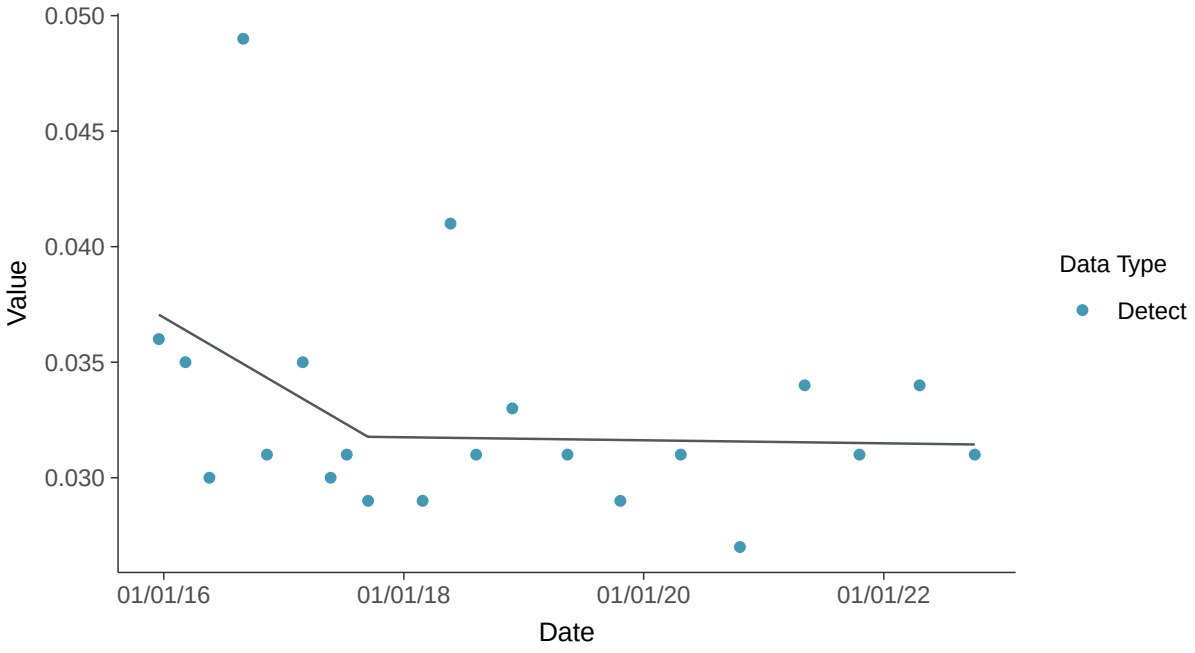
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-1 (mg/l)



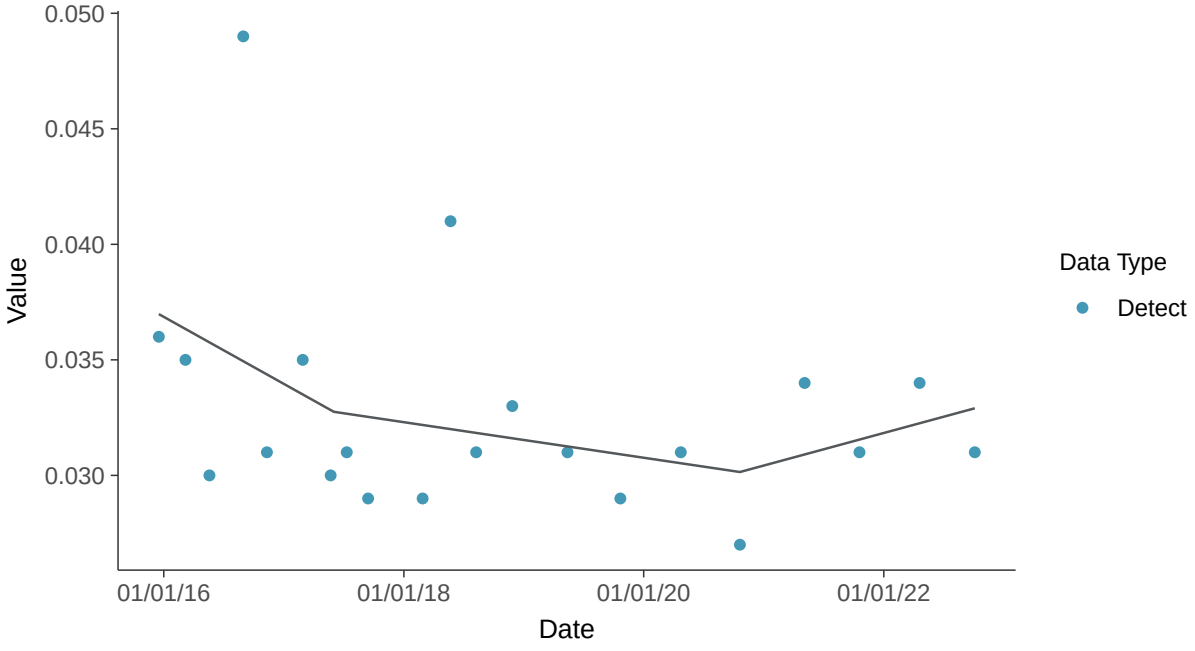
Trend Regression: Piecewise Linear-Linear

Lithium, MW-1 (mg/l)



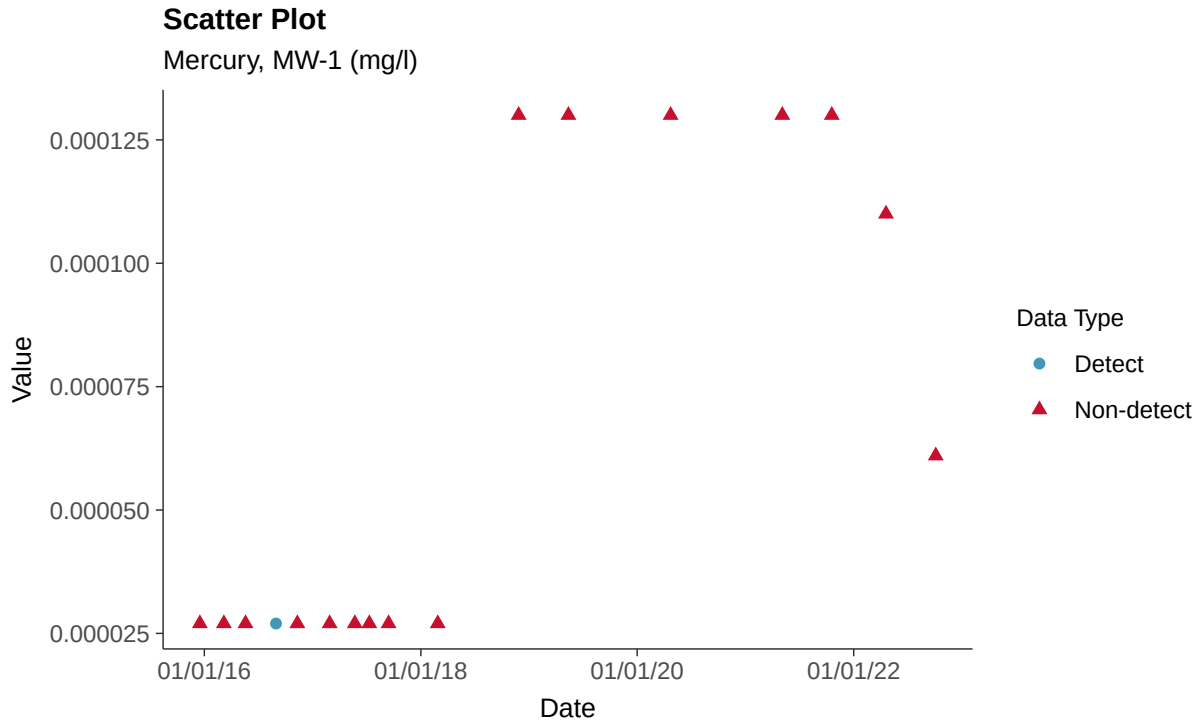
Trend Regression: Piecewise Linear-Linear-Linear

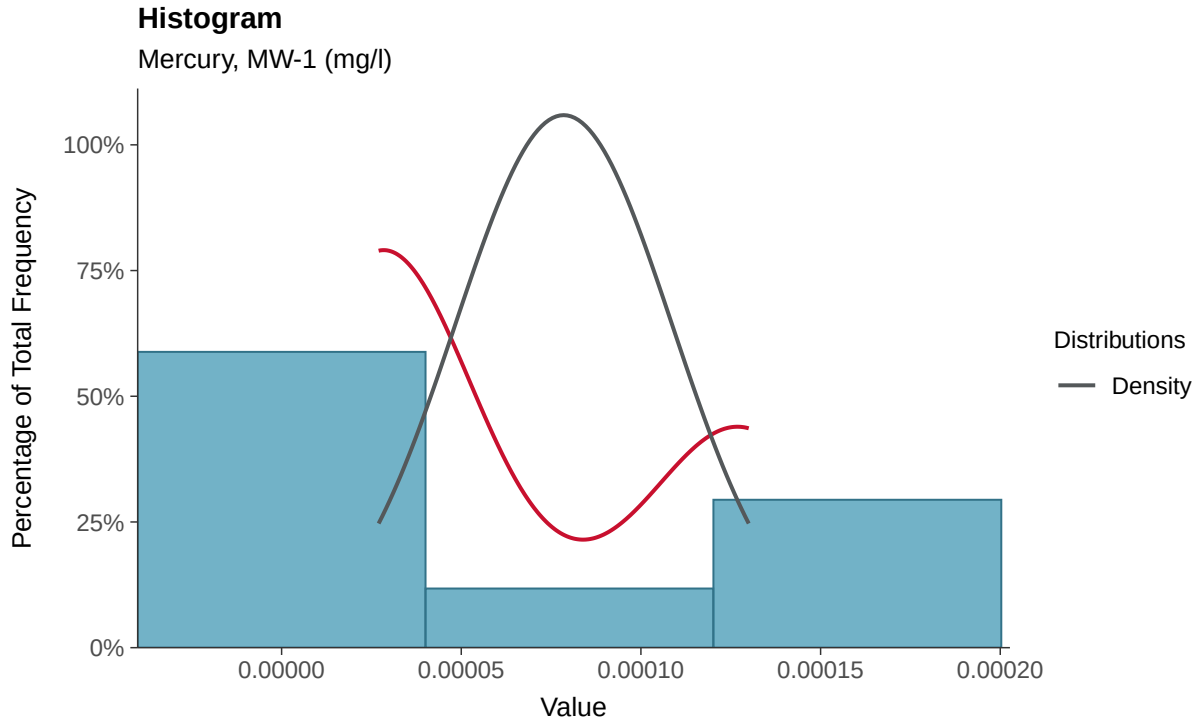
Lithium, MW-1 (mg/l)



Appendix IV: Mercury, MW-1

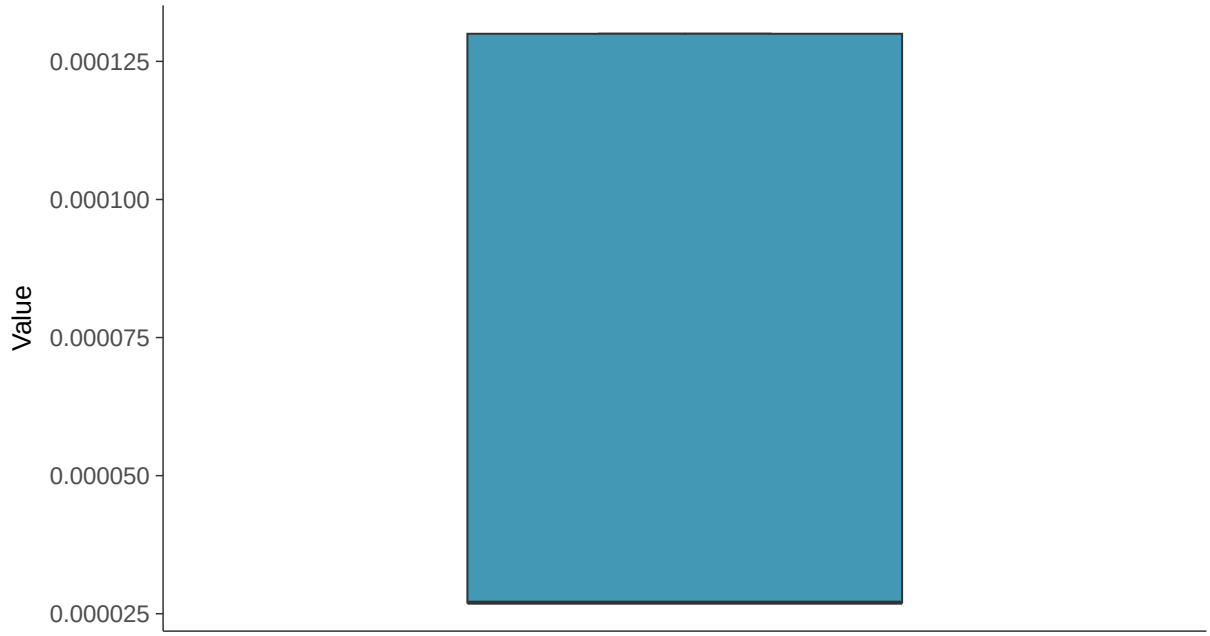
ID: 11_2_120





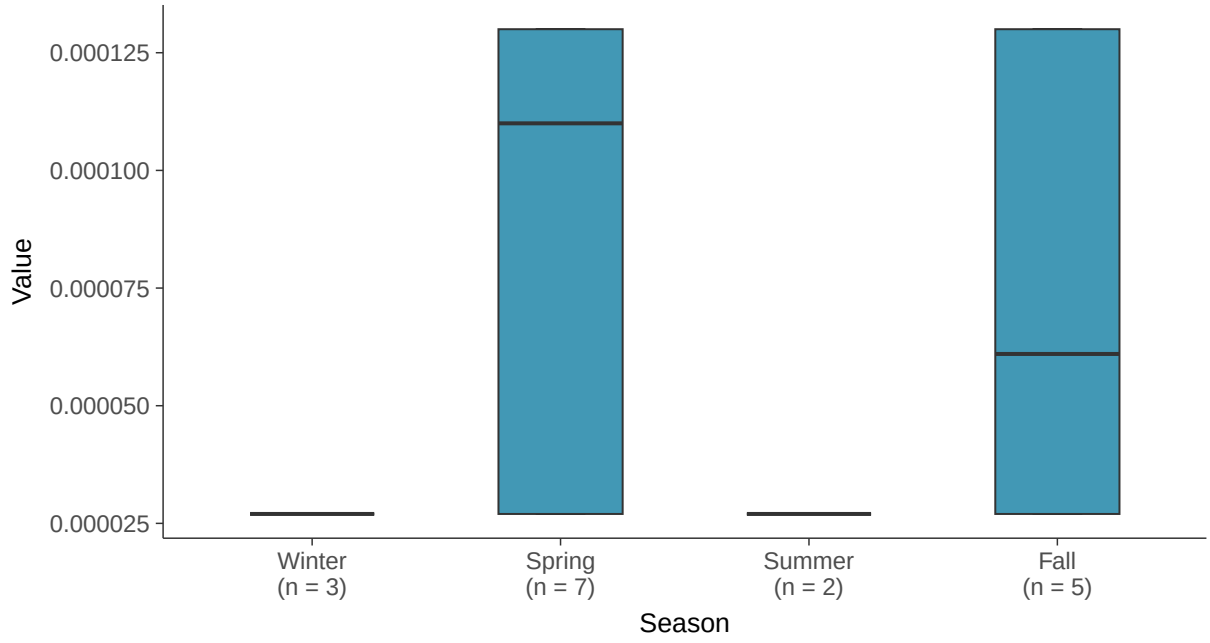
Boxplot

Mercury, MW-1 (mg/l)



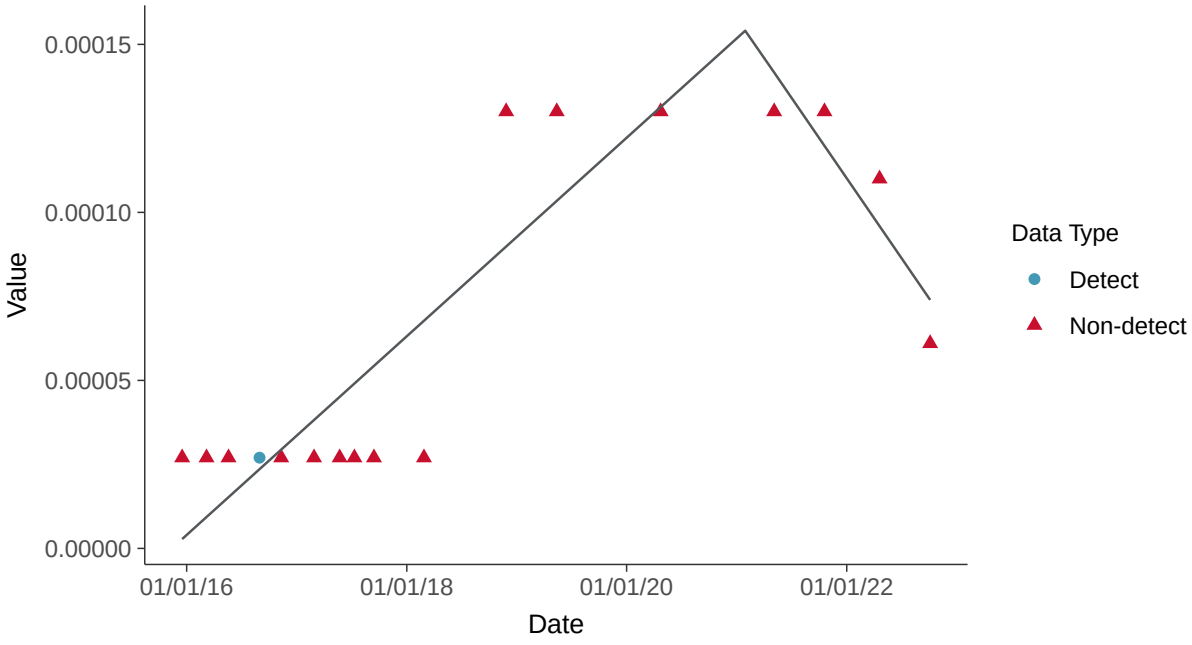
Boxplot by Season

Mercury, MW-1 (mg/l)



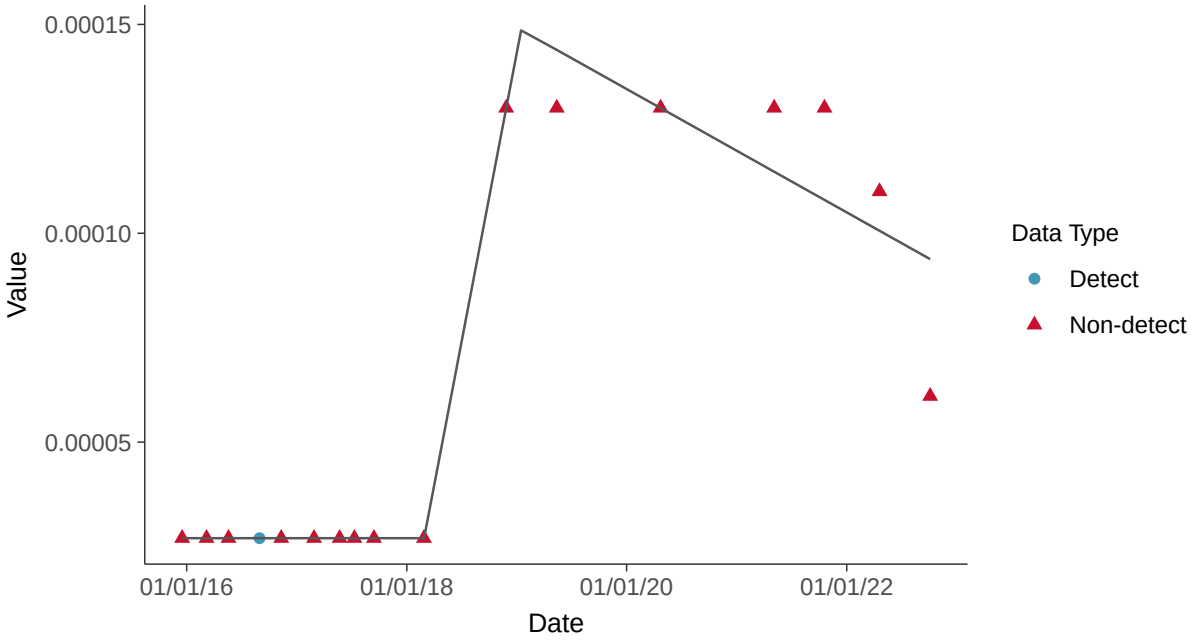
Trend Regression: Piecewise Linear-Linear

Mercury, MW-1 (mg/l)



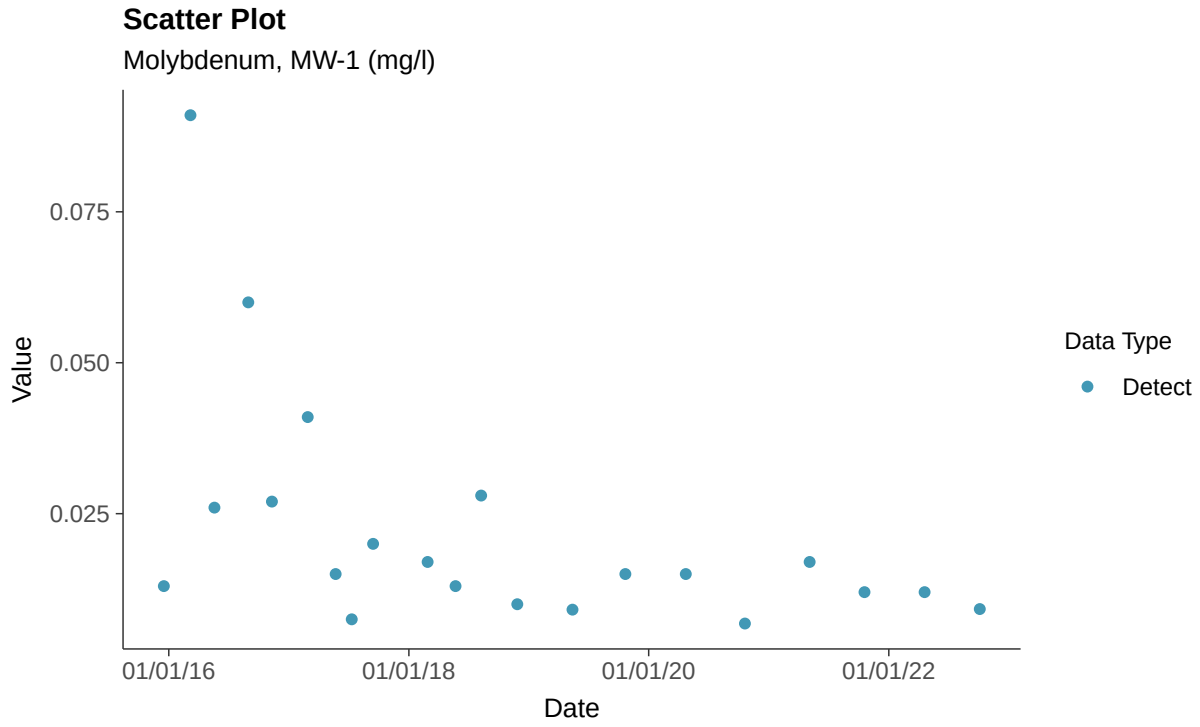
Trend Regression: Piecewise Linear-Linear-Linear

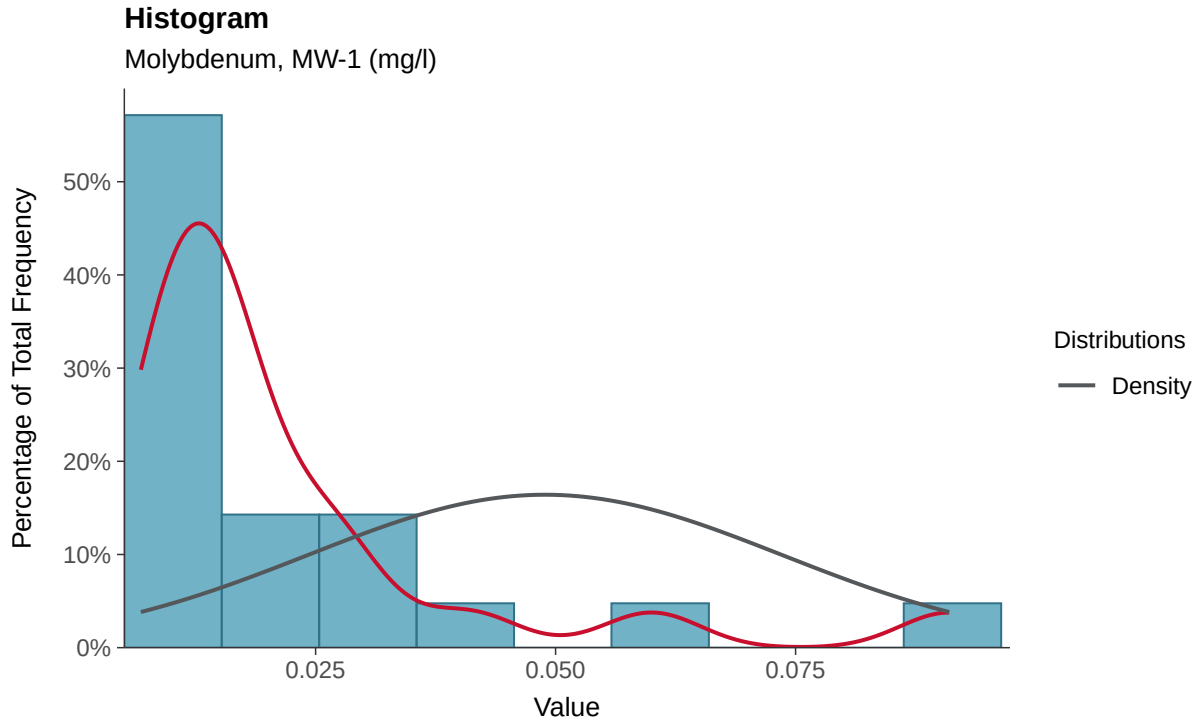
Mercury, MW-1 (mg/l)



Appendix IV: Molybdenum, MW-1

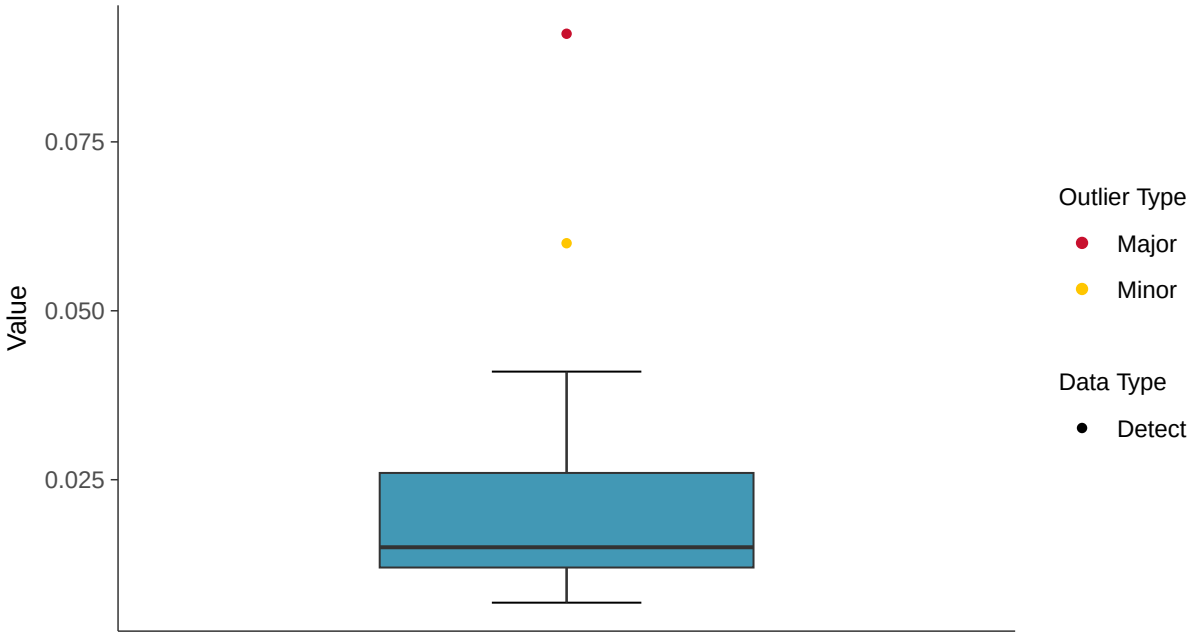
ID: 11_2_121





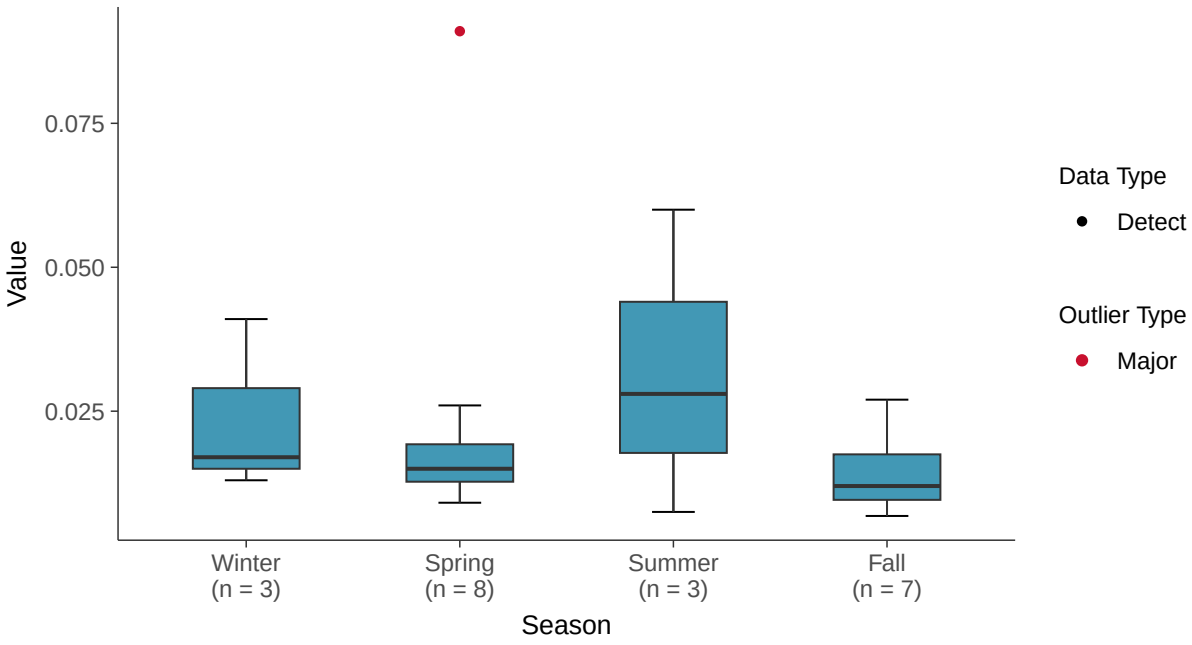
Boxplot

Molybdenum, MW-1 (mg/l)



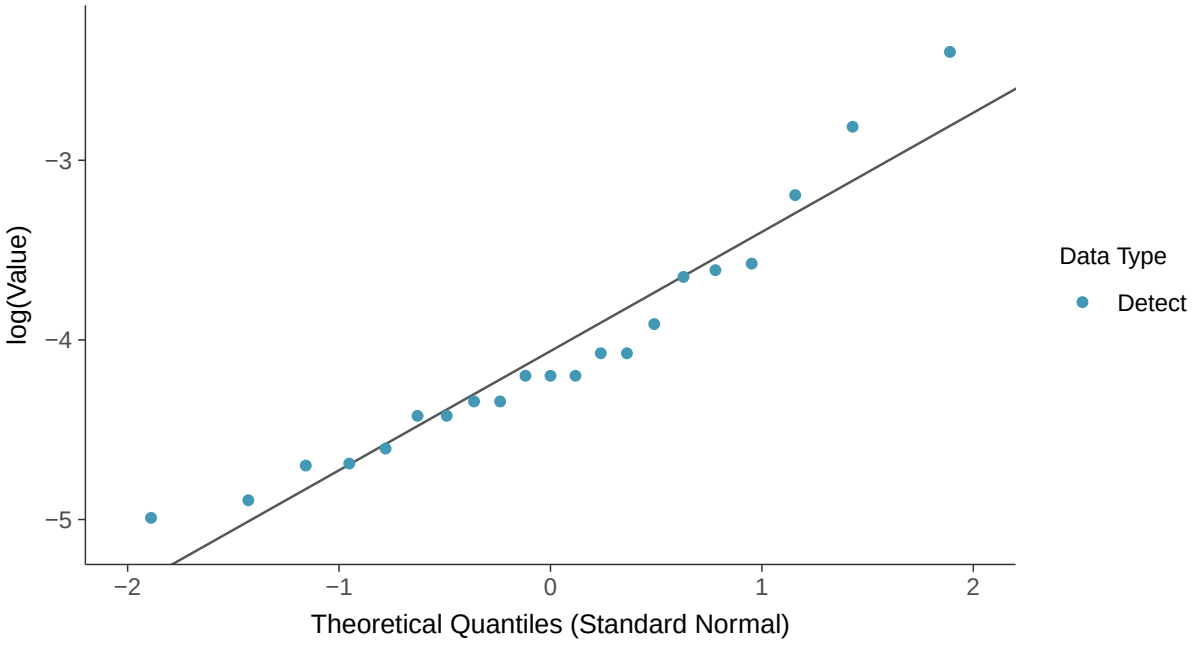
Boxplot by Season

Molybdenum, MW-1 (mg/l)



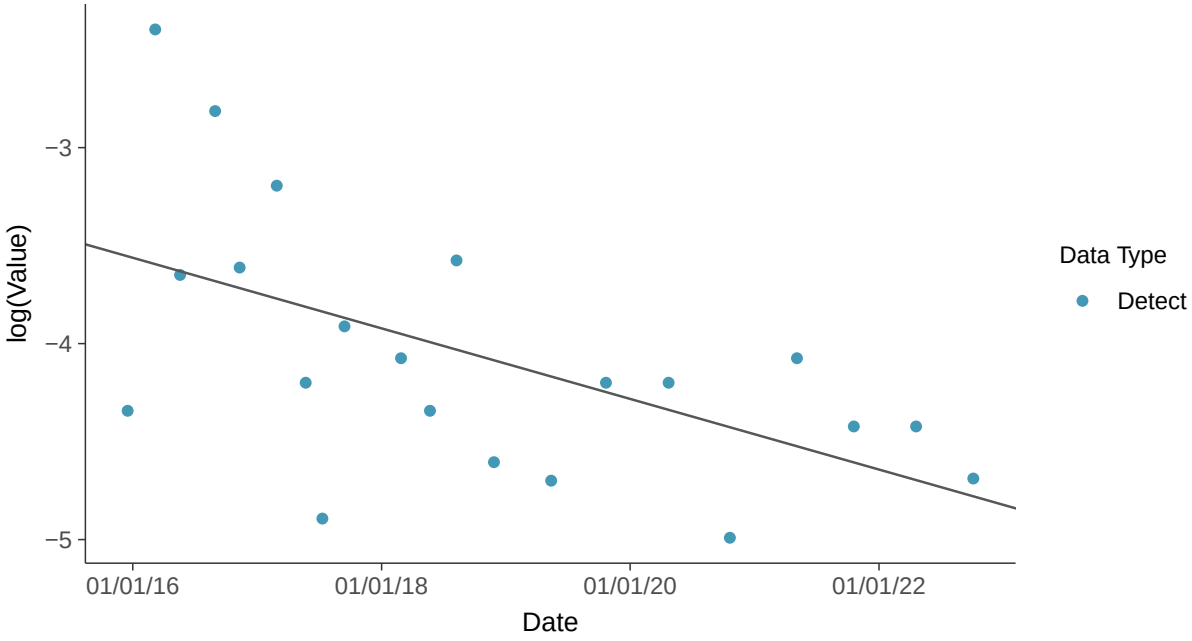
Lognormal Q-Q plot

Molybdenum, MW-1 (mg/l)



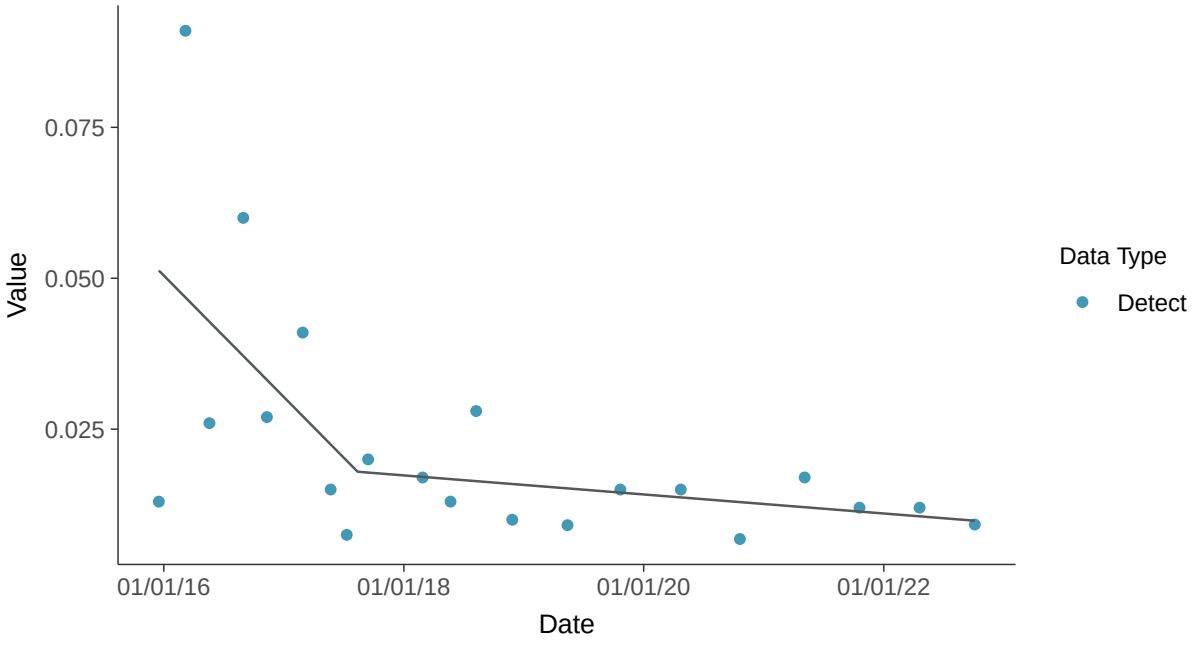
Trend Regression: Lognormal MLE

Molybdenum, MW-1 (mg/l)



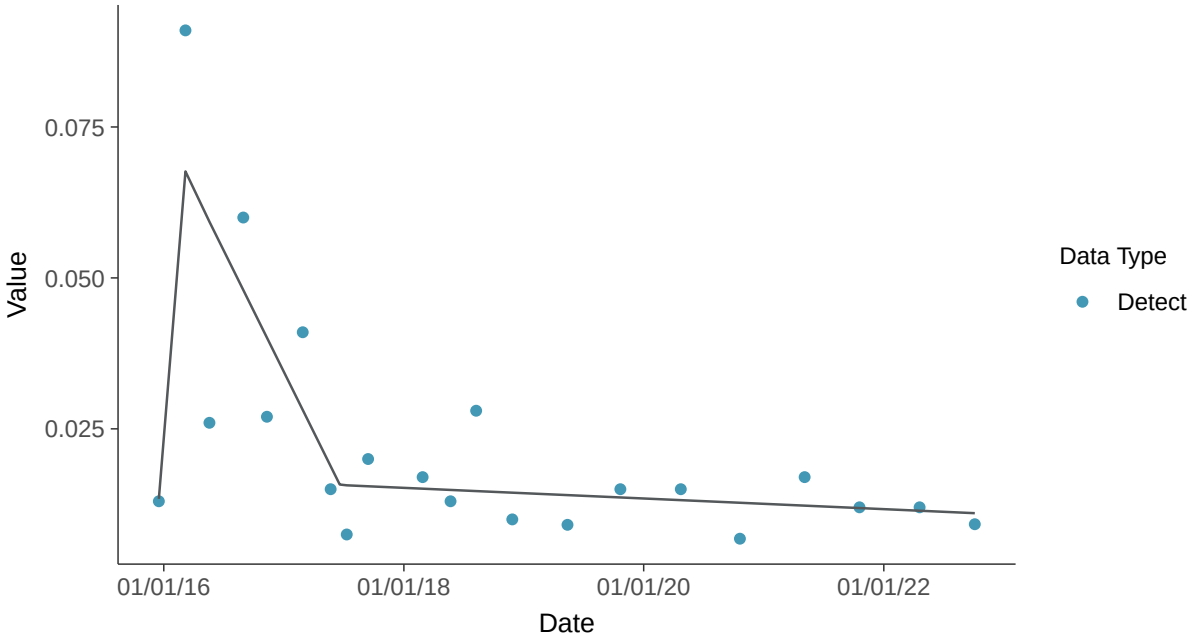
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-1 (mg/l)



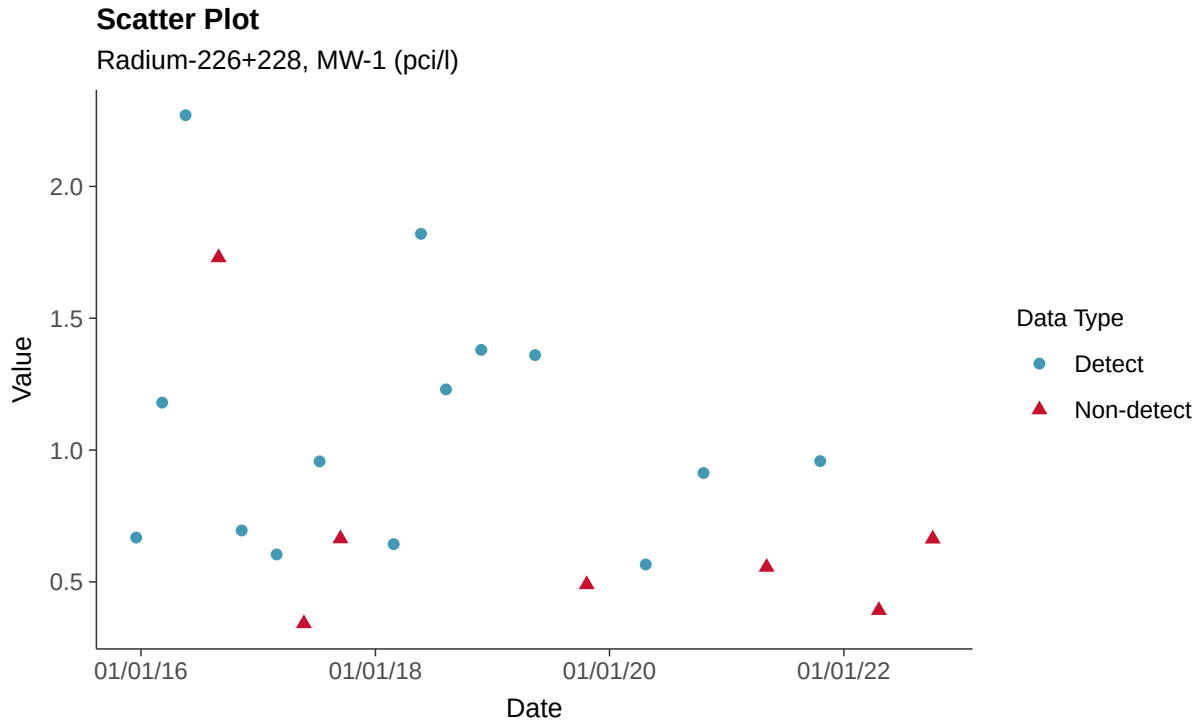
Trend Regression: Piecewise Linear-Linear-Linear

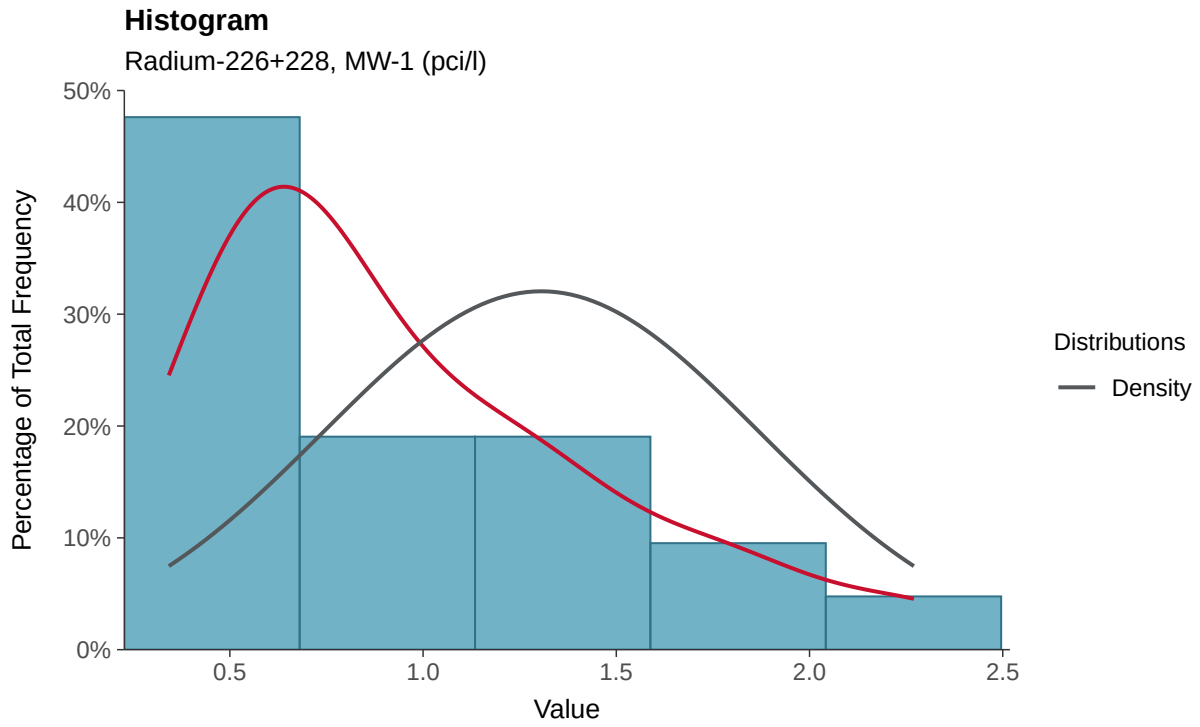
Molybdenum, MW-1 (mg/l)



Appendix IV: Radium-226+228, MW-1

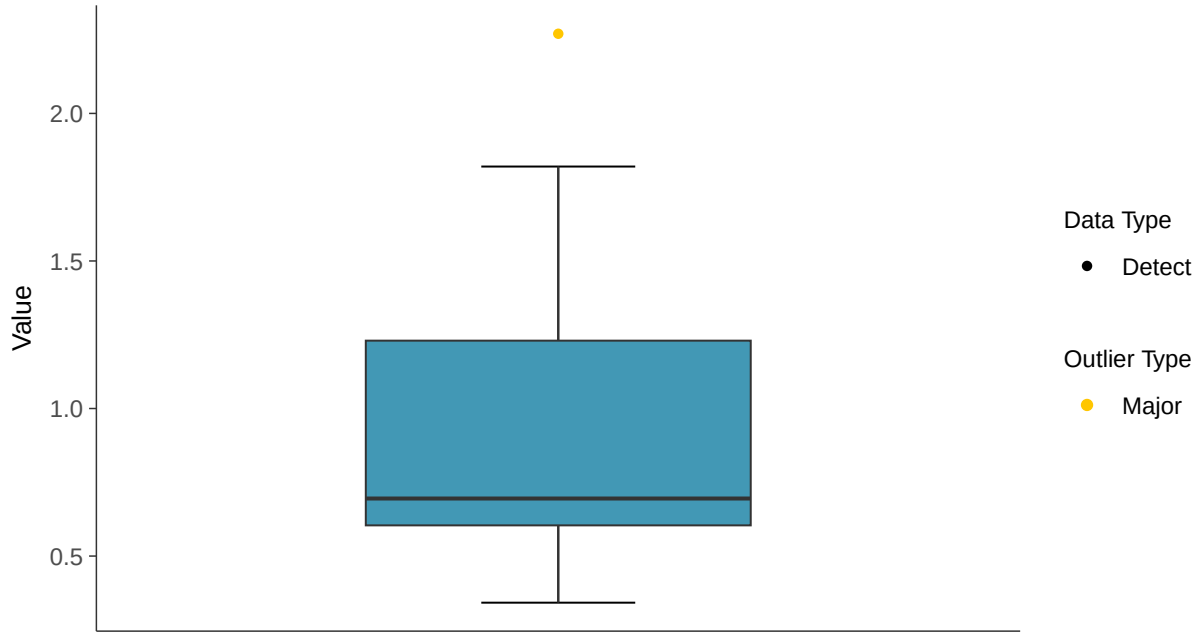
ID: 11_2_127





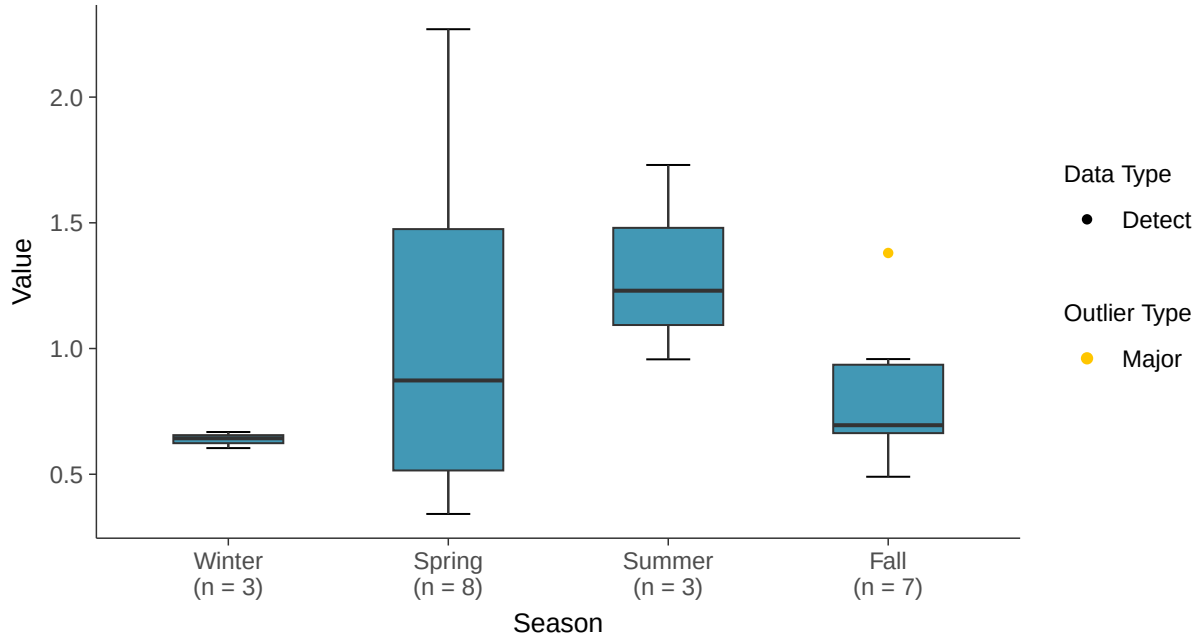
Boxplot

Radium-226+228, MW-1 (pci/l)



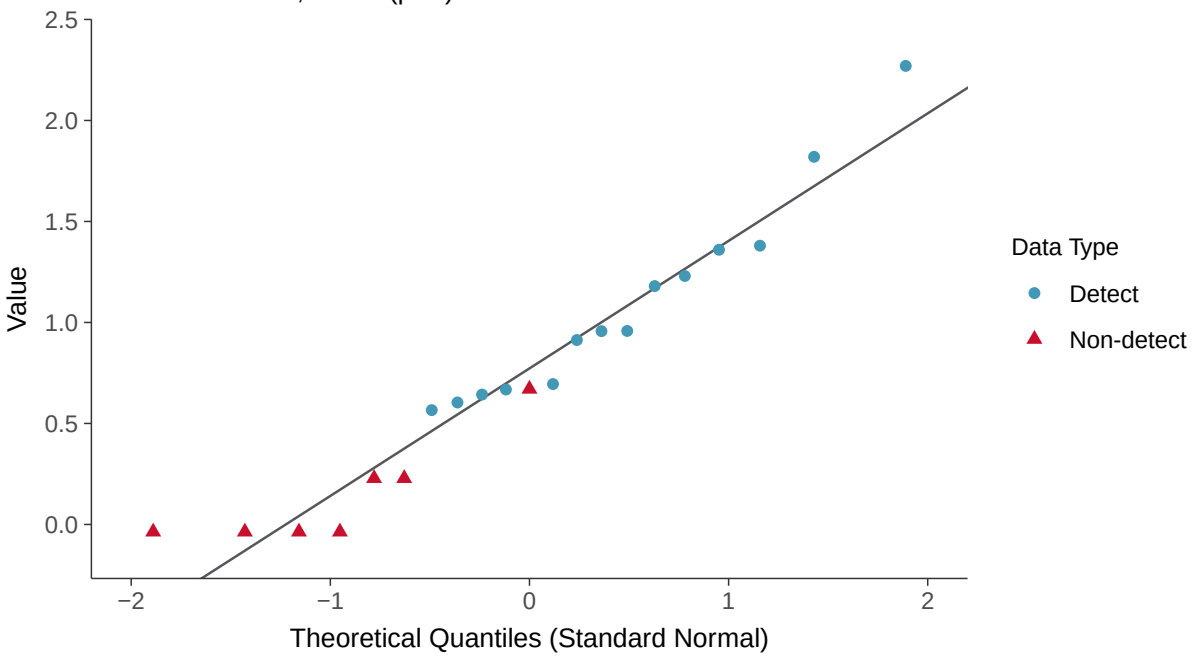
Boxplot by Season

Radium-226+228, MW-1 (pci/l)



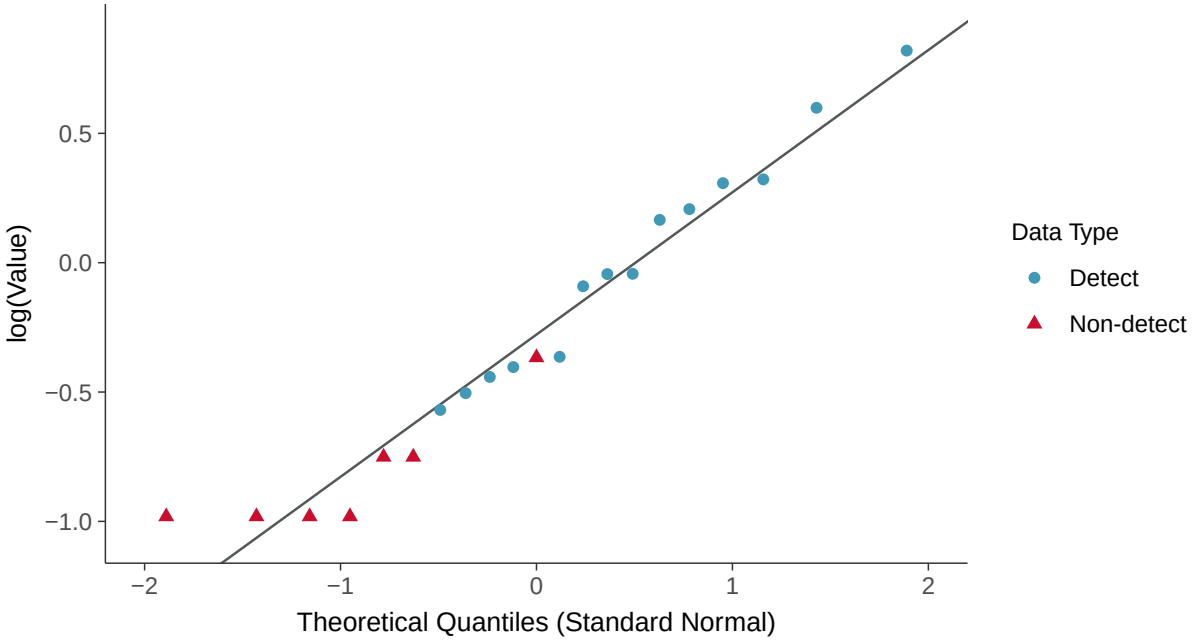
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-1 (pci/l)



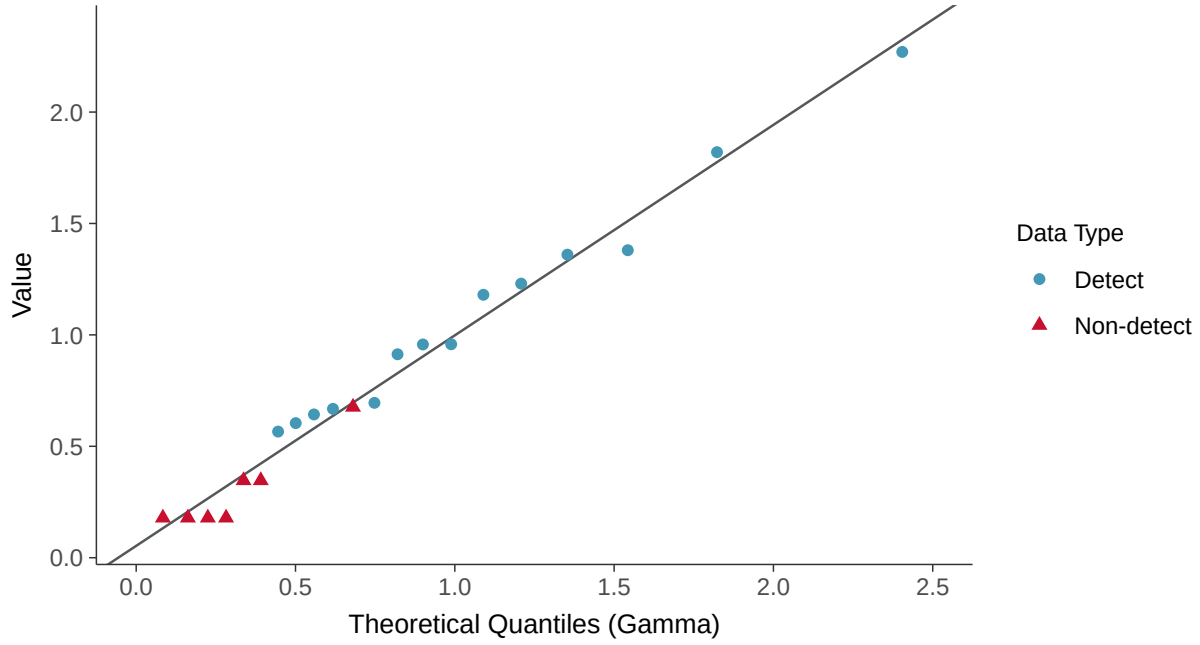
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-1 (pci/l)



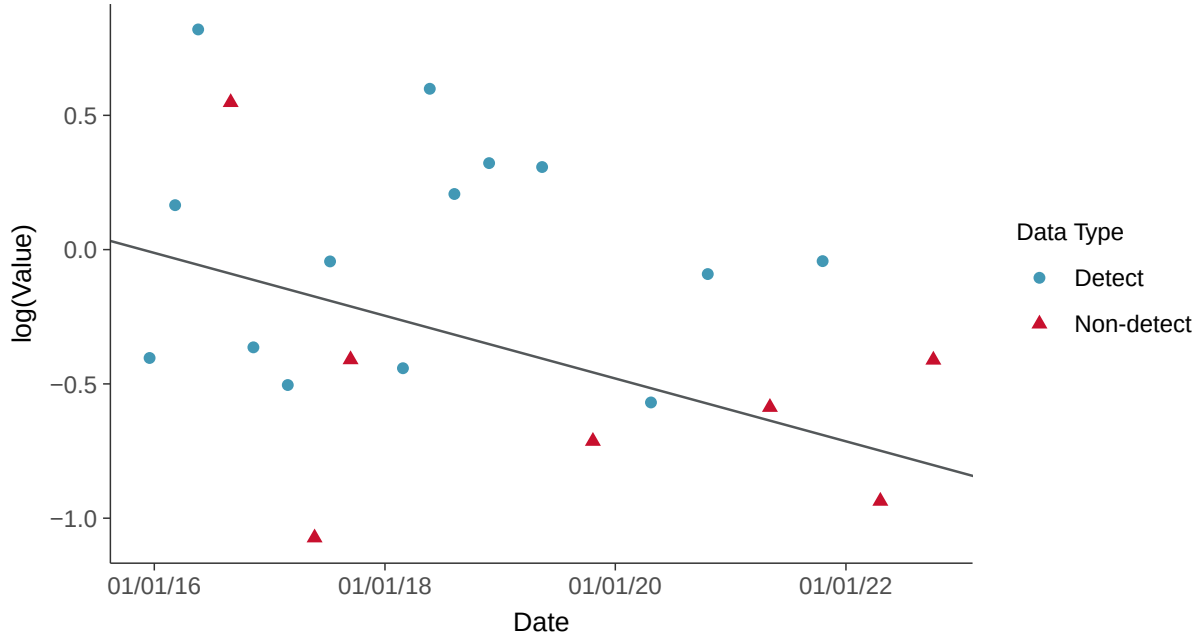
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-1 (pci/l)



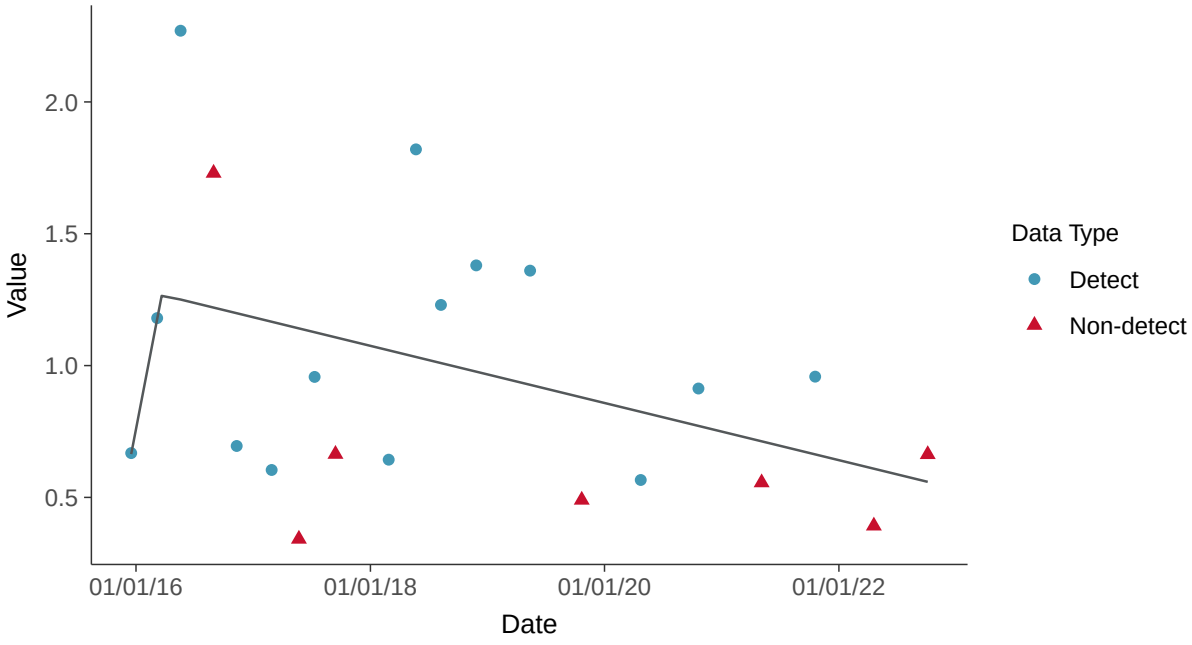
Trend Regression: Lognormal MLE

Radium-226+228, MW-1 (pci/l)



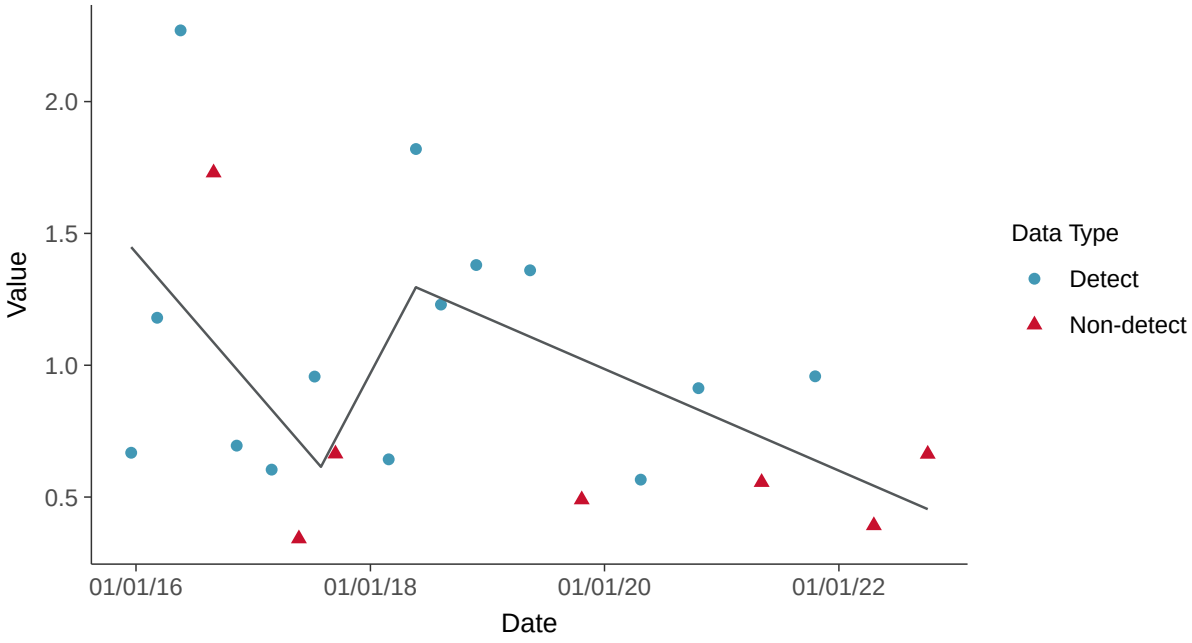
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-1 (pci/l)



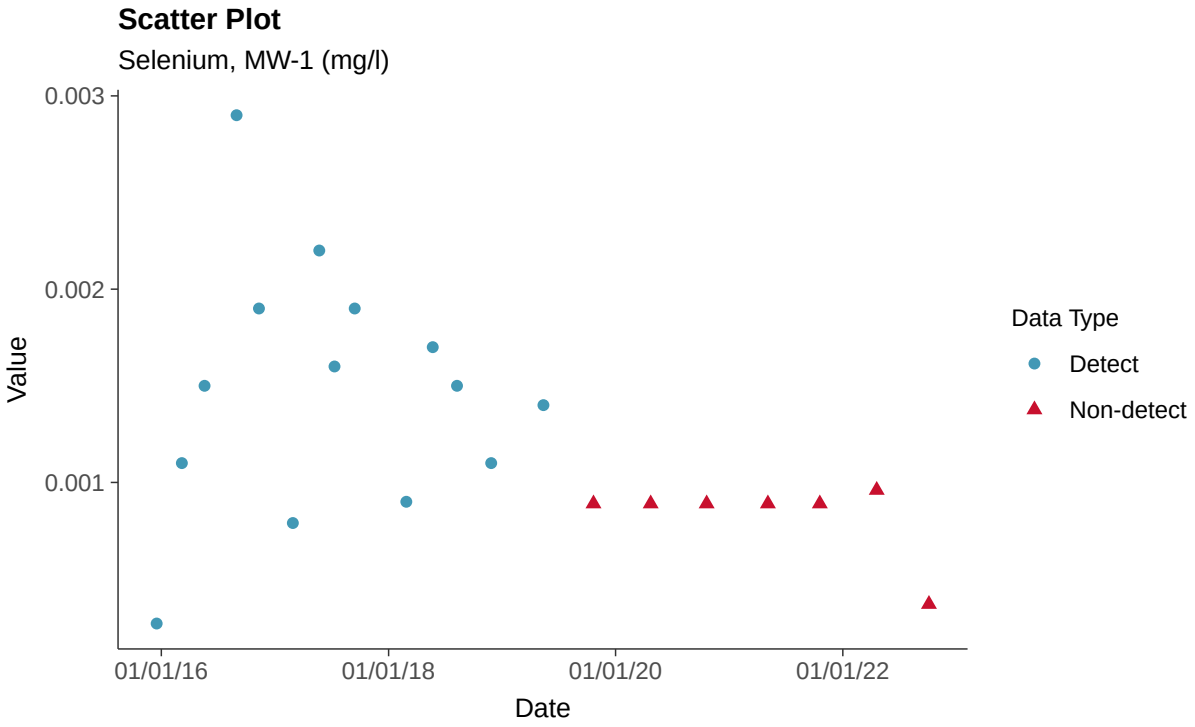
Trend Regression: Piecewise Linear-Linear-Linear

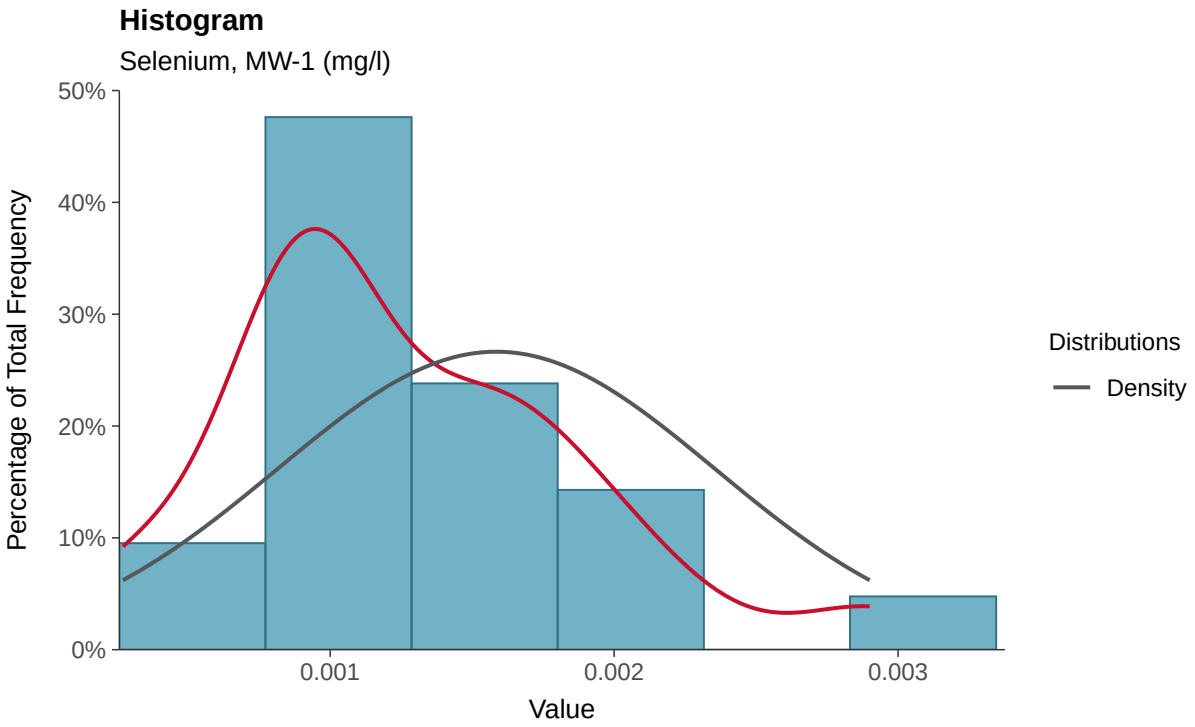
Radium-226+228, MW-1 (pci/l)



Appendix IV: Selenium, MW-1

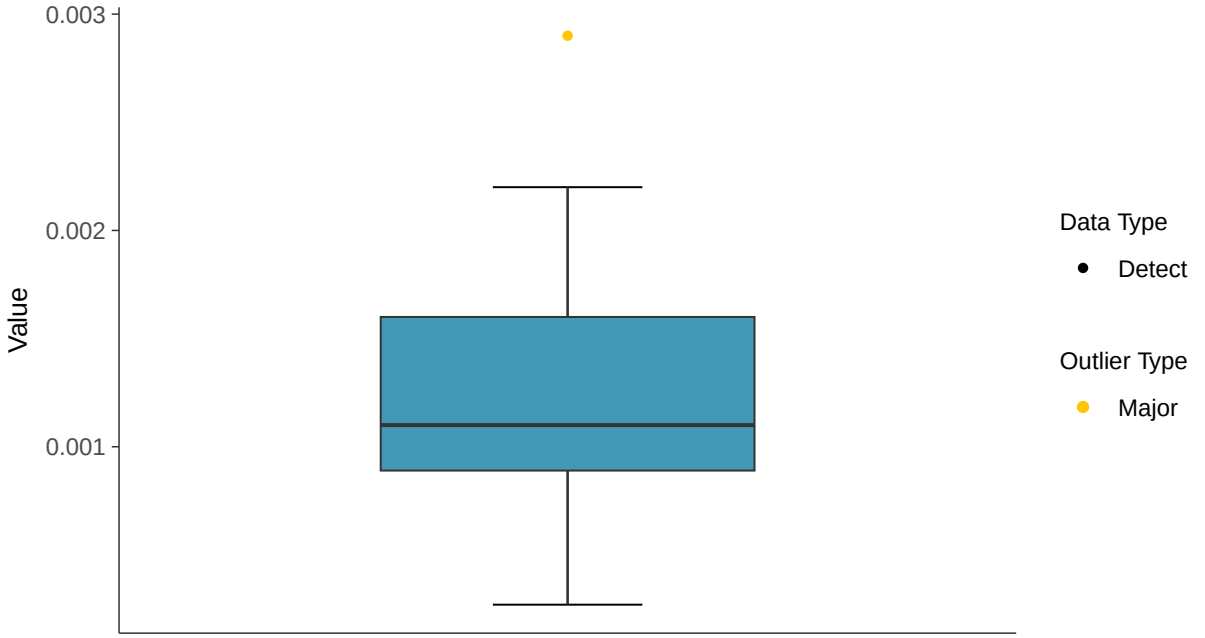
ID: 11_2_129





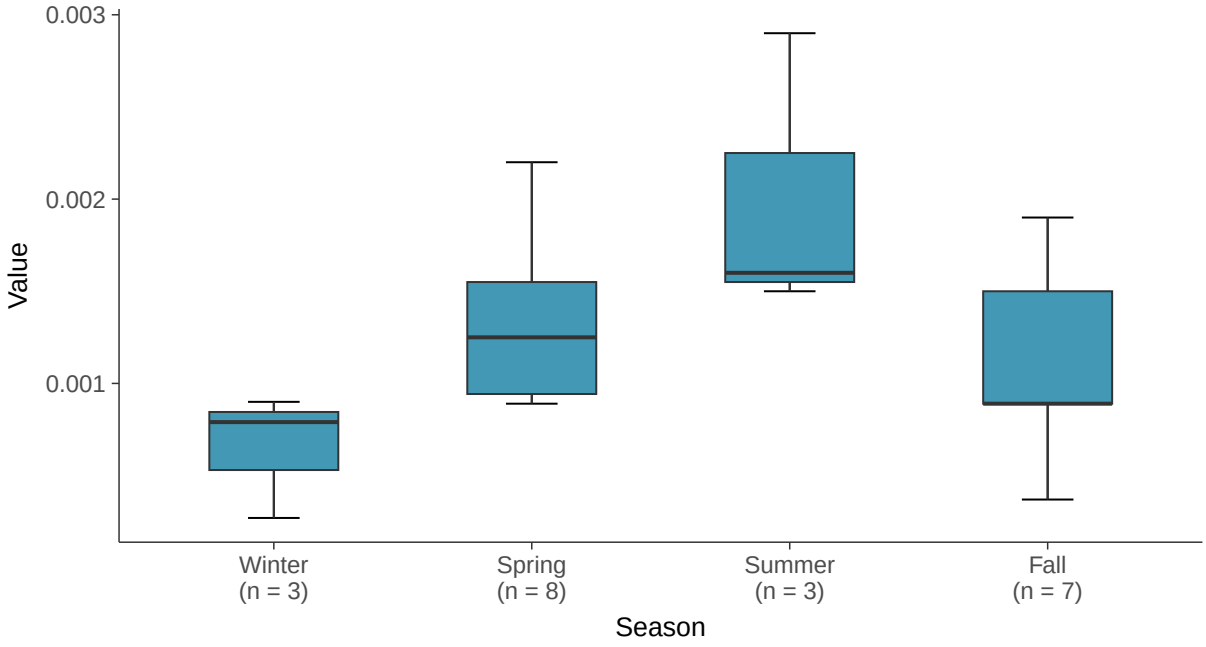
Boxplot

Selenium, MW-1 (mg/l)



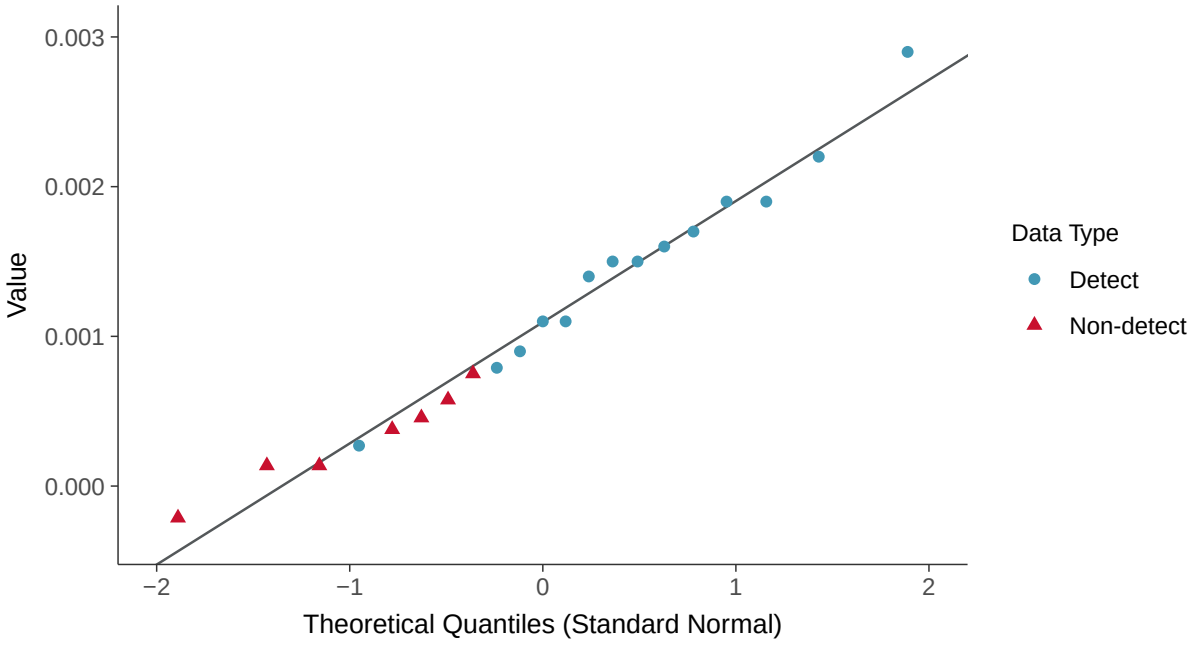
Boxplot by Season

Selenium, MW-1 (mg/l)



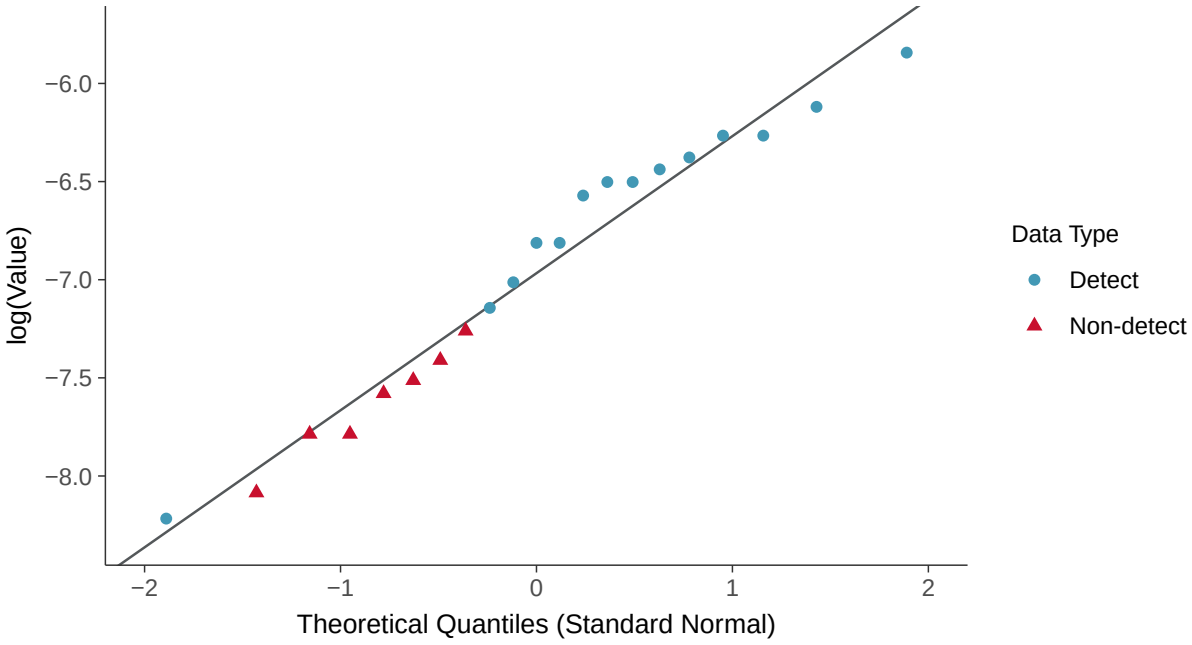
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-1 (mg/l)



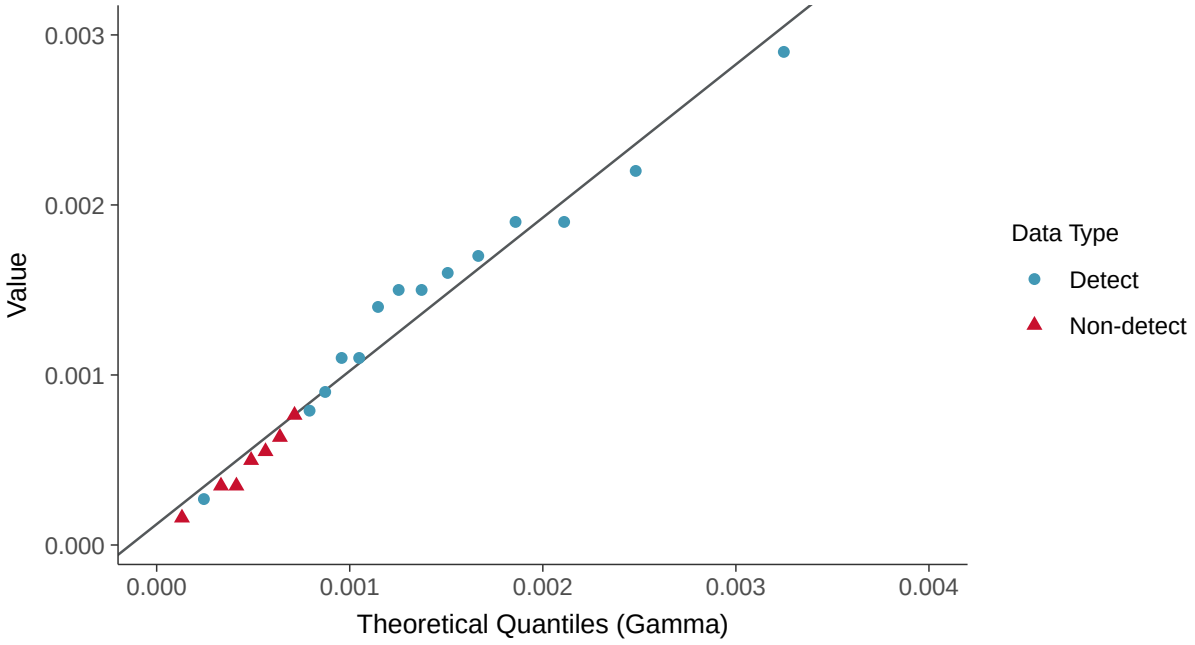
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-1 (mg/l)



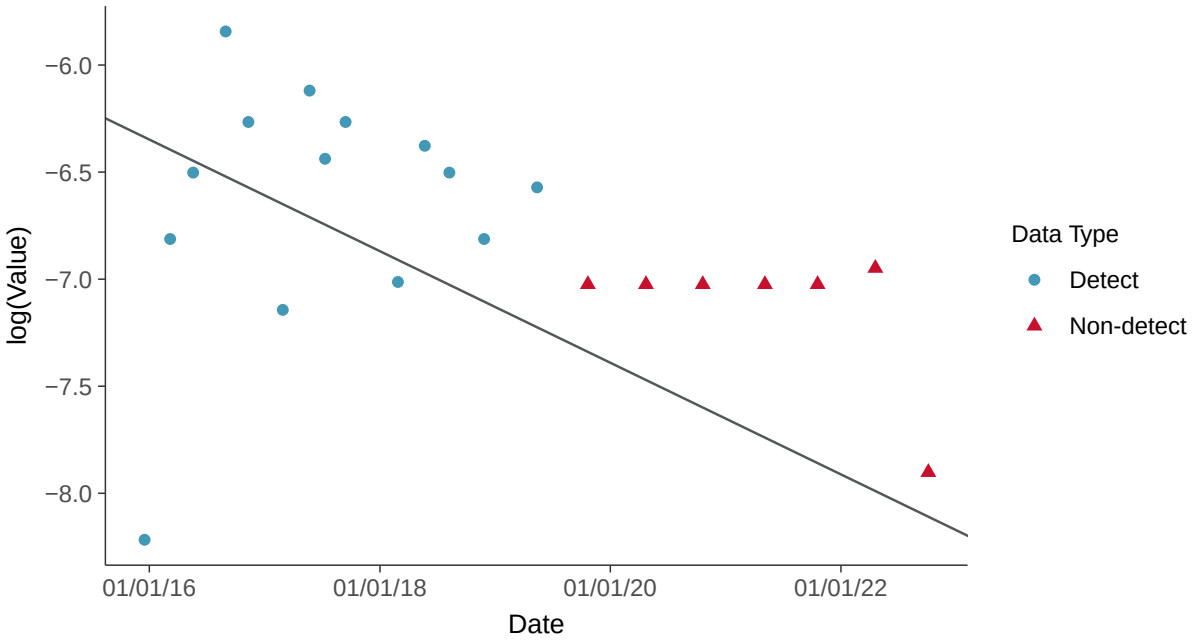
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-1 (mg/l)



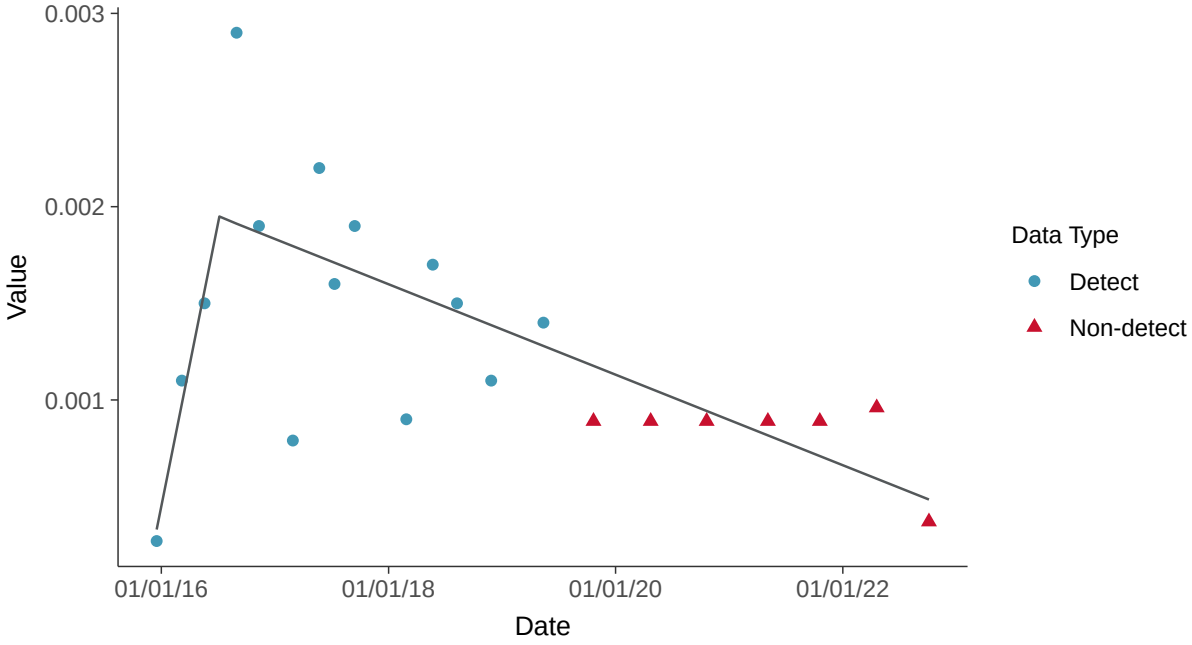
Trend Regression: Lognormal MLE

Selenium, MW-1 (mg/l)



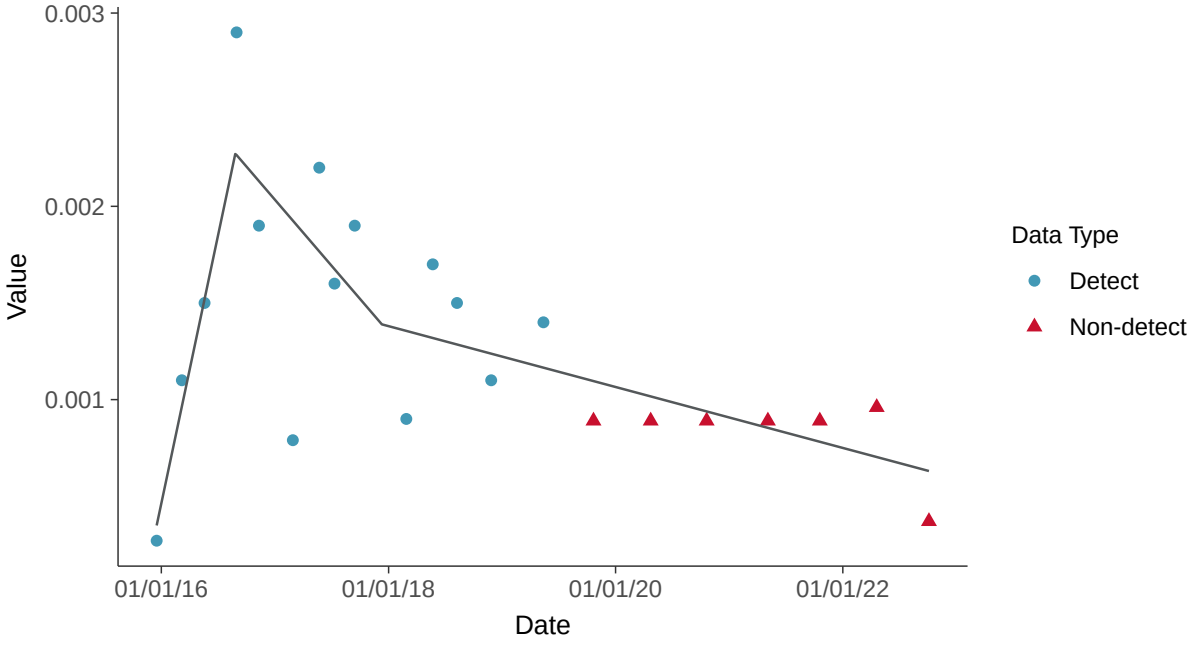
Trend Regression: Piecewise Linear-Linear

Selenium, MW-1 (mg/l)



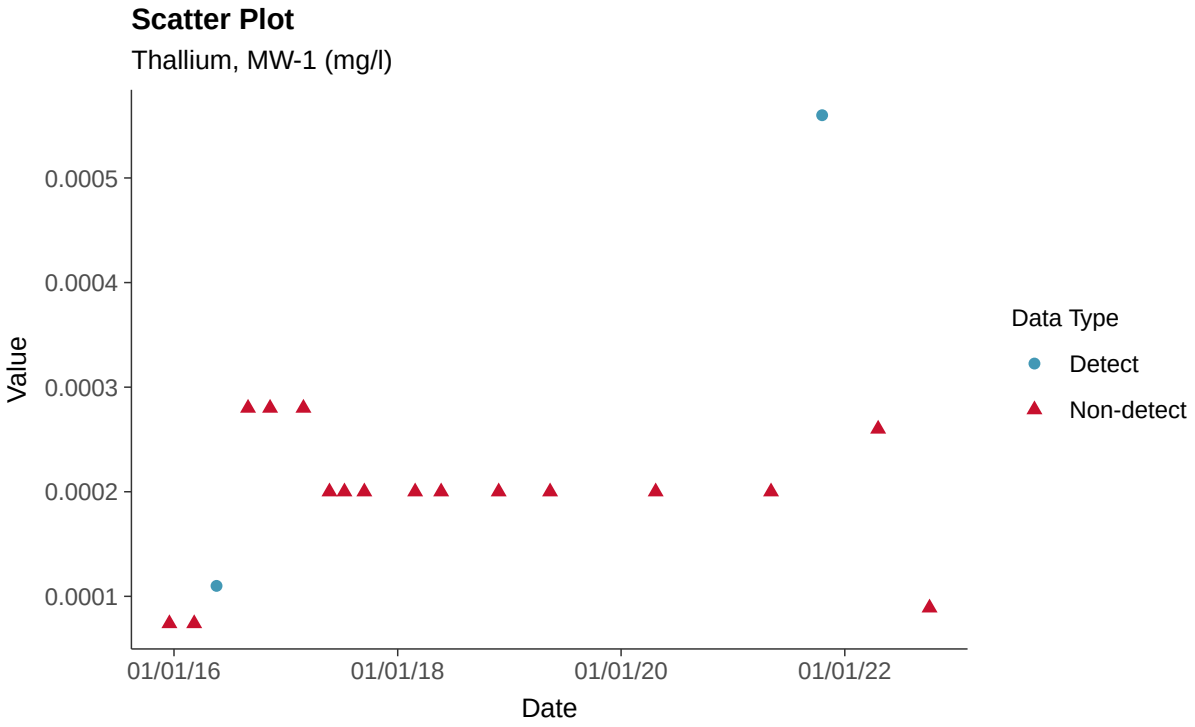
Trend Regression: Piecewise Linear-Linear-Linear

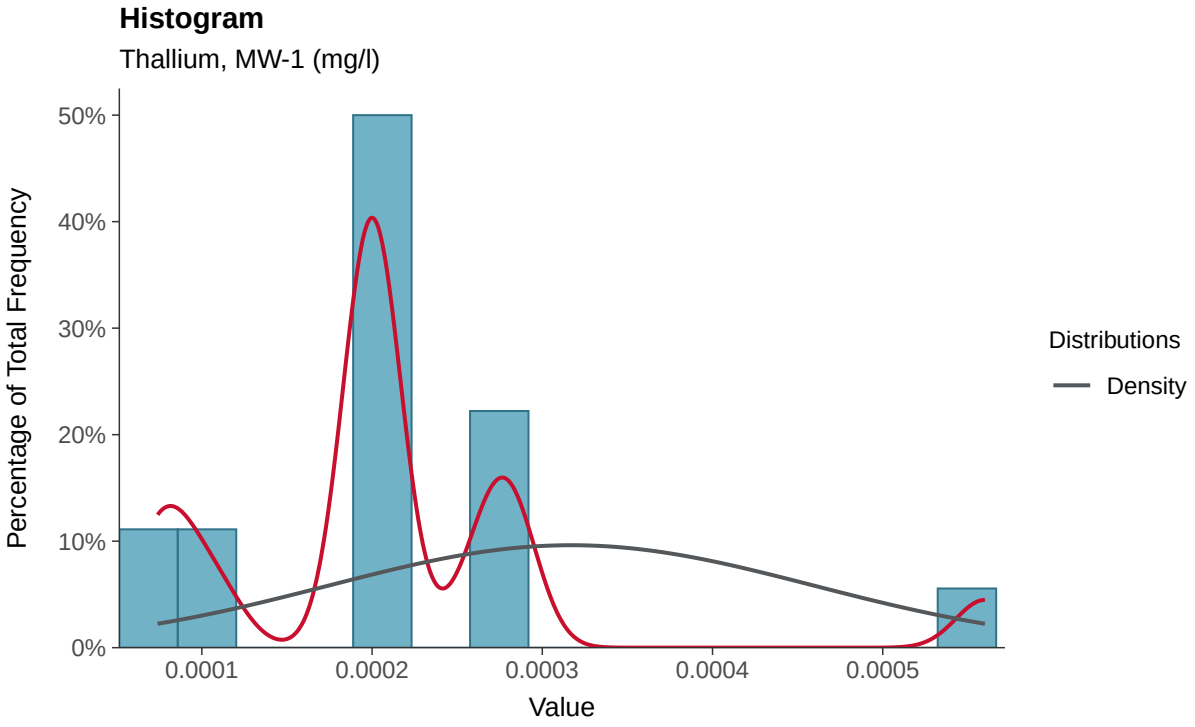
Selenium, MW-1 (mg/l)



Appendix IV: Thallium, MW-1

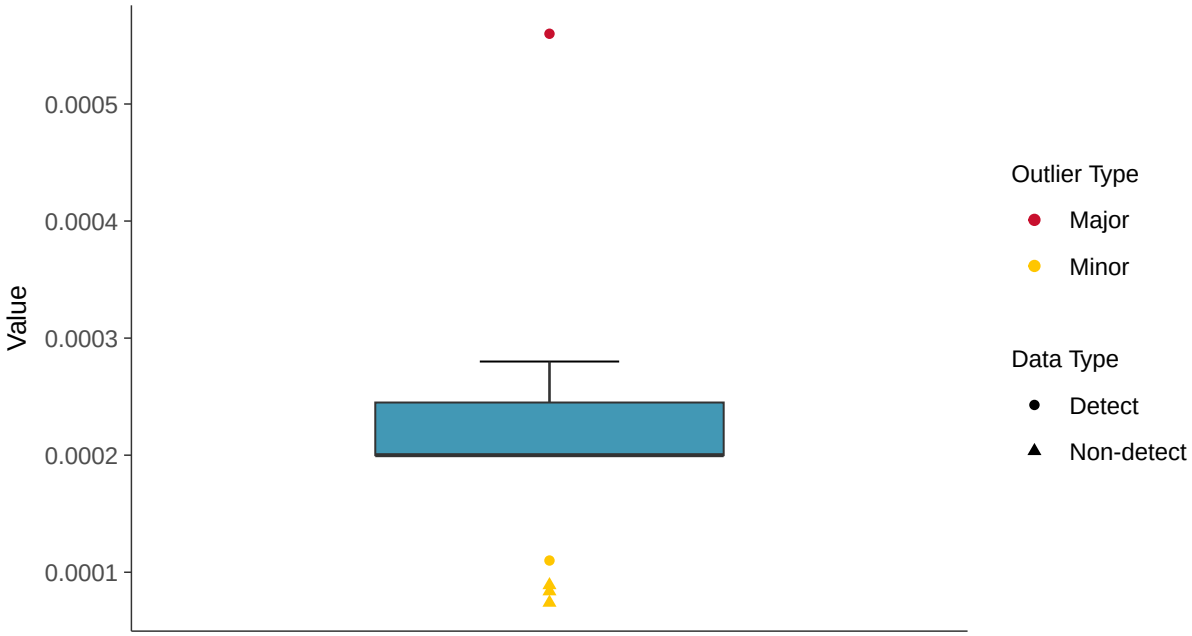
ID: 11_2_134





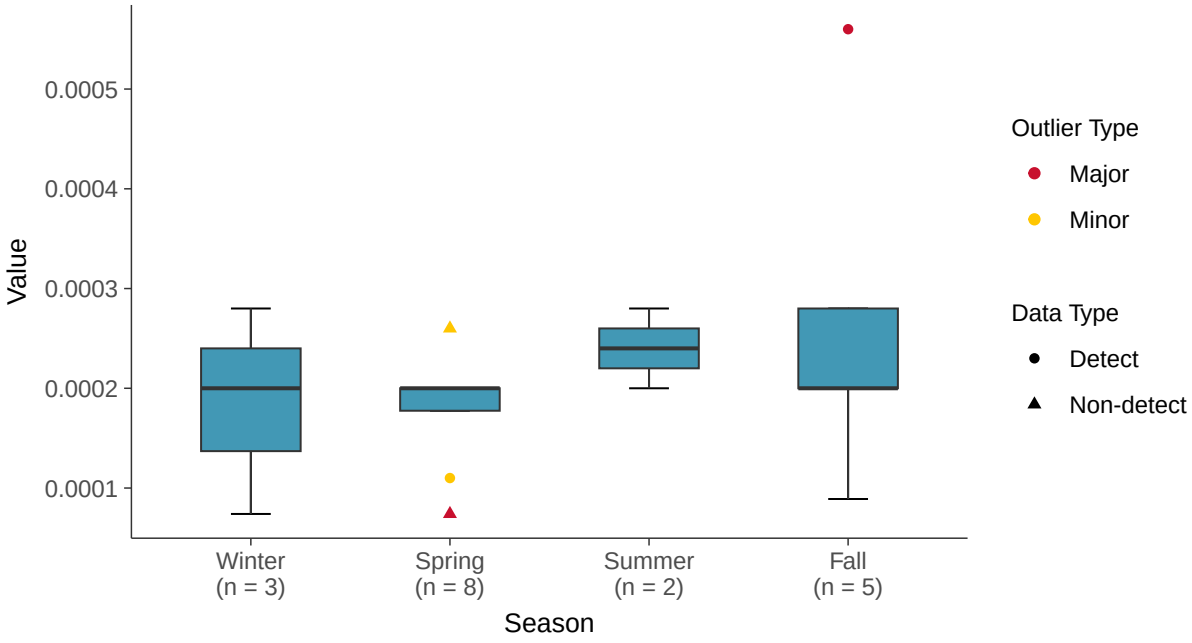
Boxplot

Thallium, MW-1 (mg/l)



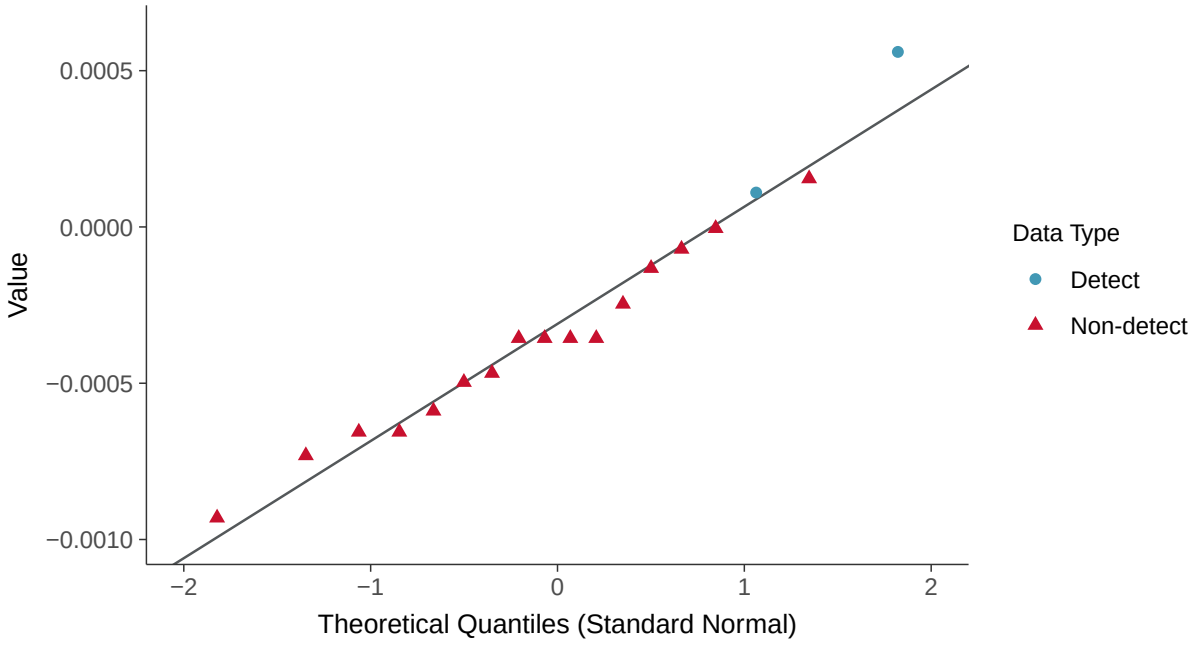
Boxplot by Season

Thallium, MW-1 (mg/l)



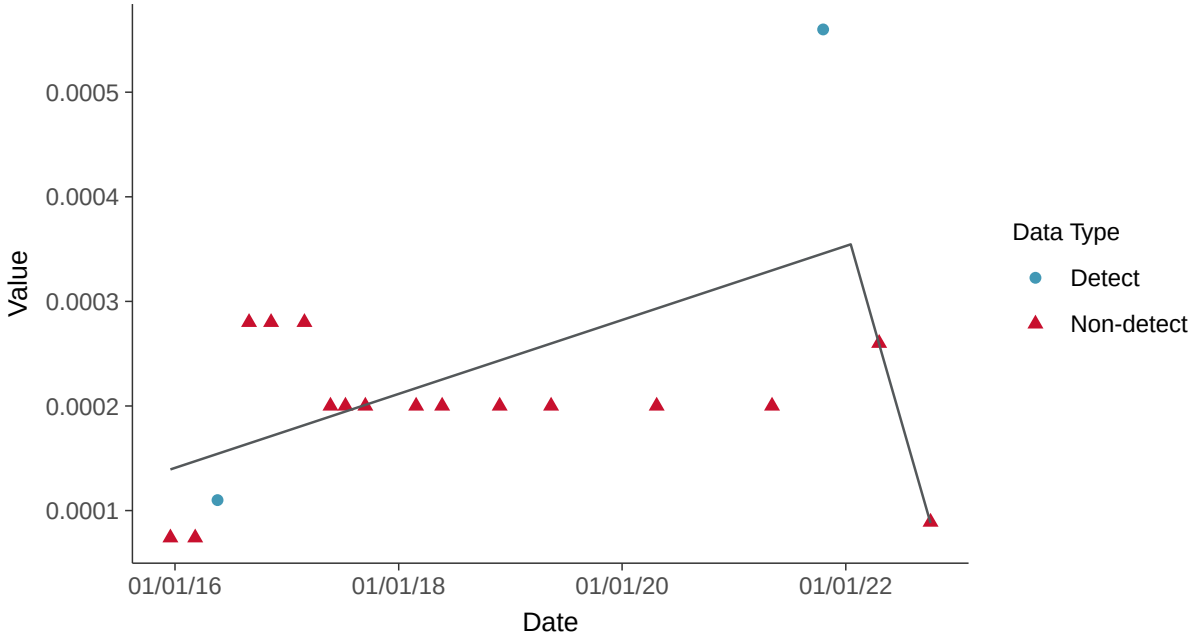
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-1 (mg/l)



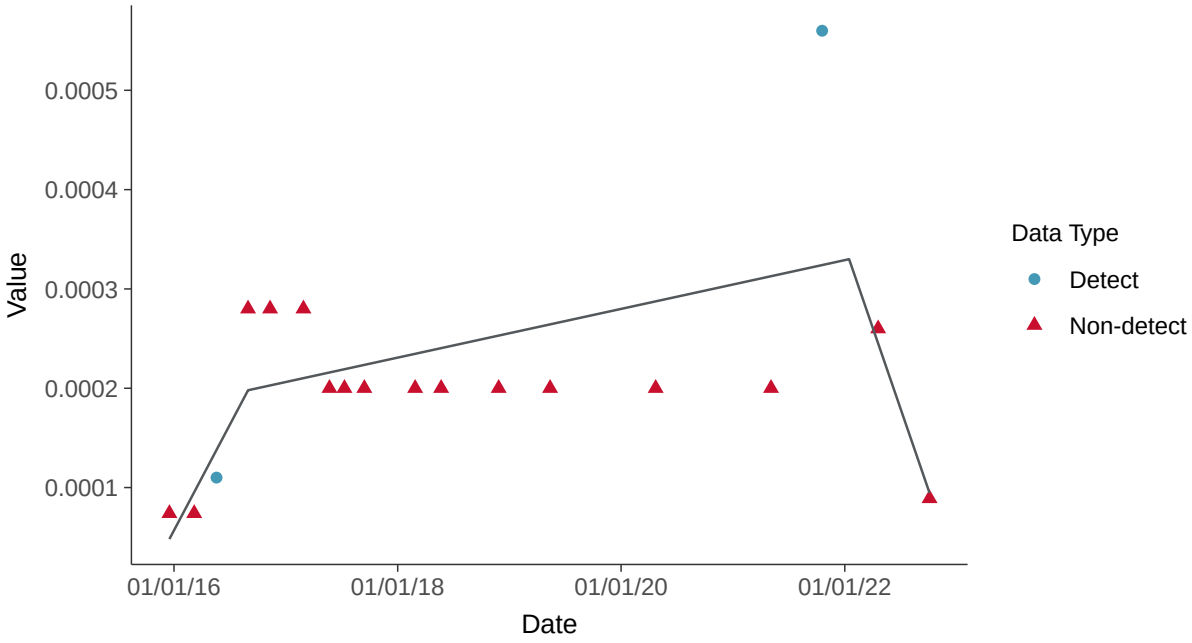
Trend Regression: Piecewise Linear-Linear

Thallium, MW-1 (mg/l)



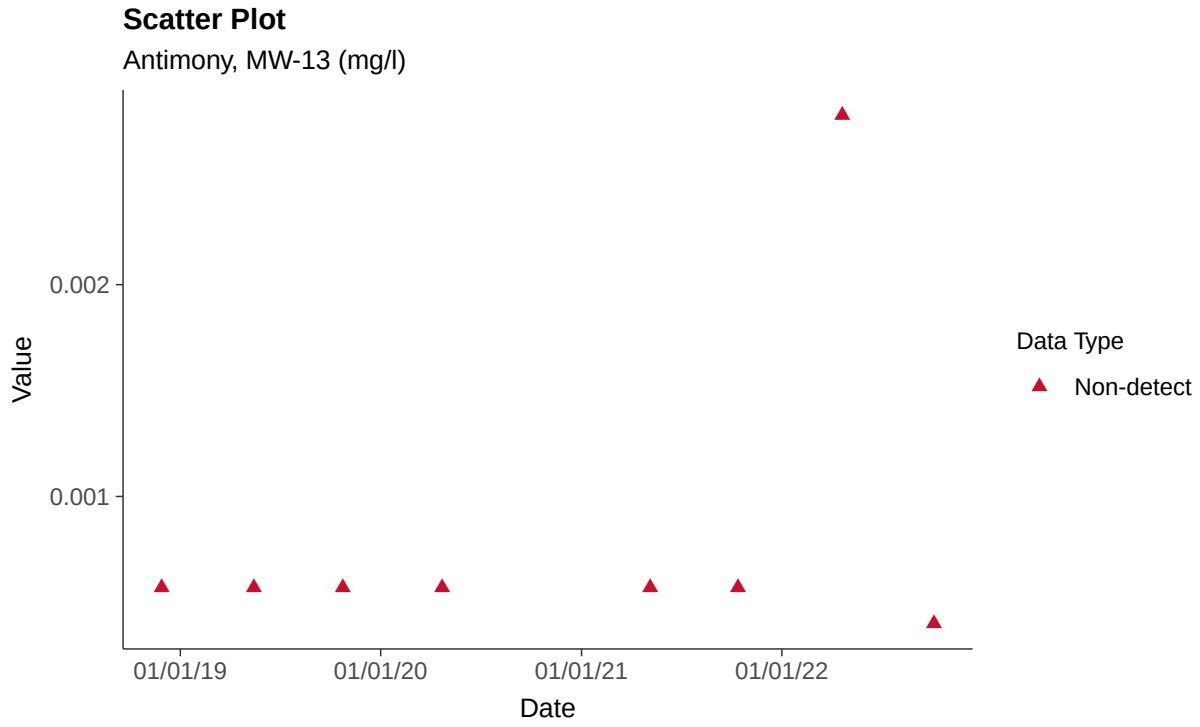
Trend Regression: Piecewise Linear-Linear-Linear

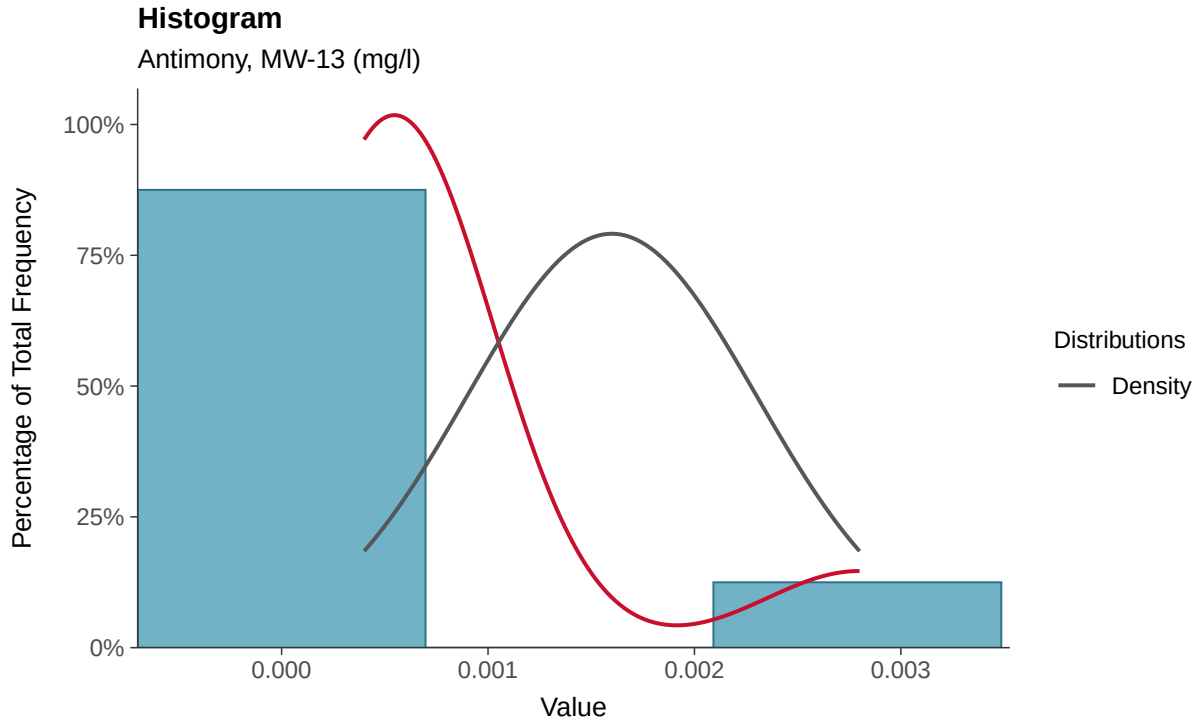
Thallium, MW-1 (mg/l)



Appendix IV: Antimony, MW-13

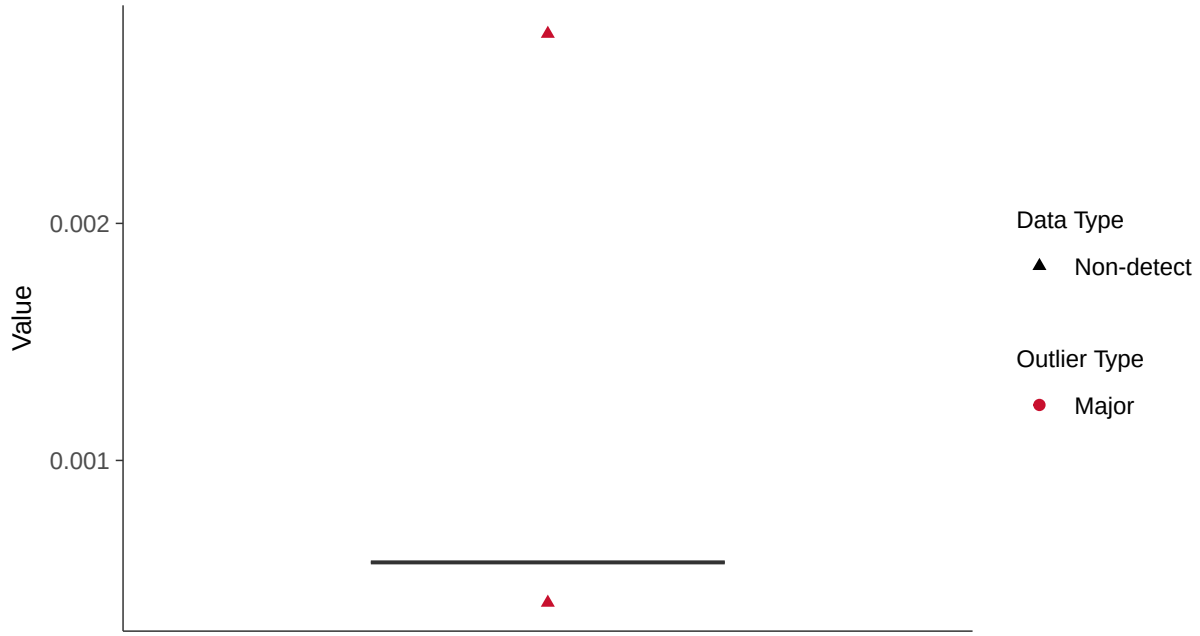
ID: 12_2_104





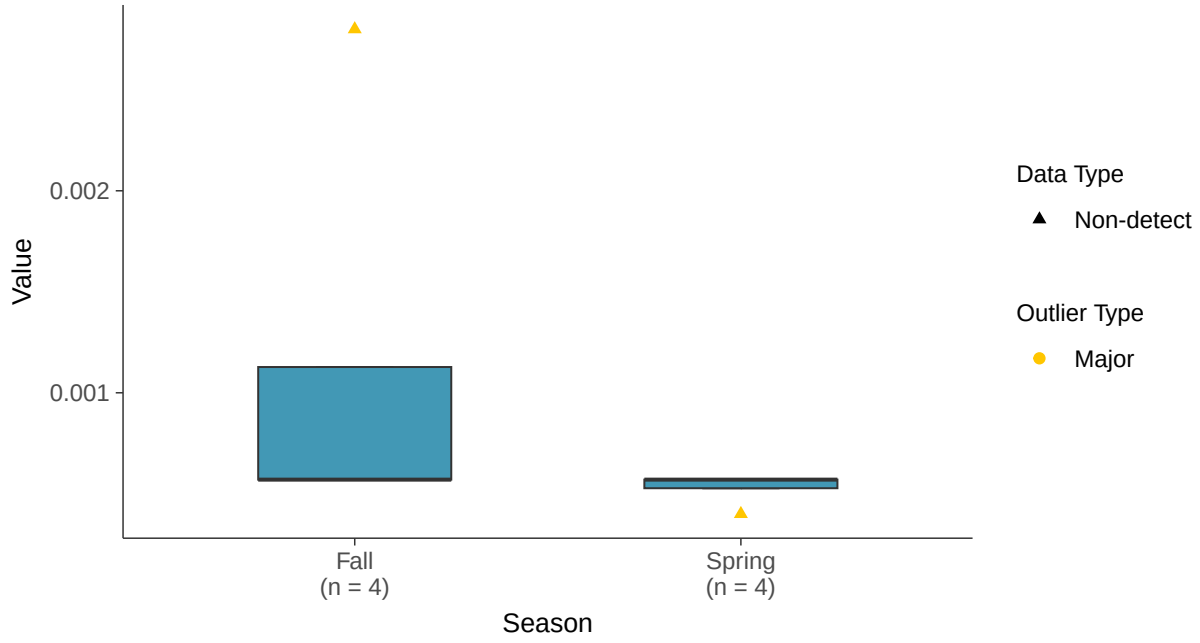
Boxplot

Antimony, MW-13 (mg/l)



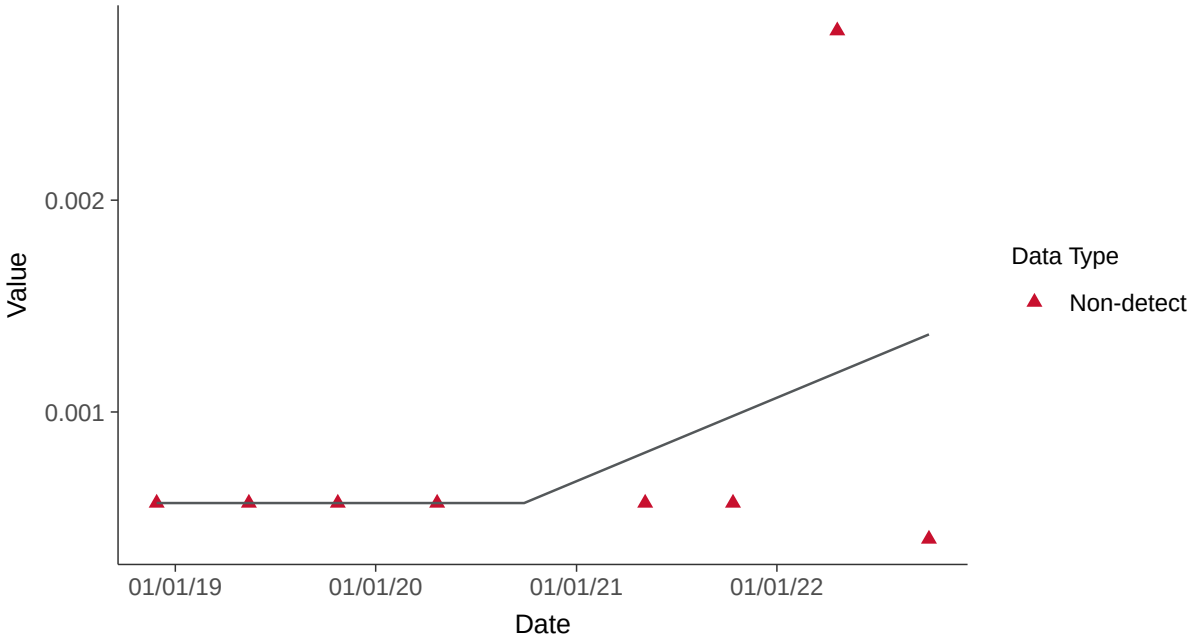
Boxplot by Season

Antimony, MW-13 (mg/l)



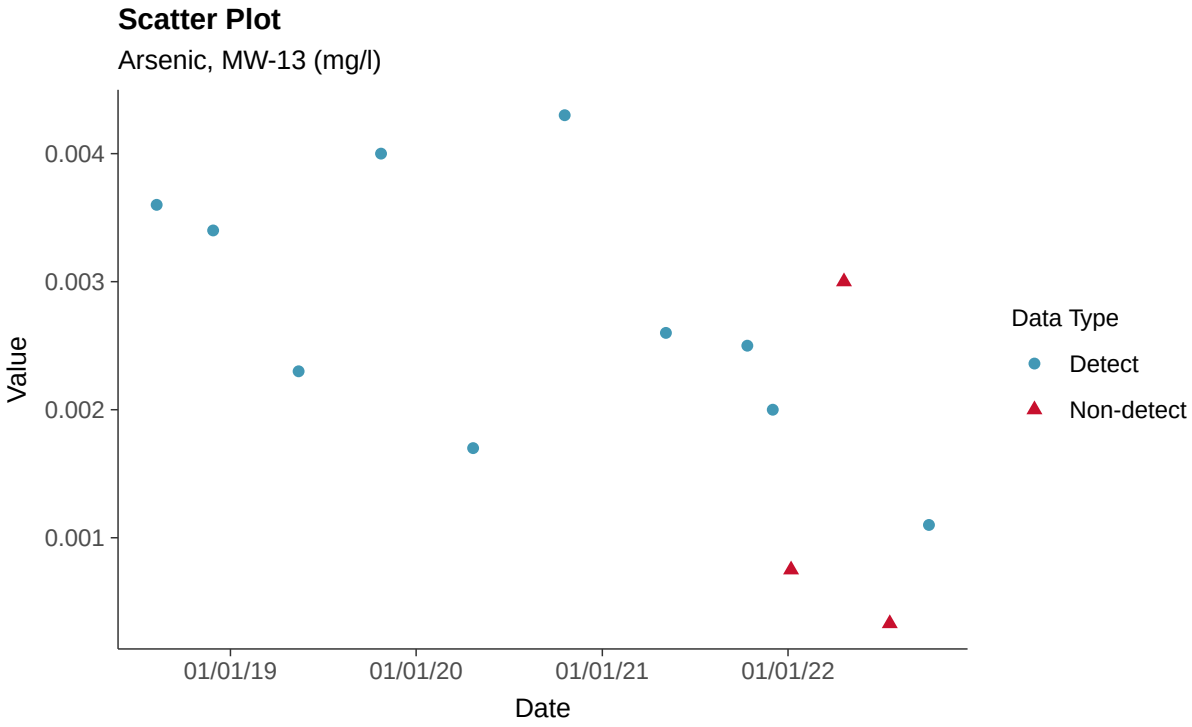
Trend Regression: Piecewise Linear-Linear

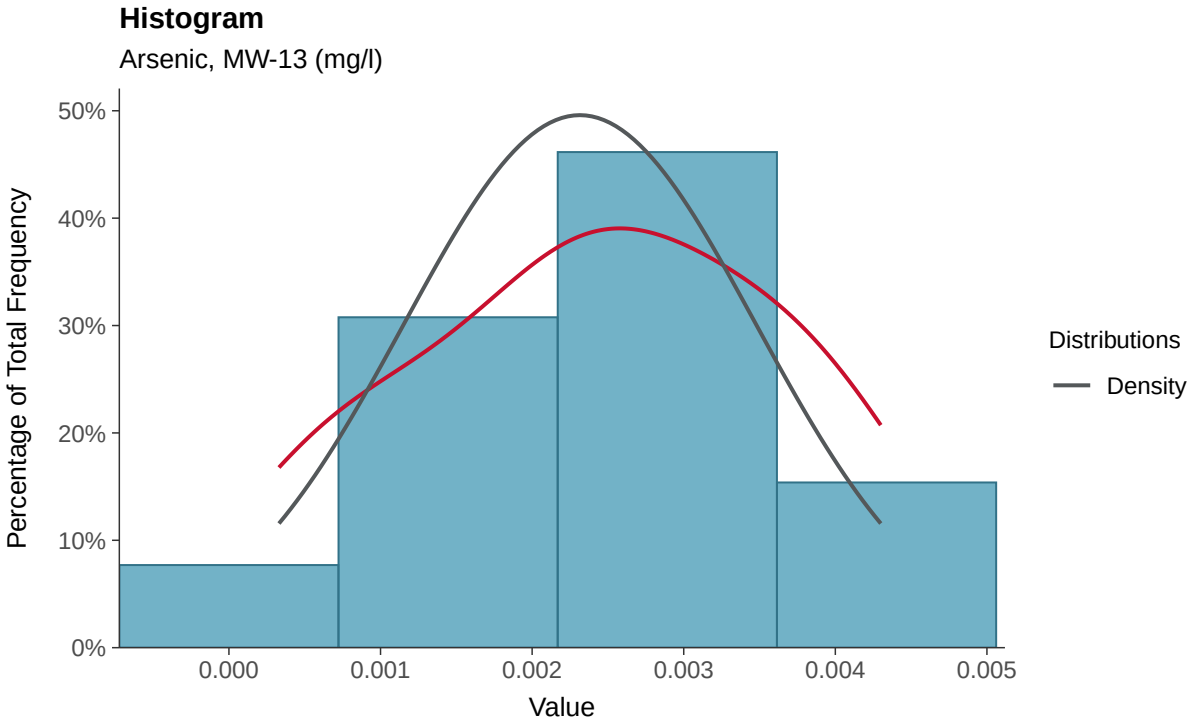
Antimony, MW-13 (mg/l)



Appendix IV: Arsenic, MW-13

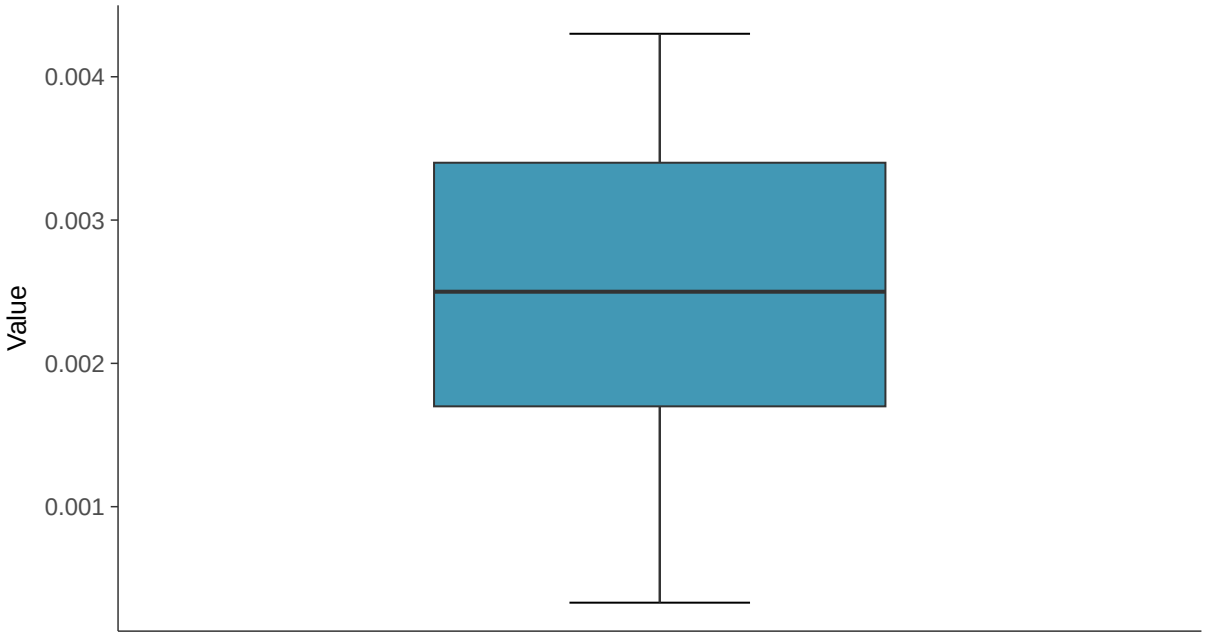
ID: 12_2_105





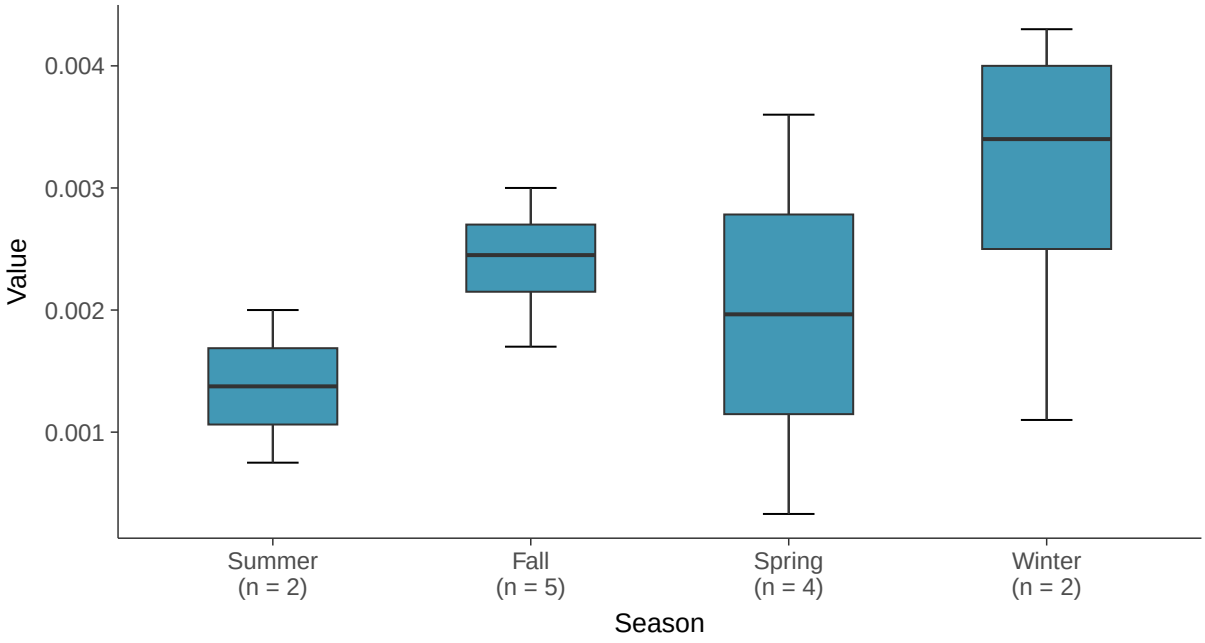
Boxplot

Arsenic, MW-13 (mg/l)



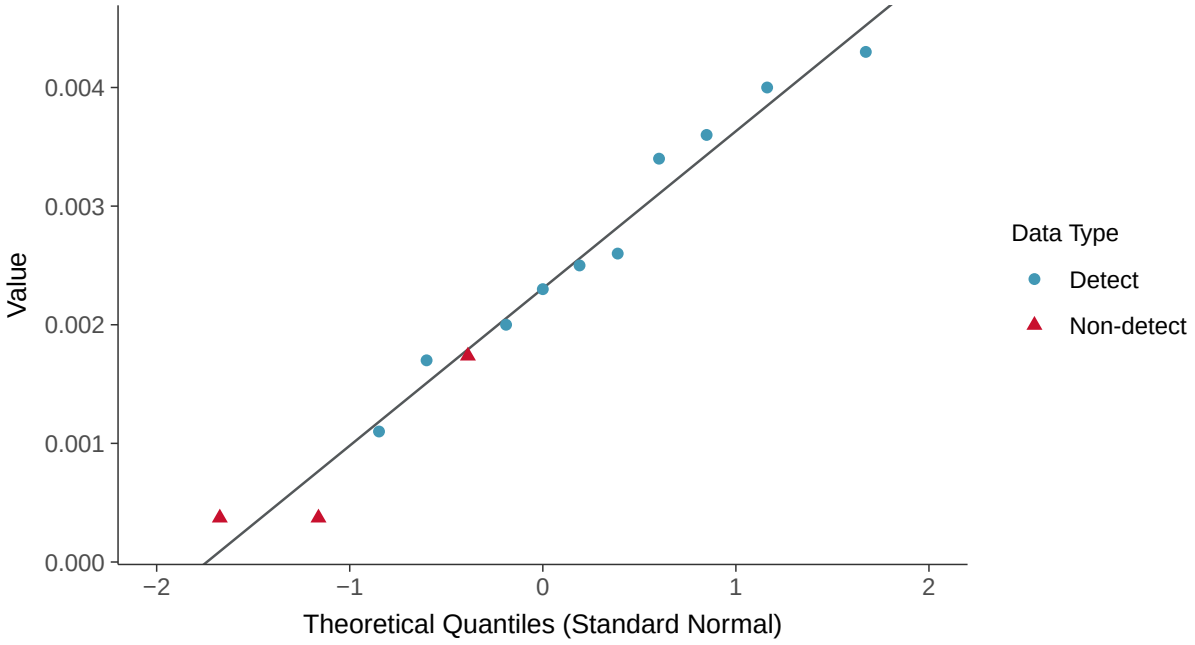
Boxplot by Season

Arsenic, MW-13 (mg/l)



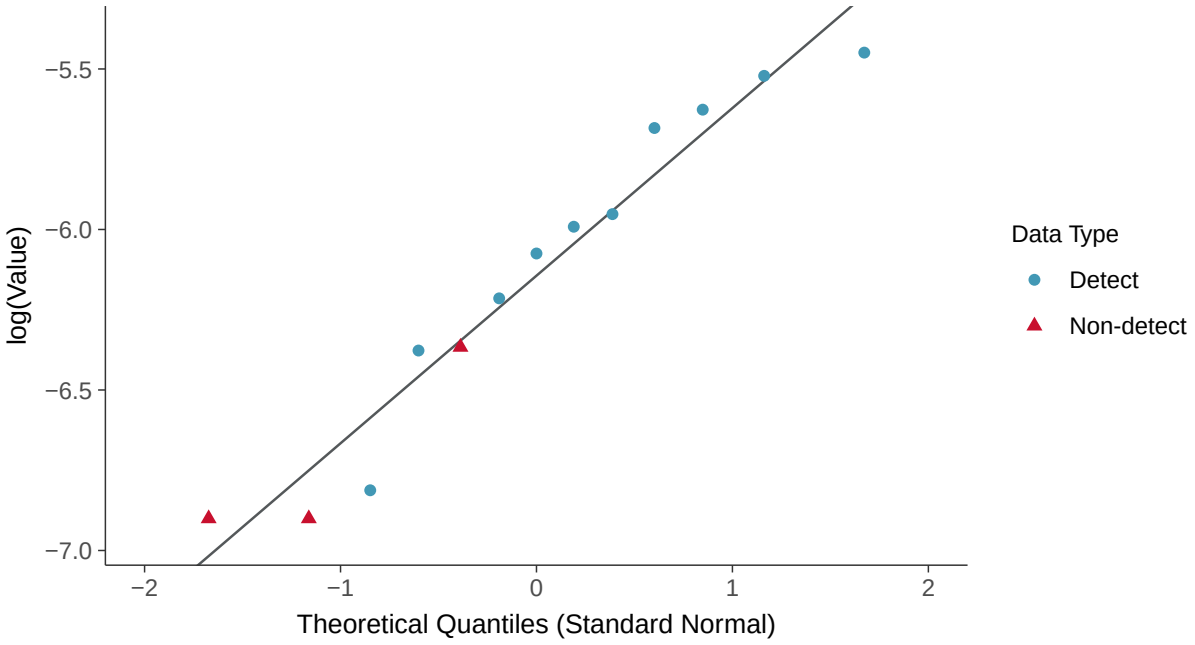
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-13 (mg/l)



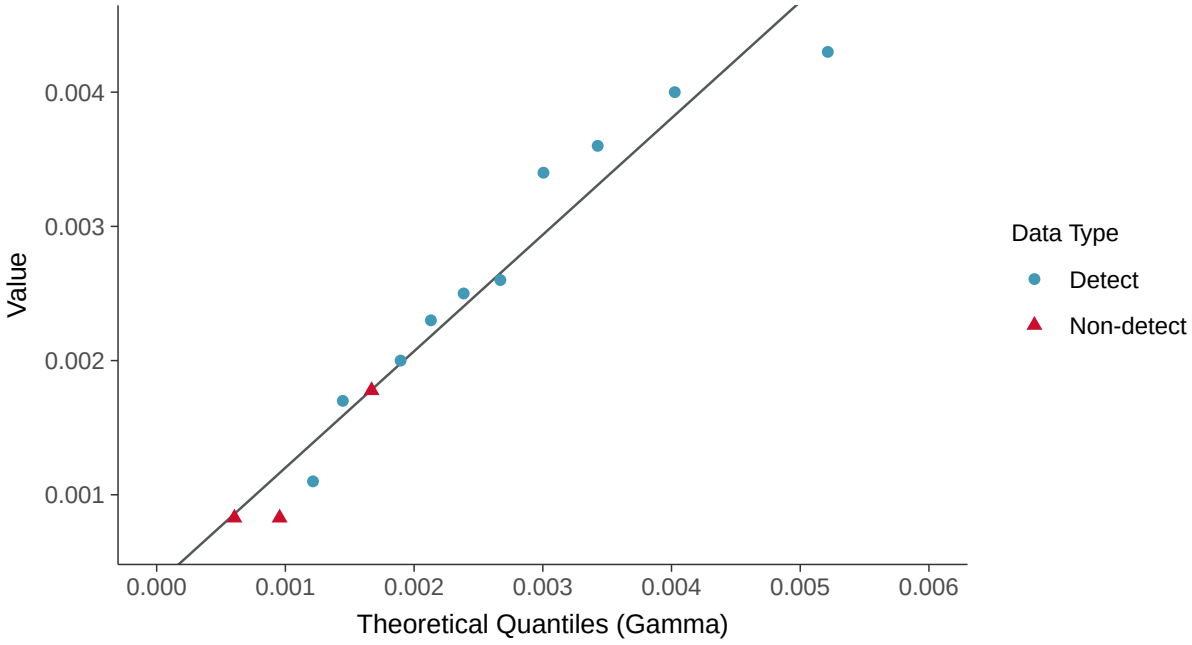
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-13 (mg/l)



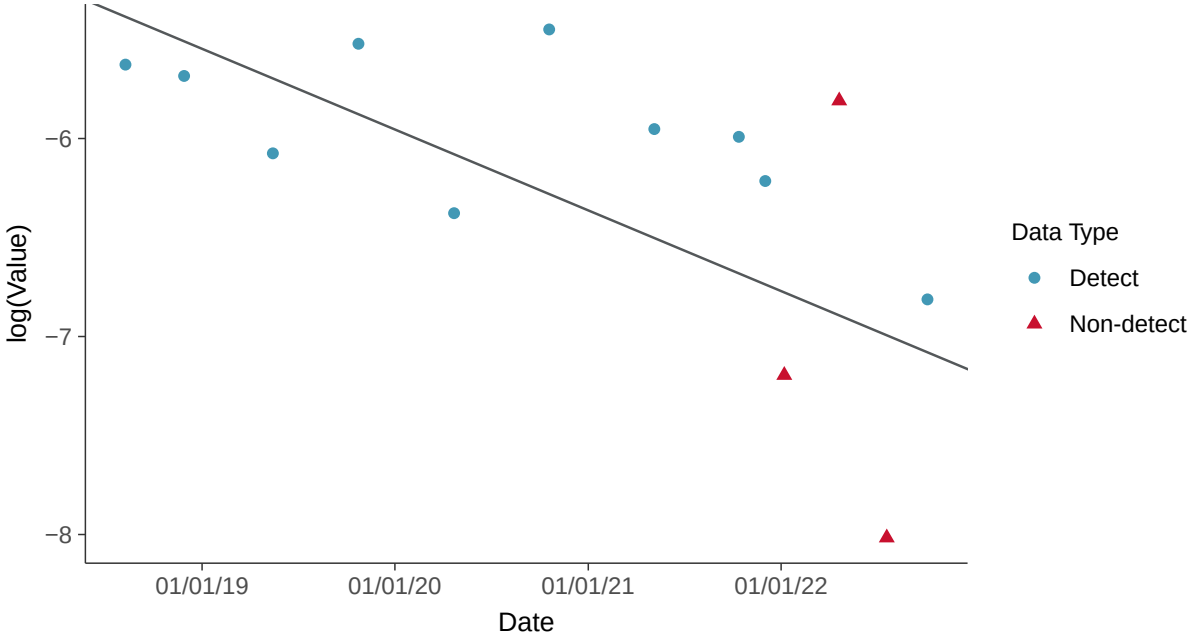
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-13 (mg/l)



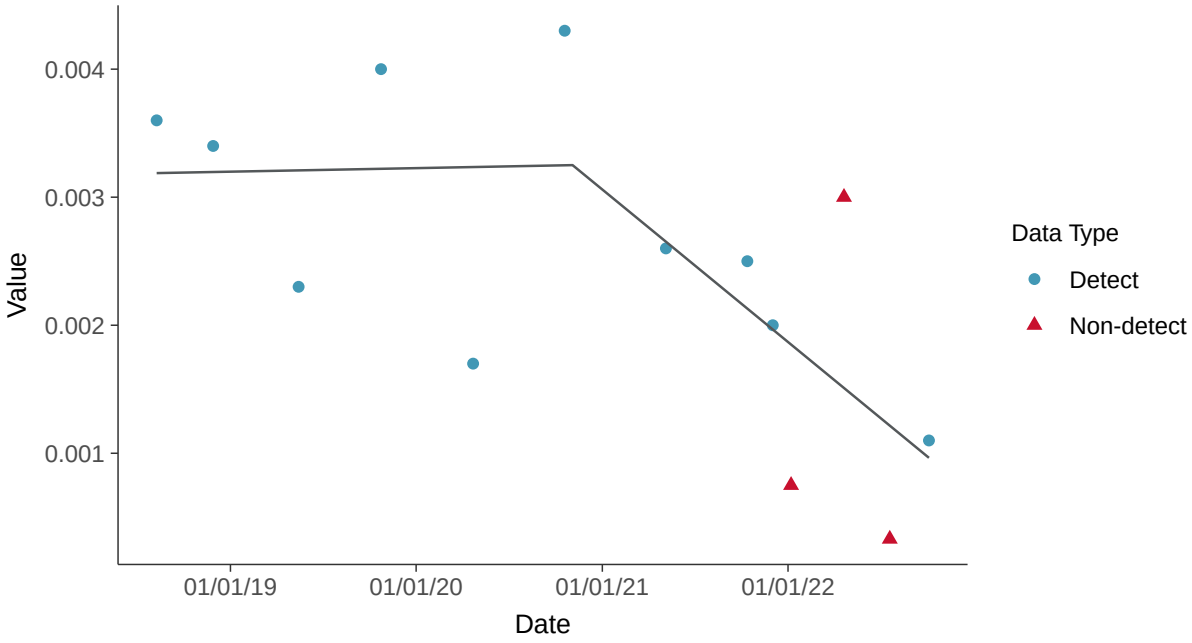
Trend Regression: Lognormal MLE

Arsenic, MW-13 (mg/l)



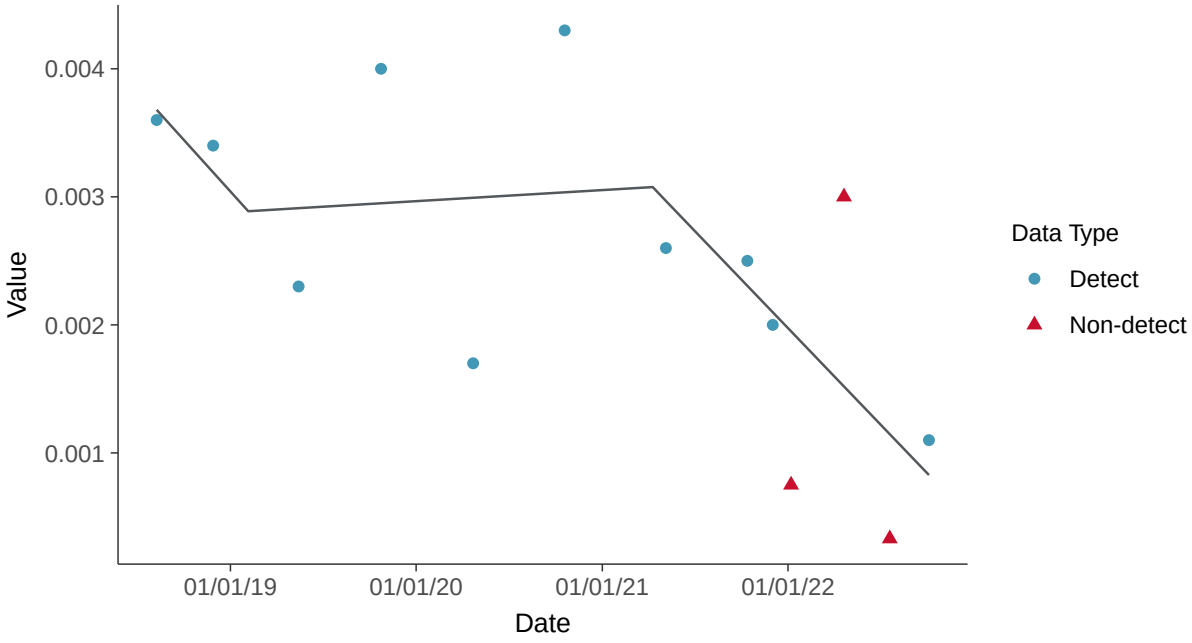
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-13 (mg/l)



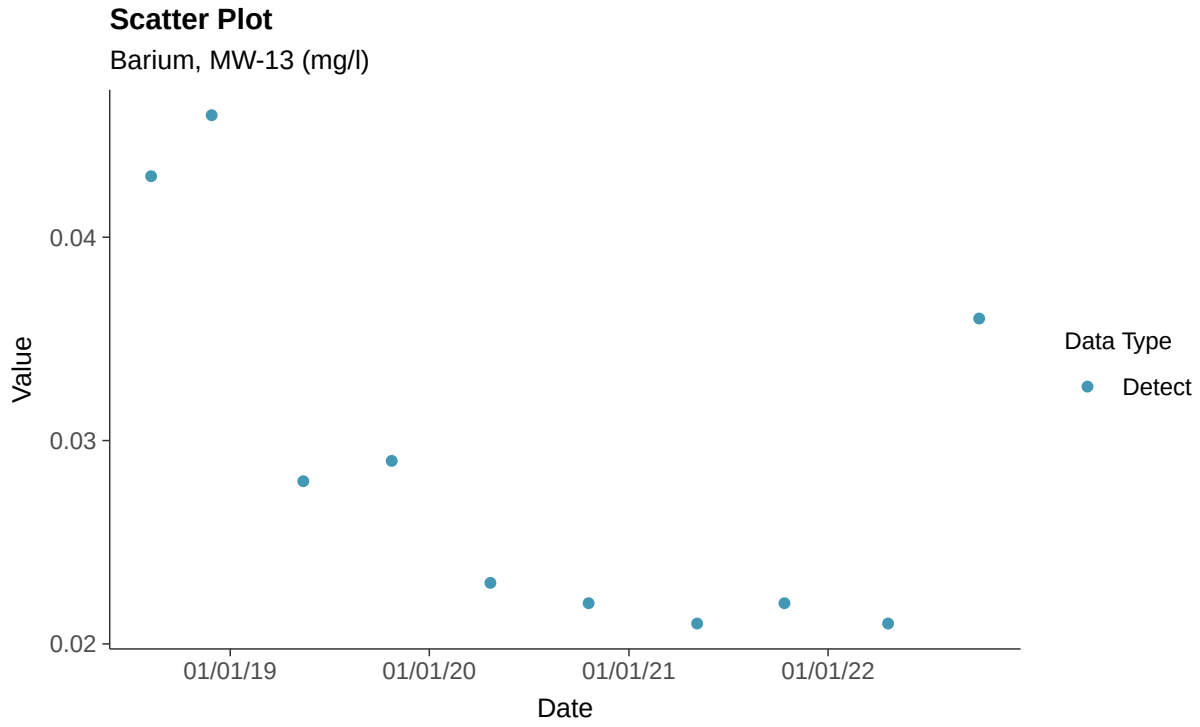
Trend Regression: Piecewise Linear-Linear-Linear

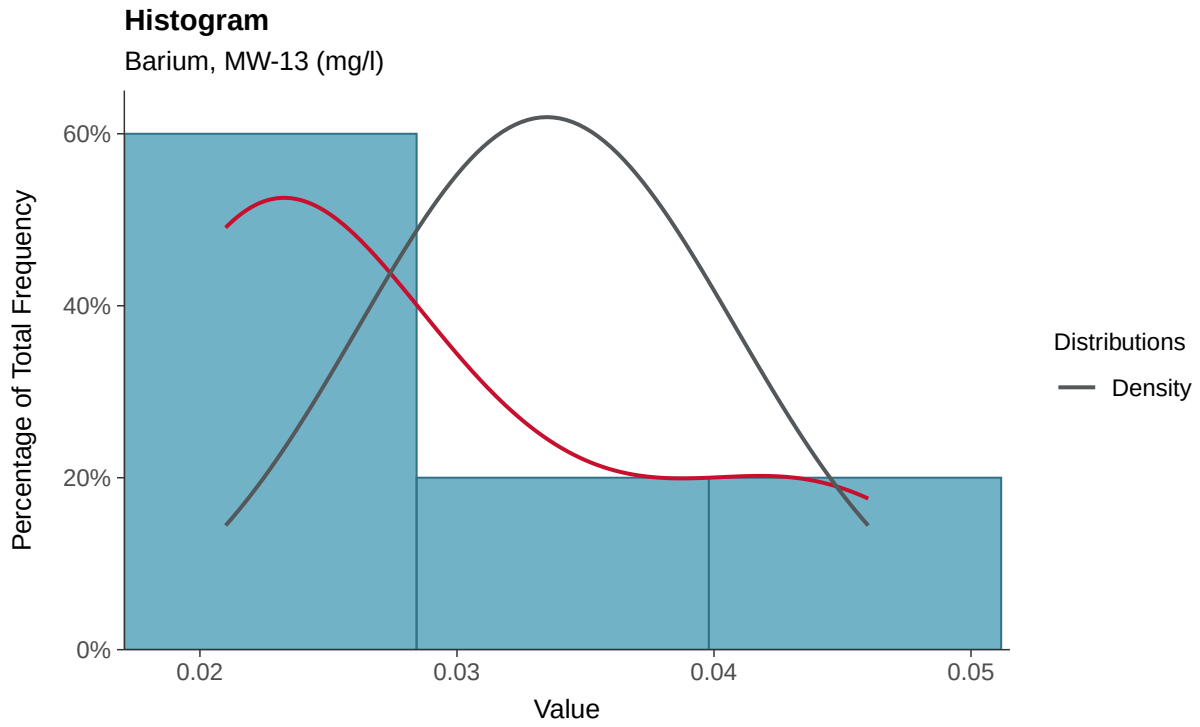
Arsenic, MW-13 (mg/l)



Appendix IV: Barium, MW-13

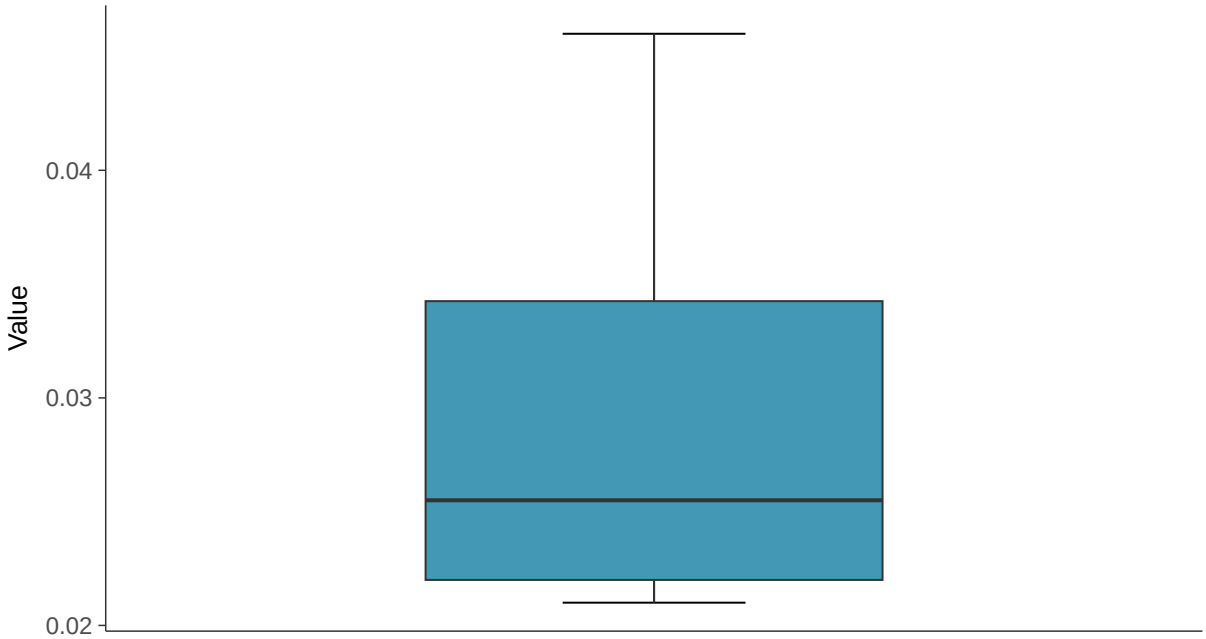
ID: 12_2_106





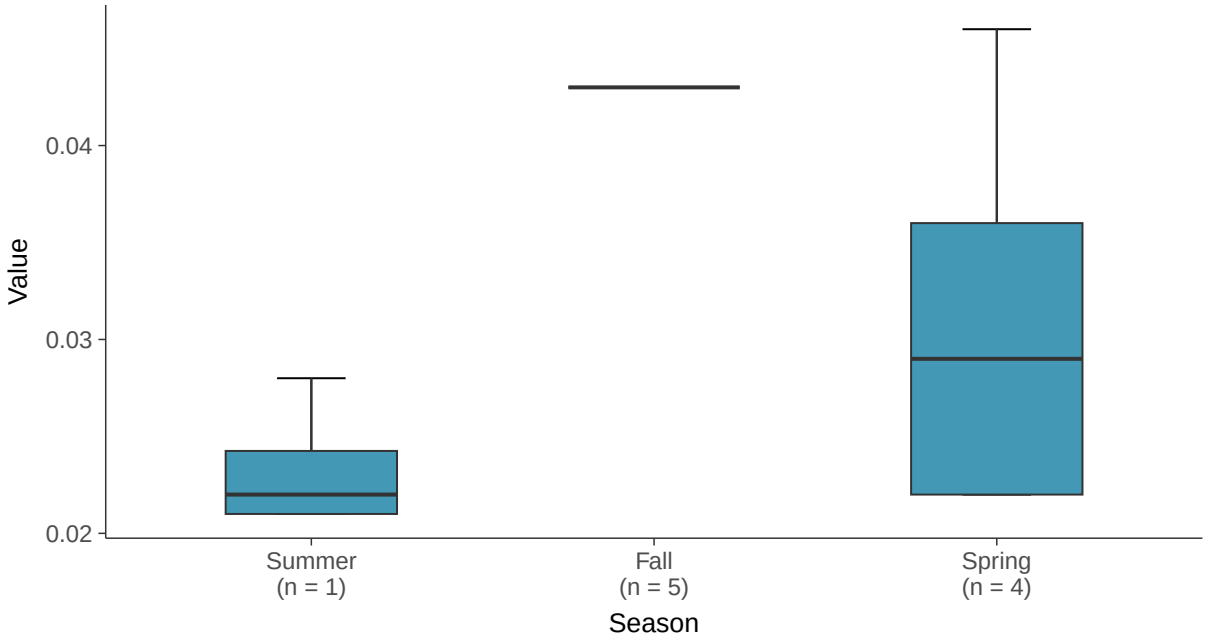
Boxplot

Barium, MW-13 (mg/l)



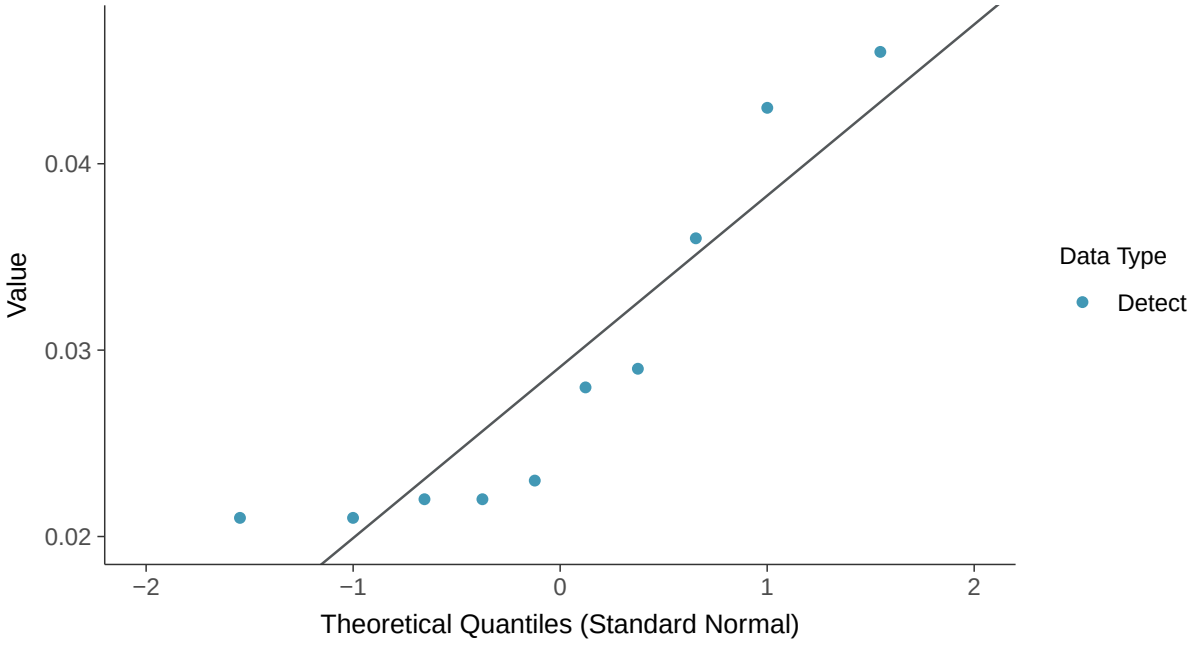
Boxplot by Season

Barium, MW-13 (mg/l)



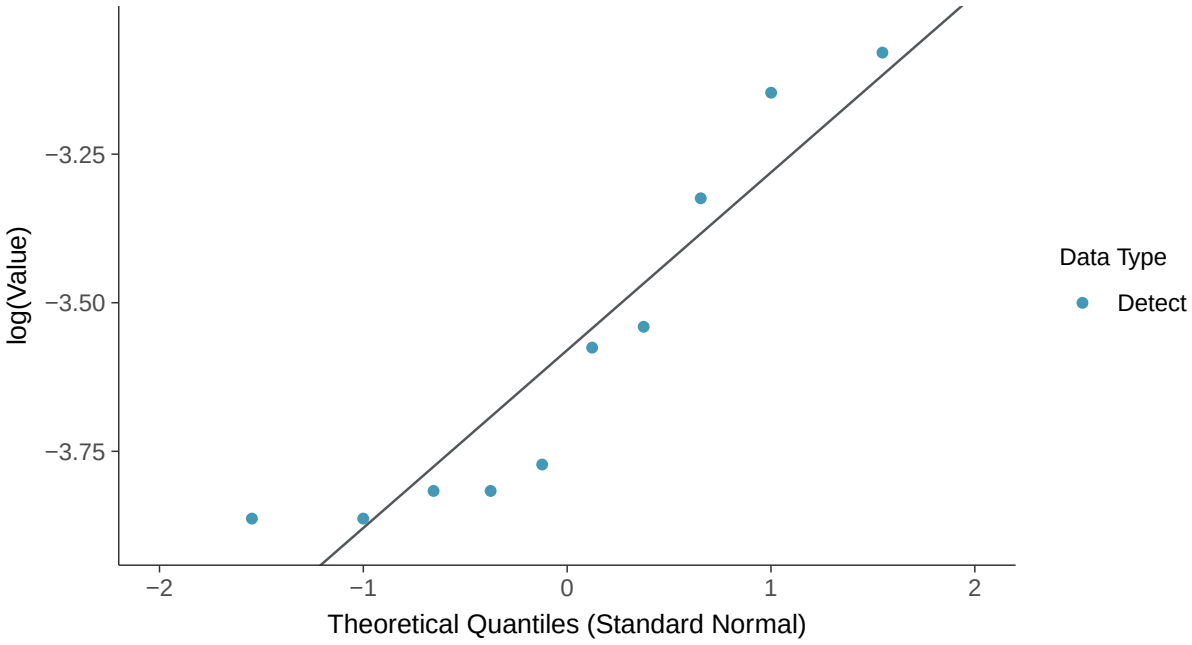
Normal Q-Q plot

Barium, MW-13 (mg/l)



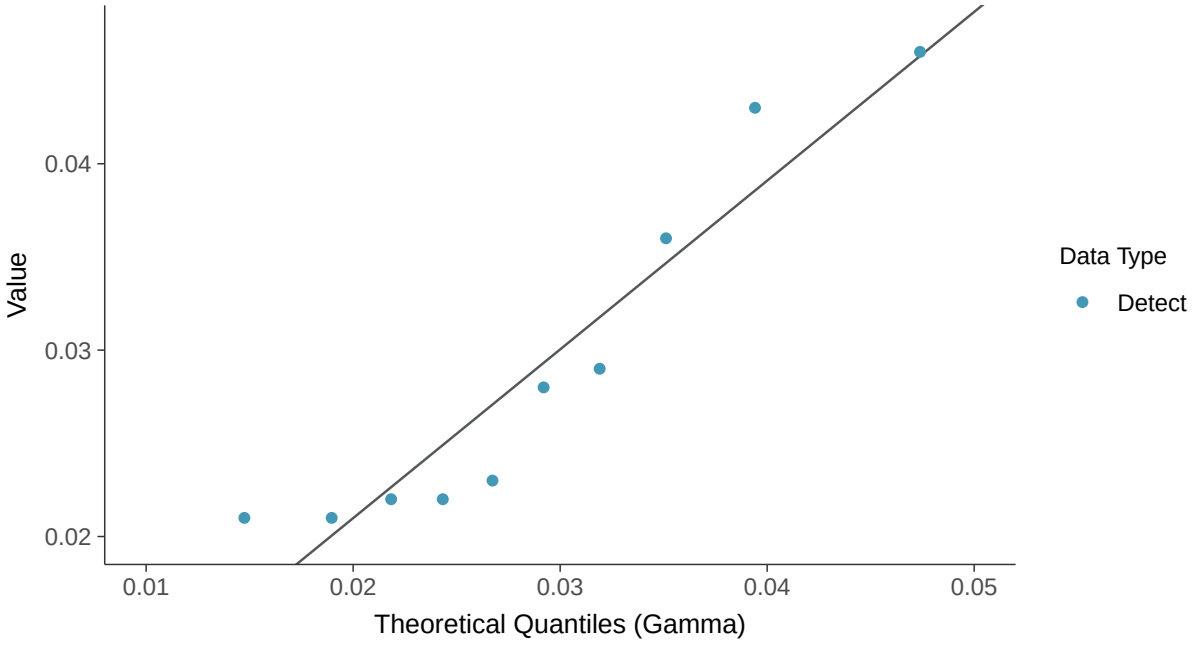
Lognormal Q-Q plot

Barium, MW-13 (mg/l)



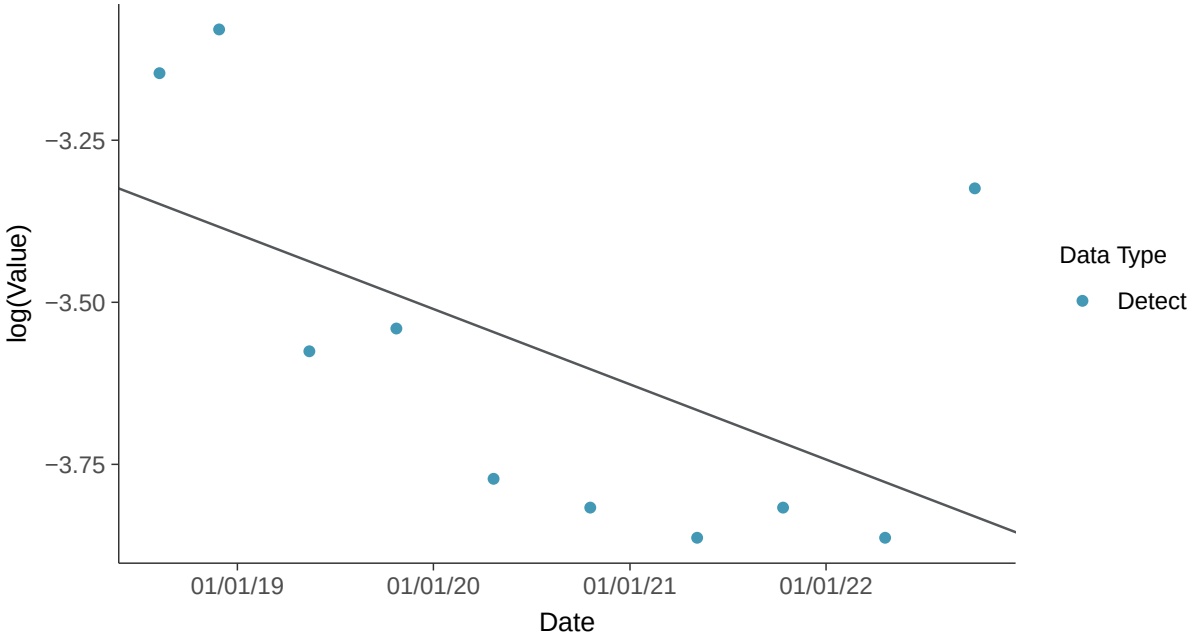
Gamma Q-Q plot

Barium, MW-13 (mg/l)



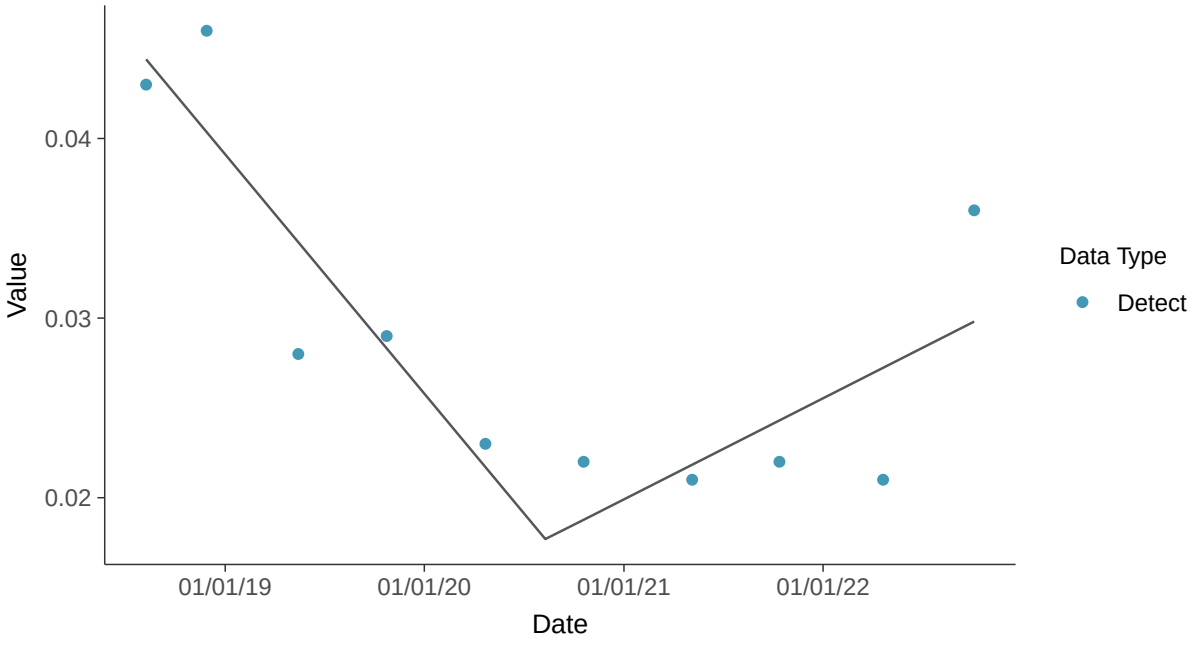
Trend Regression: Lognormal MLE

Barium, MW-13 (mg/l)



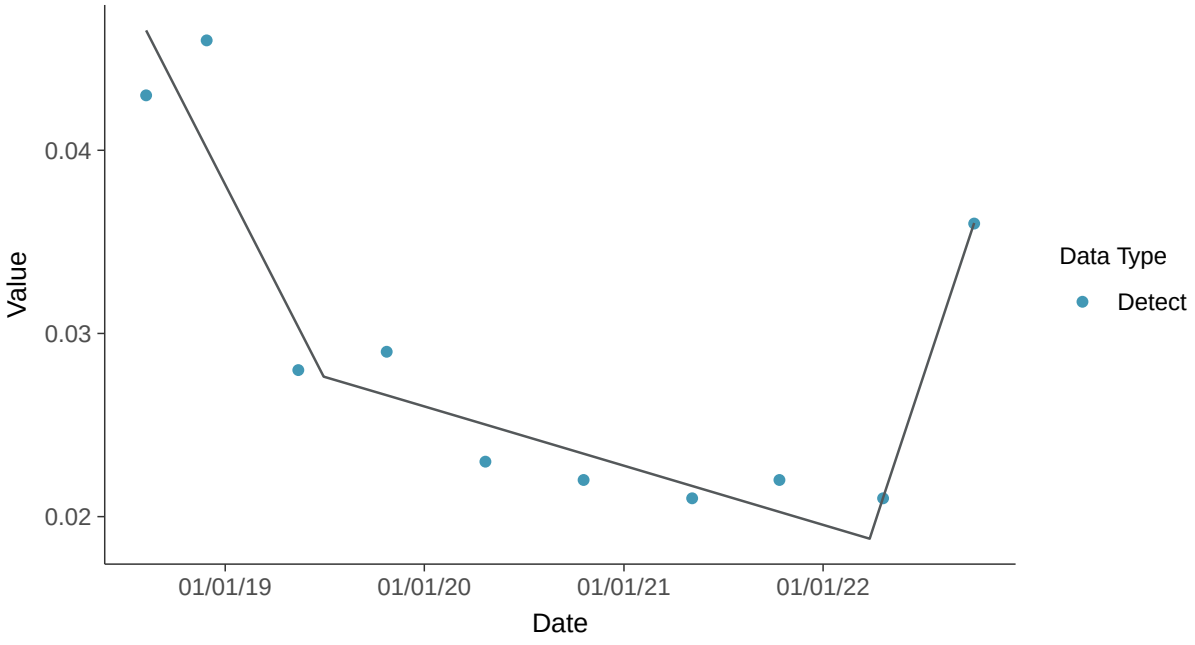
Trend Regression: Piecewise Linear-Linear

Barium, MW-13 (mg/l)



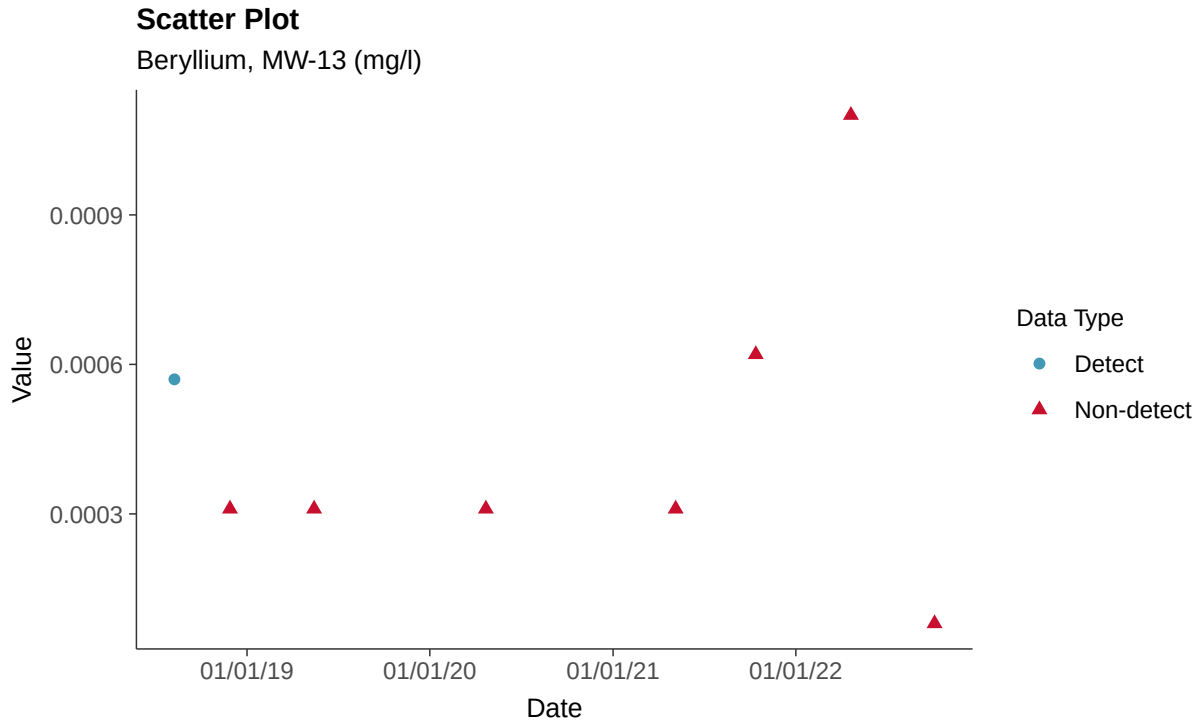
Trend Regression: Piecewise Linear-Linear-Linear

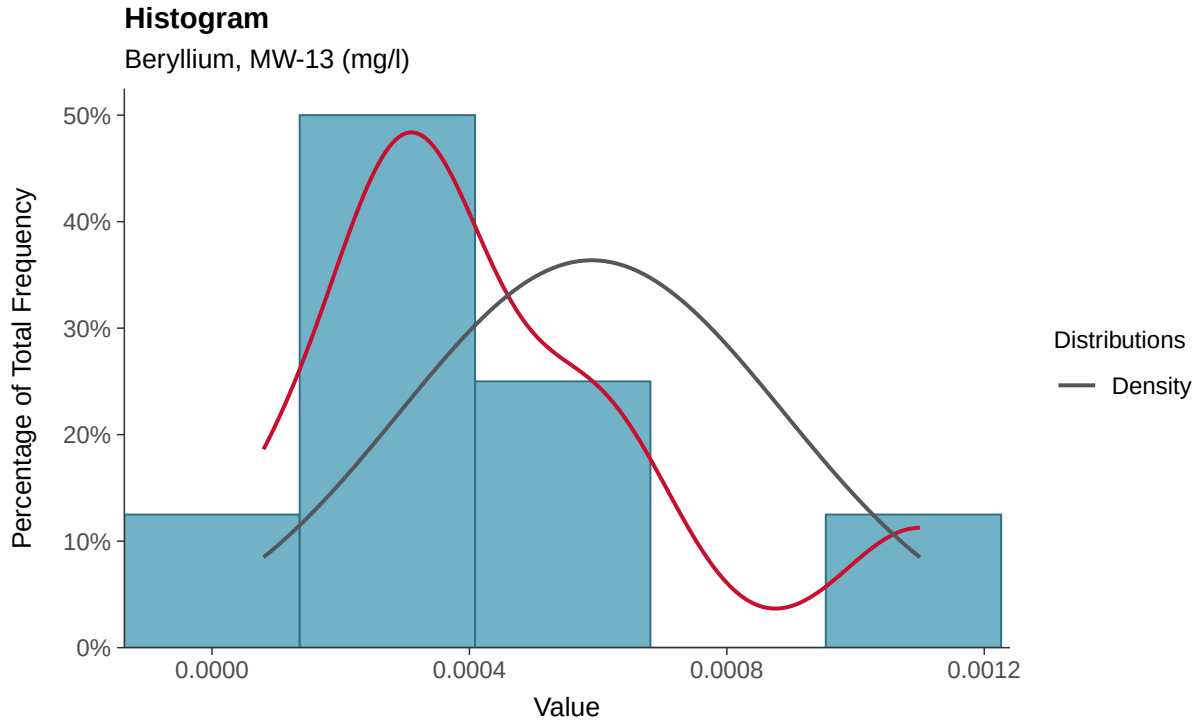
Barium, MW-13 (mg/l)



Appendix IV: Beryllium, MW-13

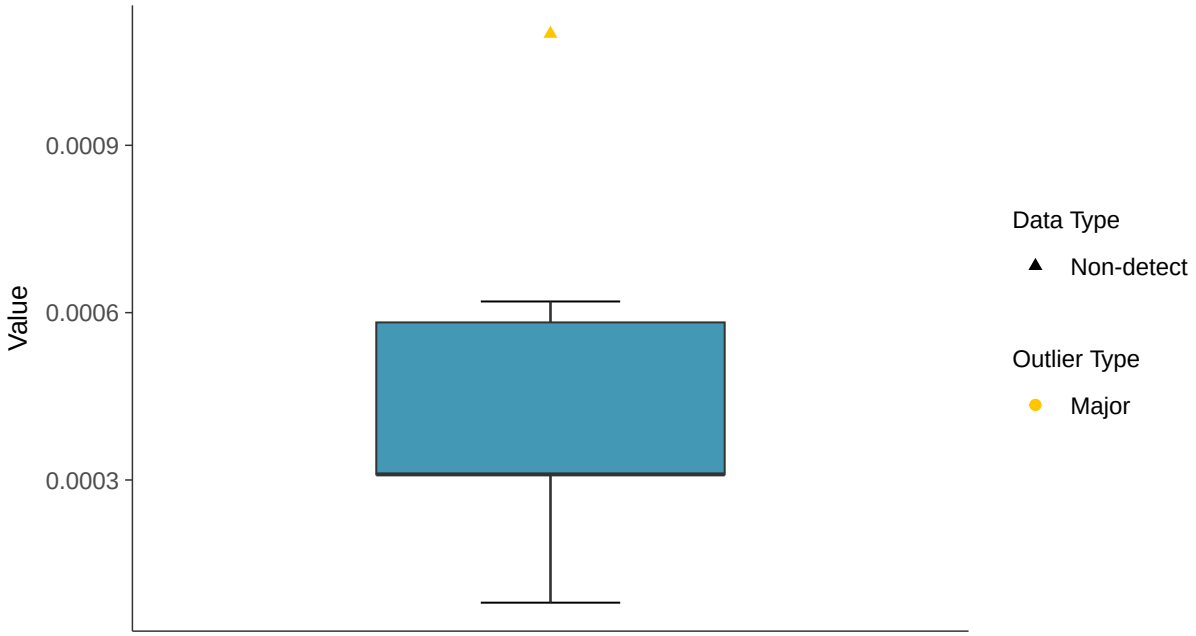
ID: 12_2_107





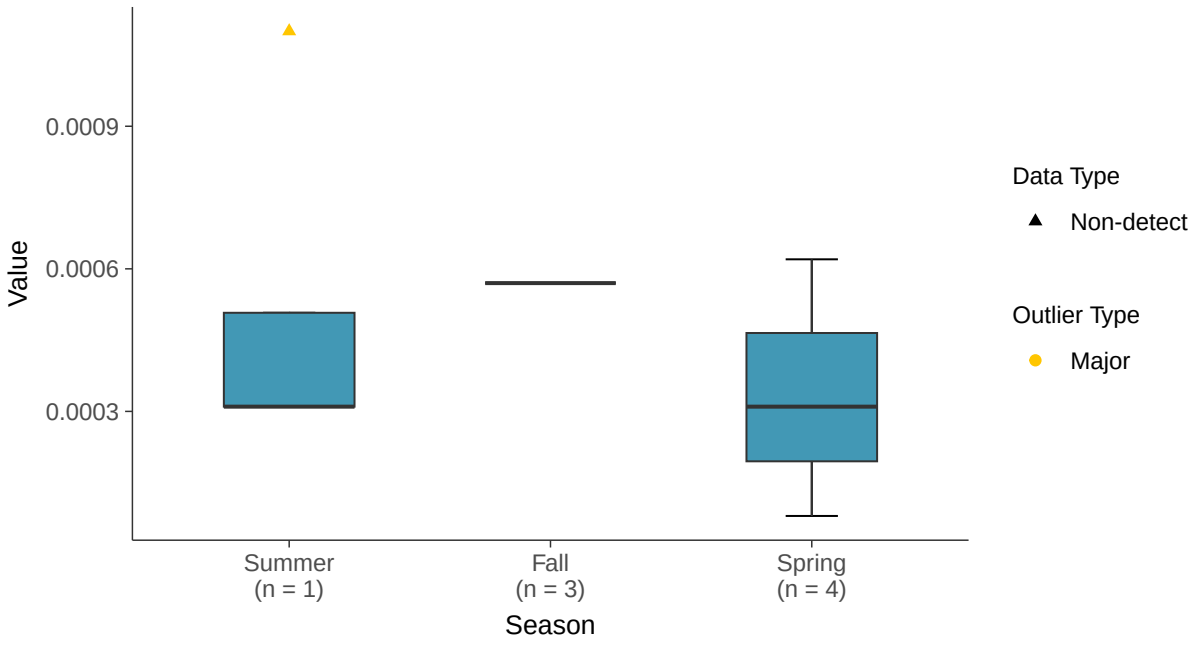
Boxplot

Beryllium, MW-13 (mg/l)



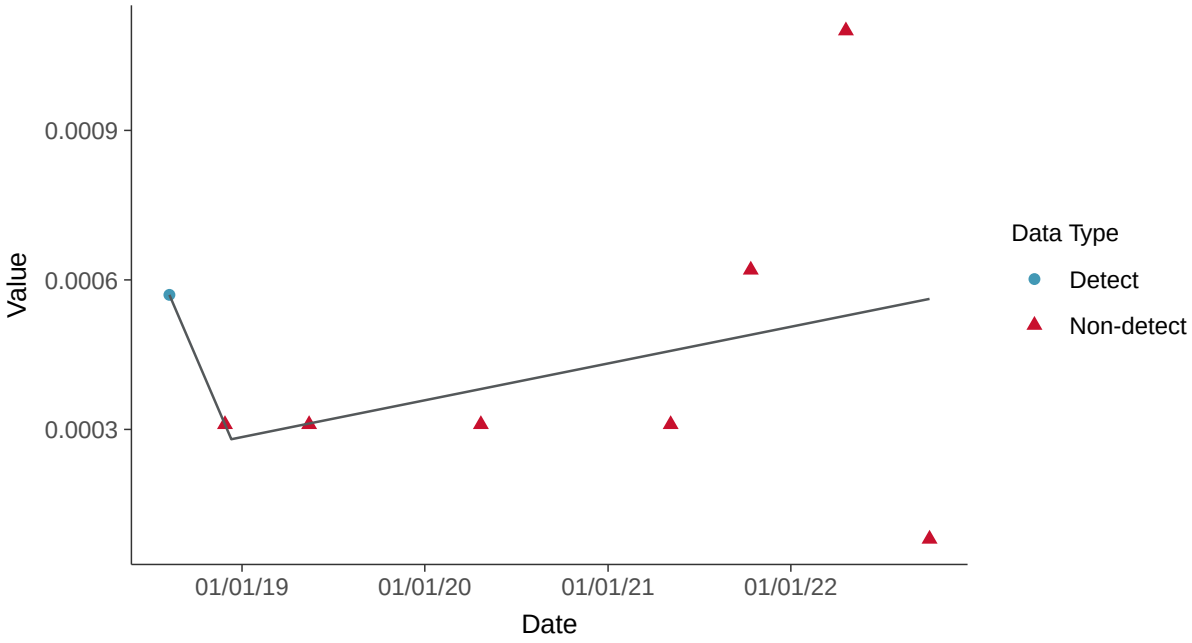
Boxplot by Season

Beryllium, MW-13 (mg/l)



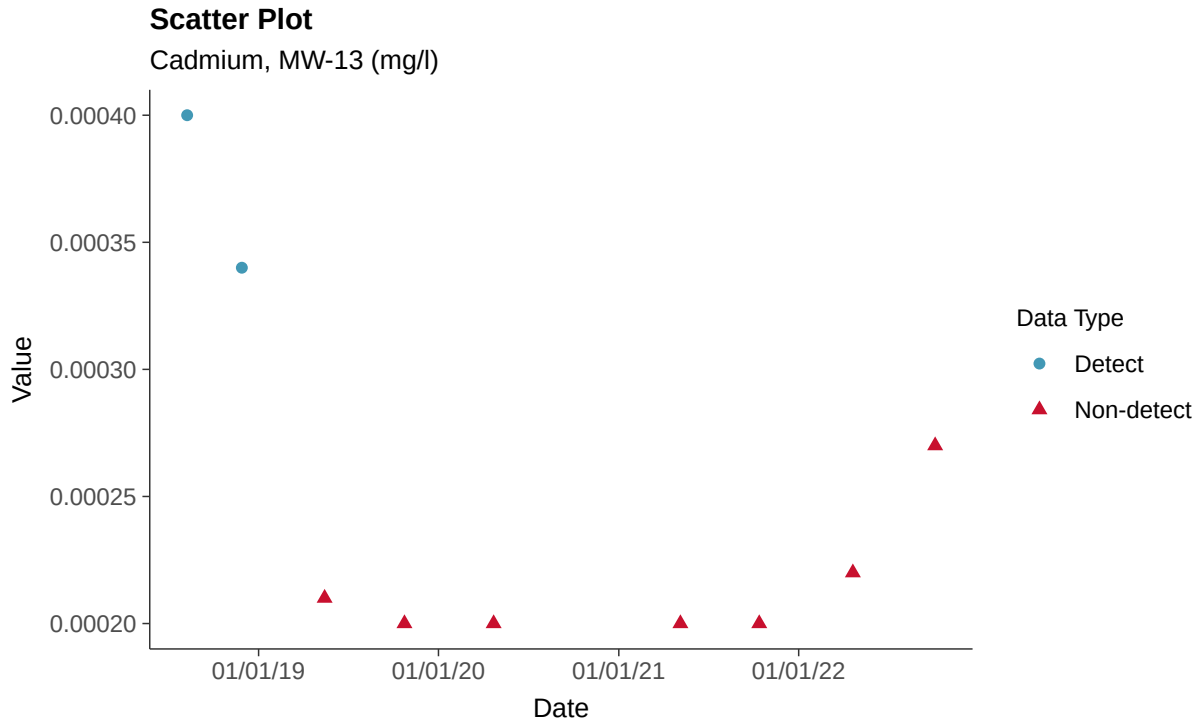
Trend Regression: Piecewise Linear-Linear

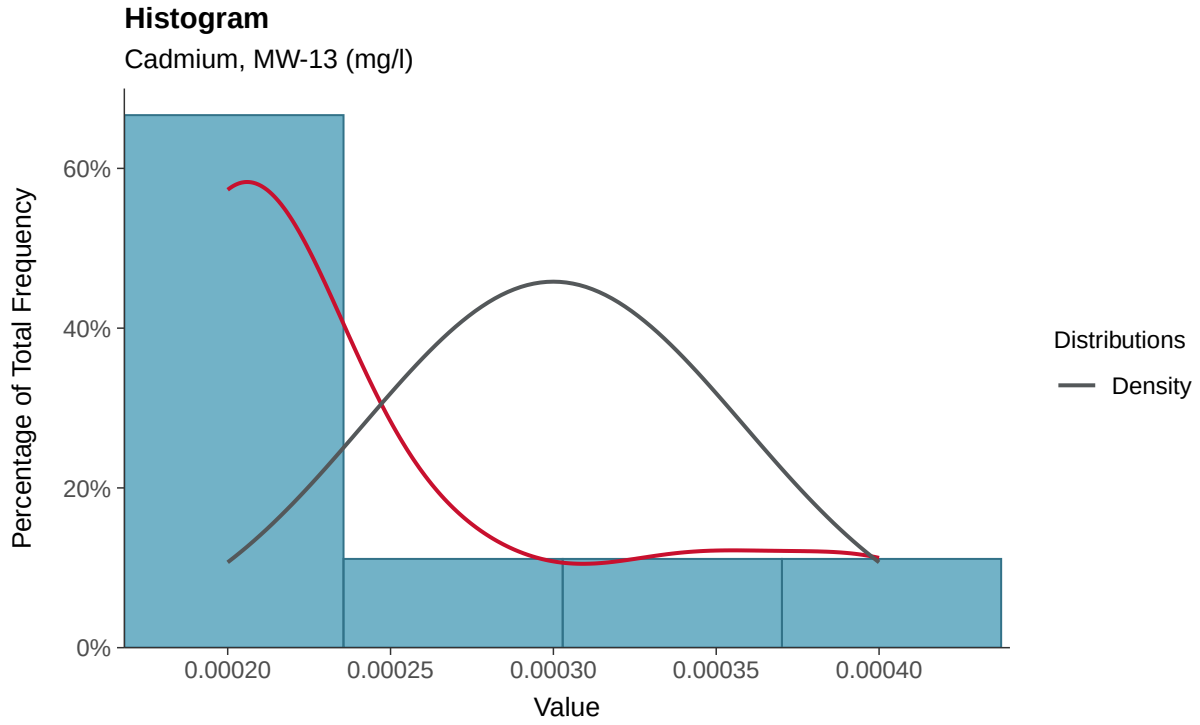
Beryllium, MW-13 (mg/l)



Appendix IV: Cadmium, MW-13

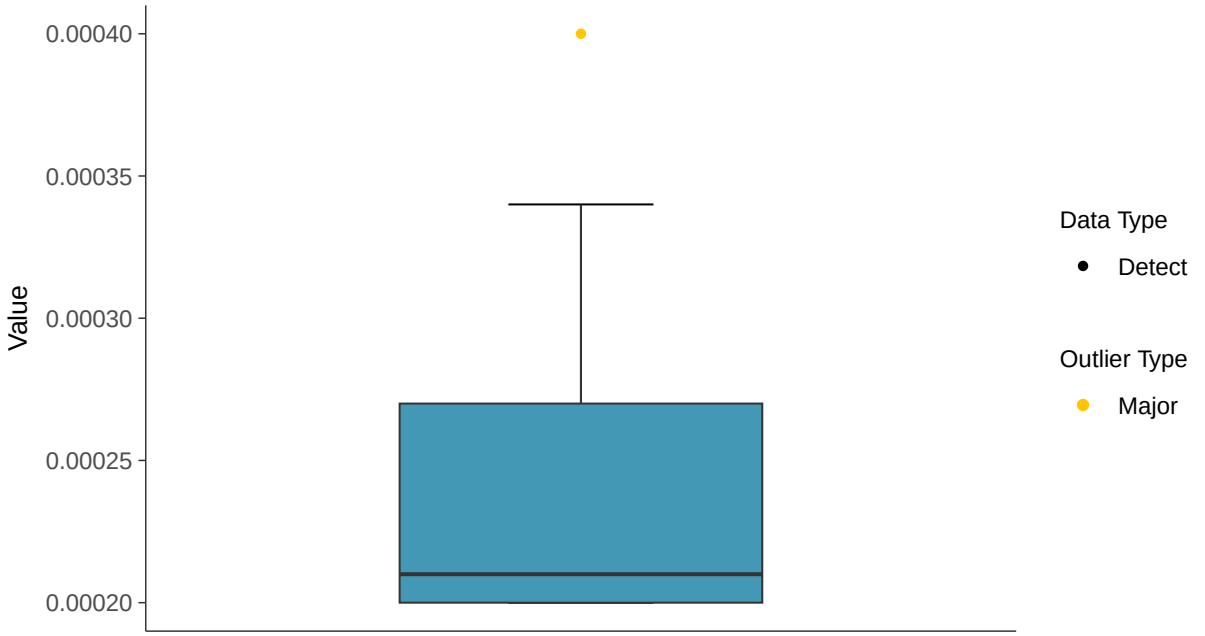
ID: 12_2_109





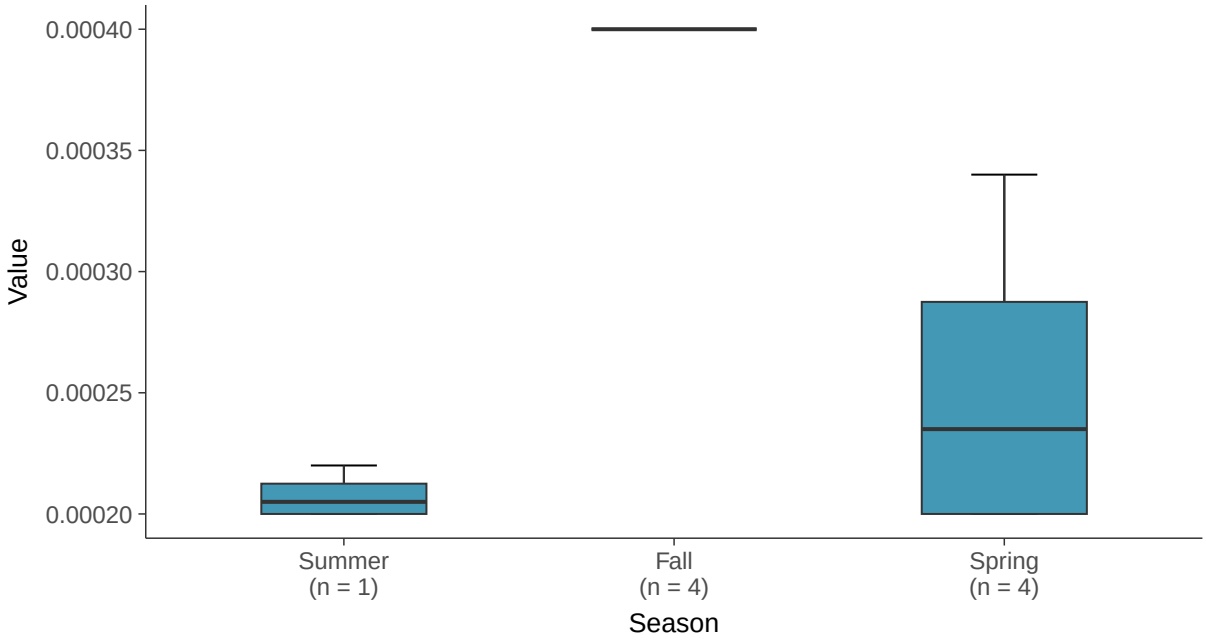
Boxplot

Cadmium, MW-13 (mg/l)



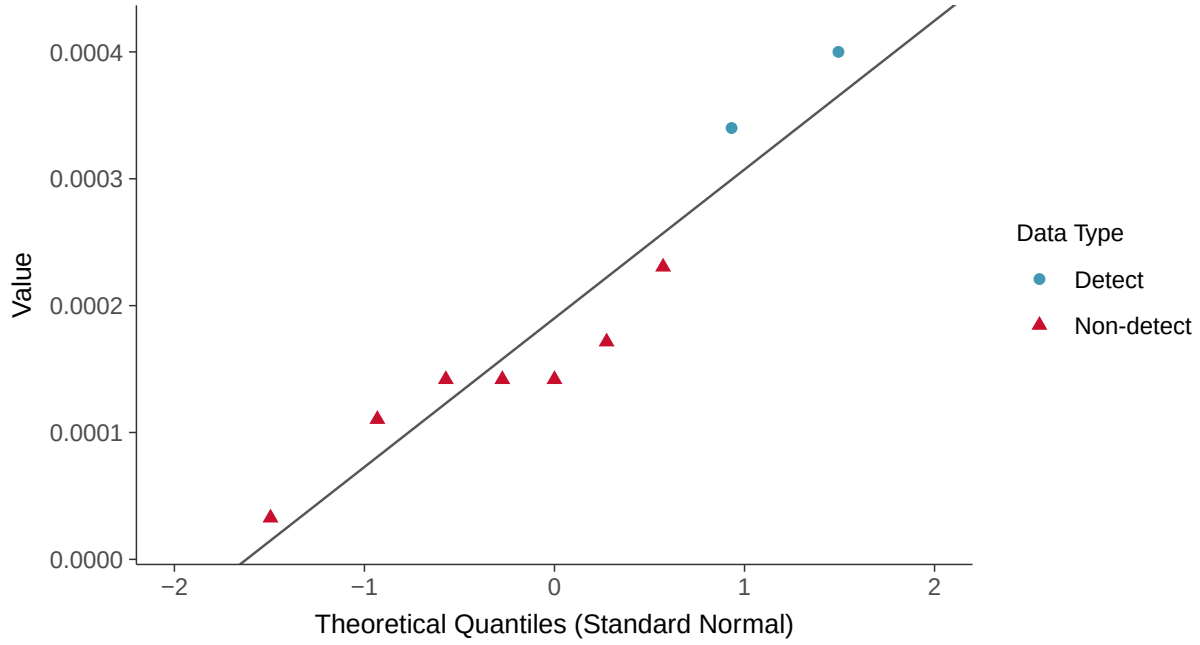
Boxplot by Season

Cadmium, MW-13 (mg/l)



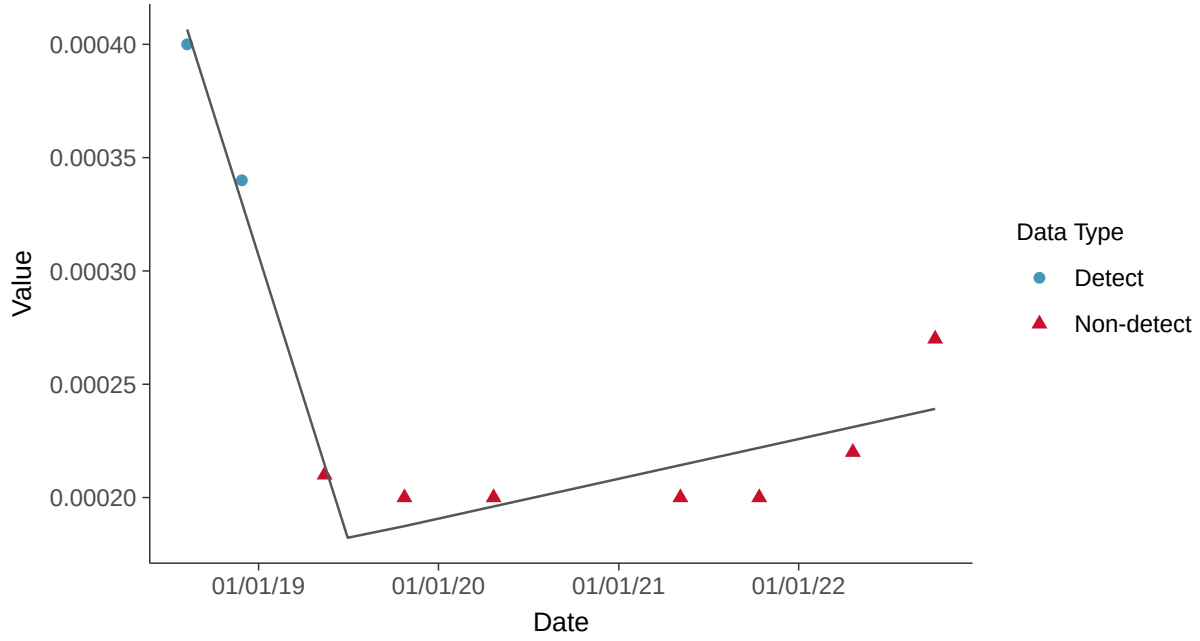
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-13 (mg/l)



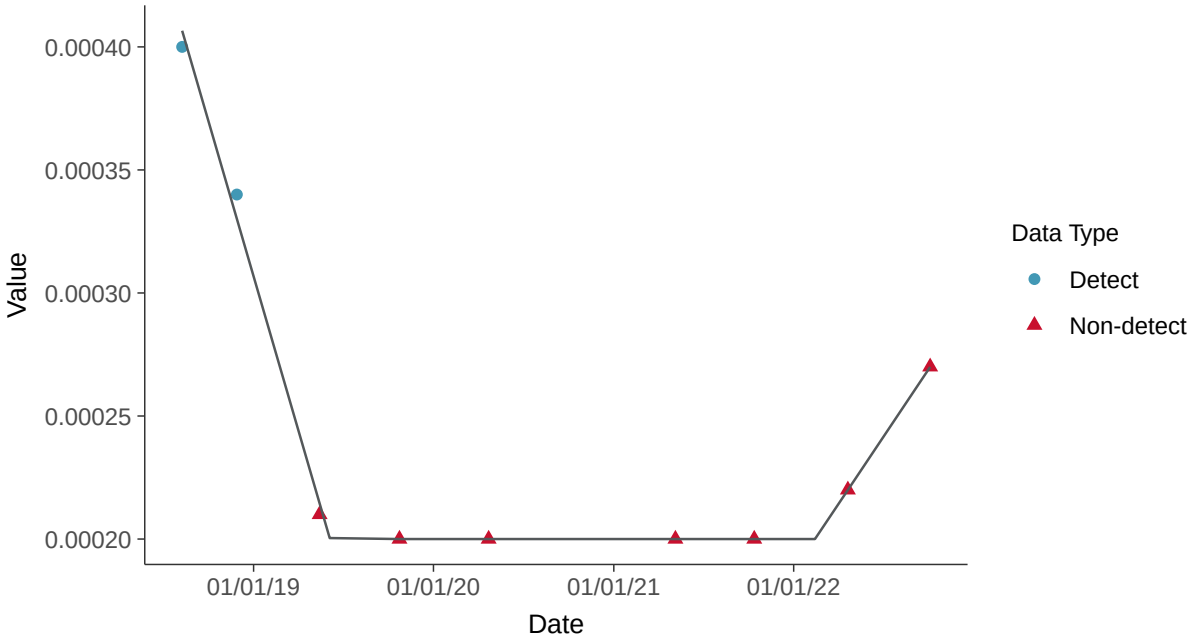
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-13 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-13 (mg/l)

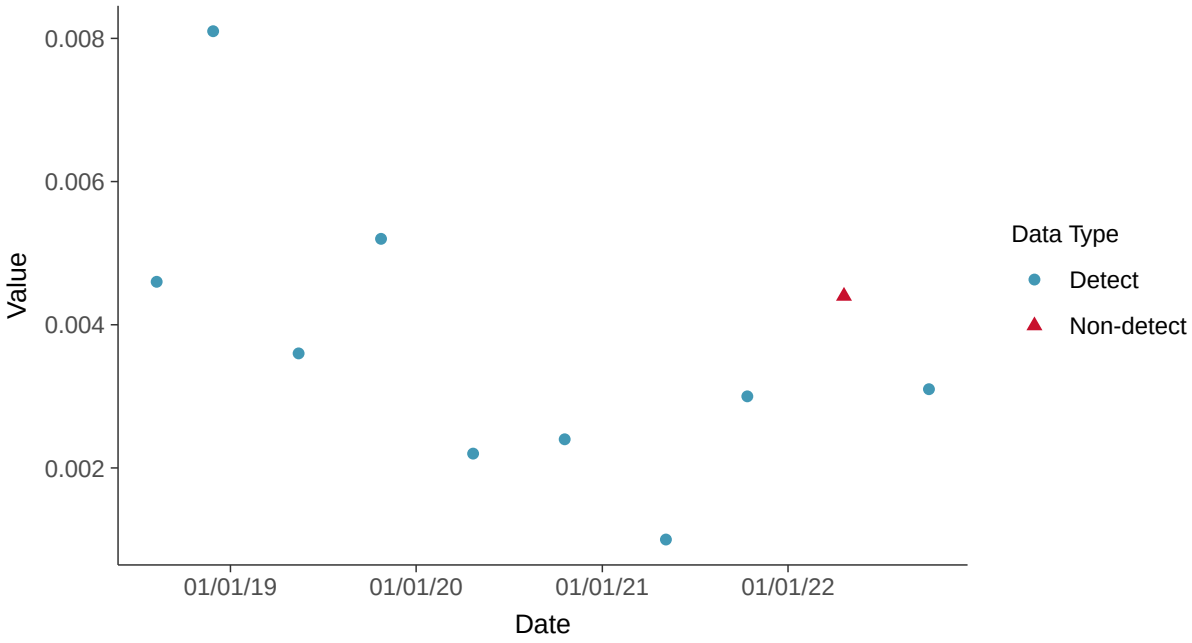


Appendix IV: Chromium, Total, MW-13

ID: 12_2_112

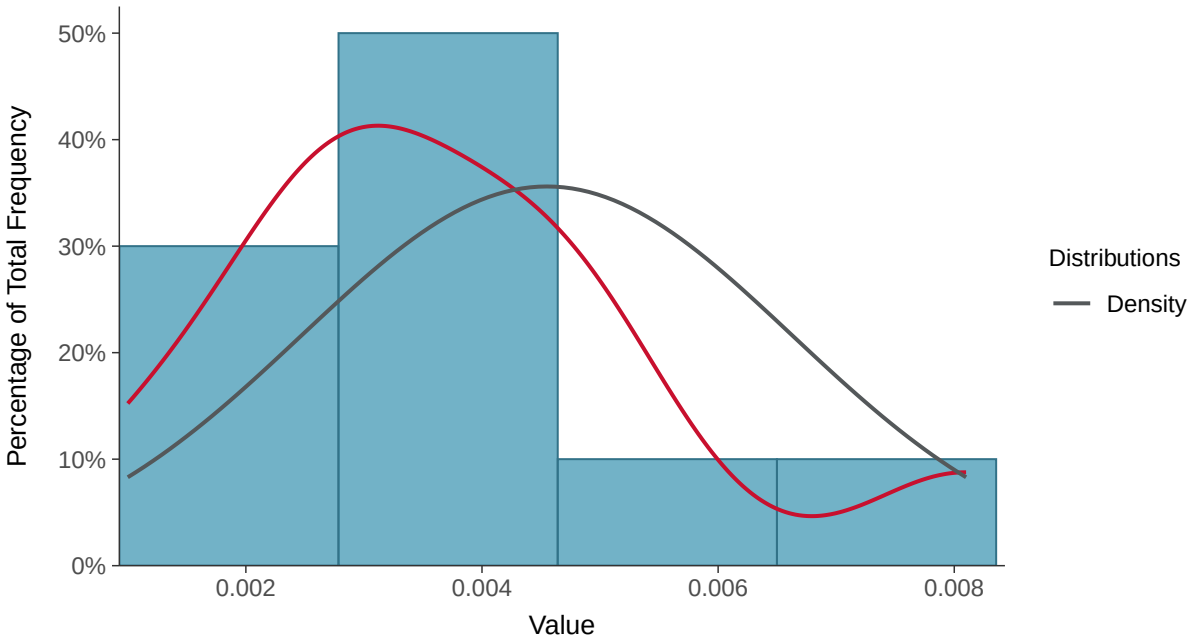
Scatter Plot

Chromium, Total, MW-13 (mg/l)



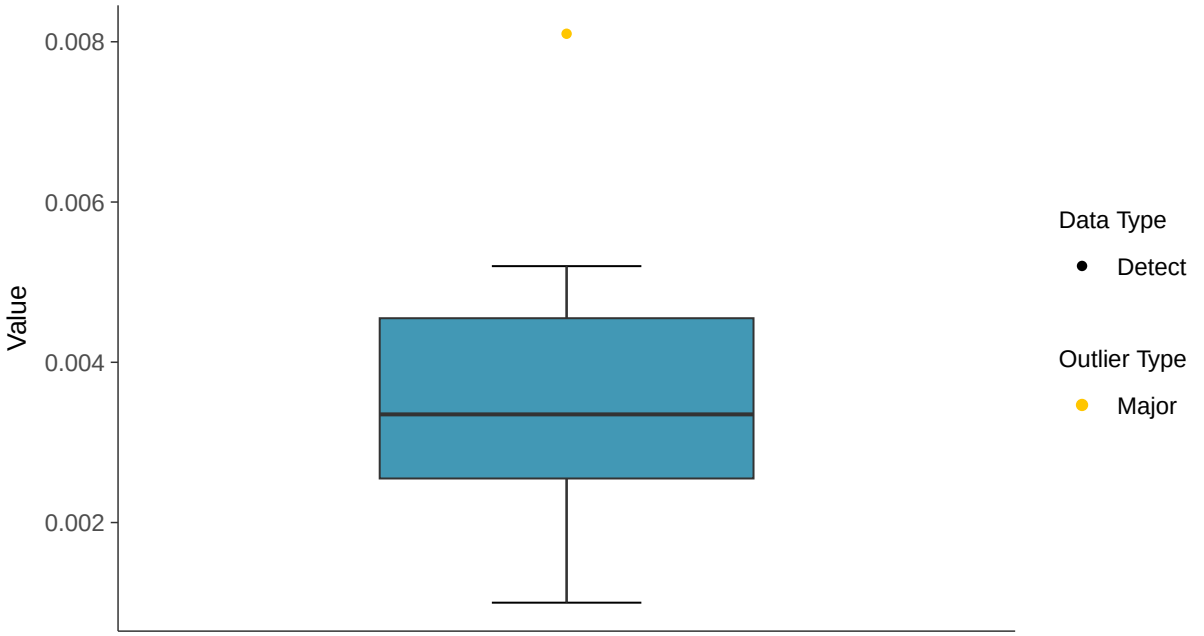
Histogram

Chromium, Total, MW-13 (mg/l)



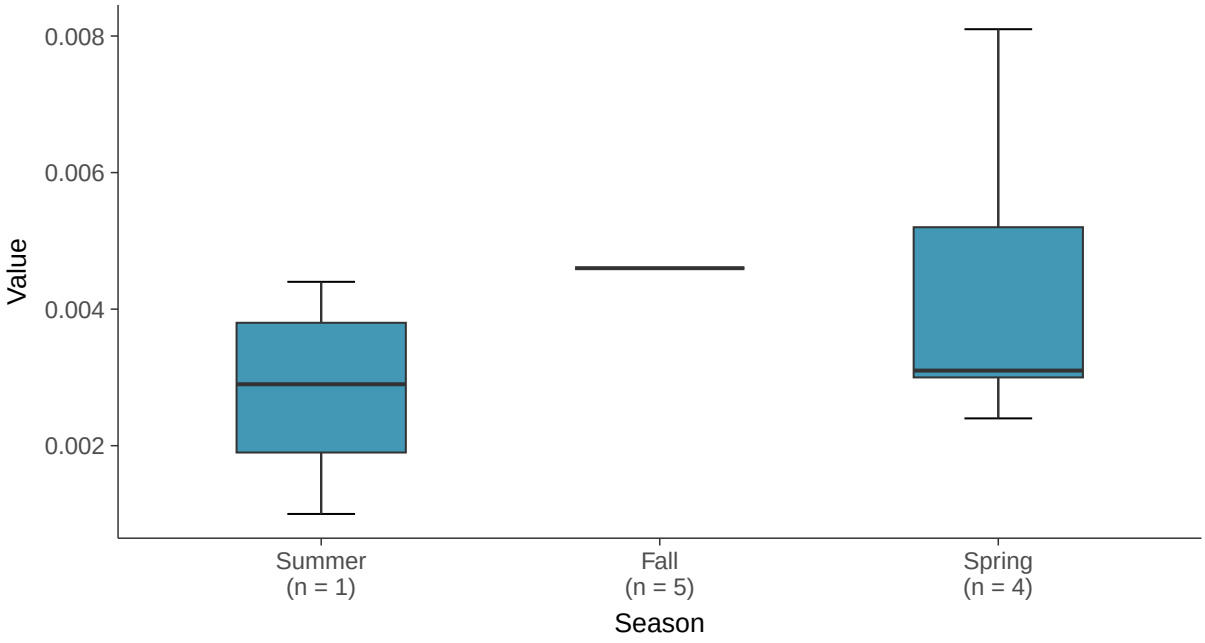
Boxplot

Chromium, Total, MW-13 (mg/l)



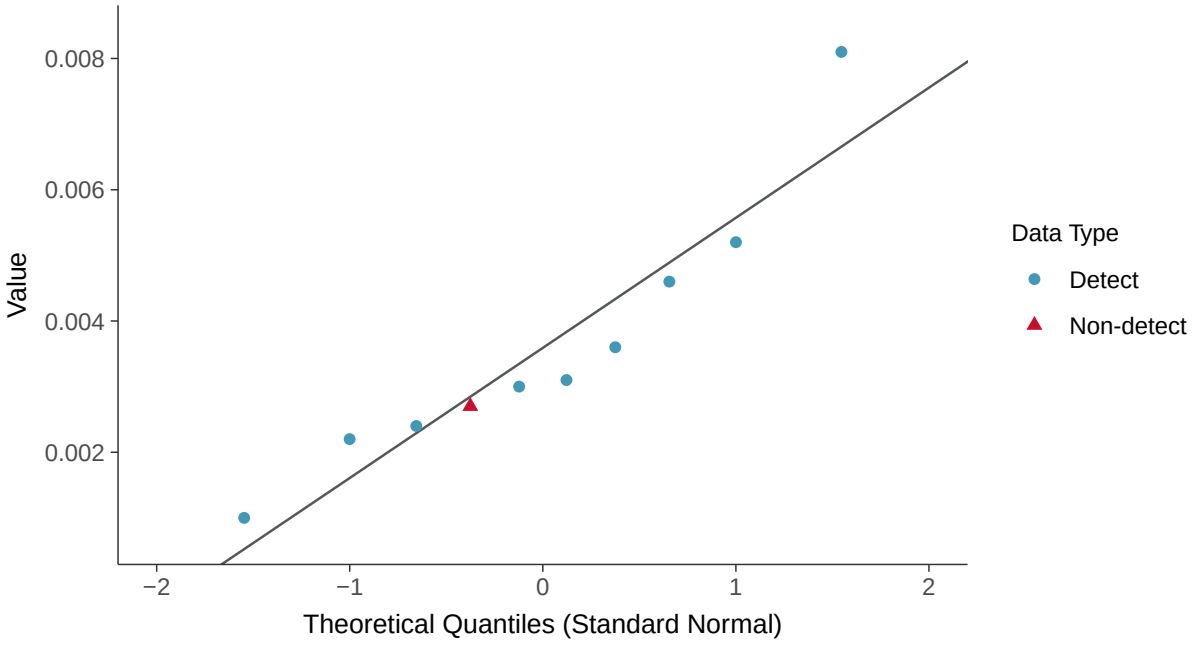
Boxplot by Season

Chromium, Total, MW-13 (mg/l)



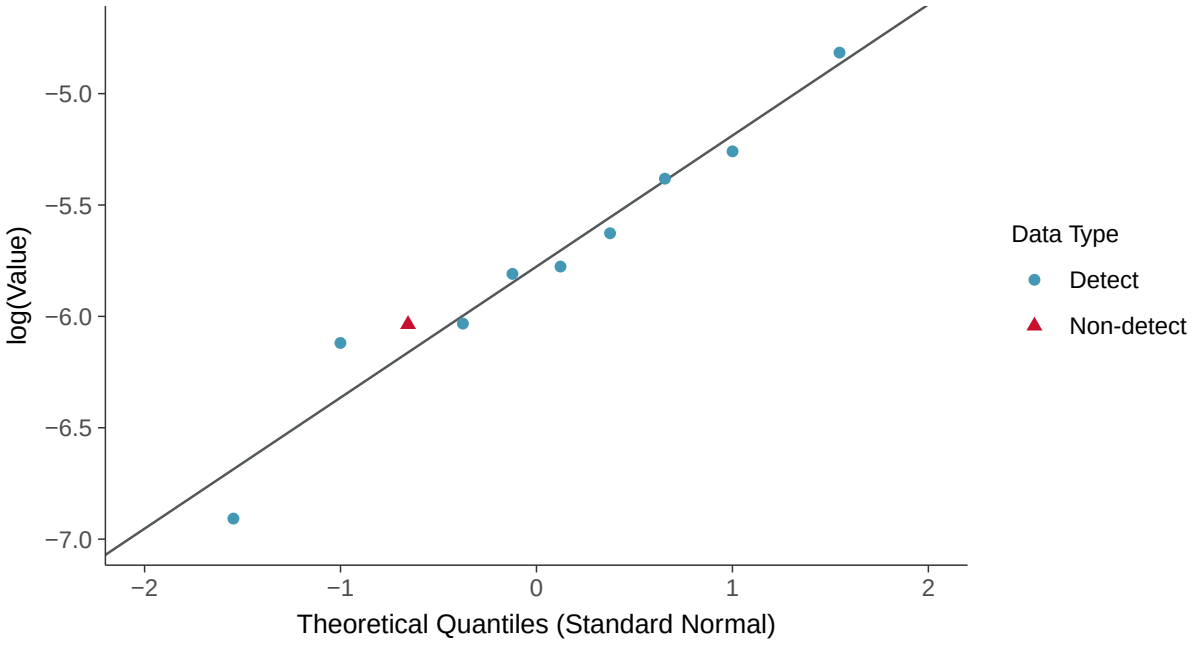
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-13 (mg/l)



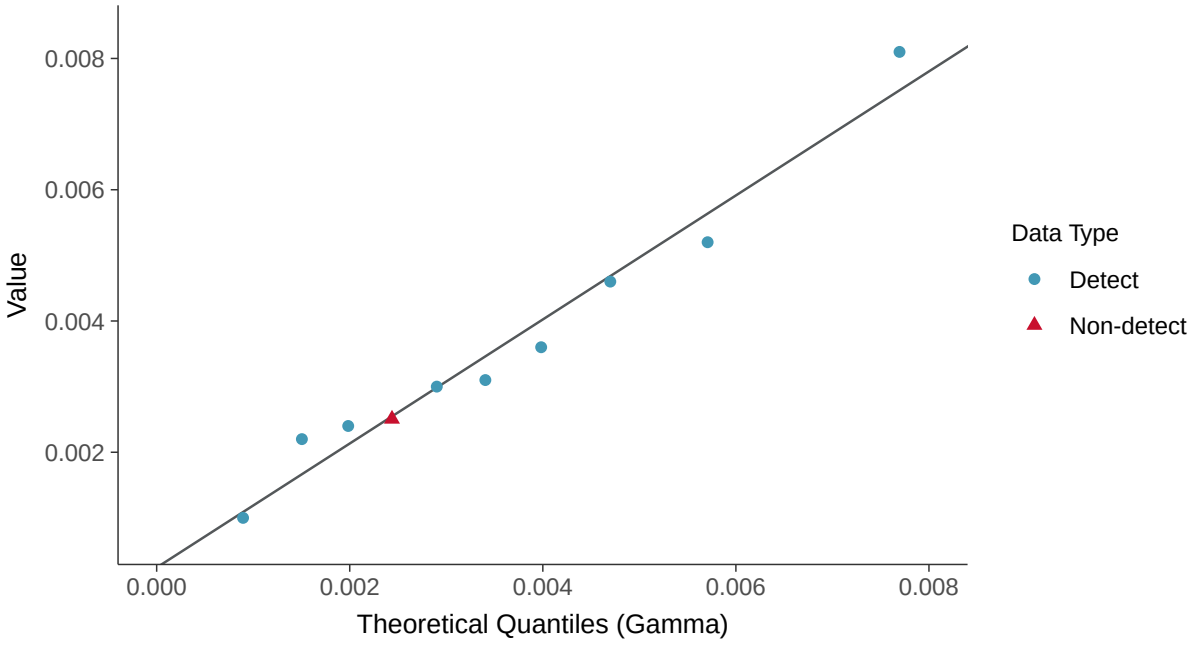
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-13 (mg/l)



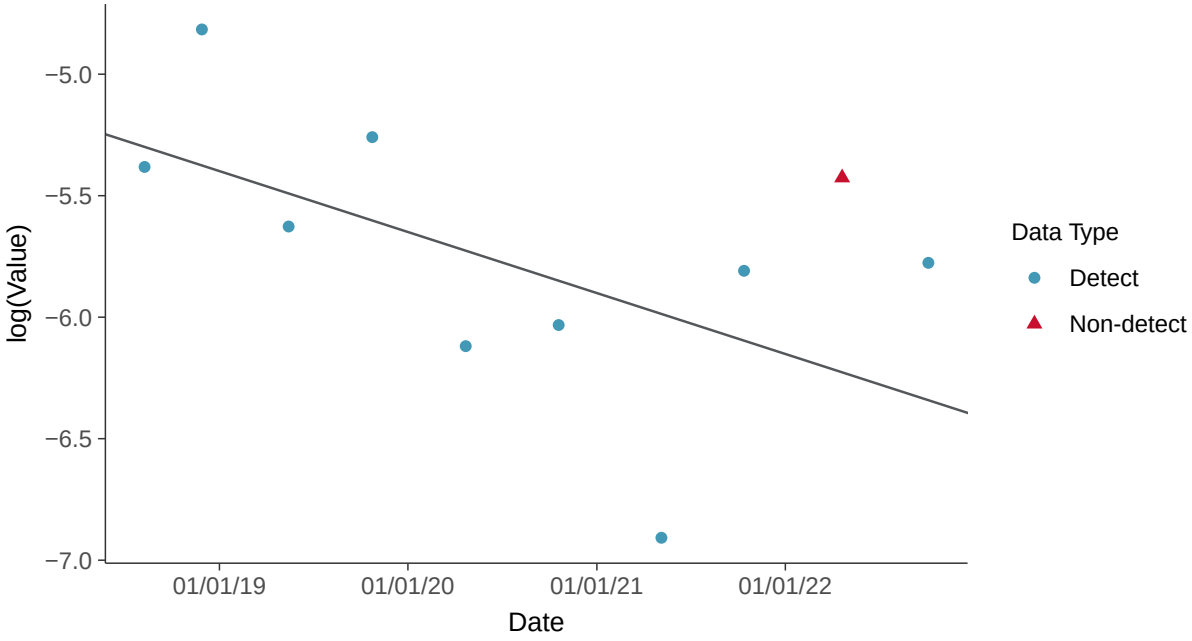
Gamma Q-Q plot using ROS Imputed Estimates

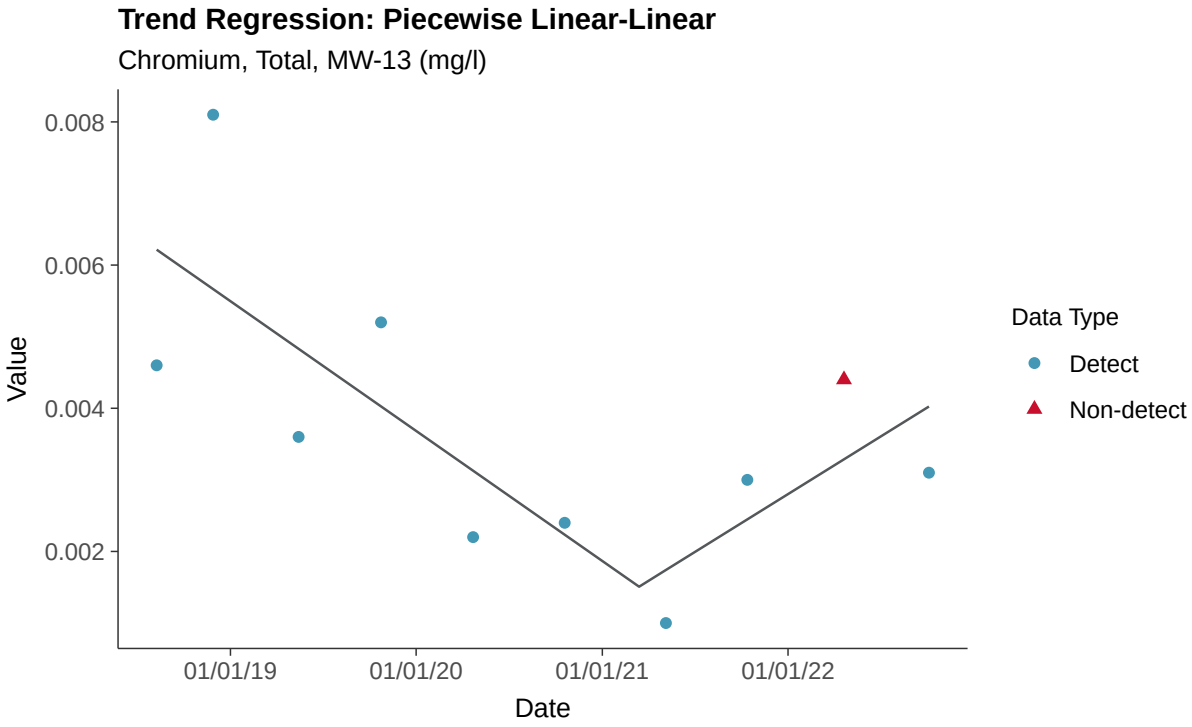
Chromium, Total, MW-13 (mg/l)



Trend Regression: Lognormal MLE

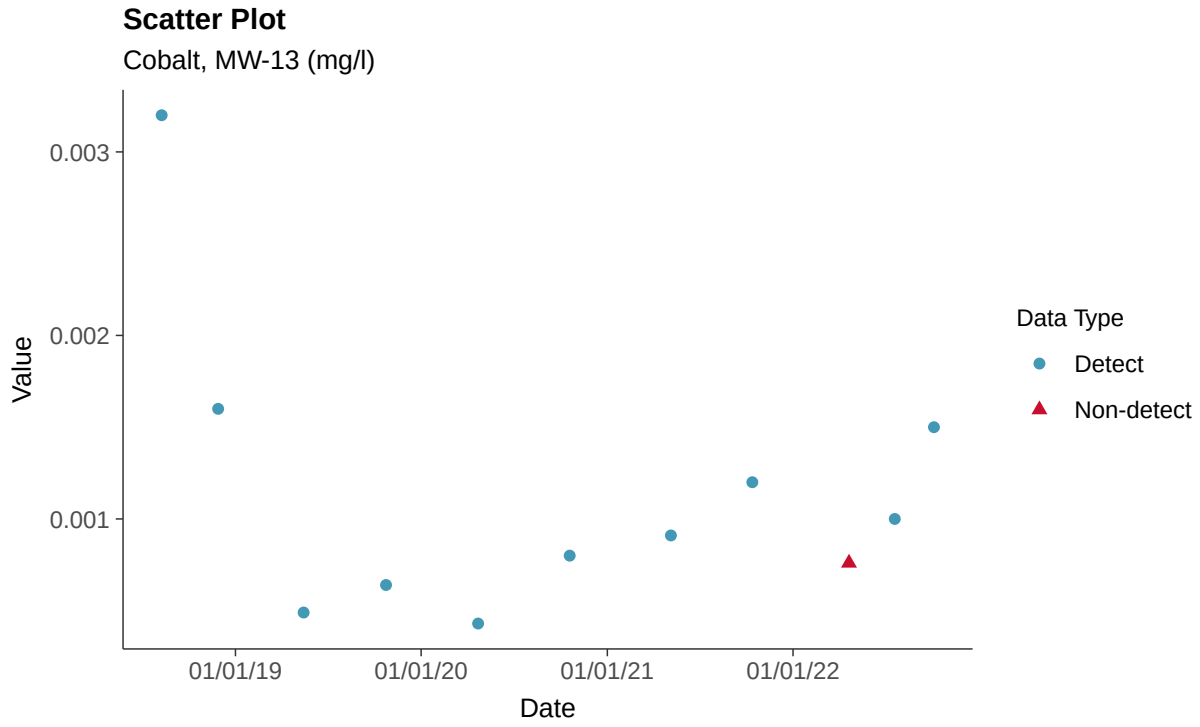
Chromium, Total, MW-13 (mg/l)

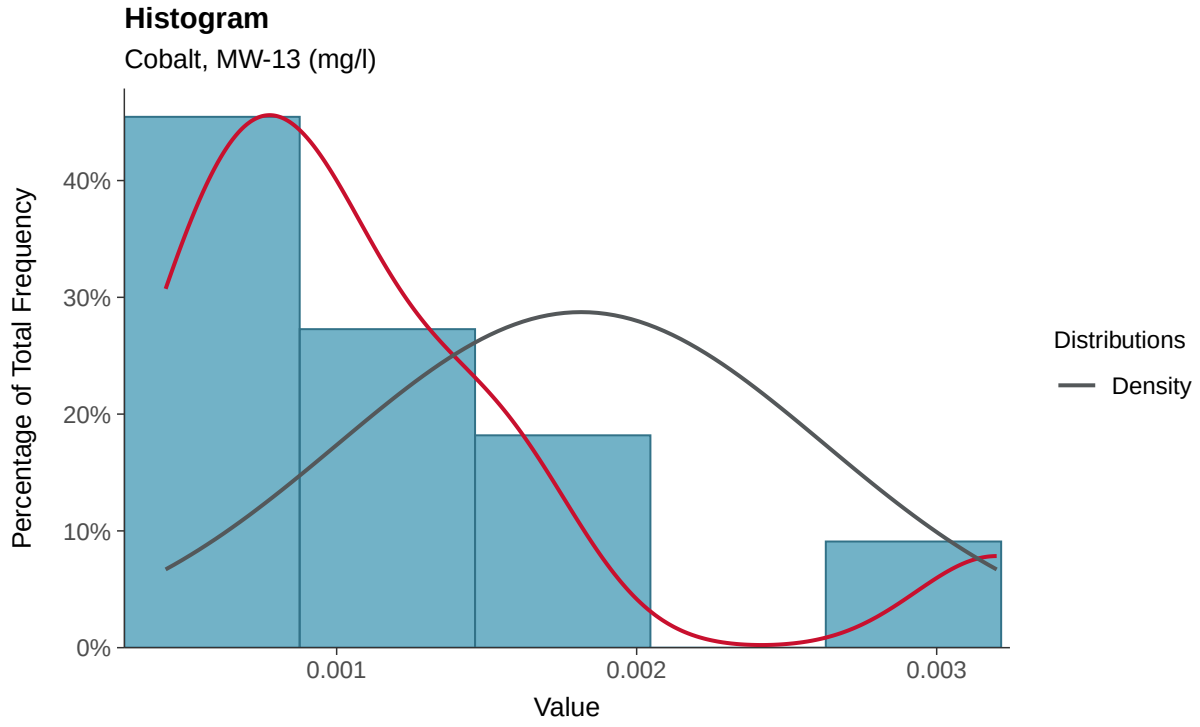



Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-13 (mg/l)
0.008
0.006
0.004
0.002
Value
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-13

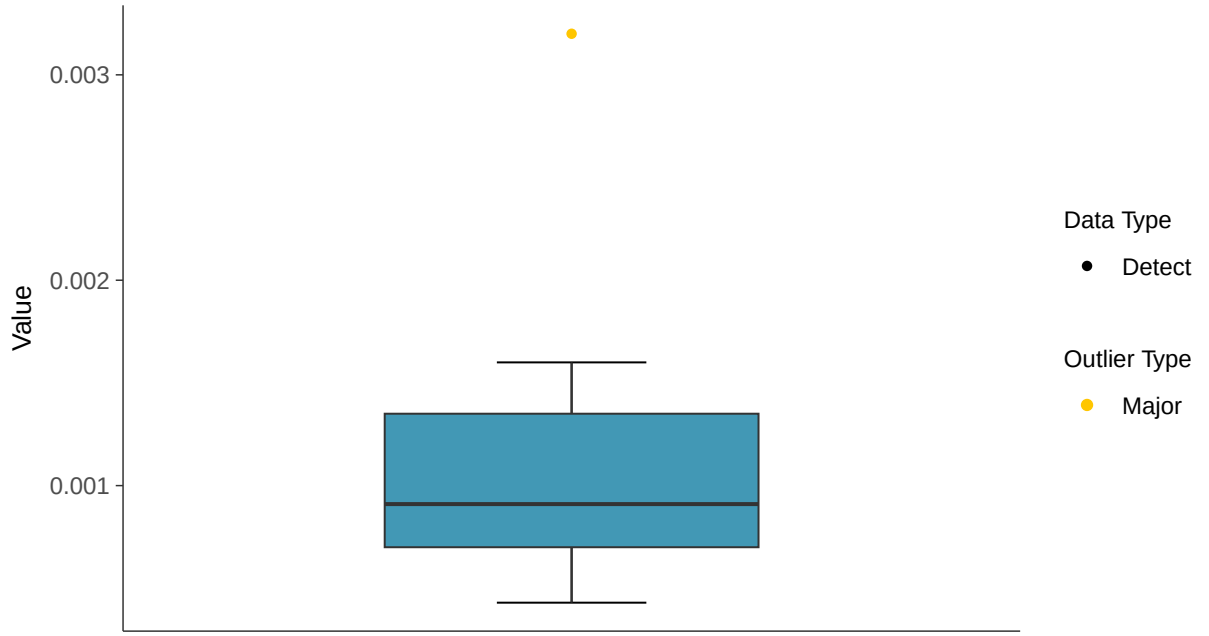
ID: 12_2_113





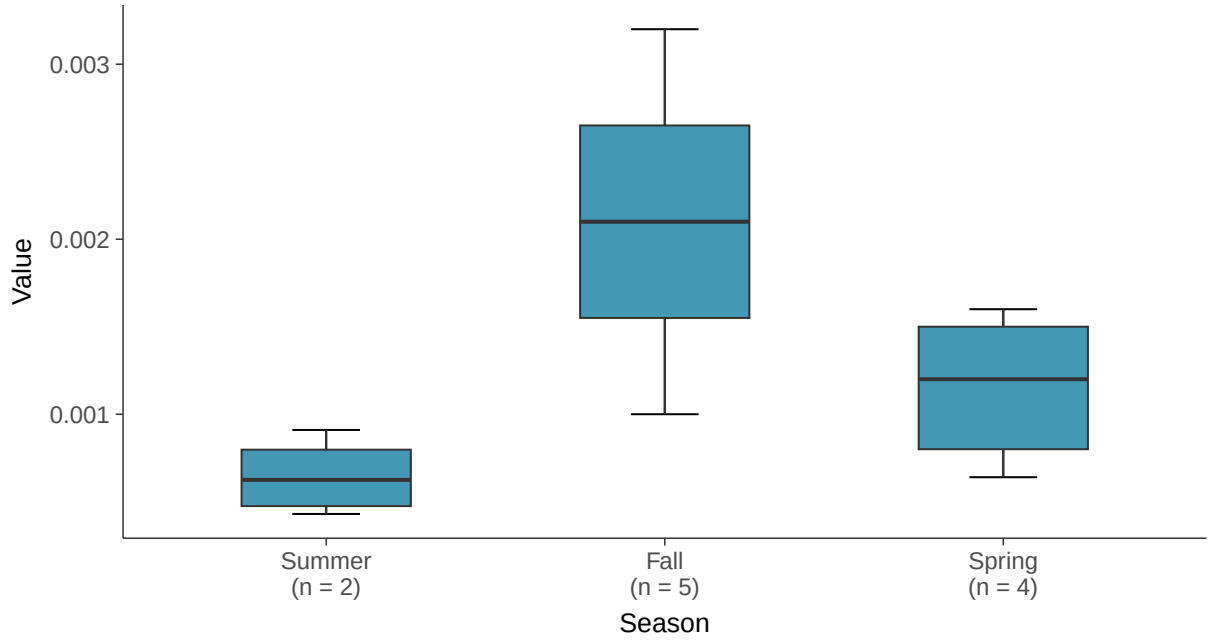
Boxplot

Cobalt, MW-13 (mg/l)



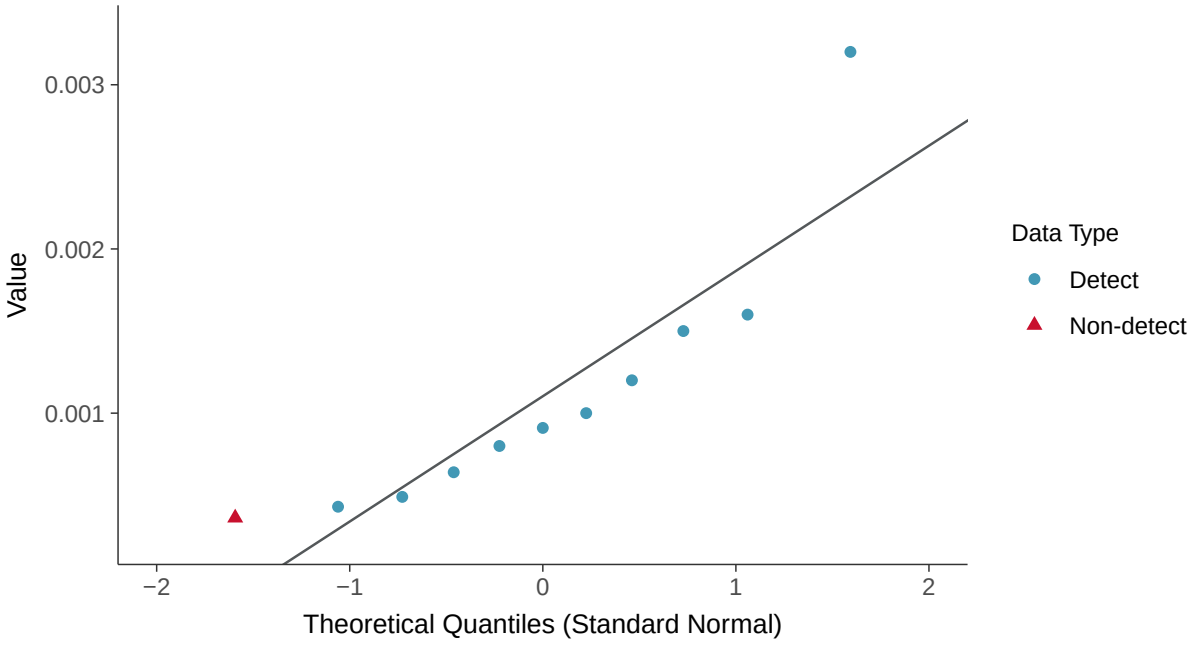
Boxplot by Season

Cobalt, MW-13 (mg/l)



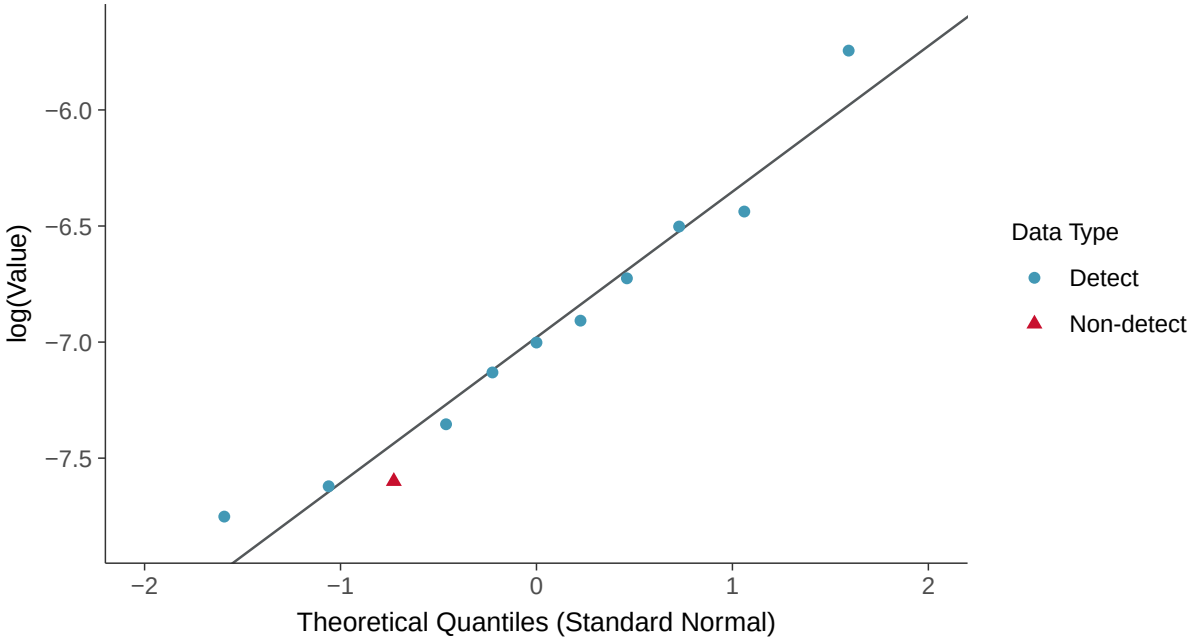
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-13 (mg/l)



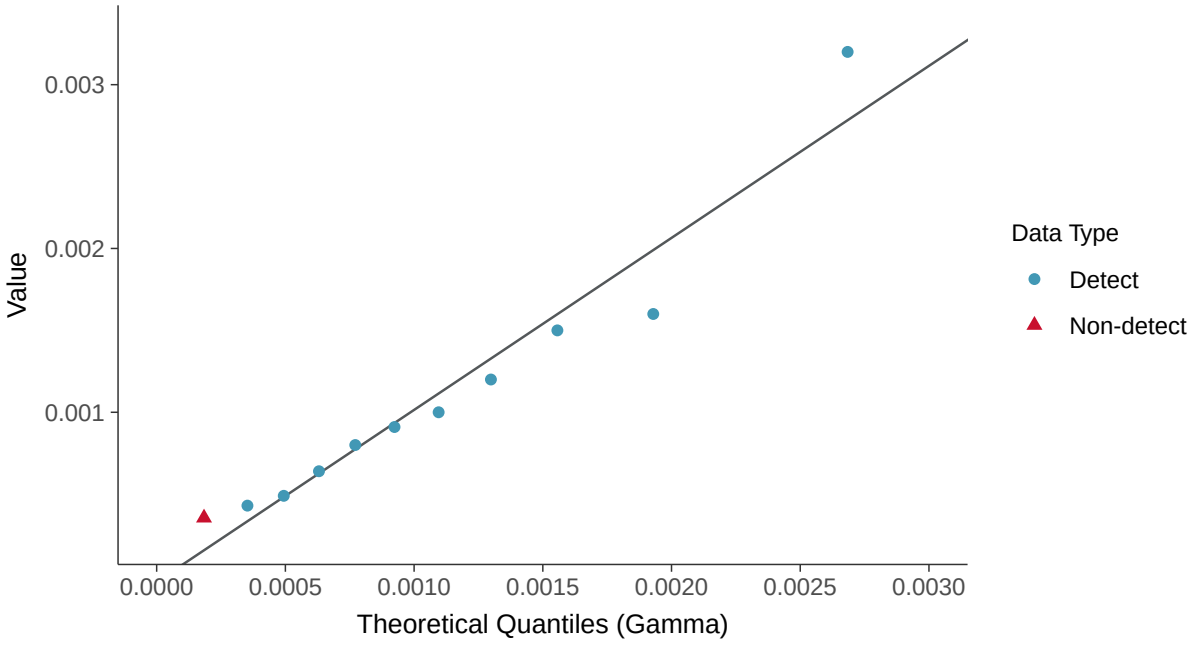
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-13 (mg/l)



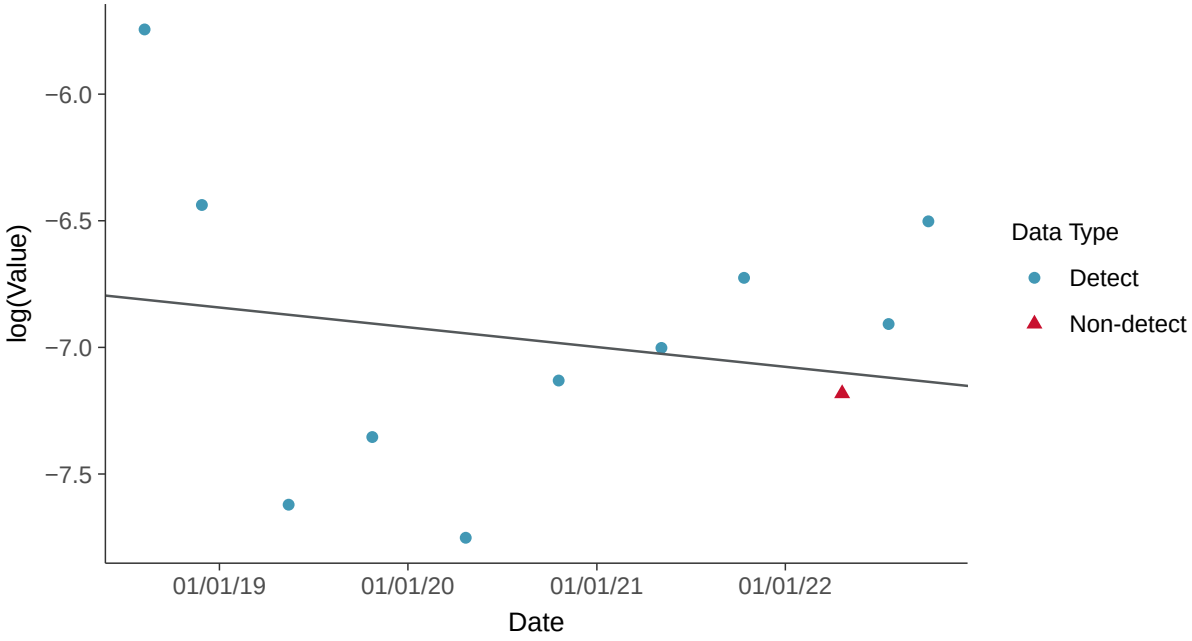
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-13 (mg/l)



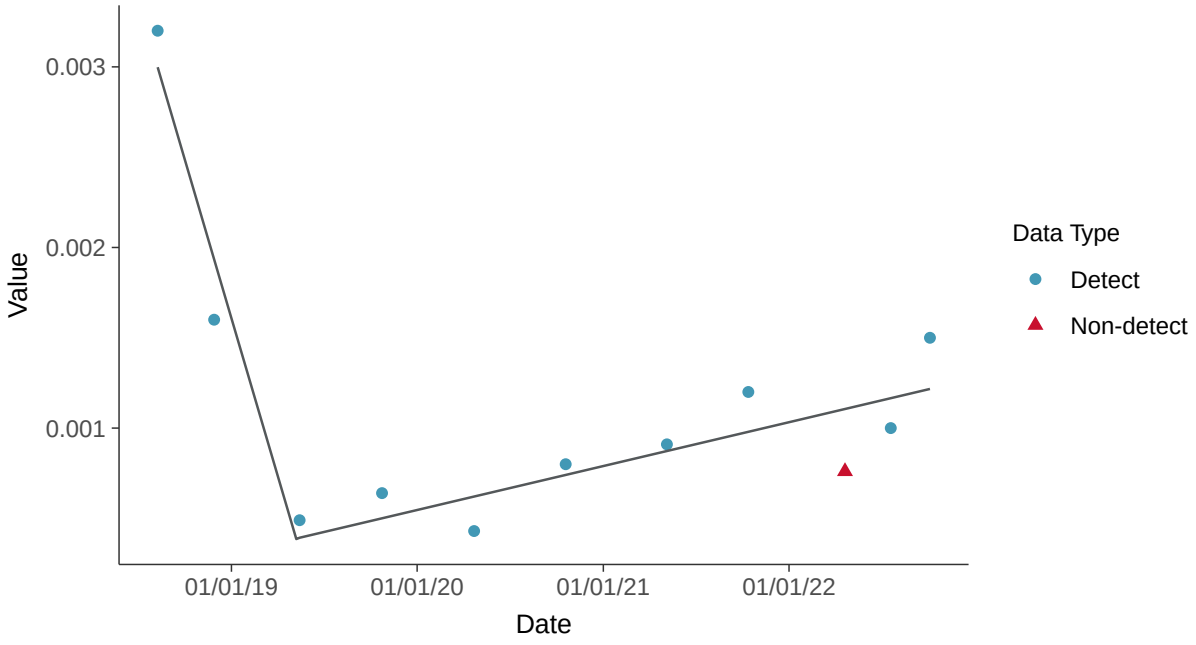
Trend Regression: Lognormal MLE

Cobalt, MW-13 (mg/l)



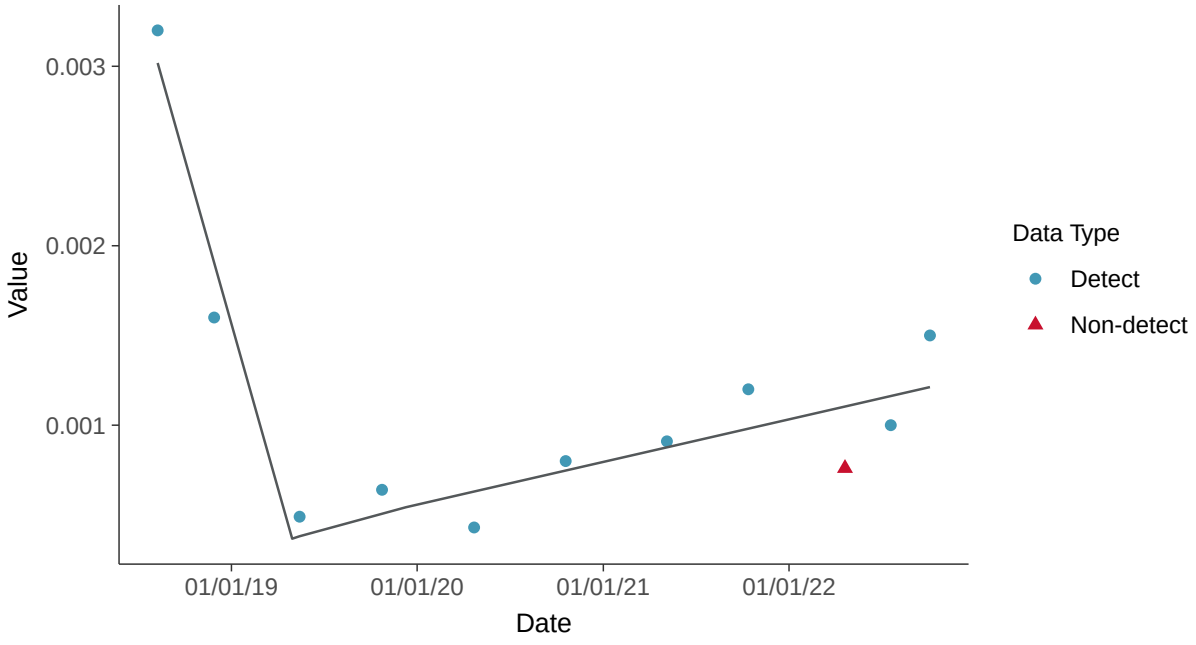
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-13 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-13 (mg/l)

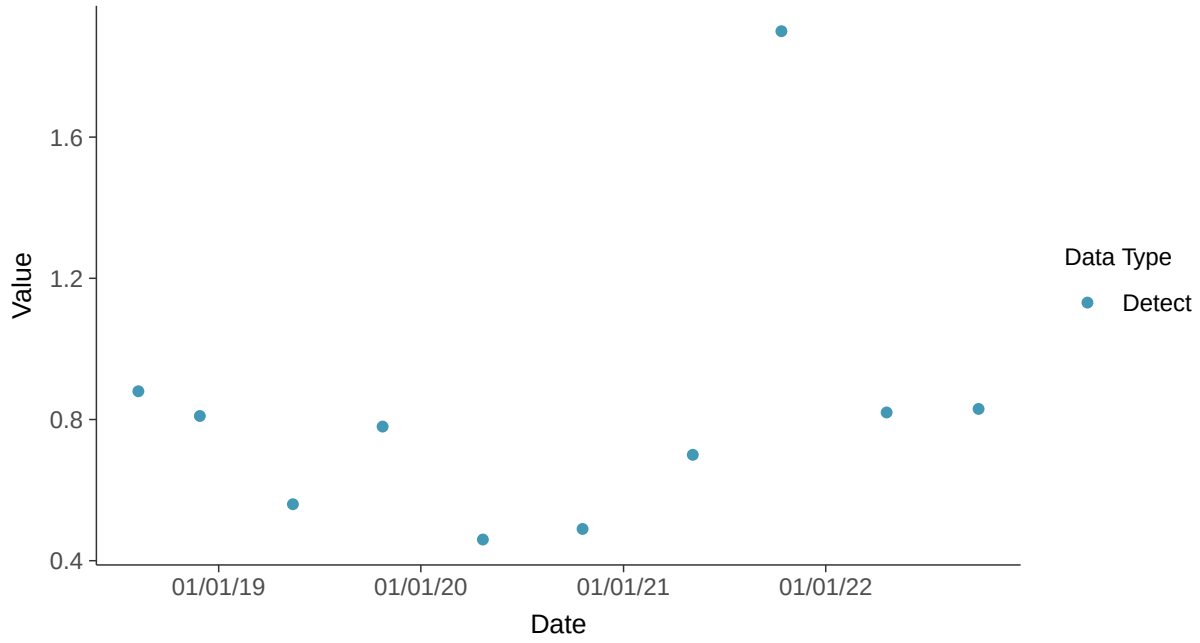


Appendix IV: Fluoride (App IV), MW-13

ID: 12_2_116

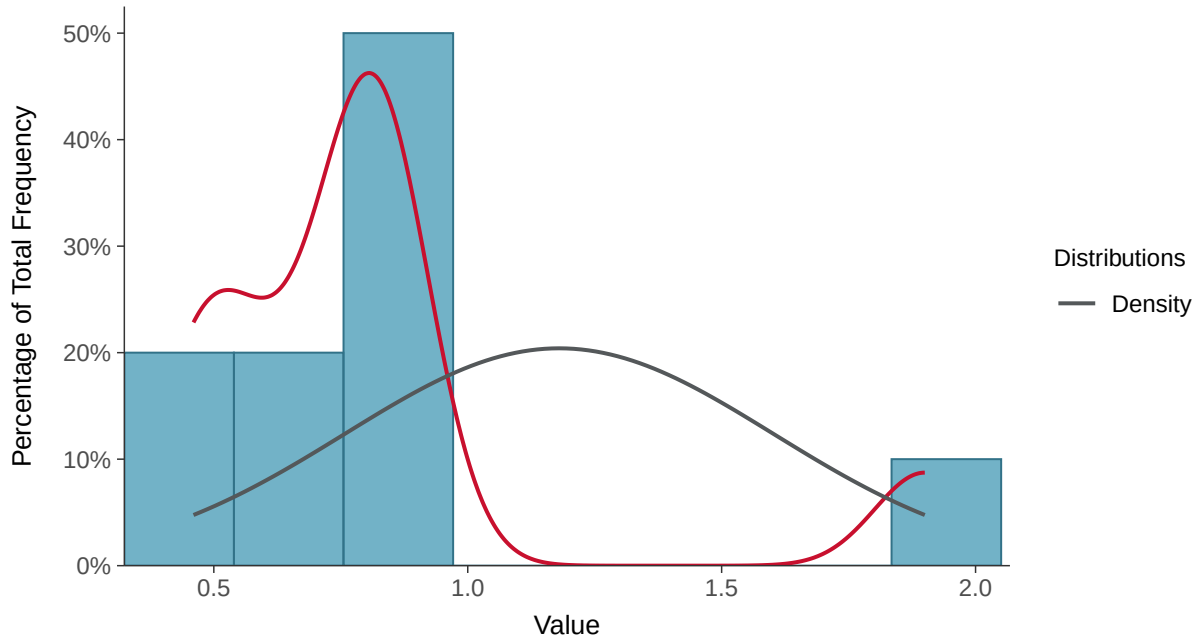
Scatter Plot

Fluoride (App IV), MW-13 (mg/l)



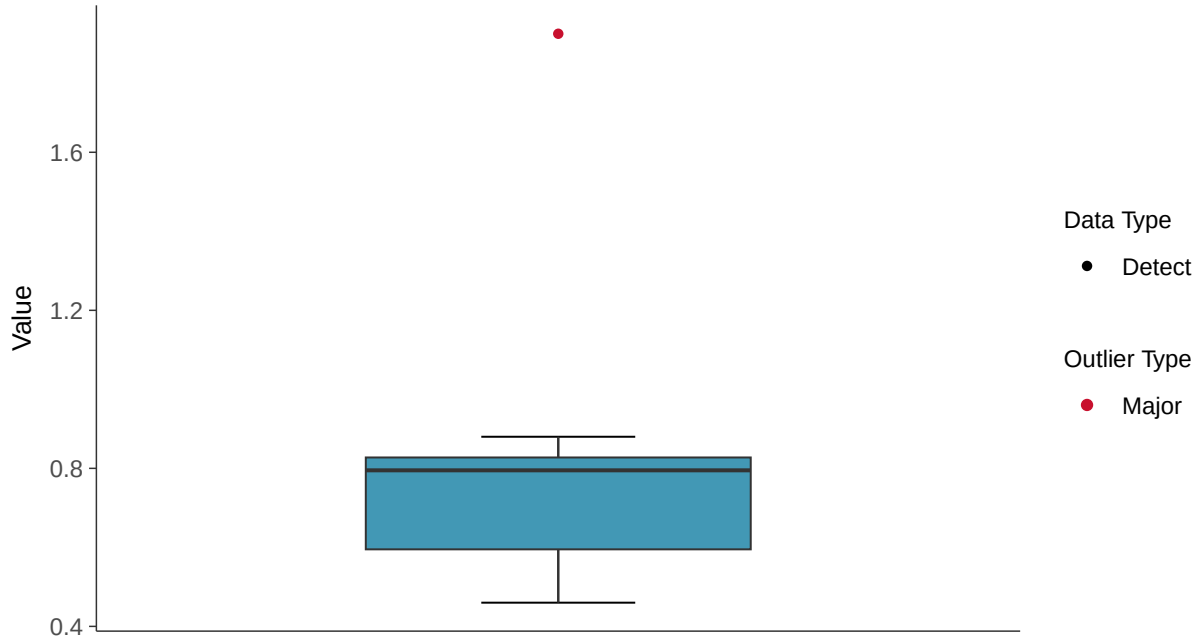
Histogram

Fluoride (App IV), MW-13 (mg/l)



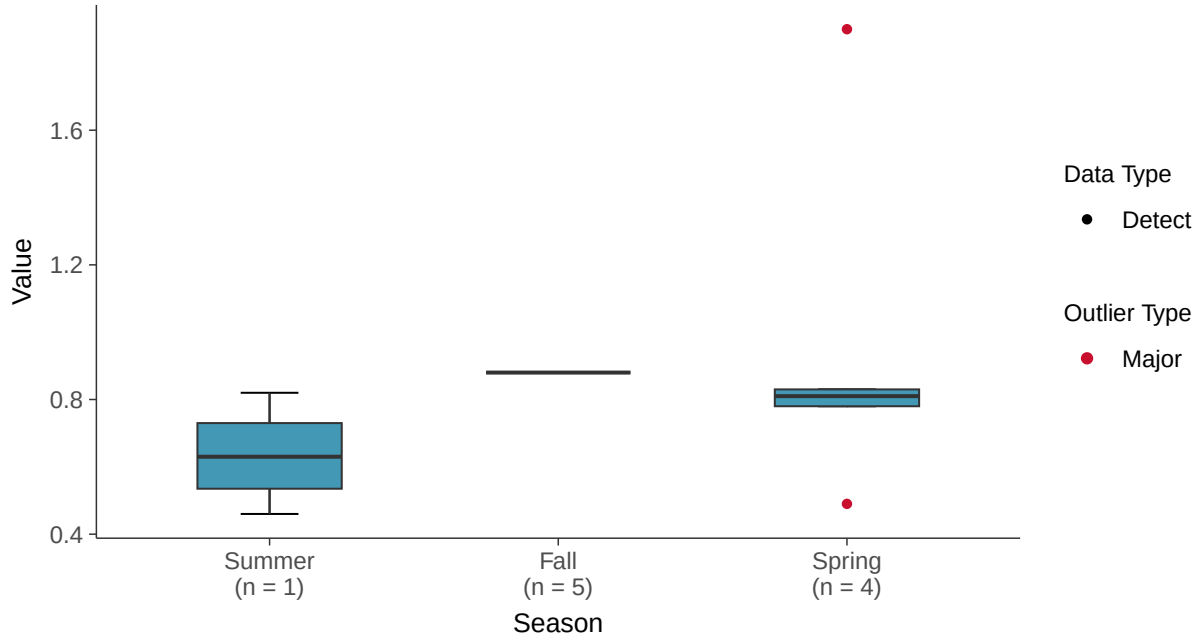
Boxplot

Fluoride (App IV), MW-13 (mg/l)



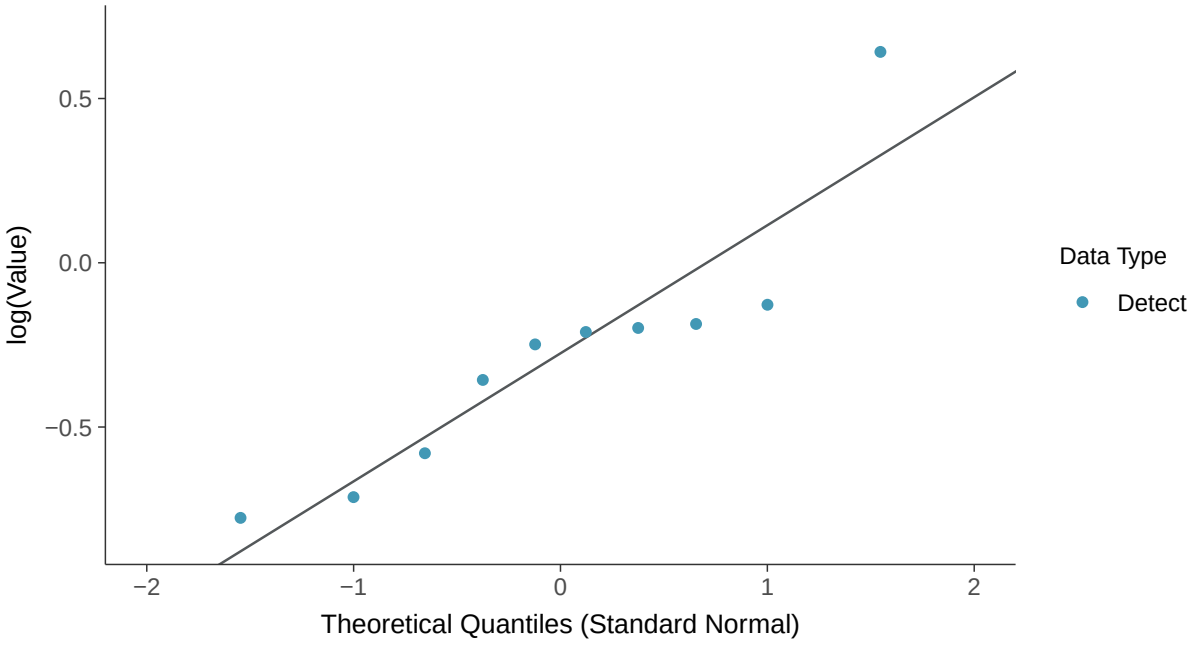
Boxplot by Season

Fluoride (App IV), MW-13 (mg/l)



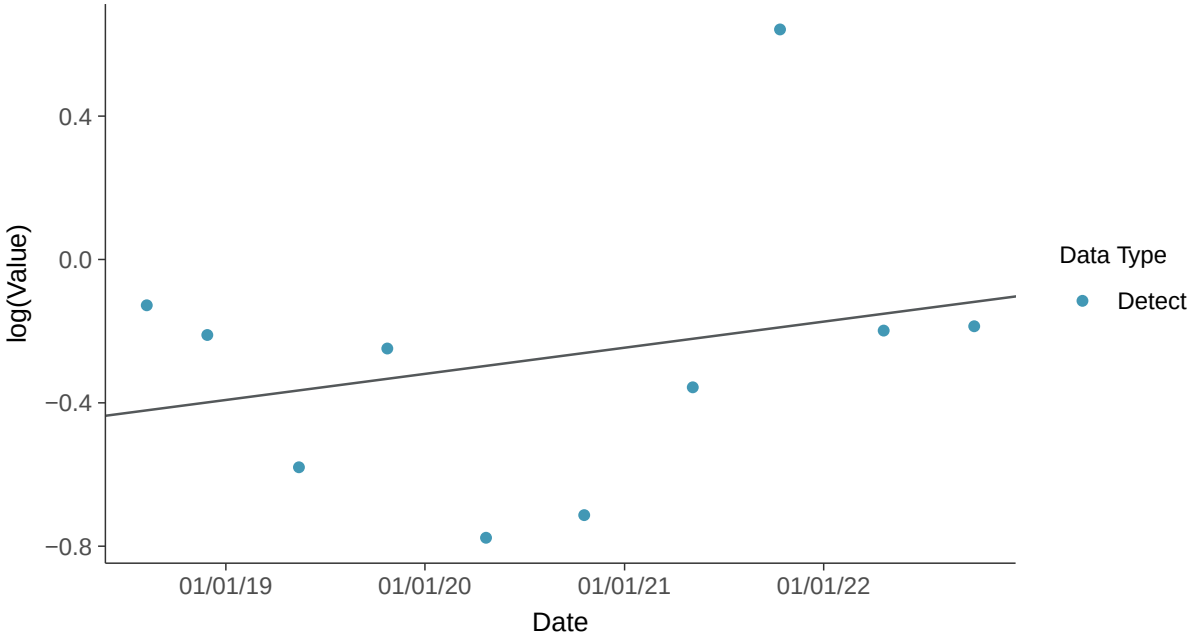
Lognormal Q-Q plot

Fluoride (App IV), MW-13 (mg/l)



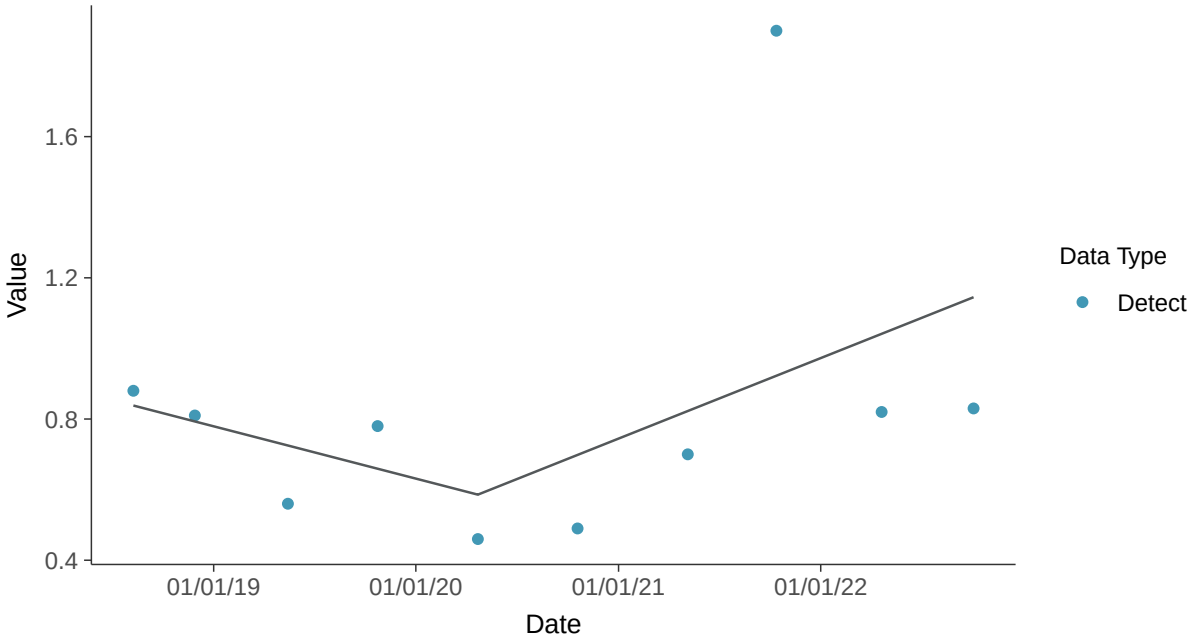
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-13 (mg/l)



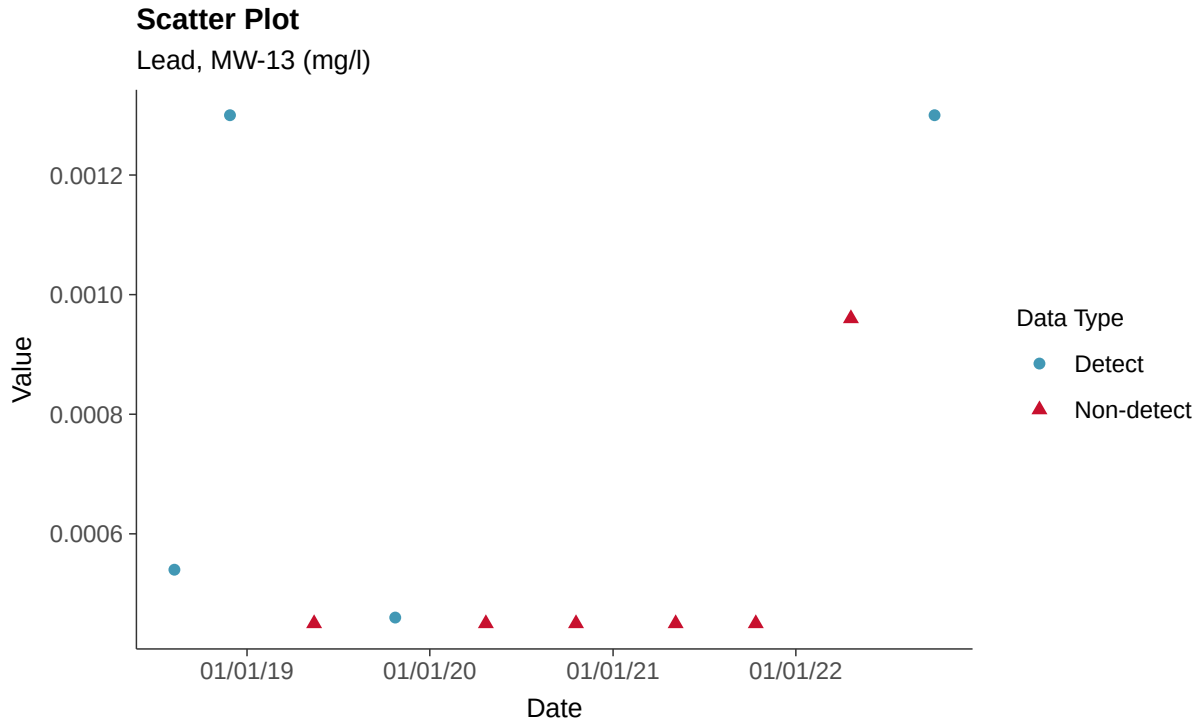
Trend Regression: Piecewise Linear-Linear

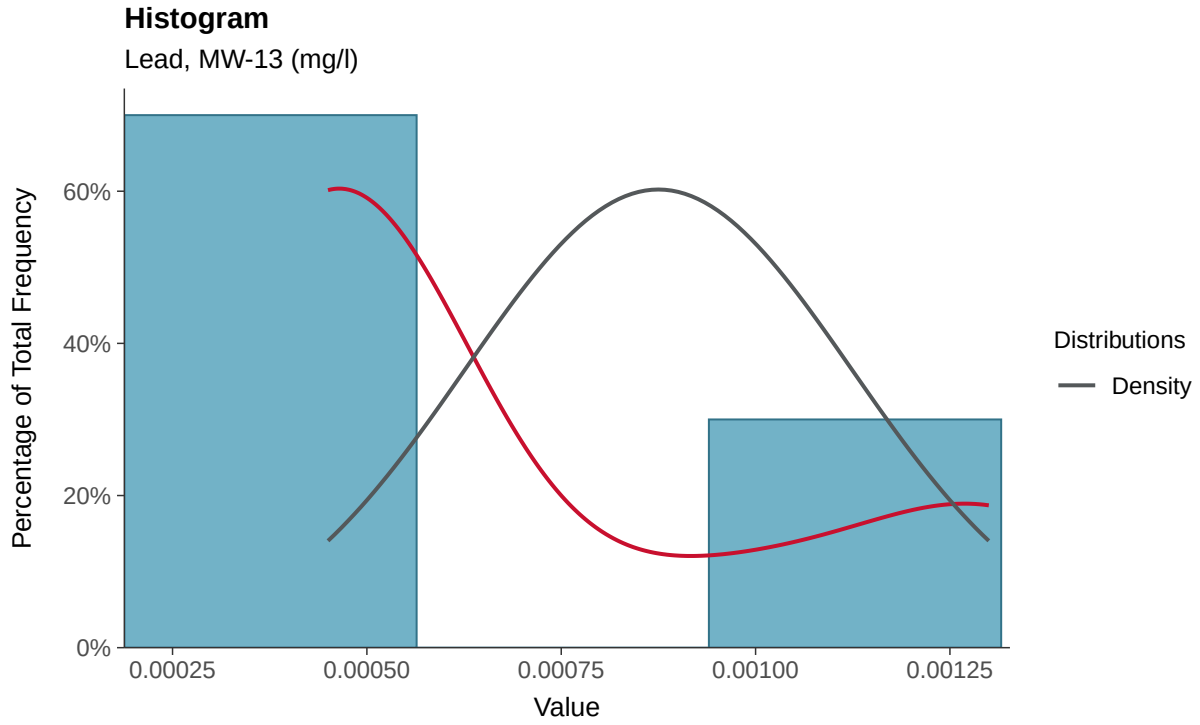
Fluoride (App IV), MW-13 (mg/l)



Appendix IV: Lead, MW-13

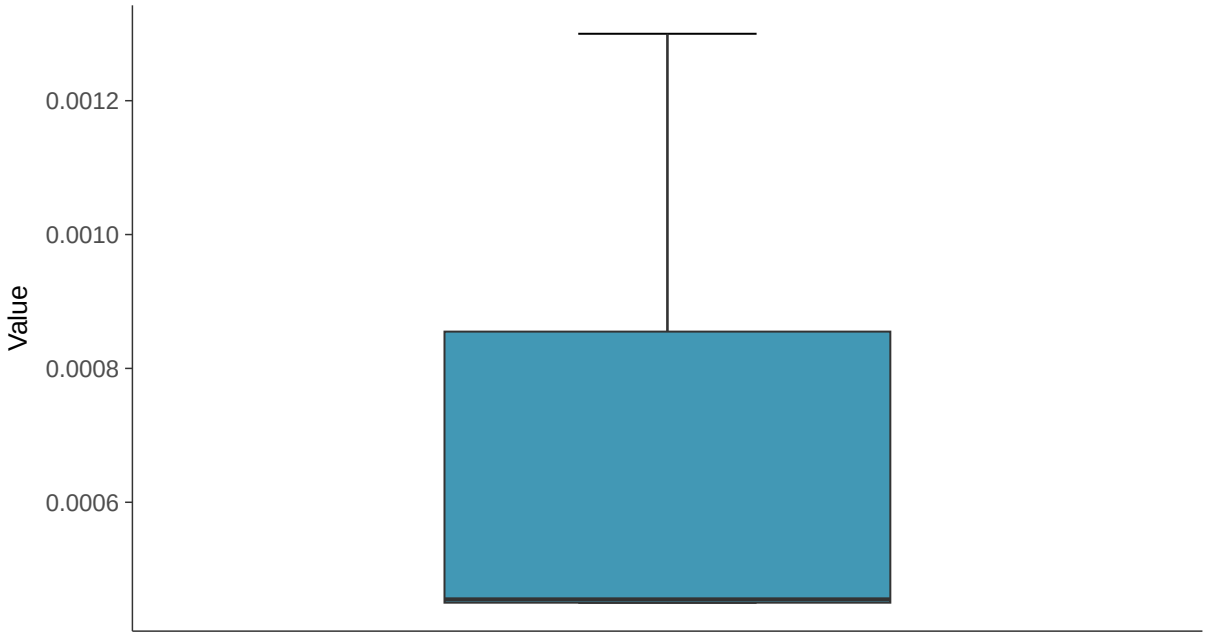
ID: 12_2_117





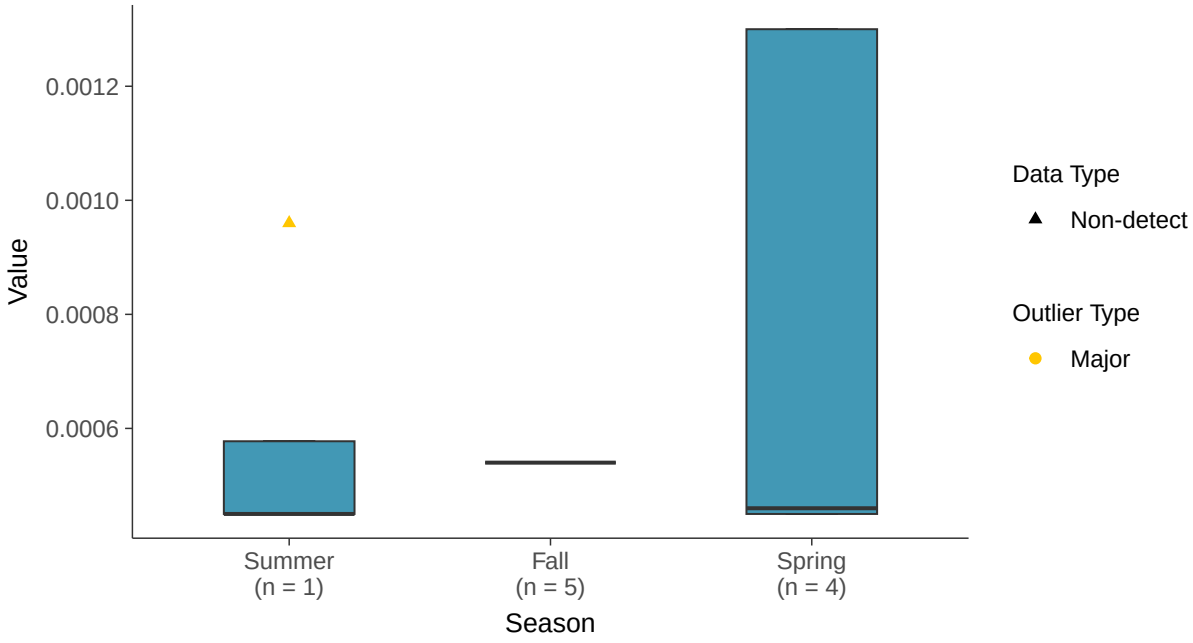
Boxplot

Lead, MW-13 (mg/l)



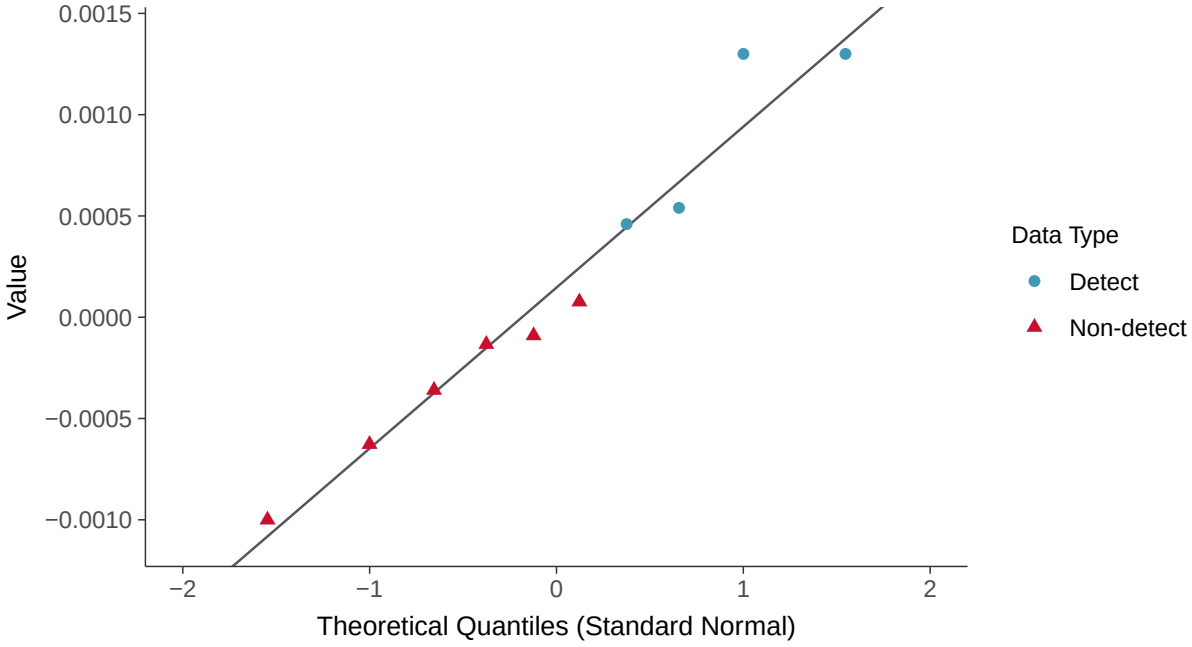
Boxplot by Season

Lead, MW-13 (mg/l)



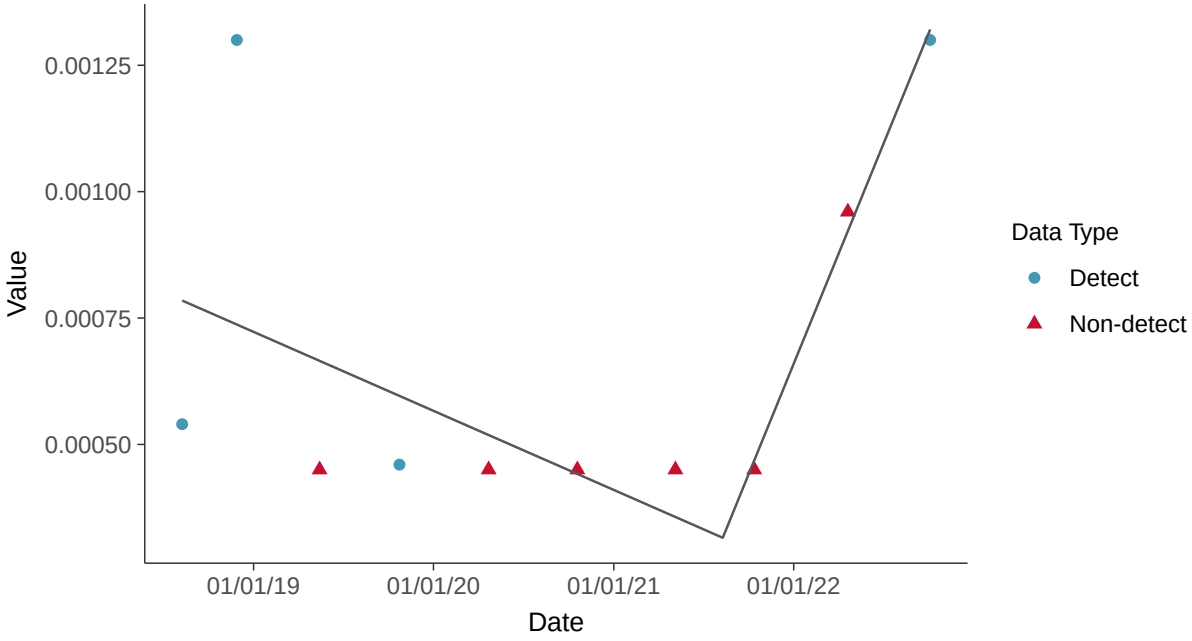
Normal Q-Q plot using ROS Imputed Estimates

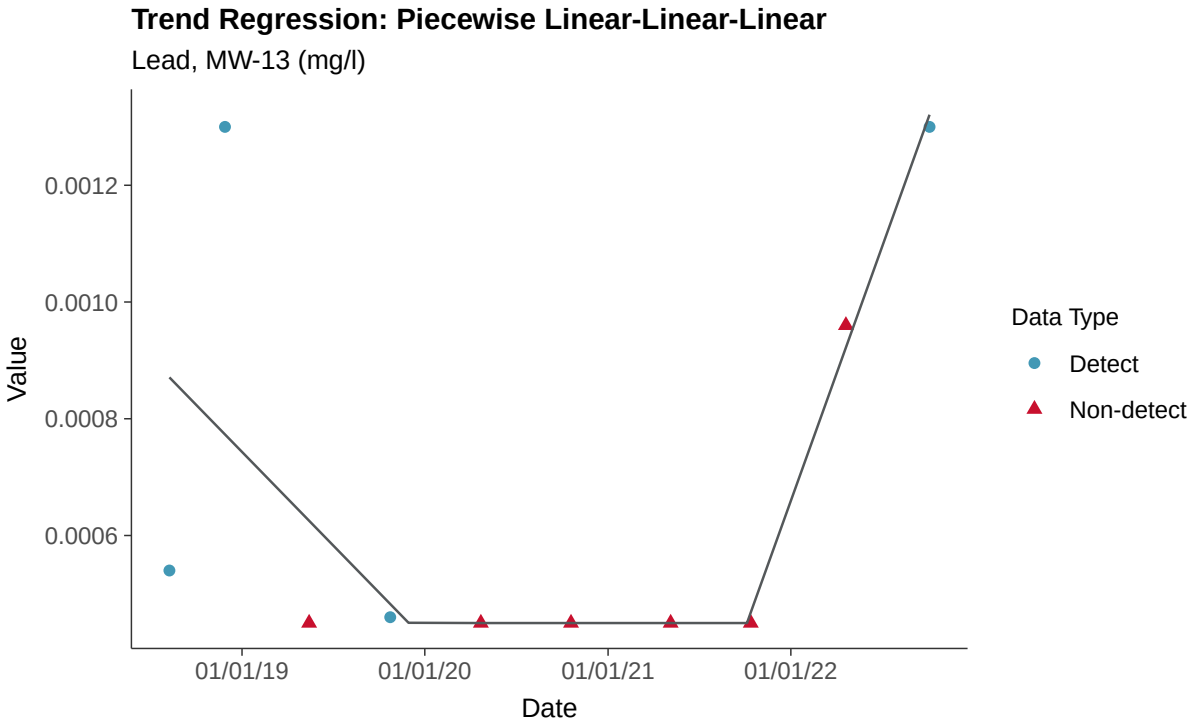
Lead, MW-13 (mg/l)



Trend Regression: Piecewise Linear-Linear

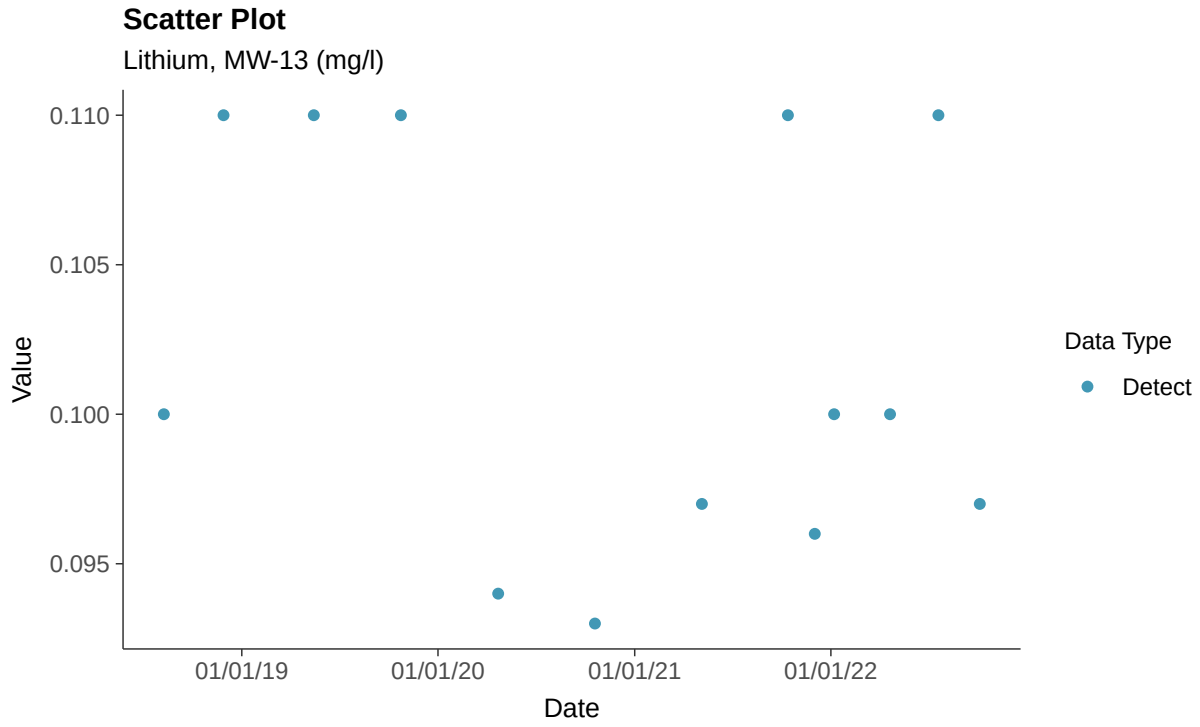
Lead, MW-13 (mg/l)

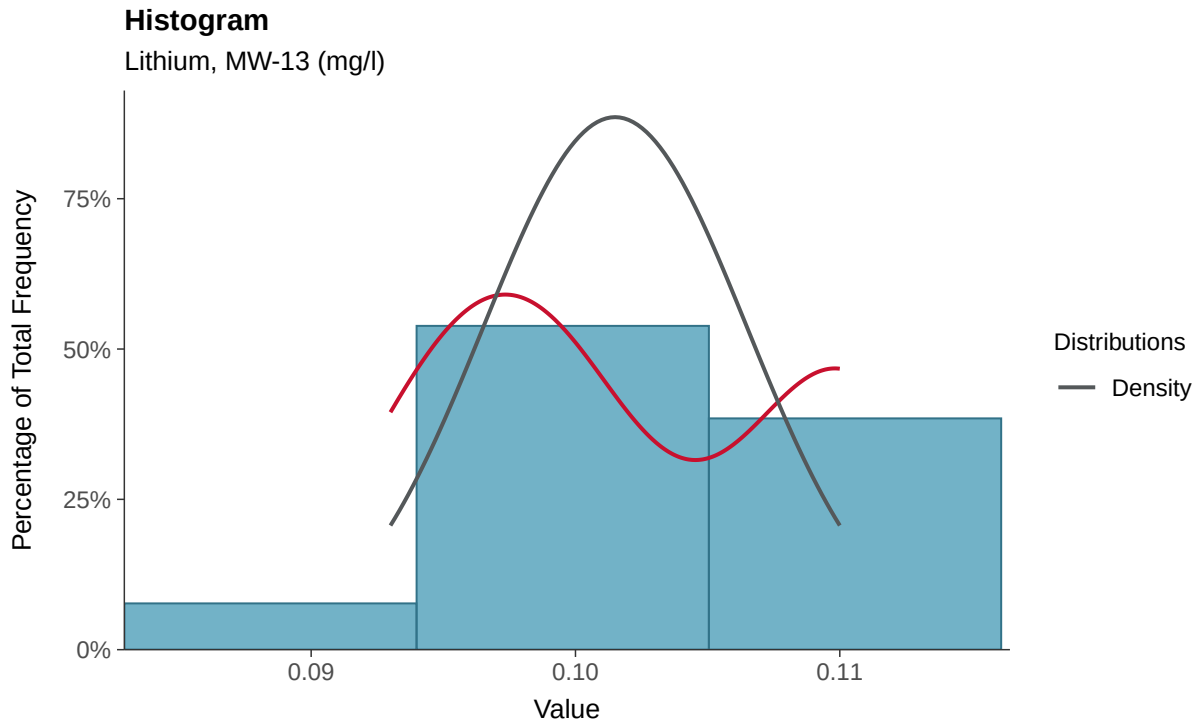



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-13 (mg/l)
Value
0.0012
0.0010
0.0008
0.0006
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-13

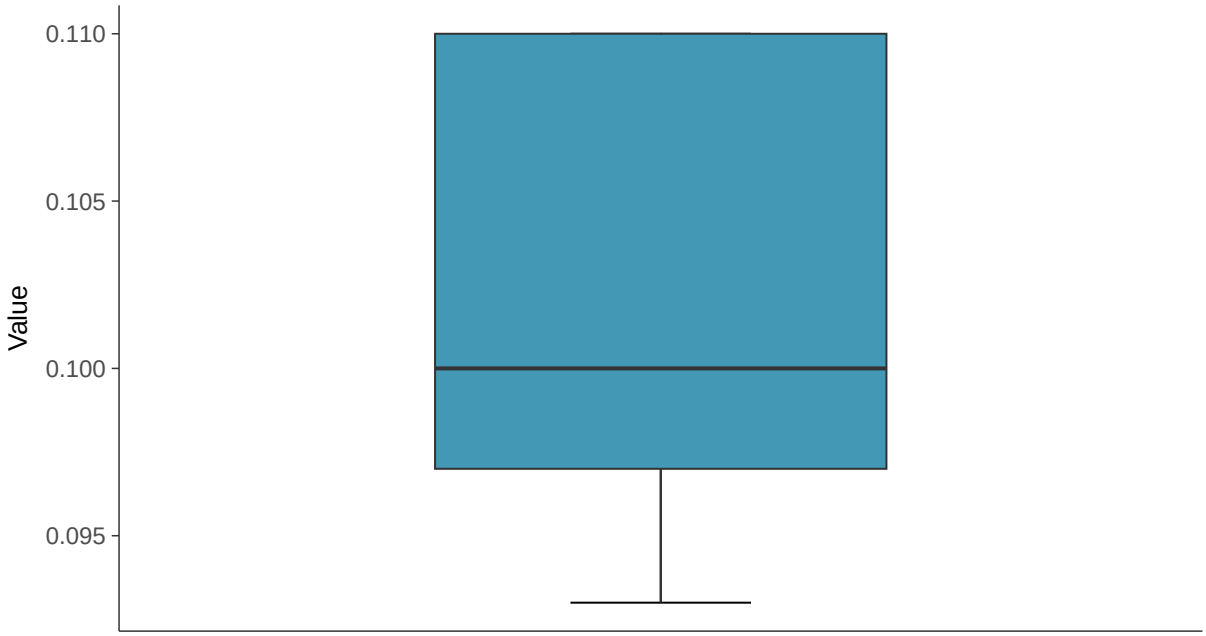
ID: 12_2_118





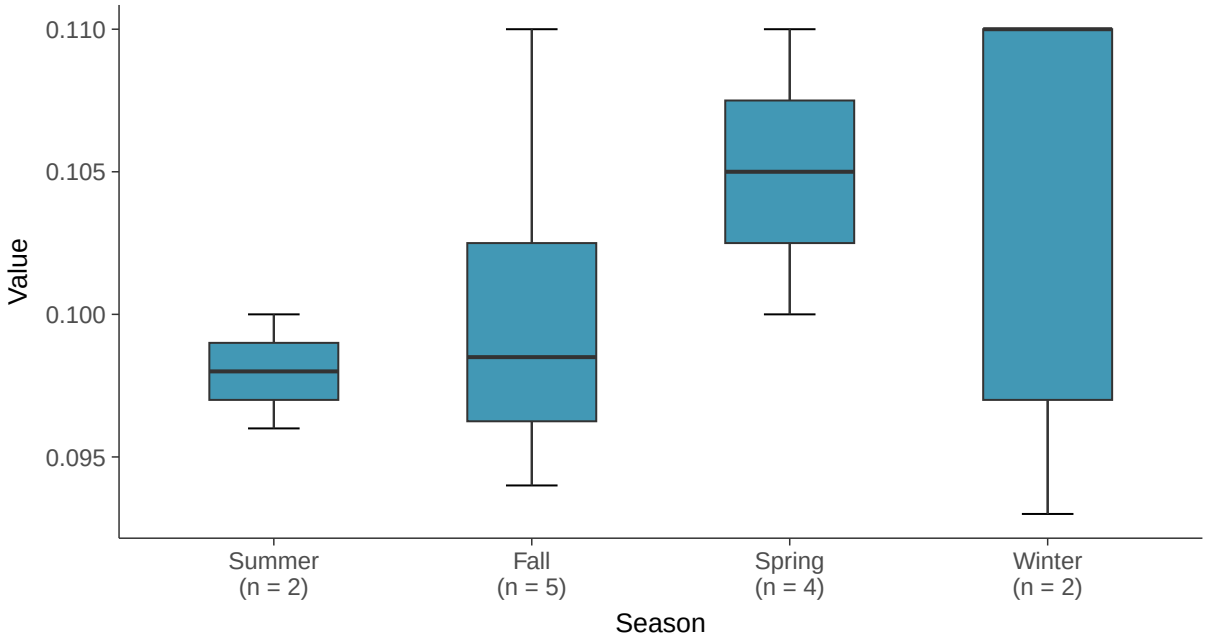
Boxplot

Lithium, MW-13 (mg/l)



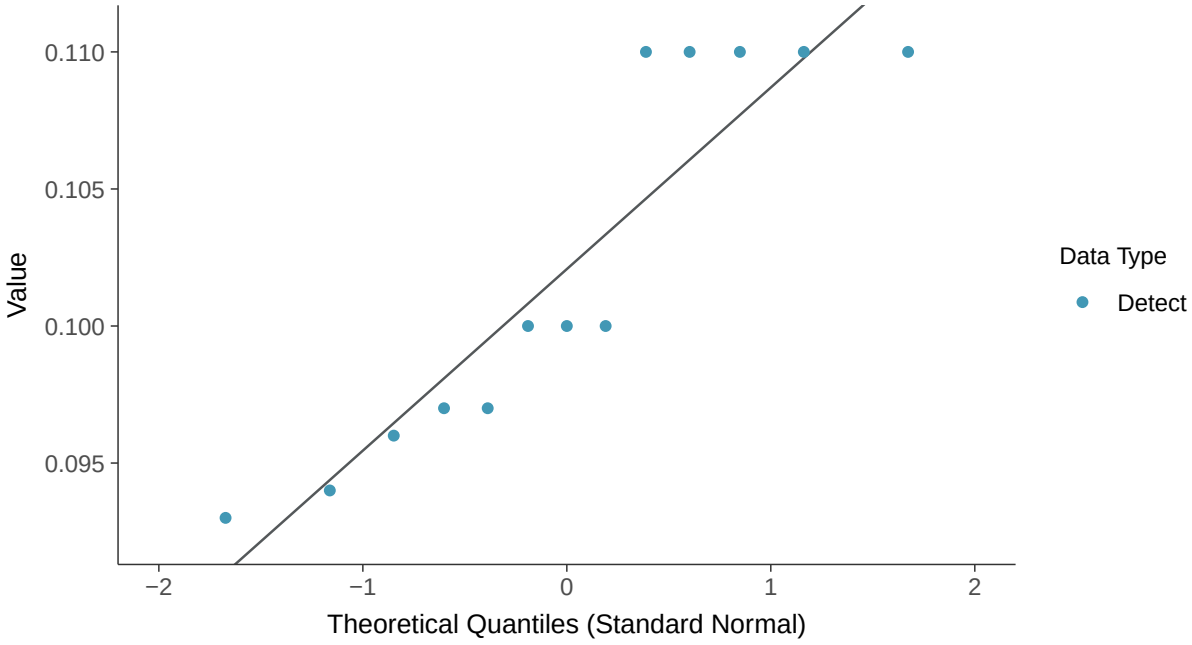
Boxplot by Season

Lithium, MW-13 (mg/l)



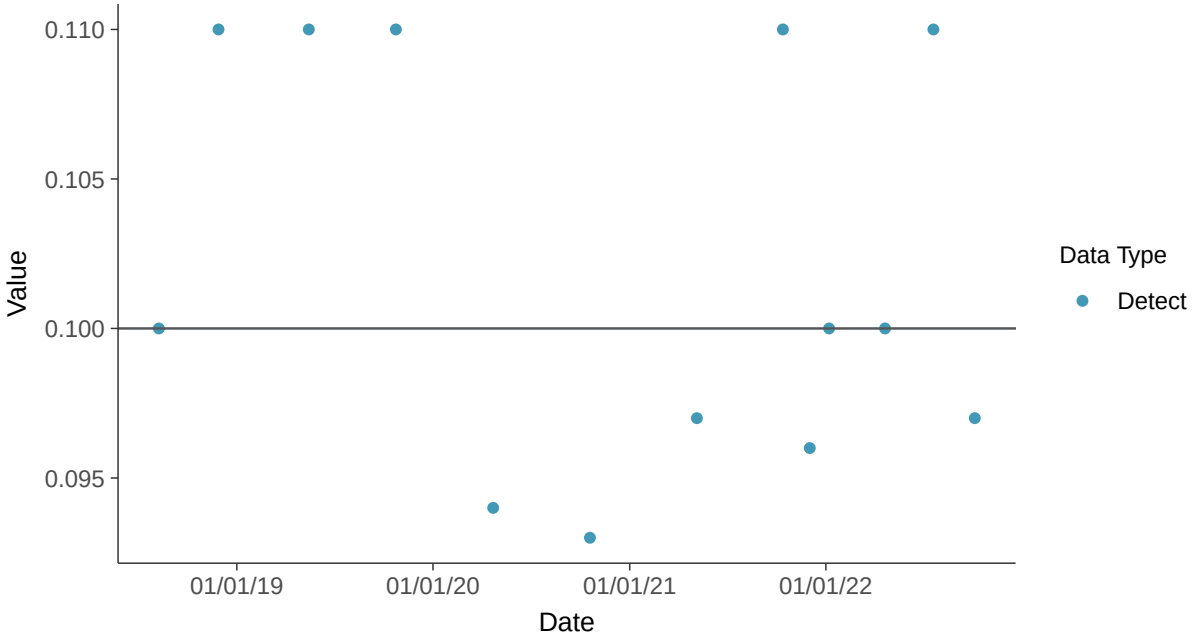
Normal Q-Q plot

Lithium, MW-13 (mg/l)



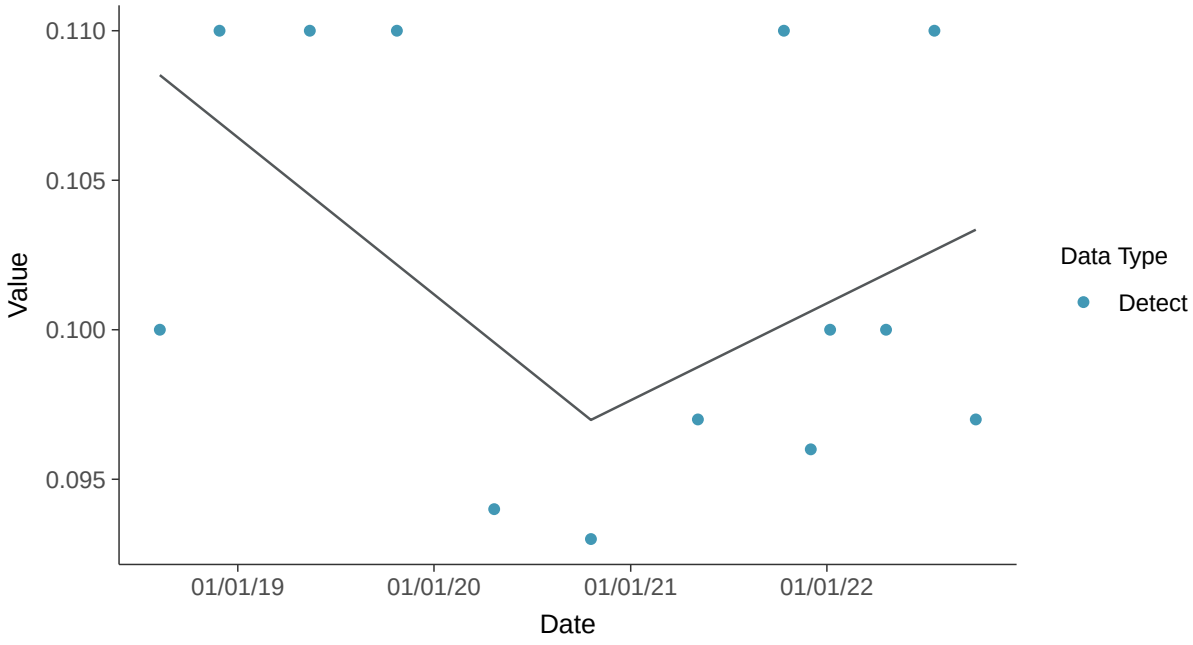
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-13 (mg/l)



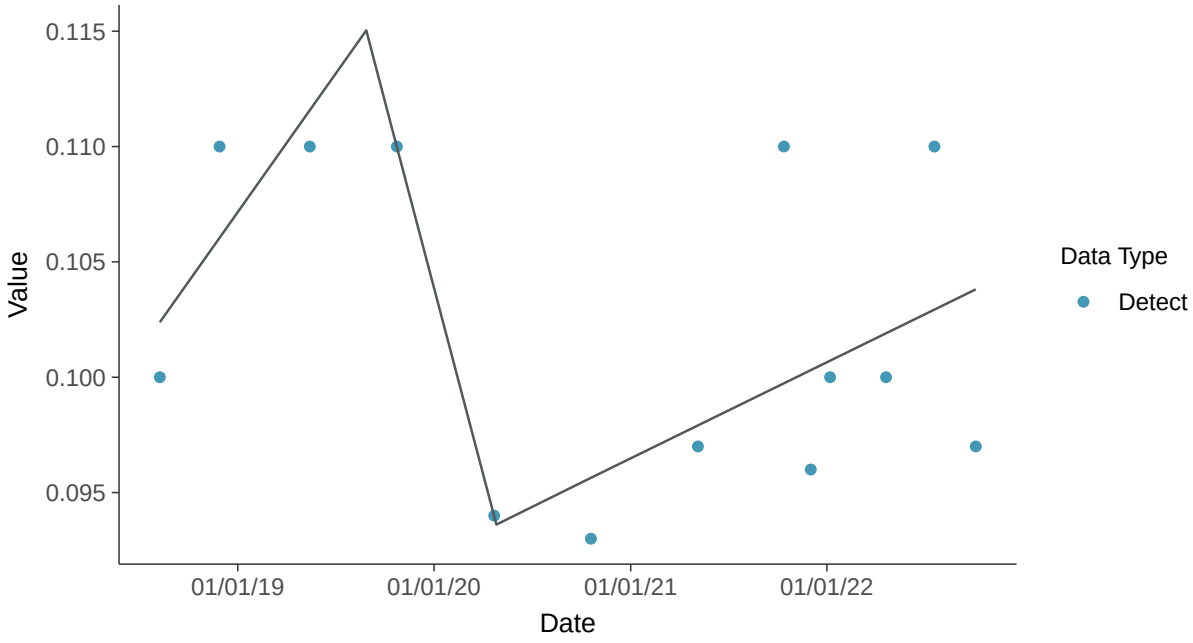
Trend Regression: Piecewise Linear-Linear

Lithium, MW-13 (mg/l)



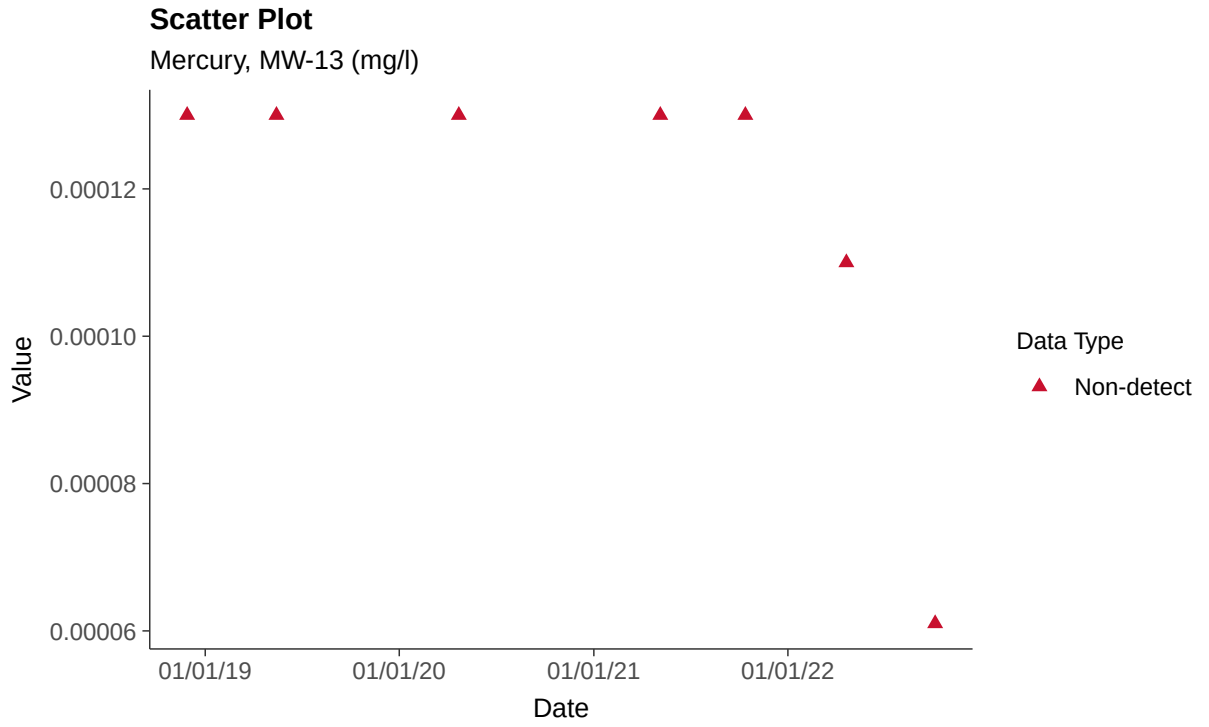
Trend Regression: Piecewise Linear-Linear-Linear

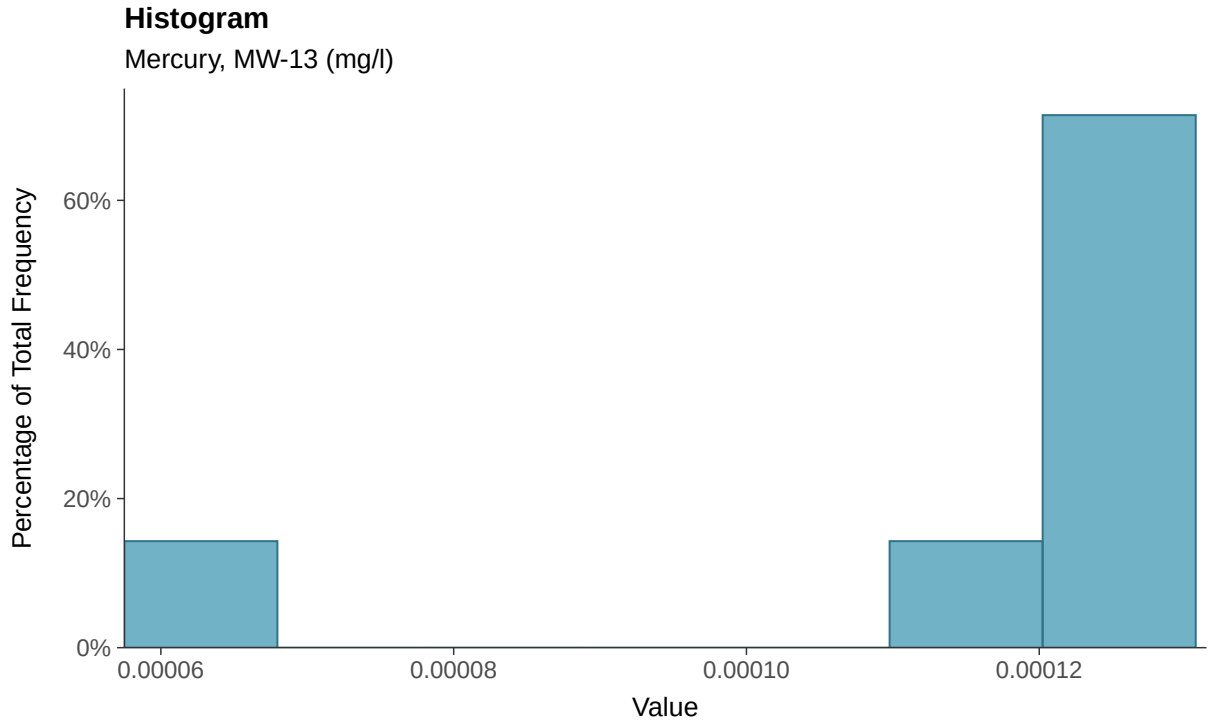
Lithium, MW-13 (mg/l)



Appendix IV: Mercury, MW-13

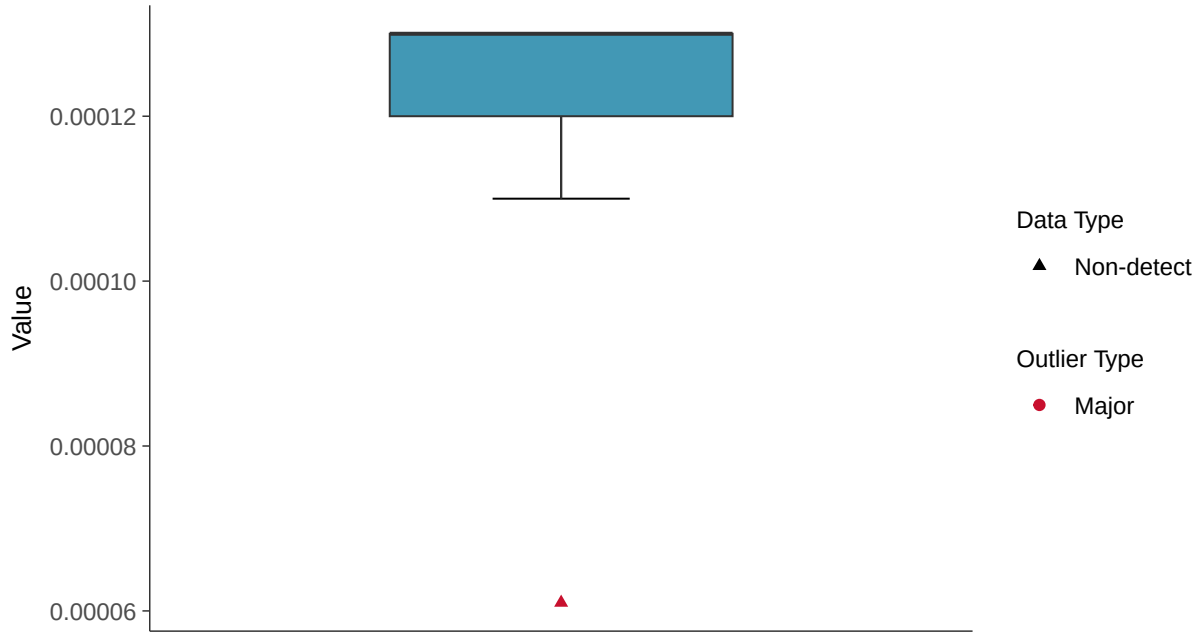
ID: 12_2_120





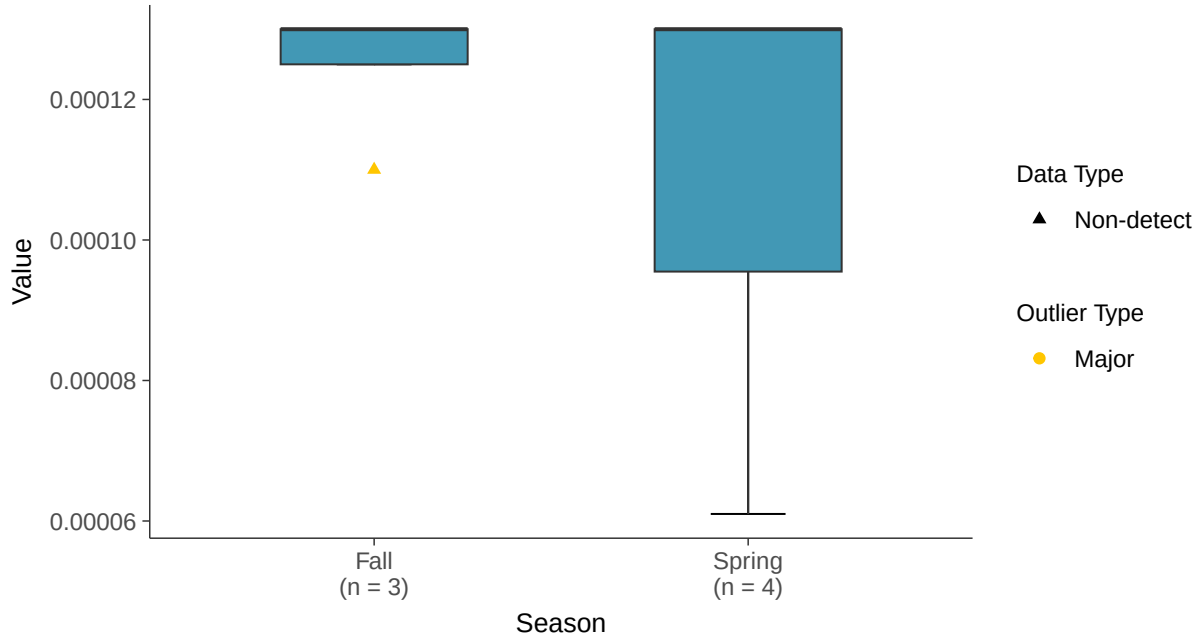
Boxplot

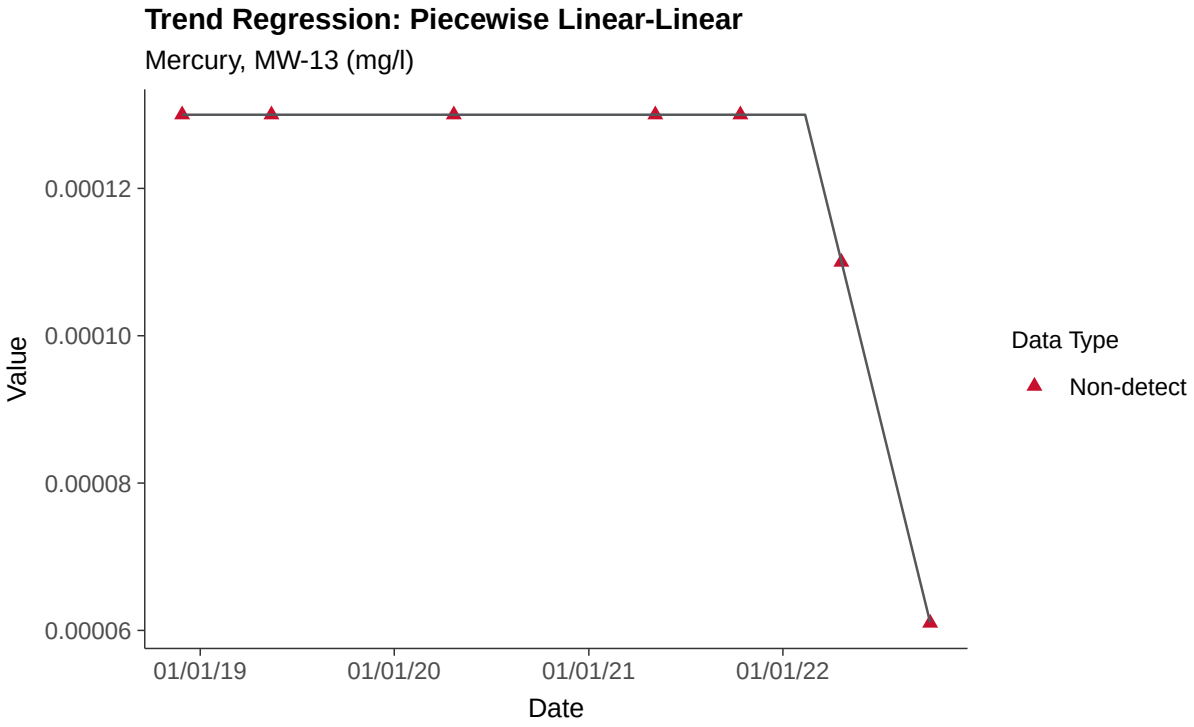
Mercury, MW-13 (mg/l)



Boxplot by Season

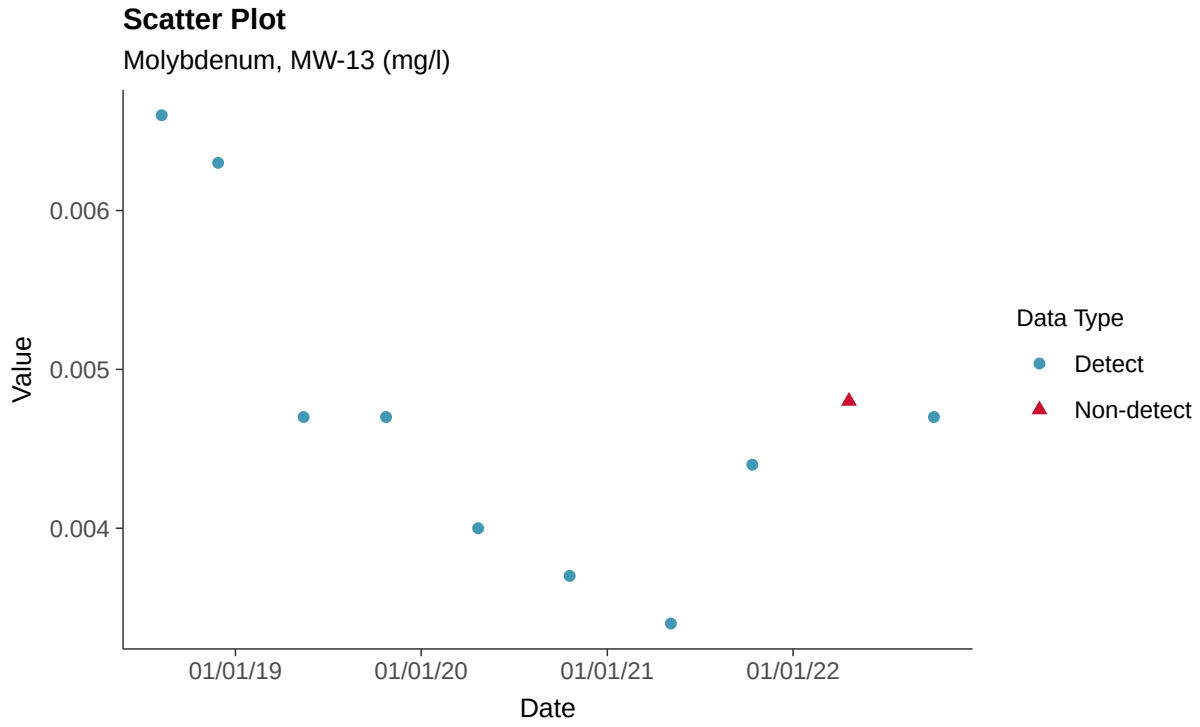
Mercury, MW-13 (mg/l)

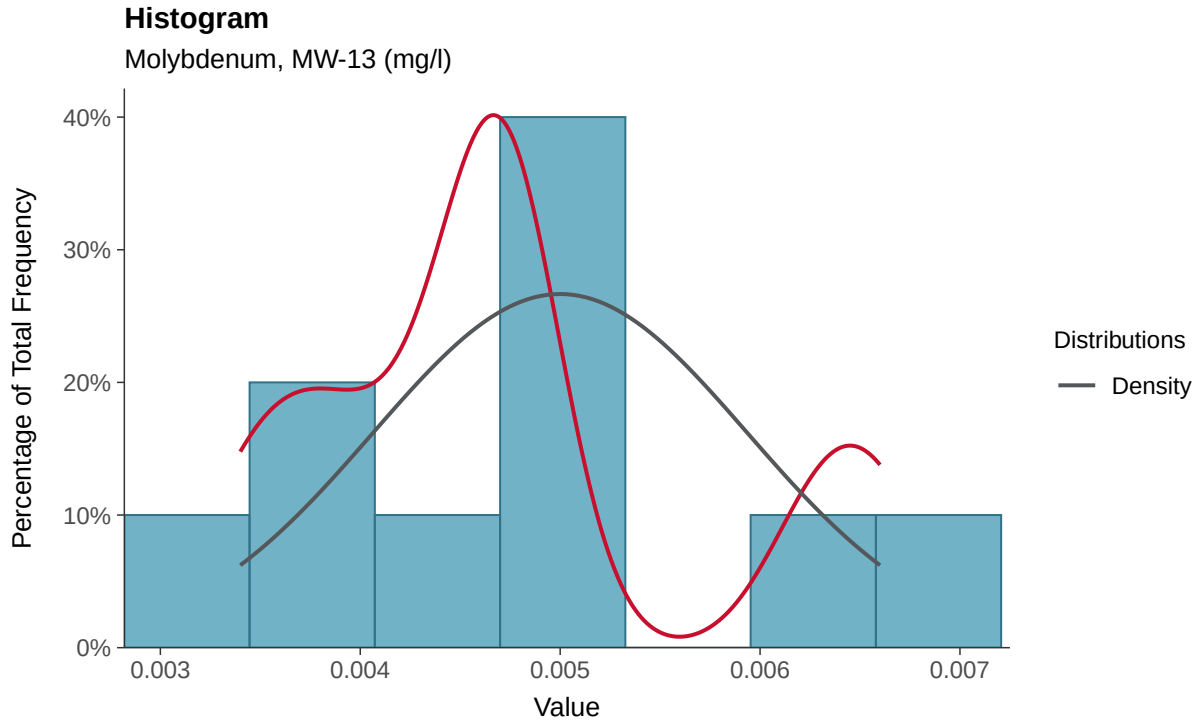



Trend Regression: Piecewise Linear-Linear
Mercury, MW-13 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-13

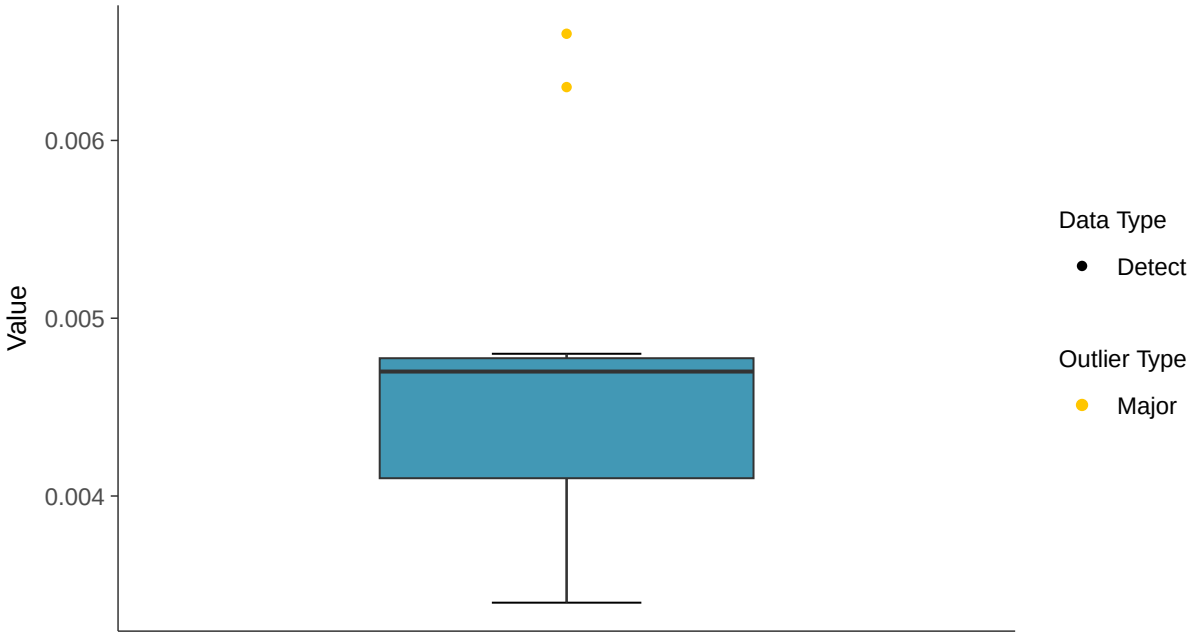
ID: 12_2_121





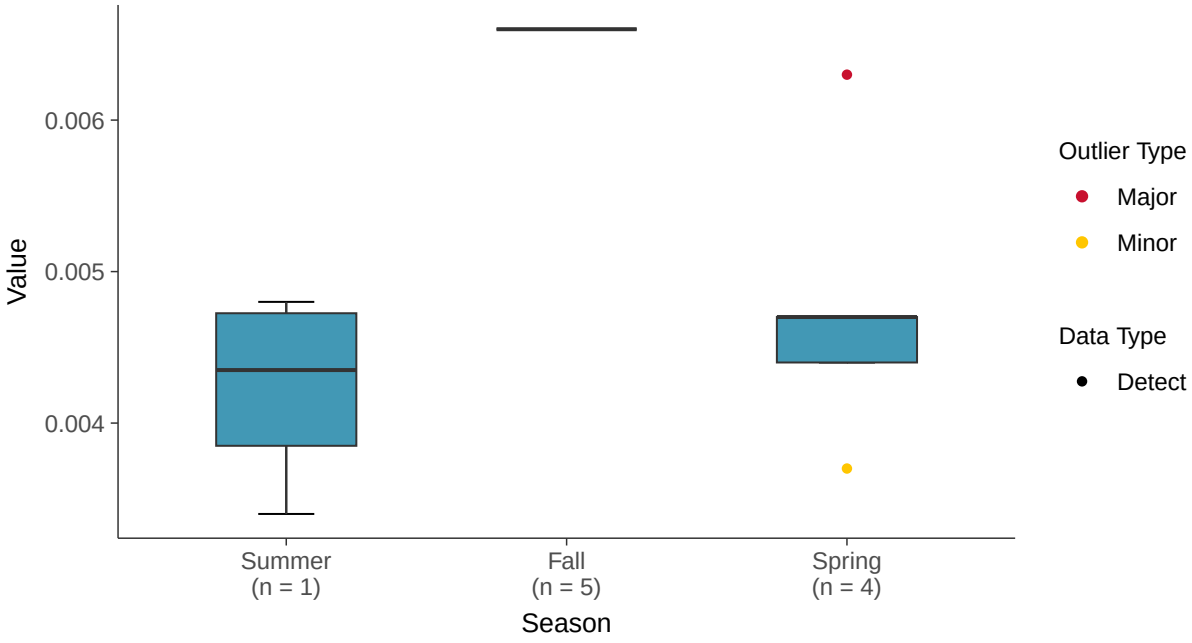
Boxplot

Molybdenum, MW-13 (mg/l)



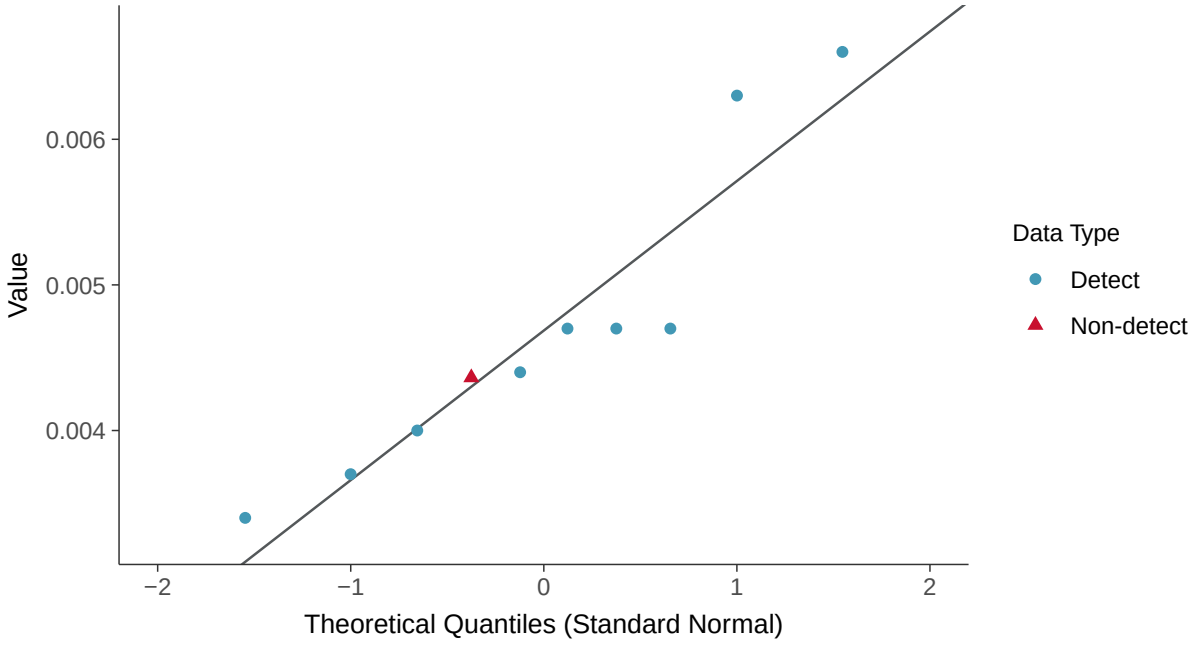
Boxplot by Season

Molybdenum, MW-13 (mg/l)



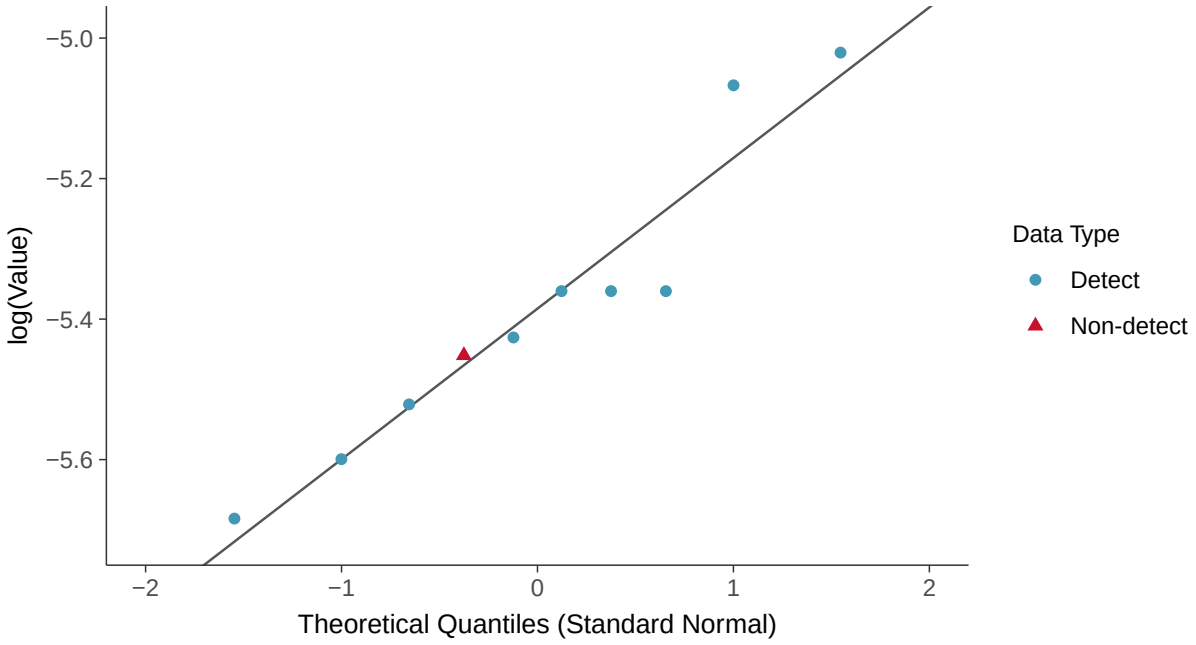
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-13 (mg/l)



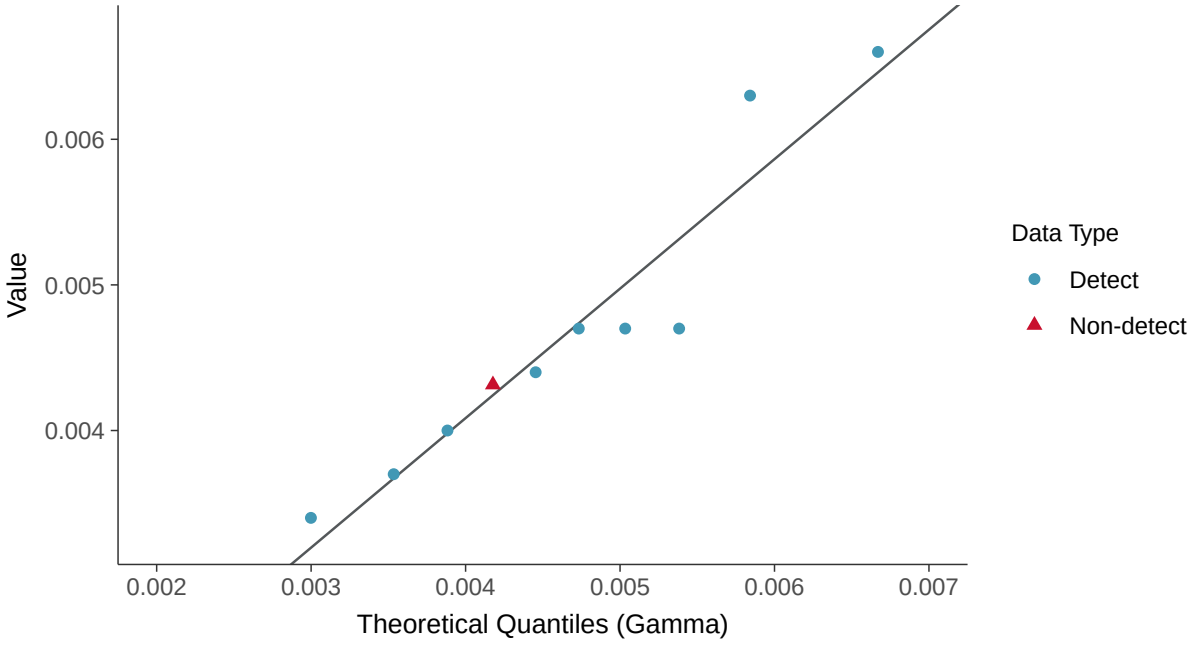
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-13 (mg/l)



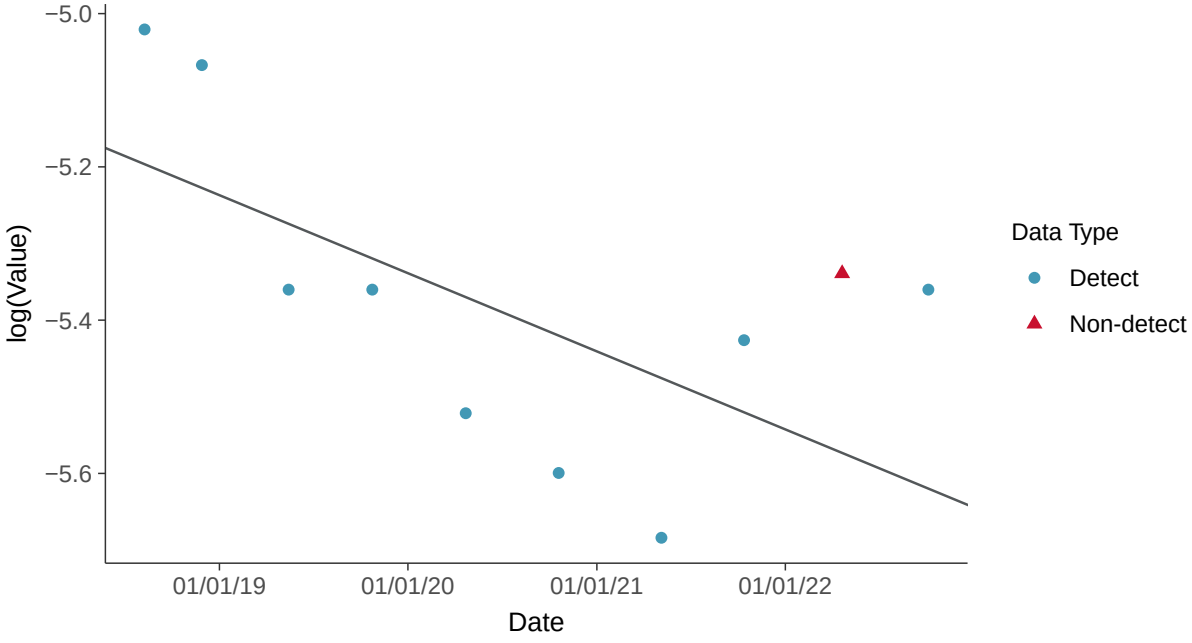
Gamma Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-13 (mg/l)



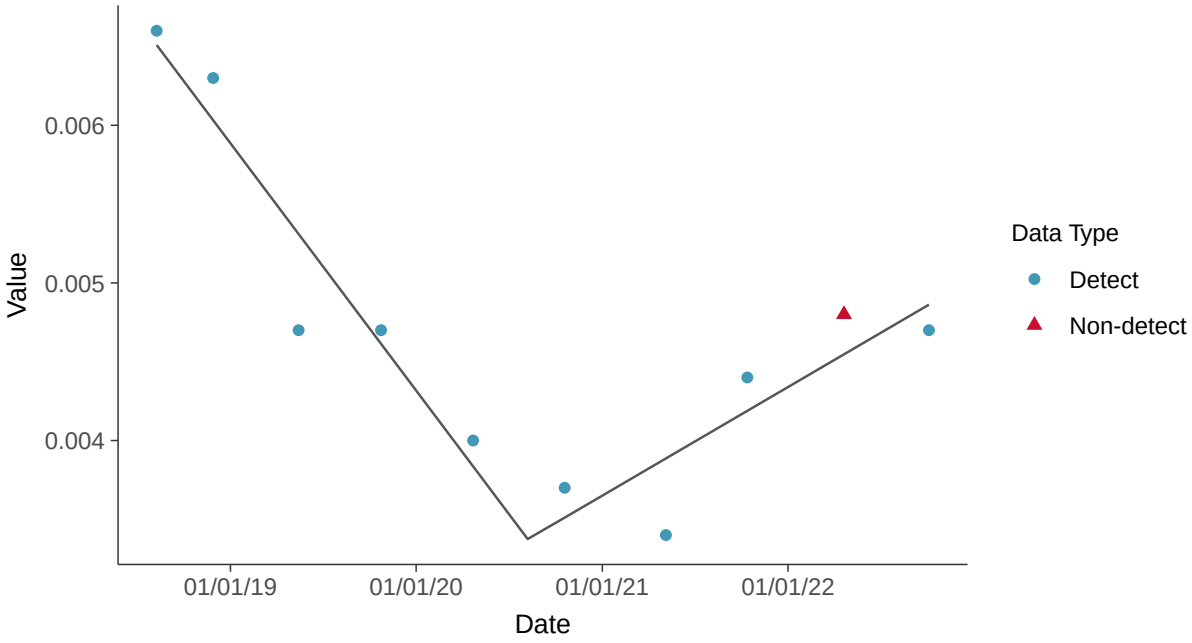
Trend Regression: Lognormal MLE

Molybdenum, MW-13 (mg/l)



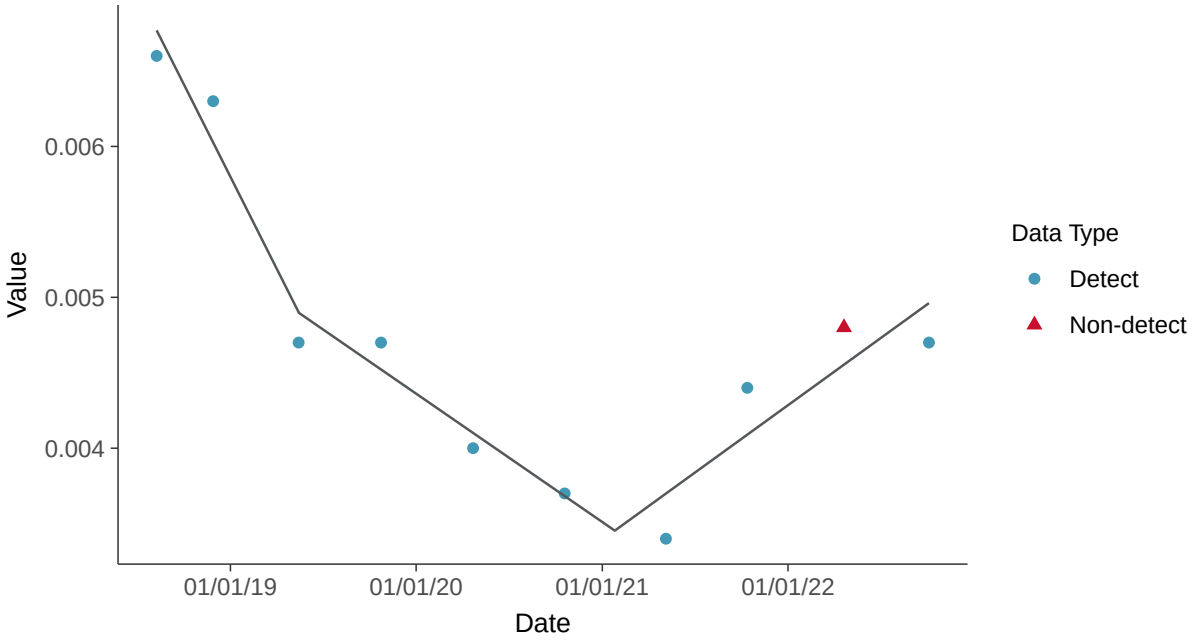
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-13 (mg/l)



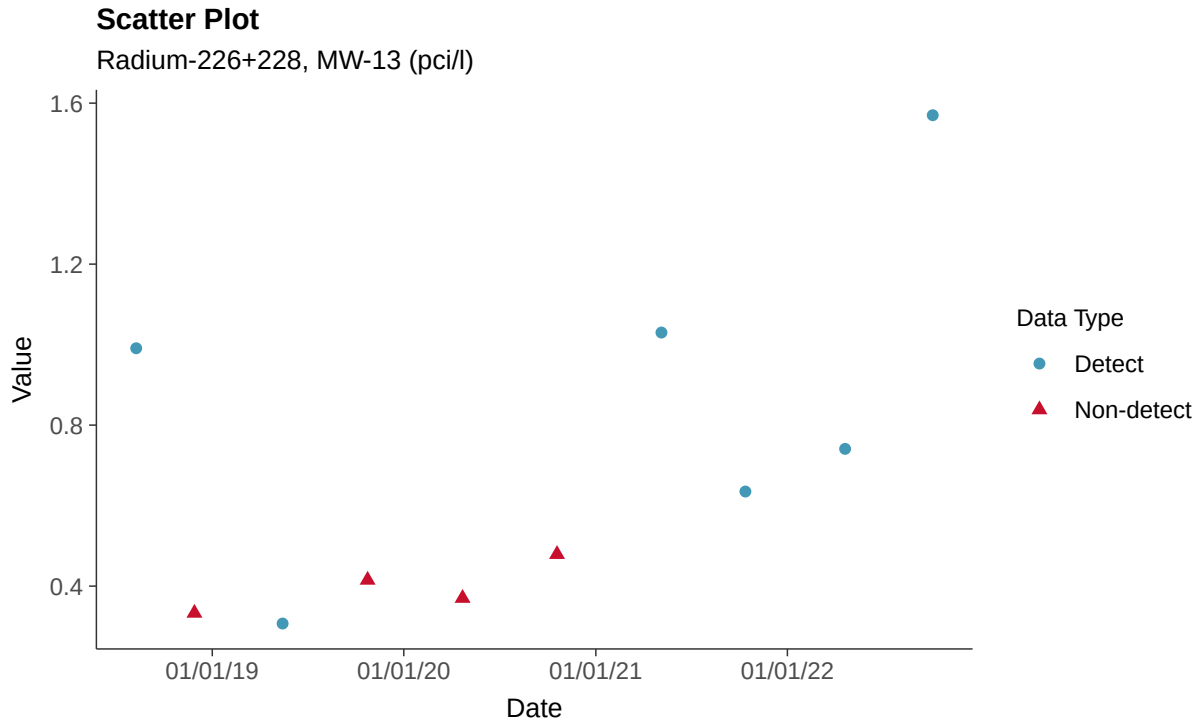
Trend Regression: Piecewise Linear-Linear-Linear

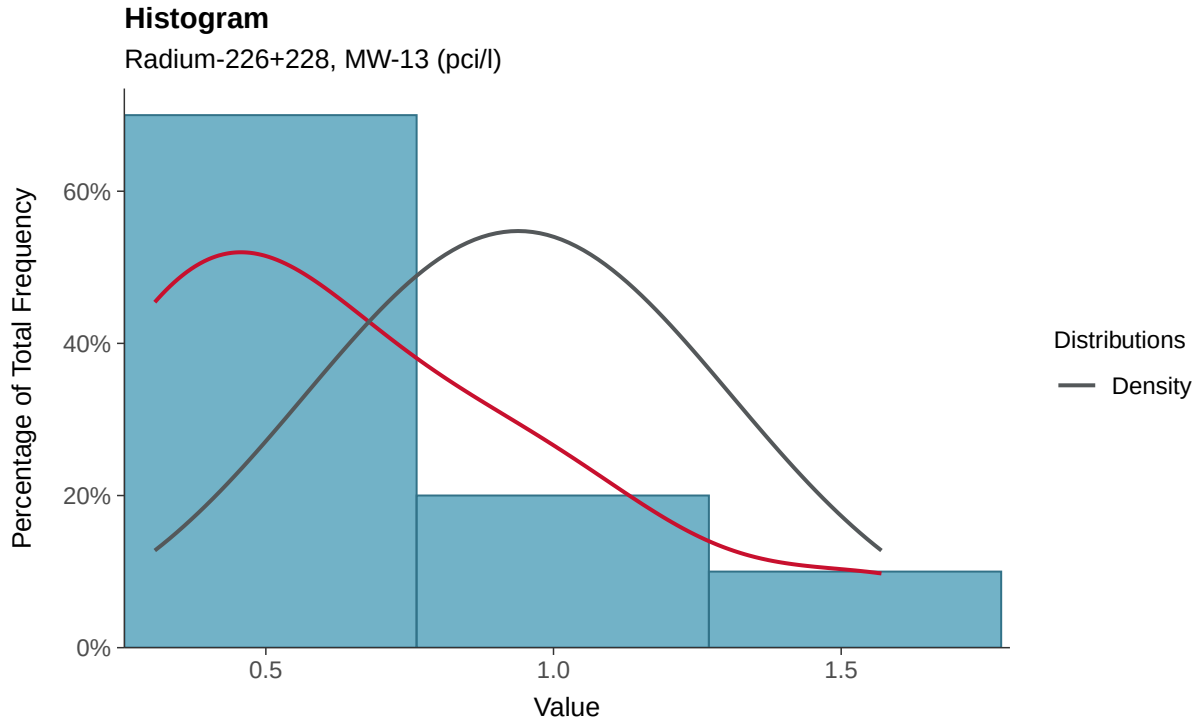
Molybdenum, MW-13 (mg/l)



Appendix IV: Radium-226+228, MW-13

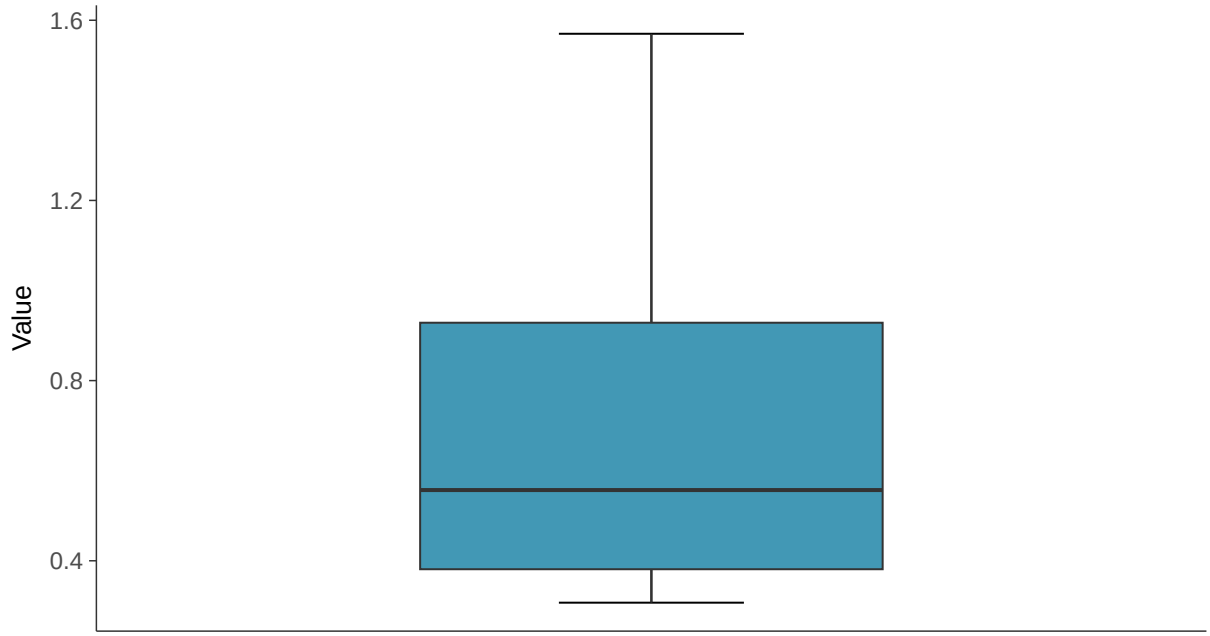
ID: 12_2_127





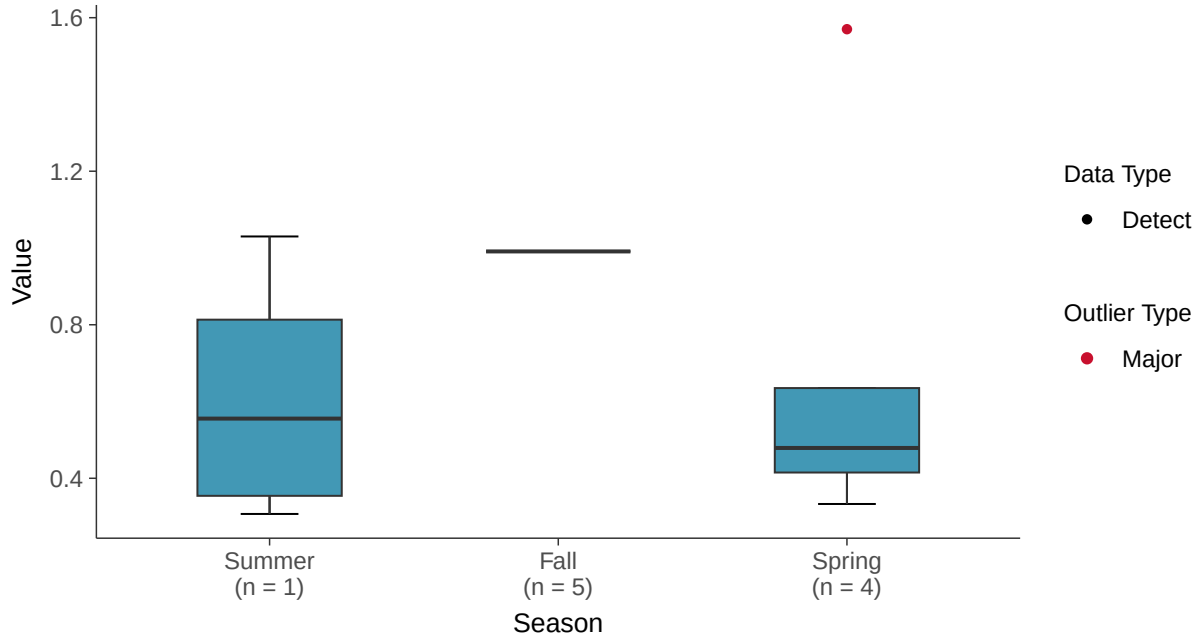
Boxplot

Radium-226+228, MW-13 (pci/l)



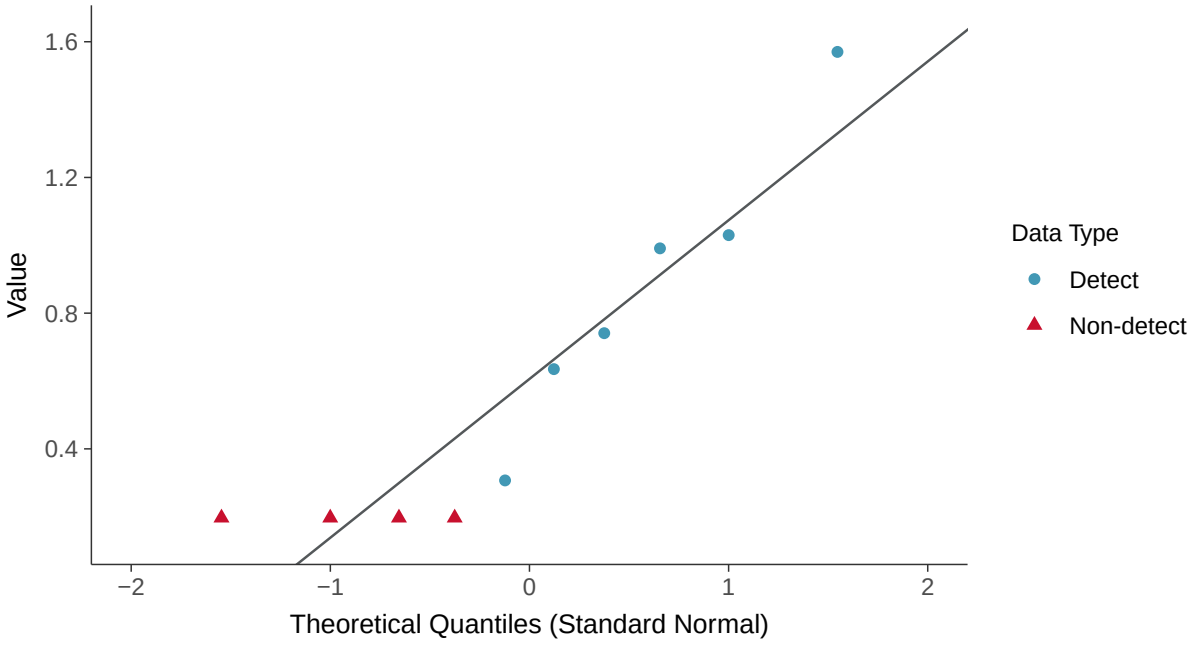
Boxplot by Season

Radium-226+228, MW-13 (pci/l)



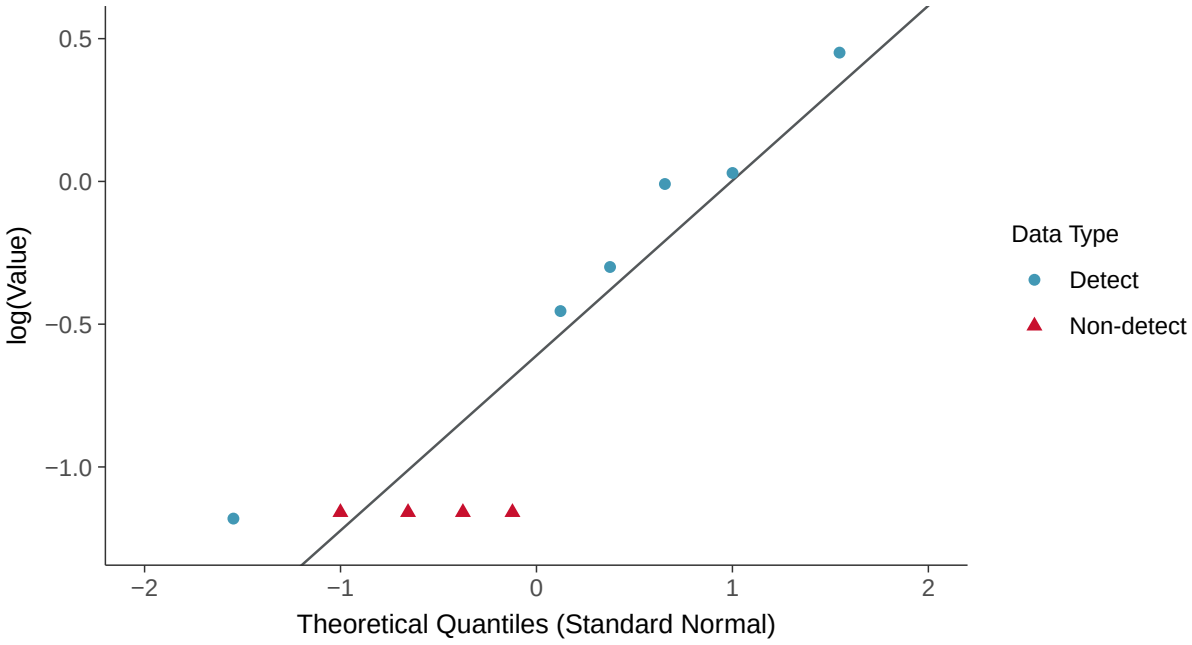
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-13 (pci/l)



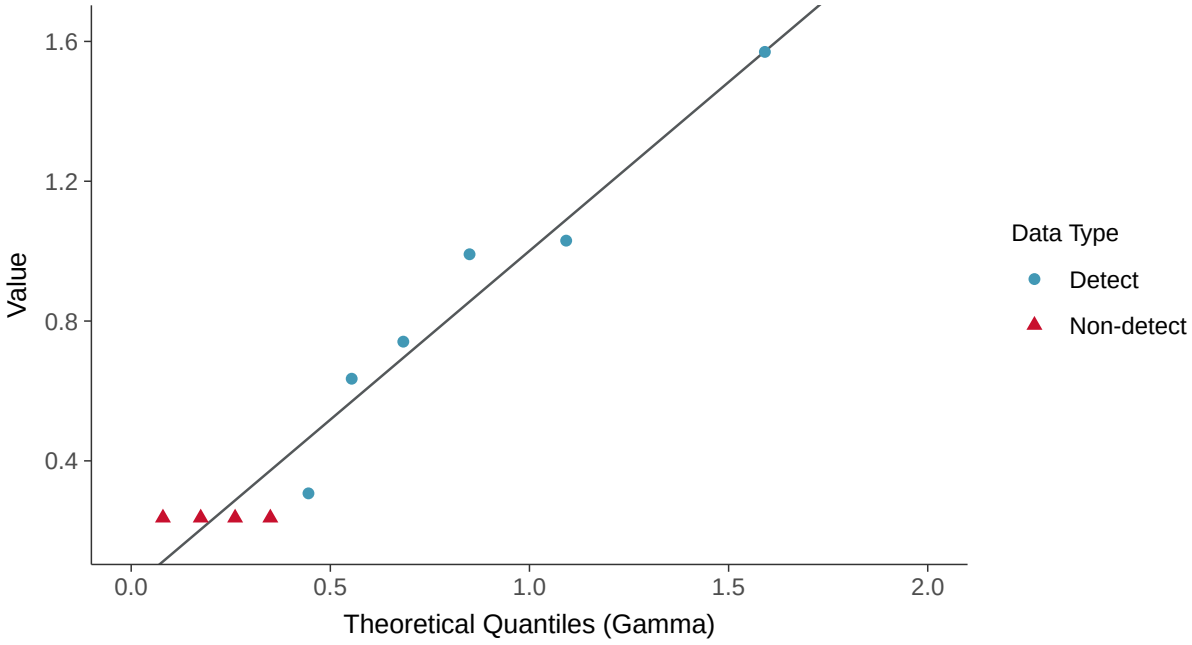
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-13 (pci/l)



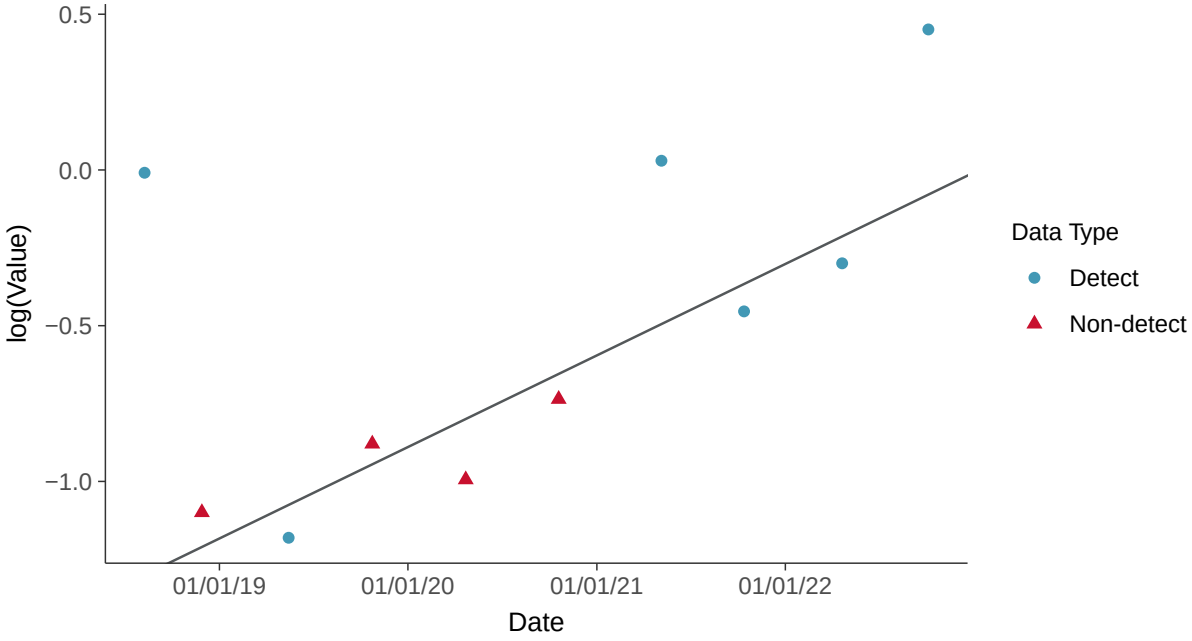
Gamma Q-Q plot using ROS Imputed Estimates

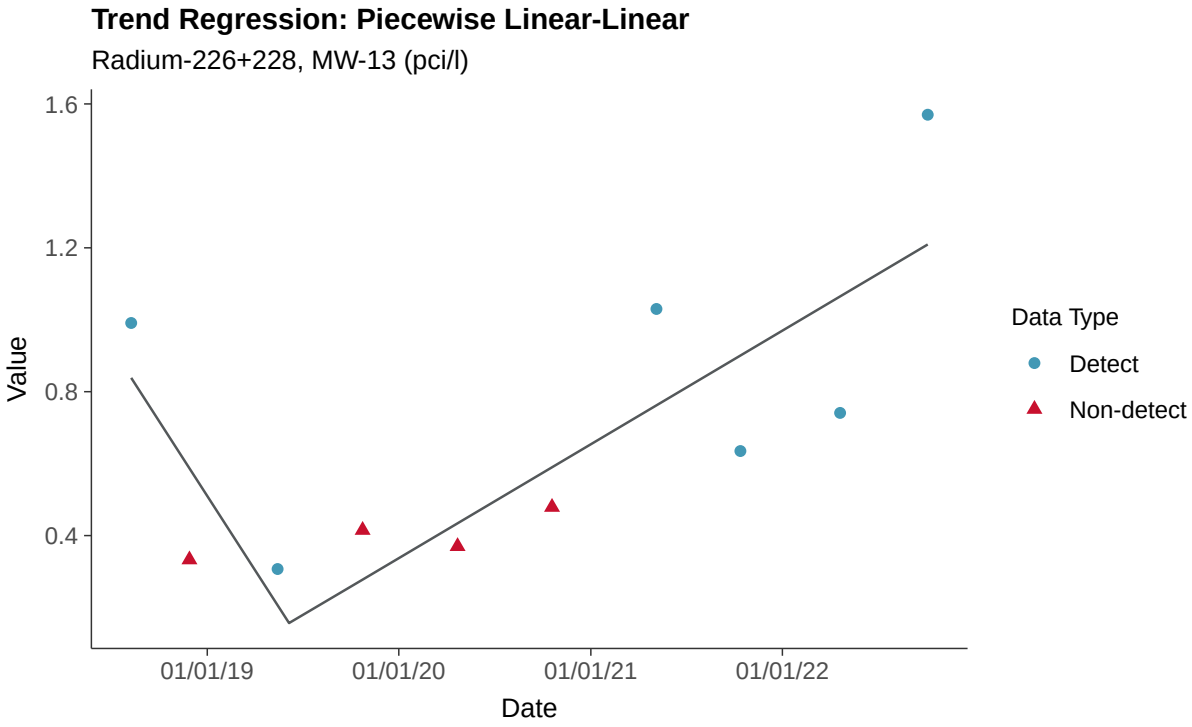
Radium-226+228, MW-13 (pci/l)



Trend Regression: Lognormal MLE

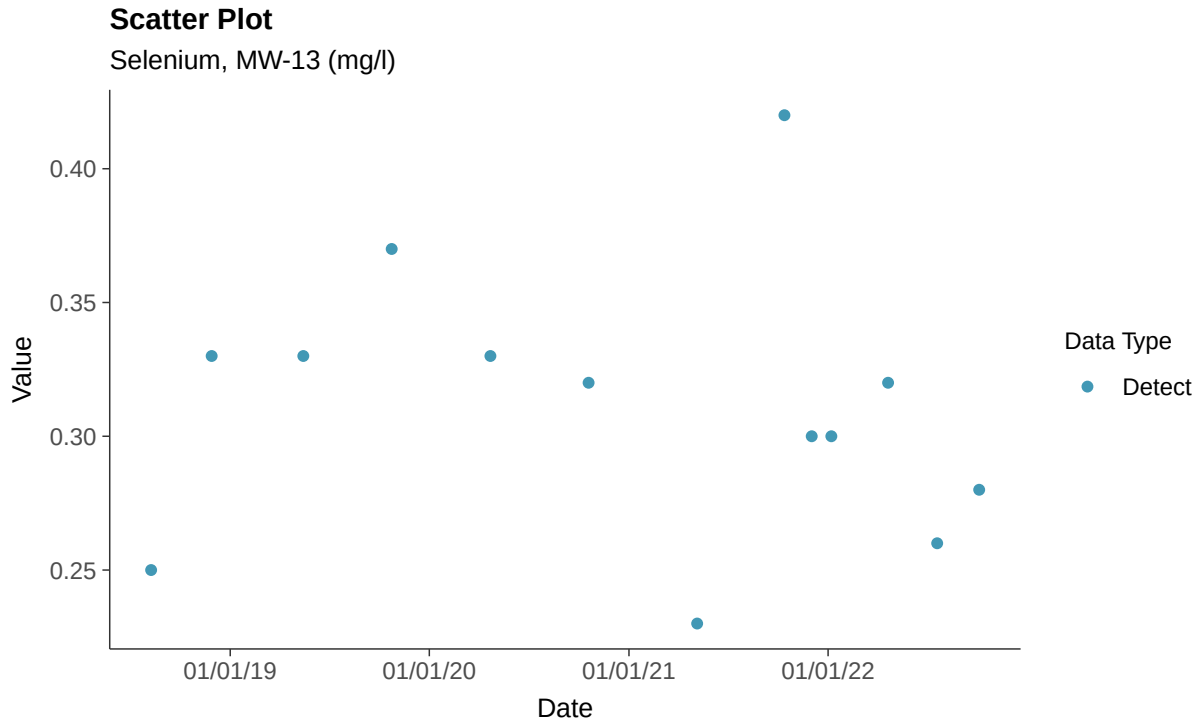
Radium-226+228, MW-13 (pci/l)

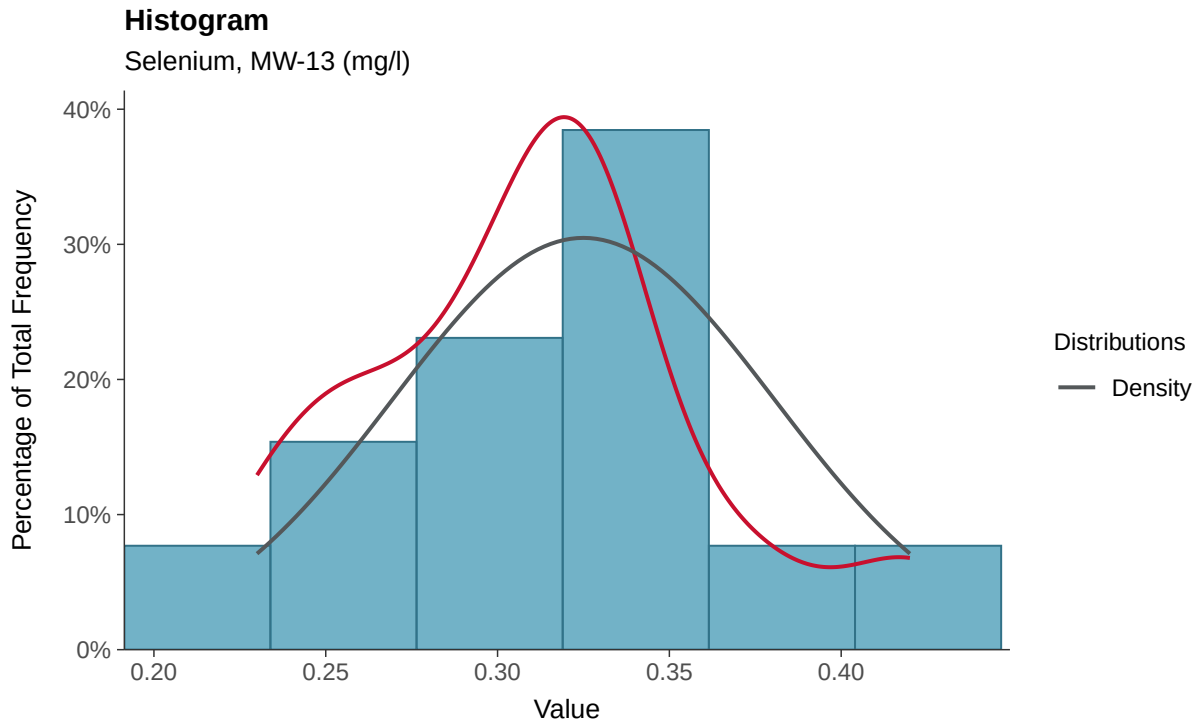



Trend Regression: Piecewise Linear-Linear
Radium-226+228, MW-13 (pci/l)
Value
1.6
1.2
0.8
0.4
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-13

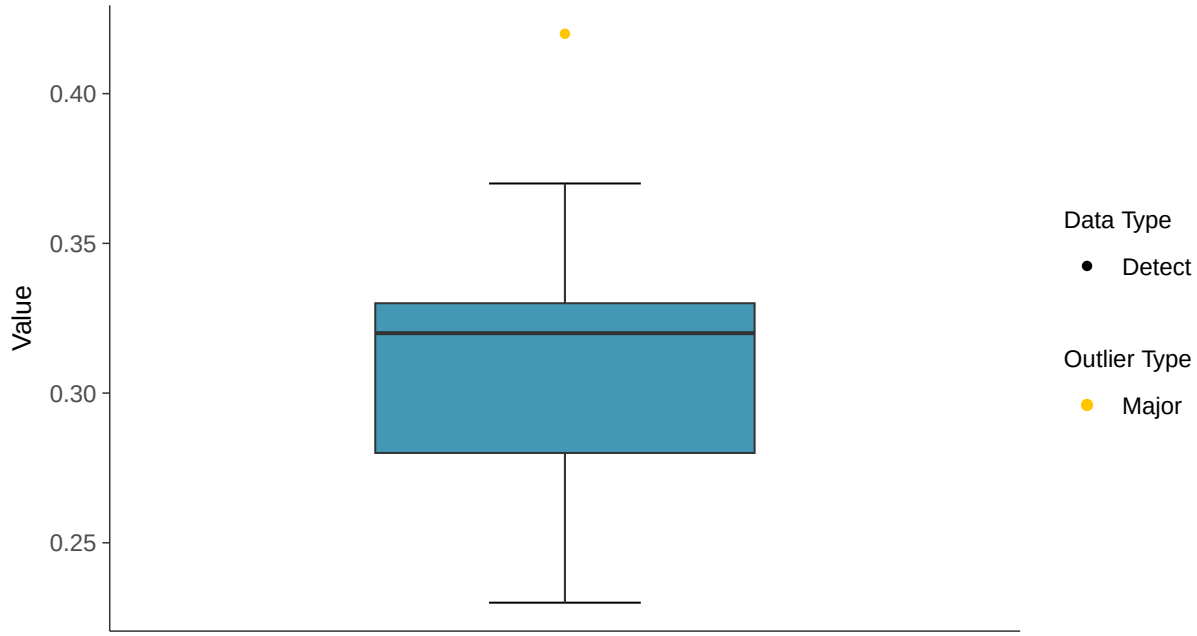
ID: 12_2_129





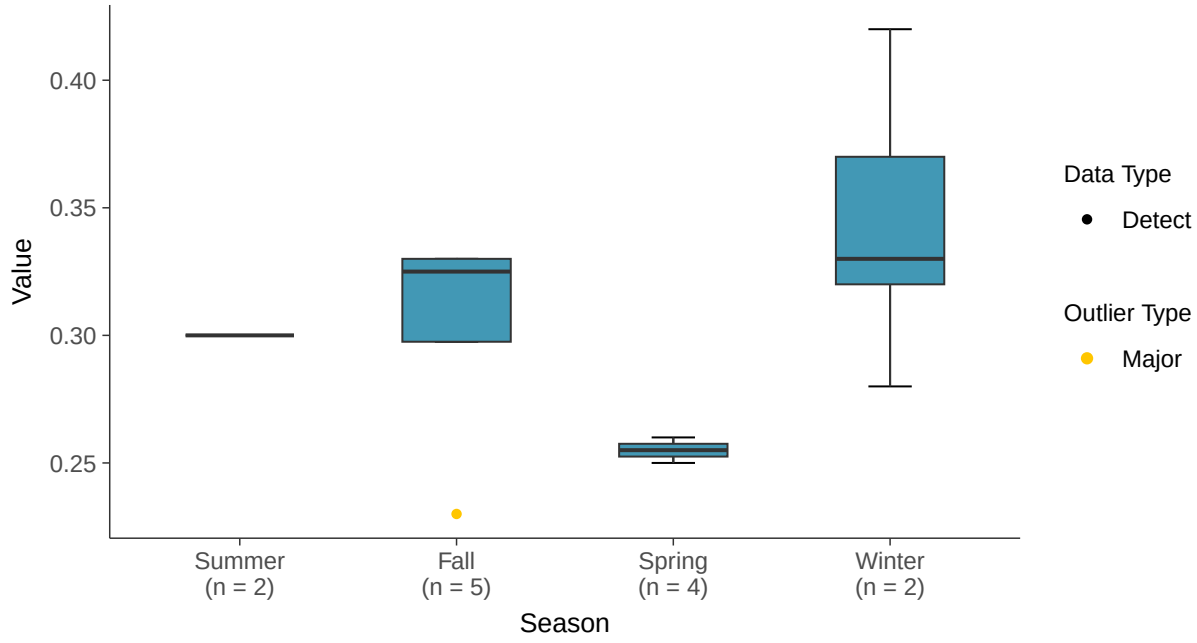
Boxplot

Selenium, MW-13 (mg/l)



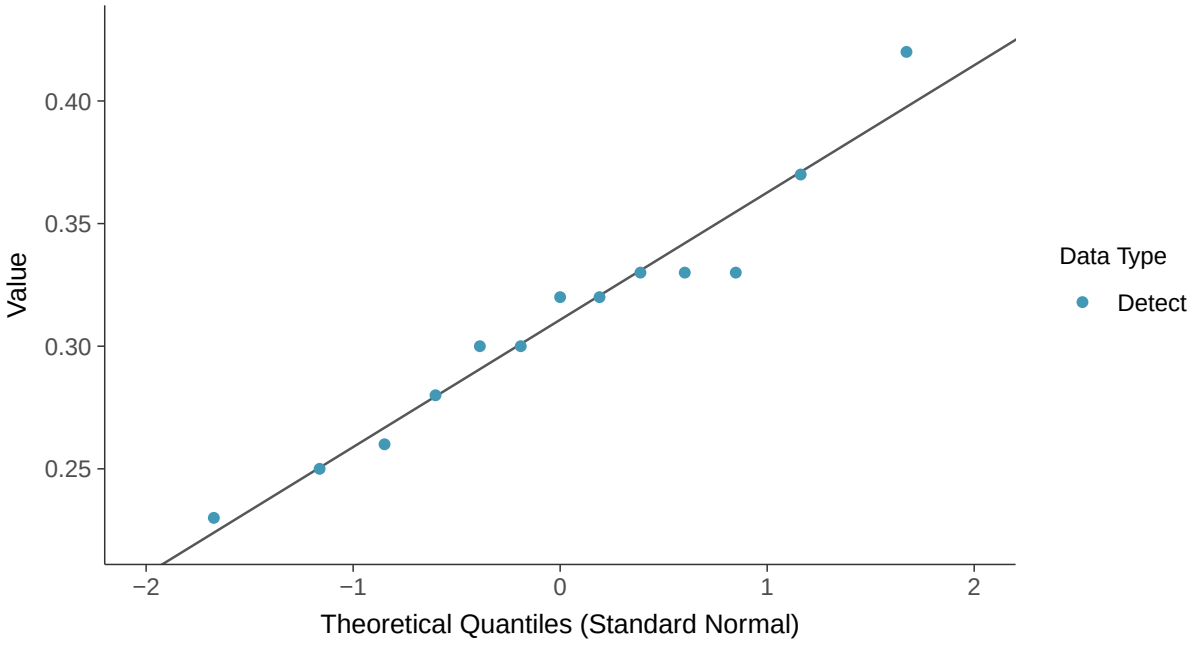
Boxplot by Season

Selenium, MW-13 (mg/l)



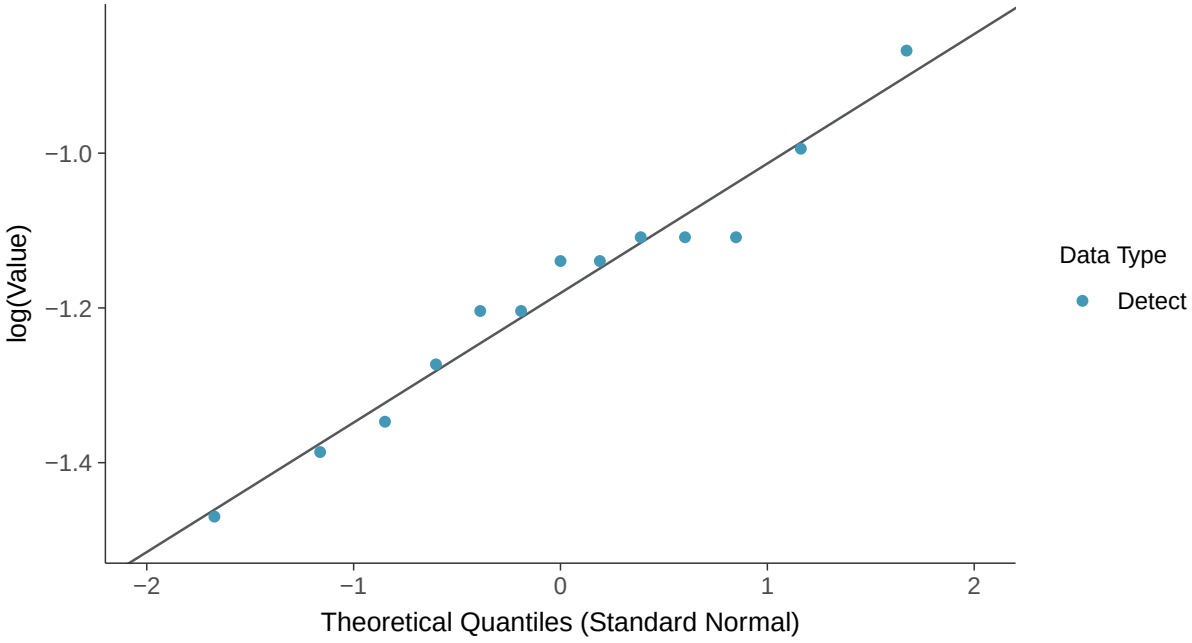
Normal Q-Q plot

Selenium, MW-13 (mg/l)



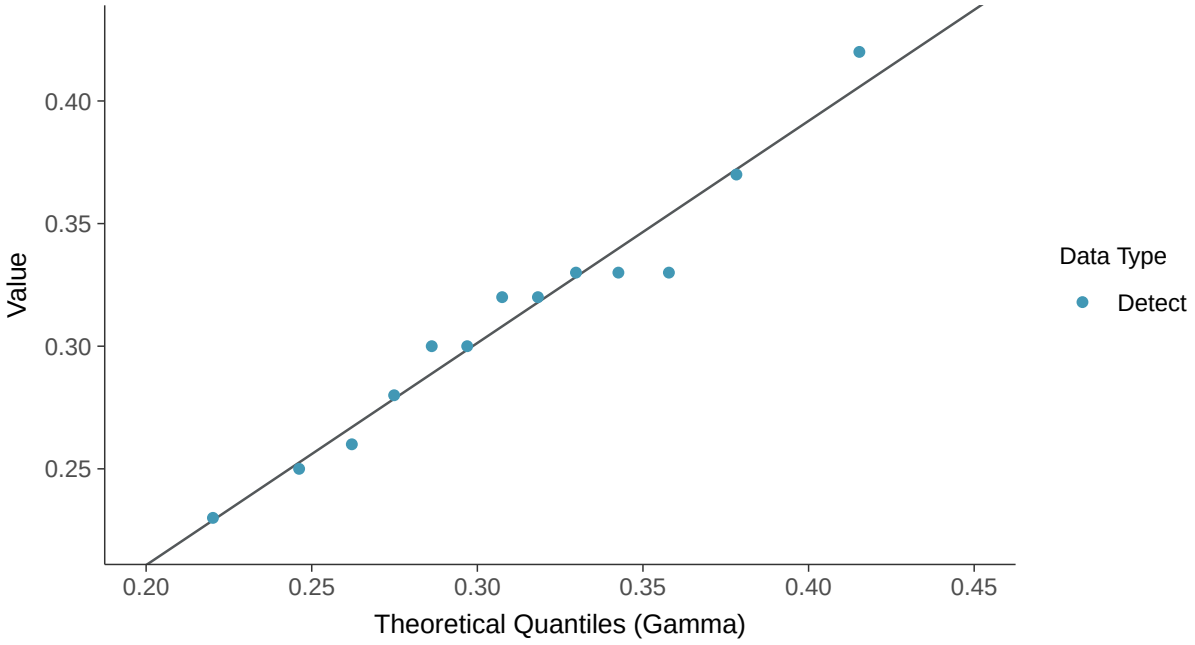
Lognormal Q-Q plot

Selenium, MW-13 (mg/l)



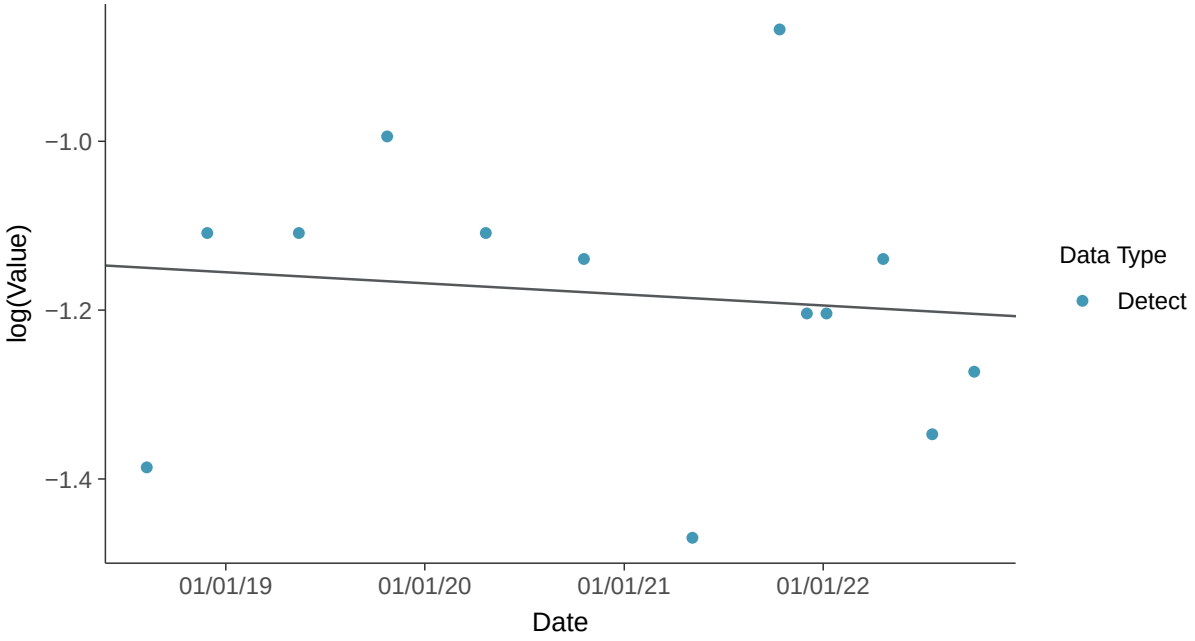
Gamma Q-Q plot

Selenium, MW-13 (mg/l)



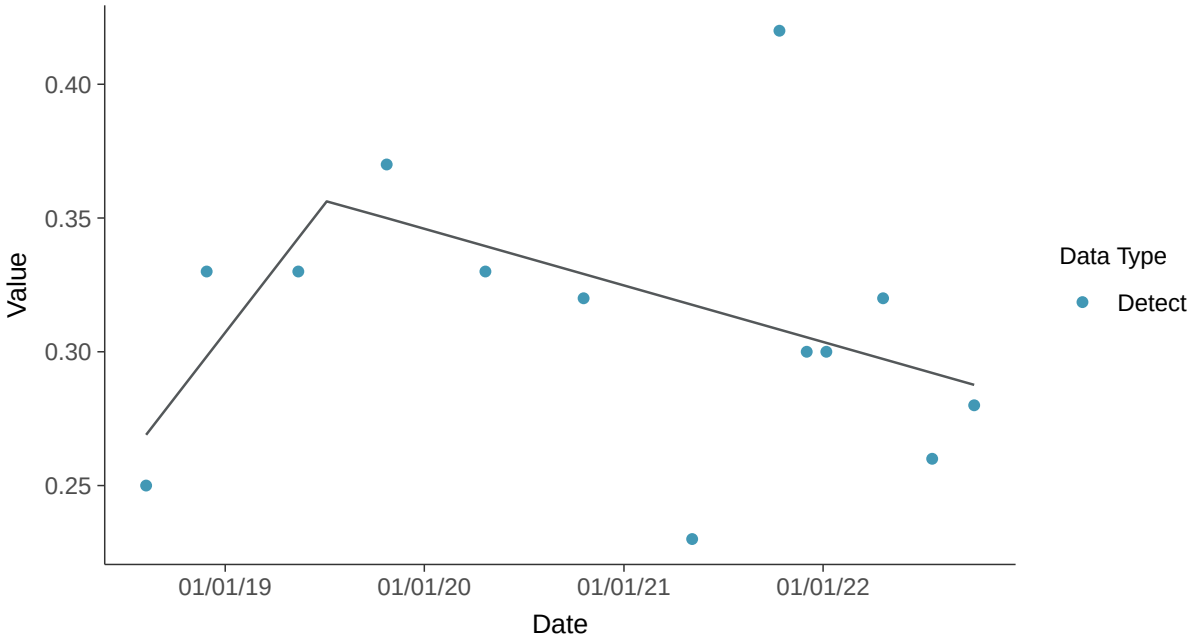
Trend Regression: Lognormal MLE

Selenium, MW-13 (mg/l)



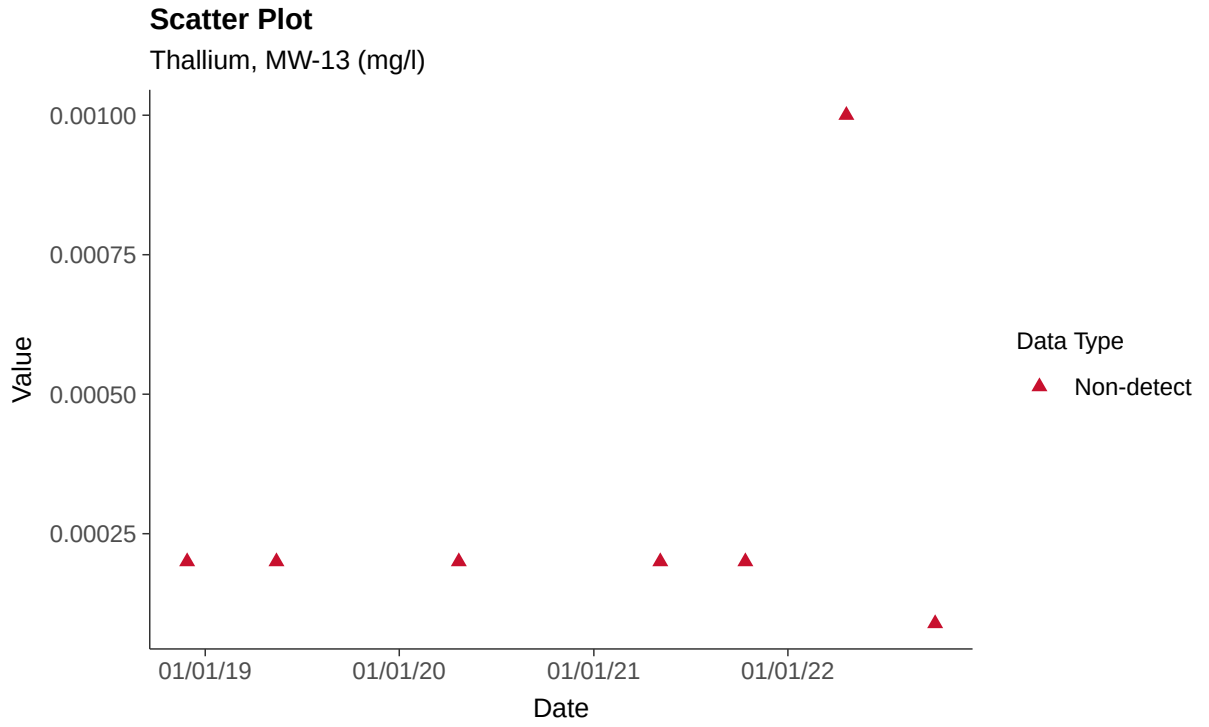
Trend Regression: Piecewise Linear-Linear

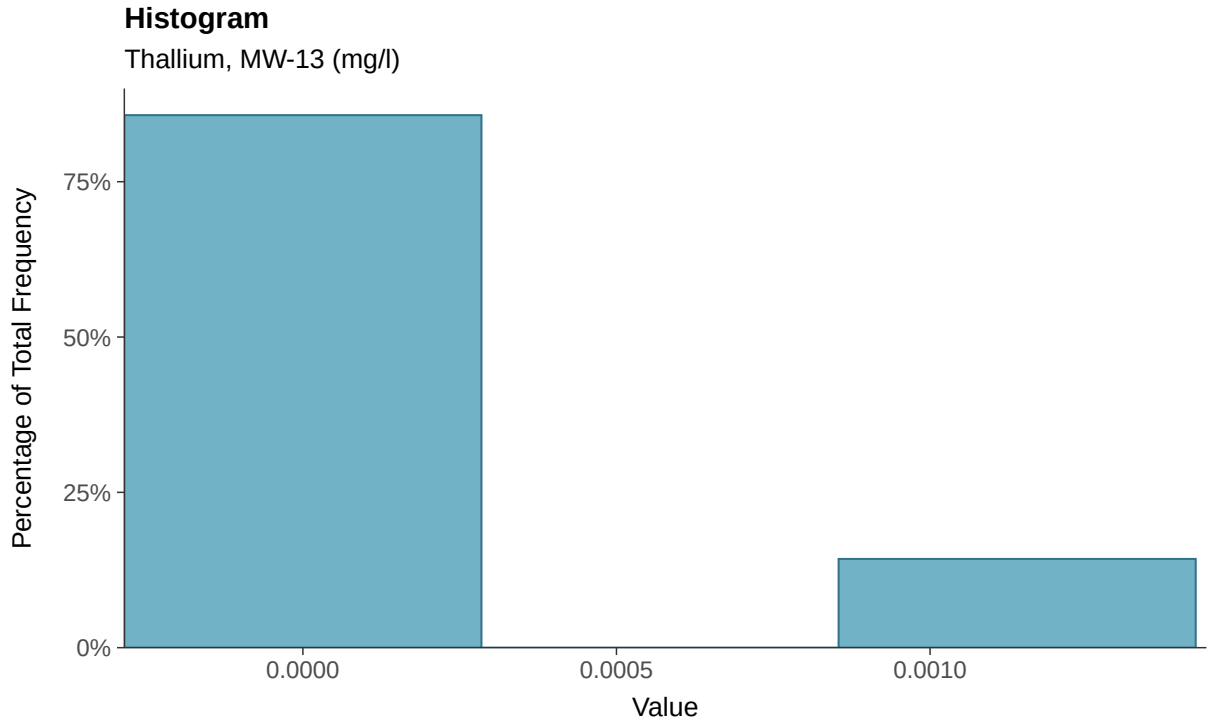
Selenium, MW-13 (mg/l)



Appendix IV: Thallium, MW-13

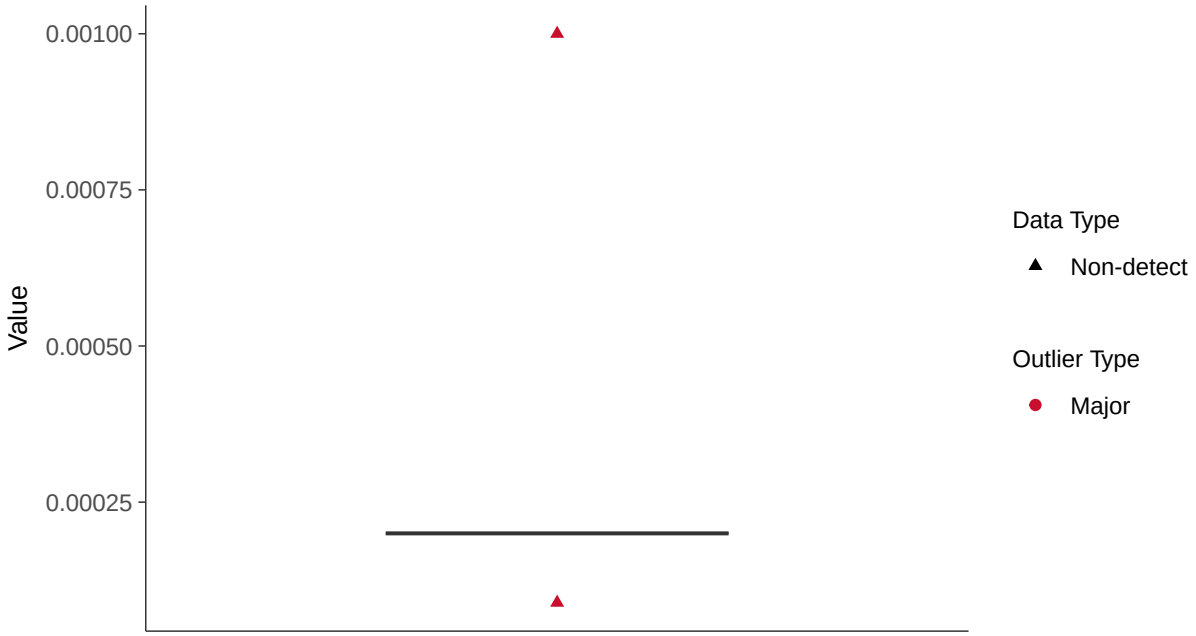
ID: 12_2_134





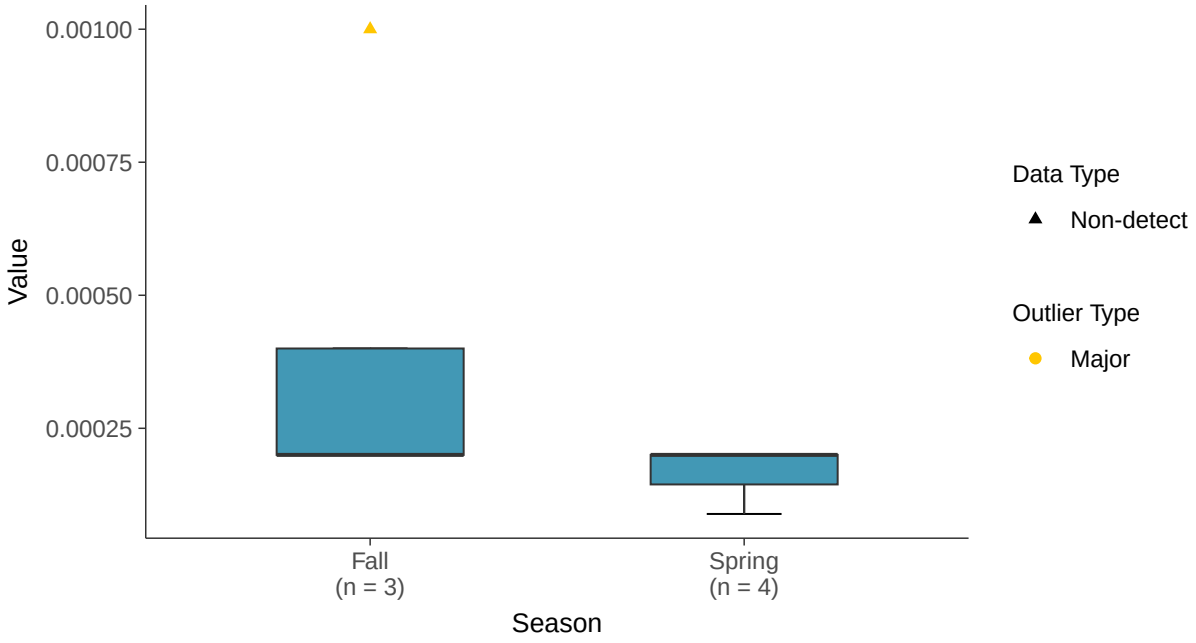
Boxplot

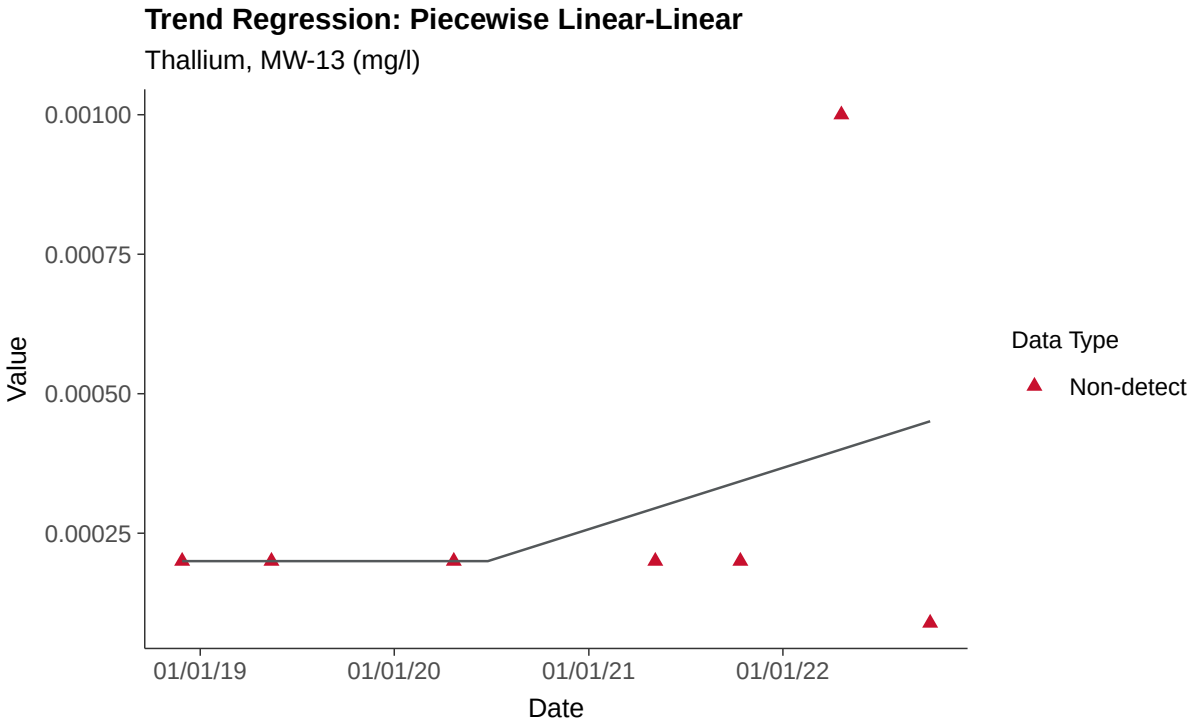
Thallium, MW-13 (mg/l)



Boxplot by Season

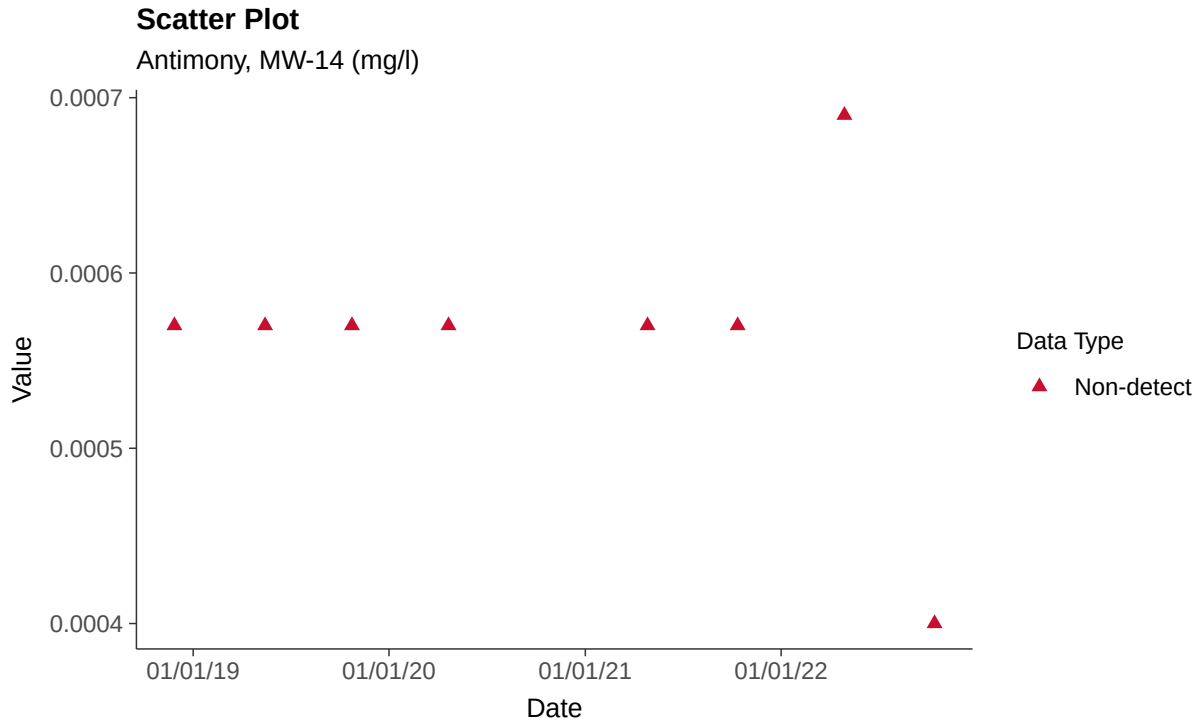
Thallium, MW-13 (mg/l)

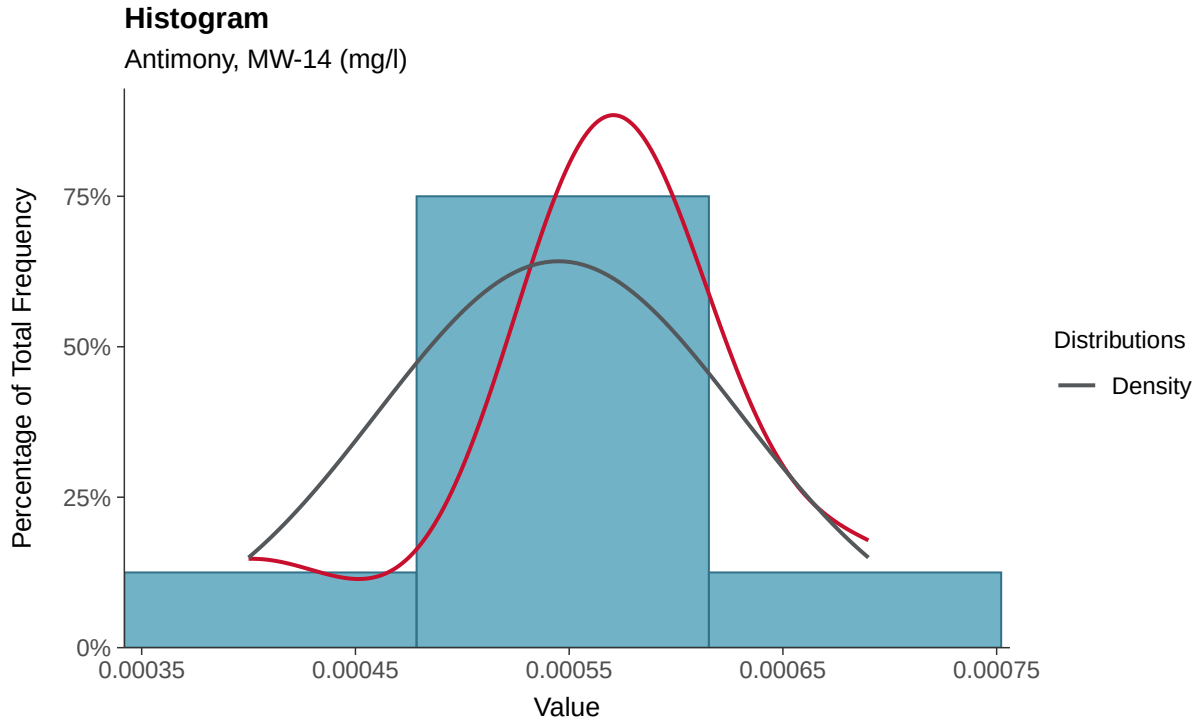



Trend Regression: Piecewise Linear-Linear
Thallium, MW-13 (mg/l)
0.00100
0.00075
0.00050
0.00025
Value
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Antimony, MW-14

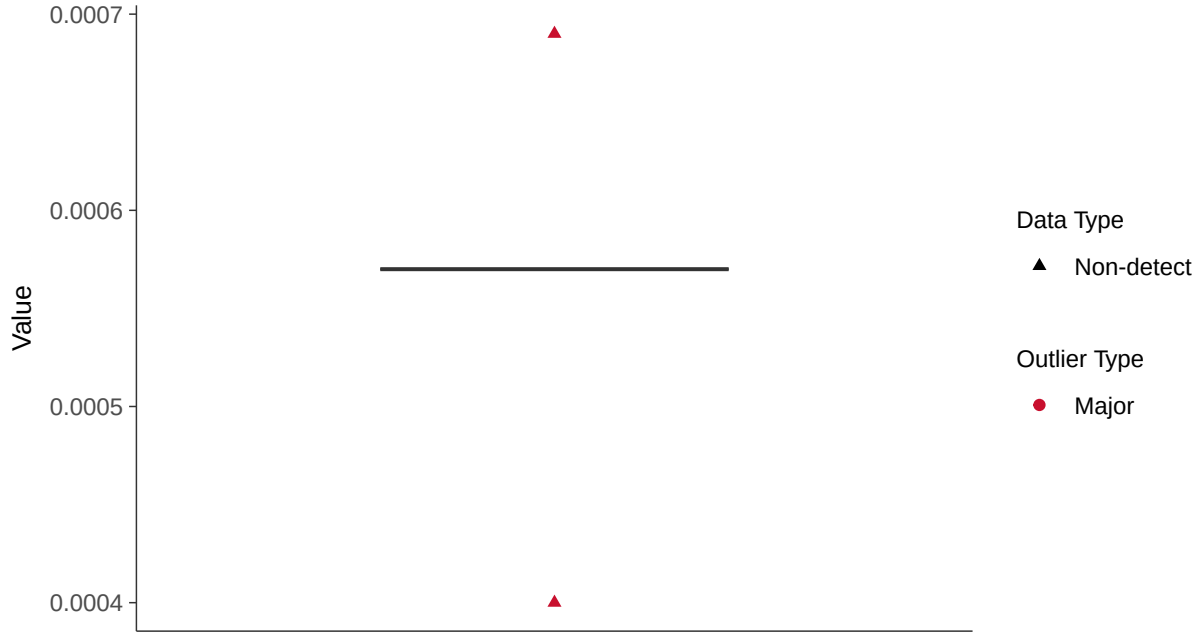
ID: 13_2_104





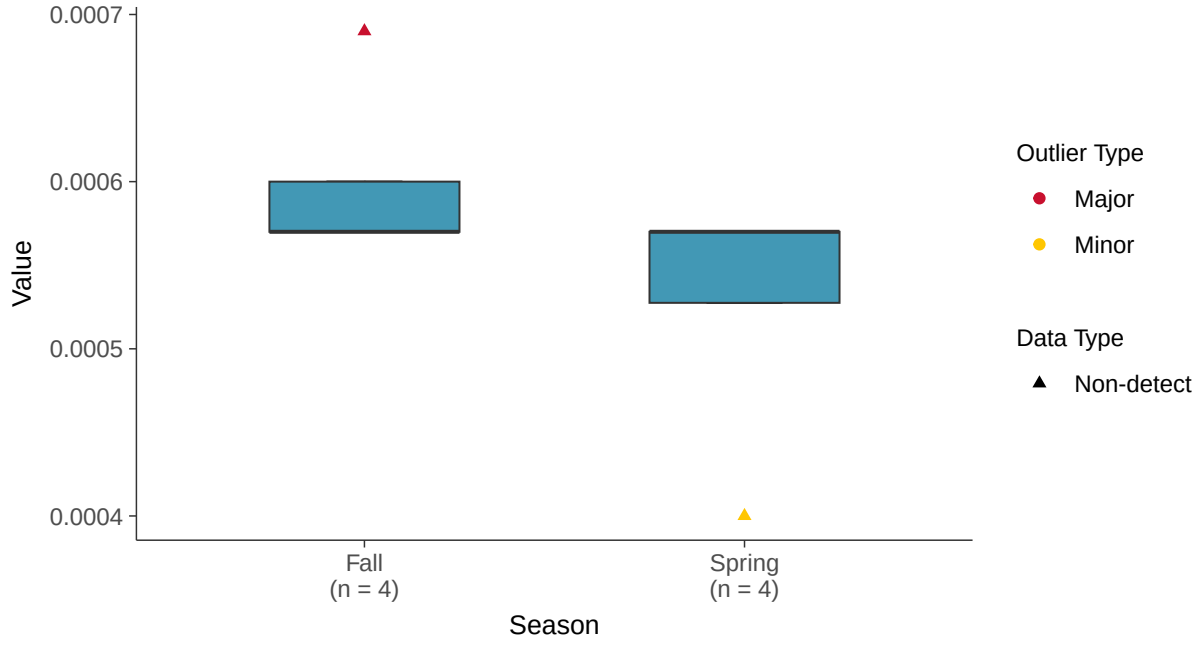
Boxplot

Antimony, MW-14 (mg/l)



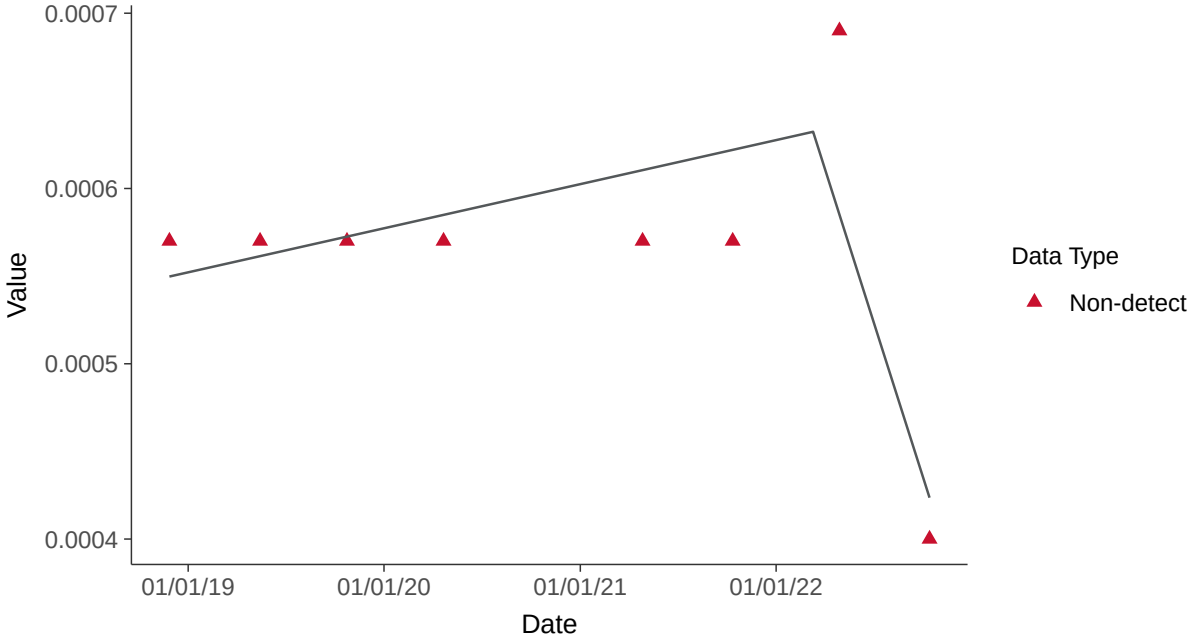
Boxplot by Season

Antimony, MW-14 (mg/l)



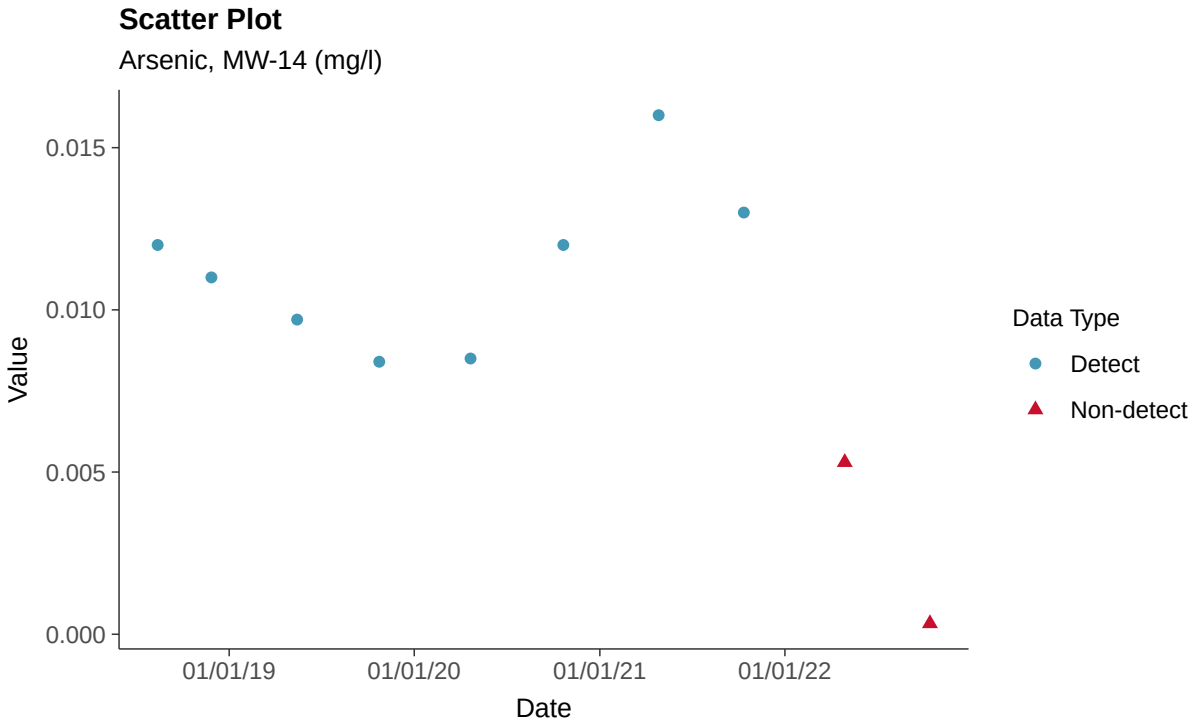
Trend Regression: Piecewise Linear-Linear

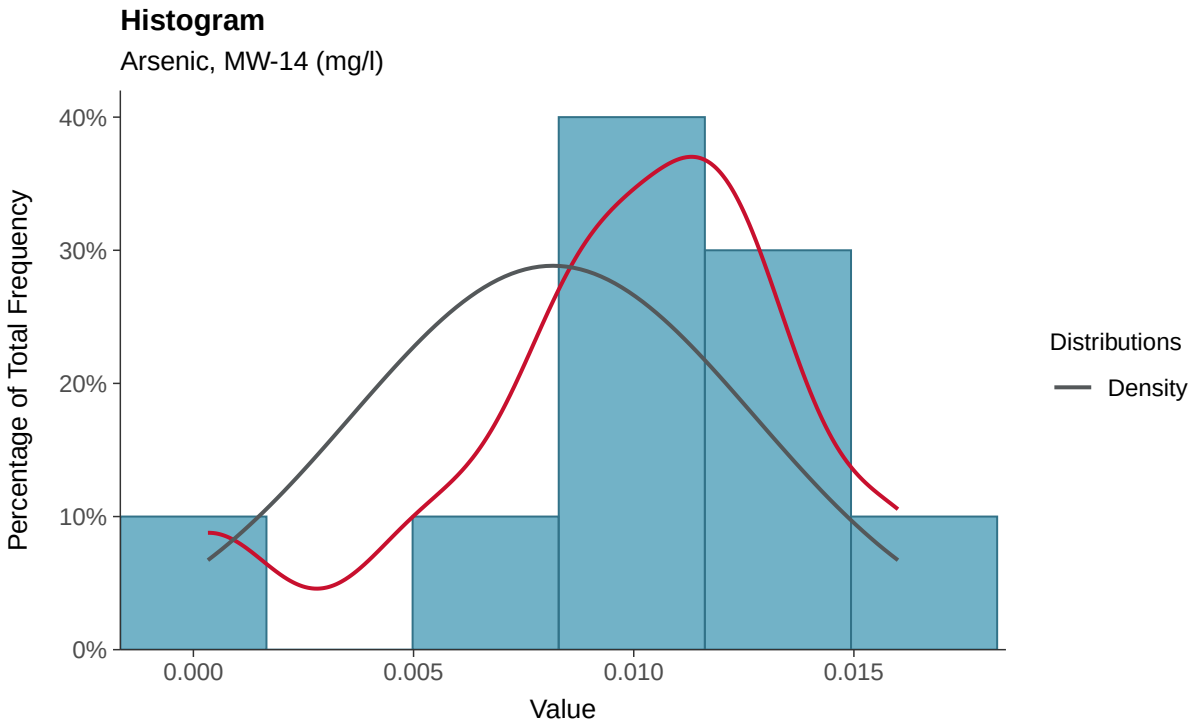
Antimony, MW-14 (mg/l)



Appendix IV: Arsenic, MW-14

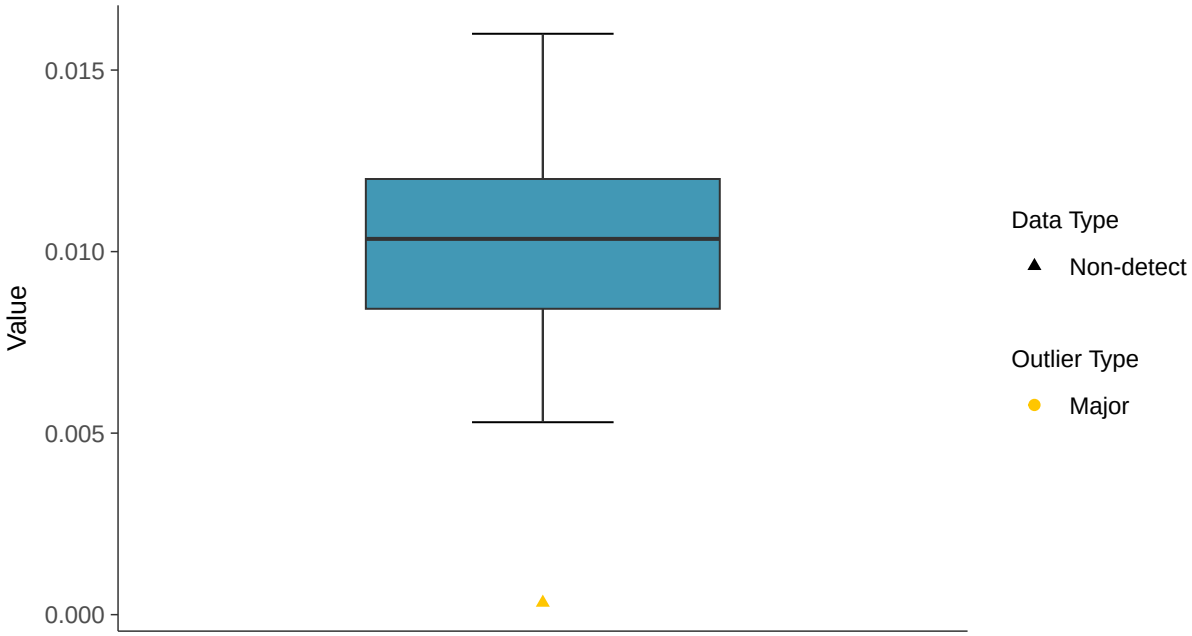
ID: 13_2_105





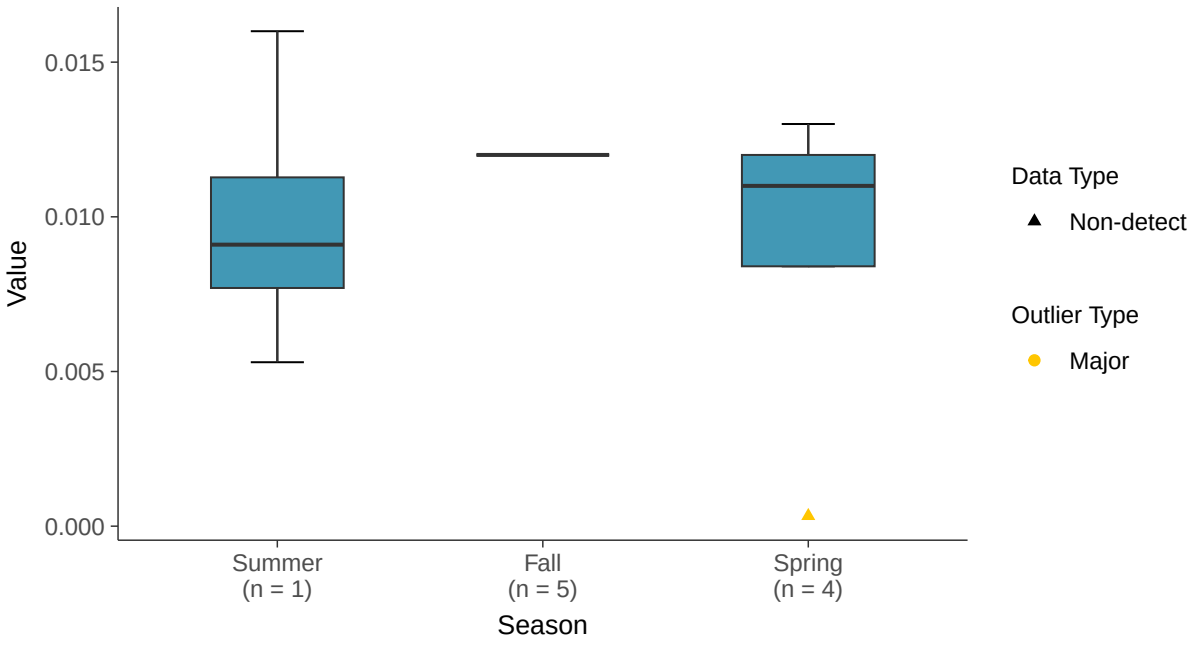
Boxplot

Arsenic, MW-14 (mg/l)



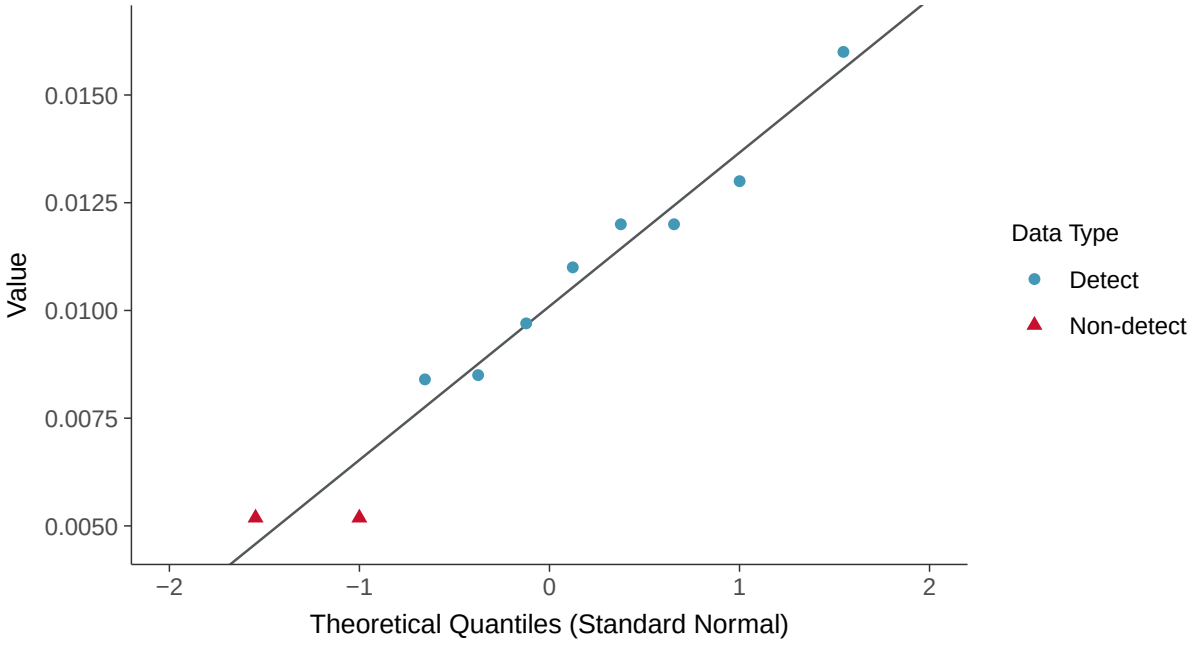
Boxplot by Season

Arsenic, MW-14 (mg/l)



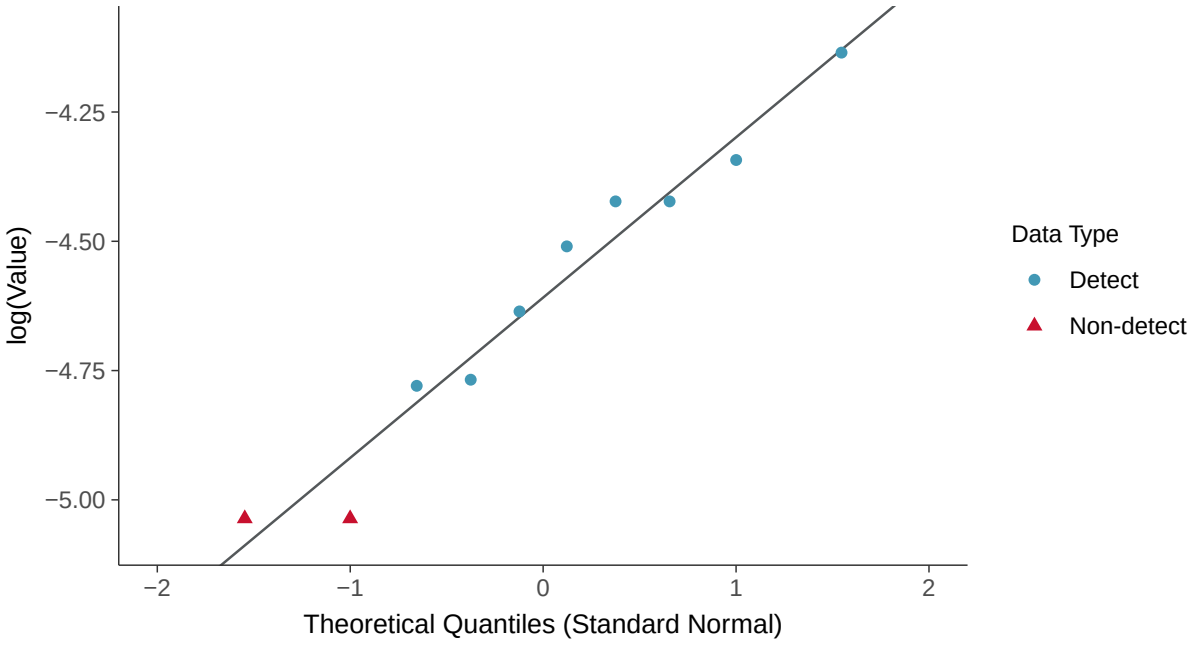
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-14 (mg/l)



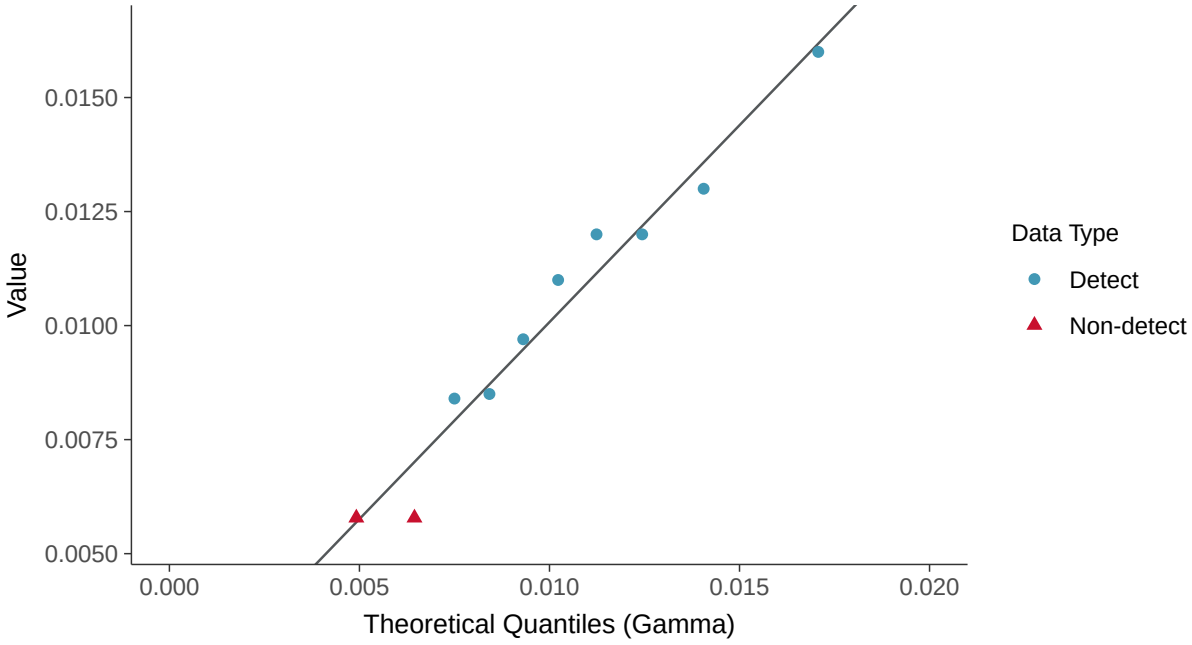
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-14 (mg/l)



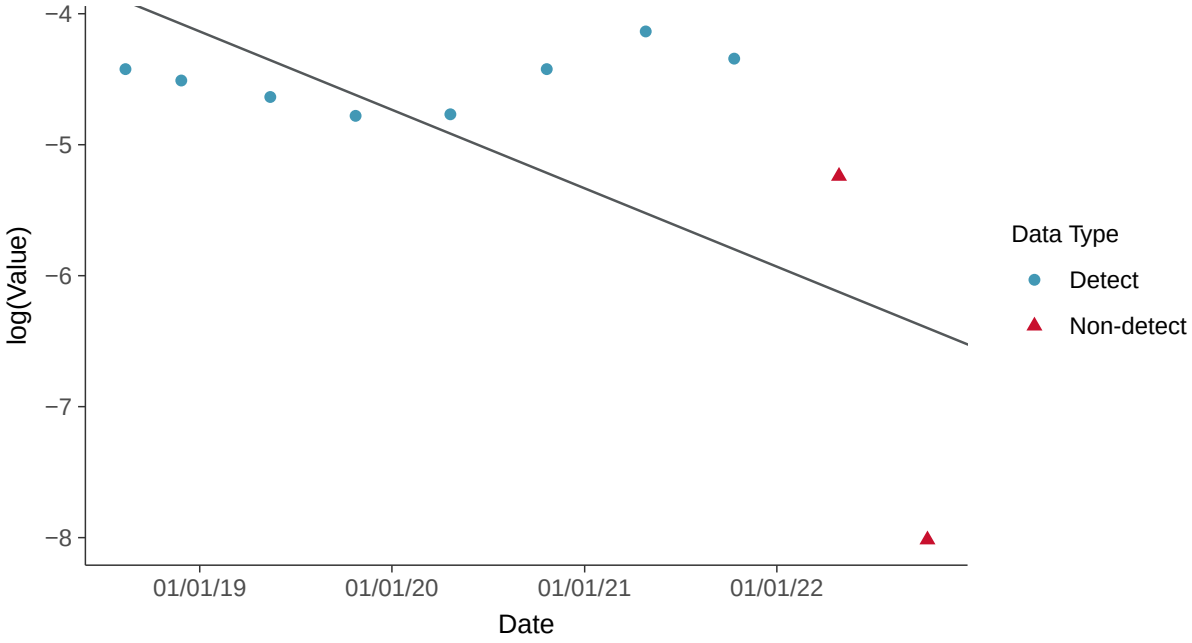
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-14 (mg/l)



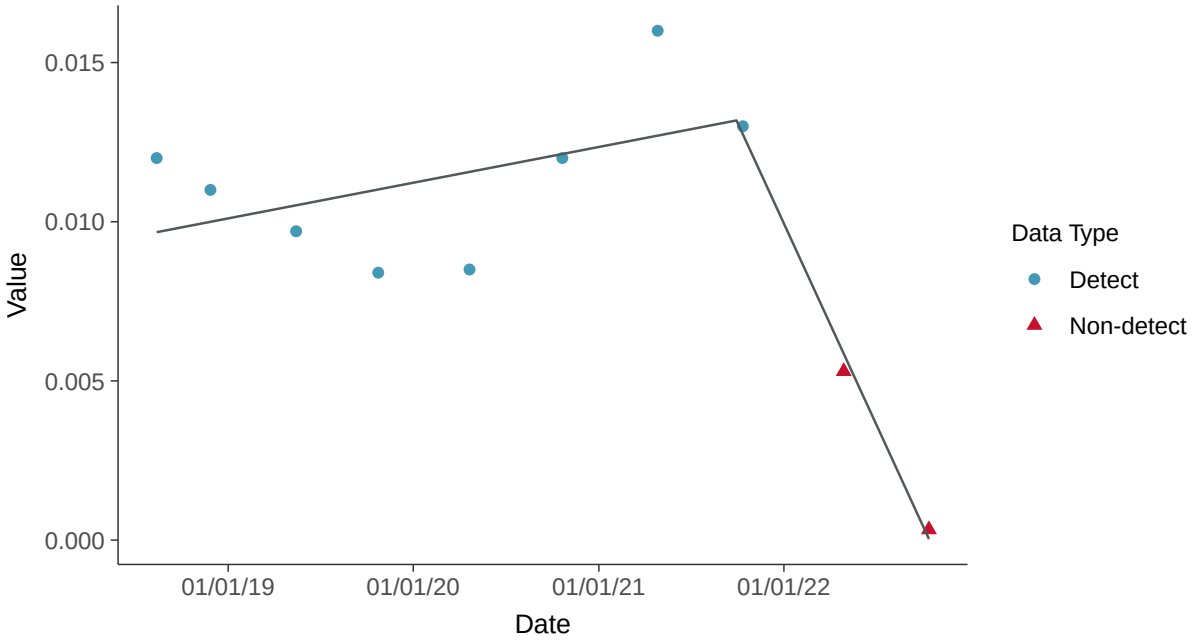
Trend Regression: Lognormal MLE

Arsenic, MW-14 (mg/l)



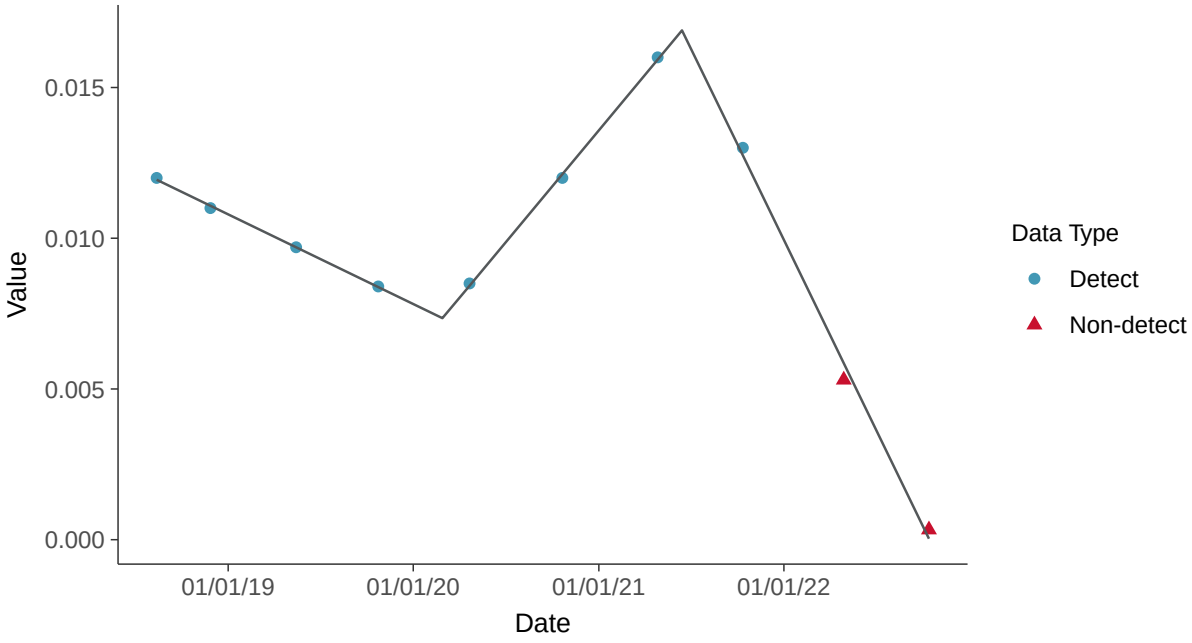
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-14 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-14 (mg/l)

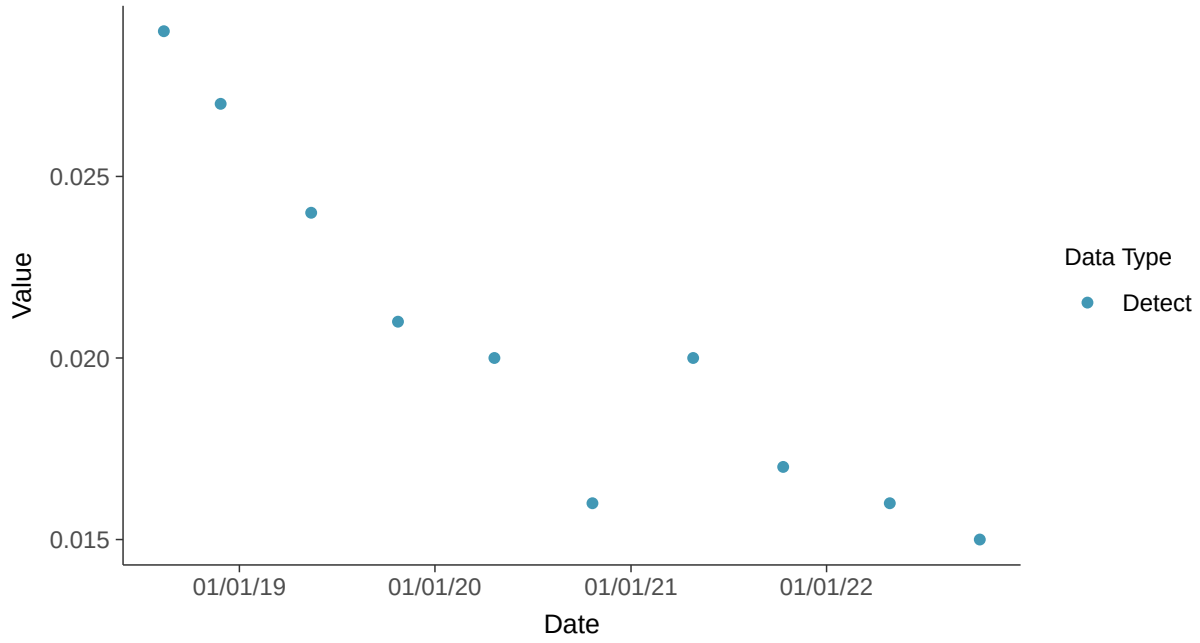


Appendix IV: Barium, MW-14

ID: 13_2_106

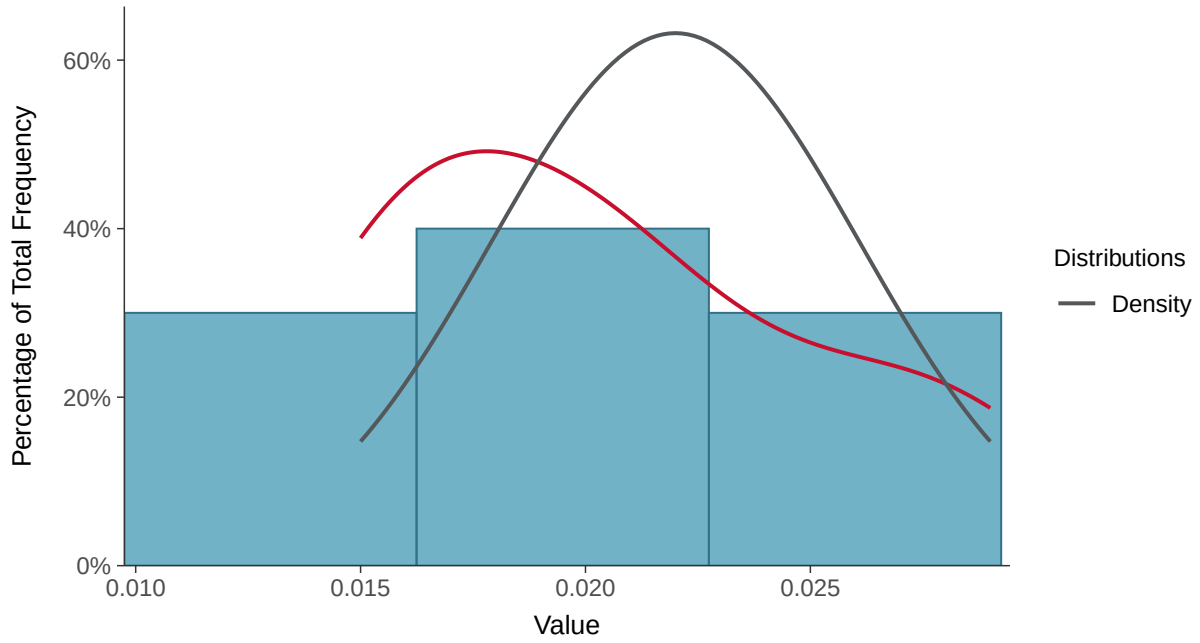
Scatter Plot

Barium, MW-14 (mg/l)



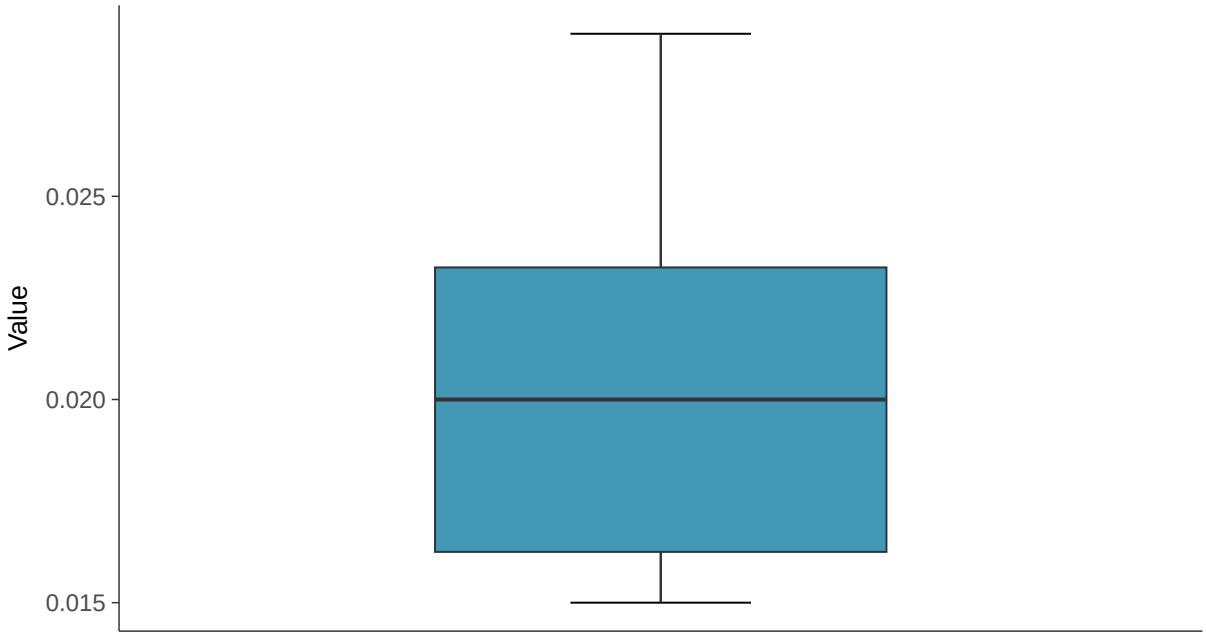
Histogram

Barium, MW-14 (mg/l)



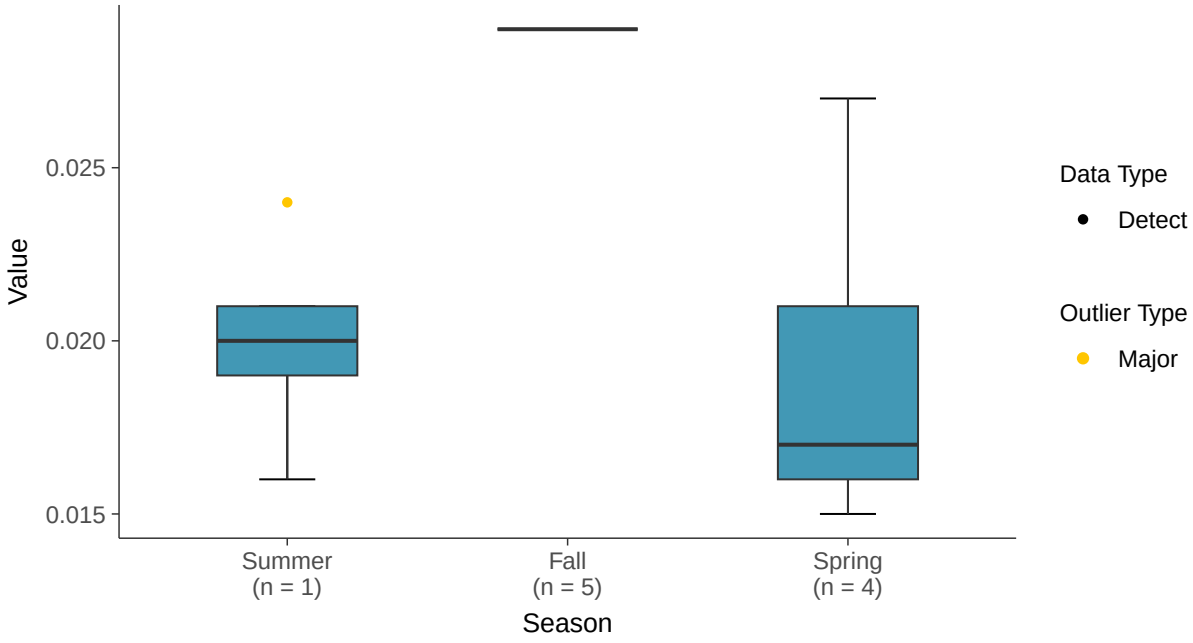
Boxplot

Barium, MW-14 (mg/l)



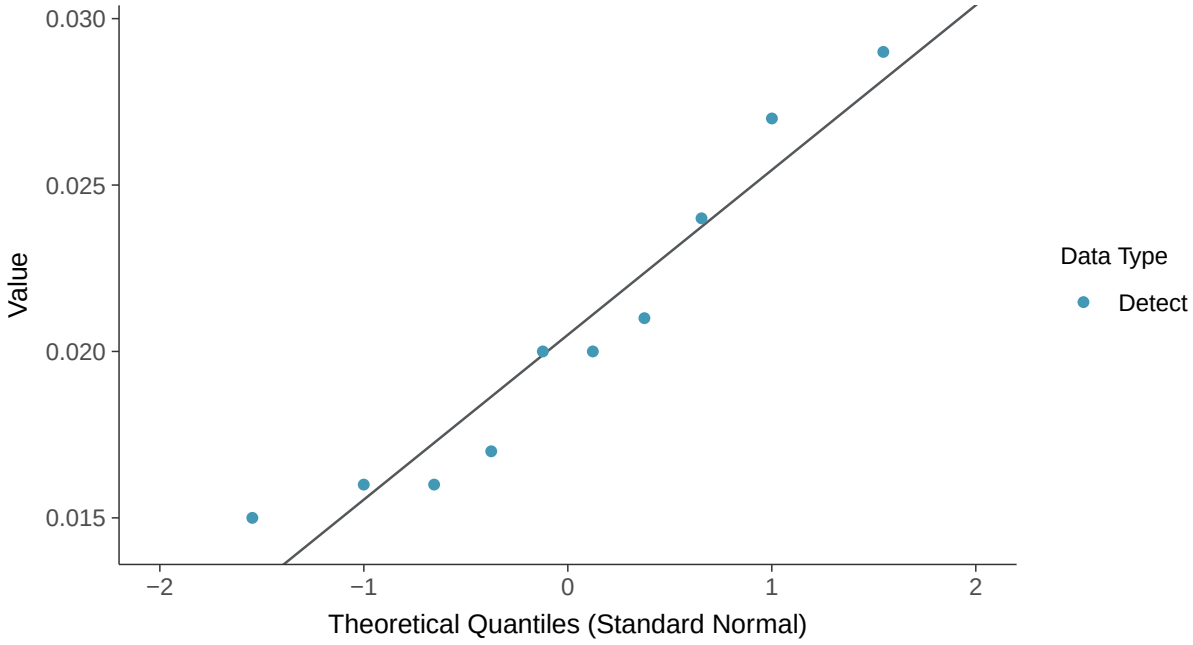
Boxplot by Season

Barium, MW-14 (mg/l)



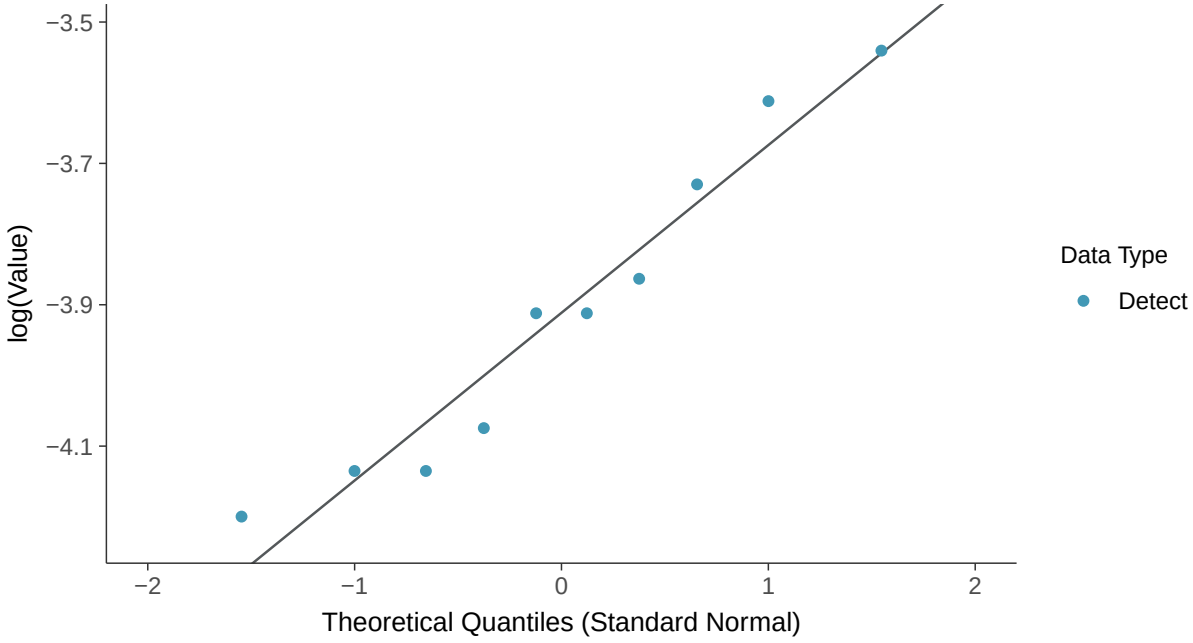
Normal Q-Q plot

Barium, MW-14 (mg/l)



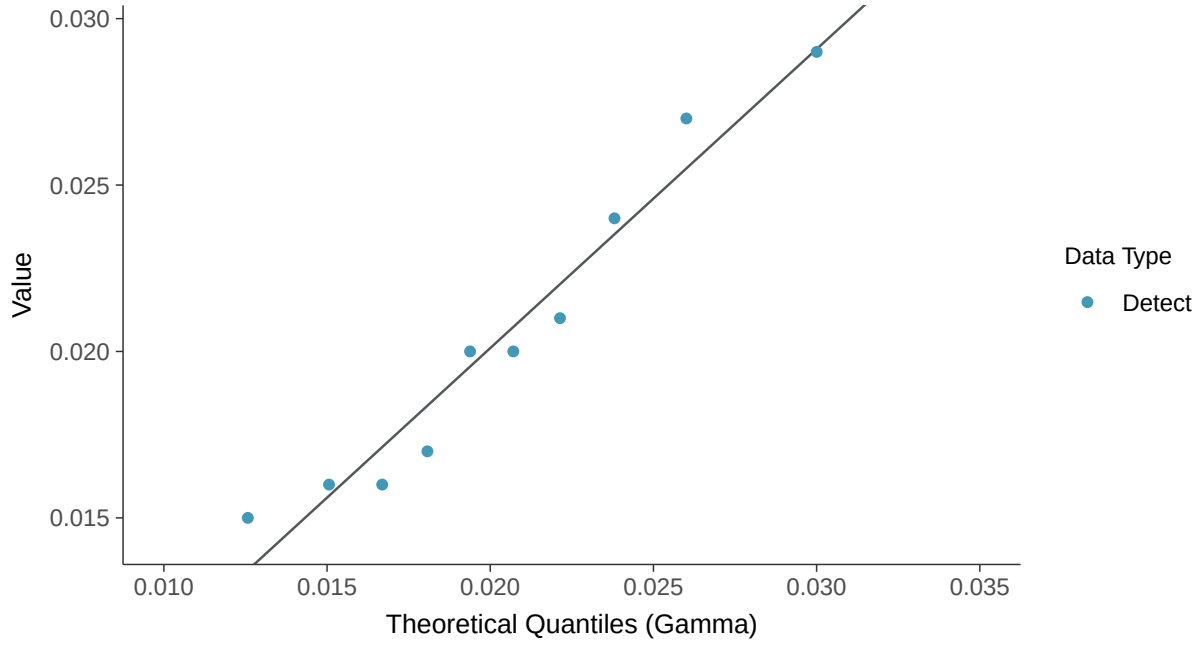
Lognormal Q-Q plot

Barium, MW-14 (mg/l)



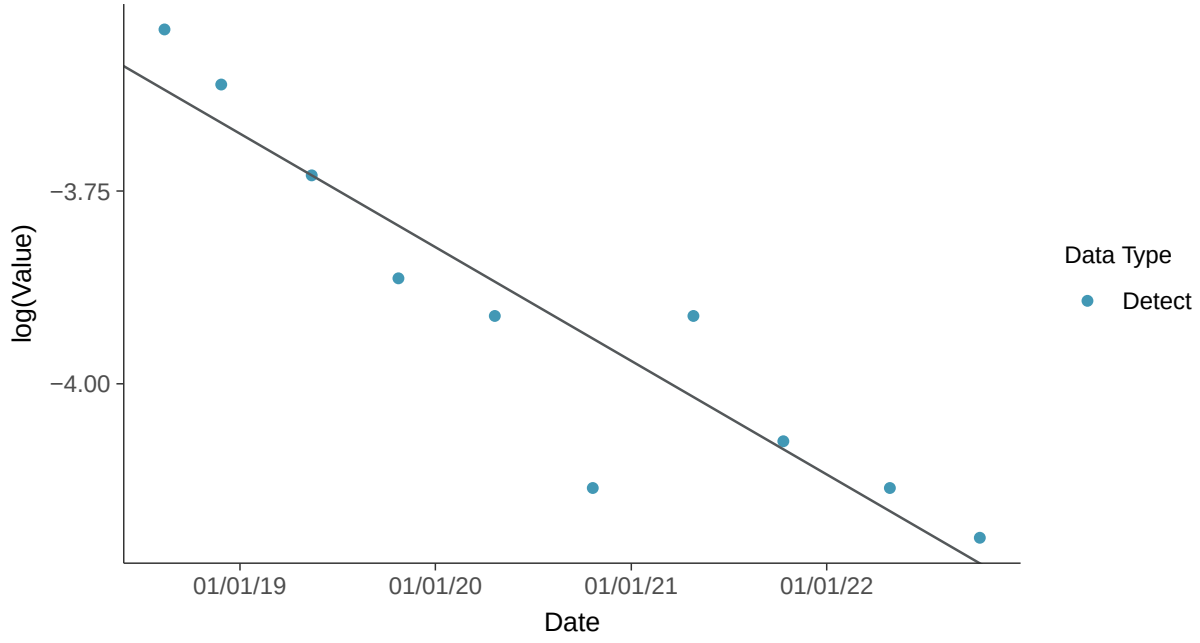
Gamma Q-Q plot

Barium, MW-14 (mg/l)



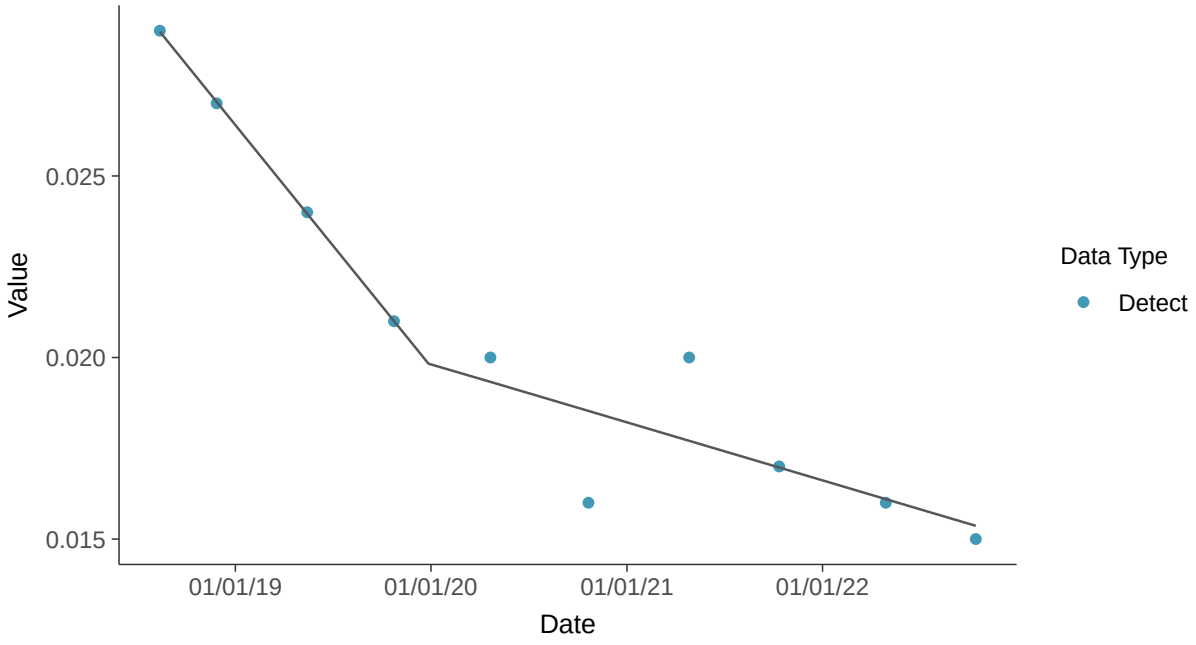
Trend Regression: Lognormal MLE

Barium, MW-14 (mg/l)



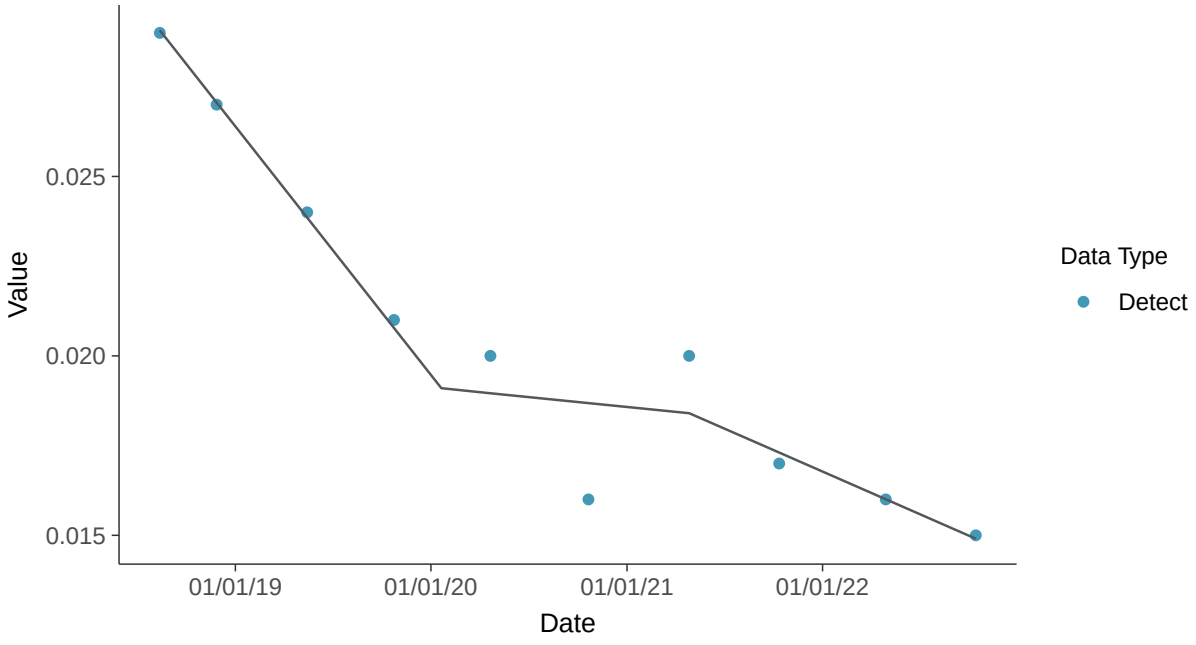
Trend Regression: Piecewise Linear-Linear

Barium, MW-14 (mg/l)



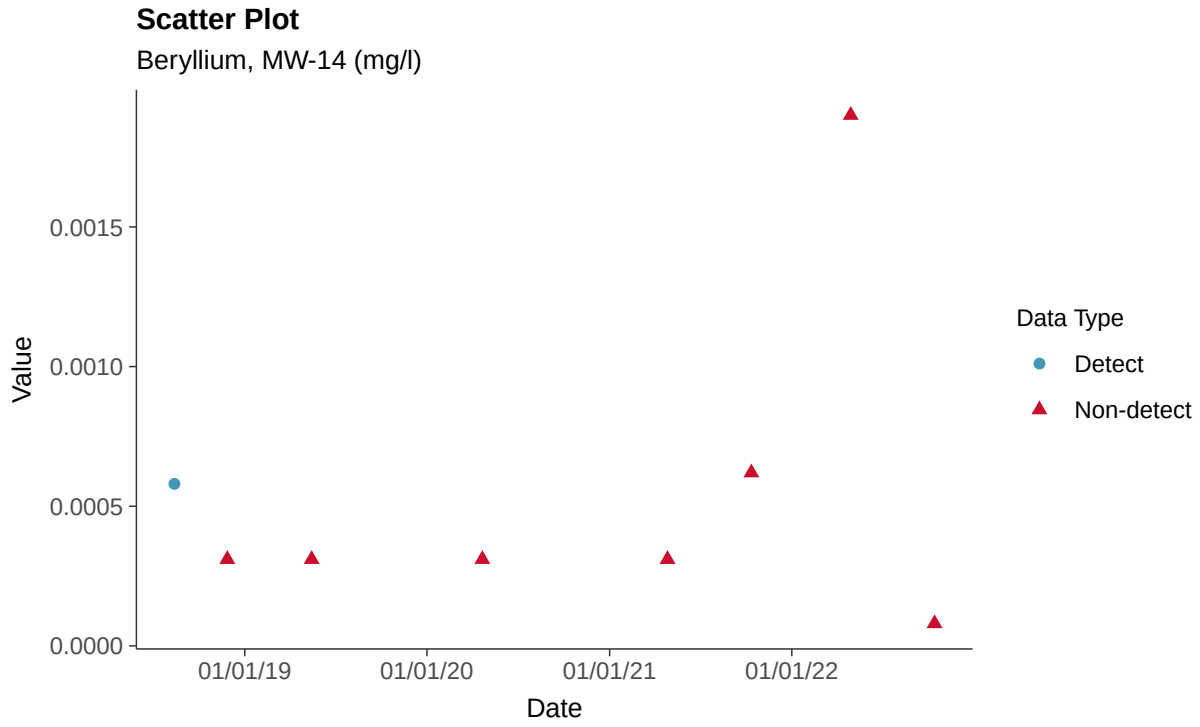
Trend Regression: Piecewise Linear-Linear-Linear

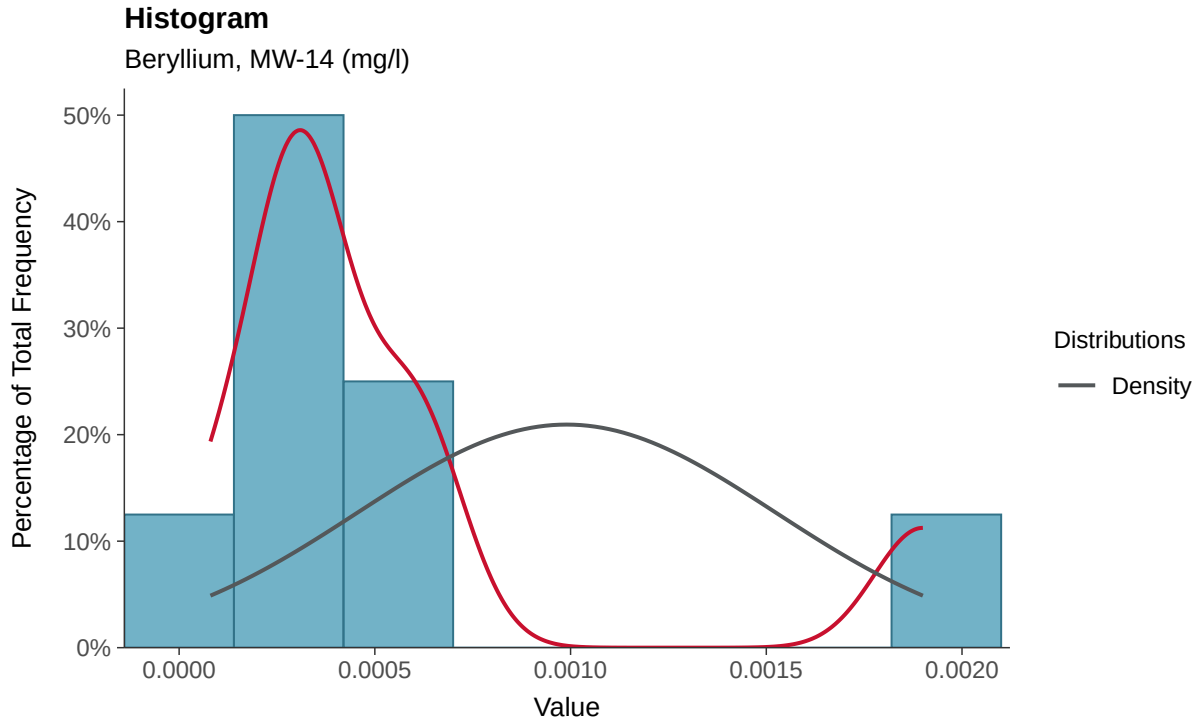
Barium, MW-14 (mg/l)



Appendix IV: Beryllium, MW-14

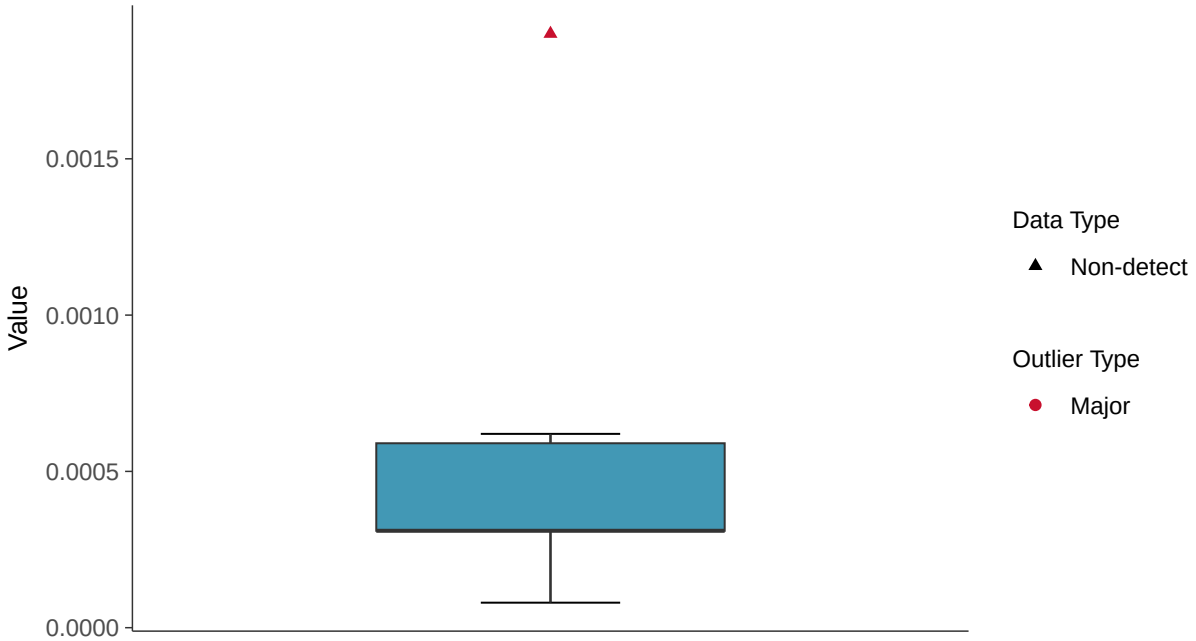
ID: 13_2_107





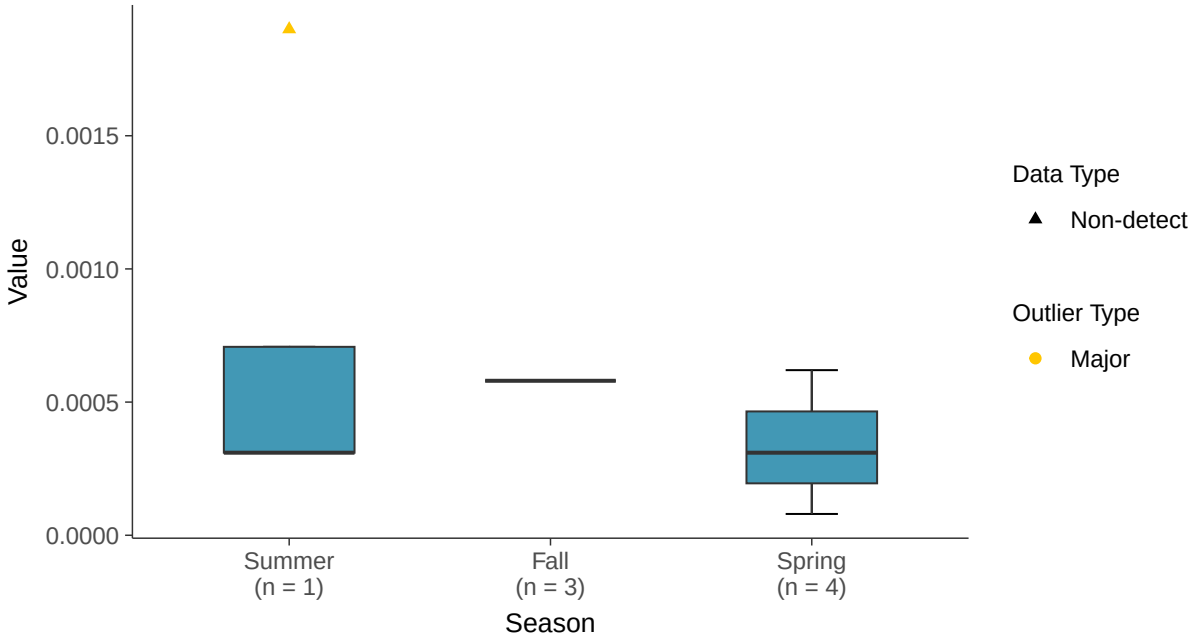
Boxplot

Beryllium, MW-14 (mg/l)



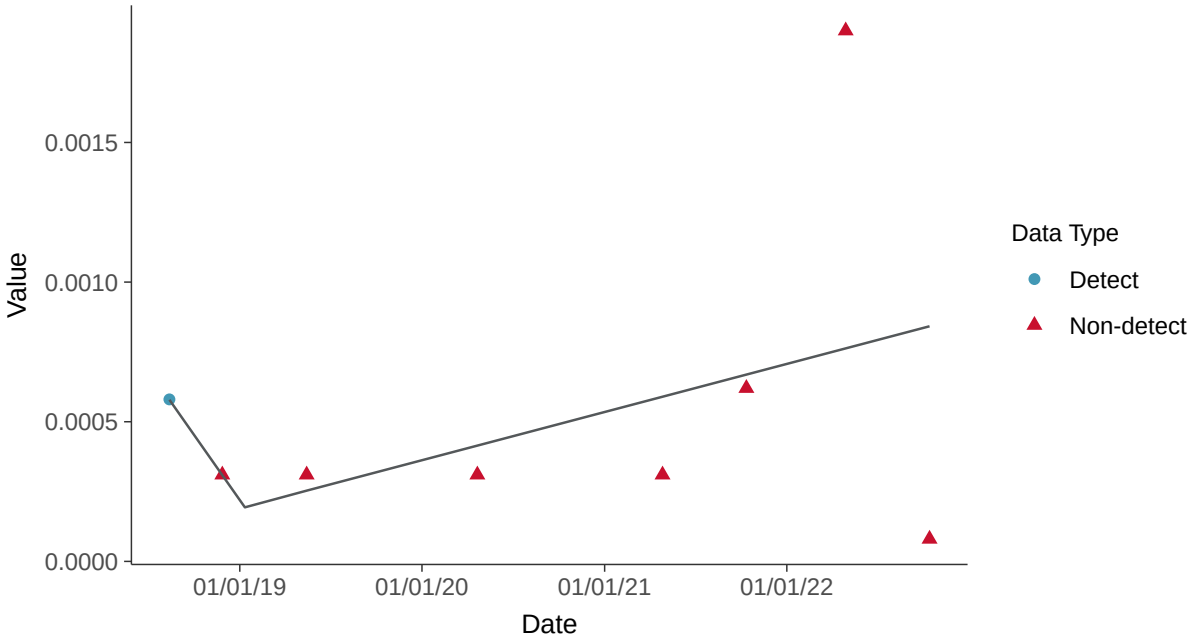
Boxplot by Season

Beryllium, MW-14 (mg/l)



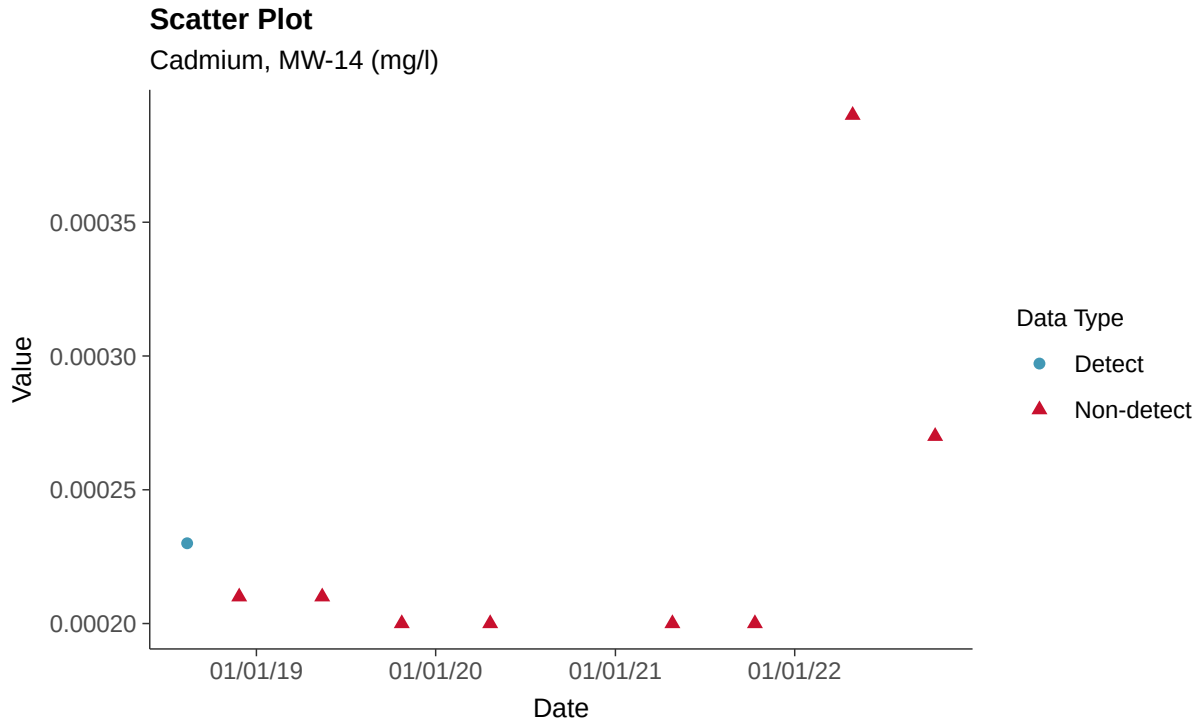
Trend Regression: Piecewise Linear-Linear

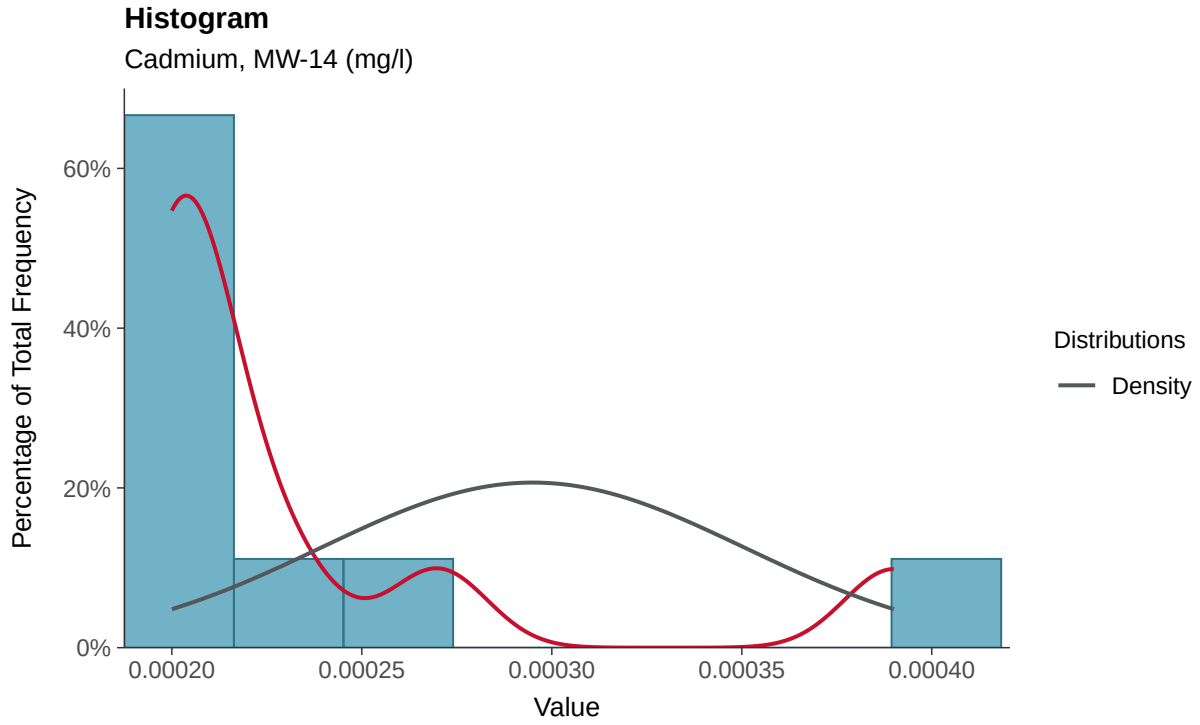
Beryllium, MW-14 (mg/l)



Appendix IV: Cadmium, MW-14

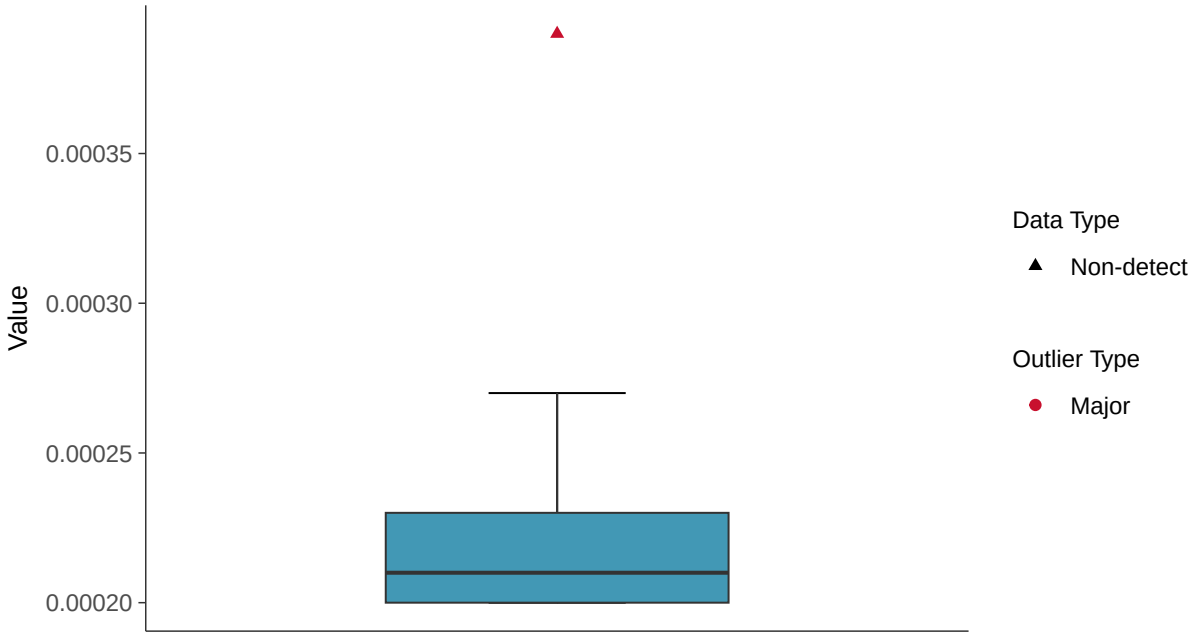
ID: 13_2_109





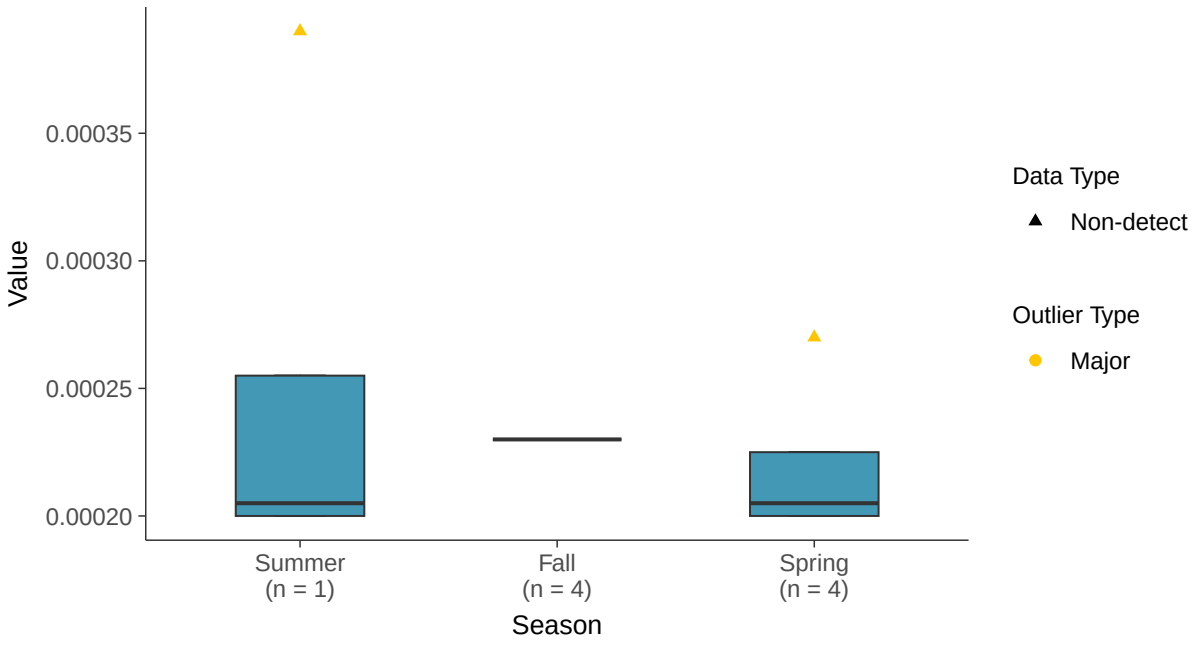
Boxplot

Cadmium, MW-14 (mg/l)



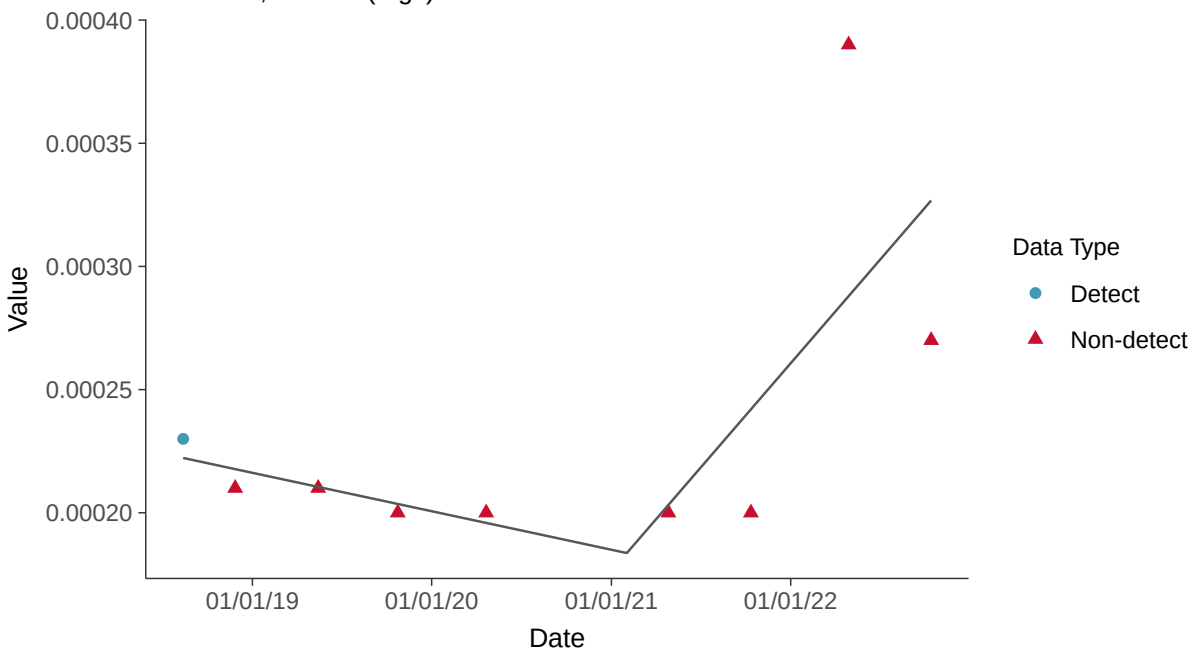
Boxplot by Season

Cadmium, MW-14 (mg/l)



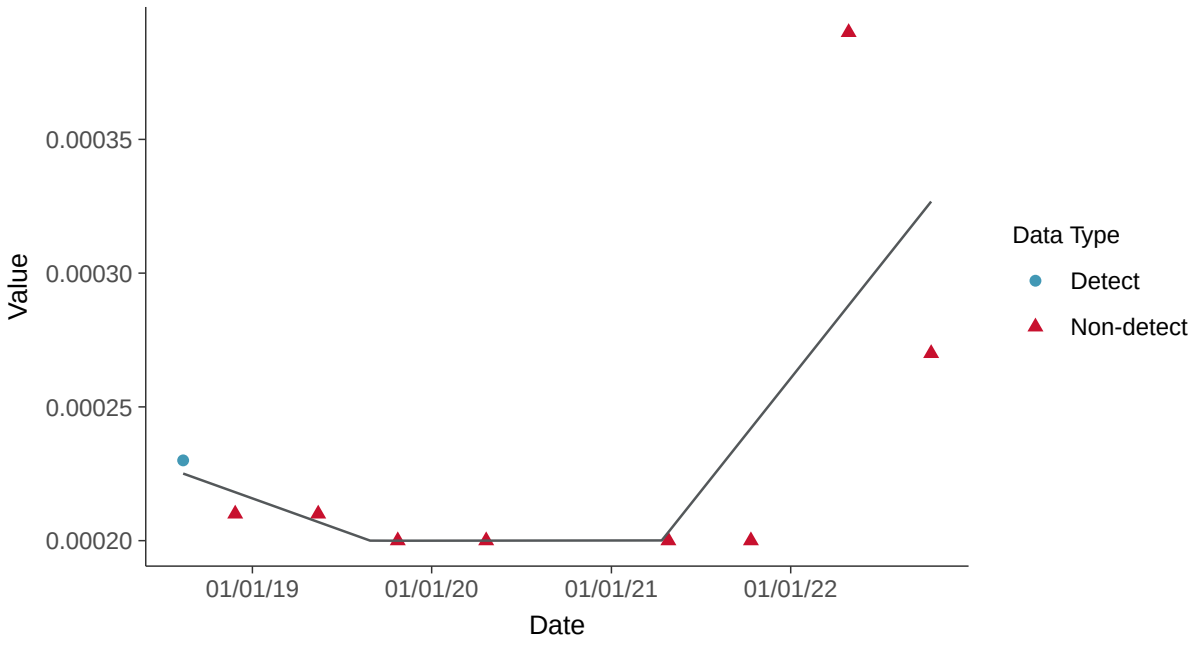
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-14 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-14 (mg/l)

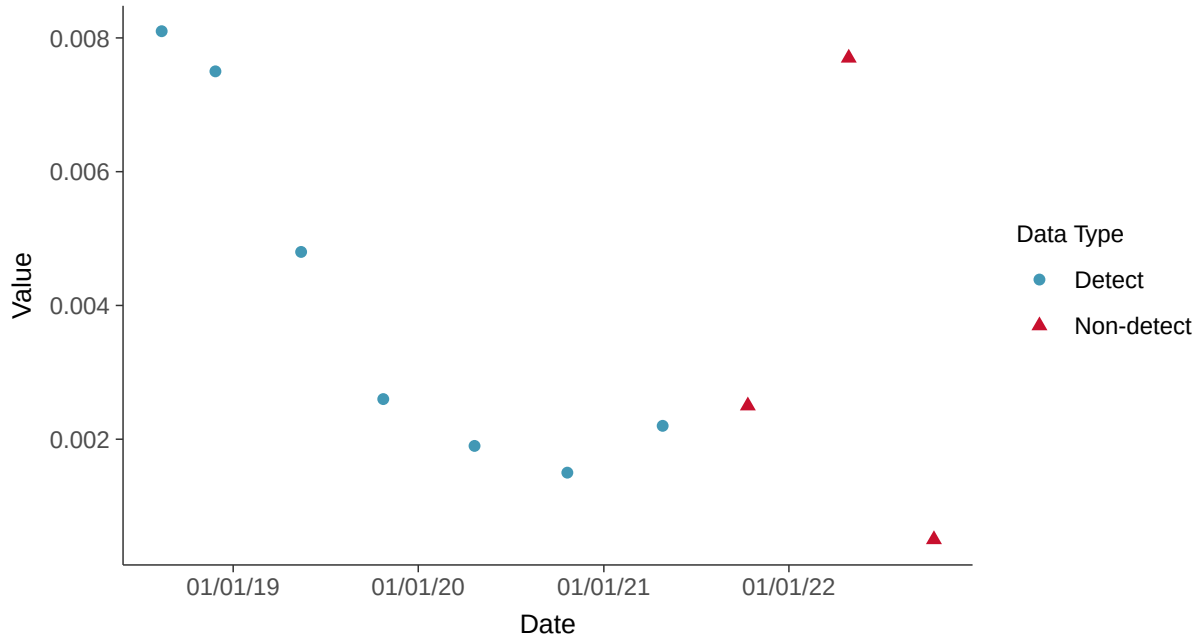


Appendix IV: Chromium, Total, MW-14

ID: 13_2_112

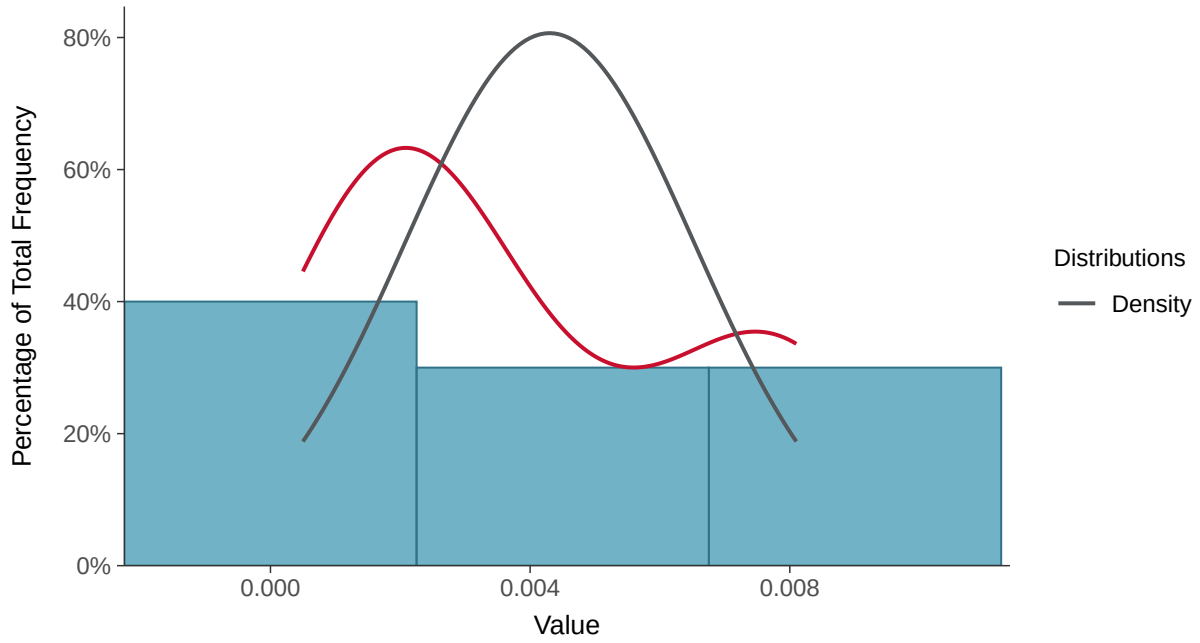
Scatter Plot

Chromium, Total, MW-14 (mg/l)



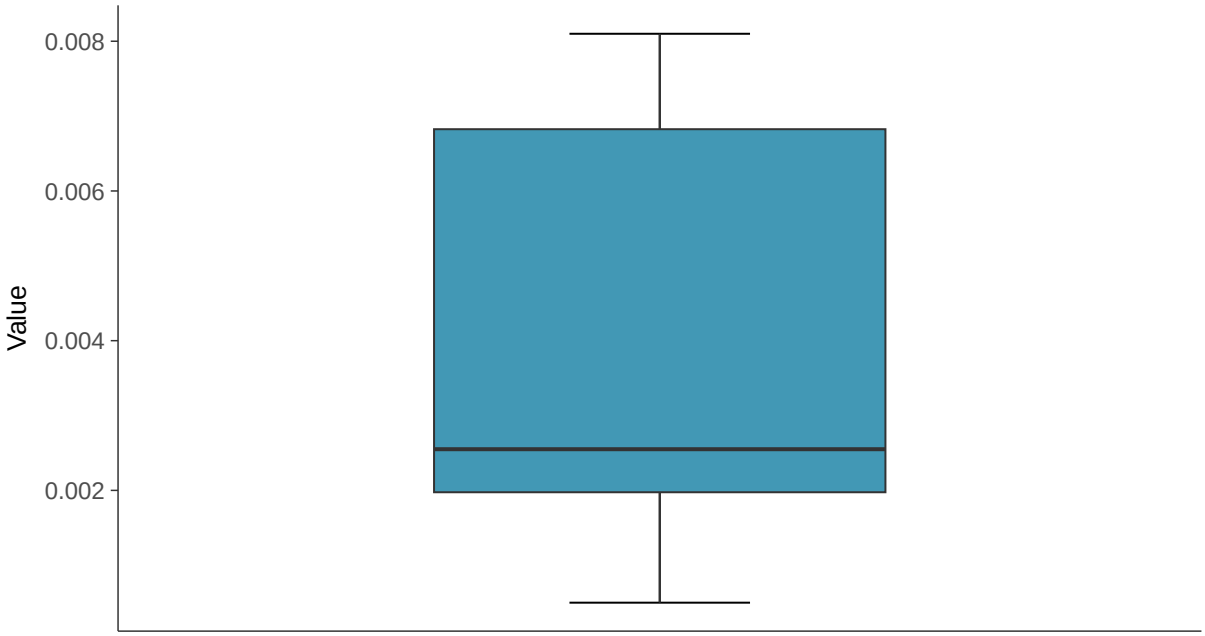
Histogram

Chromium, Total, MW-14 (mg/l)



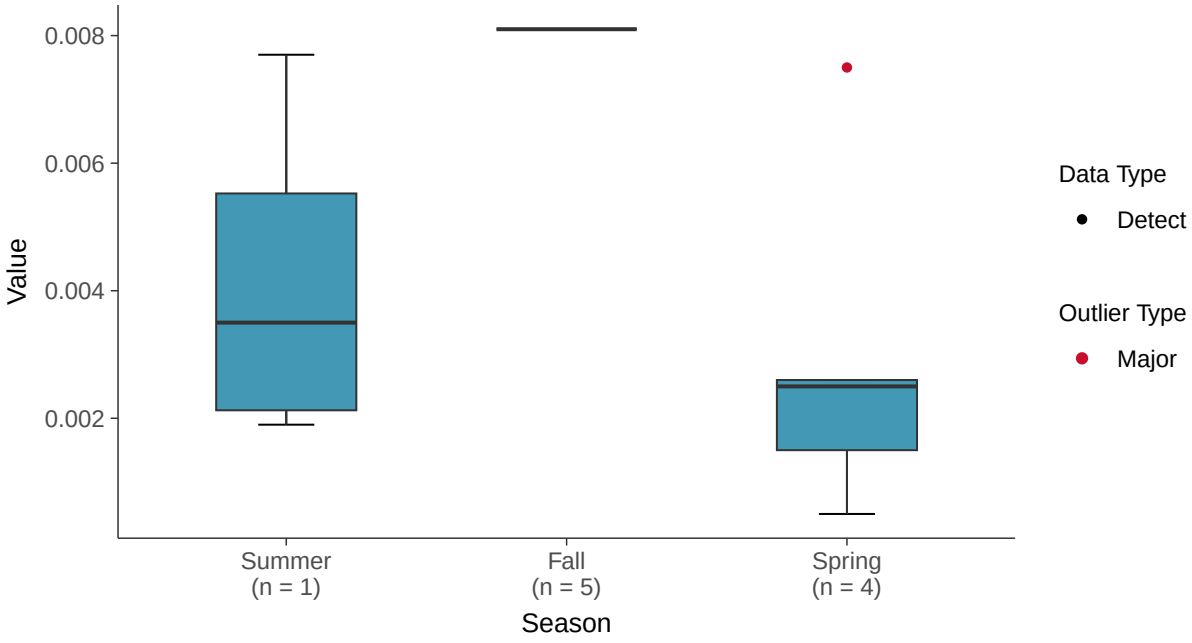
Boxplot

Chromium, Total, MW-14 (mg/l)



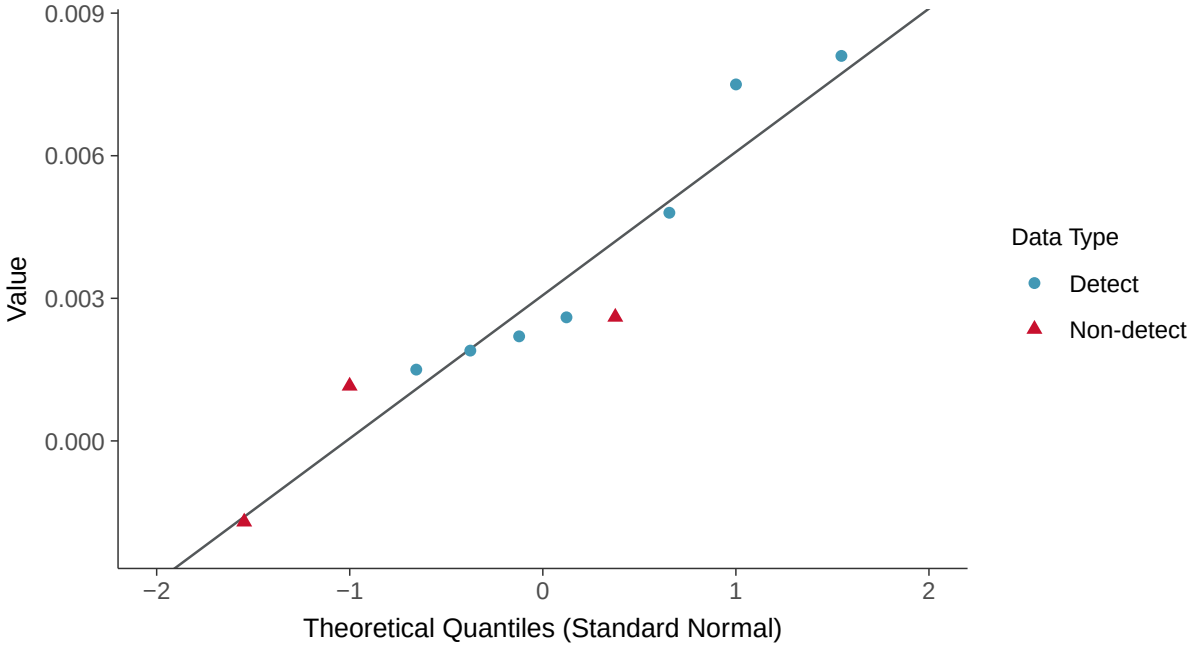
Boxplot by Season

Chromium, Total, MW-14 (mg/l)



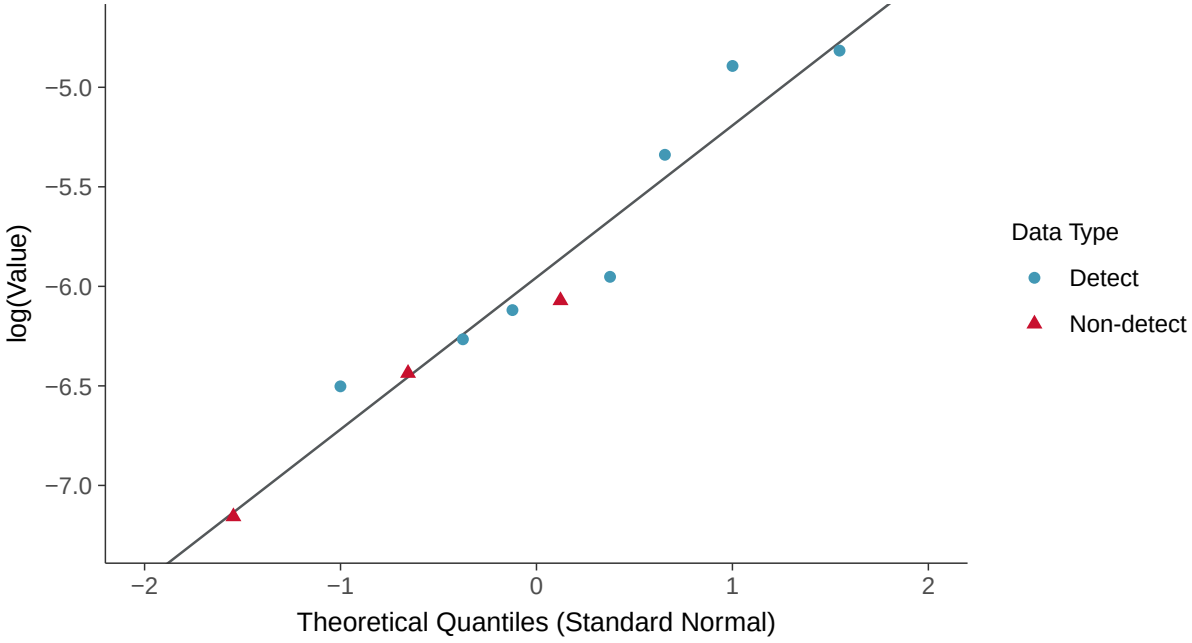
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-14 (mg/l)



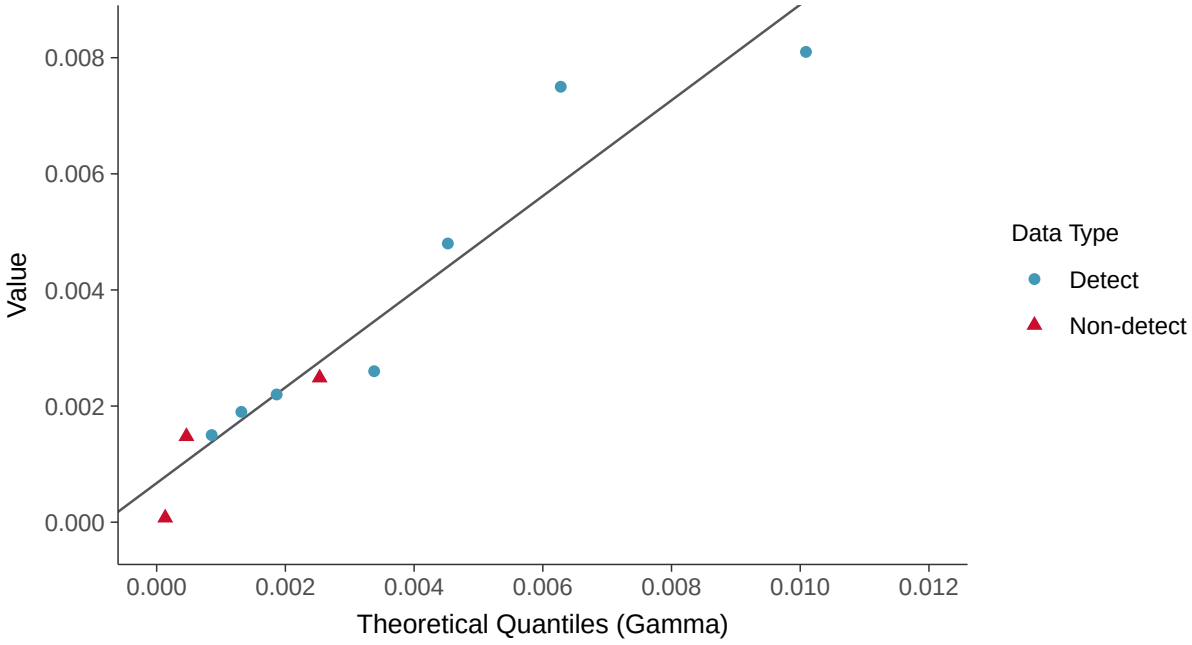
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-14 (mg/l)



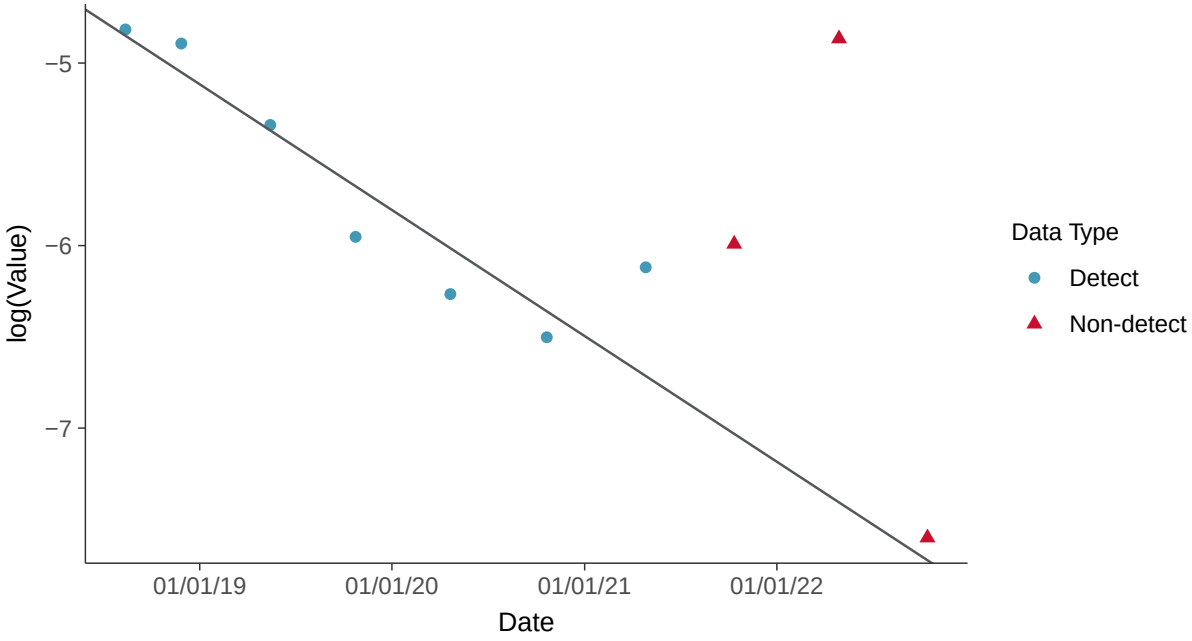
Gamma Q-Q plot using ROS Imputed Estimates

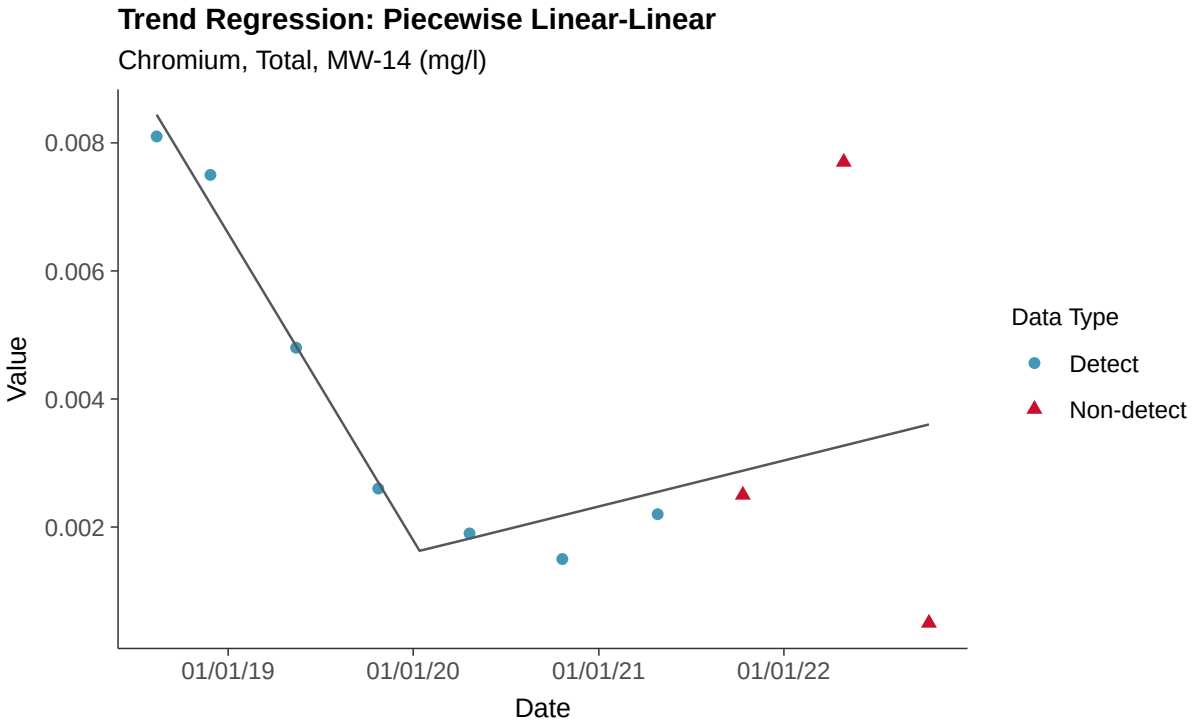
Chromium, Total, MW-14 (mg/l)



Trend Regression: Lognormal MLE

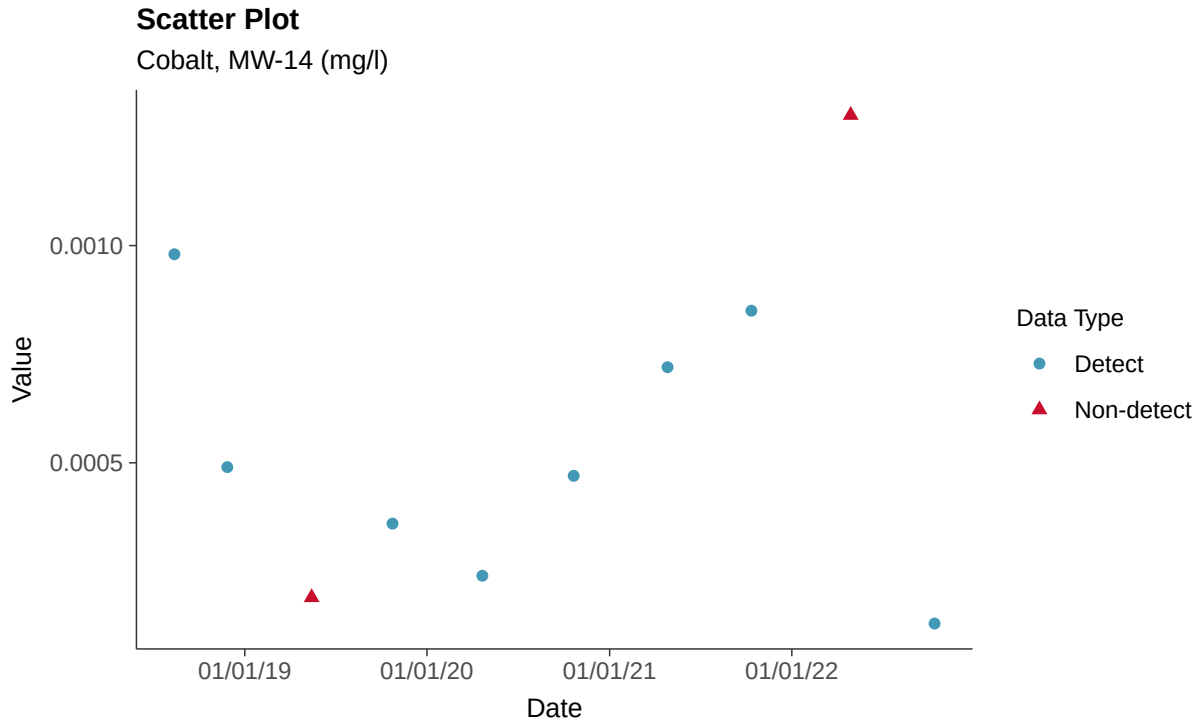
Chromium, Total, MW-14 (mg/l)

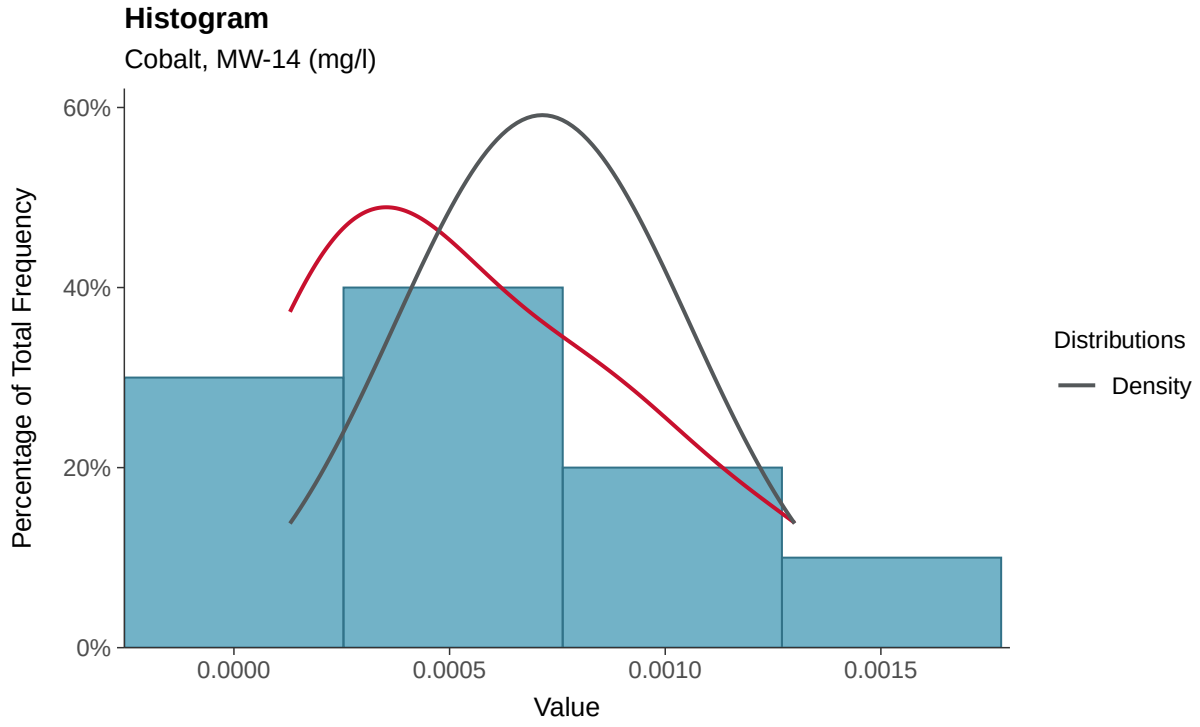



Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-14 (mg/l)
0.008
0.006
0.004
0.002
Value
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-14

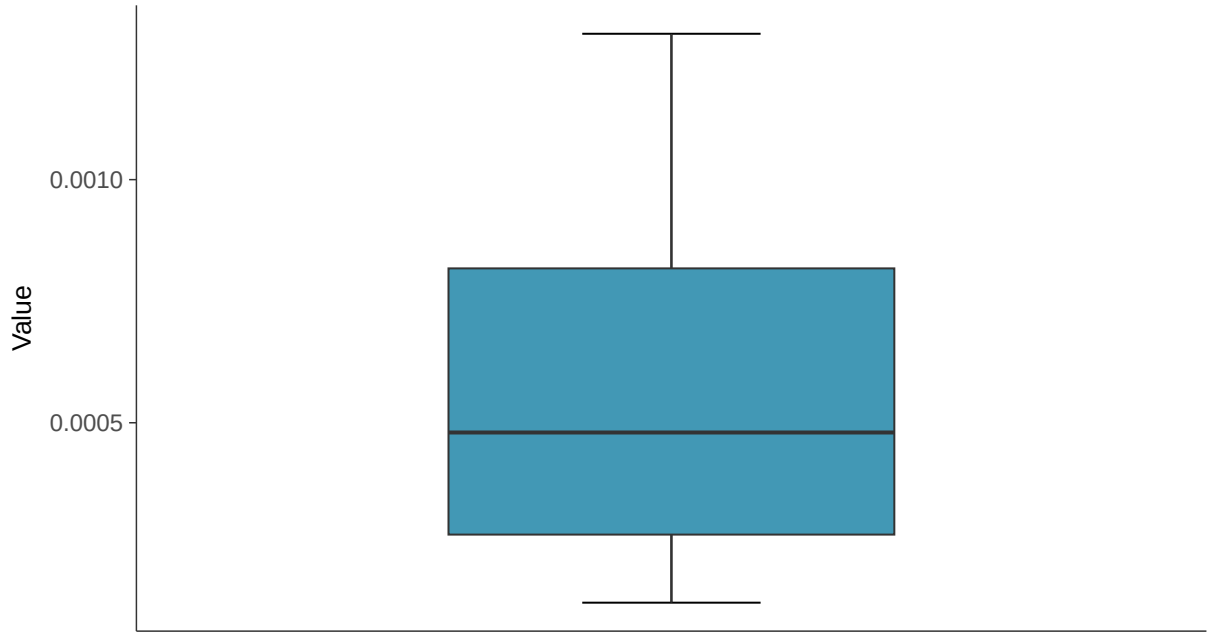
ID: 13_2_113





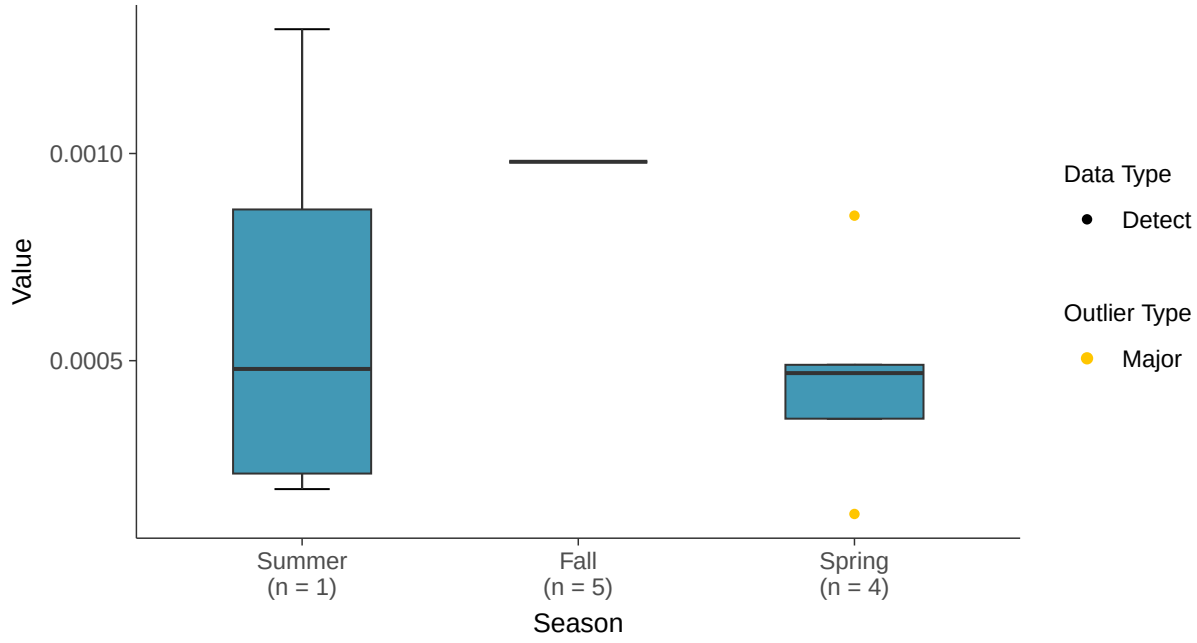
Boxplot

Cobalt, MW-14 (mg/l)



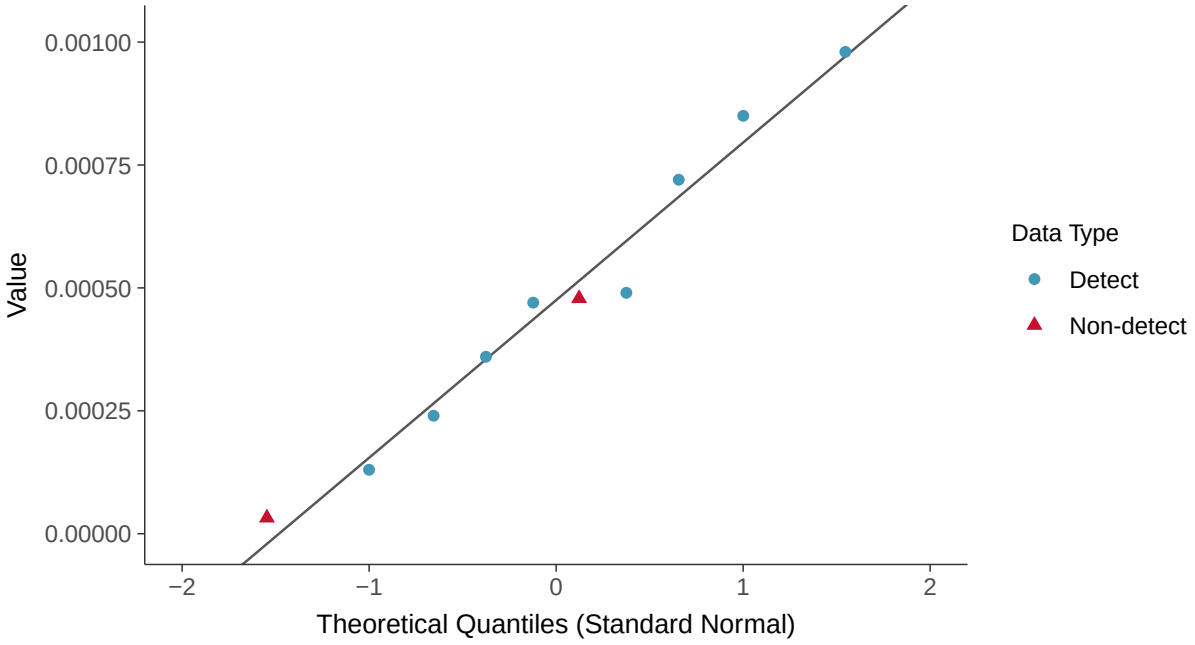
Boxplot by Season

Cobalt, MW-14 (mg/l)



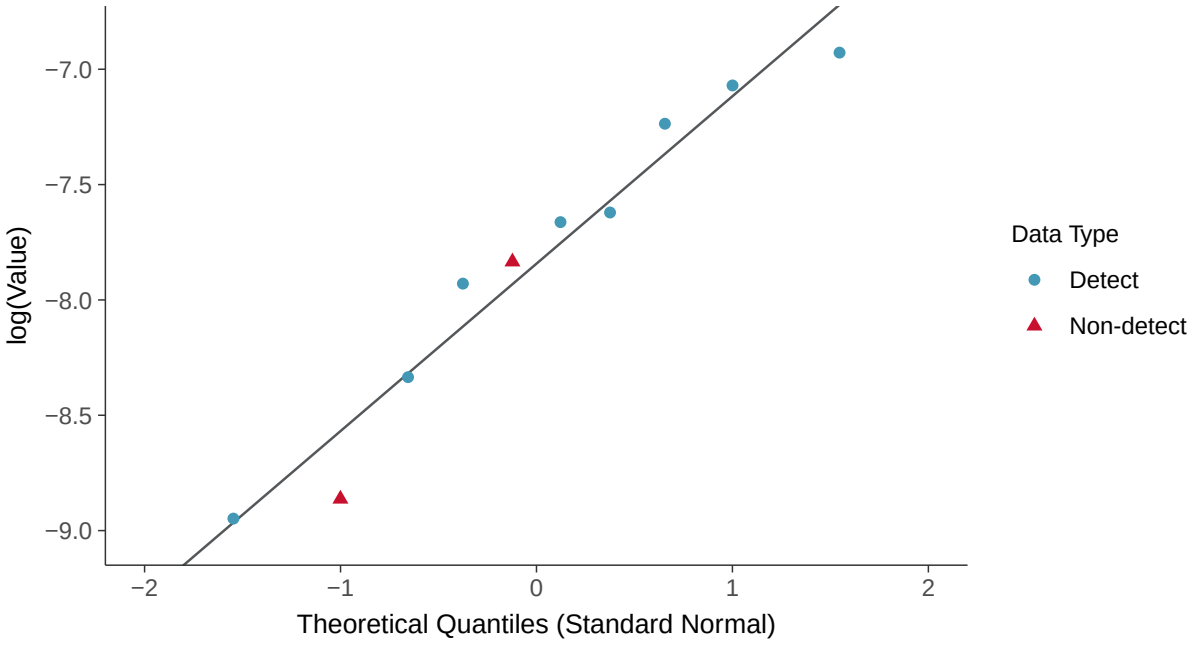
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-14 (mg/l)



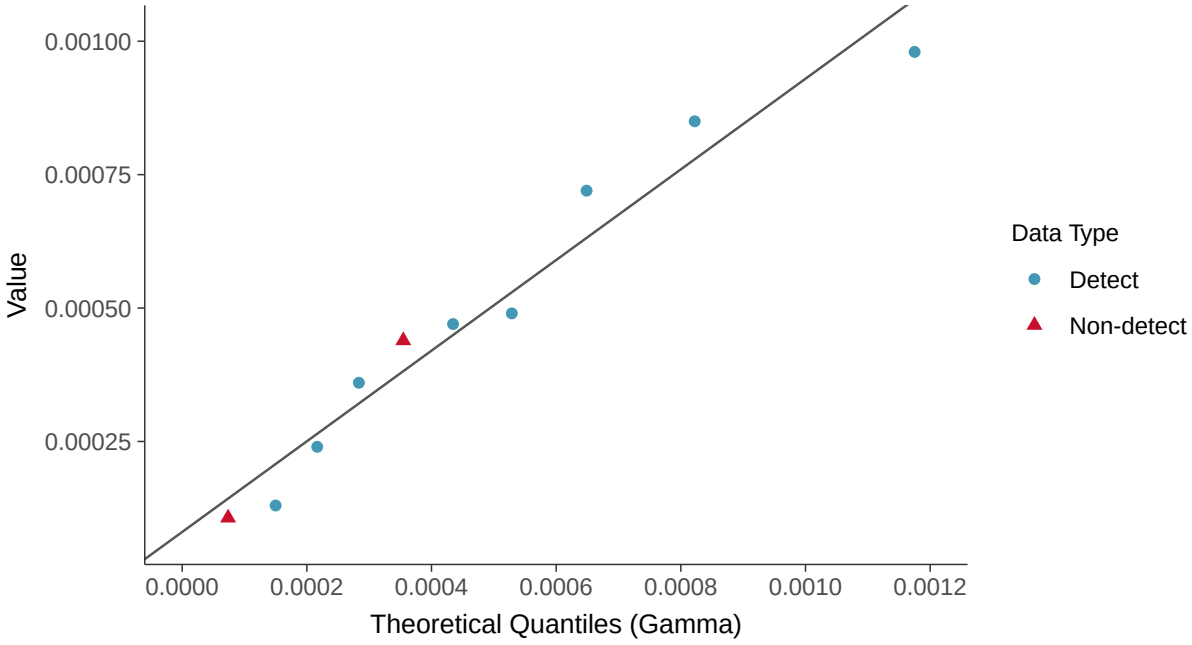
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-14 (mg/l)



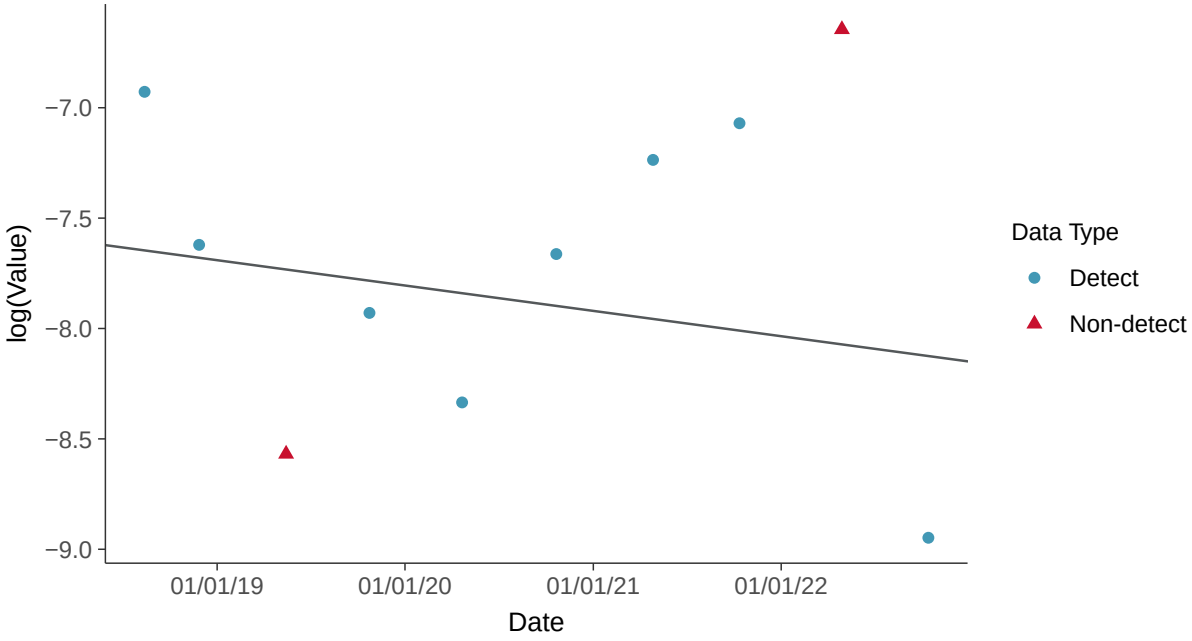
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-14 (mg/l)



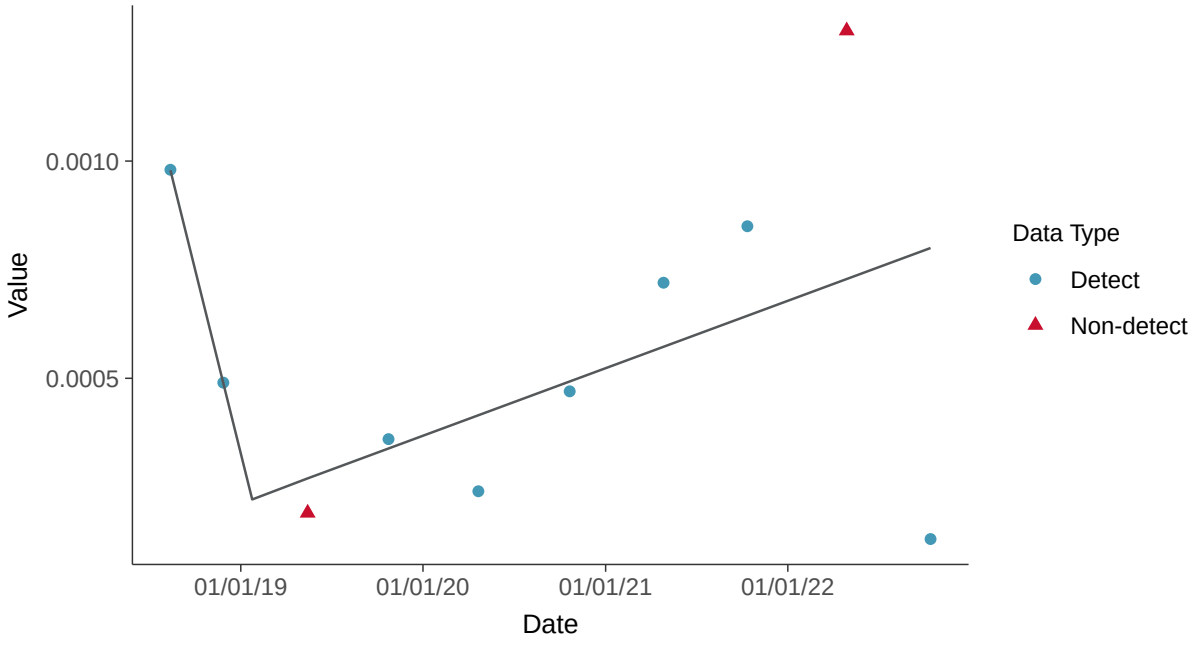
Trend Regression: Lognormal MLE

Cobalt, MW-14 (mg/l)



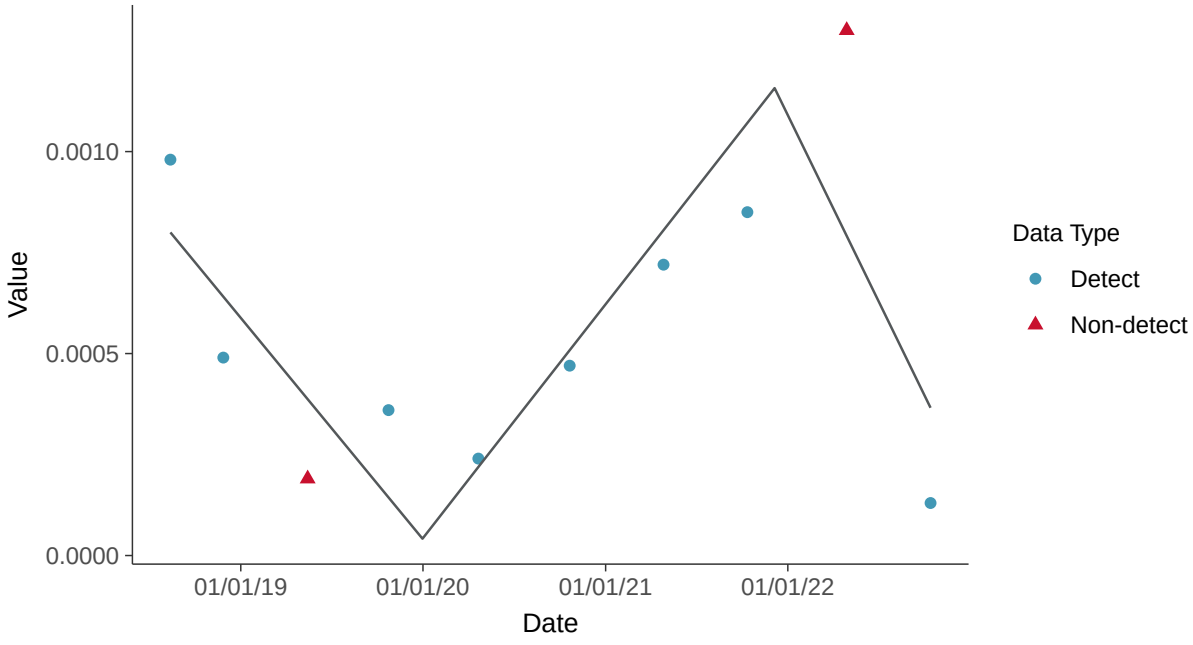
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-14 (mg/l)



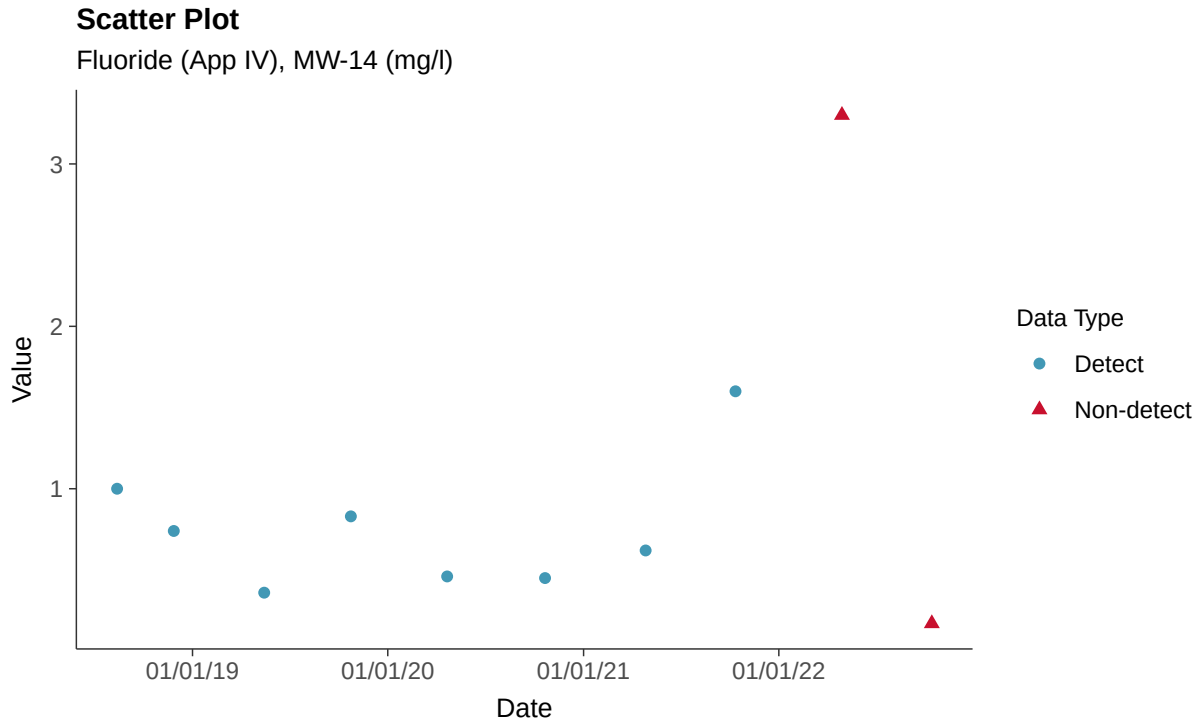
Trend Regression: Piecewise Linear-Linear-Linear

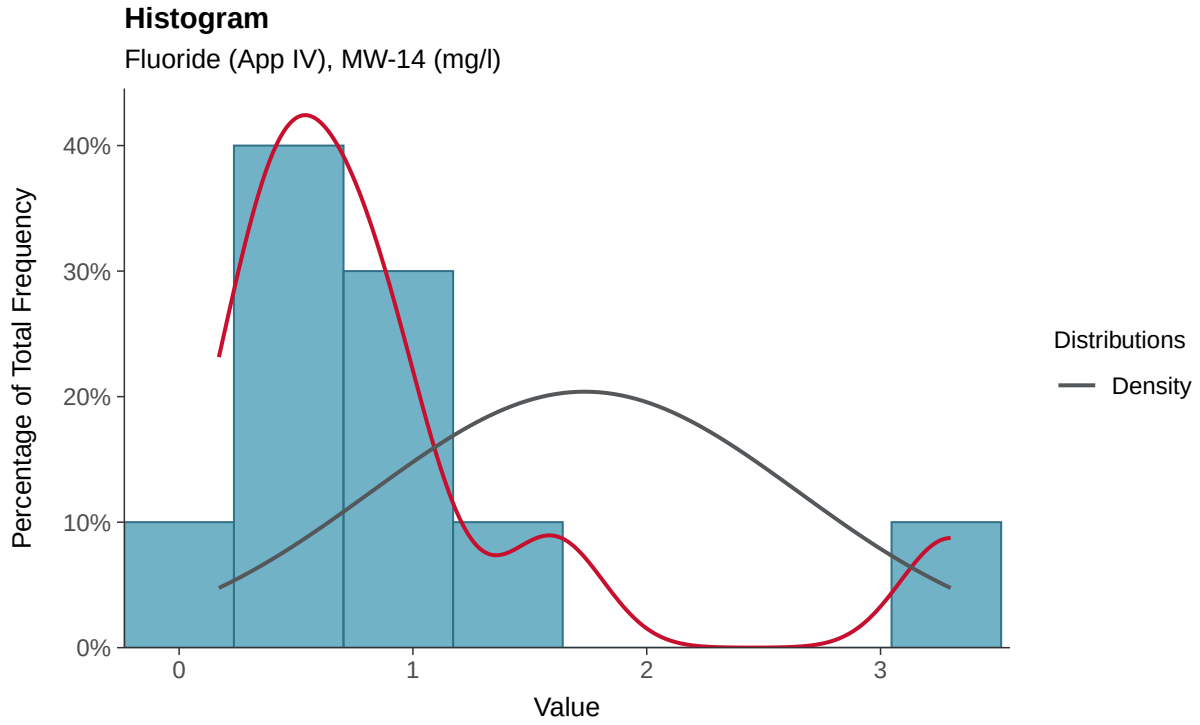
Cobalt, MW-14 (mg/l)



Appendix IV: Fluoride (App IV), MW-14

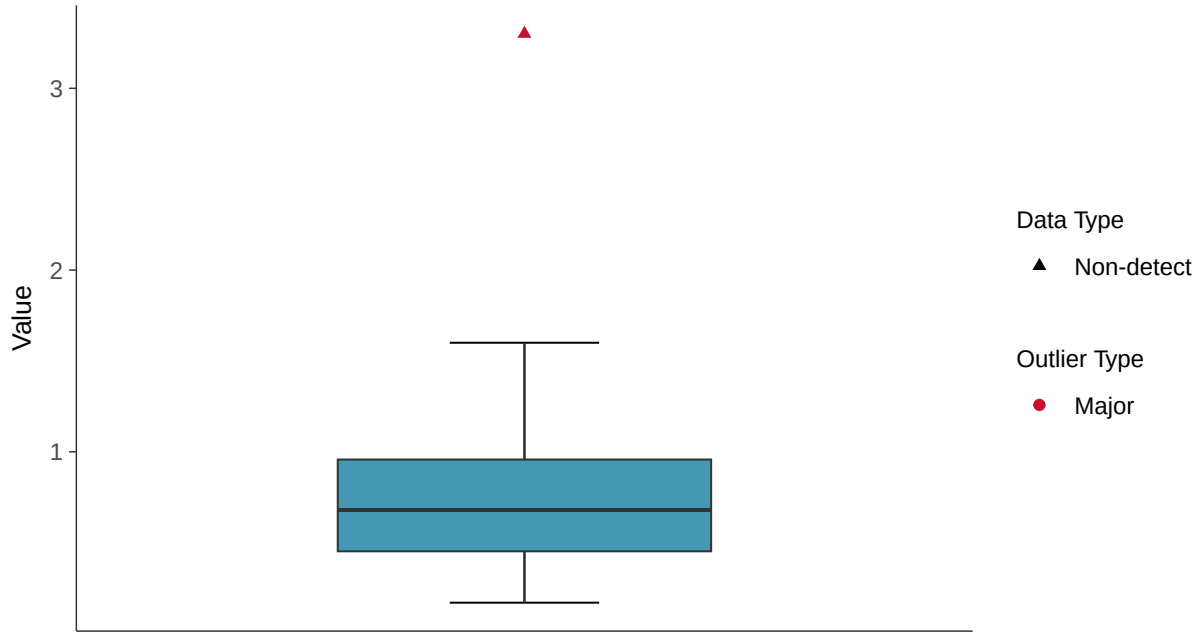
ID: 13_2_116





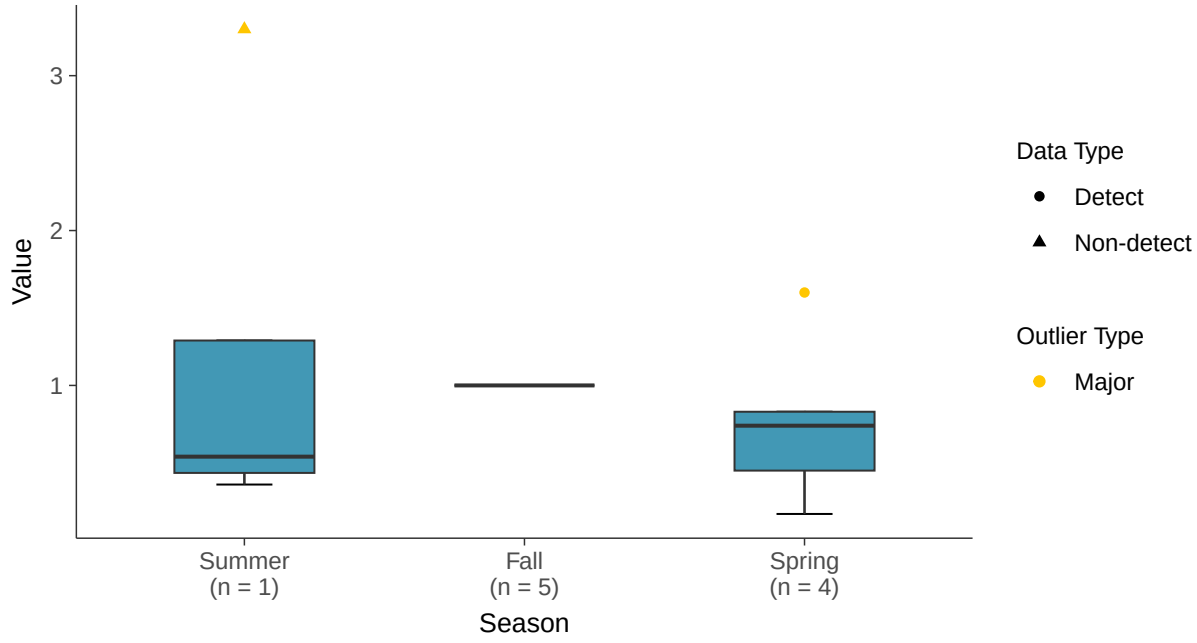
Boxplot

Fluoride (App IV), MW-14 (mg/l)



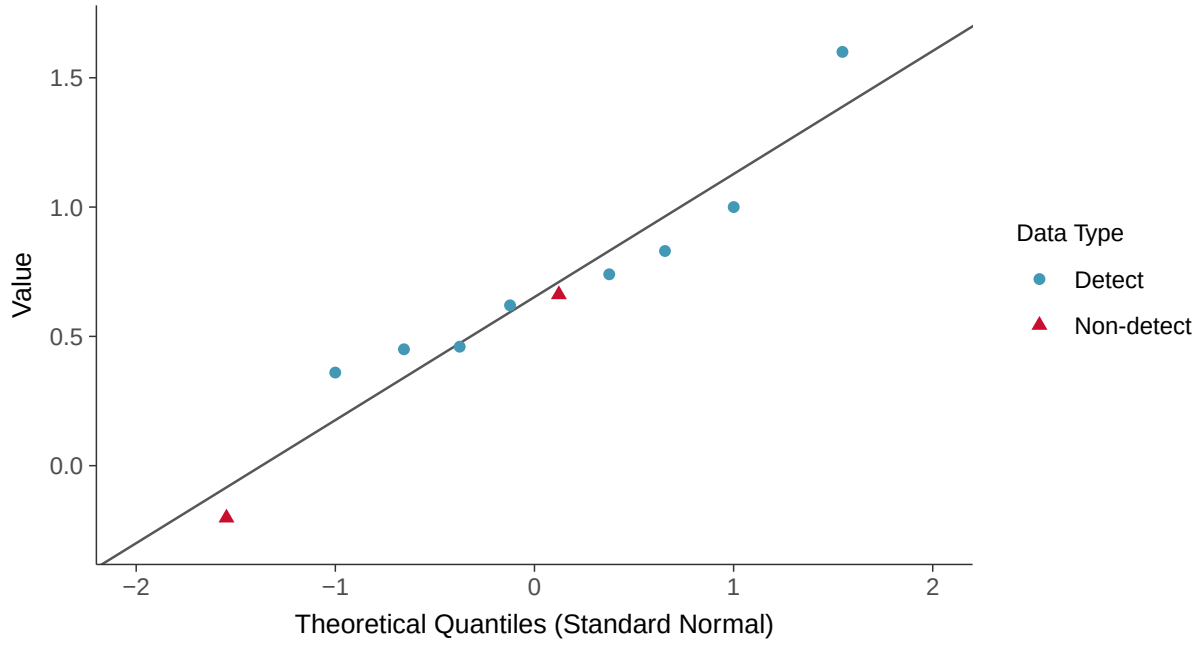
Boxplot by Season

Fluoride (App IV), MW-14 (mg/l)



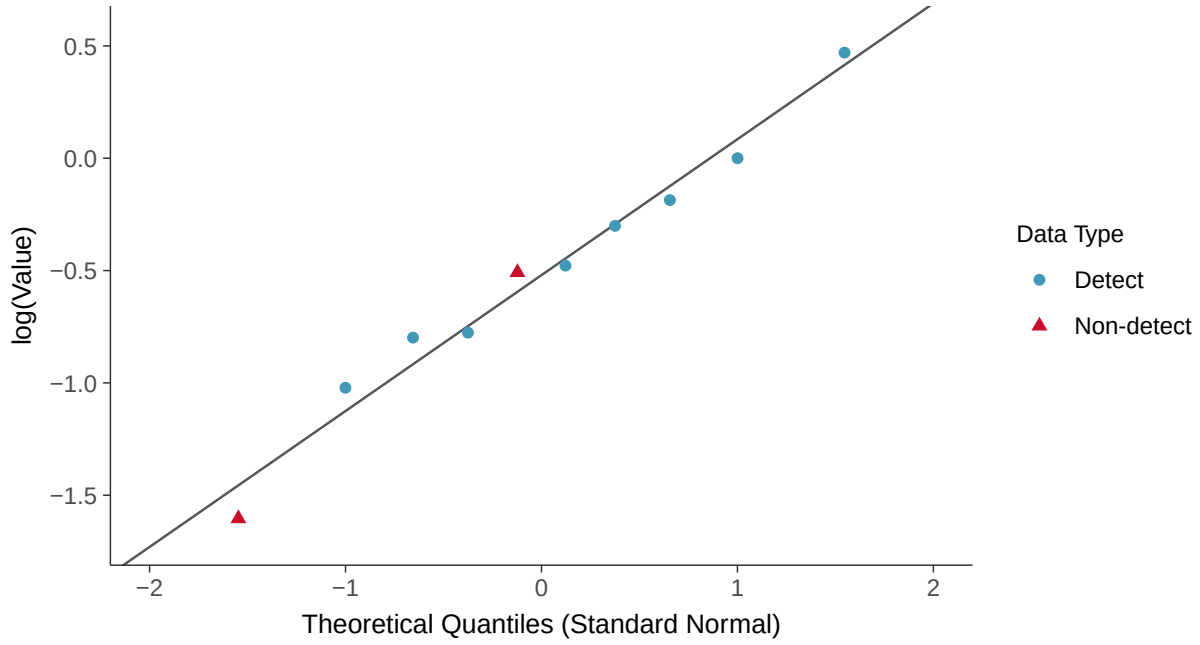
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-14 (mg/l)



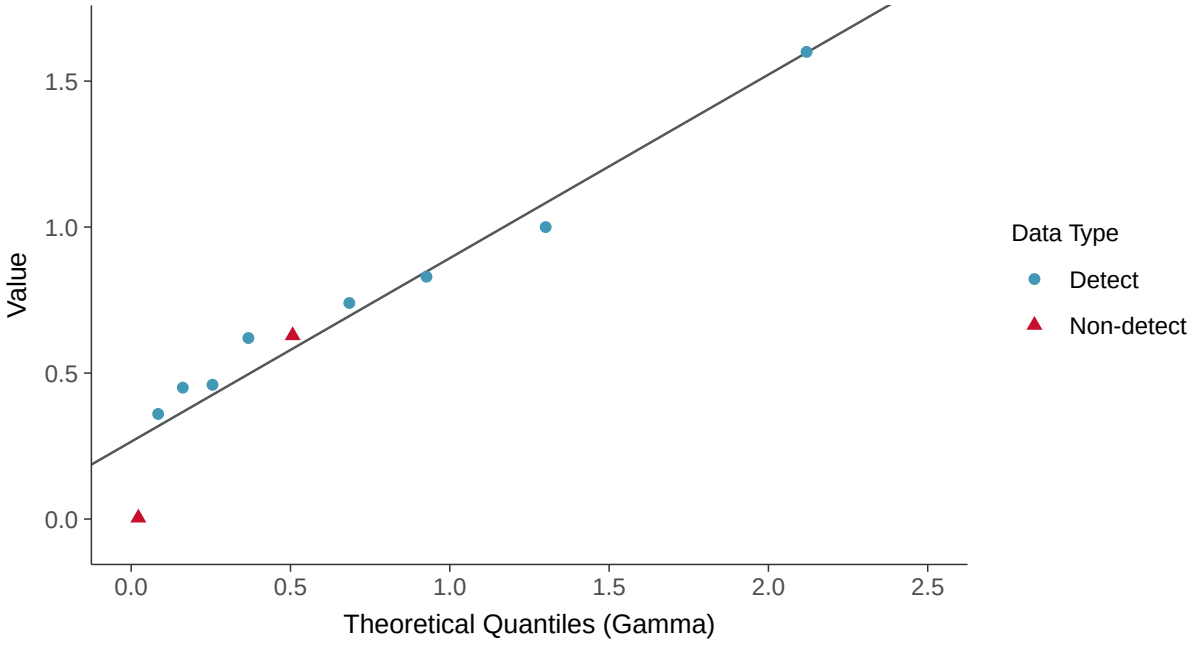
Lognormal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-14 (mg/l)



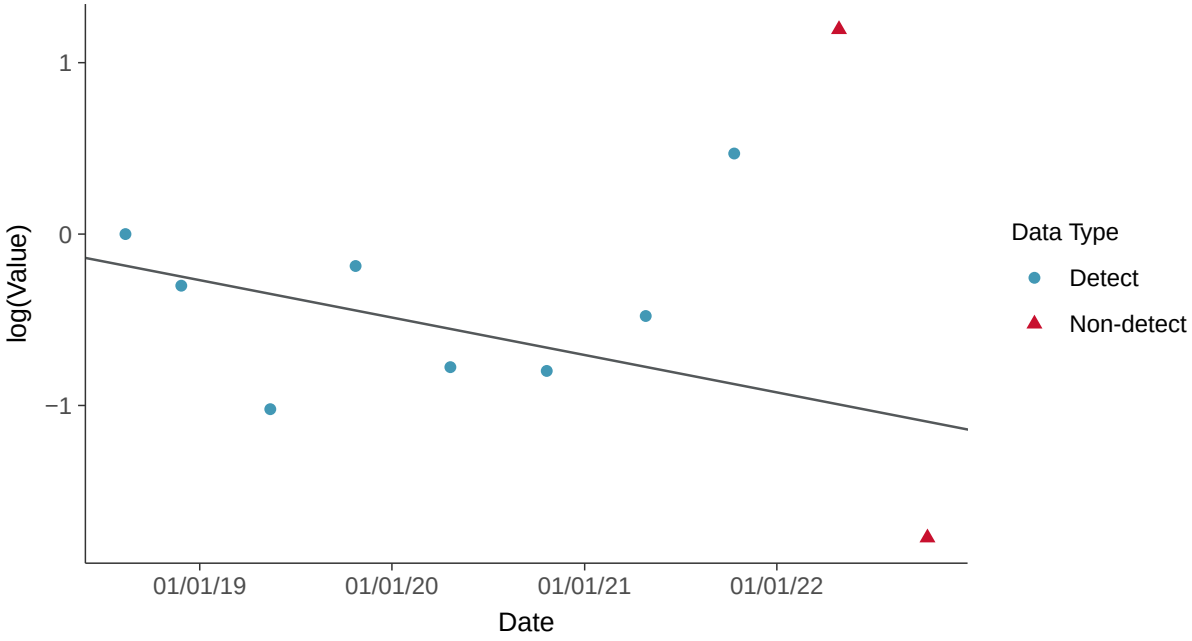
Gamma Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-14 (mg/l)



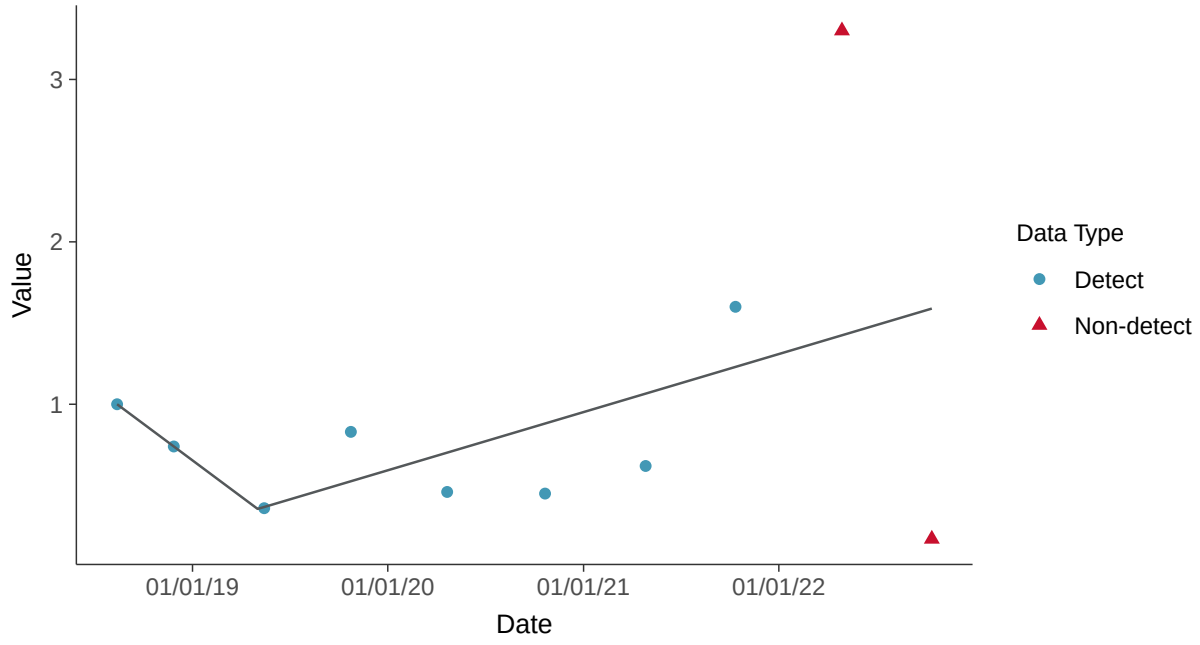
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-14 (mg/l)



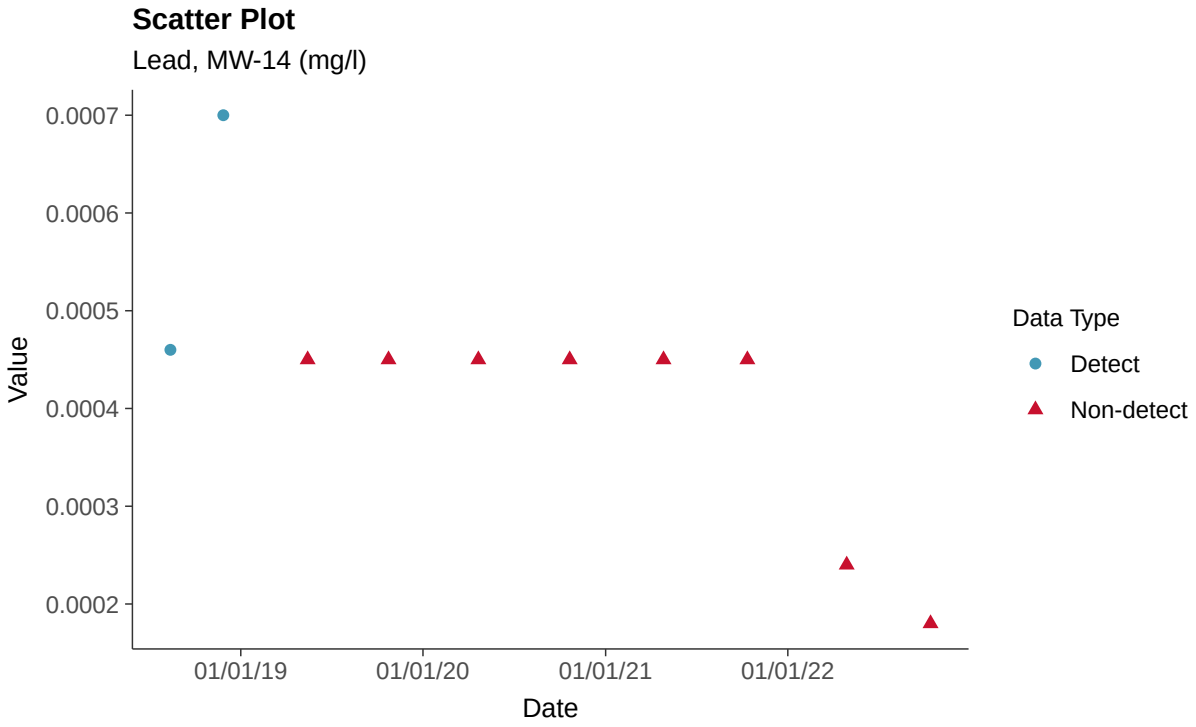
Trend Regression: Piecewise Linear-Linear

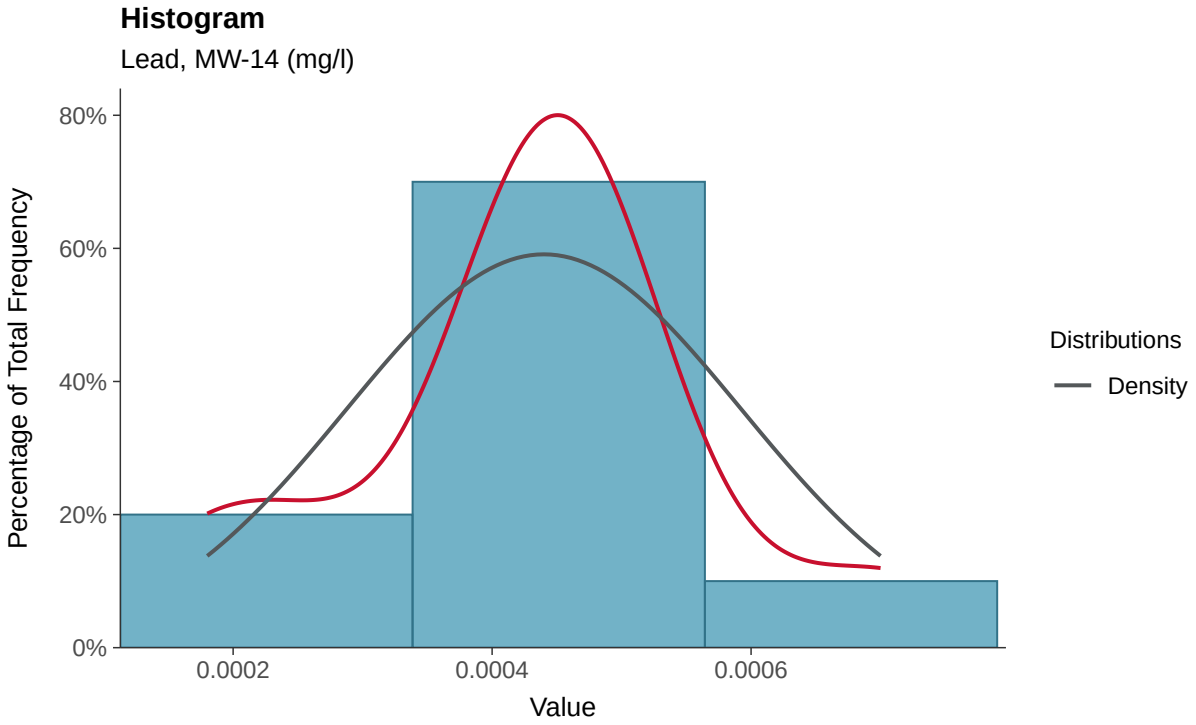
Fluoride (App IV), MW-14 (mg/l)



Appendix IV: Lead, MW-14

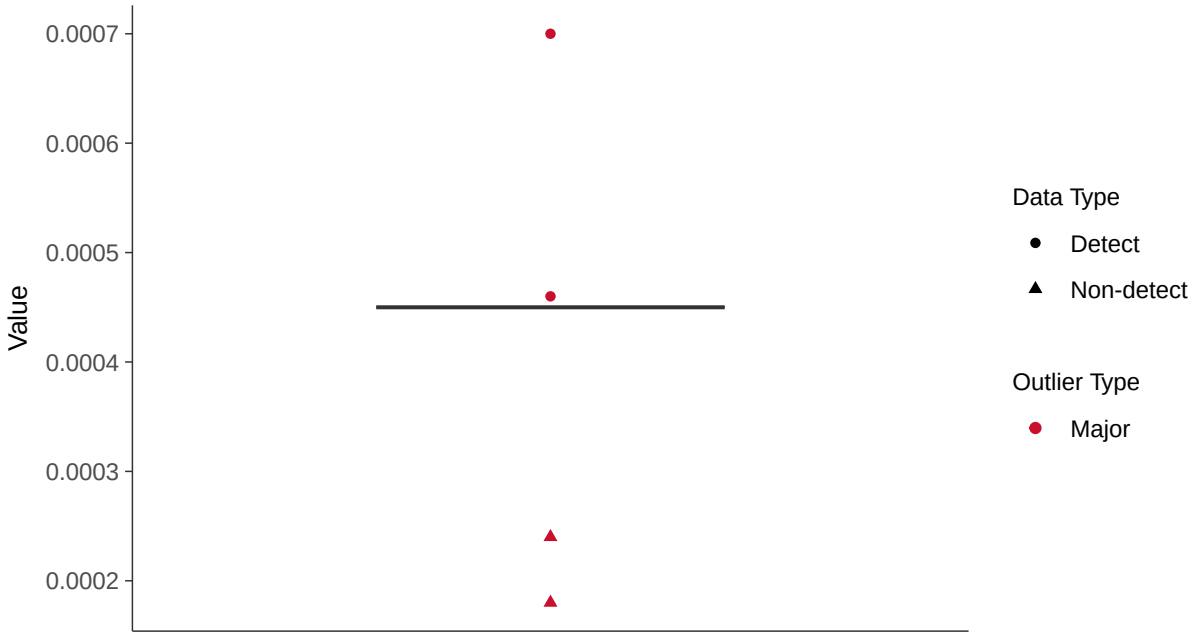
ID: 13_2_117





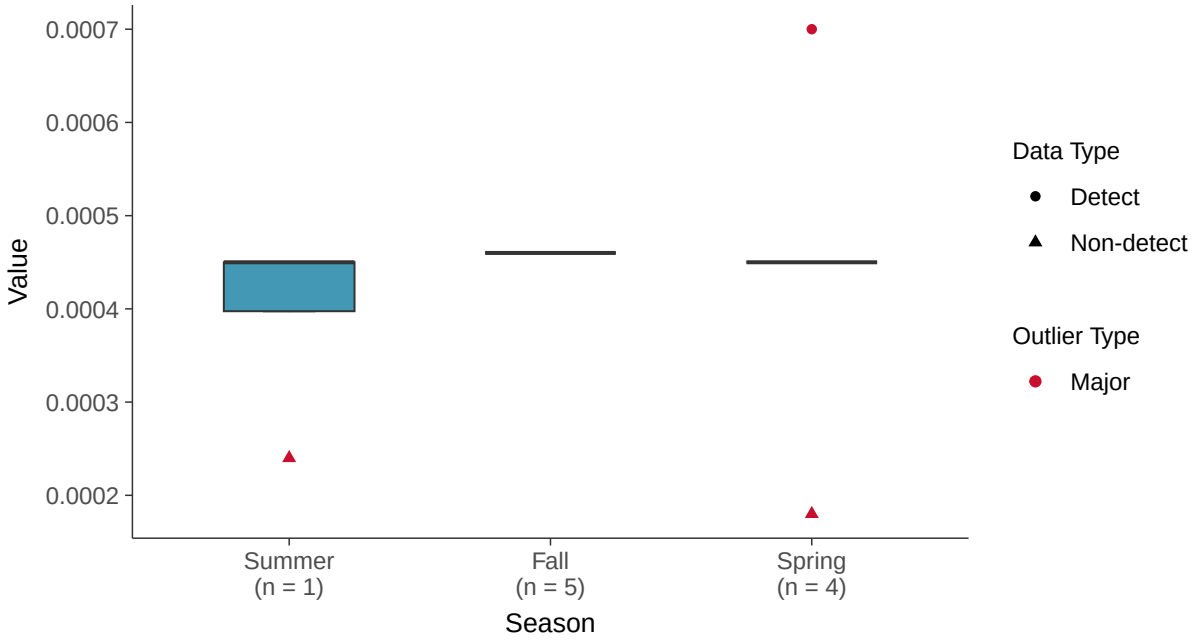
Boxplot

Lead, MW-14 (mg/l)



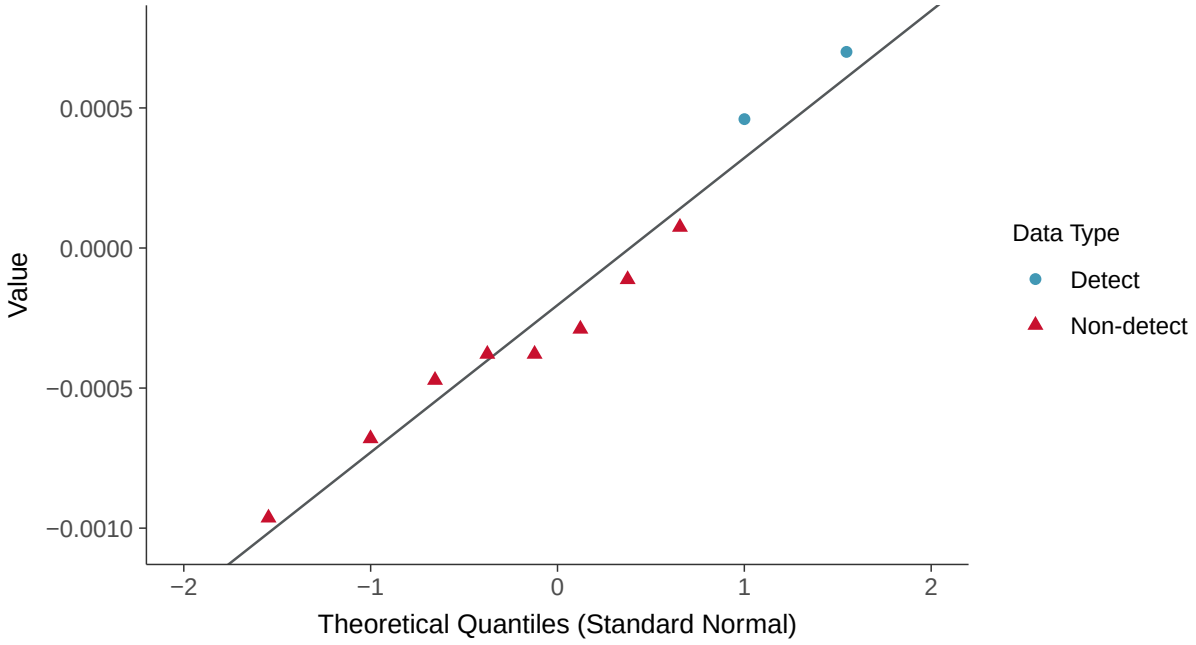
Boxplot by Season

Lead, MW-14 (mg/l)



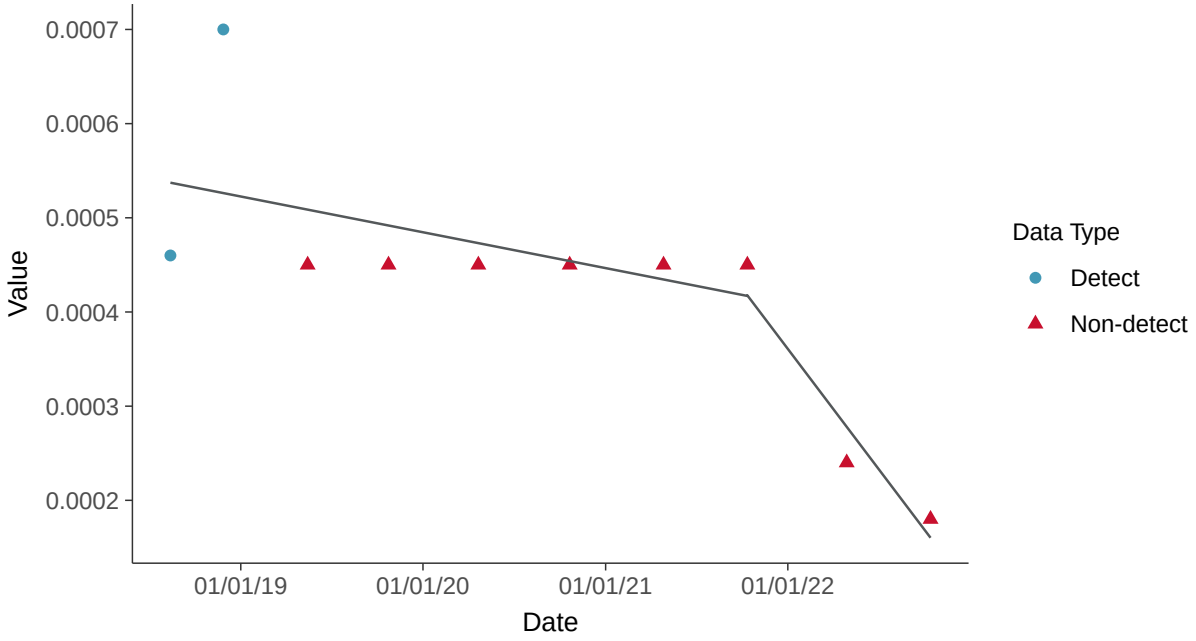
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-14 (mg/l)



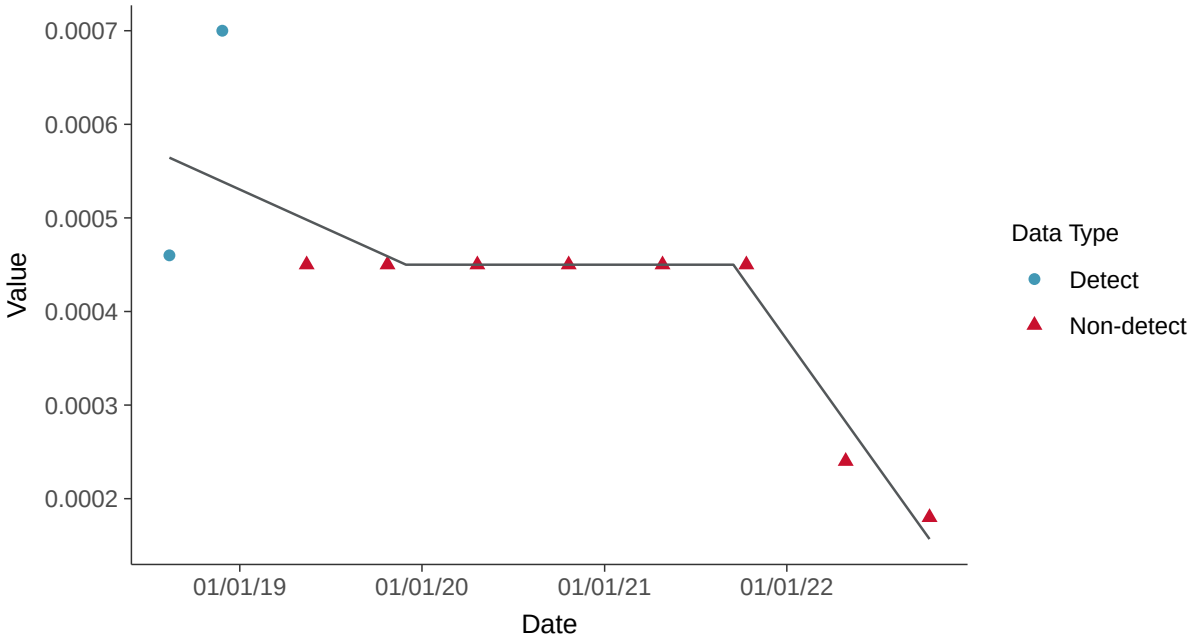
Trend Regression: Piecewise Linear-Linear

Lead, MW-14 (mg/l)



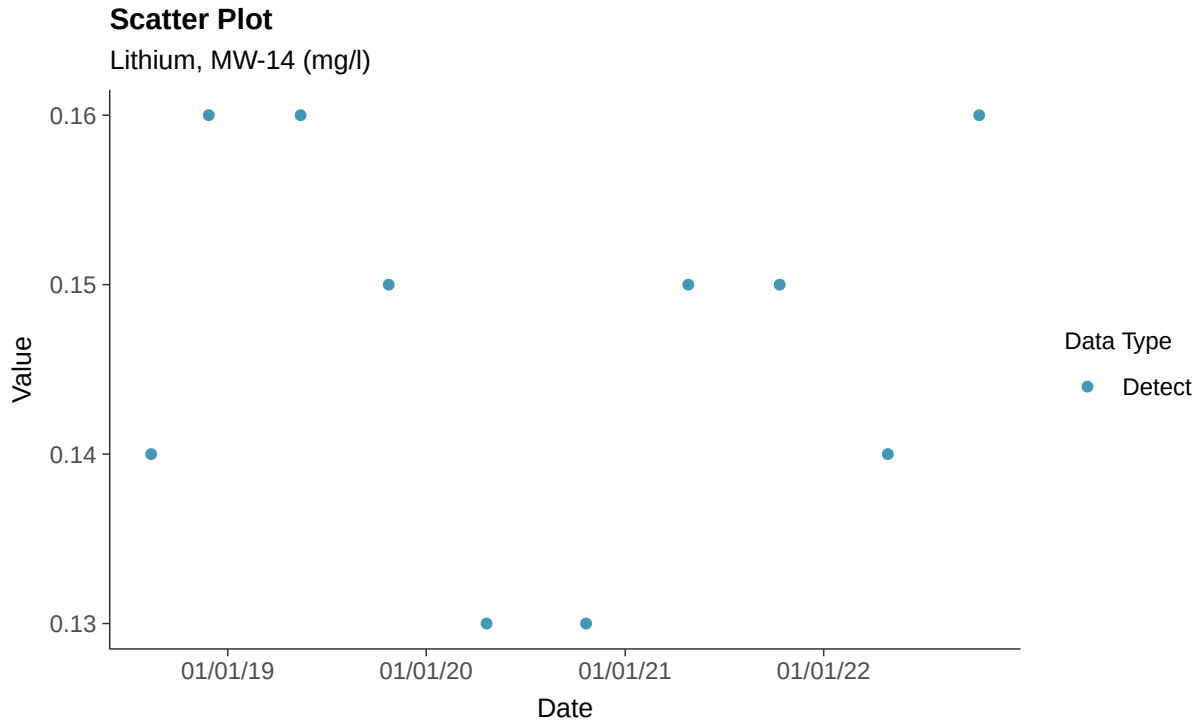
Trend Regression: Piecewise Linear-Linear-Linear

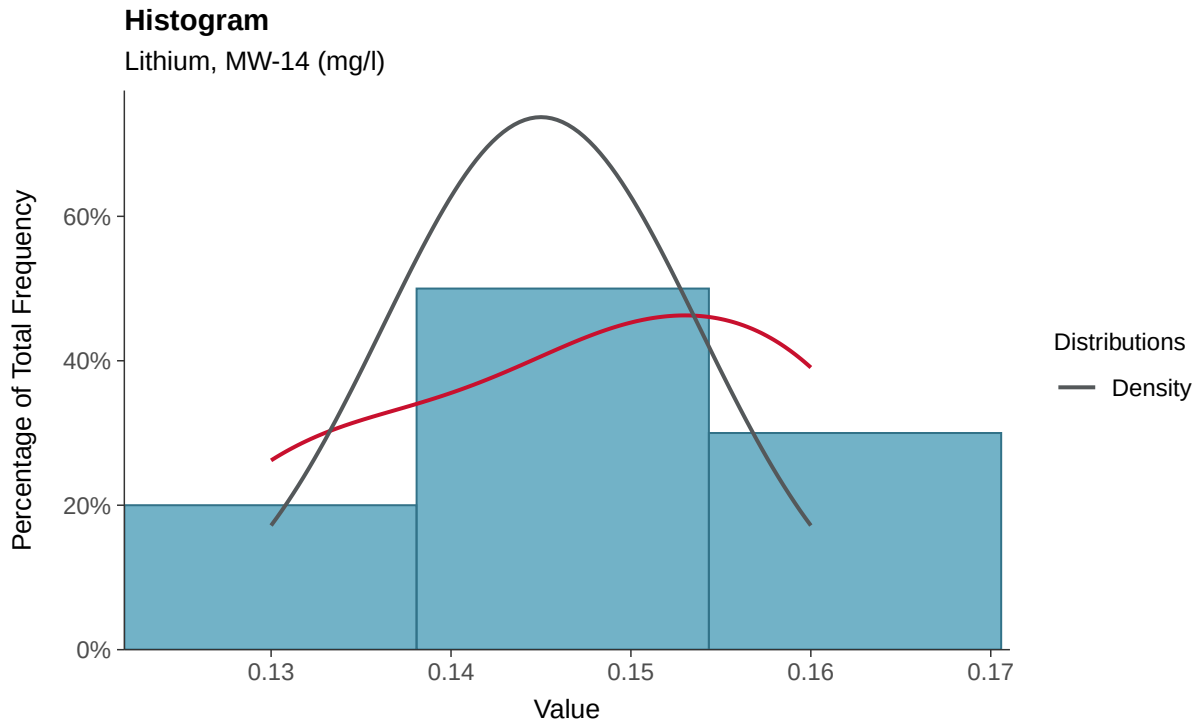
Lead, MW-14 (mg/l)



Appendix IV: Lithium, MW-14

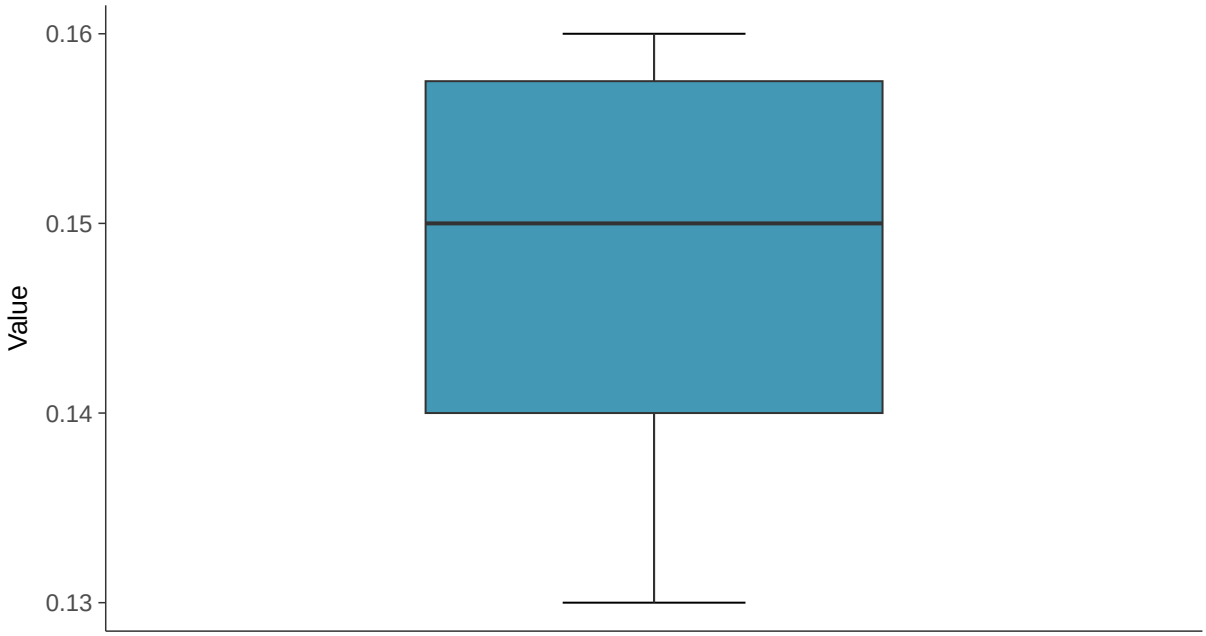
ID: 13_2_118





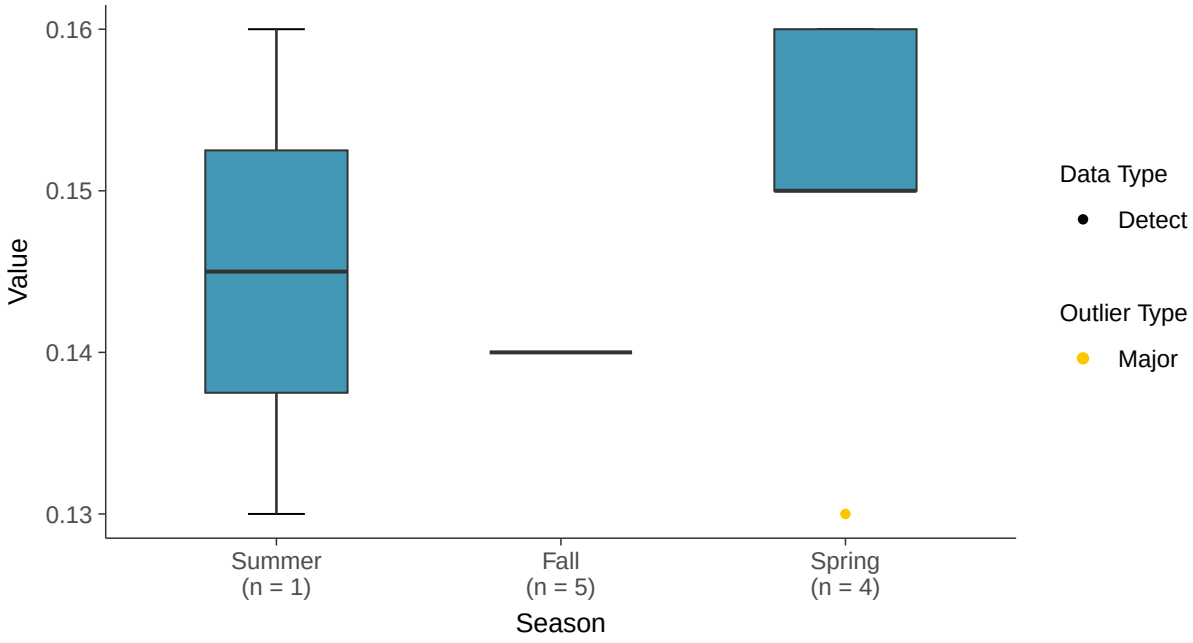
Boxplot

Lithium, MW-14 (mg/l)



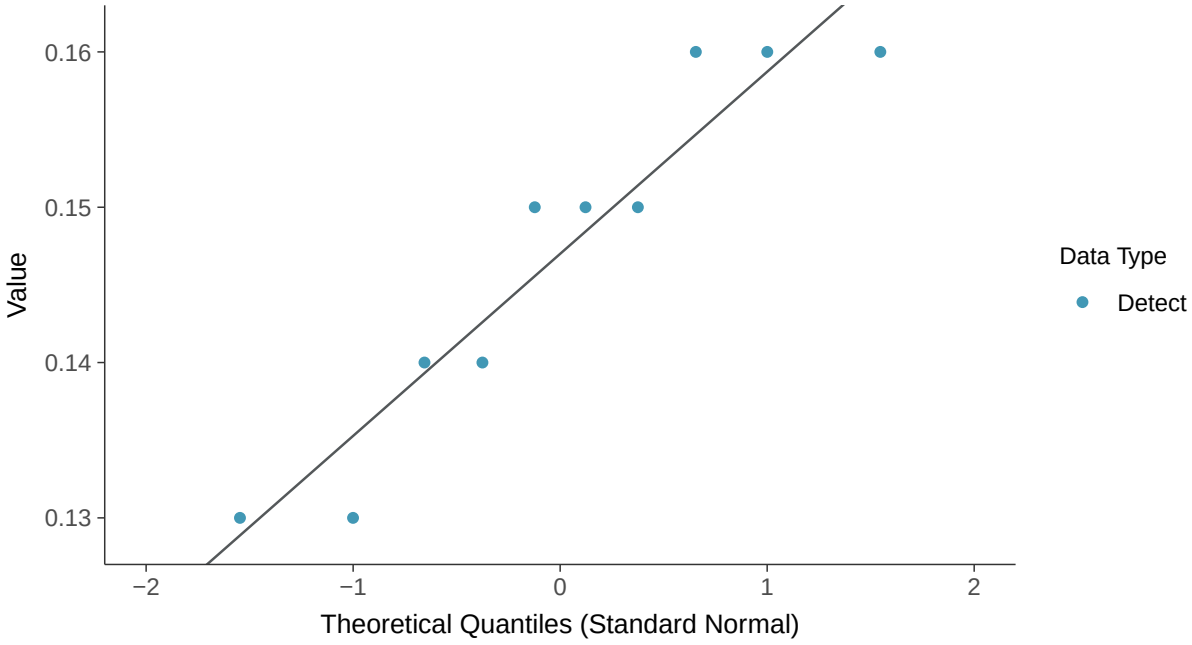
Boxplot by Season

Lithium, MW-14 (mg/l)



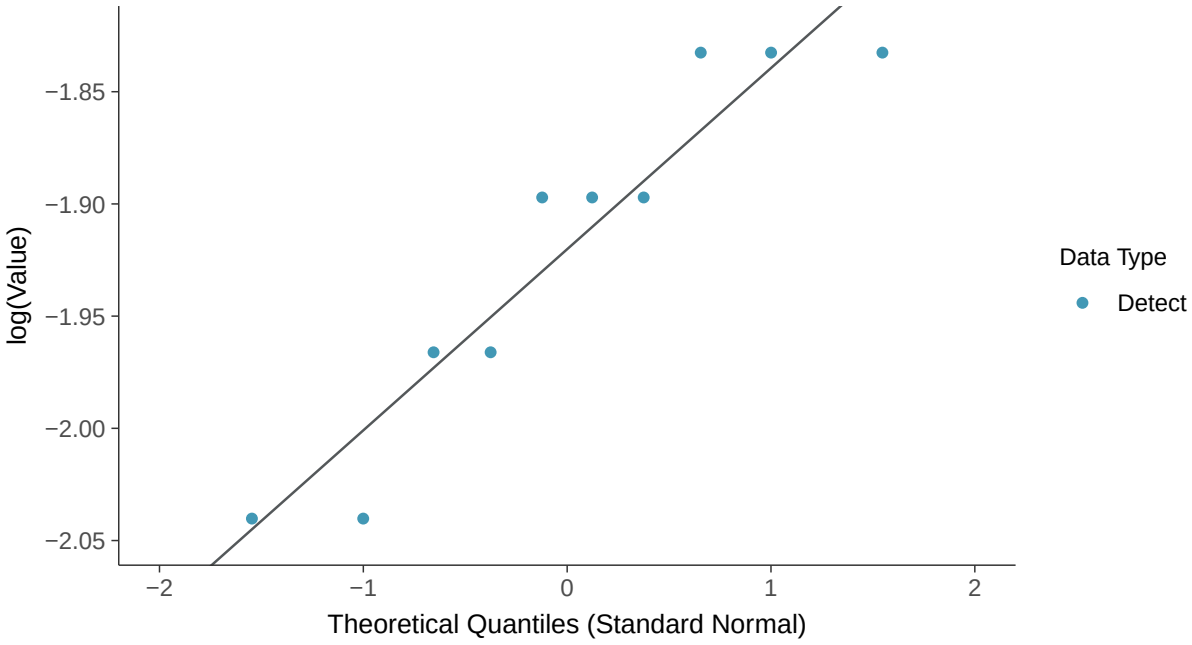
Normal Q-Q plot

Lithium, MW-14 (mg/l)



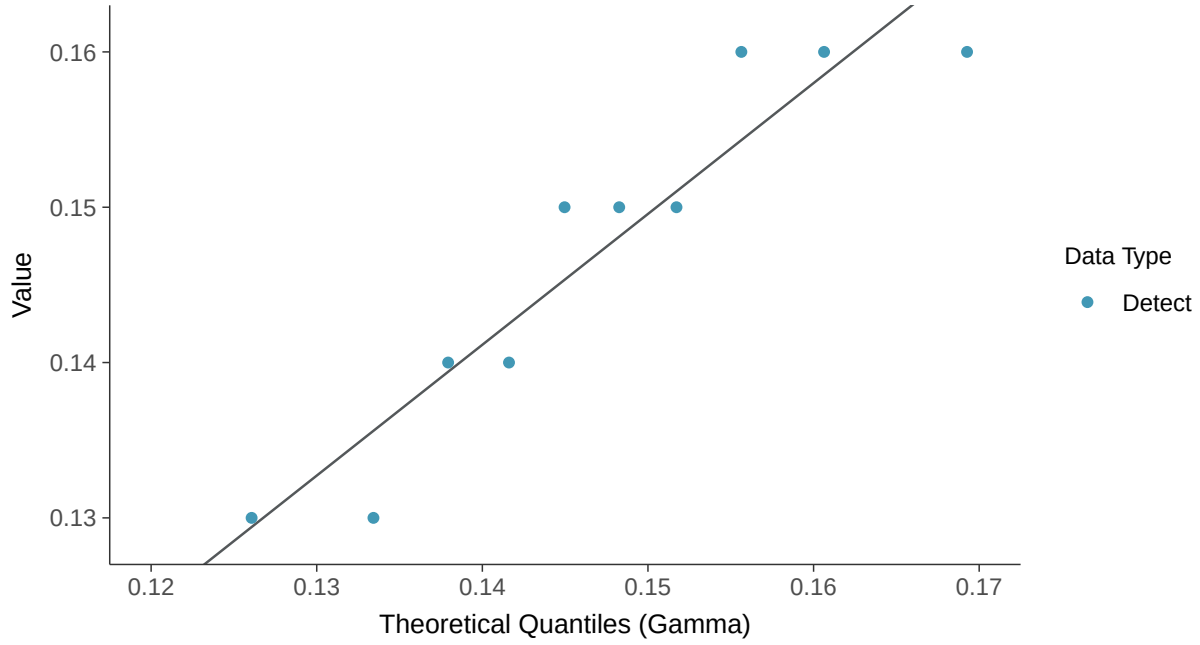
Lognormal Q-Q plot

Lithium, MW-14 (mg/l)



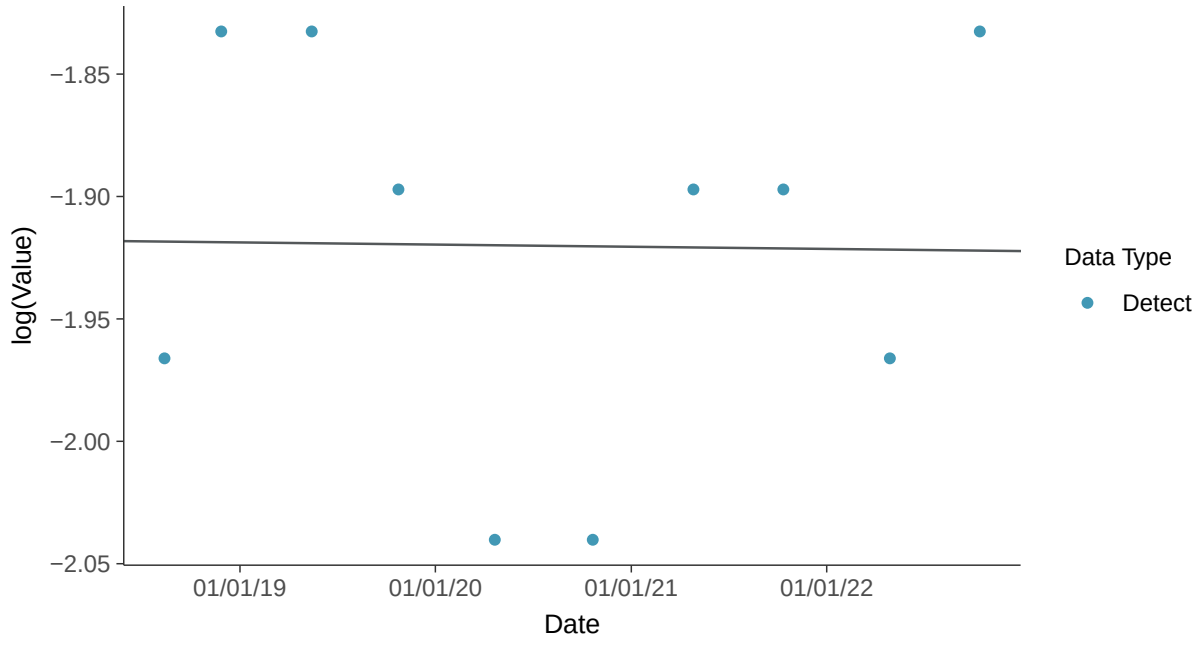
Gamma Q-Q plot

Lithium, MW-14 (mg/l)



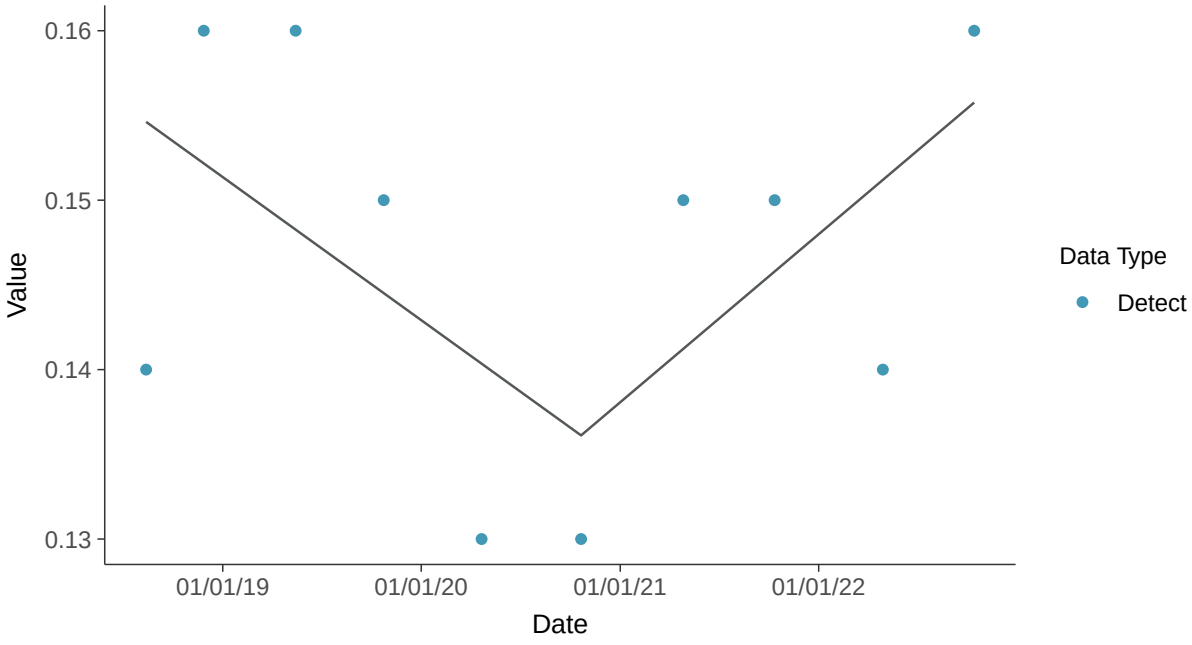
Trend Regression: Lognormal MLE

Lithium, MW-14 (mg/l)



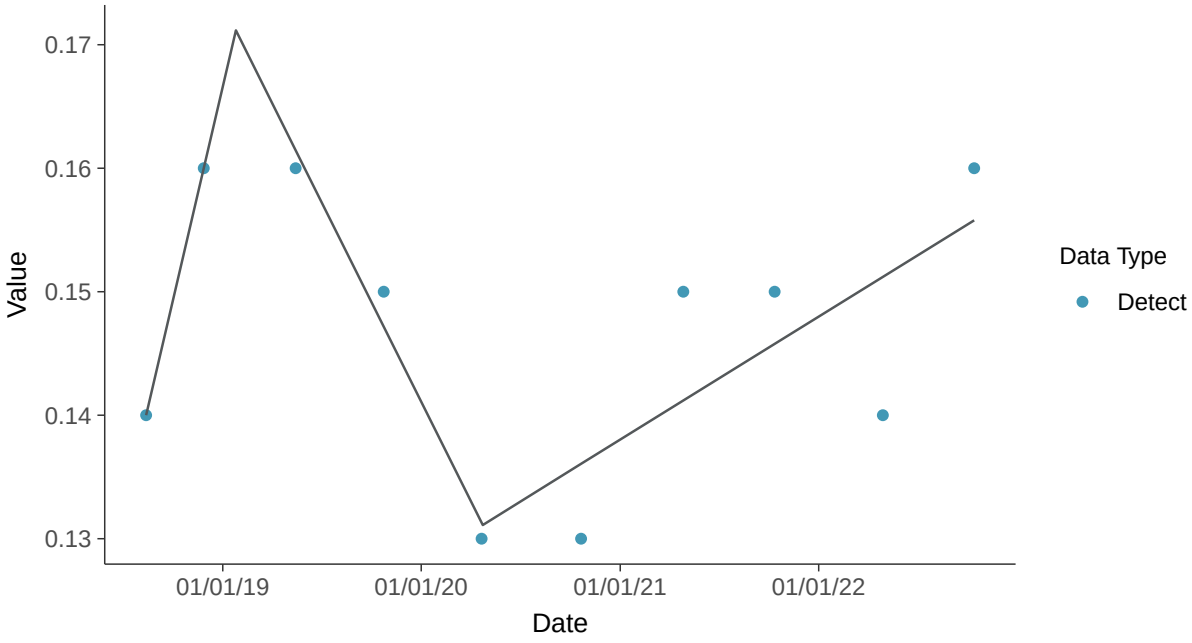
Trend Regression: Piecewise Linear-Linear

Lithium, MW-14 (mg/l)



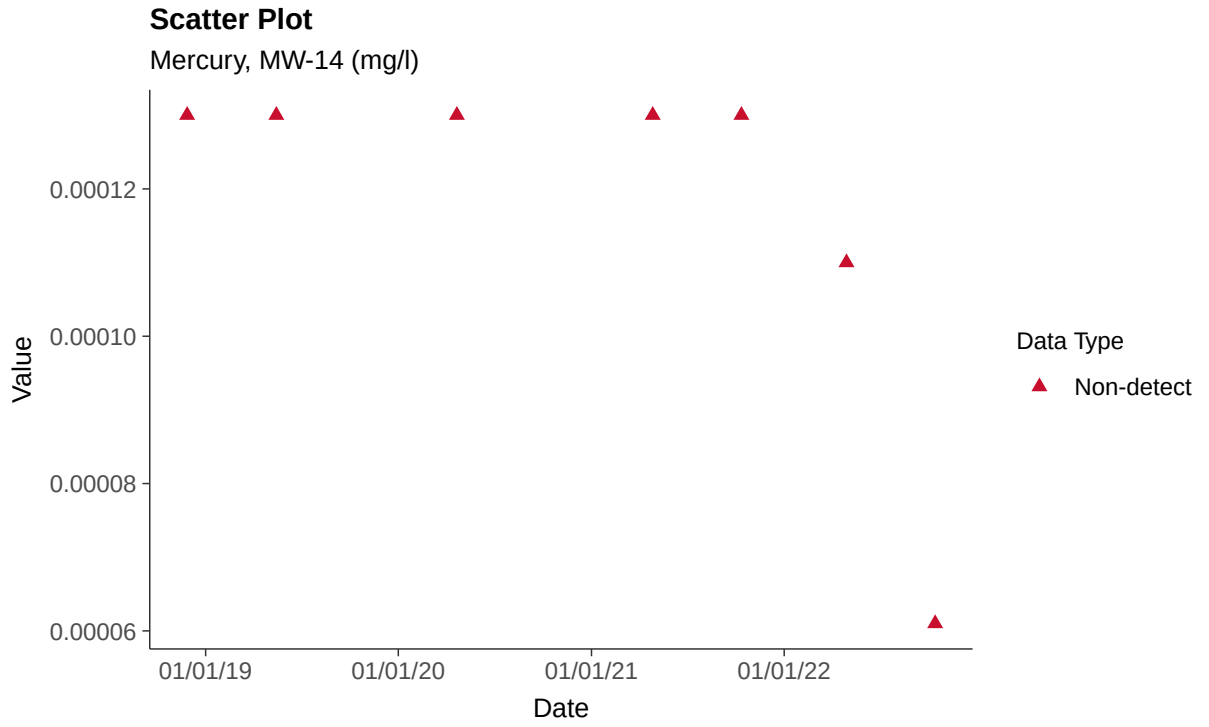
Trend Regression: Piecewise Linear-Linear-Linear

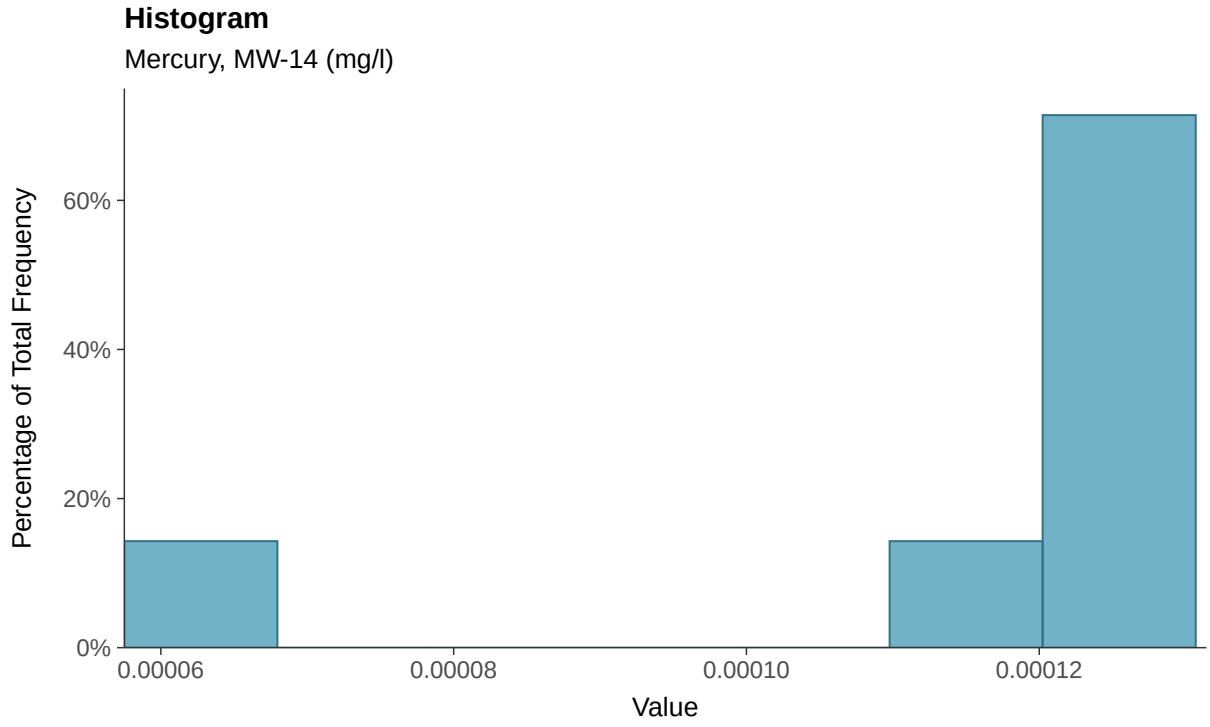
Lithium, MW-14 (mg/l)



Appendix IV: Mercury, MW-14

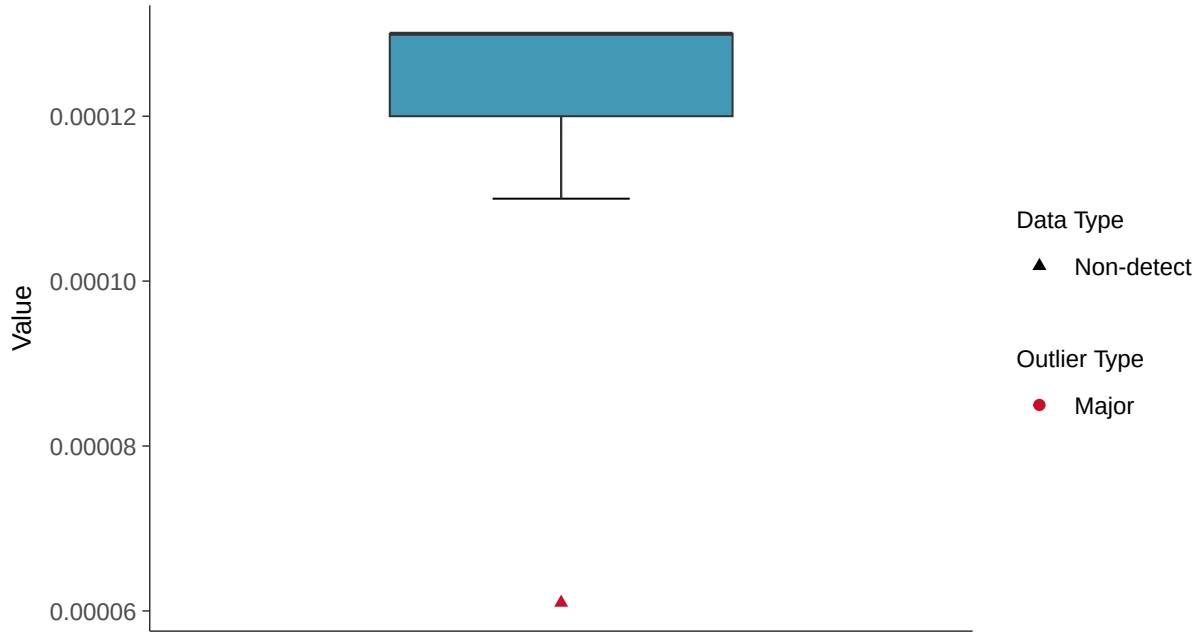
ID: 13_2_120





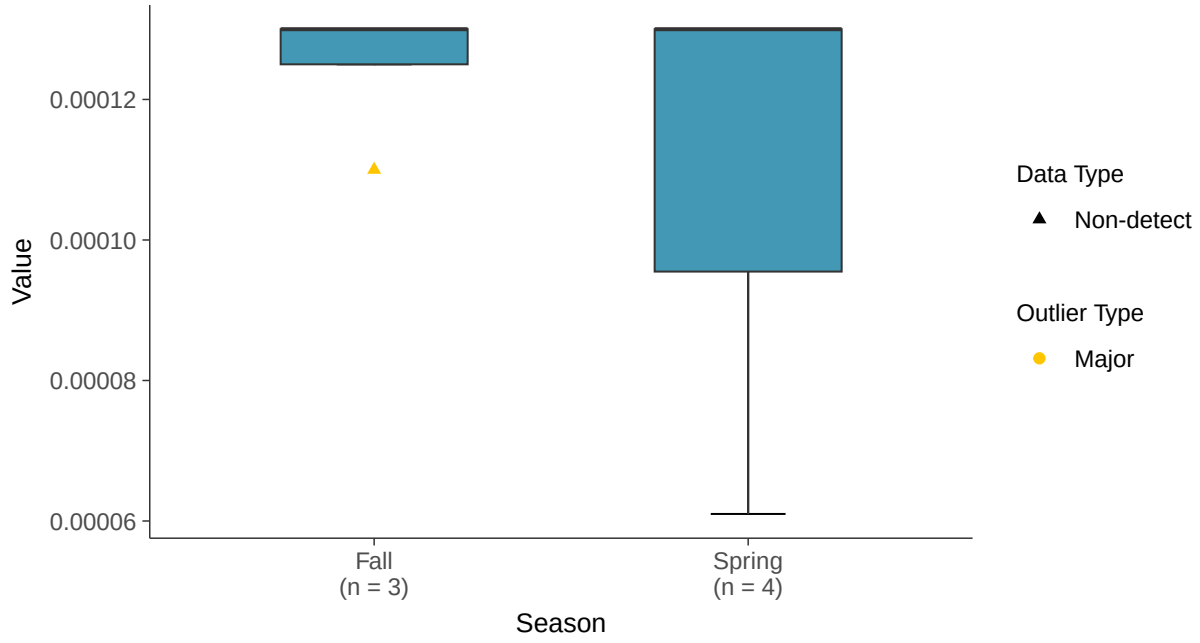
Boxplot

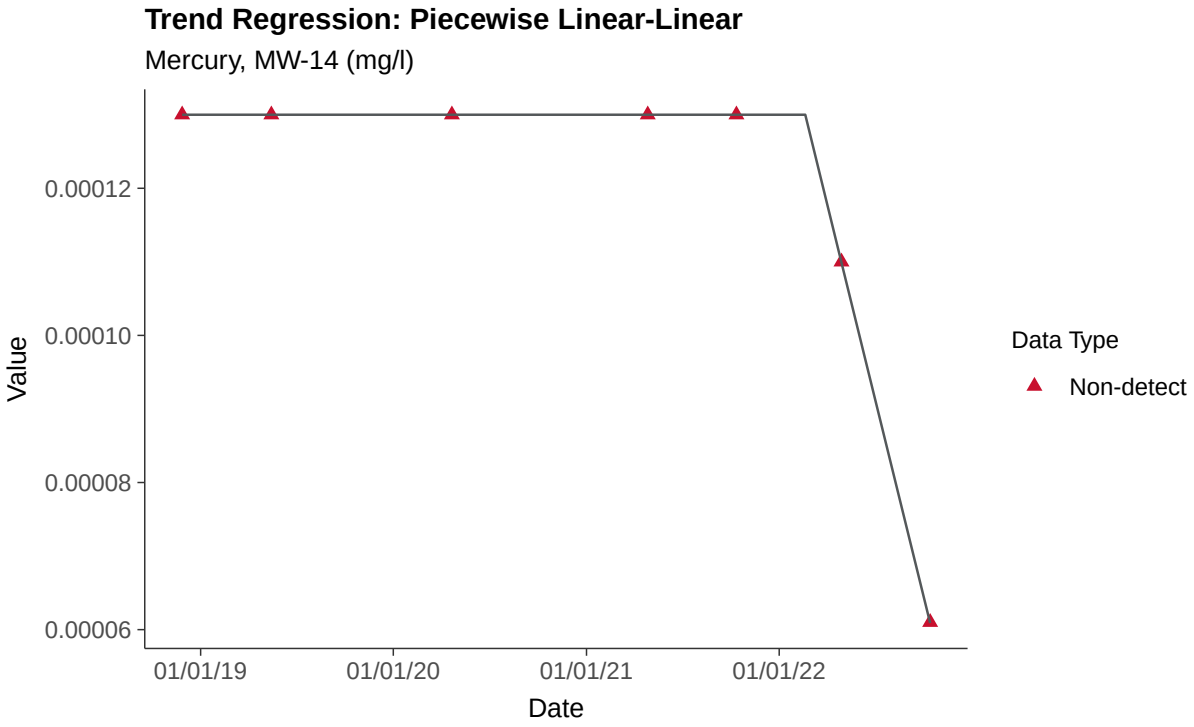
Mercury, MW-14 (mg/l)



Boxplot by Season

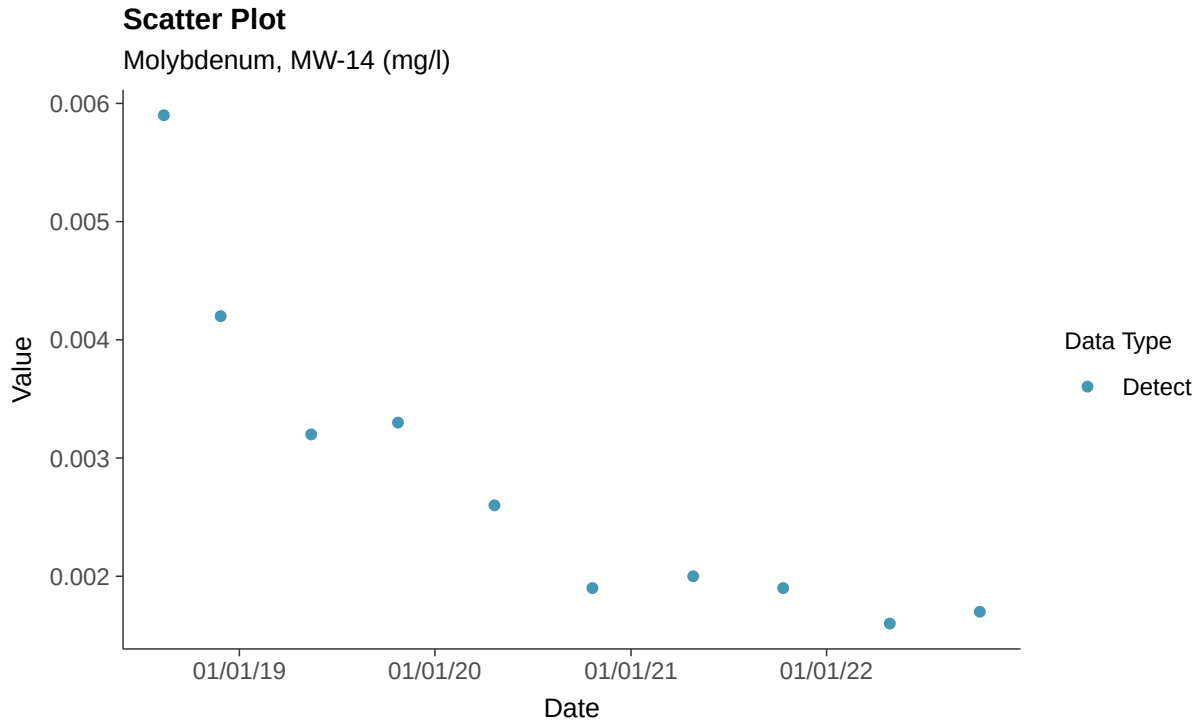
Mercury, MW-14 (mg/l)

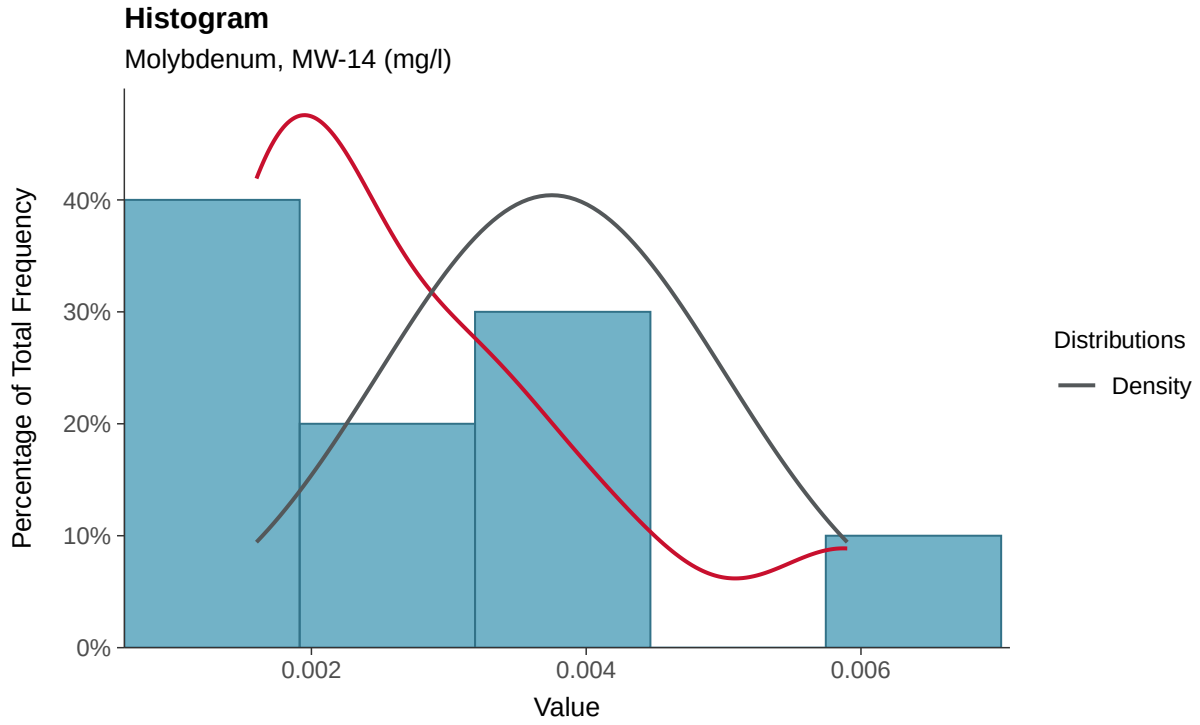



Trend Regression: Piecewise Linear-Linear
Mercury, MW-14 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-14

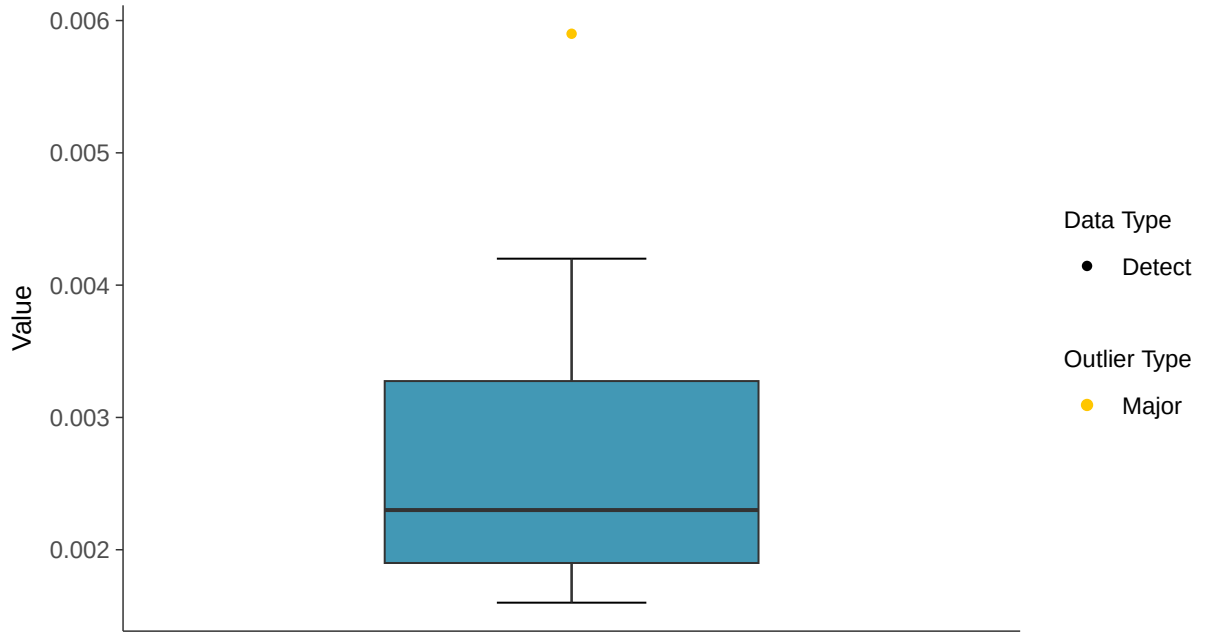
ID: 13_2_121





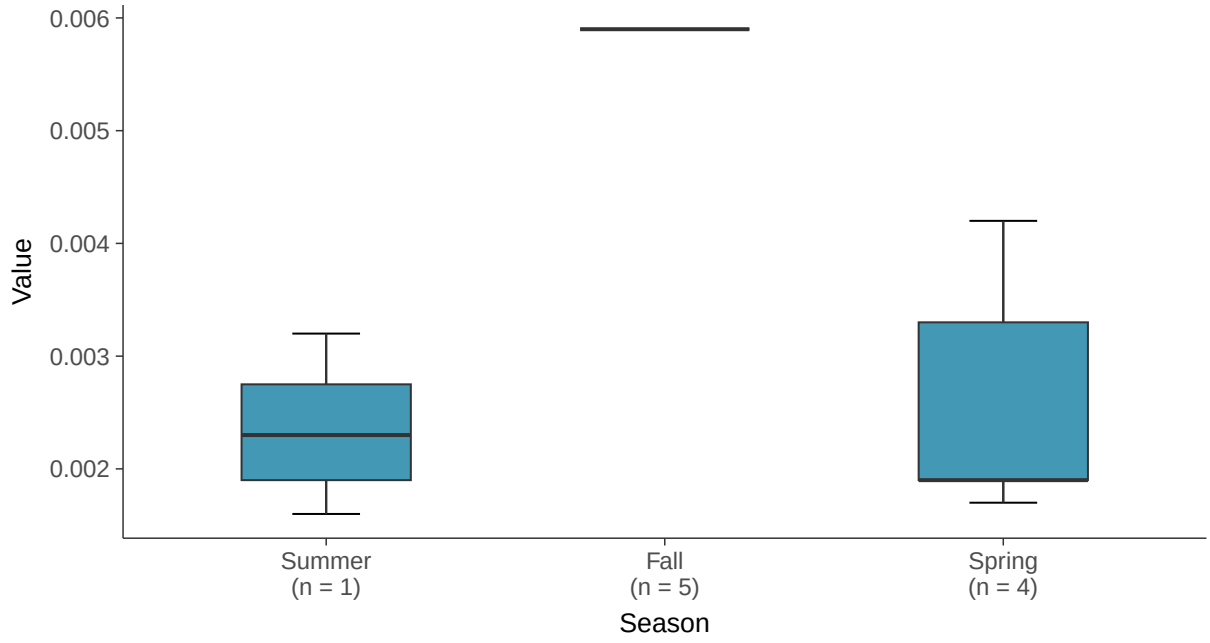
Boxplot

Molybdenum, MW-14 (mg/l)



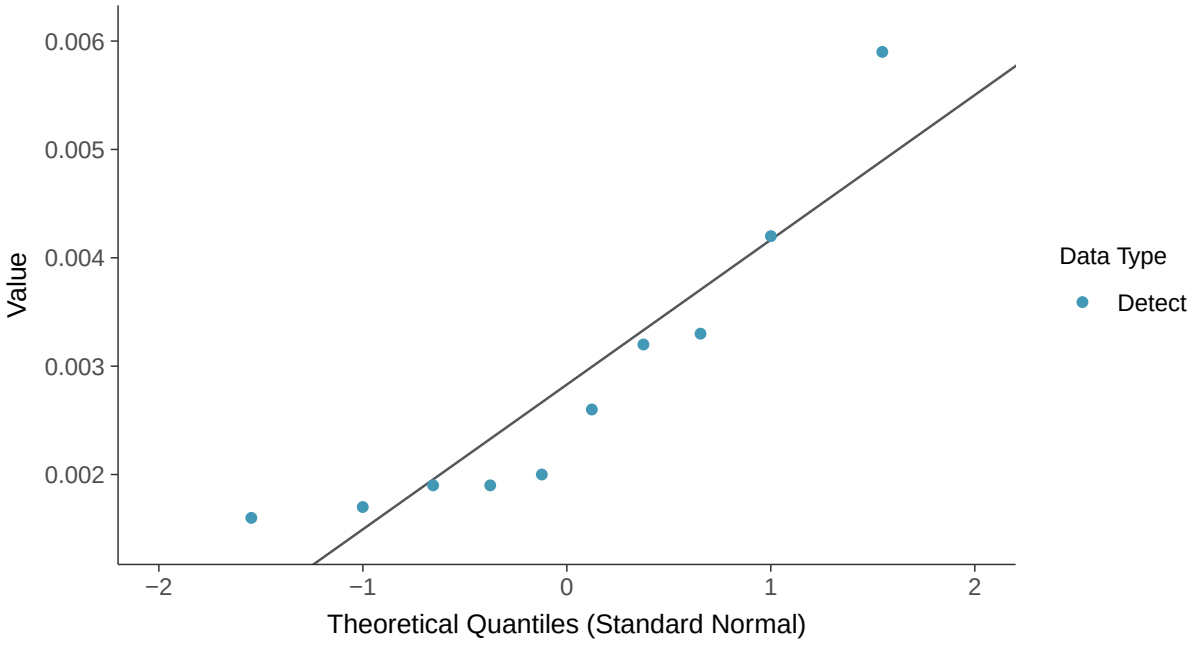
Boxplot by Season

Molybdenum, MW-14 (mg/l)



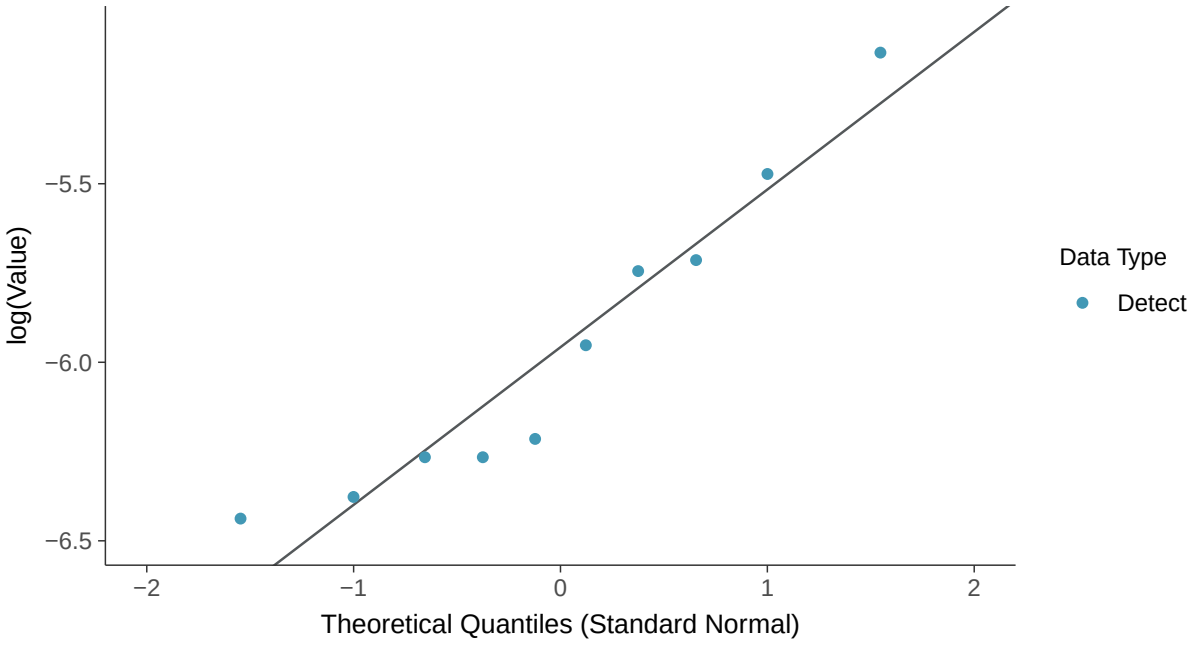
Normal Q-Q plot

Molybdenum, MW-14 (mg/l)



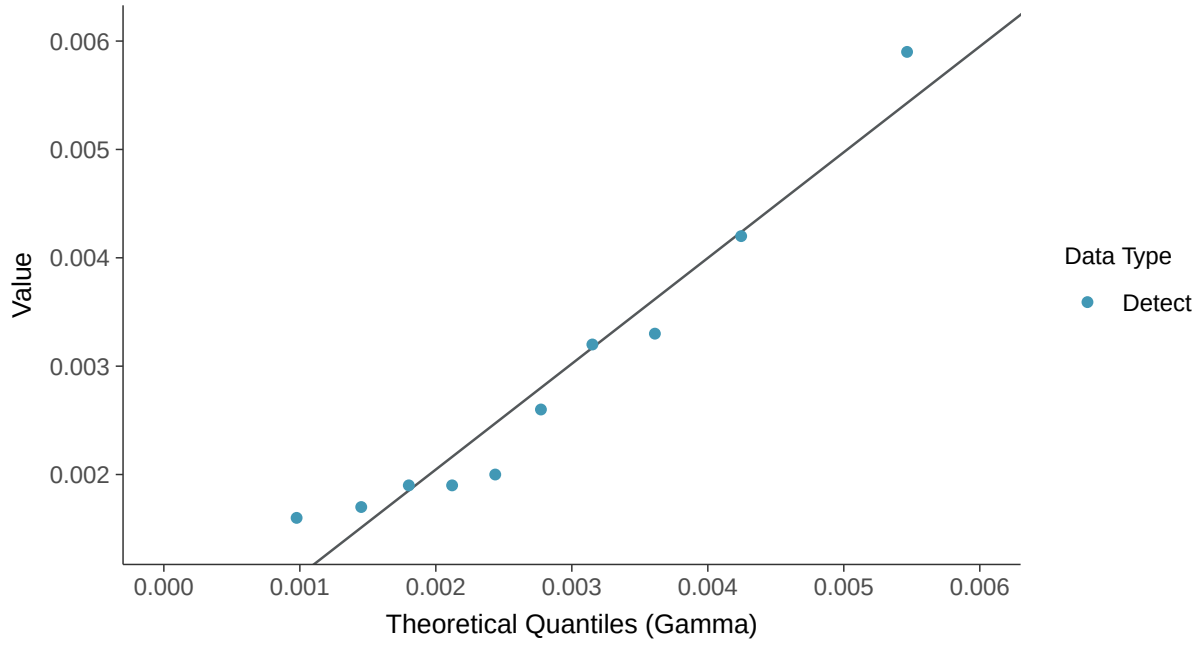
Lognormal Q-Q plot

Molybdenum, MW-14 (mg/l)



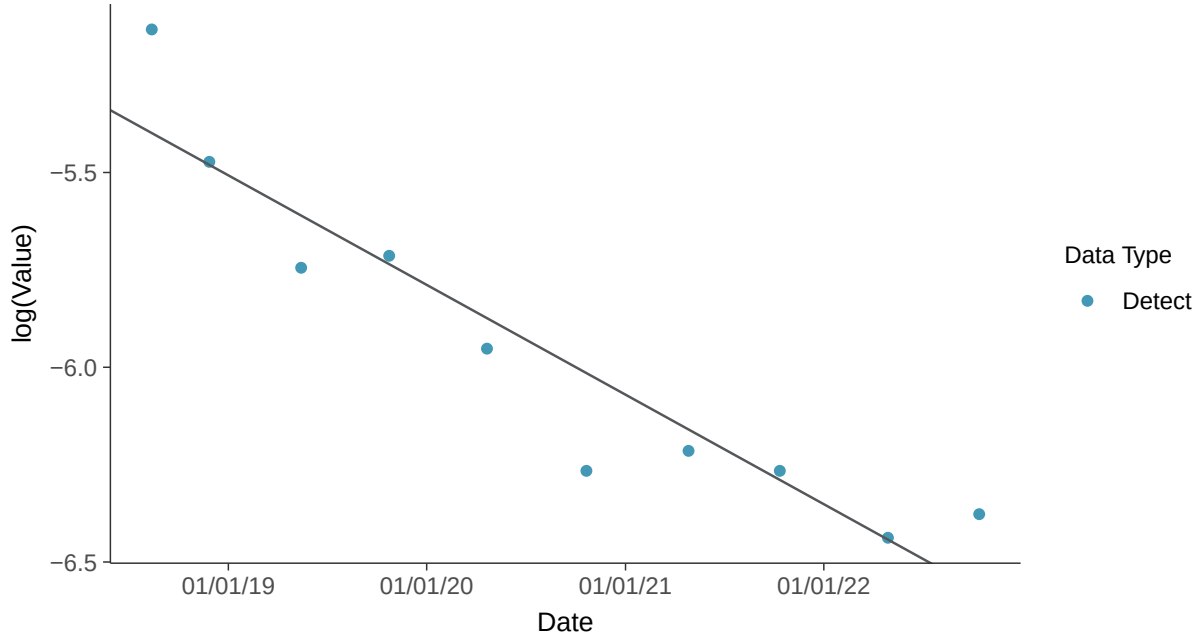
Gamma Q-Q plot

Molybdenum, MW-14 (mg/l)



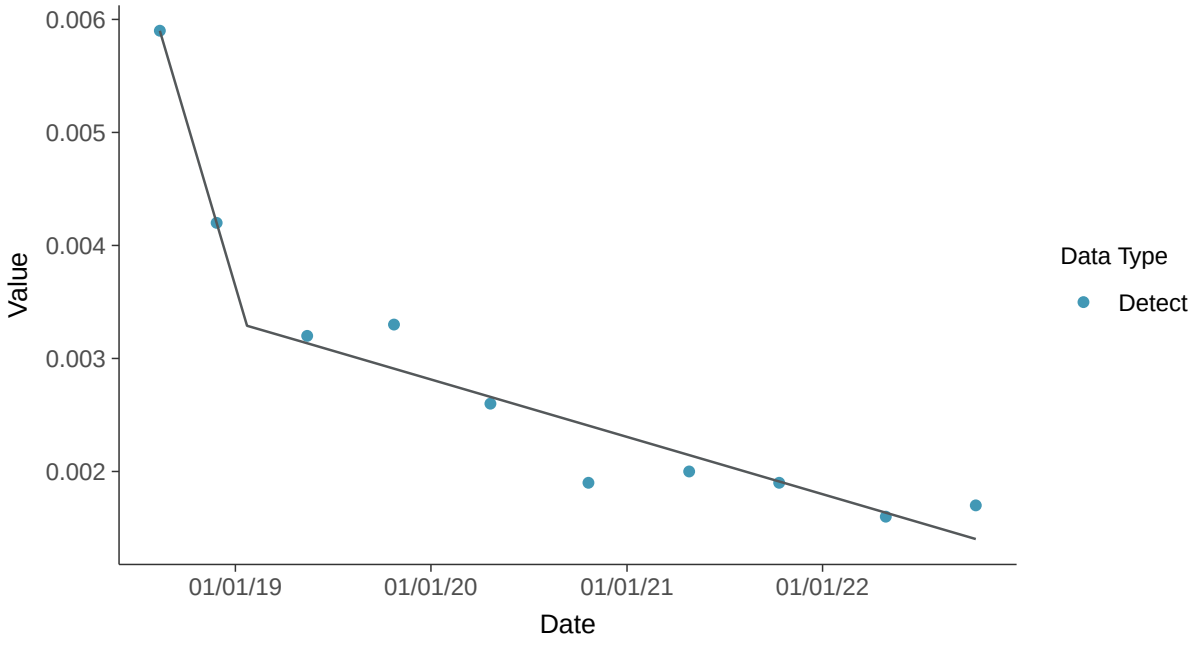
Trend Regression: Lognormal MLE

Molybdenum, MW-14 (mg/l)



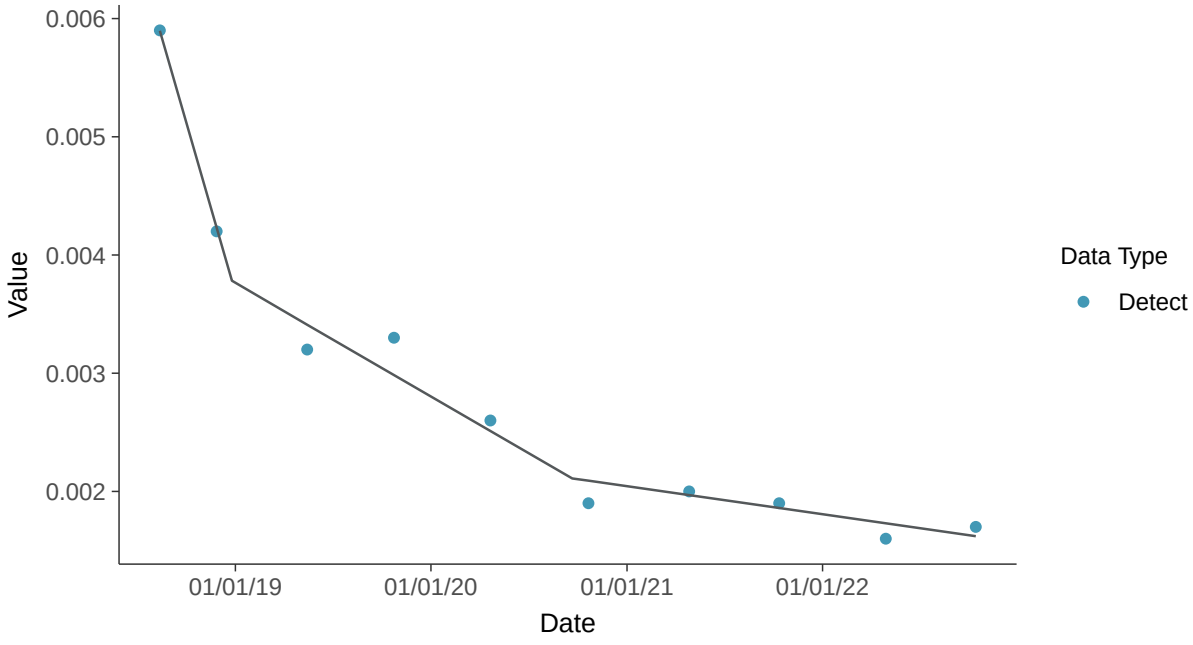
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-14 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-14 (mg/l)

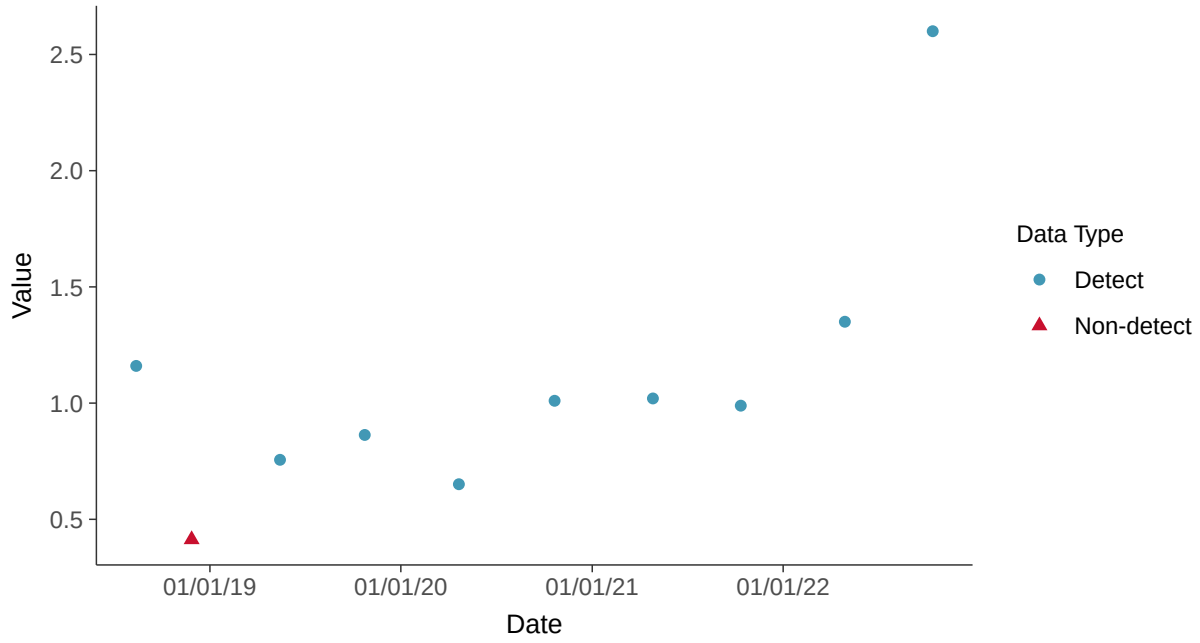


Appendix IV: Radium-226+228, MW-14

ID: 13_2_127

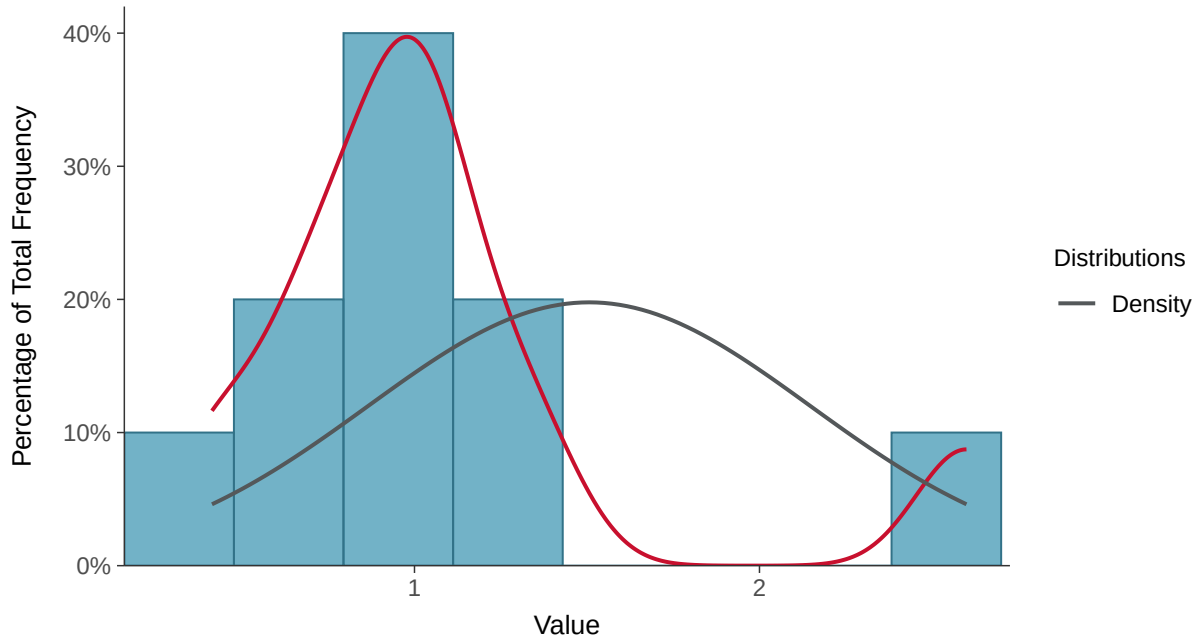
Scatter Plot

Radium-226+228, MW-14 (pci/l)



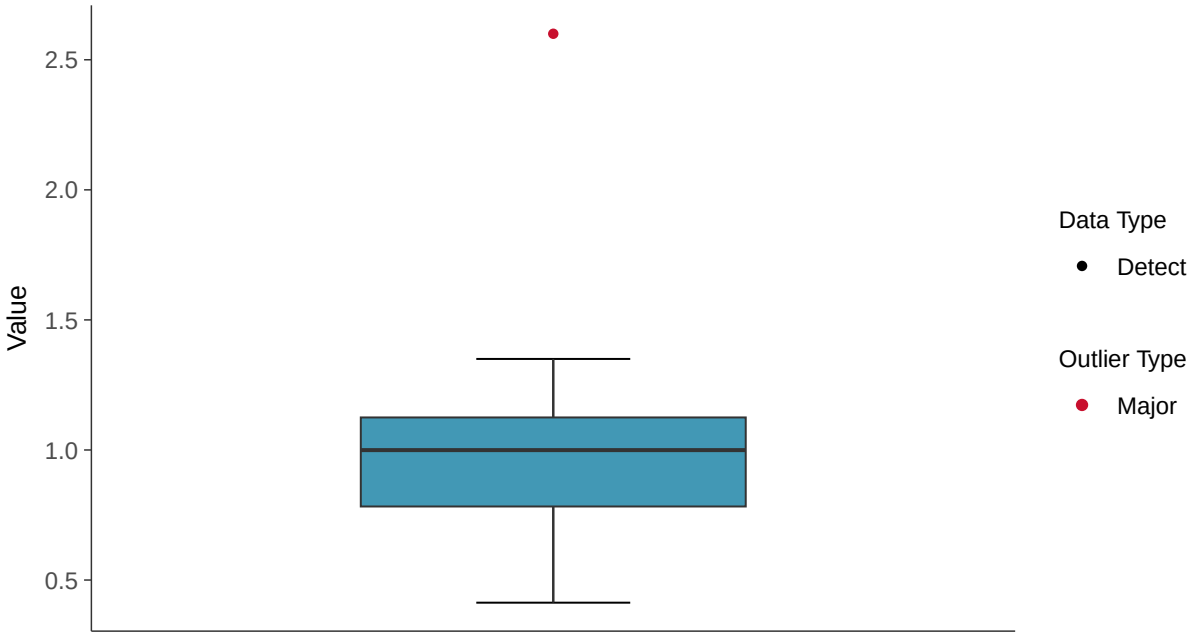
Histogram

Radium-226+228, MW-14 (pci/l)



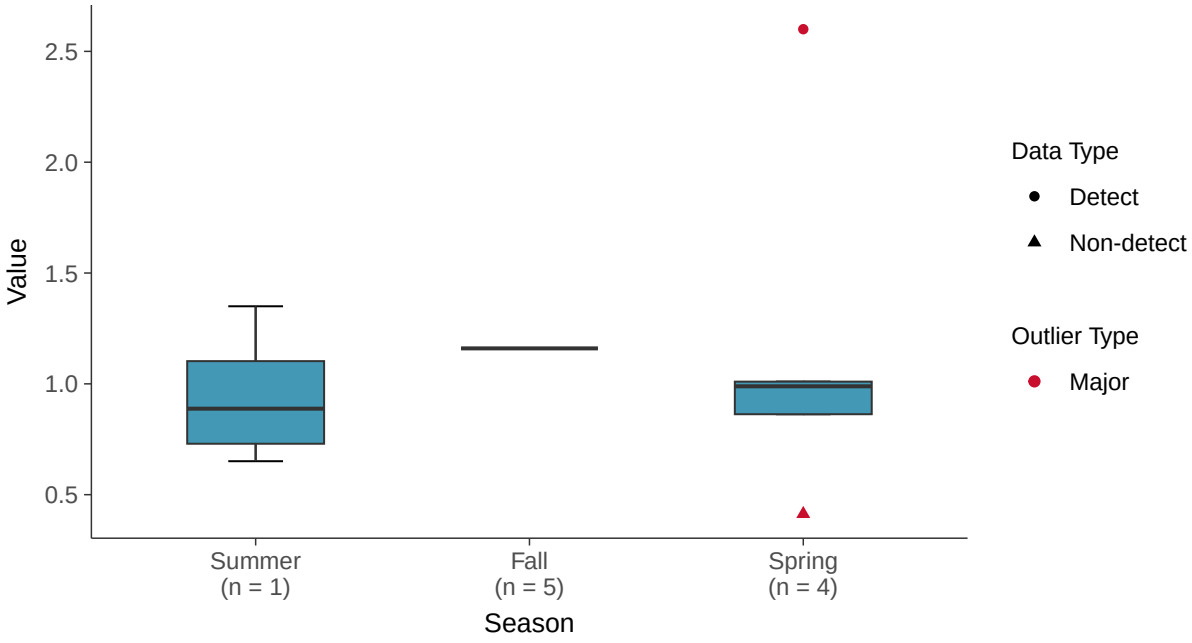
Boxplot

Radium-226+228, MW-14 (pci/l)



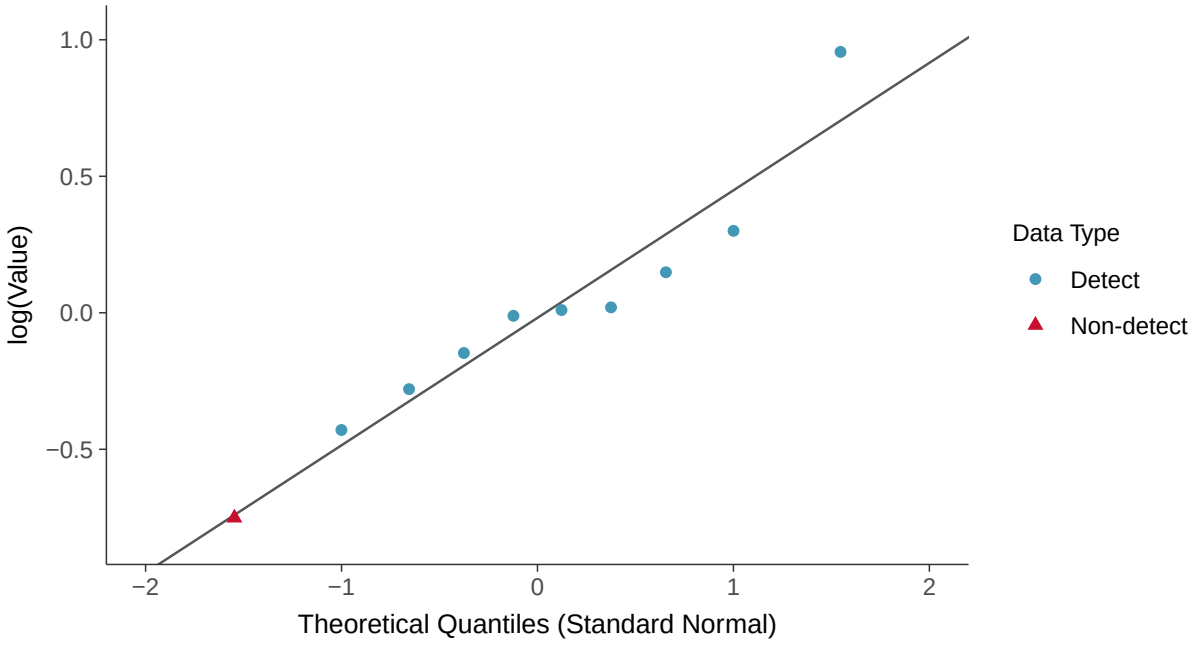
Boxplot by Season

Radium-226+228, MW-14 (pci/l)



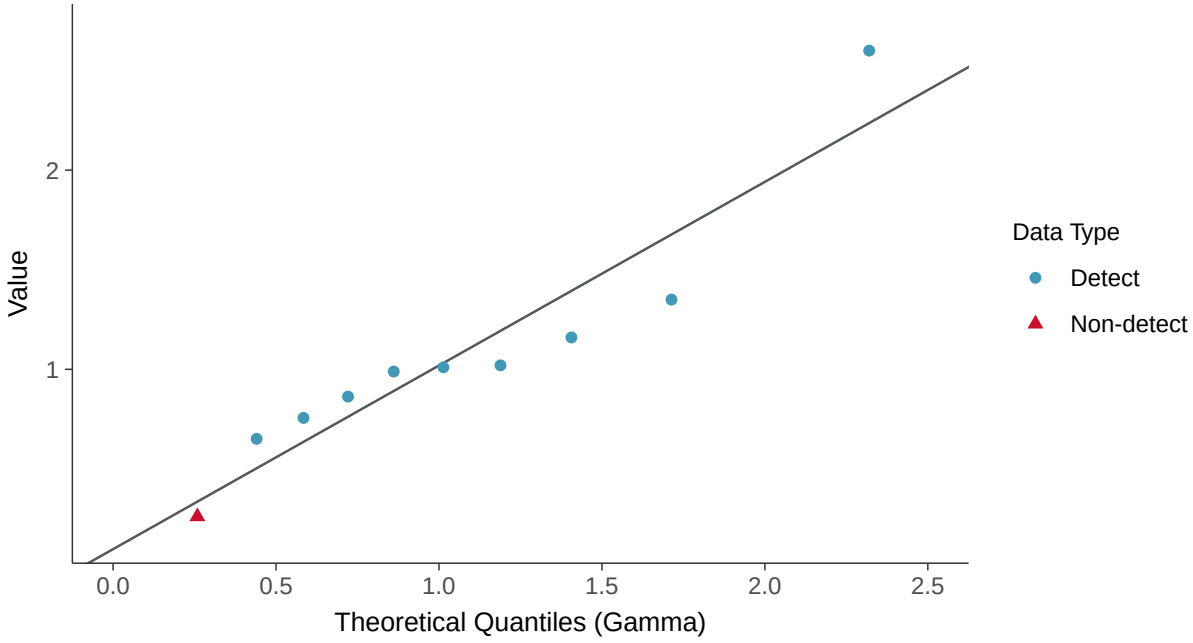
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-14 (pci/l)



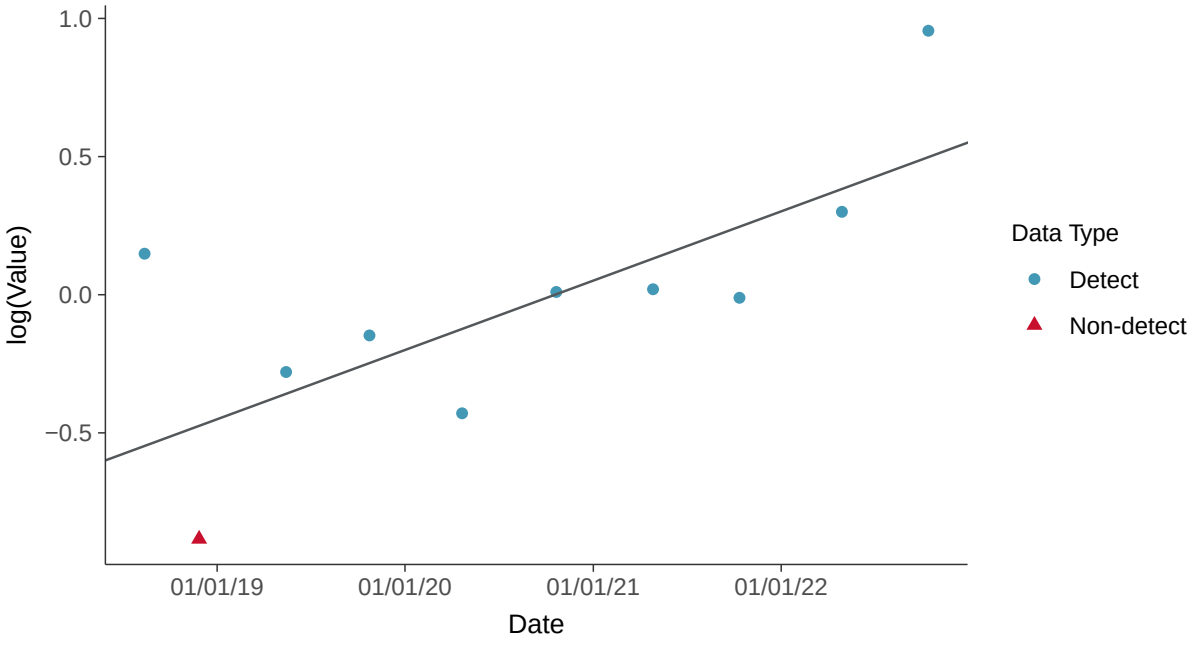
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-14 (pci/l)



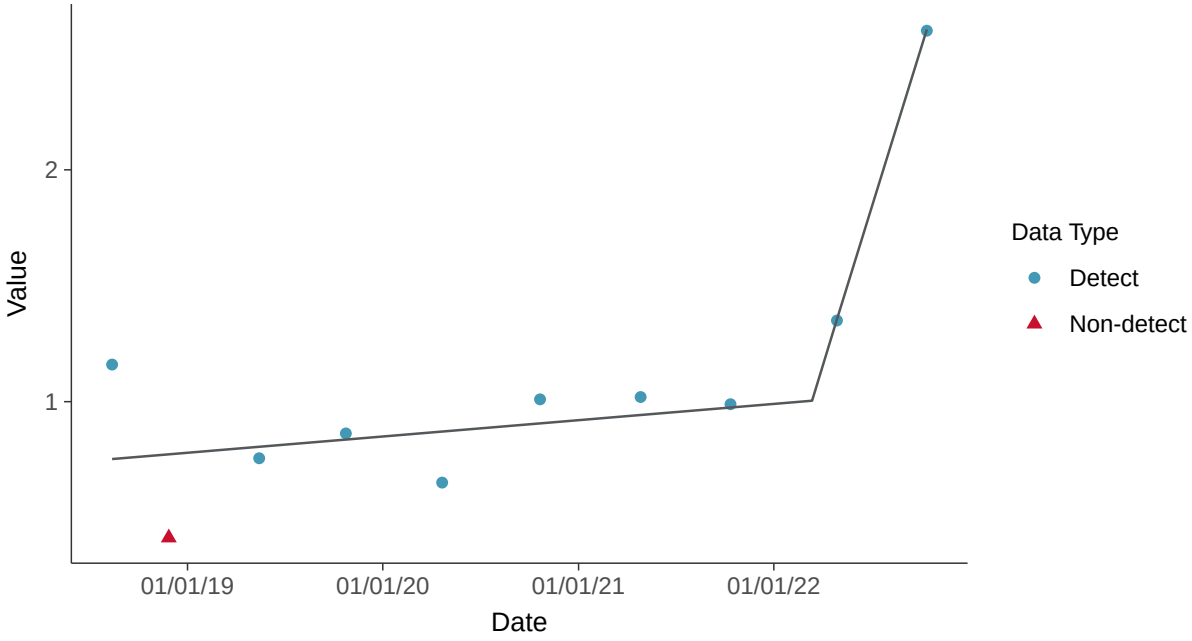
Trend Regression: Lognormal MLE

Radium-226+228, MW-14 (pci/l)



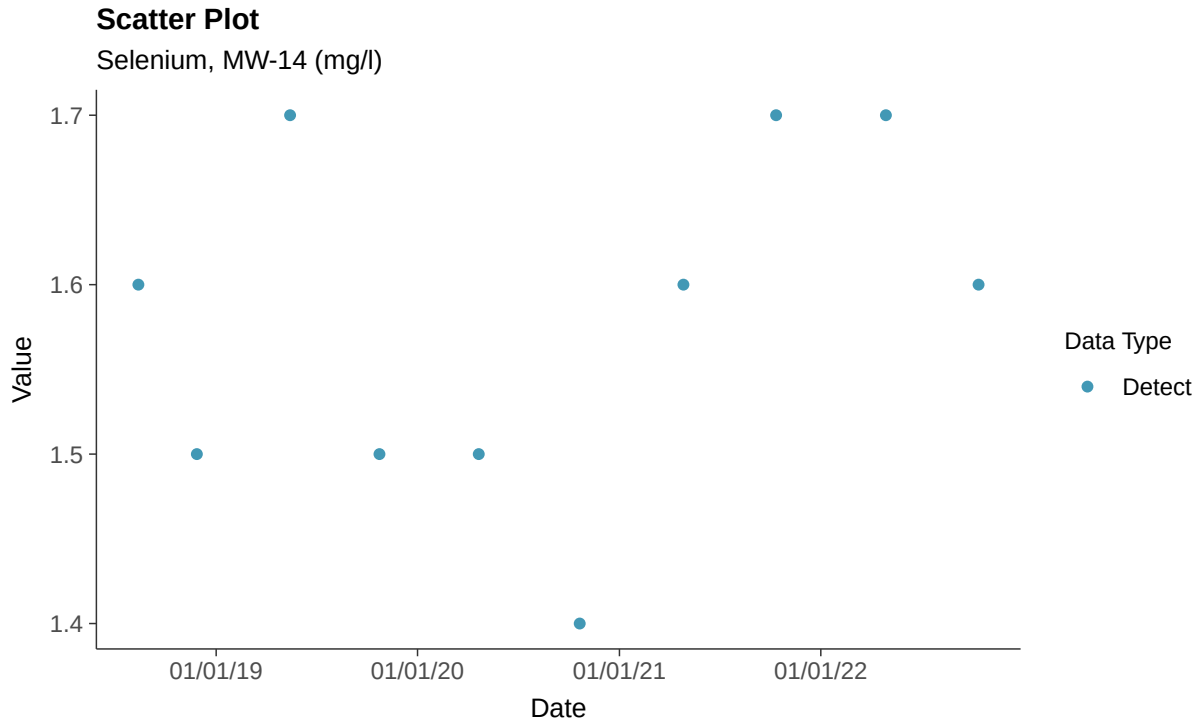
Trend Regression: Piecewise Linear-Linear

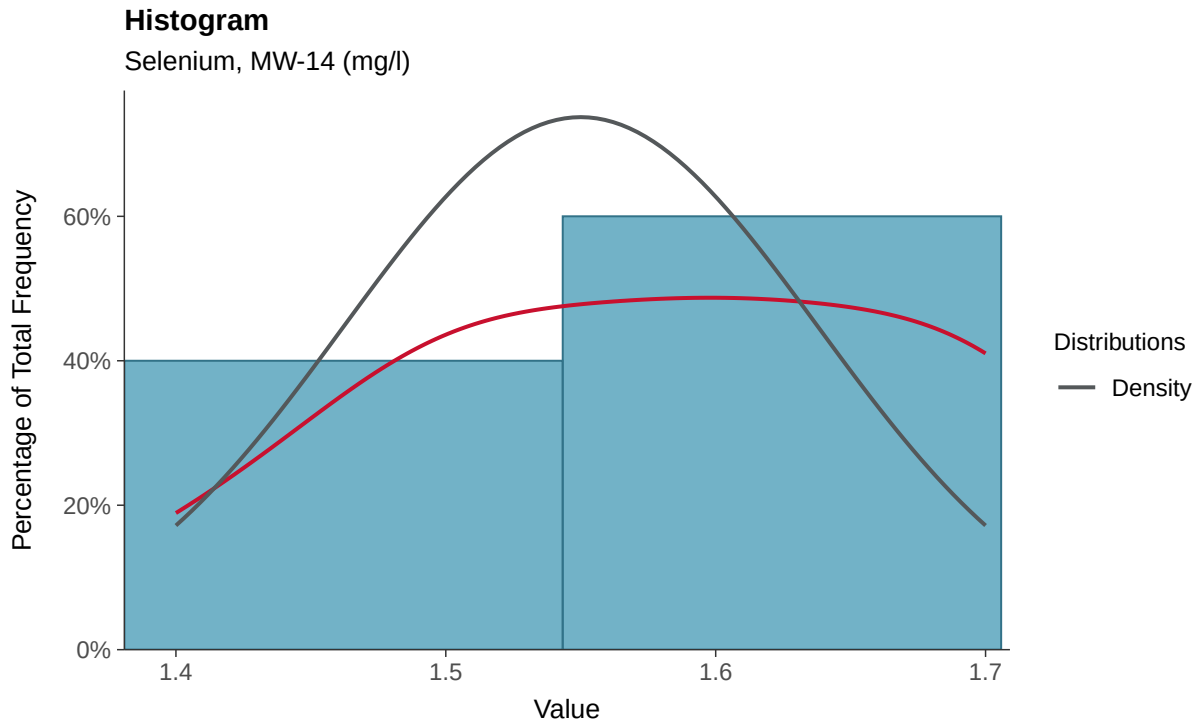
Radium-226+228, MW-14 (pci/l)



Appendix IV: Selenium, MW-14

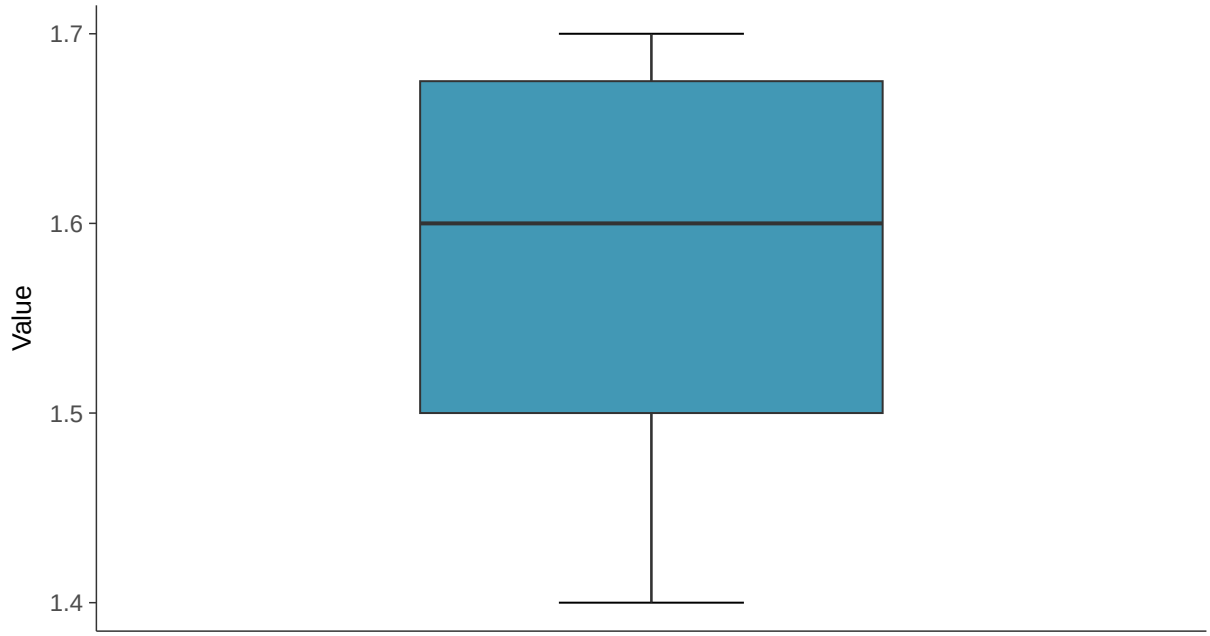
ID: 13_2_129





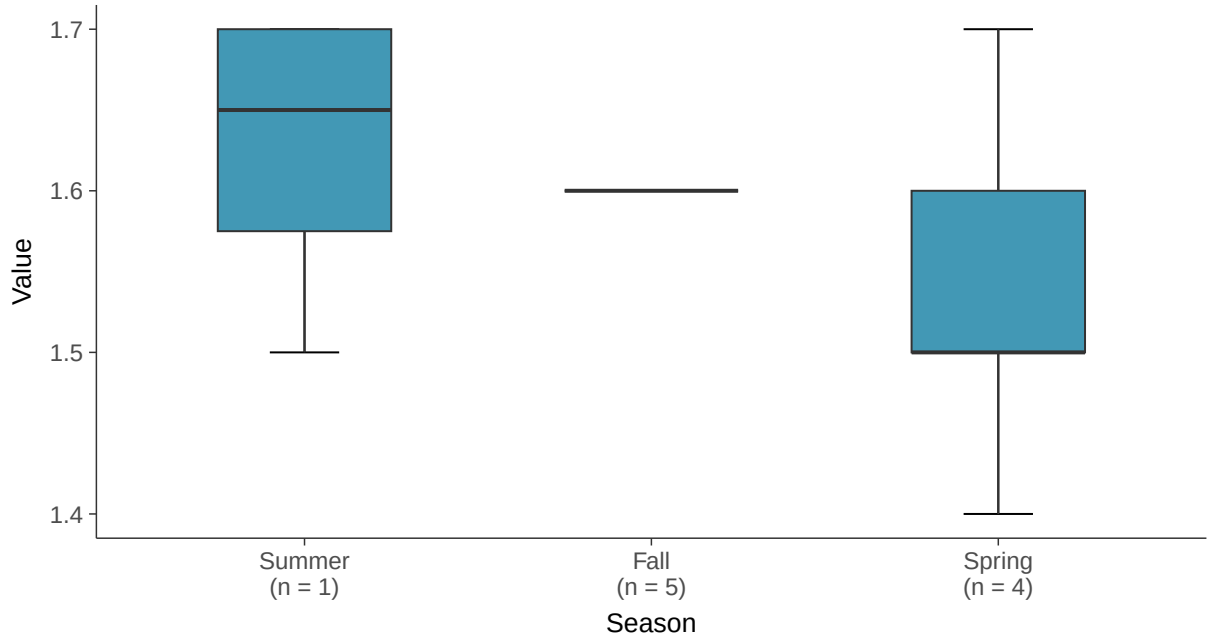
Boxplot

Selenium, MW-14 (mg/l)



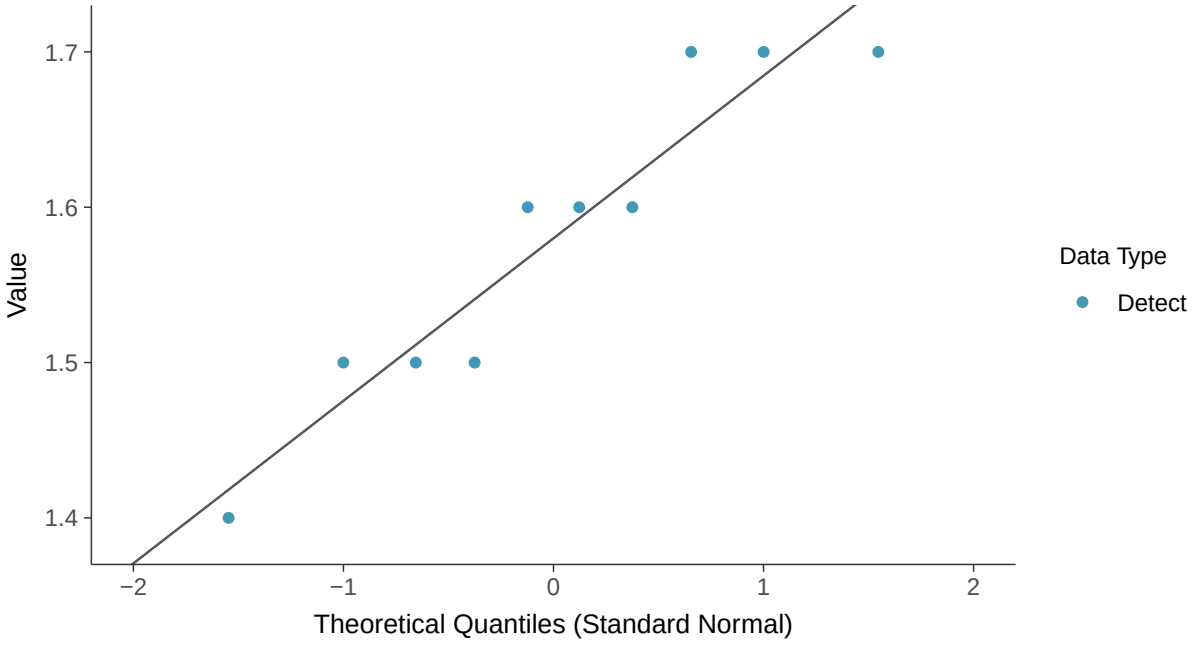
Boxplot by Season

Selenium, MW-14 (mg/l)



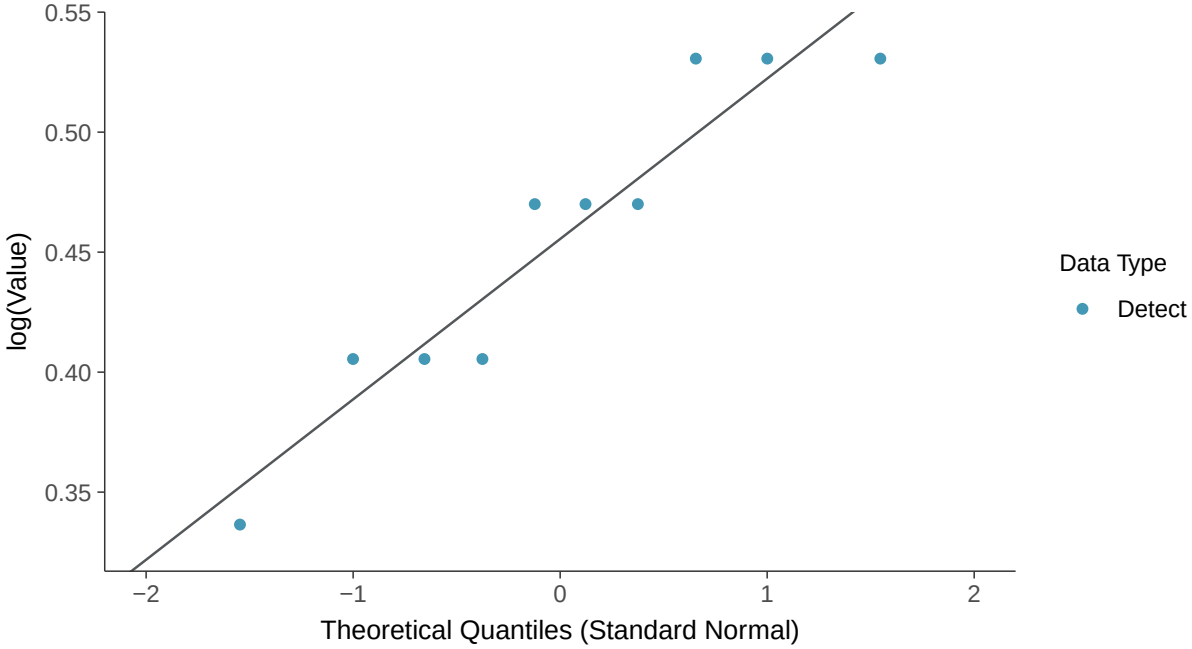
Normal Q-Q plot

Selenium, MW-14 (mg/l)



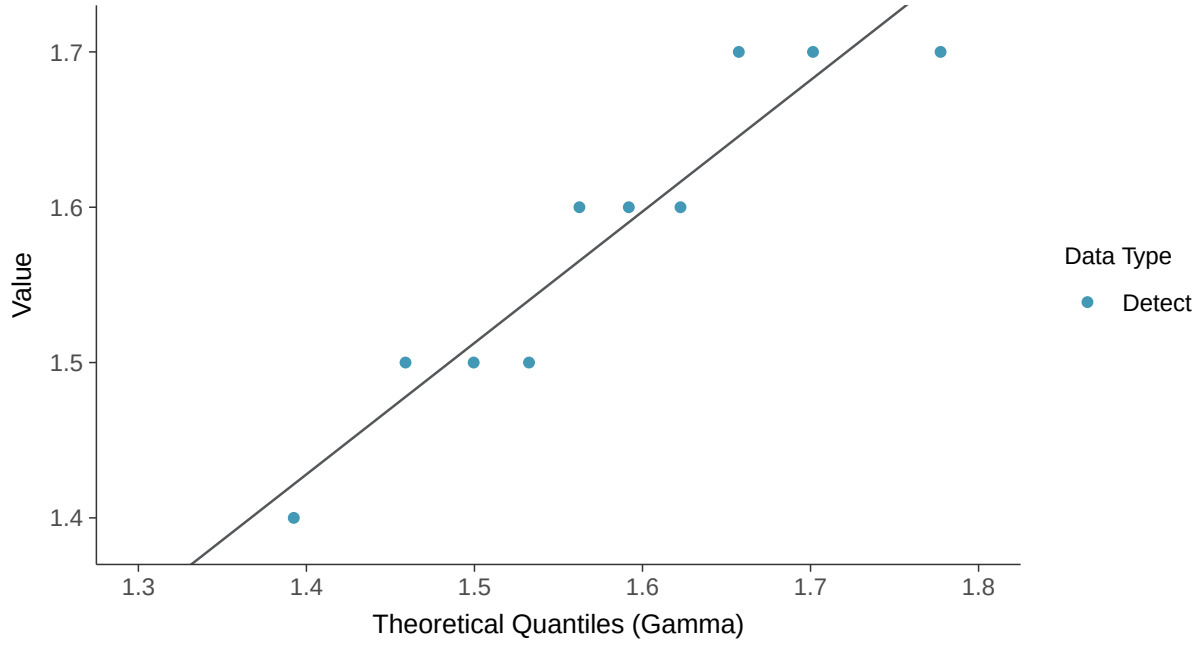
Lognormal Q-Q plot

Selenium, MW-14 (mg/l)



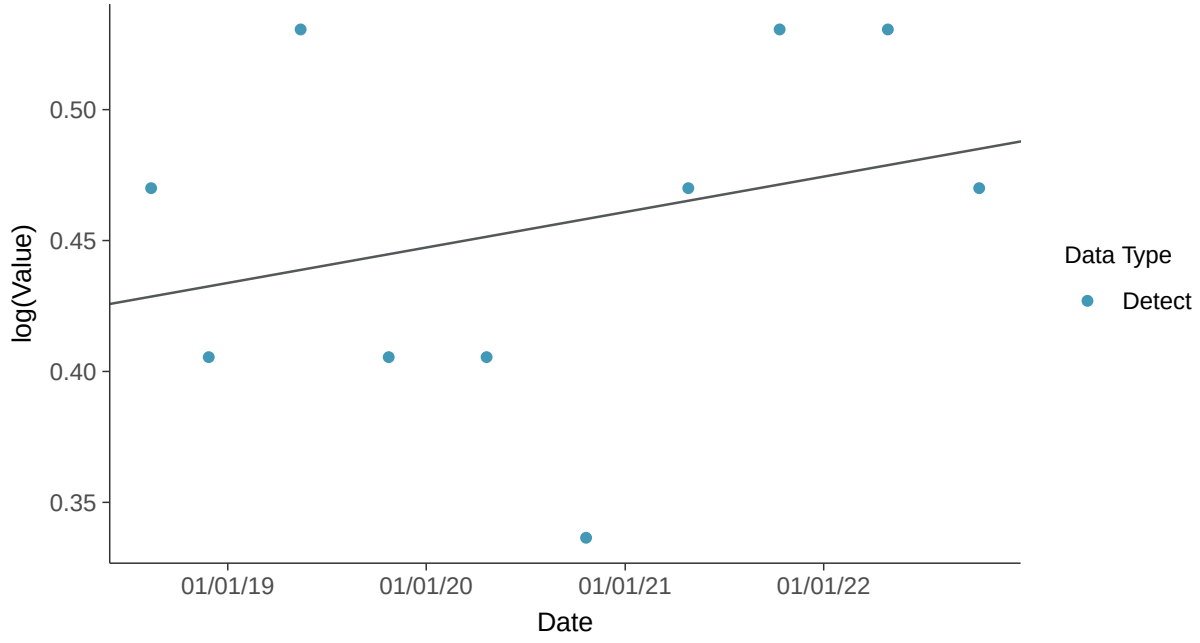
Gamma Q-Q plot

Selenium, MW-14 (mg/l)



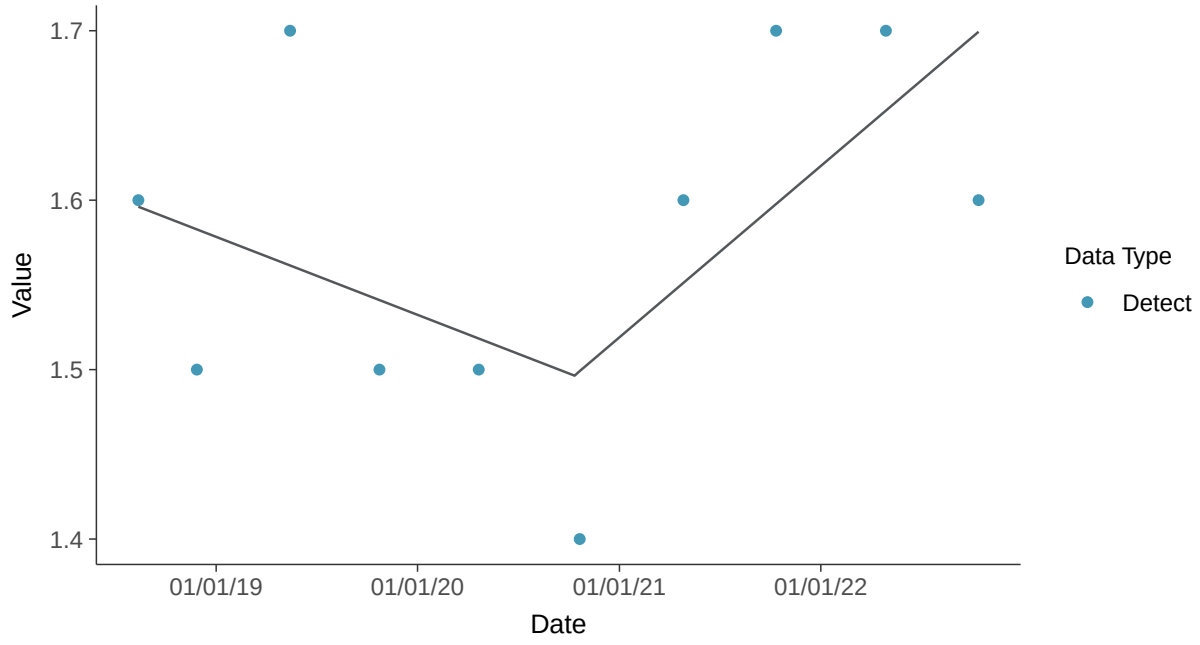
Trend Regression: Lognormal MLE

Selenium, MW-14 (mg/l)



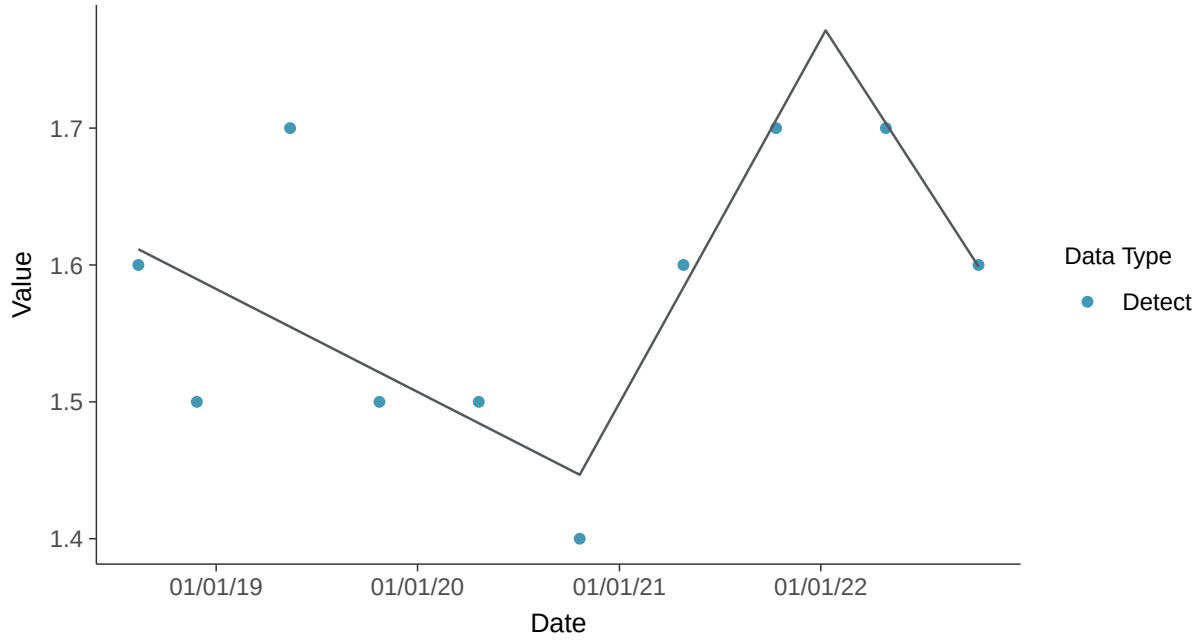
Trend Regression: Piecewise Linear-Linear

Selenium, MW-14 (mg/l)



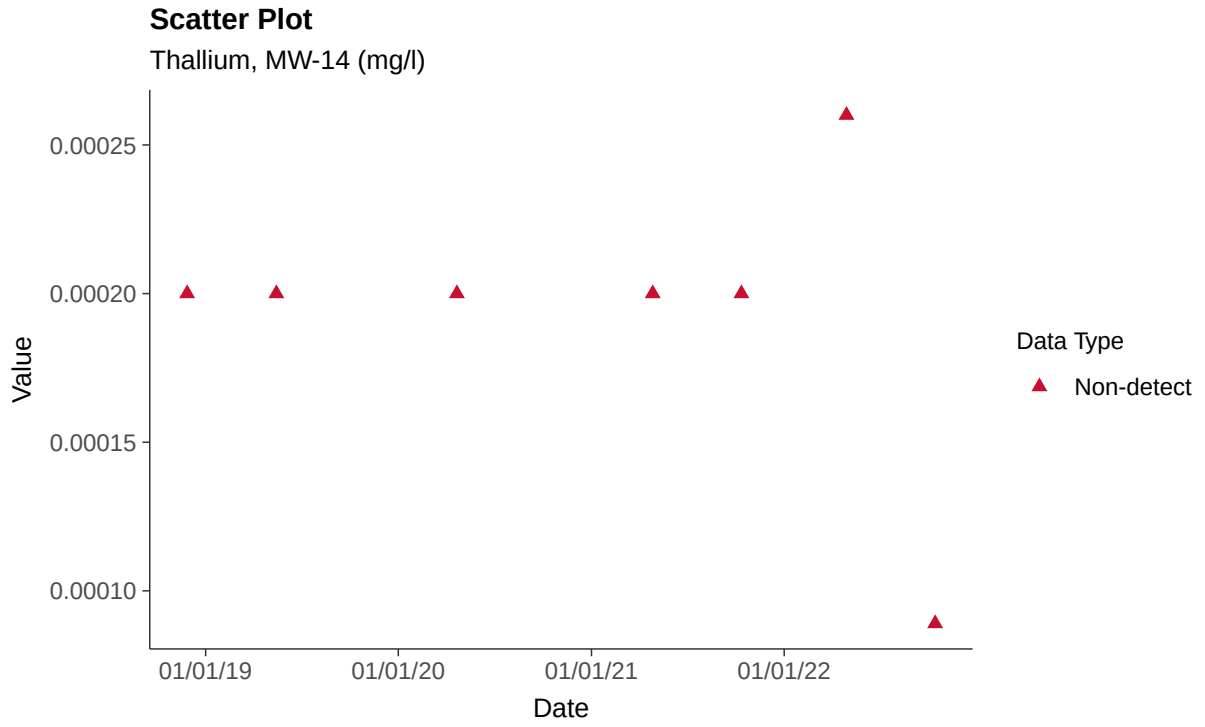
Trend Regression: Piecewise Linear-Linear-Linear

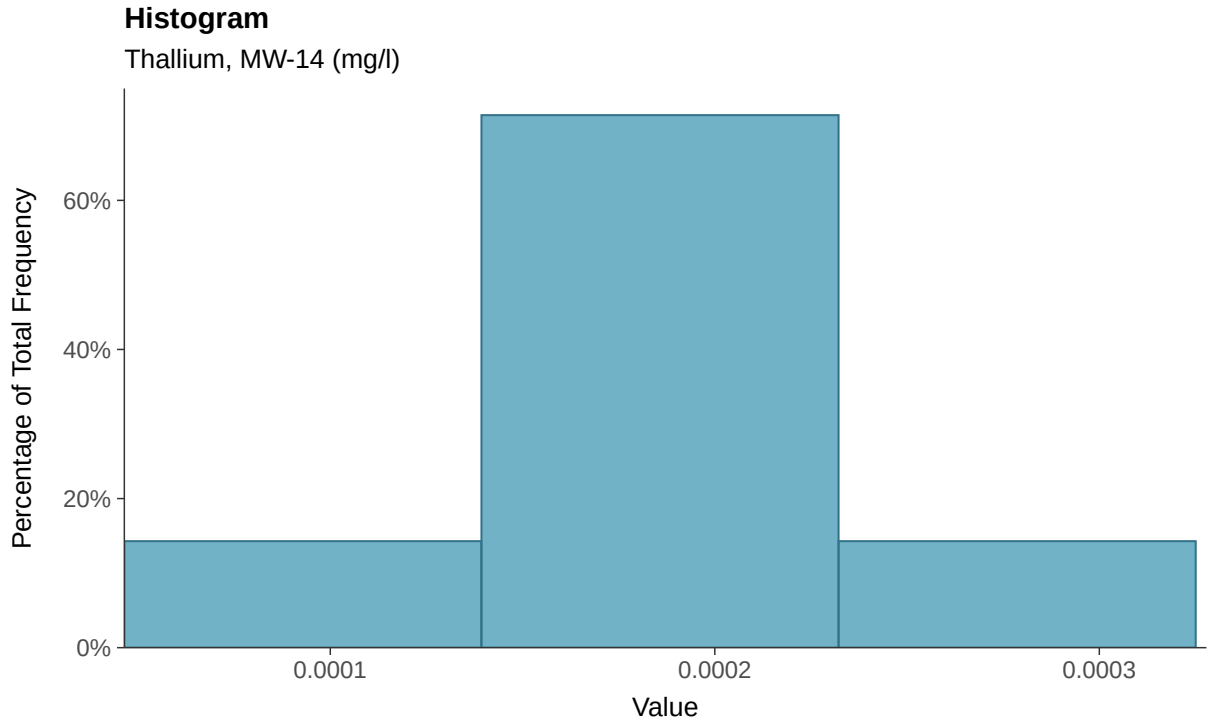
Selenium, MW-14 (mg/l)



Appendix IV: Thallium, MW-14

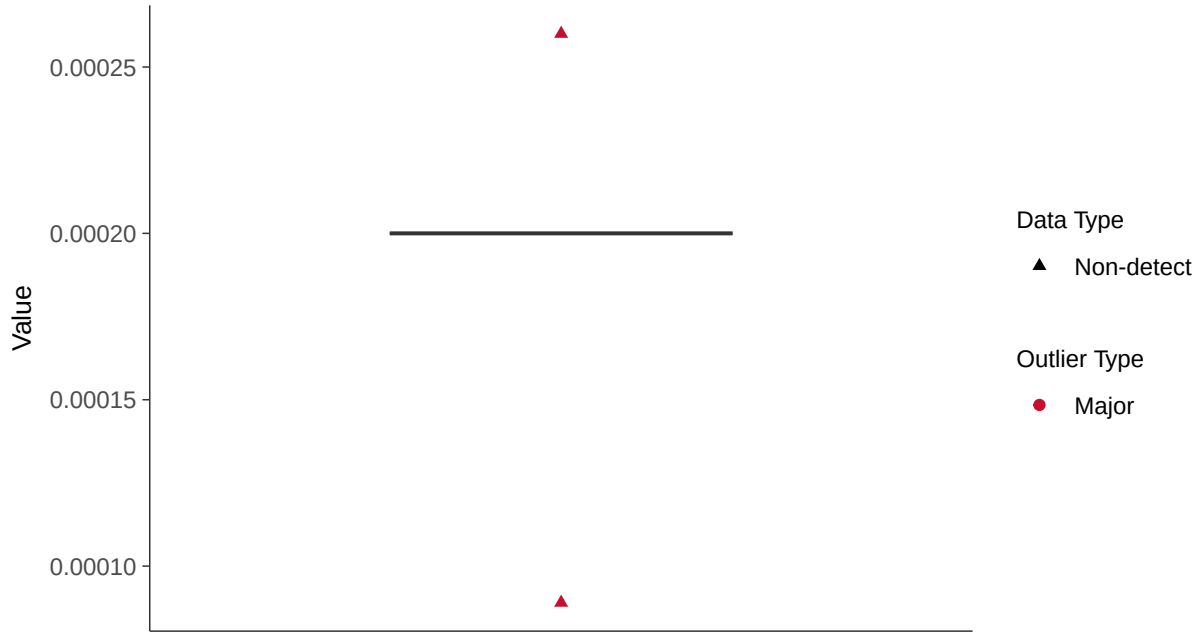
ID: 13_2_134





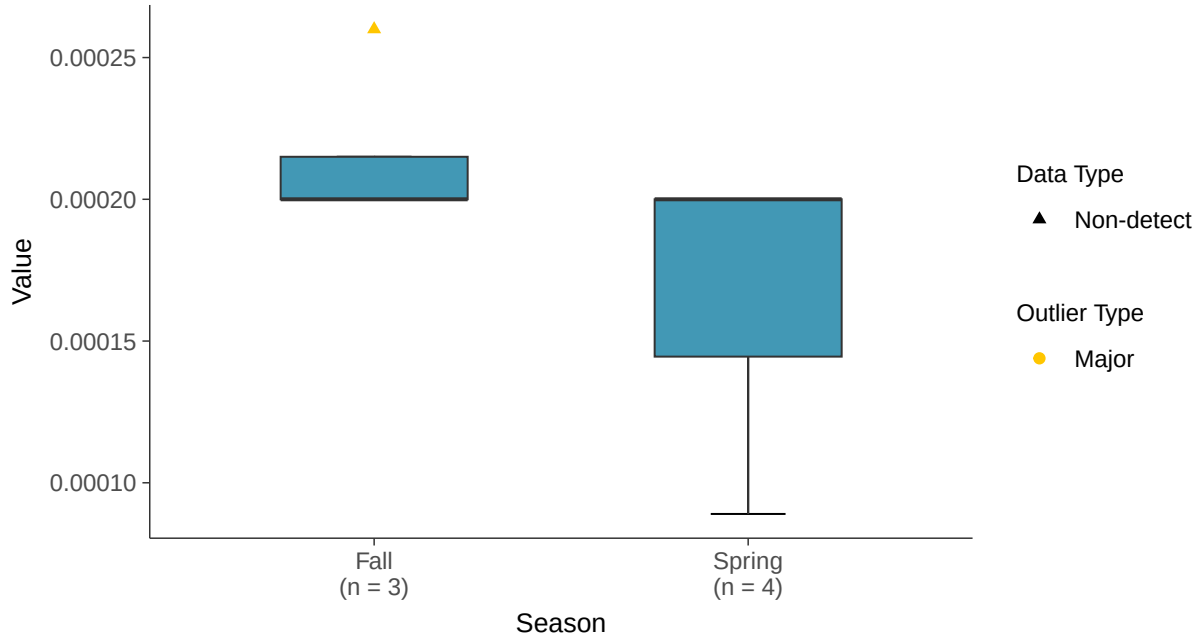
Boxplot

Thallium, MW-14 (mg/l)



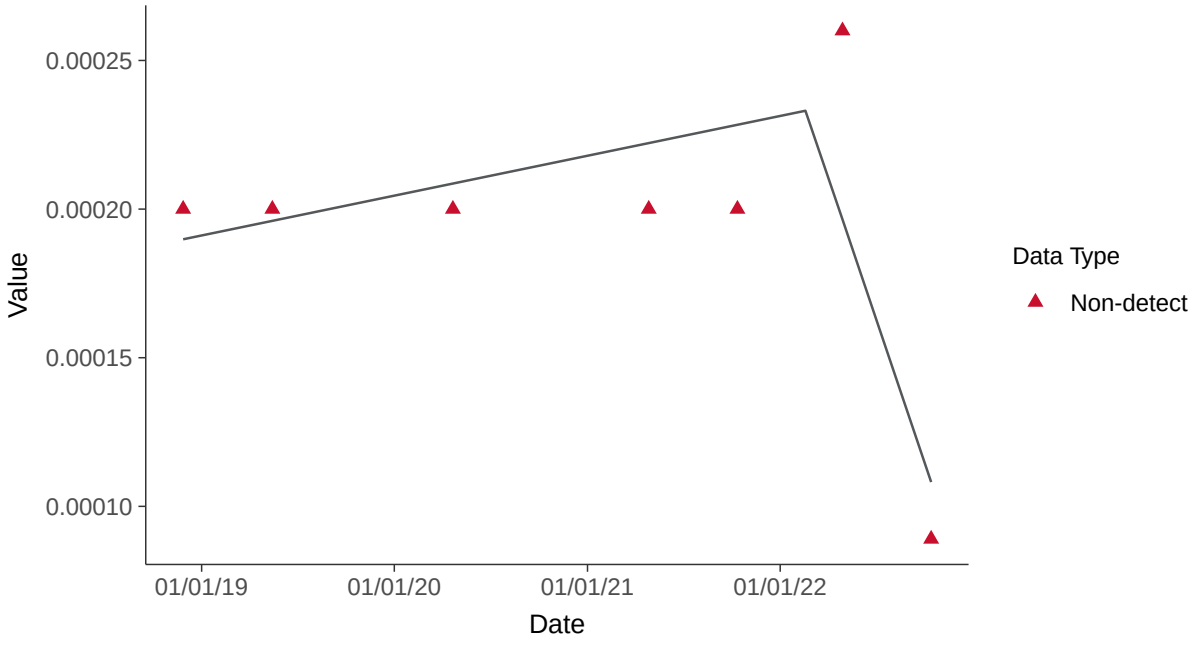
Boxplot by Season

Thallium, MW-14 (mg/l)



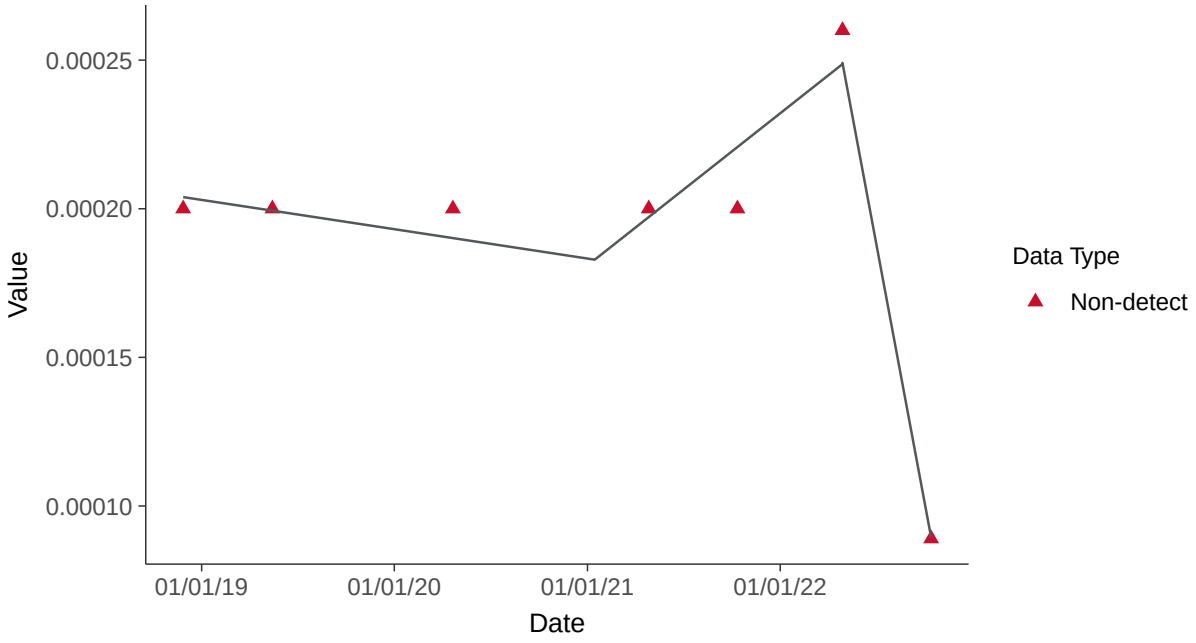
Trend Regression: Piecewise Linear-Linear

Thallium, MW-14 (mg/l)



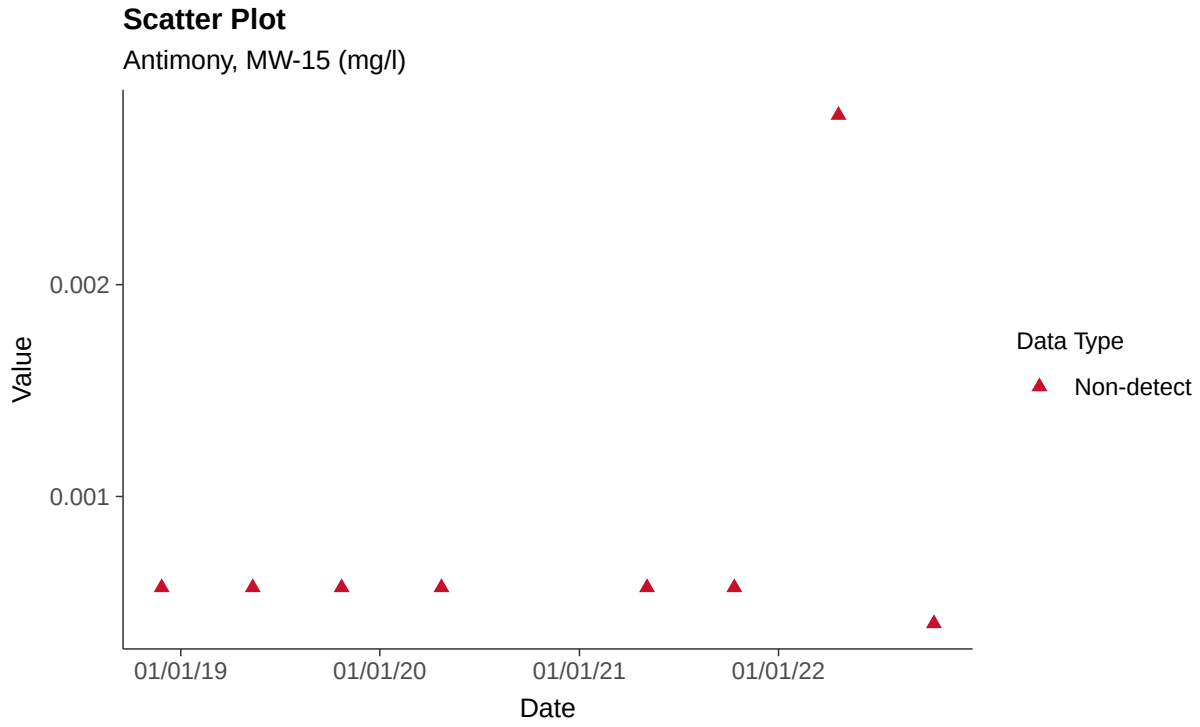
Trend Regression: Piecewise Linear-Linear-Linear

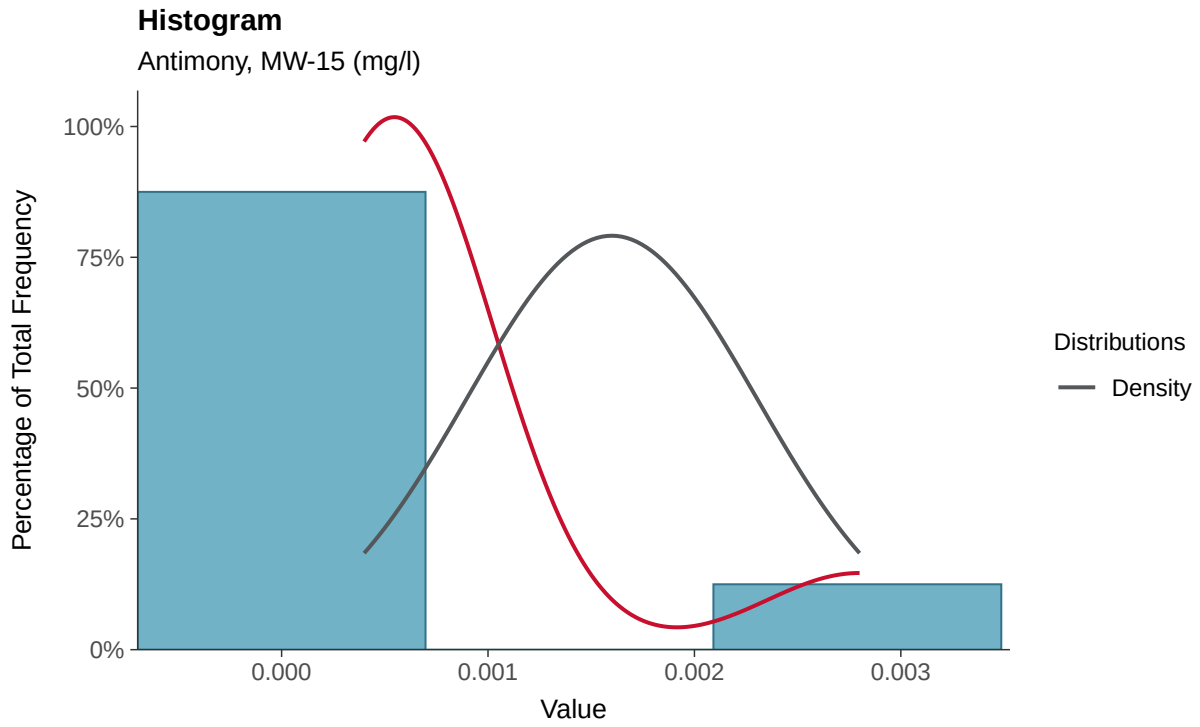
Thallium, MW-14 (mg/l)



Appendix IV: Antimony, MW-15

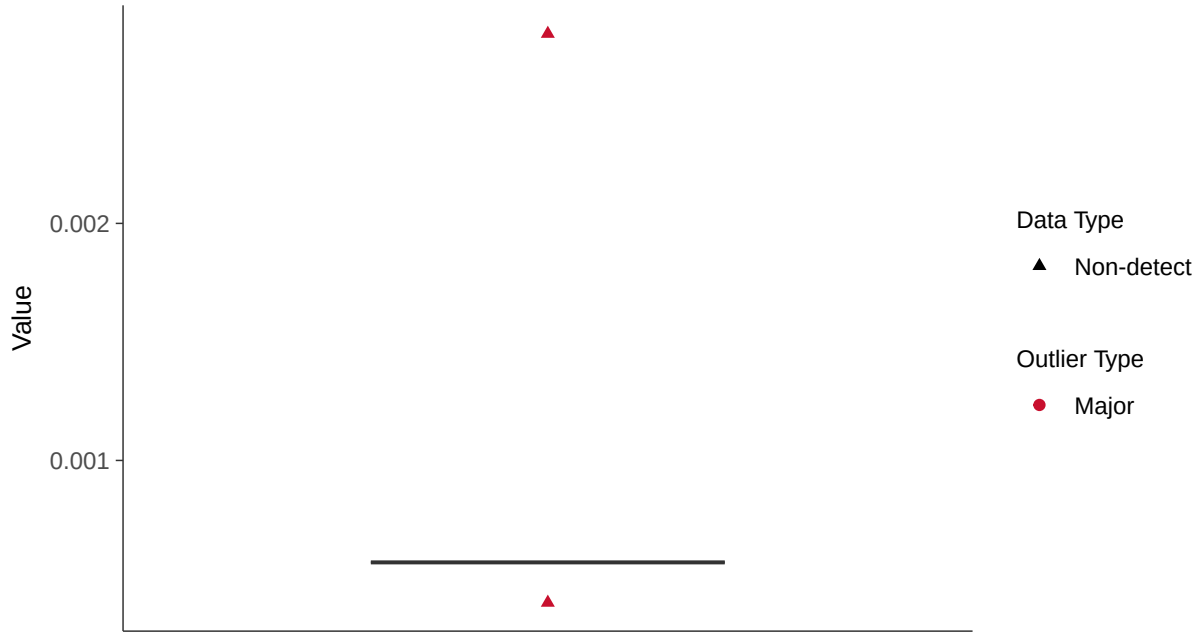
ID: 14_2_104





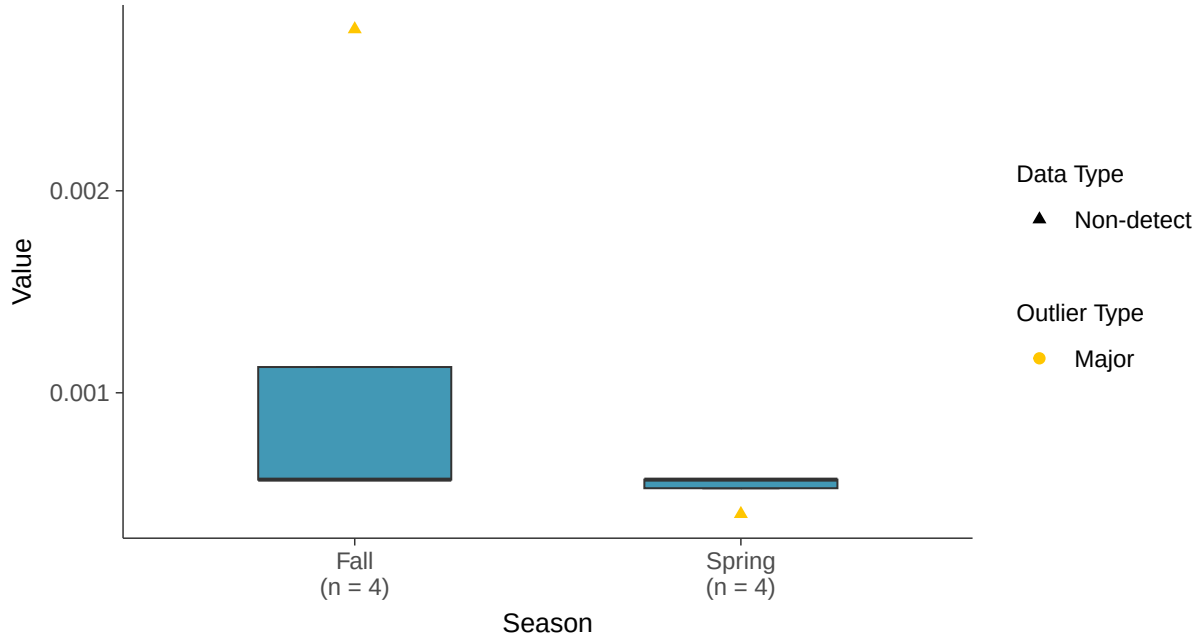
Boxplot

Antimony, MW-15 (mg/l)



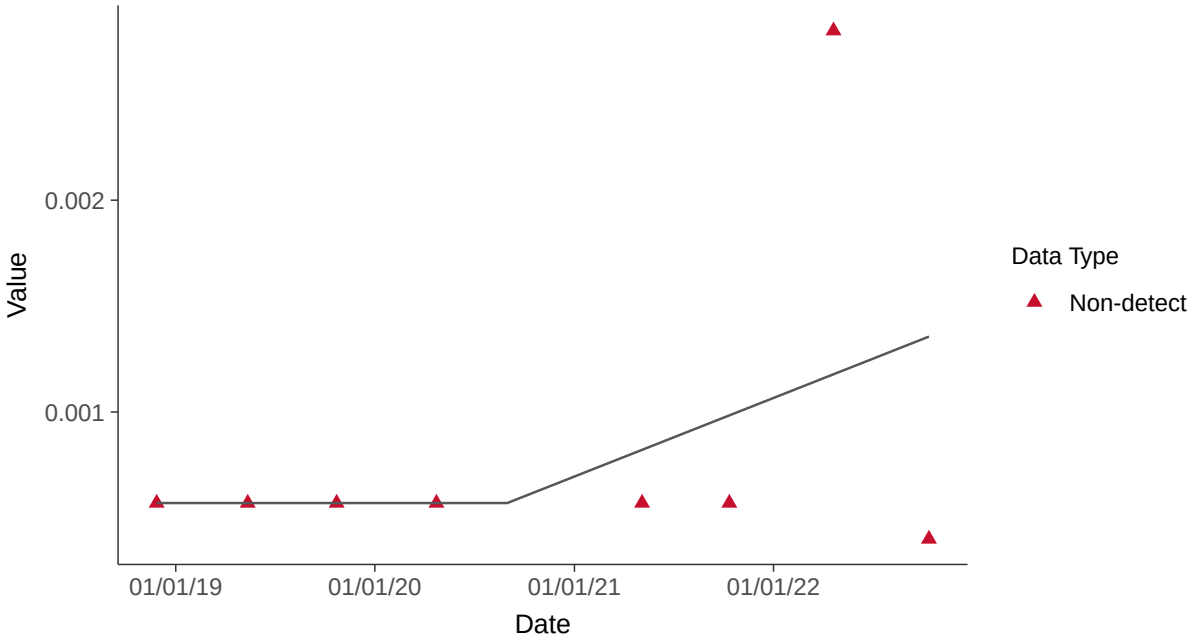
Boxplot by Season

Antimony, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear

Antimony, MW-15 (mg/l)

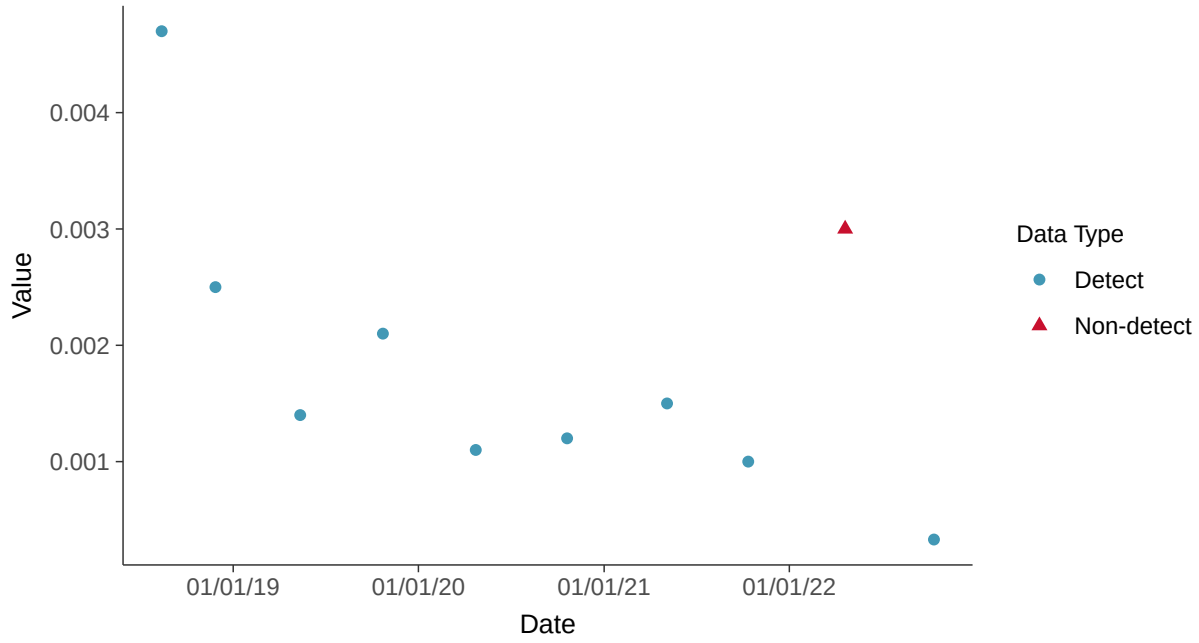


Appendix IV: Arsenic, MW-15

ID: 14_2_105

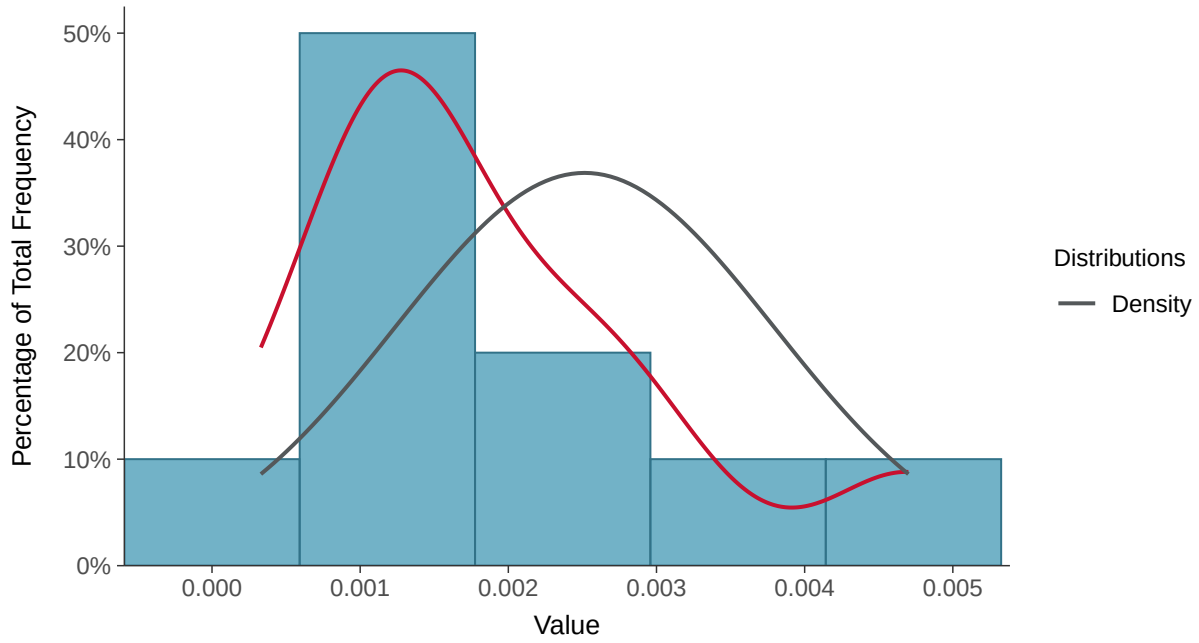
Scatter Plot

Arsenic, MW-15 (mg/l)



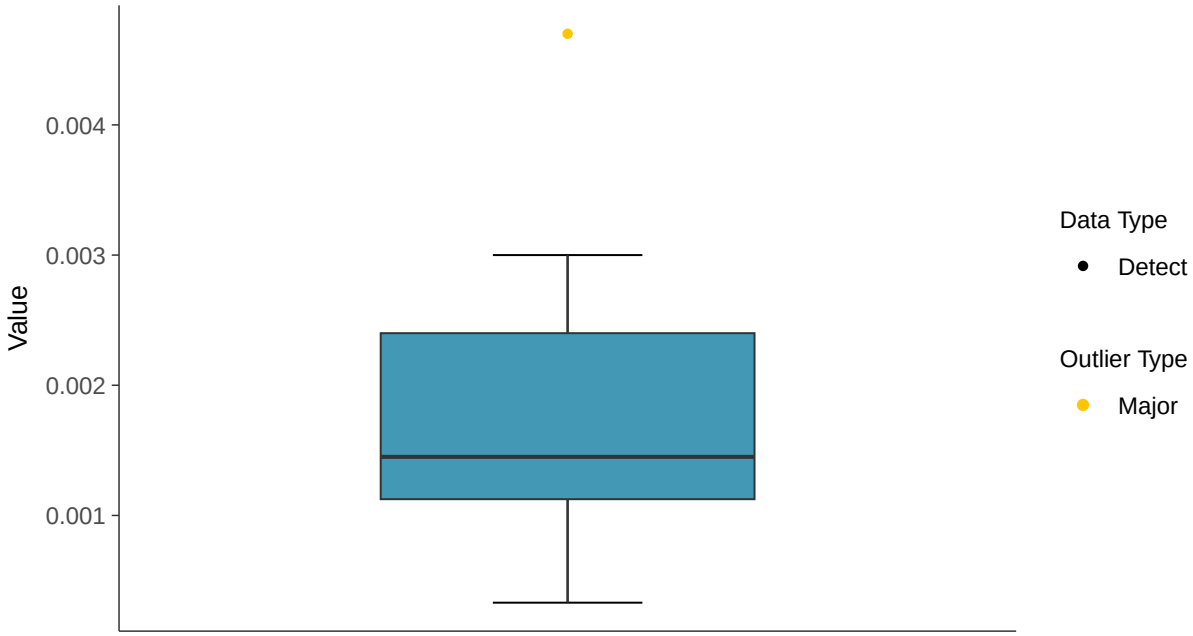
Histogram

Arsenic, MW-15 (mg/l)



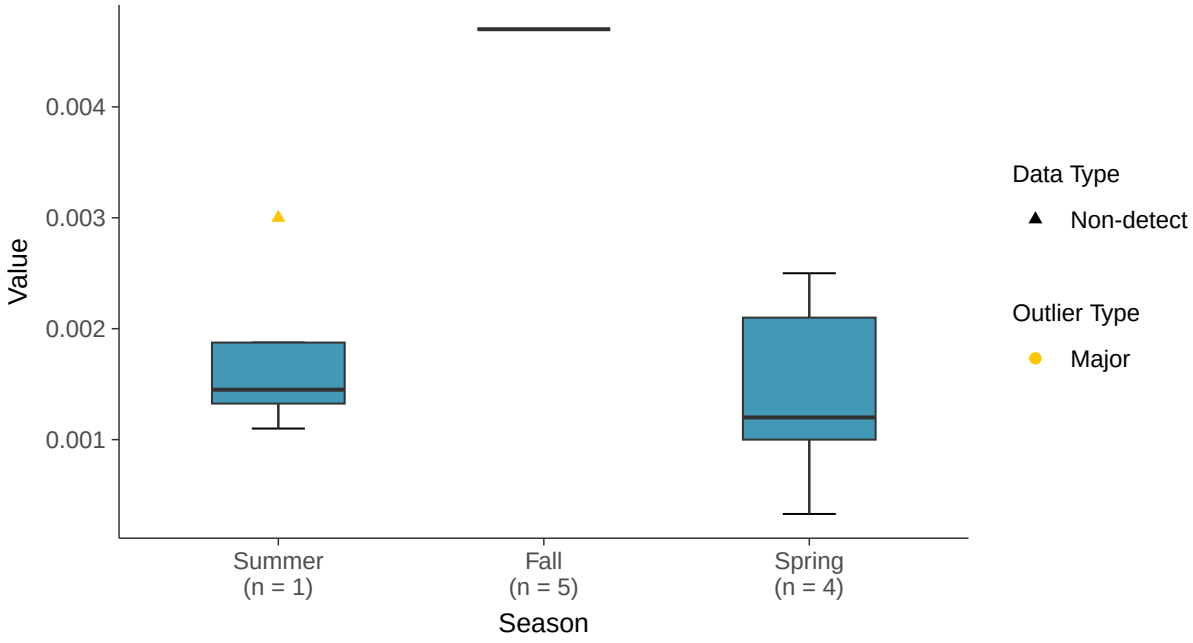
Boxplot

Arsenic, MW-15 (mg/l)



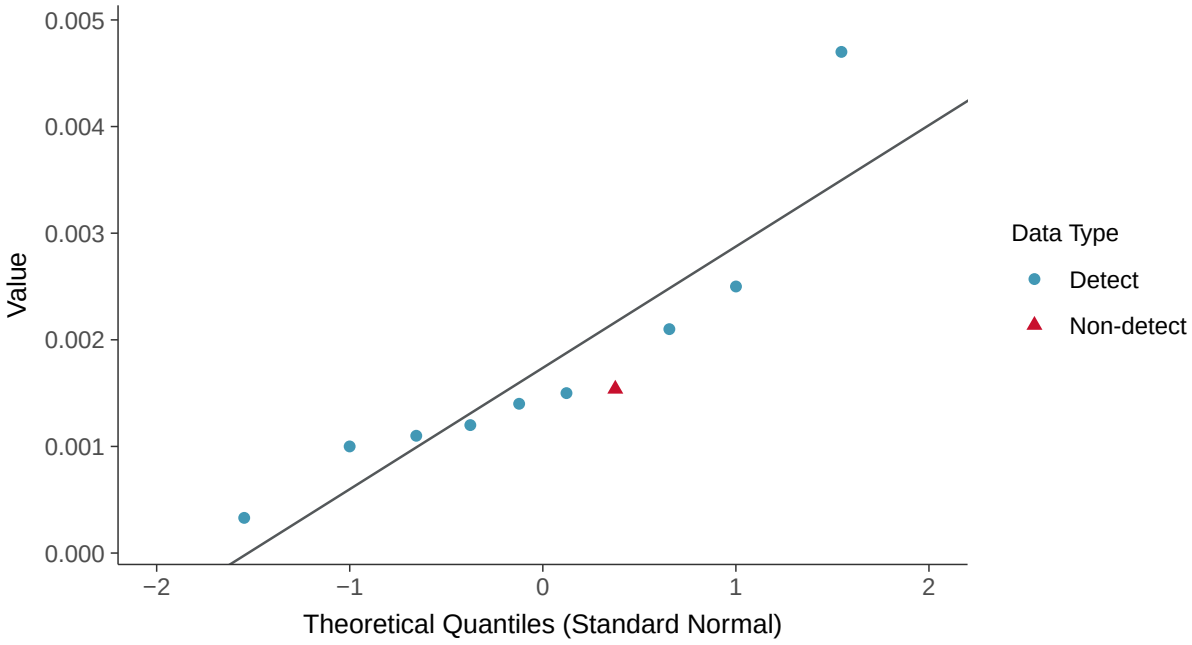
Boxplot by Season

Arsenic, MW-15 (mg/l)



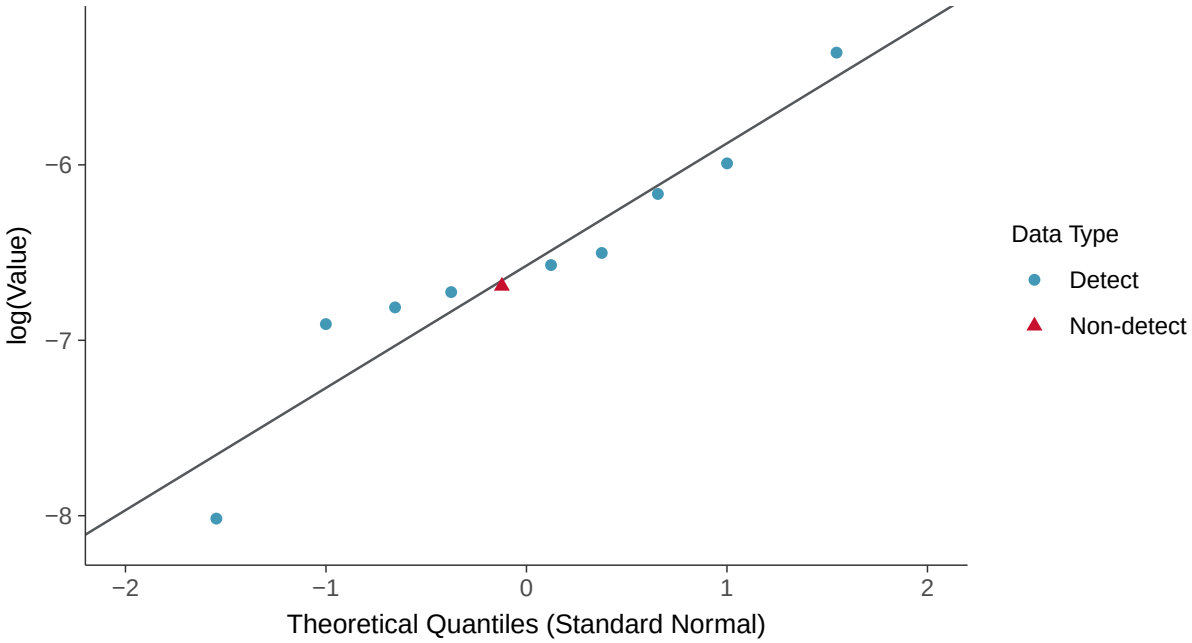
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-15 (mg/l)



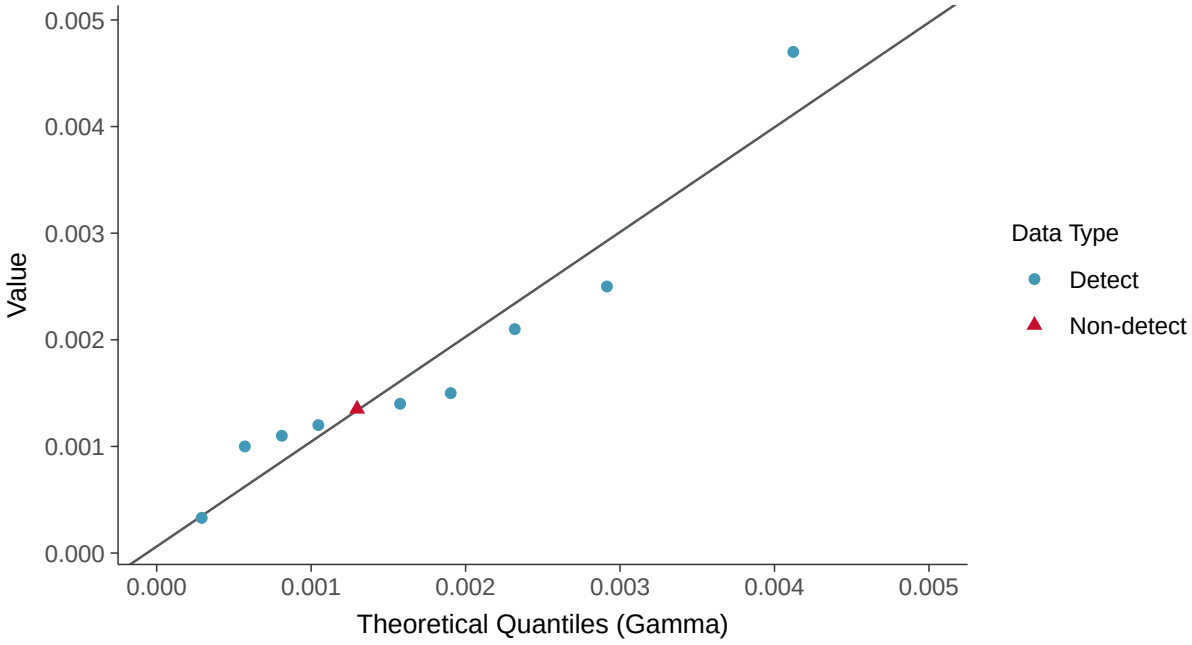
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-15 (mg/l)



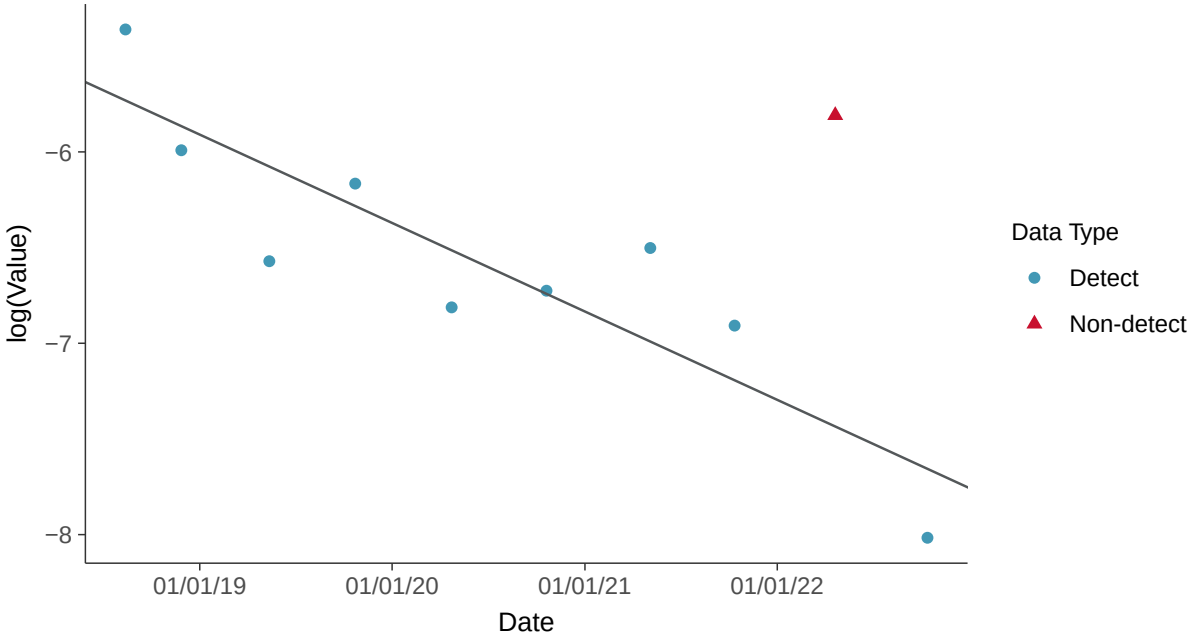
Gamma Q-Q plot using ROS Imputed Estimates

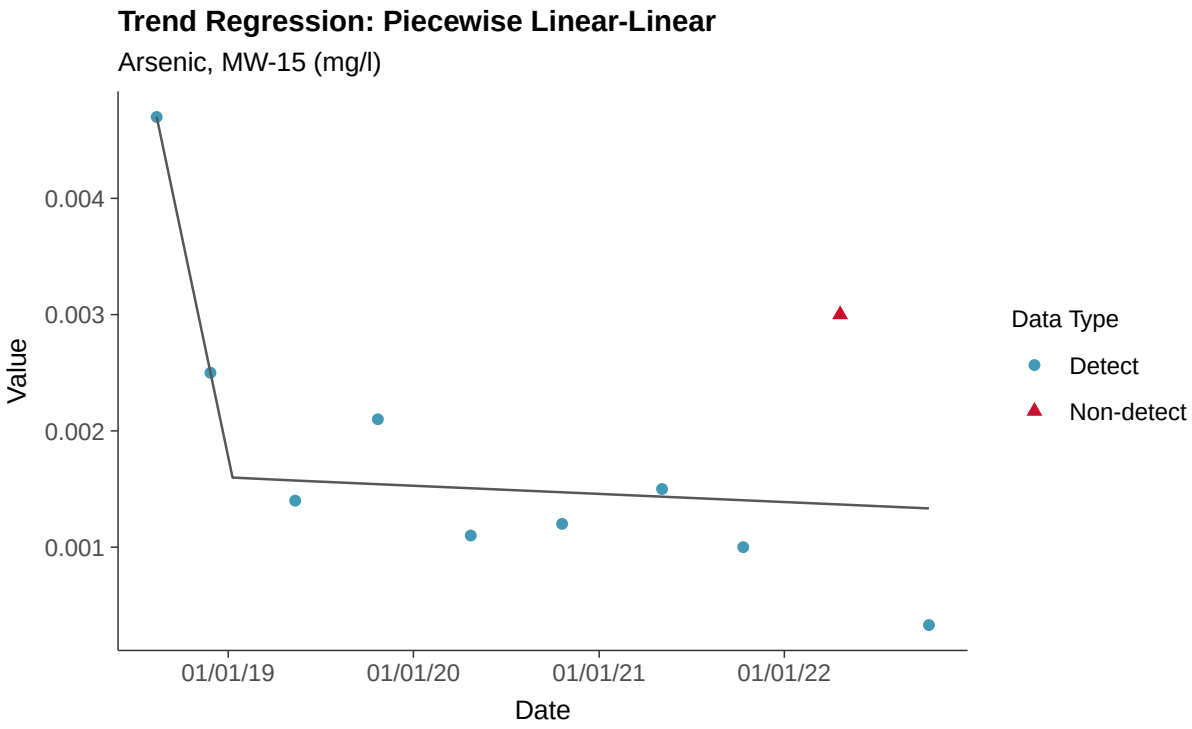
Arsenic, MW-15 (mg/l)



Trend Regression: Lognormal MLE

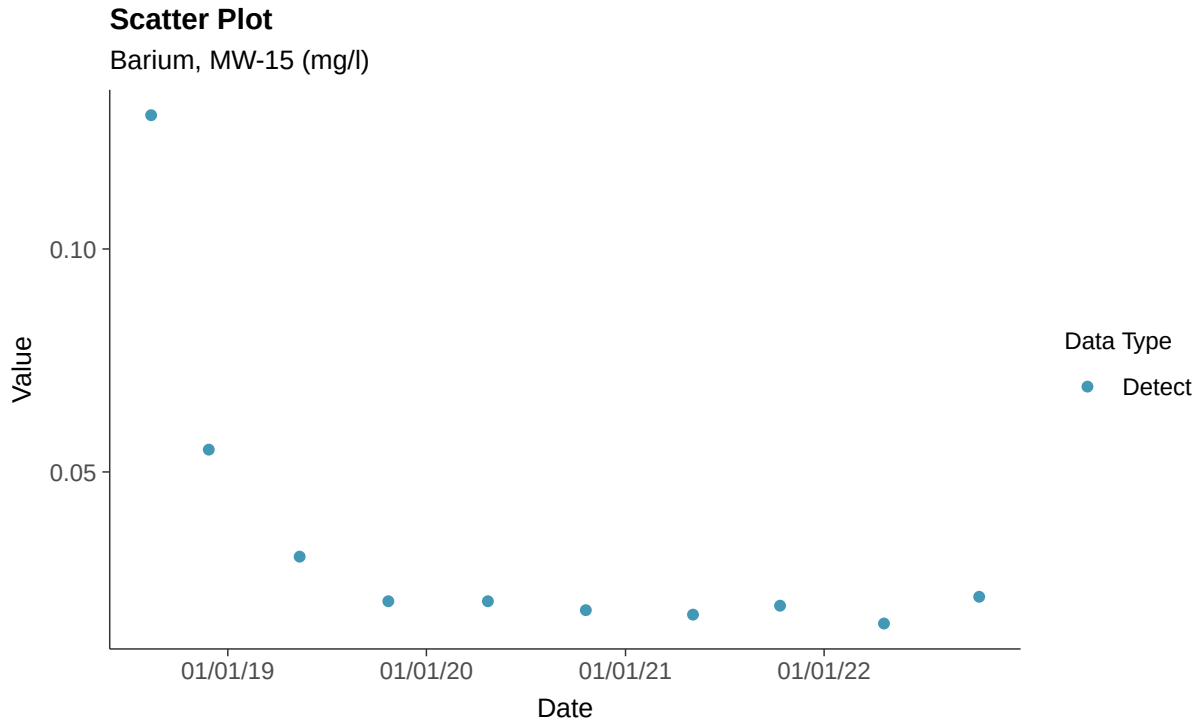
Arsenic, MW-15 (mg/l)

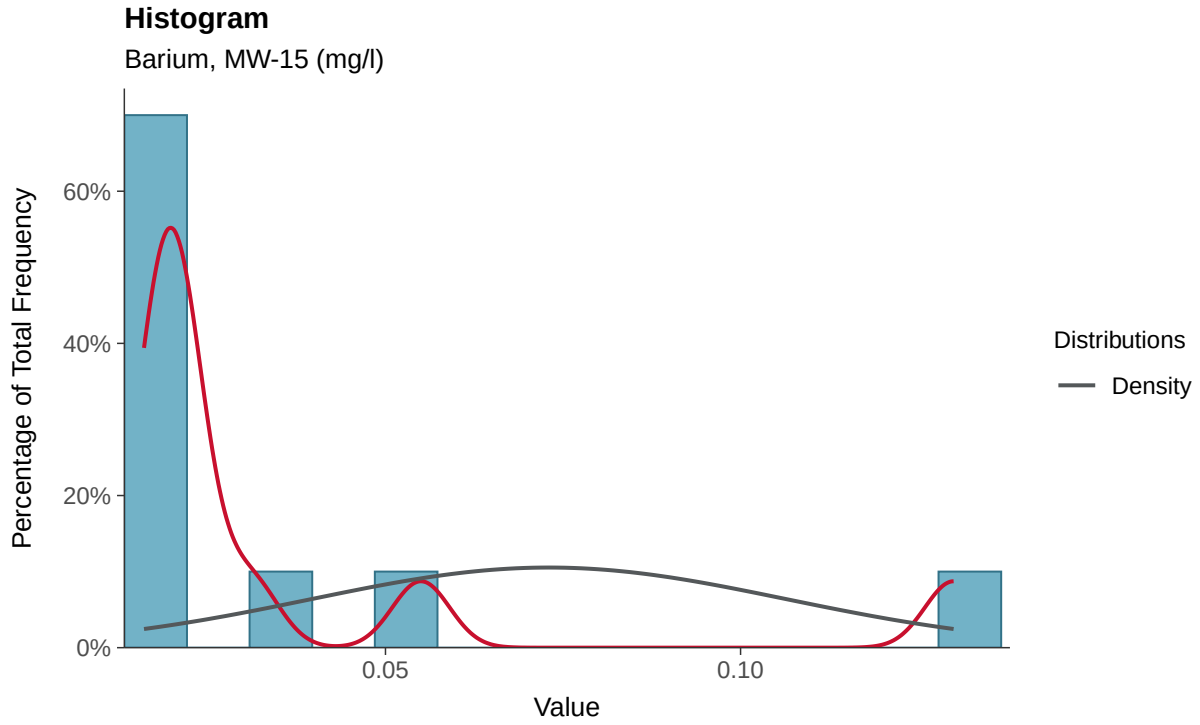



Trend Regression: Piecewise Linear-Linear
Arsenic, MW-15 (mg/l)
Value
0.004
0.003
0.002
0.001
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-15

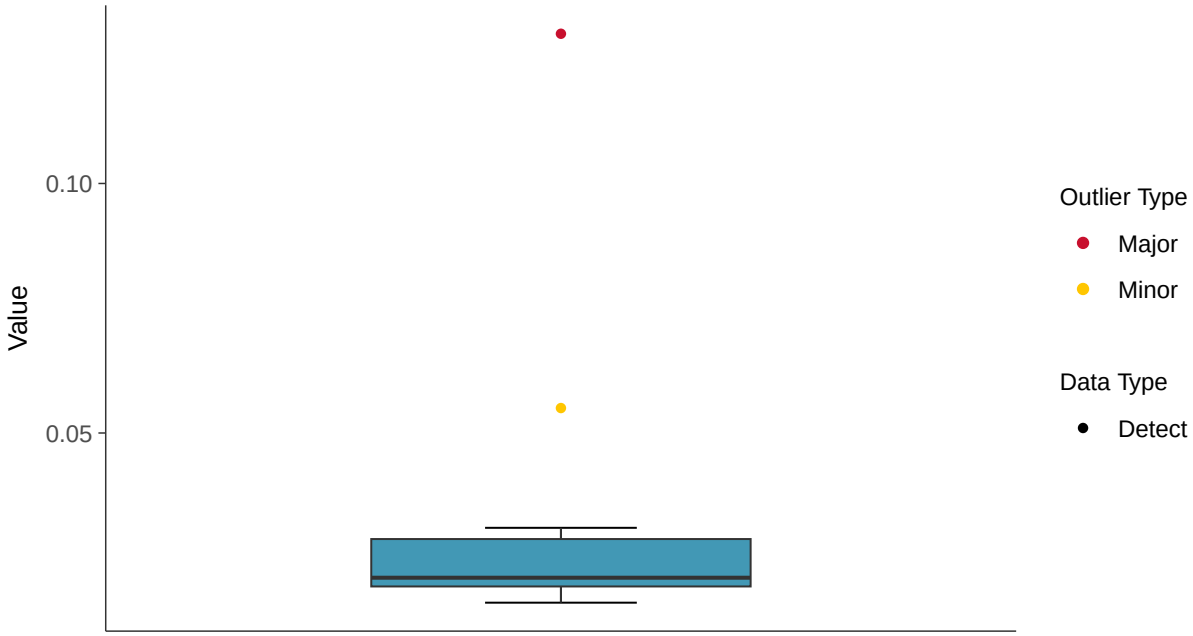
ID: 14_2_106





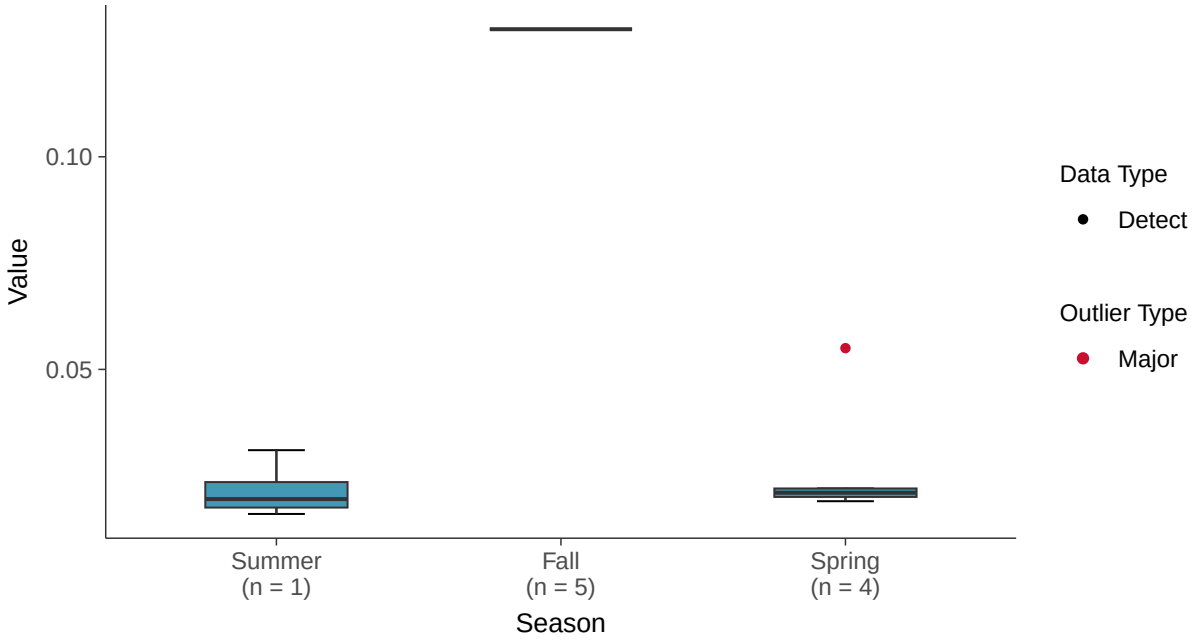
Boxplot

Barium, MW-15 (mg/l)



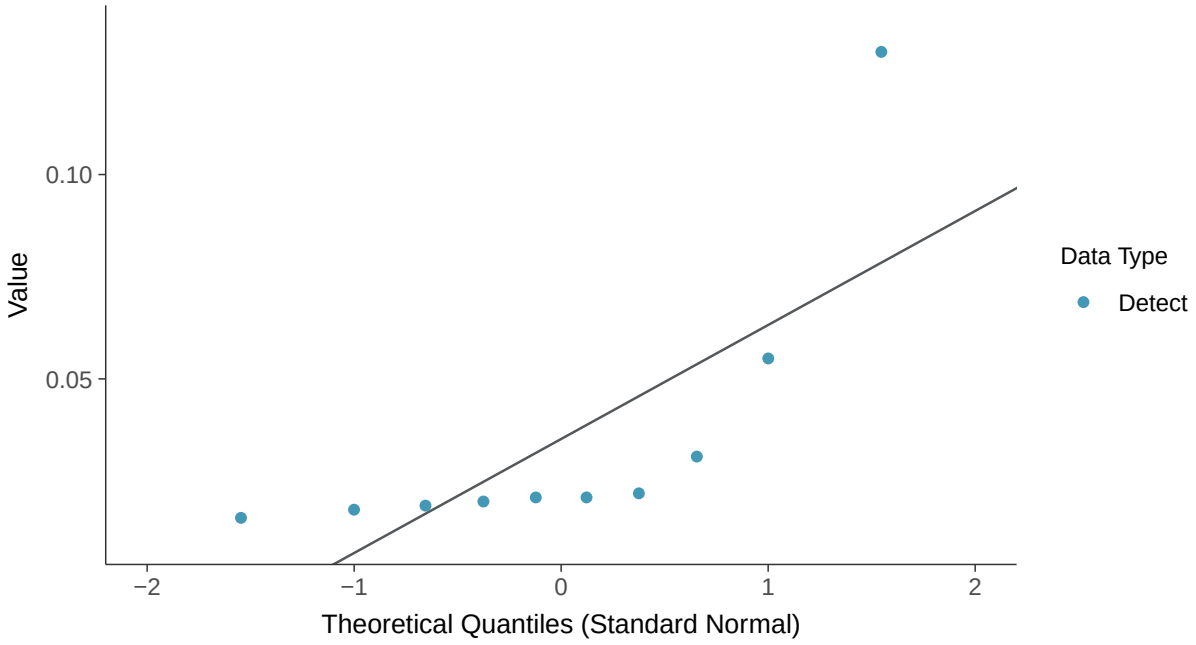
Boxplot by Season

Barium, MW-15 (mg/l)



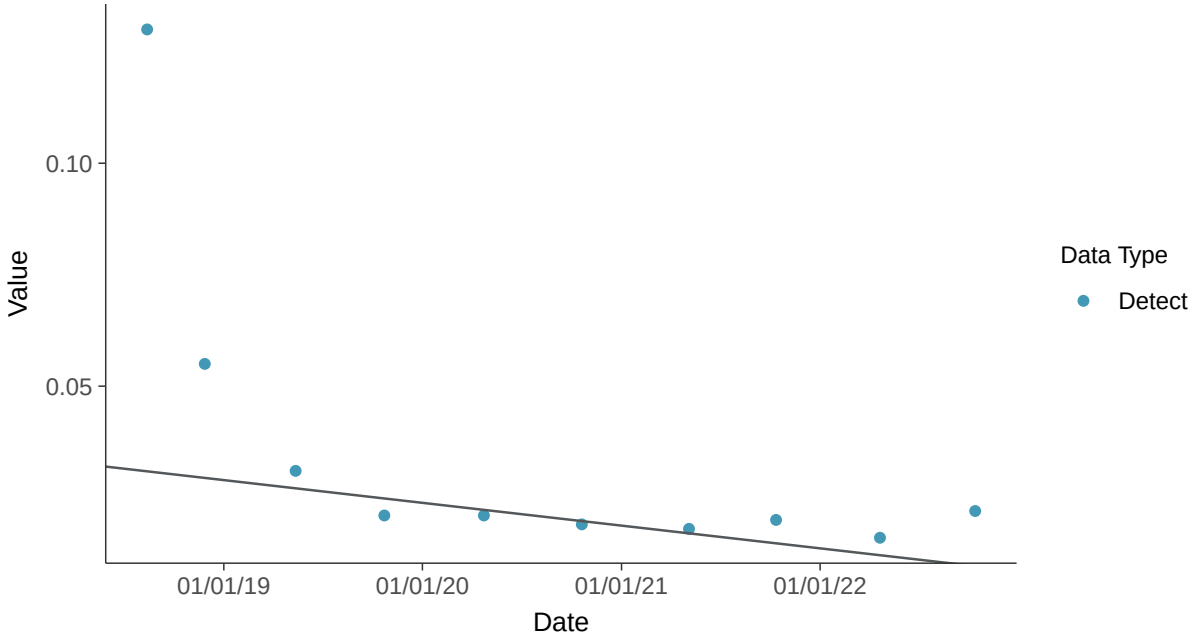
Normal Q-Q plot

Barium, MW-15 (mg/l)



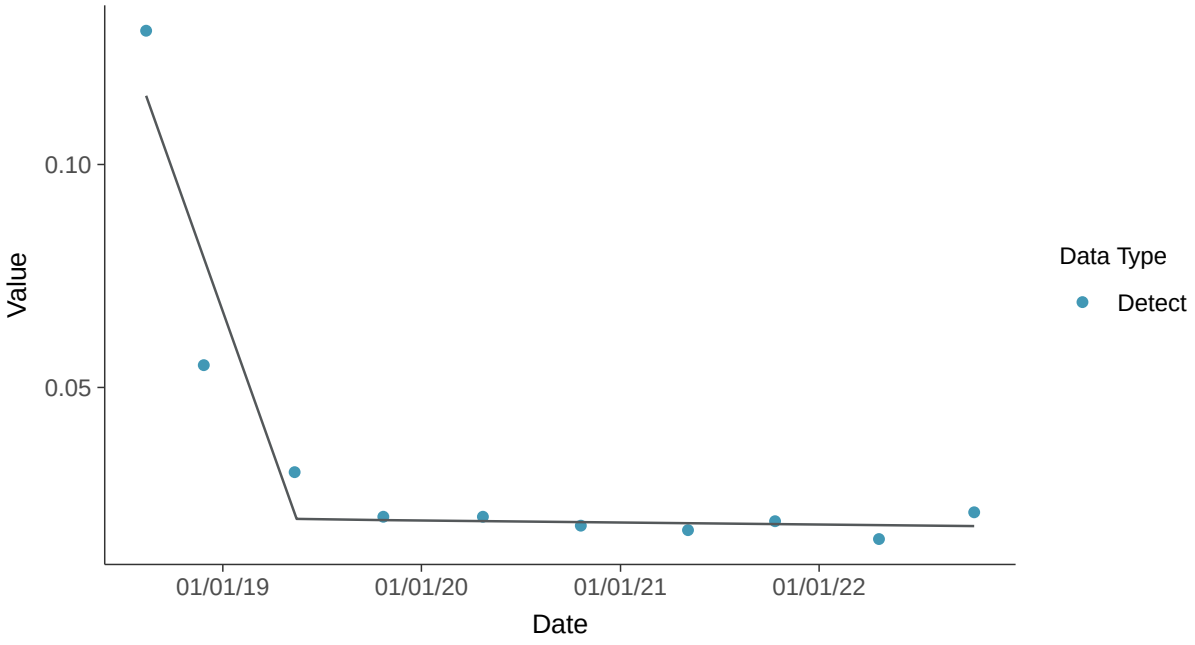
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-15 (mg/l)



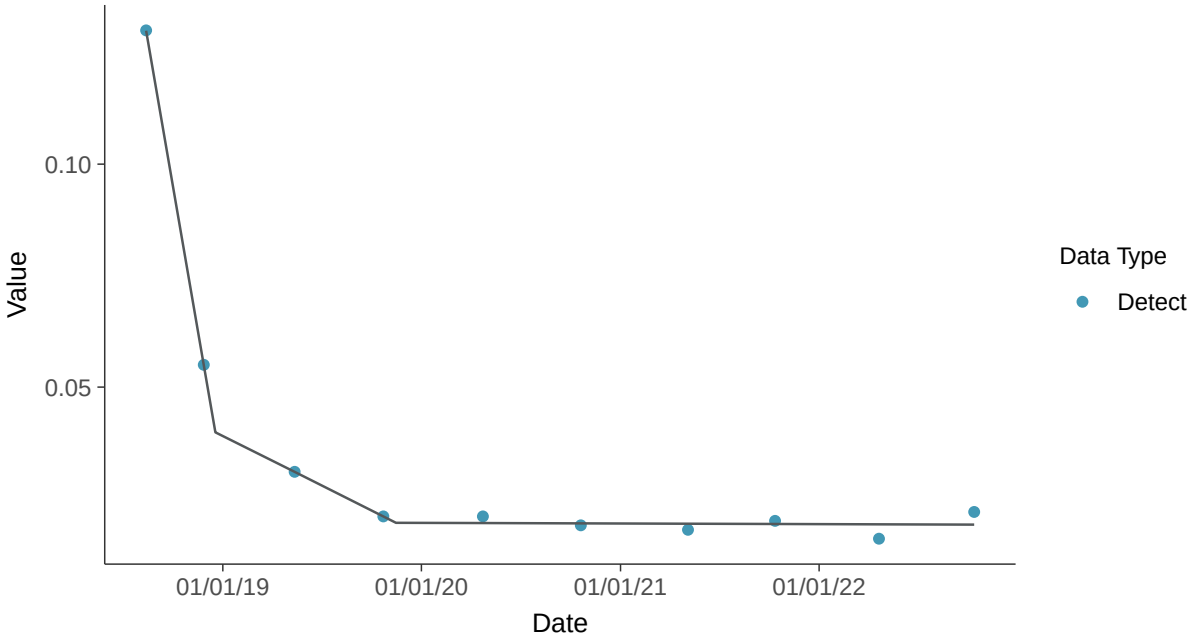
Trend Regression: Piecewise Linear-Linear

Barium, MW-15 (mg/l)



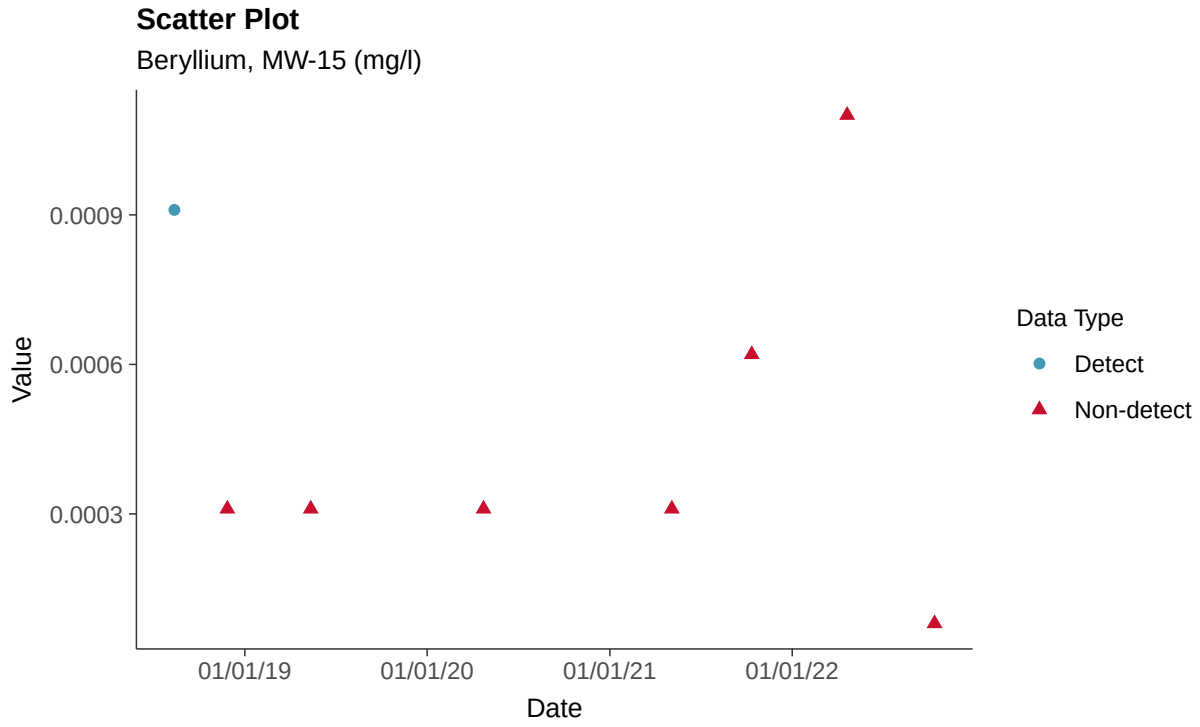
Trend Regression: Piecewise Linear-Linear-Linear

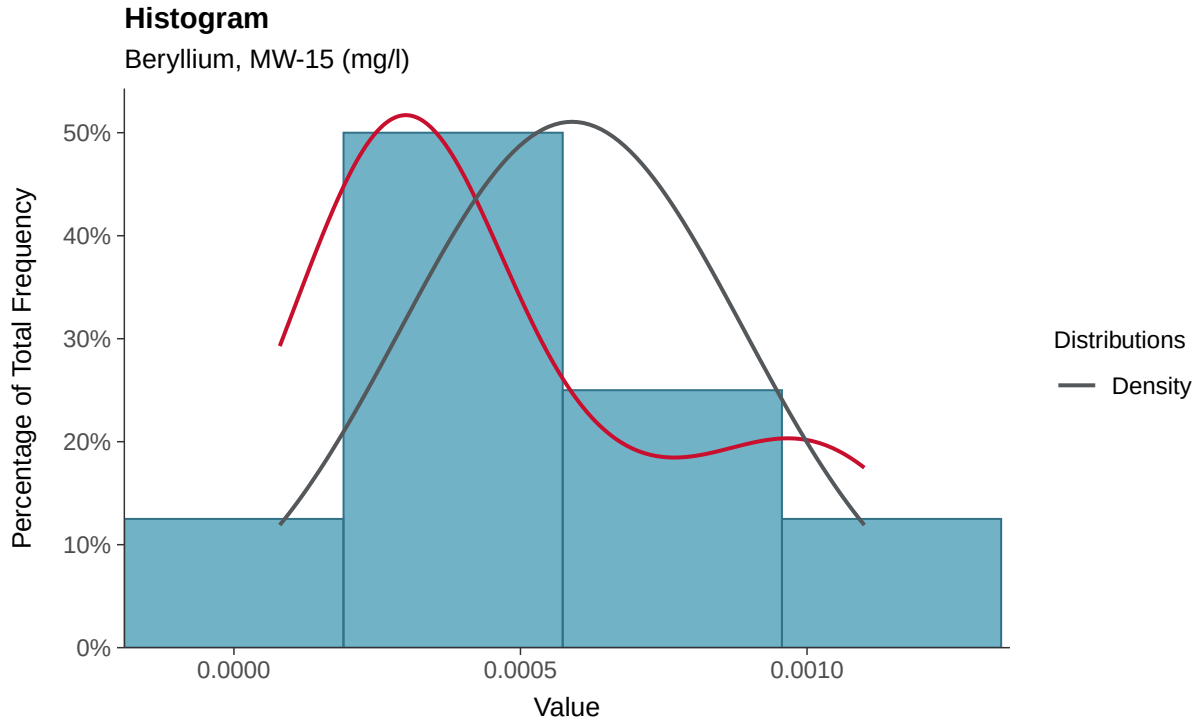
Barium, MW-15 (mg/l)



Appendix IV: Beryllium, MW-15

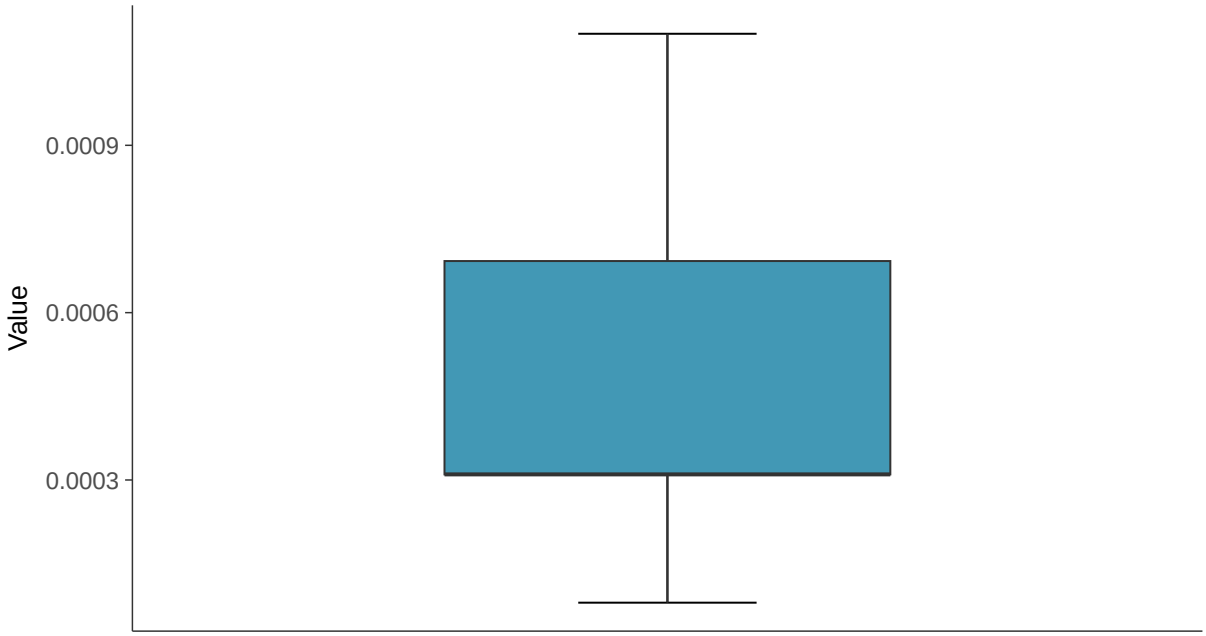
ID: 14_2_107





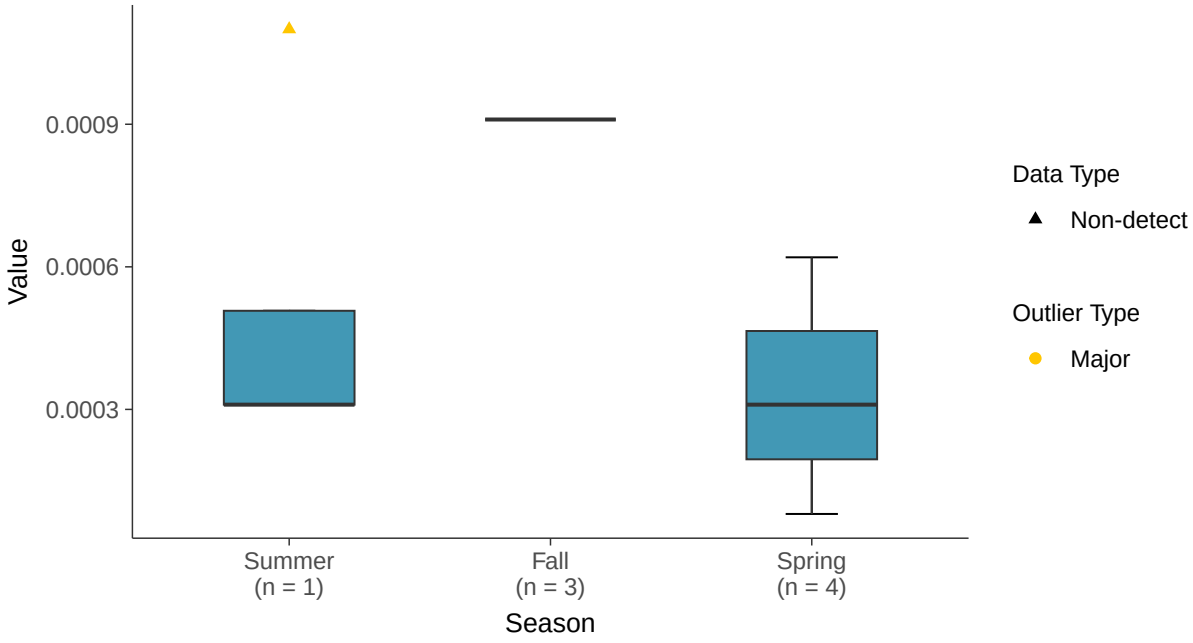
Boxplot

Beryllium, MW-15 (mg/l)



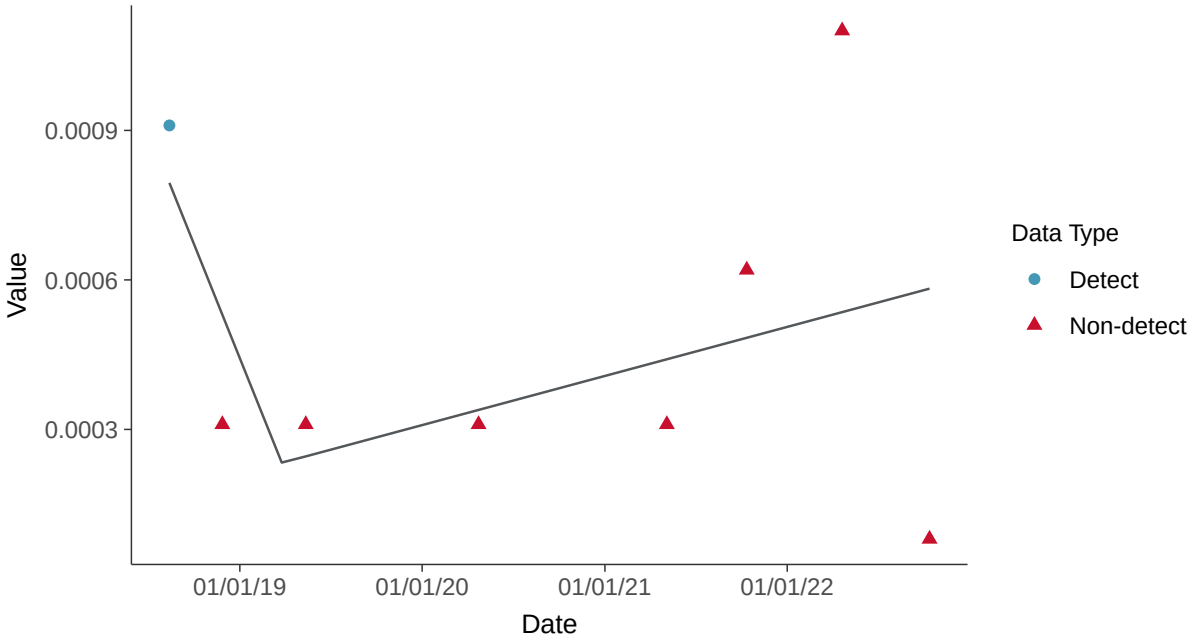
Boxplot by Season

Beryllium, MW-15 (mg/l)



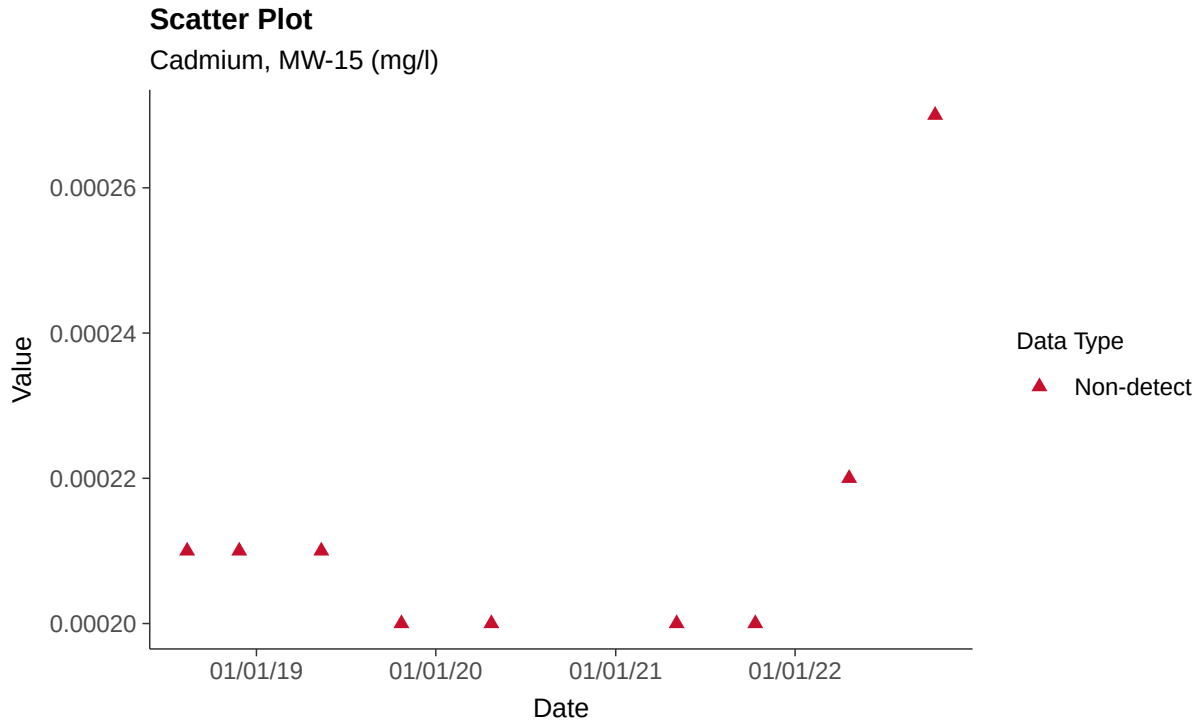
Trend Regression: Piecewise Linear-Linear

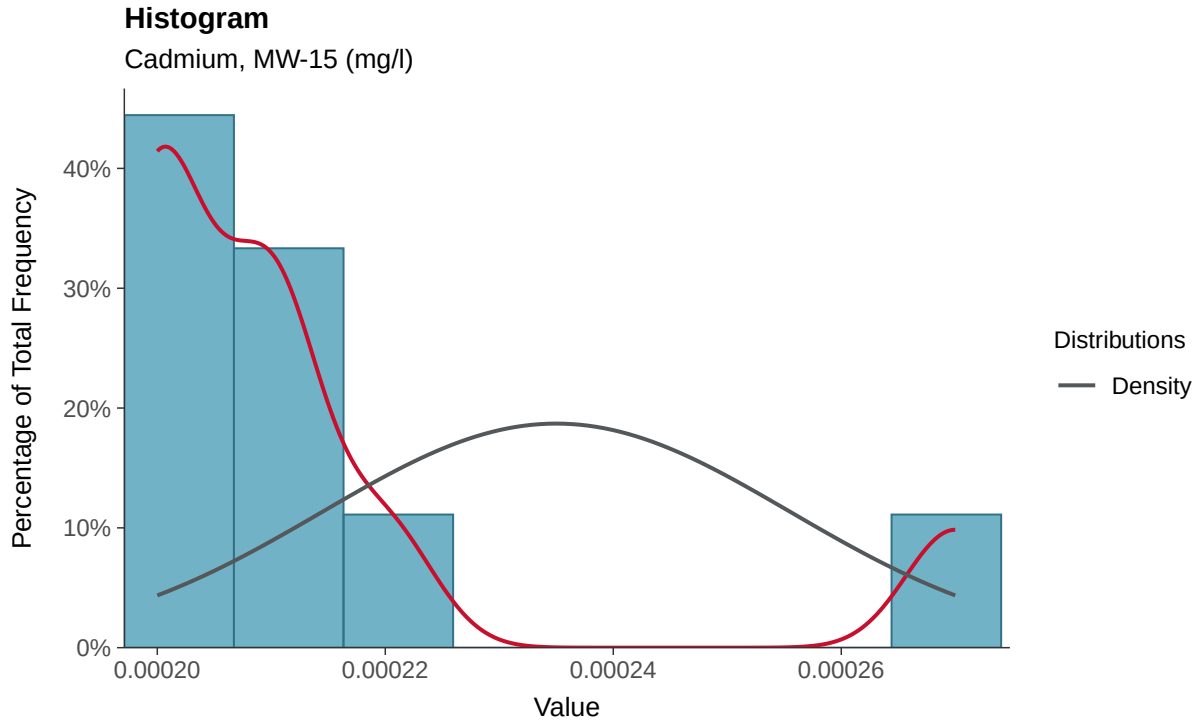
Beryllium, MW-15 (mg/l)



Appendix IV: Cadmium, MW-15

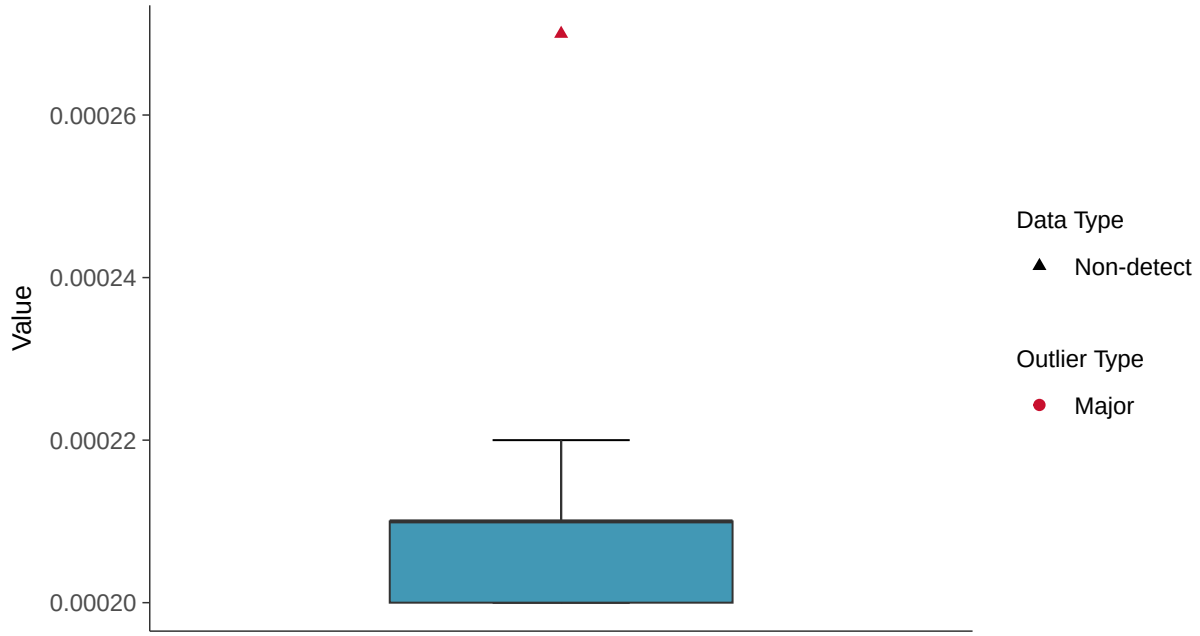
ID: 14_2_109





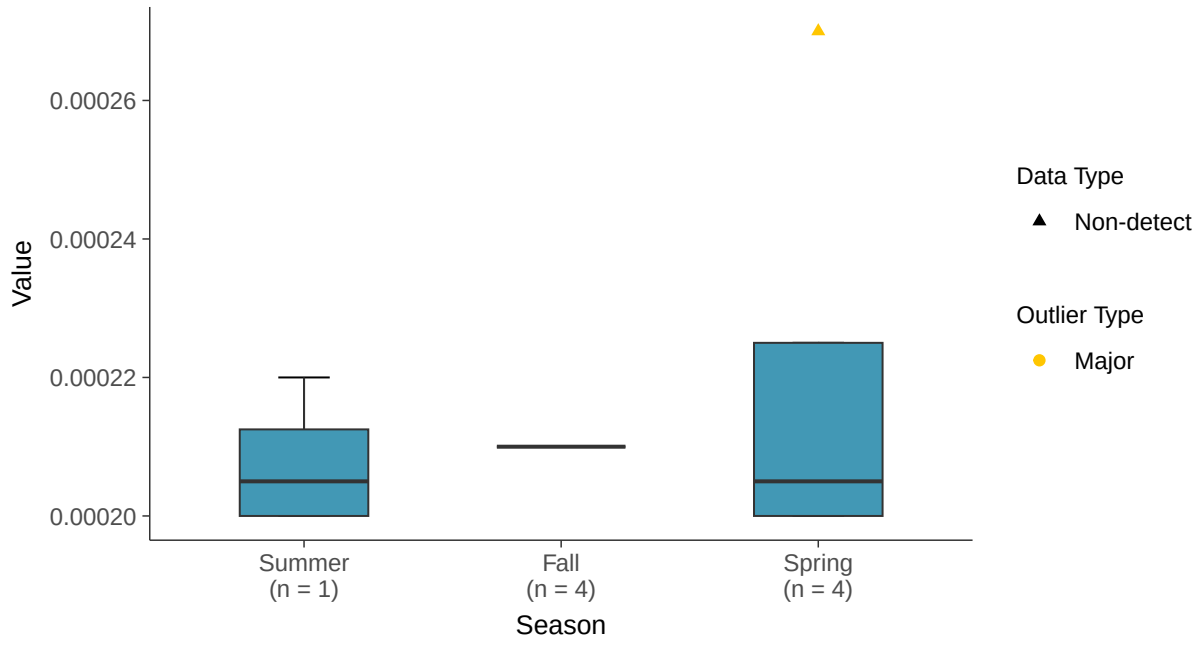
Boxplot

Cadmium, MW-15 (mg/l)



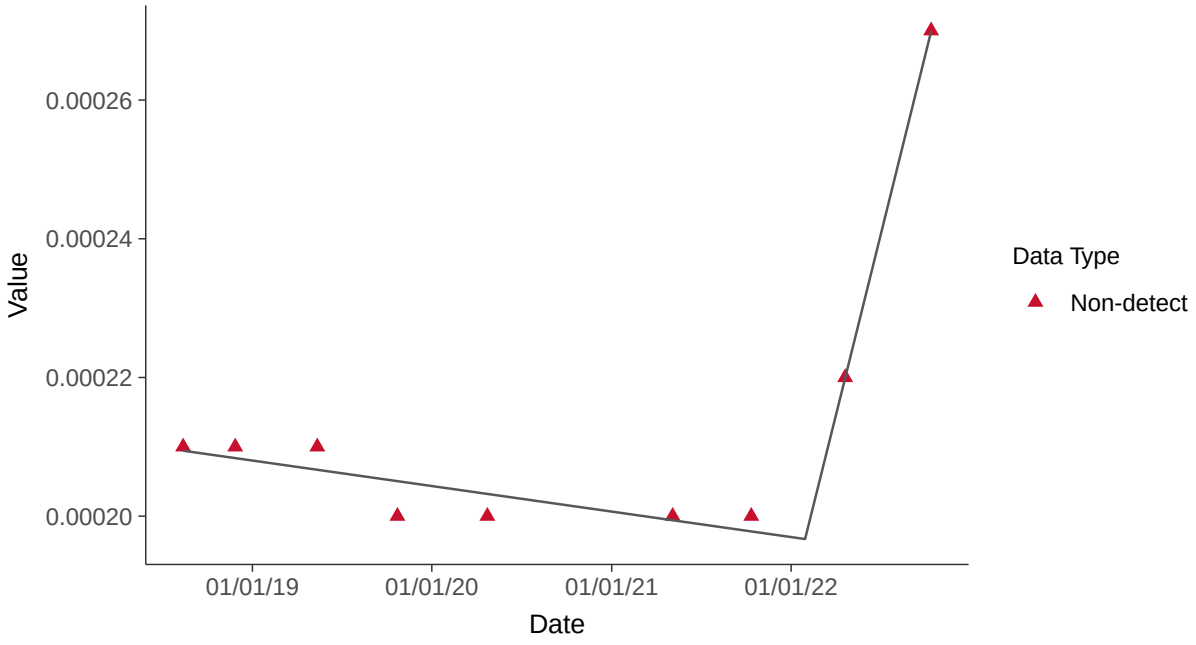
Boxplot by Season

Cadmium, MW-15 (mg/l)



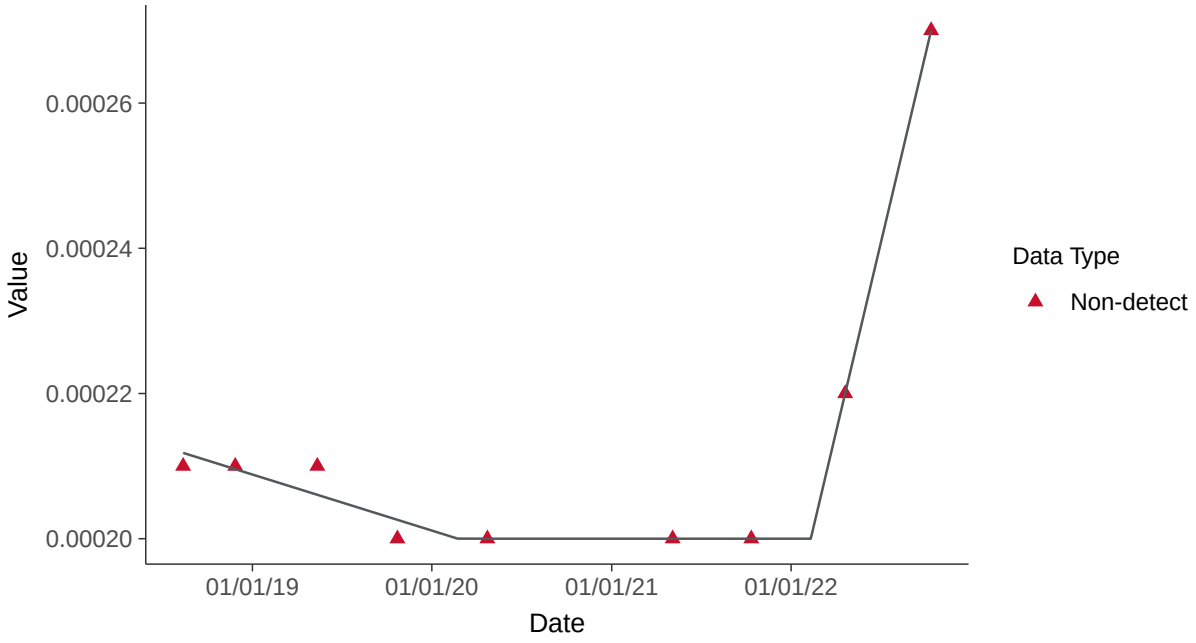
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-15 (mg/l)



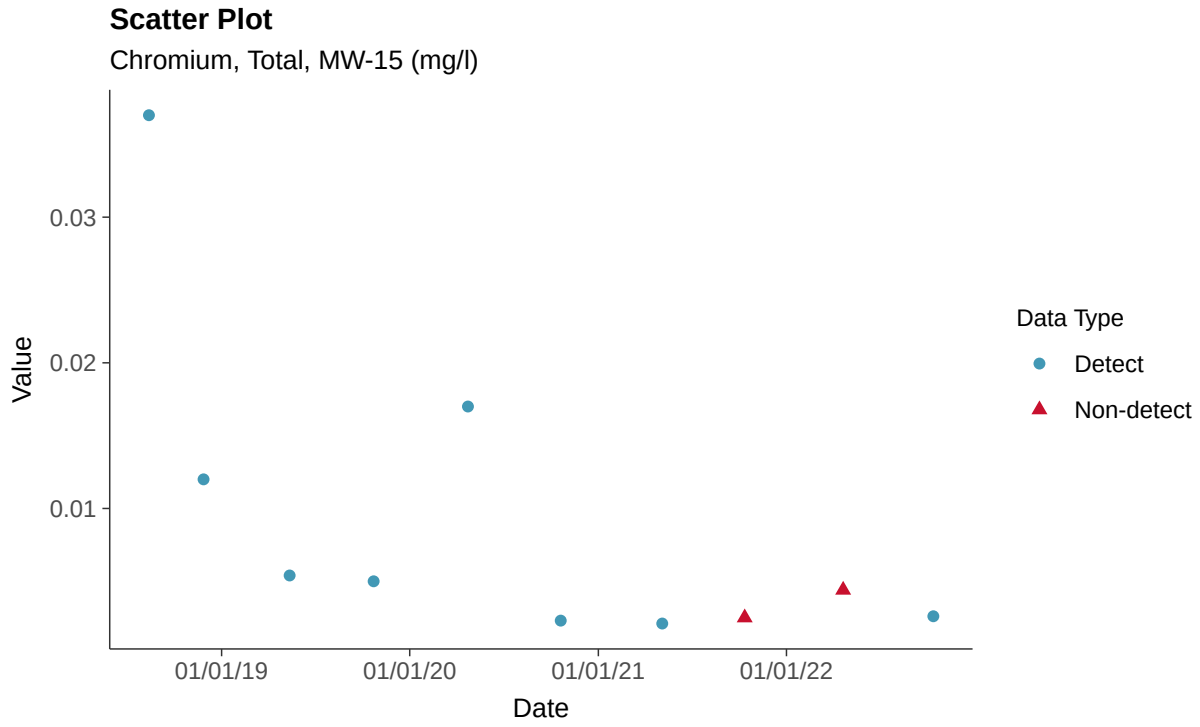
Trend Regression: Piecewise Linear-Linear-Linear

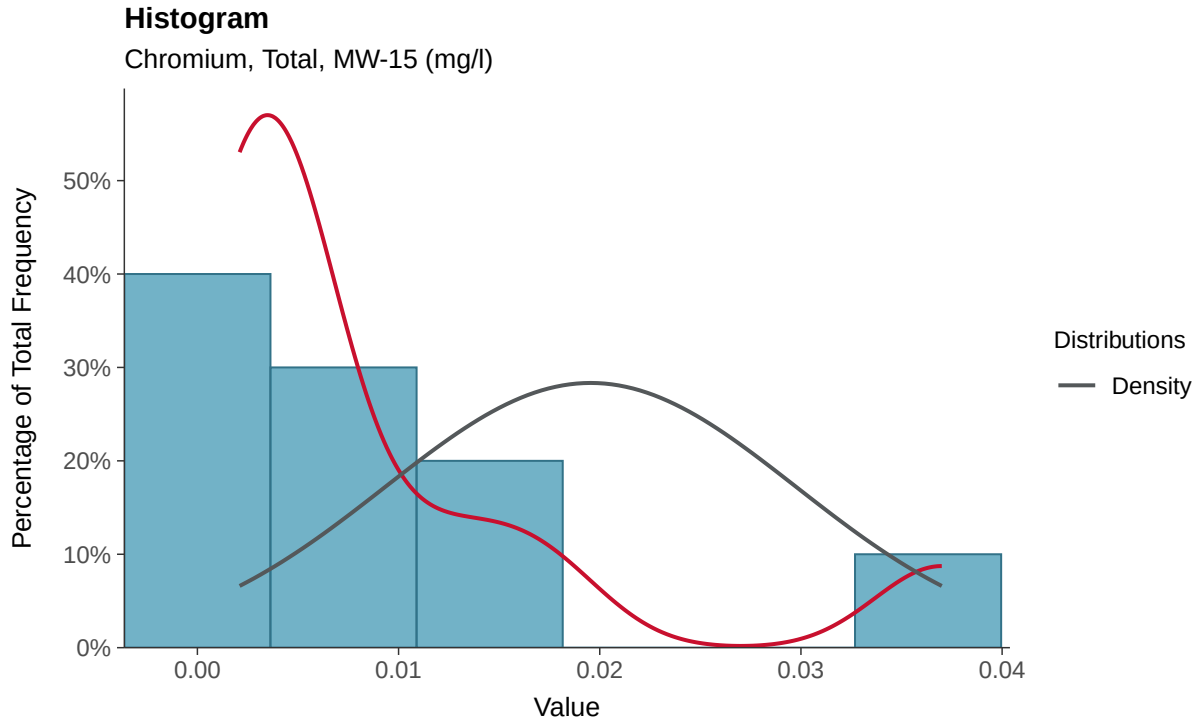
Cadmium, MW-15 (mg/l)



Appendix IV: Chromium, Total, MW-15

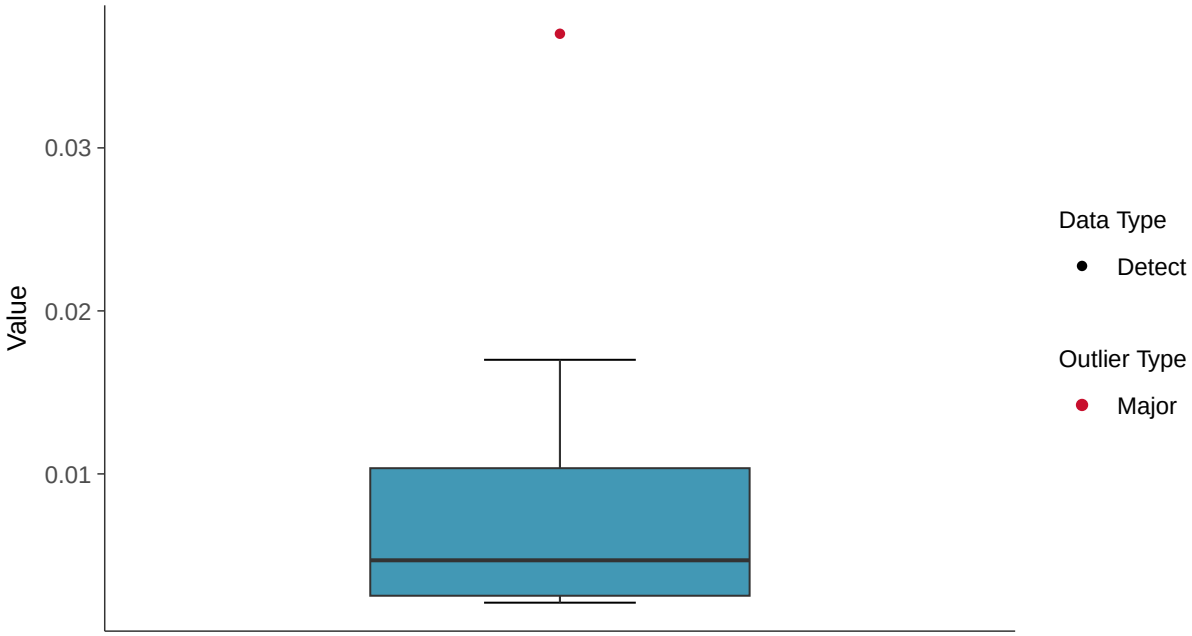
ID: 14_2_112





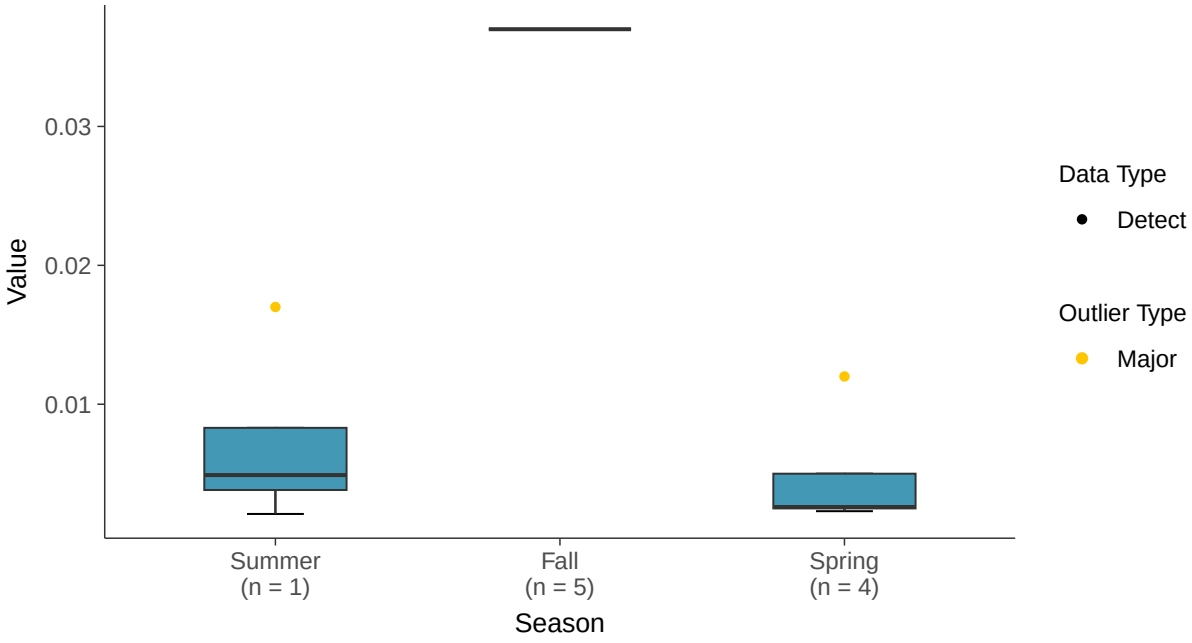
Boxplot

Chromium, Total, MW-15 (mg/l)



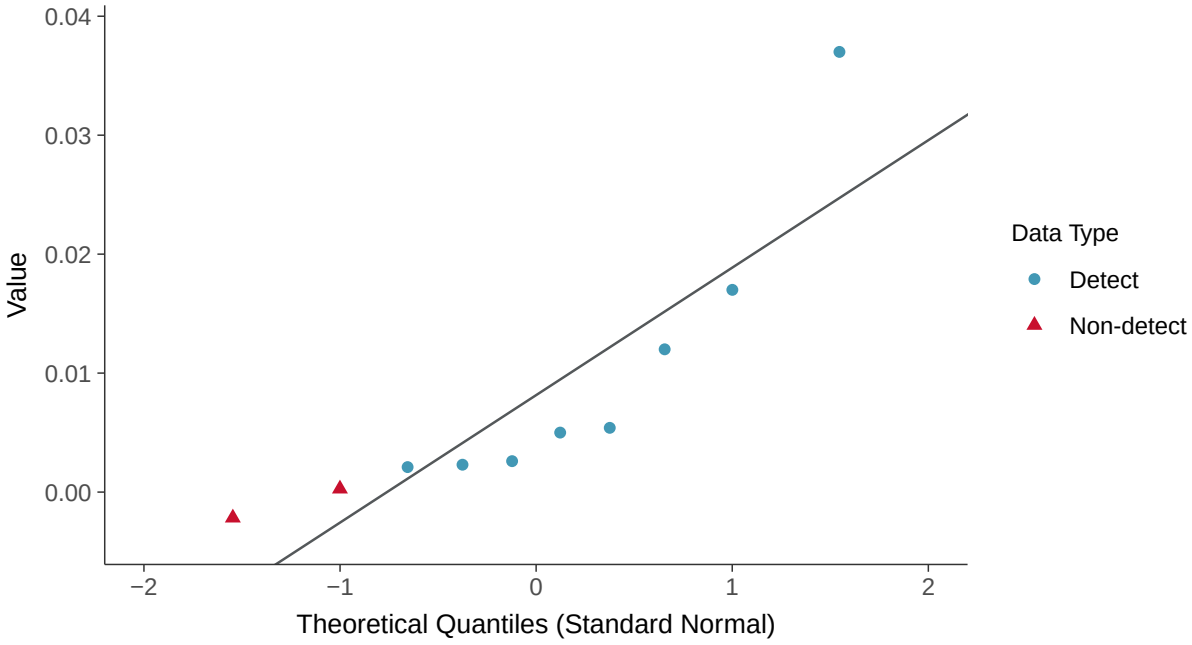
Boxplot by Season

Chromium, Total, MW-15 (mg/l)



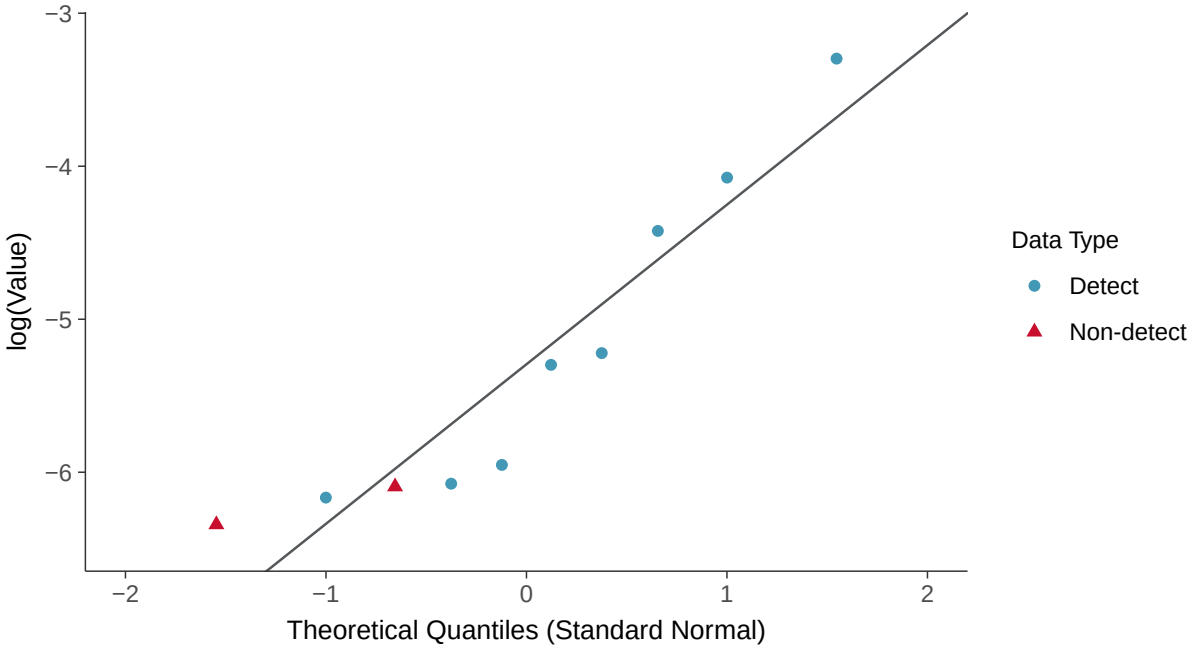
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



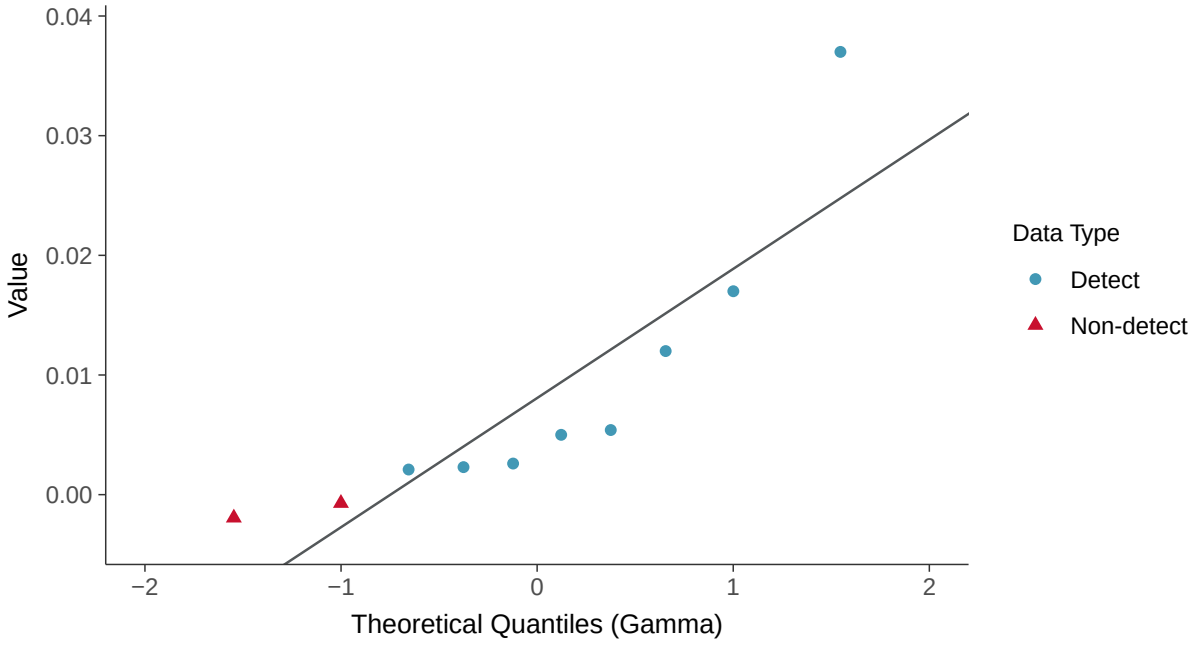
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



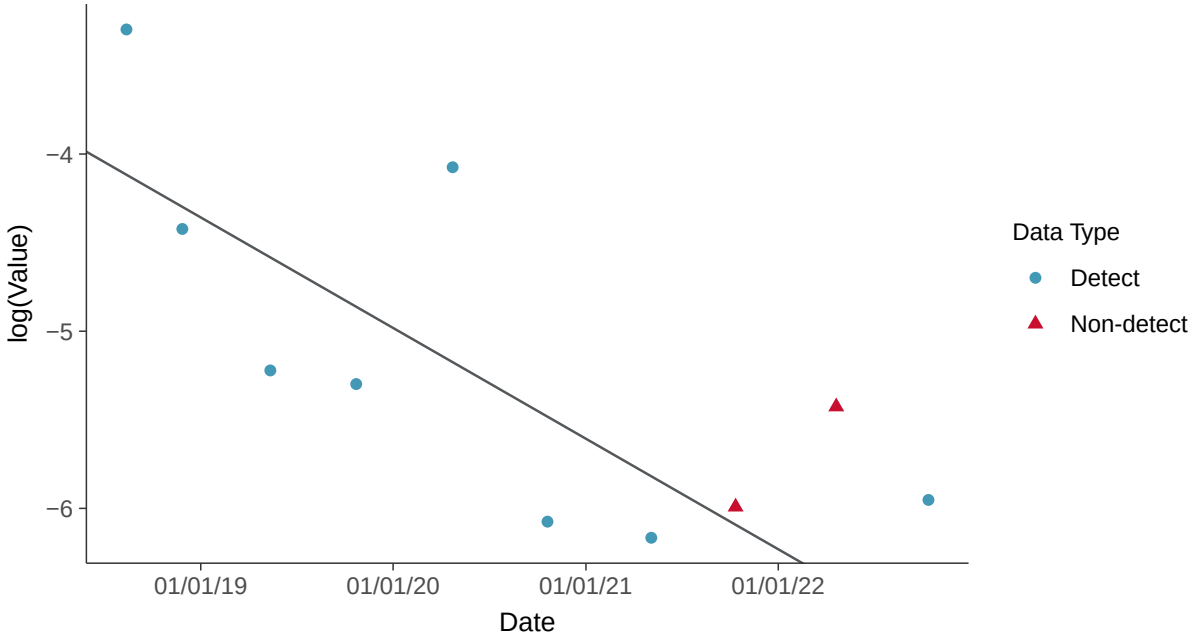
Gamma Q-Q plot using ROS Imputed Estimates

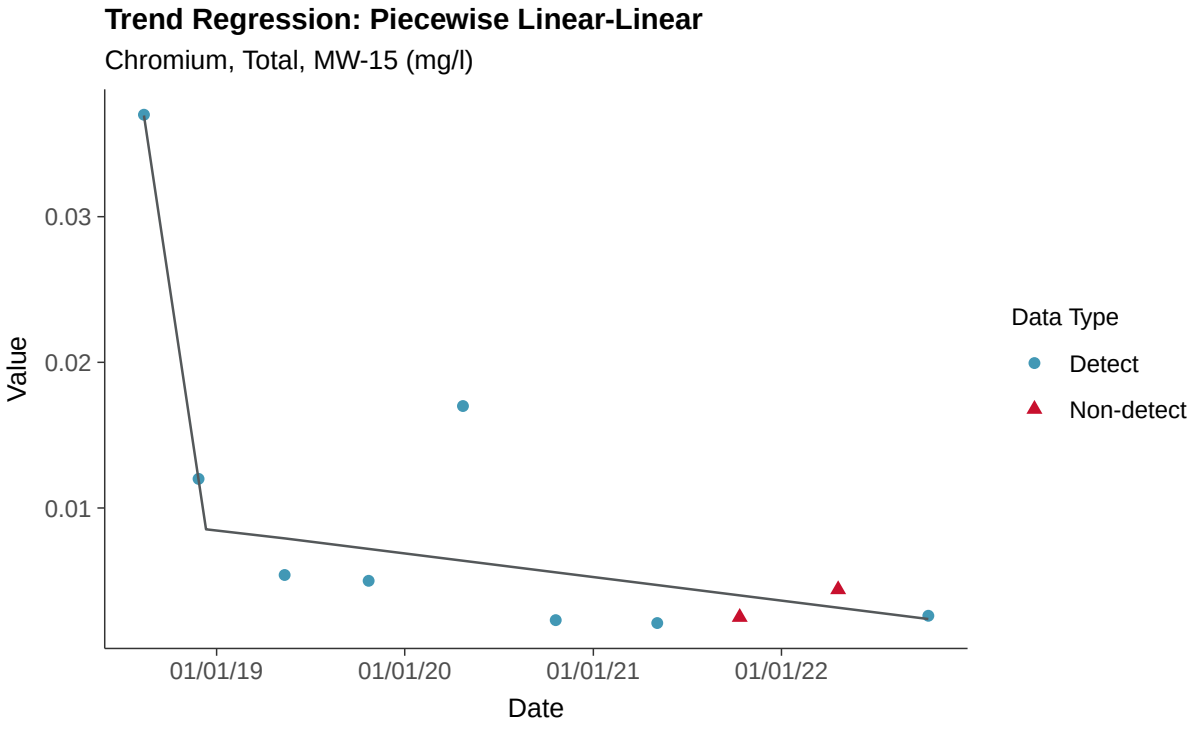
Chromium, Total, MW-15 (mg/l)



Trend Regression: Lognormal MLE

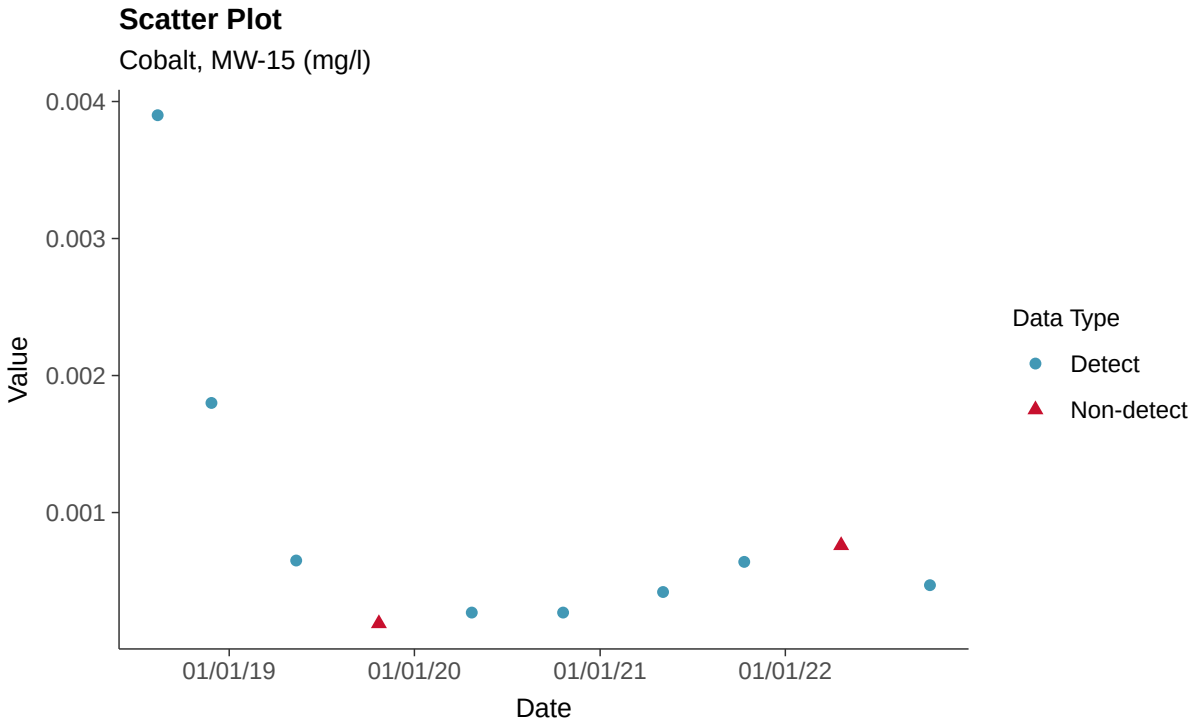
Chromium, Total, MW-15 (mg/l)

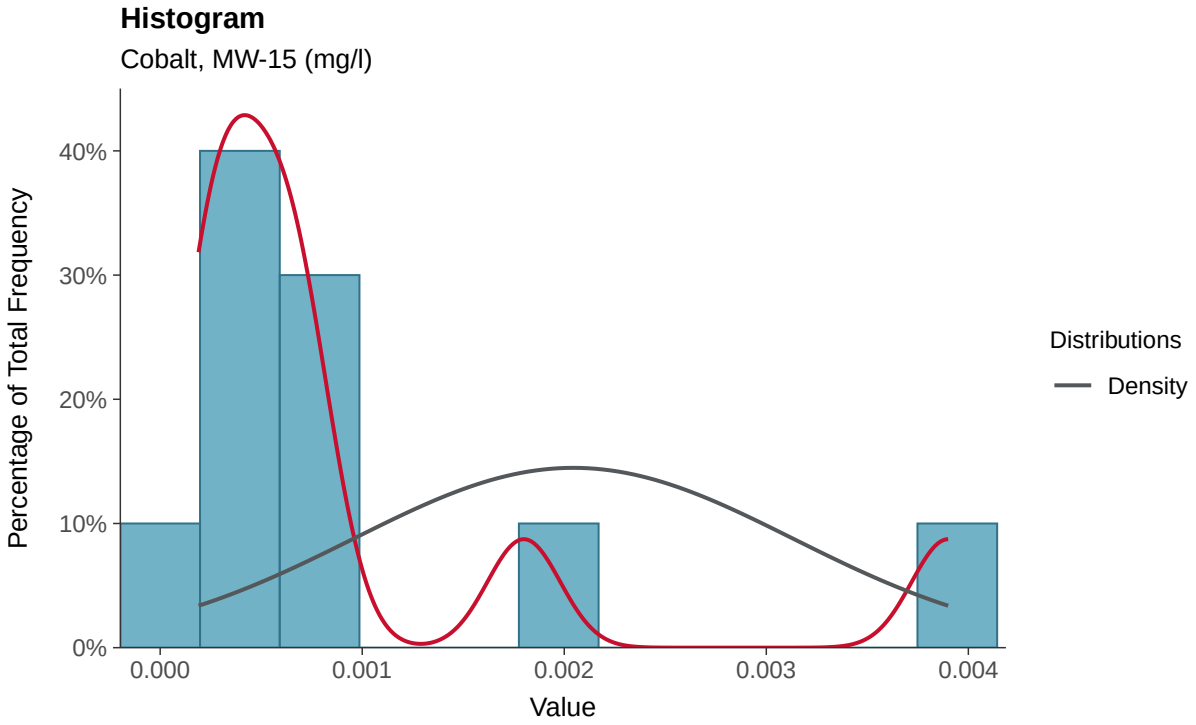



Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-15 (mg/l)
Value
0.03
0.02
0.01
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-15

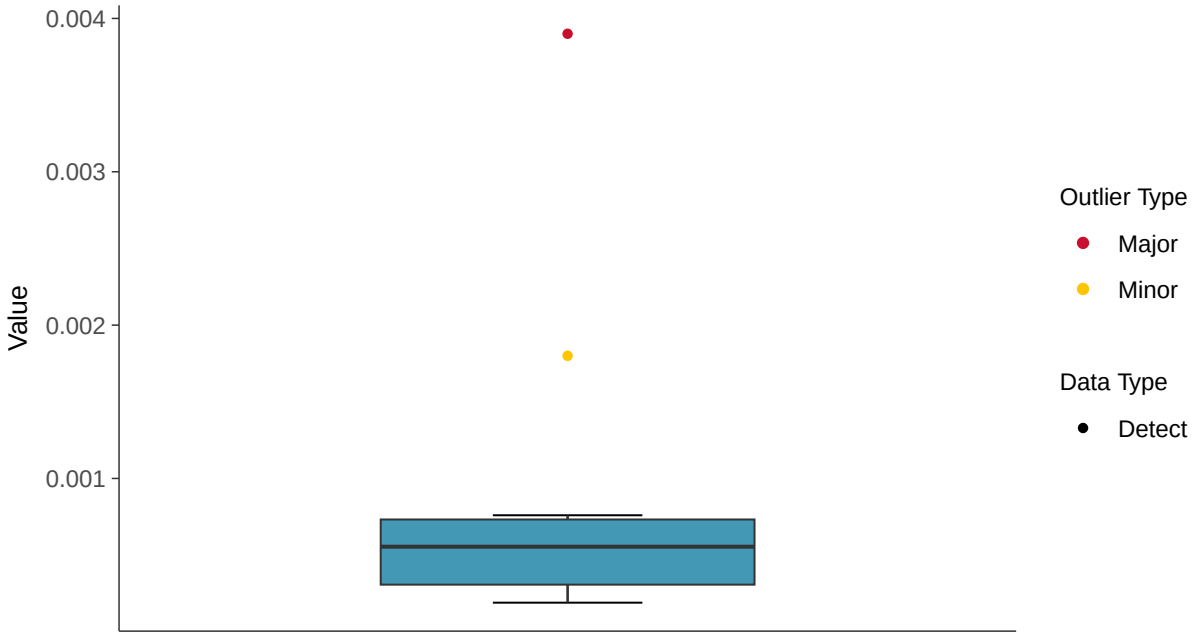
ID: 14_2_113





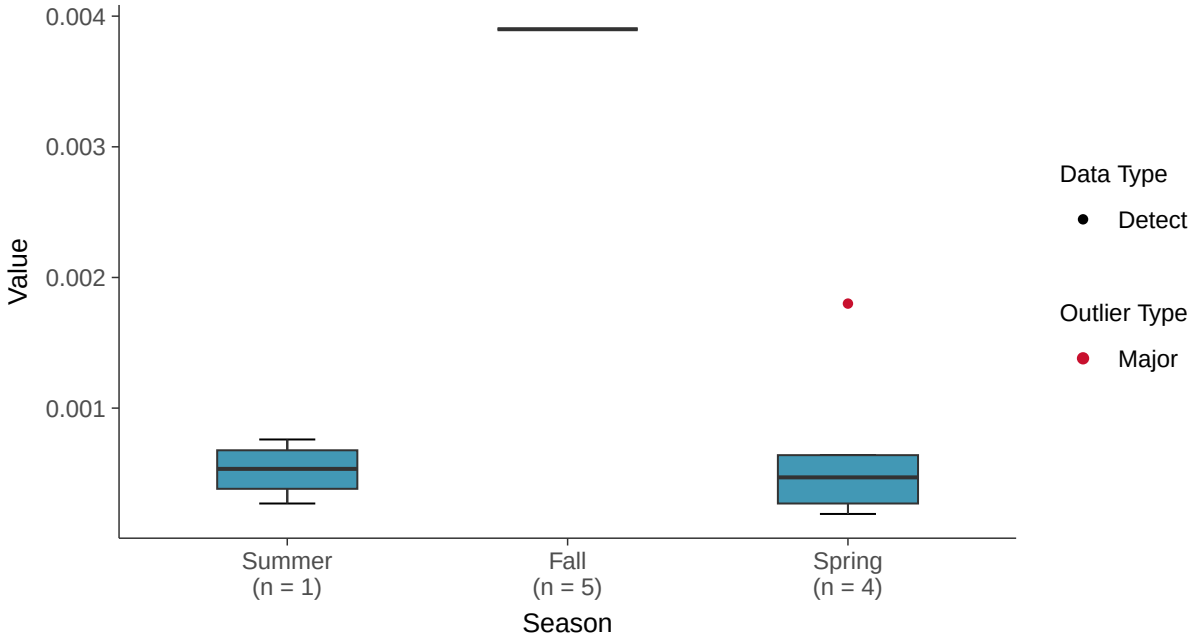
Boxplot

Cobalt, MW-15 (mg/l)



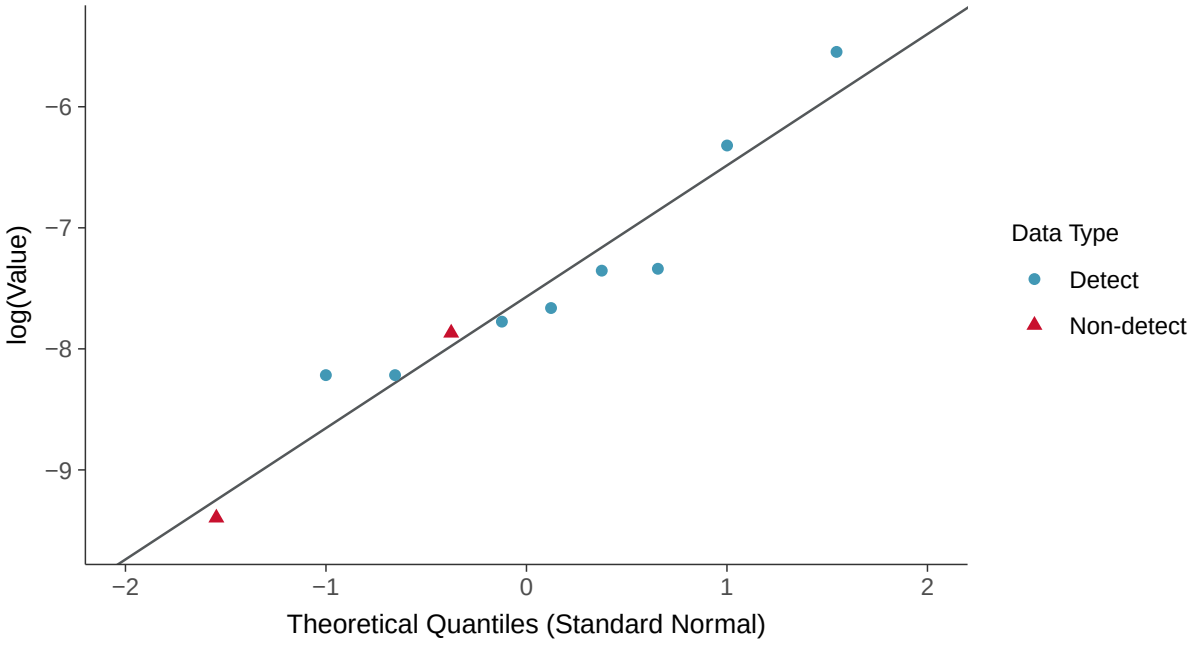
Boxplot by Season

Cobalt, MW-15 (mg/l)



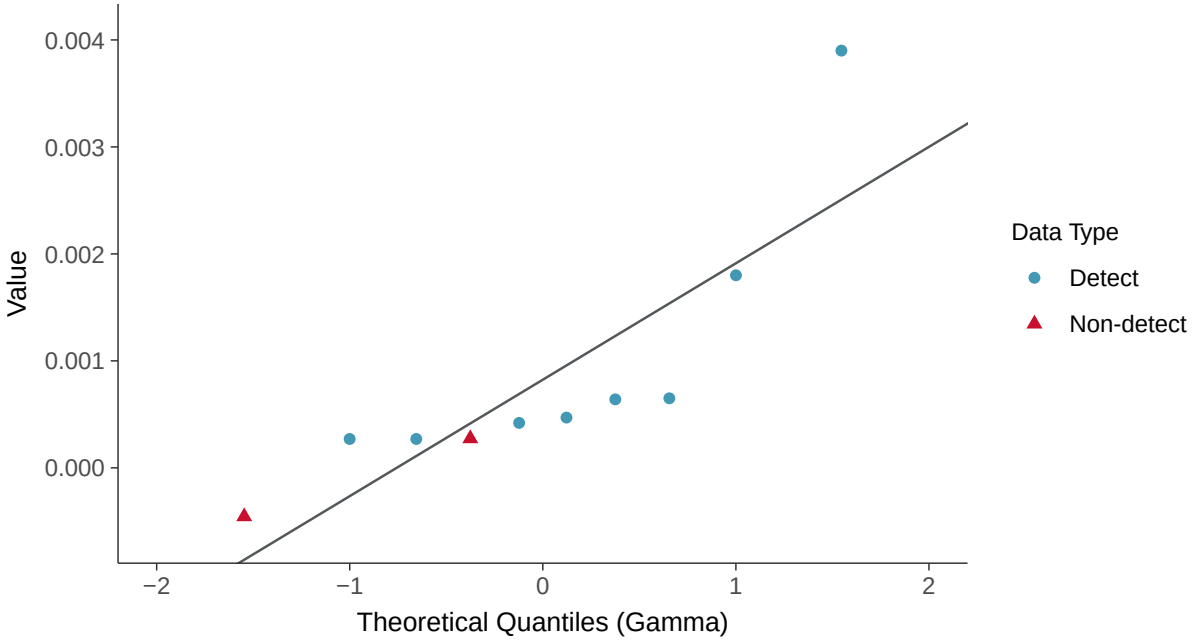
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-15 (mg/l)



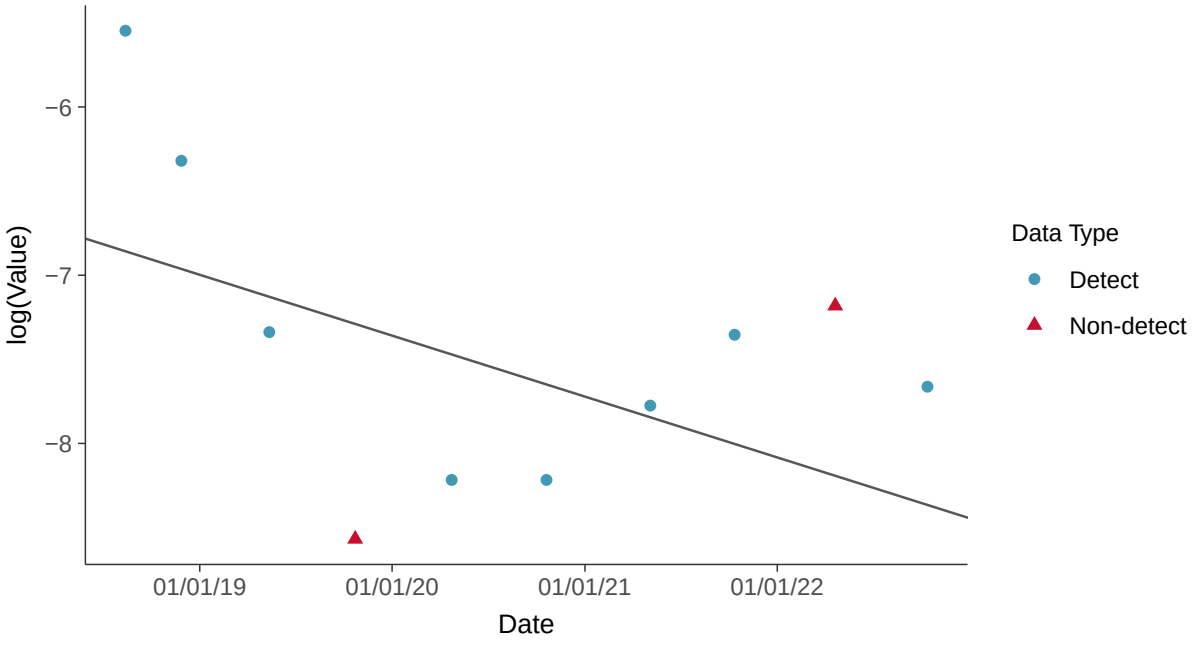
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-15 (mg/l)



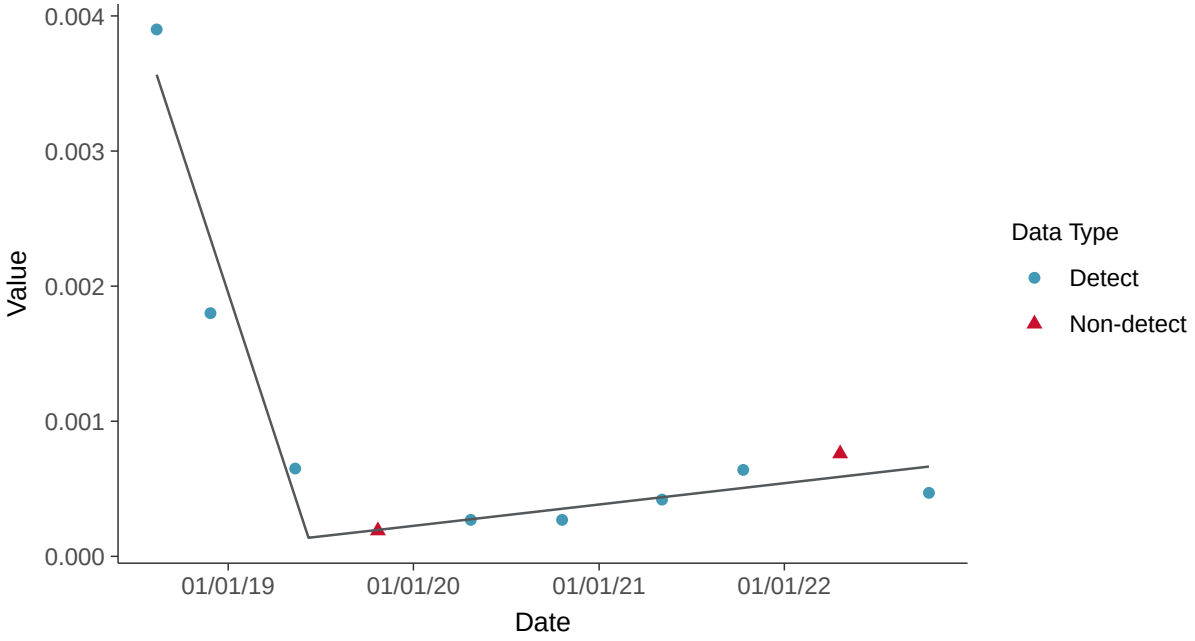
Trend Regression: Lognormal MLE

Cobalt, MW-15 (mg/l)



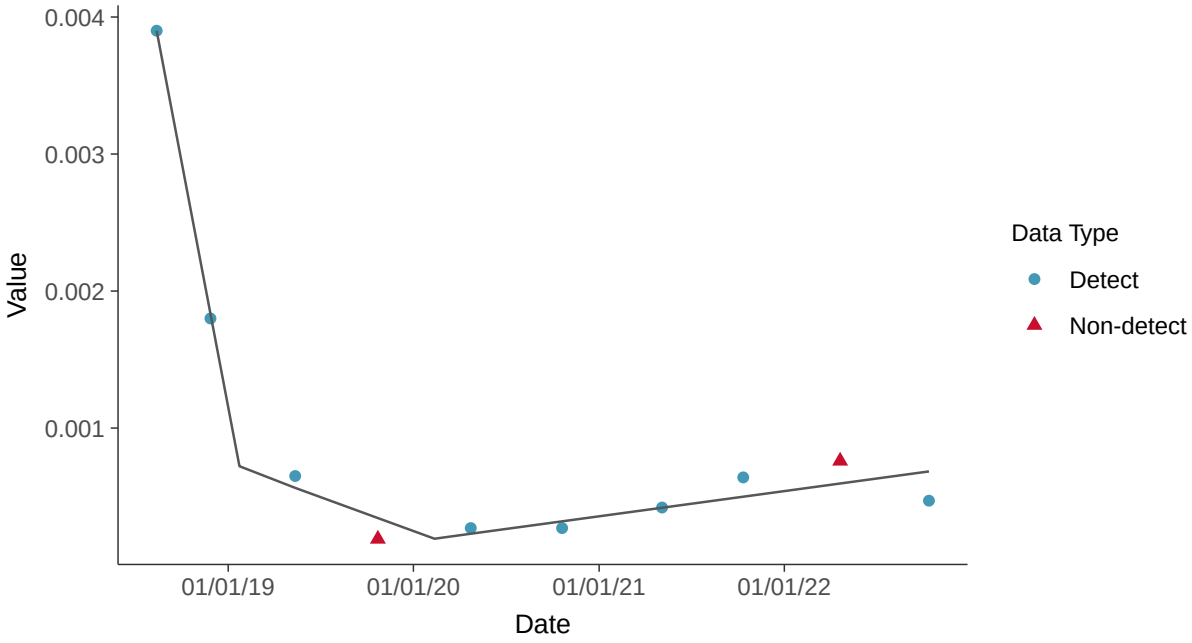
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-15 (mg/l)



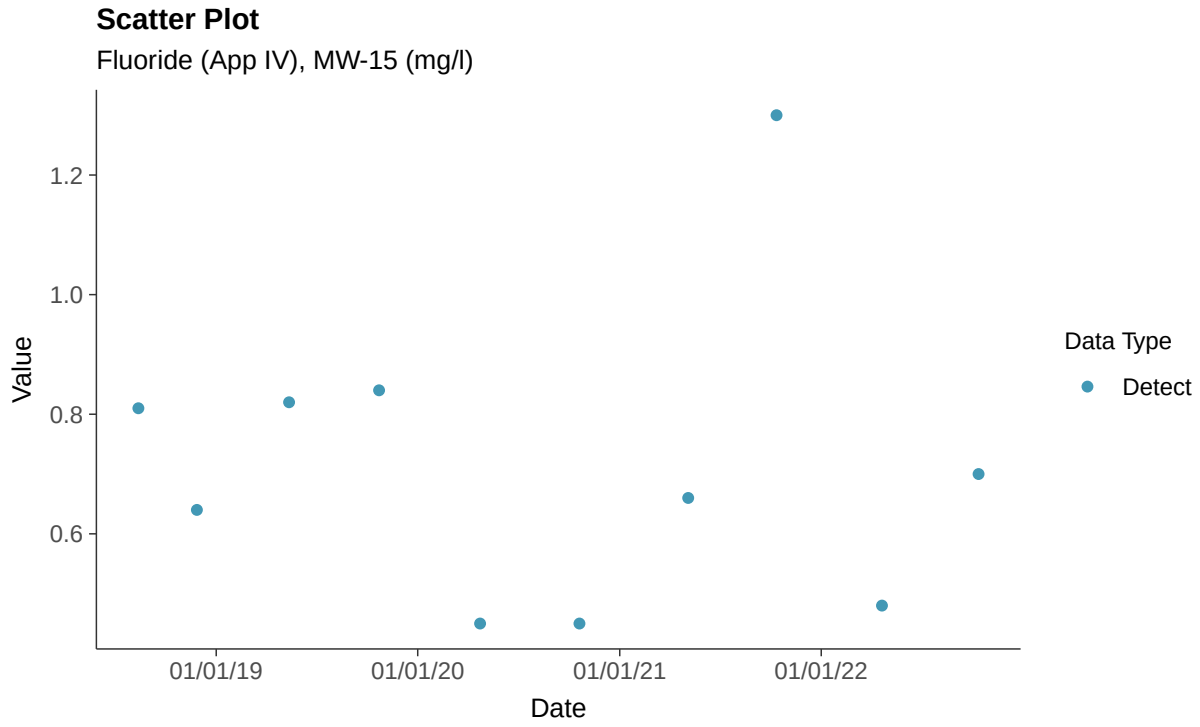
Trend Regression: Piecewise Linear-Linear-Linear

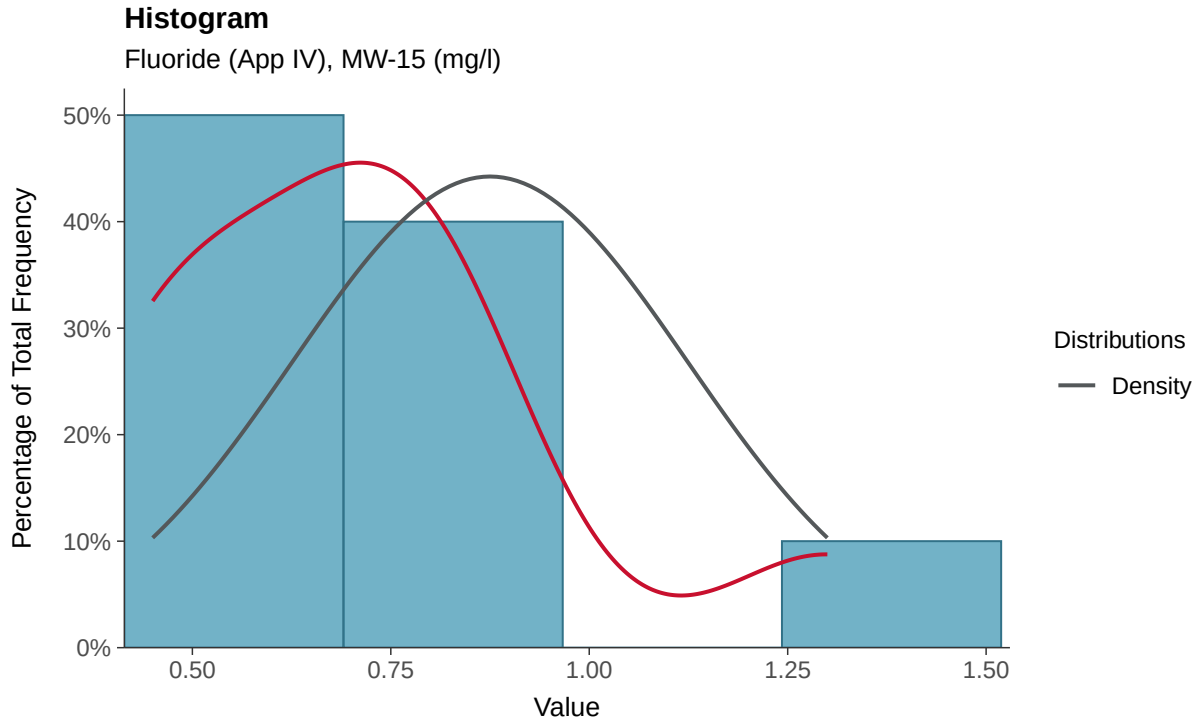
Cobalt, MW-15 (mg/l)



Appendix IV: Fluoride (App IV), MW-15

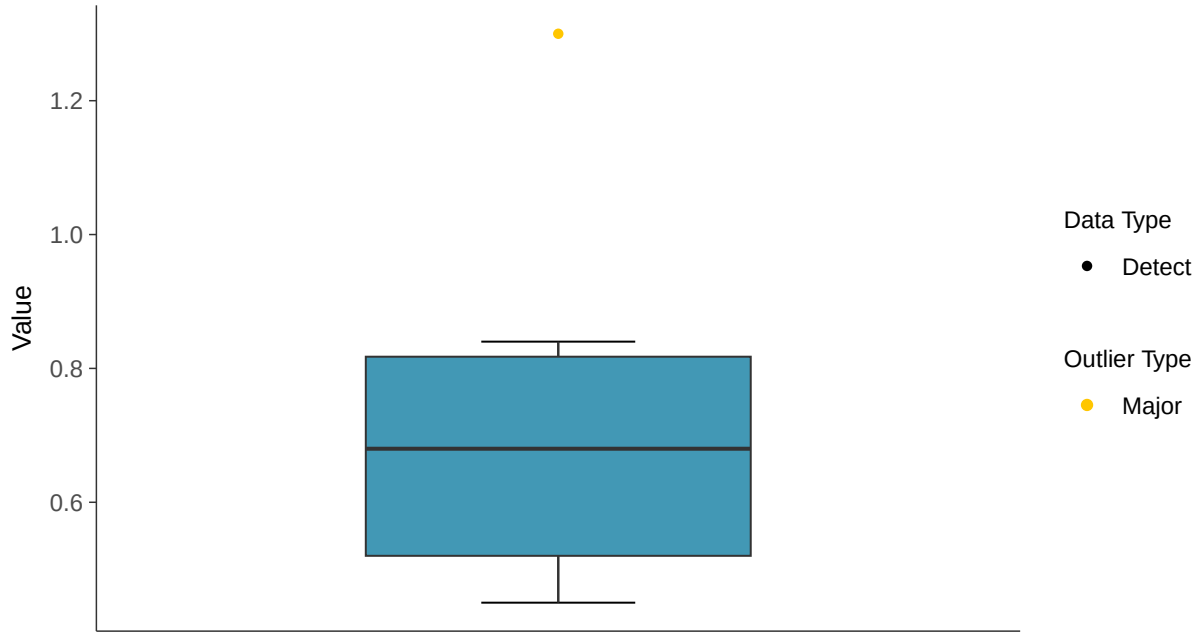
ID: 14_2_116





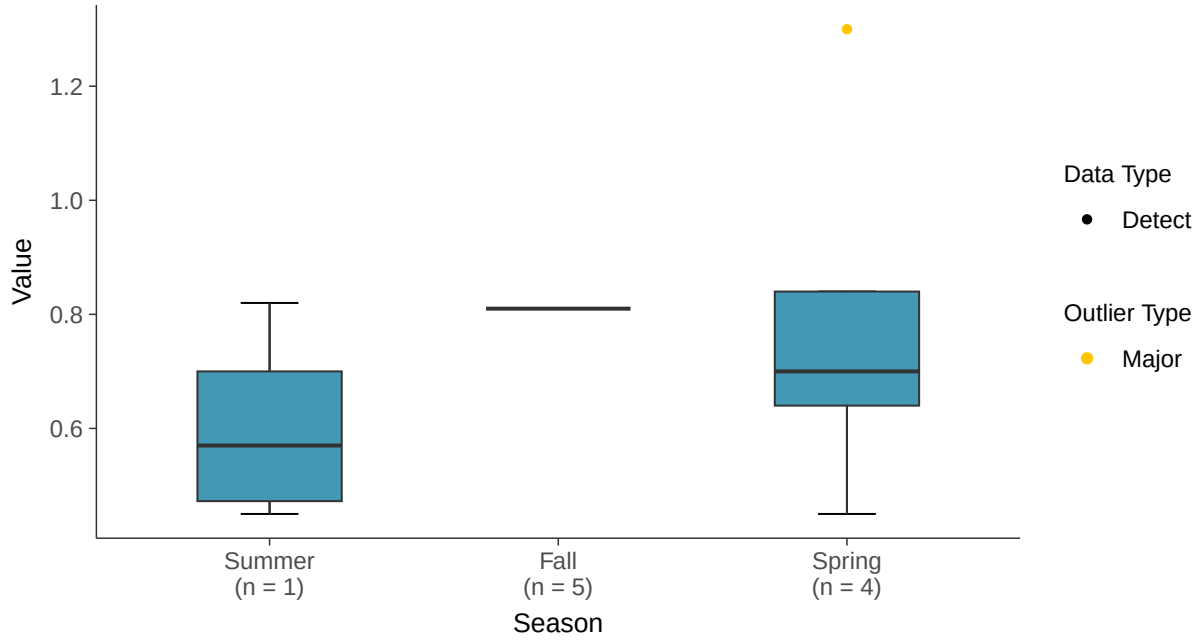
Boxplot

Fluoride (App IV), MW-15 (mg/l)



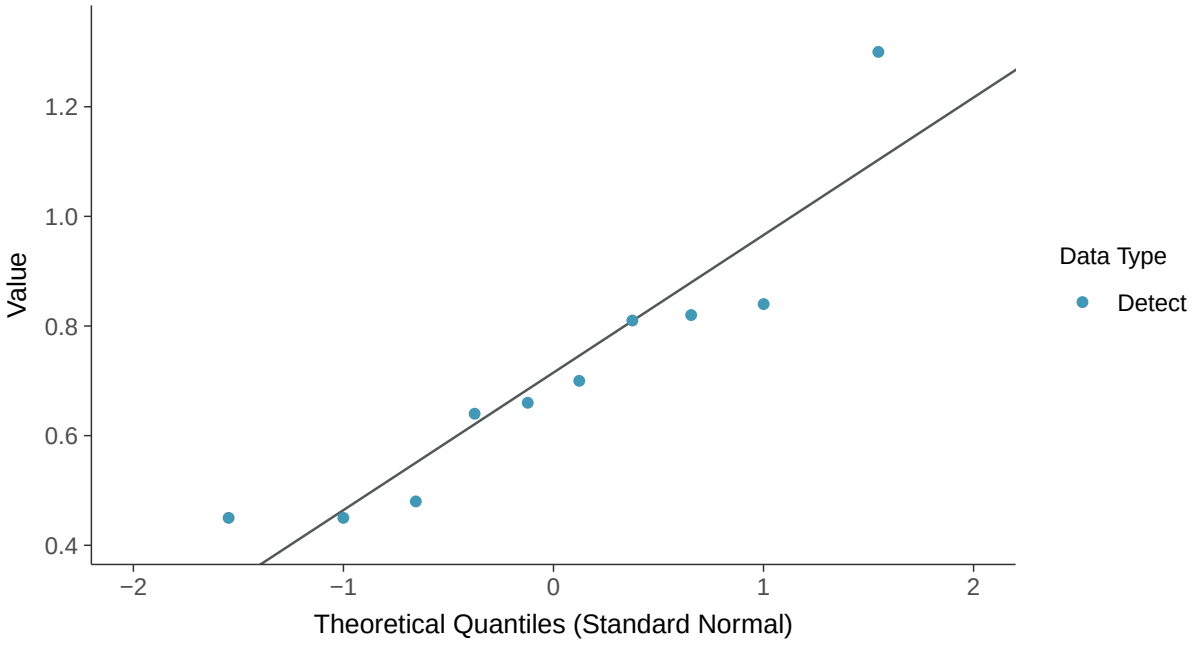
Boxplot by Season

Fluoride (App IV), MW-15 (mg/l)



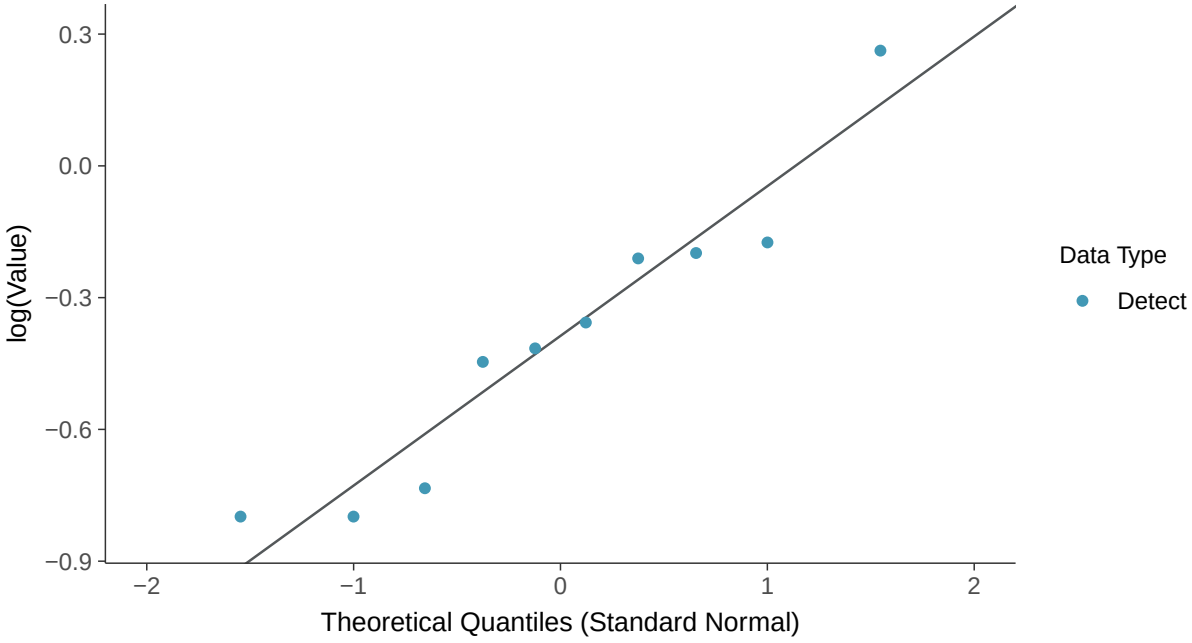
Normal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



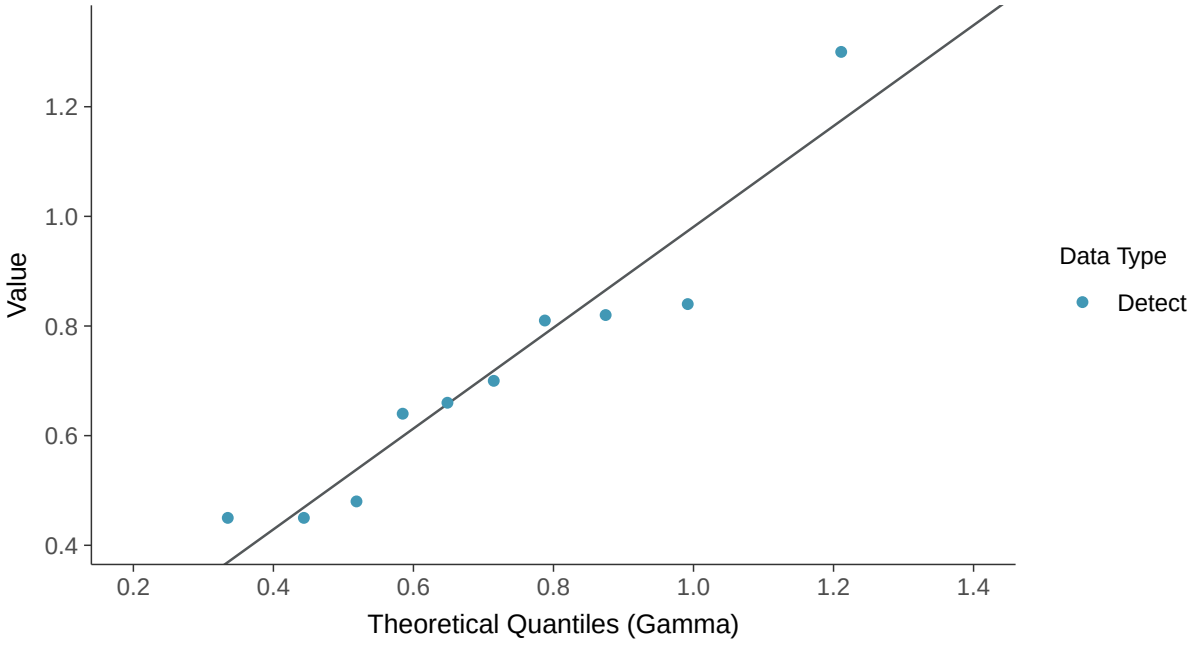
Lognormal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



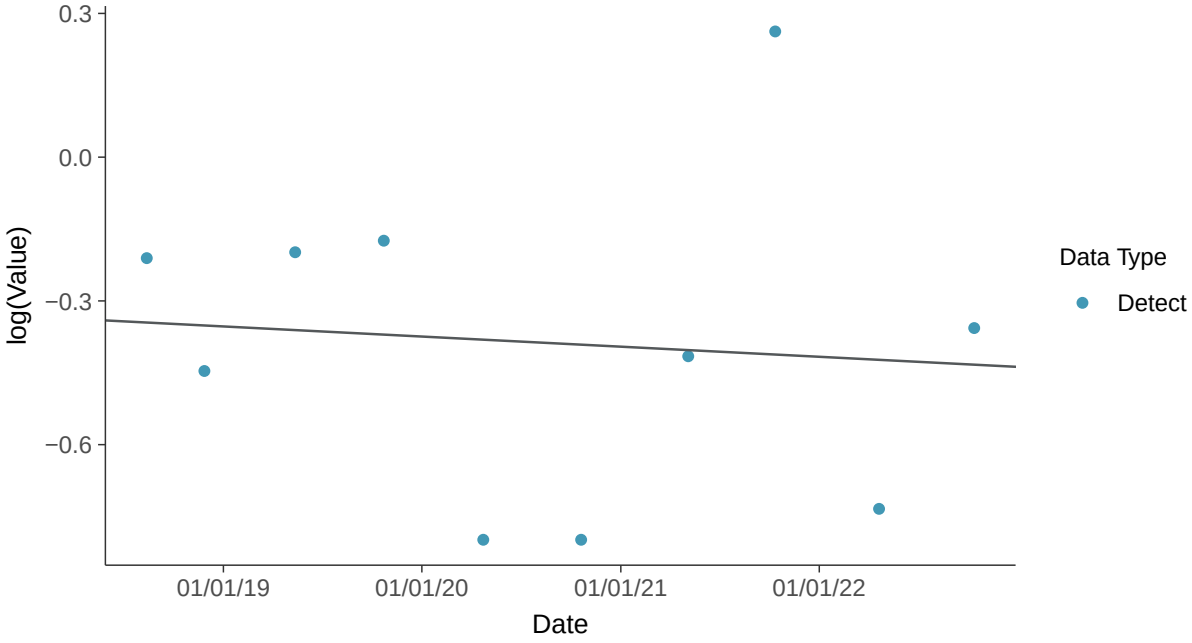
Gamma Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



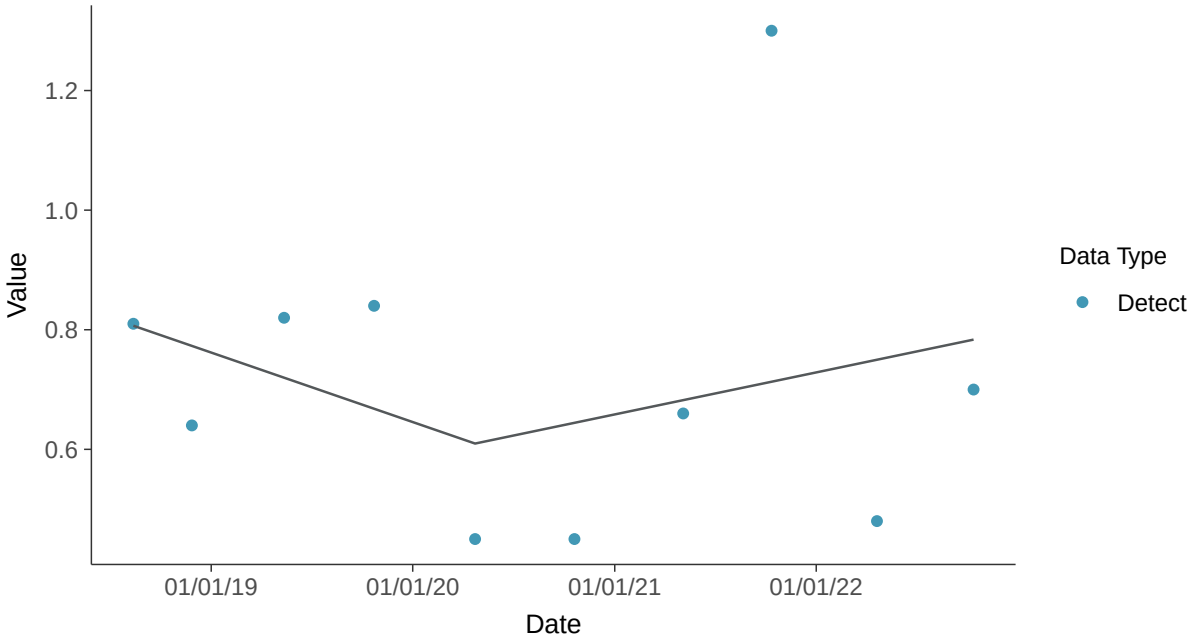
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-15 (mg/l)



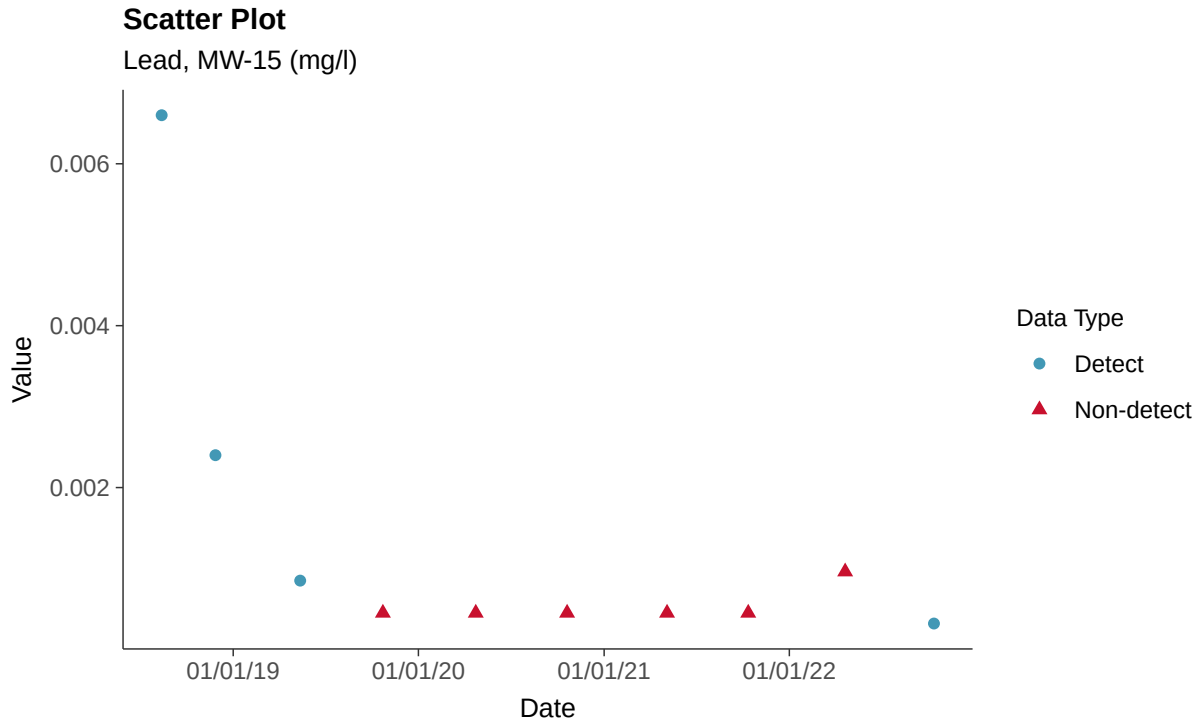
Trend Regression: Piecewise Linear-Linear

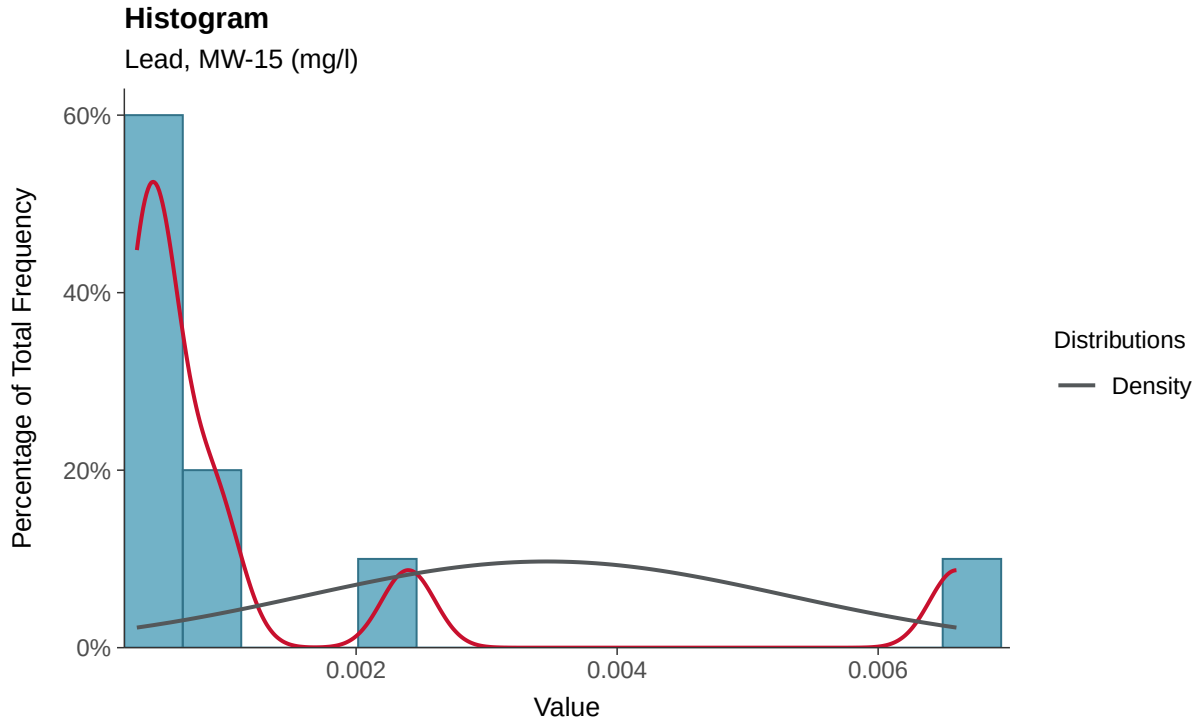
Fluoride (App IV), MW-15 (mg/l)



Appendix IV: Lead, MW-15

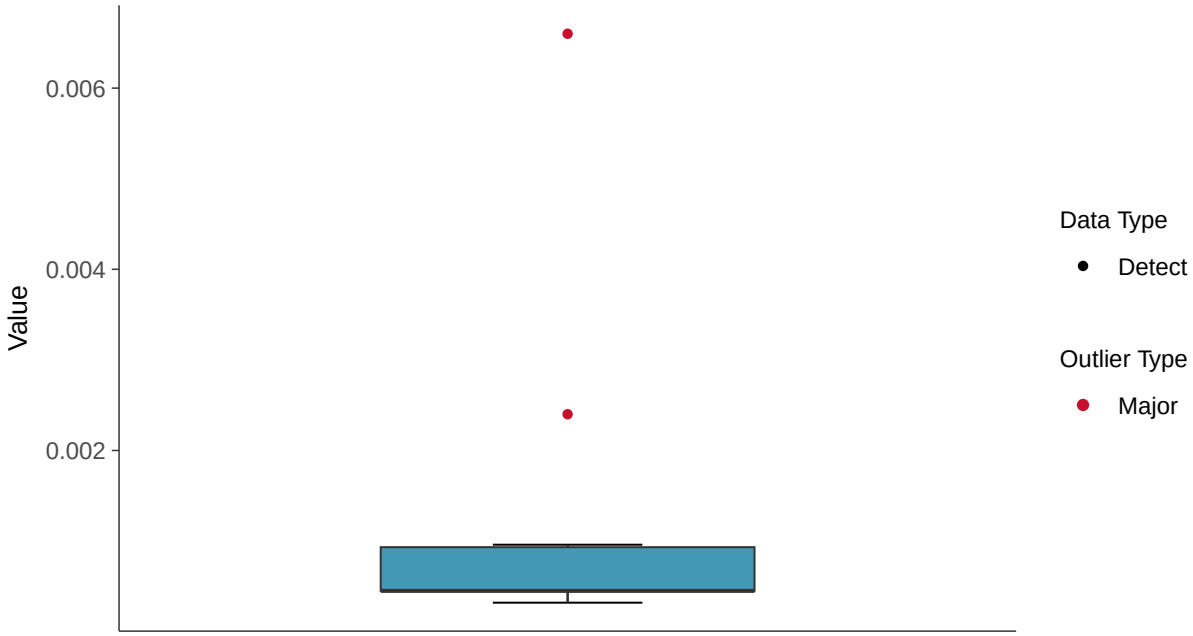
ID: 14_2_117





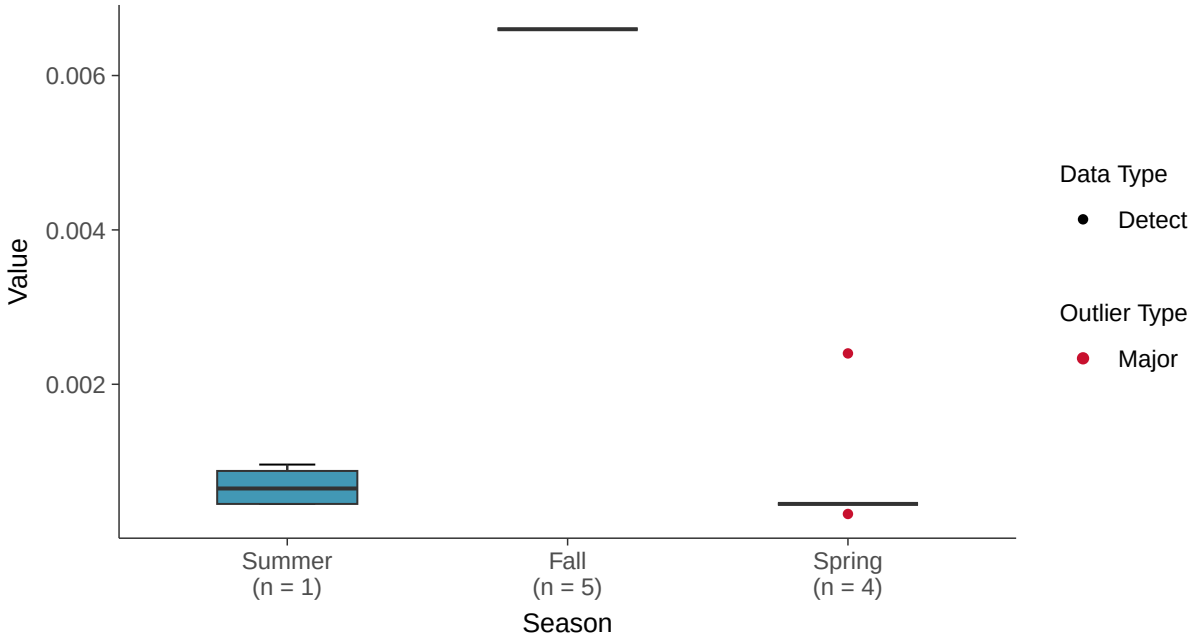
Boxplot

Lead, MW-15 (mg/l)



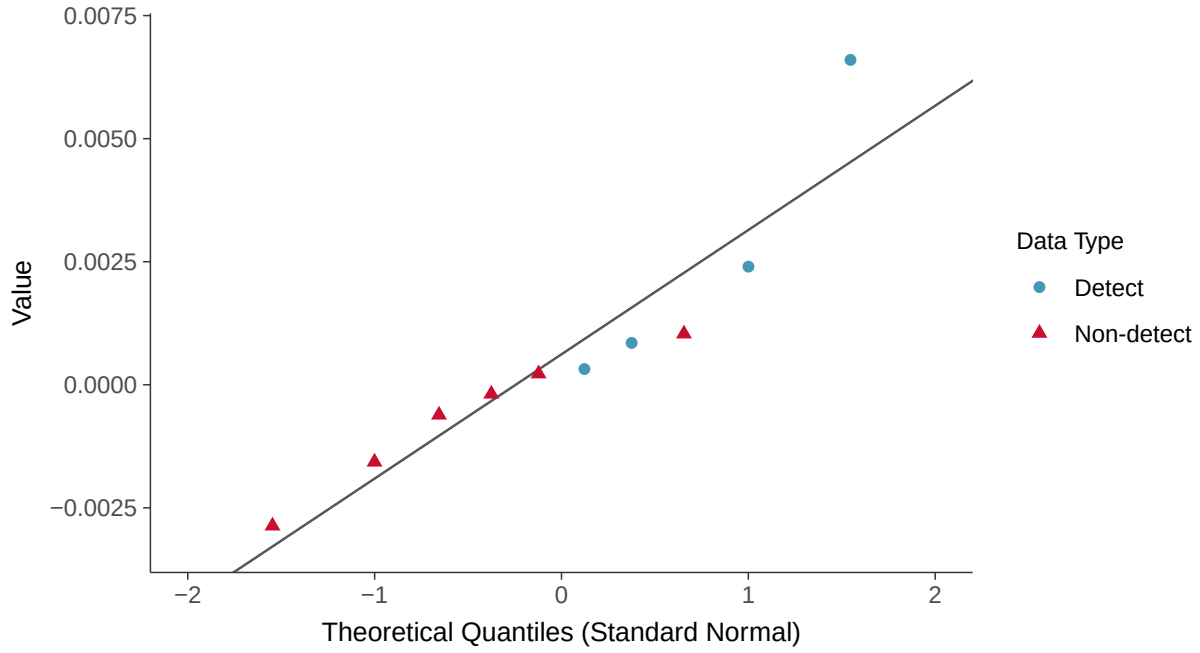
Boxplot by Season

Lead, MW-15 (mg/l)



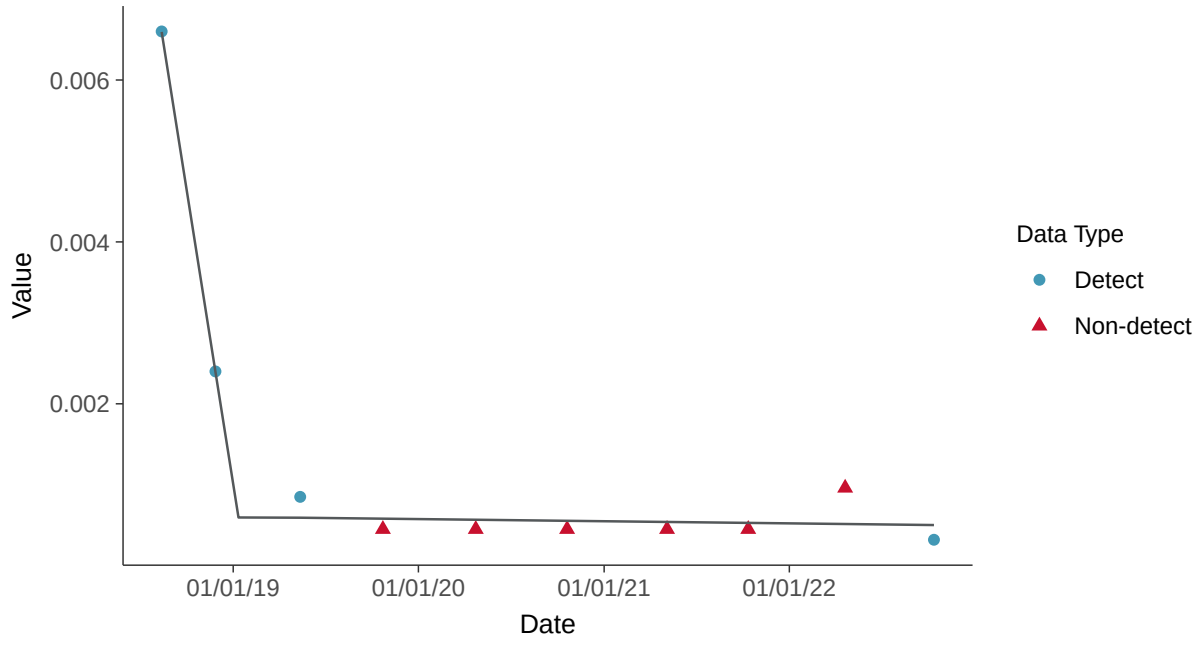
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-15 (mg/l)



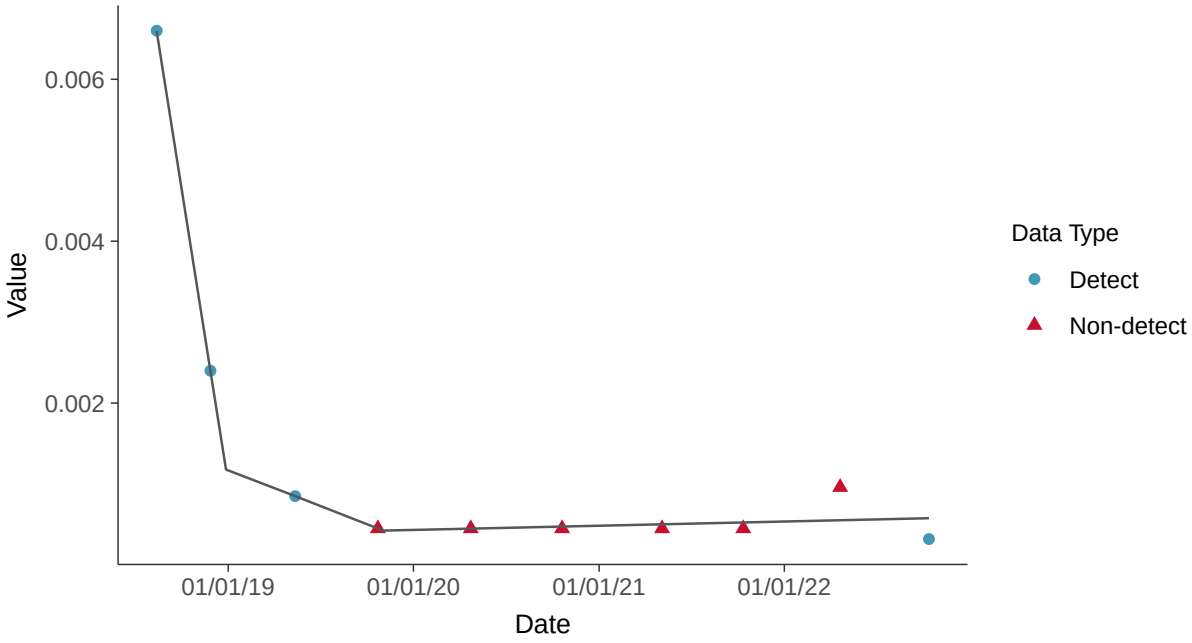
Trend Regression: Piecewise Linear-Linear

Lead, MW-15 (mg/l)



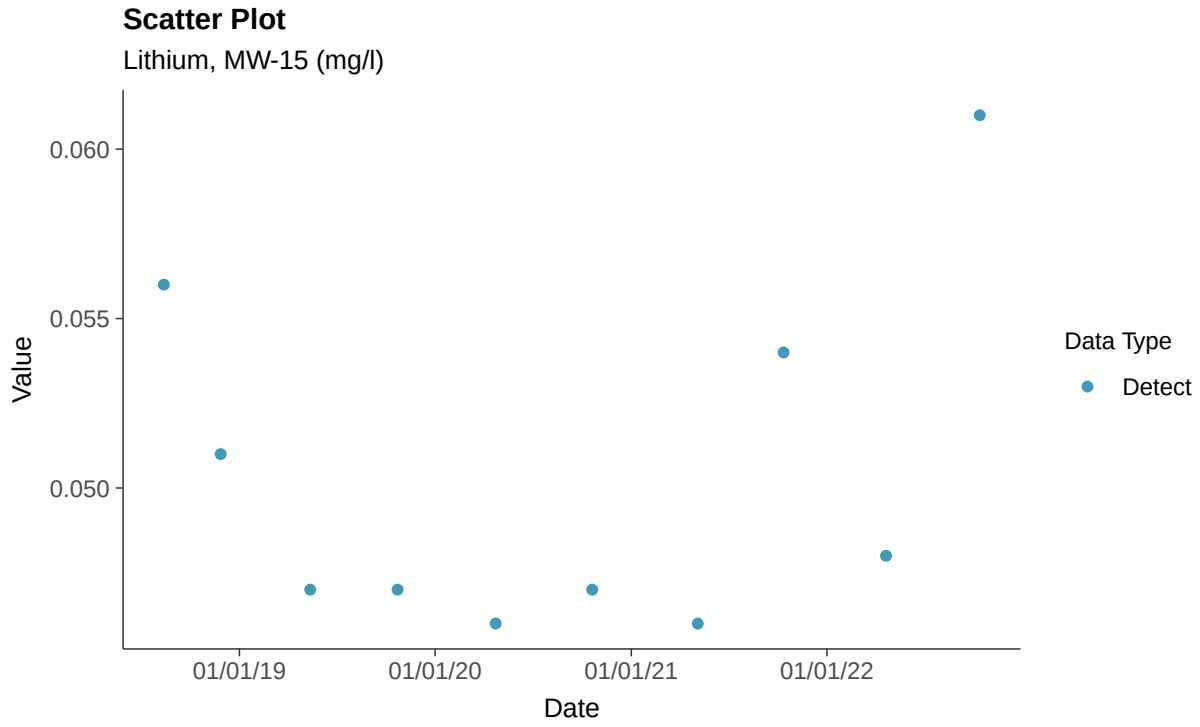
Trend Regression: Piecewise Linear-Linear-Linear

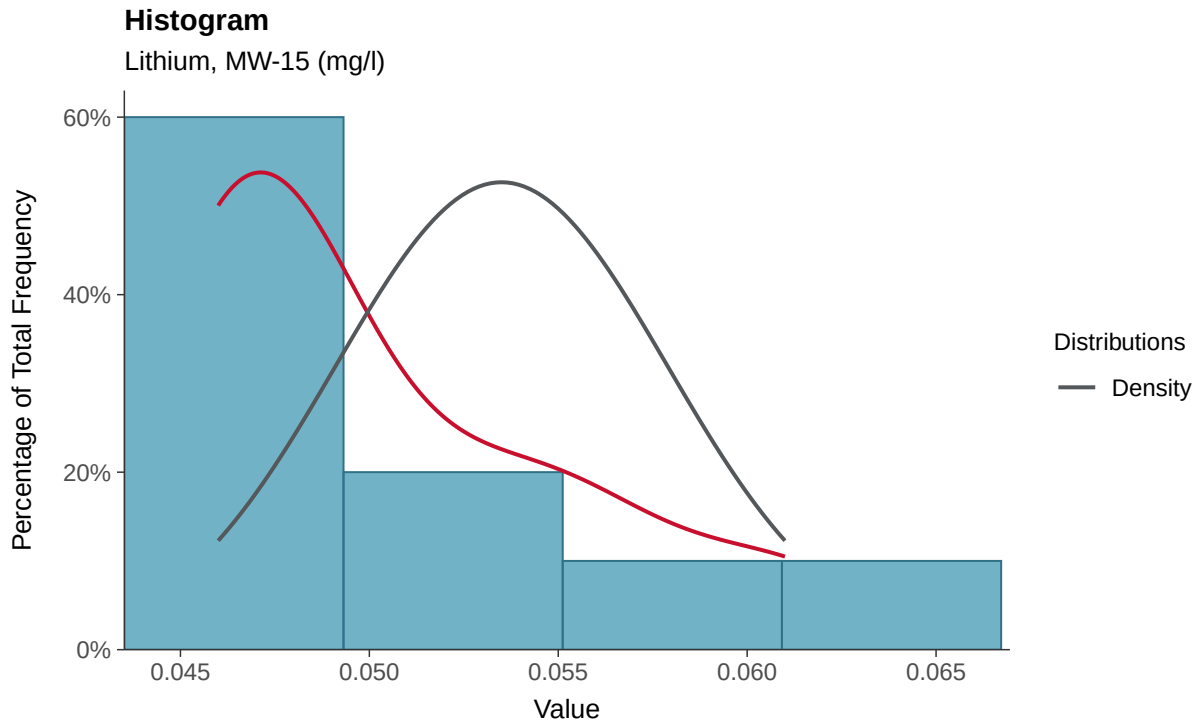
Lead, MW-15 (mg/l)



Appendix IV: Lithium, MW-15

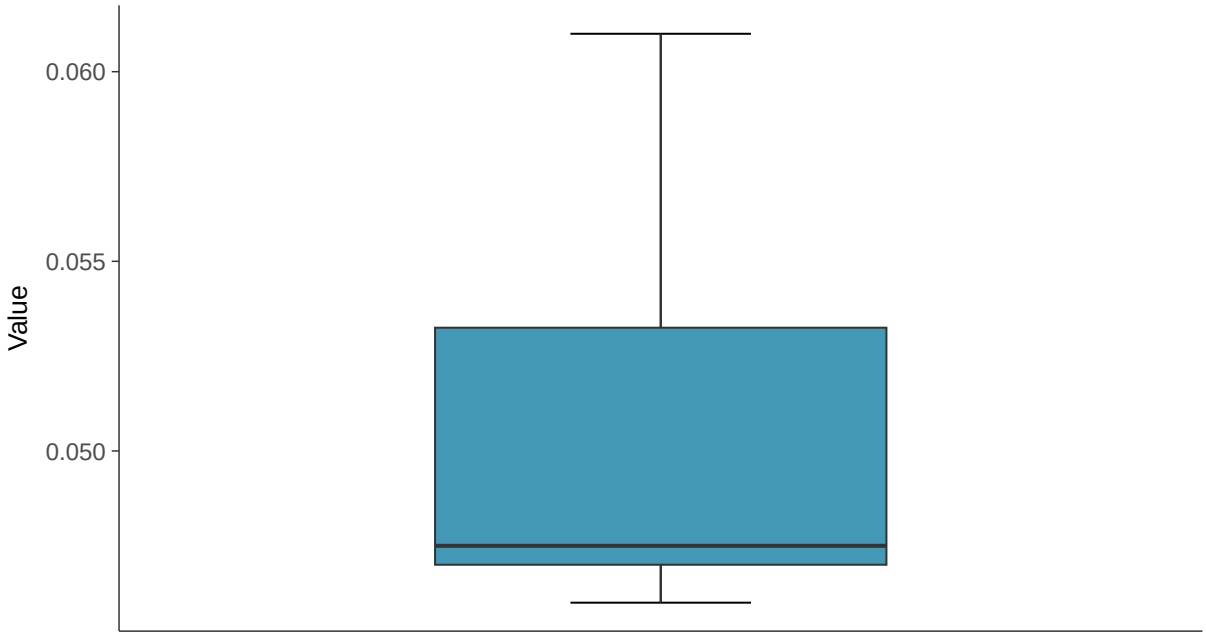
ID: 14_2_118





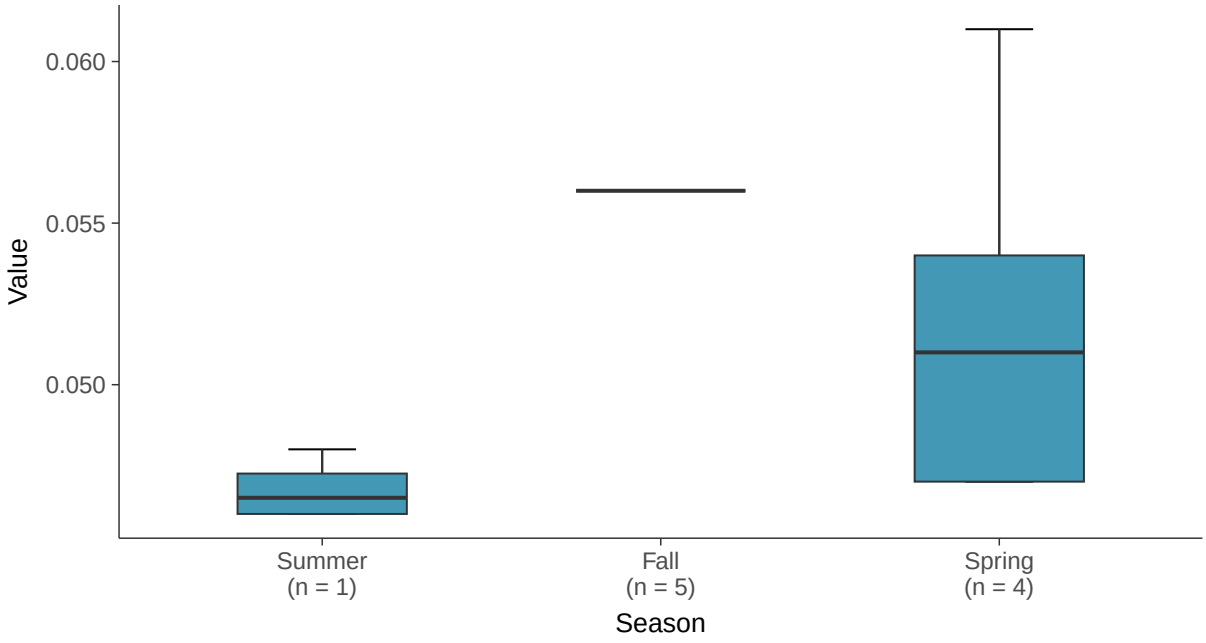
Boxplot

Lithium, MW-15 (mg/l)



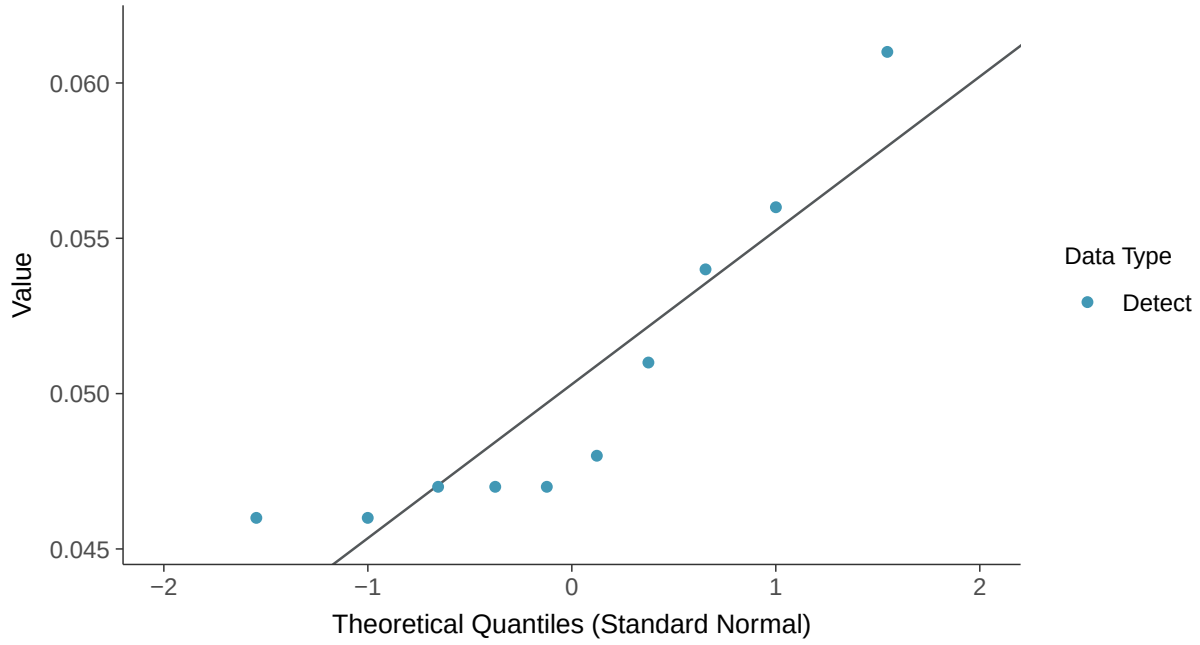
Boxplot by Season

Lithium, MW-15 (mg/l)



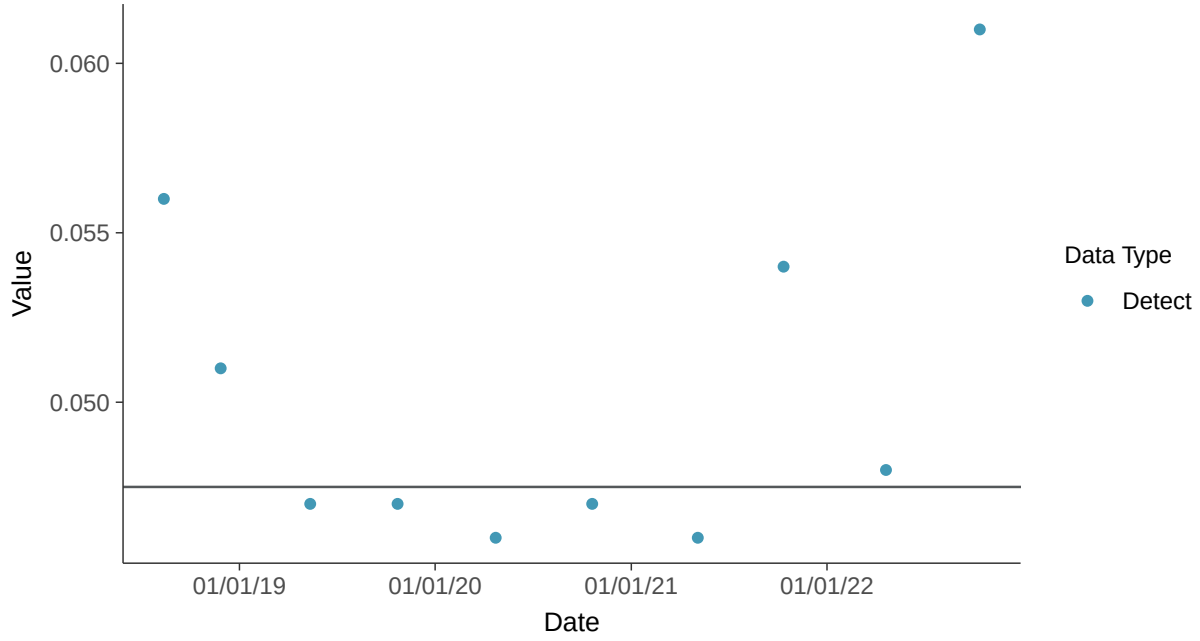
Normal Q-Q plot

Lithium, MW-15 (mg/l)



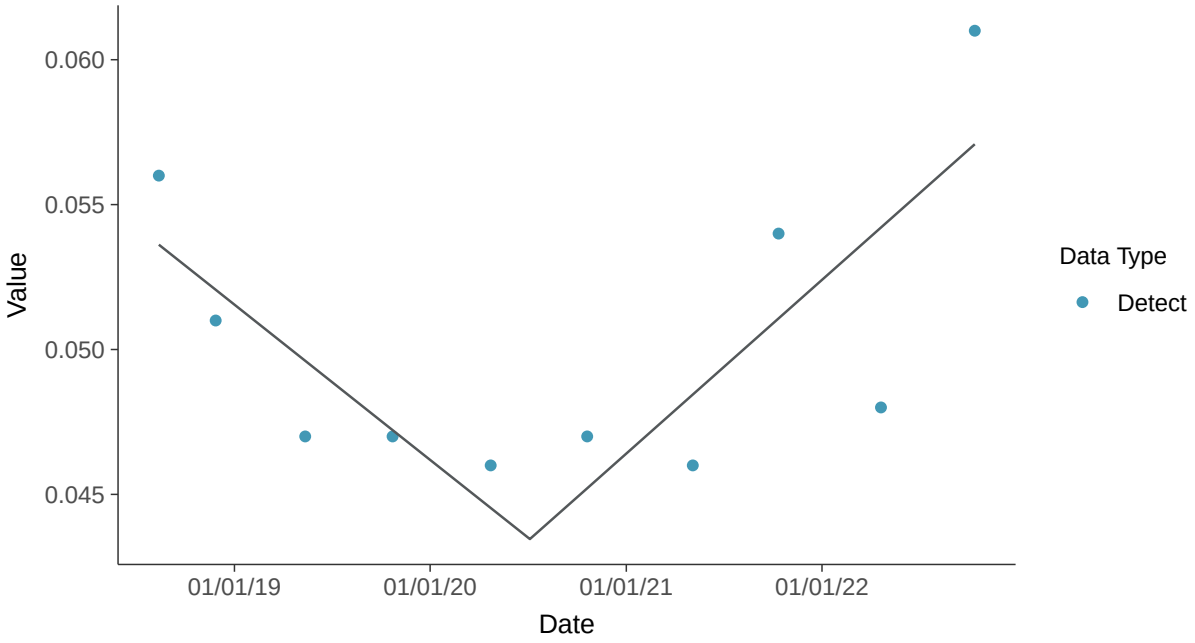
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-15 (mg/l)



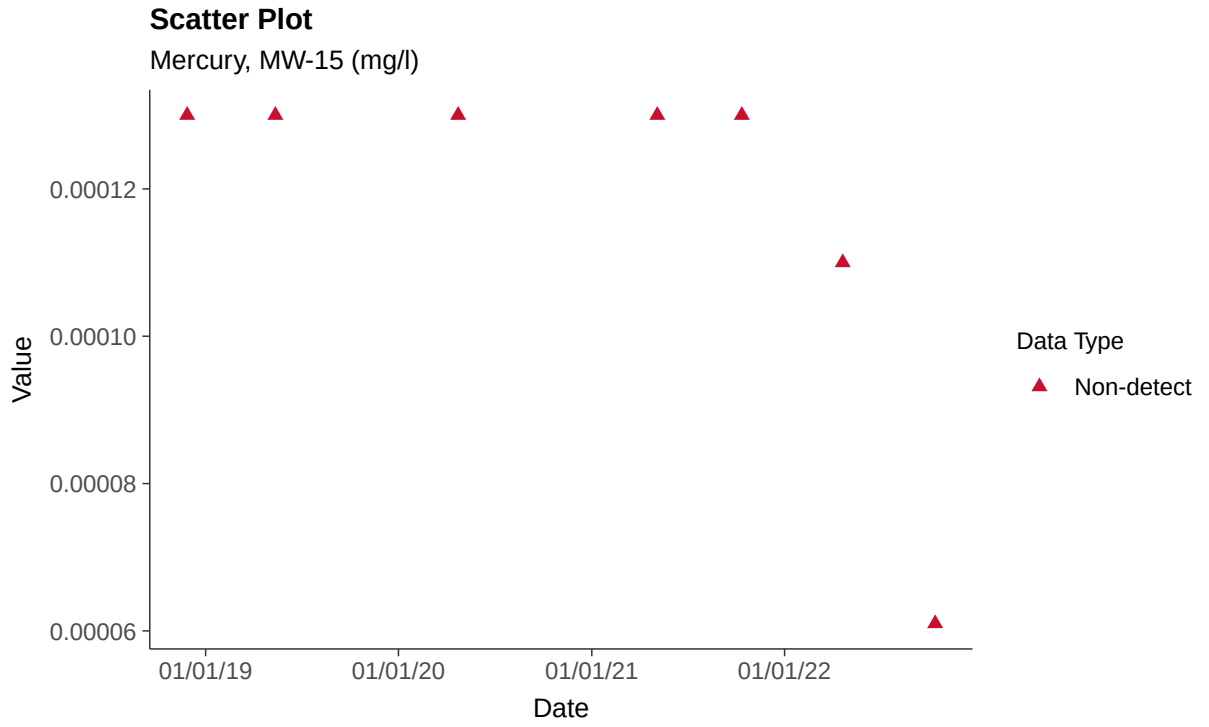
Trend Regression: Piecewise Linear-Linear

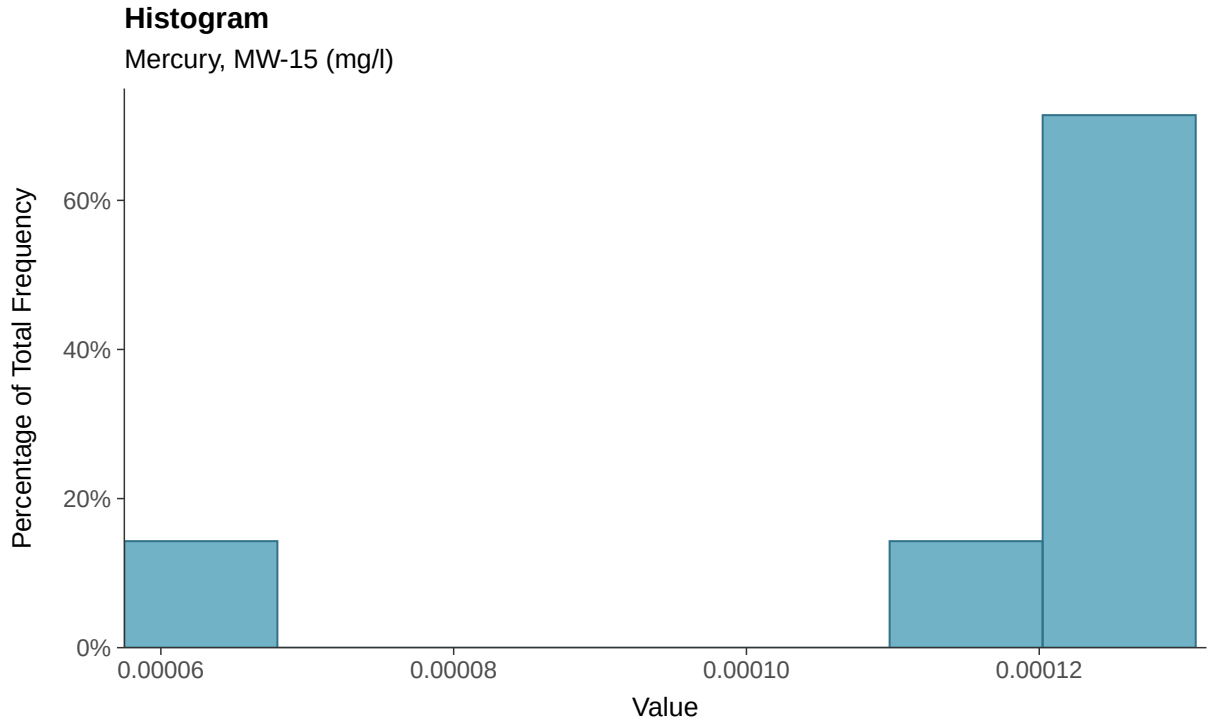
Lithium, MW-15 (mg/l)



Appendix IV: Mercury, MW-15

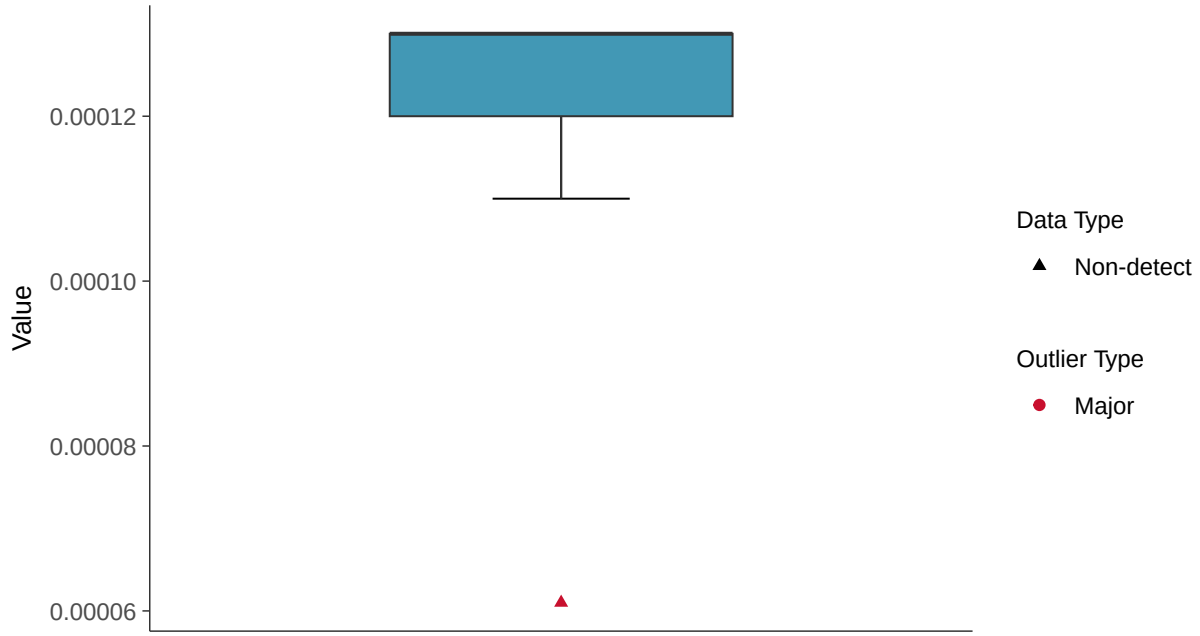
ID: 14_2_120





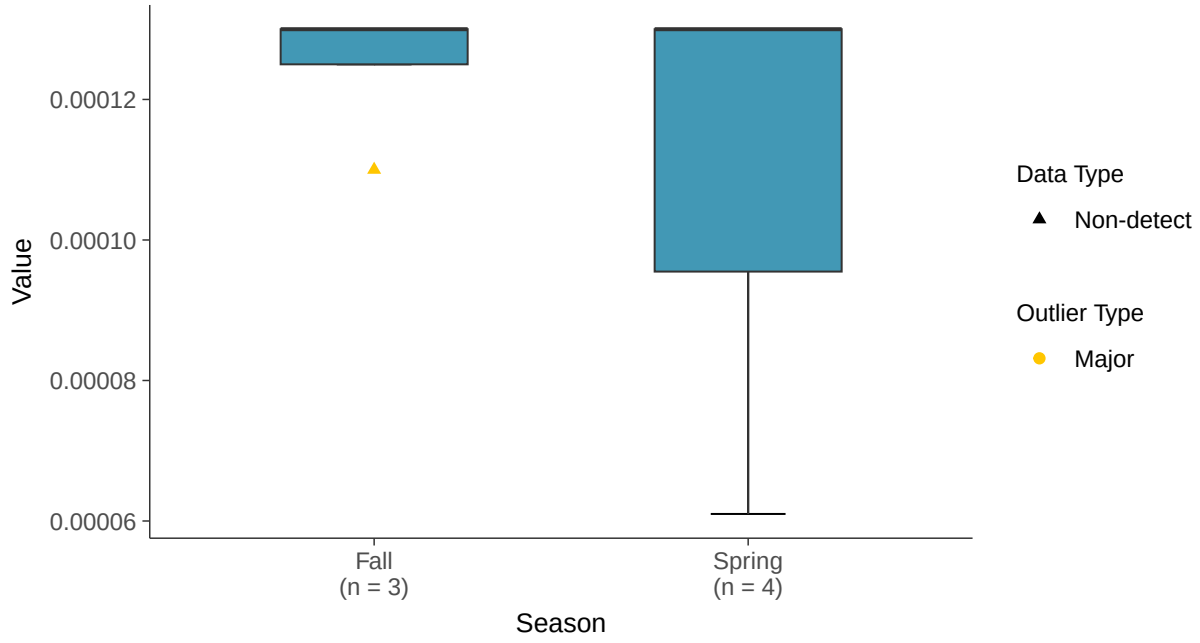
Boxplot

Mercury, MW-15 (mg/l)



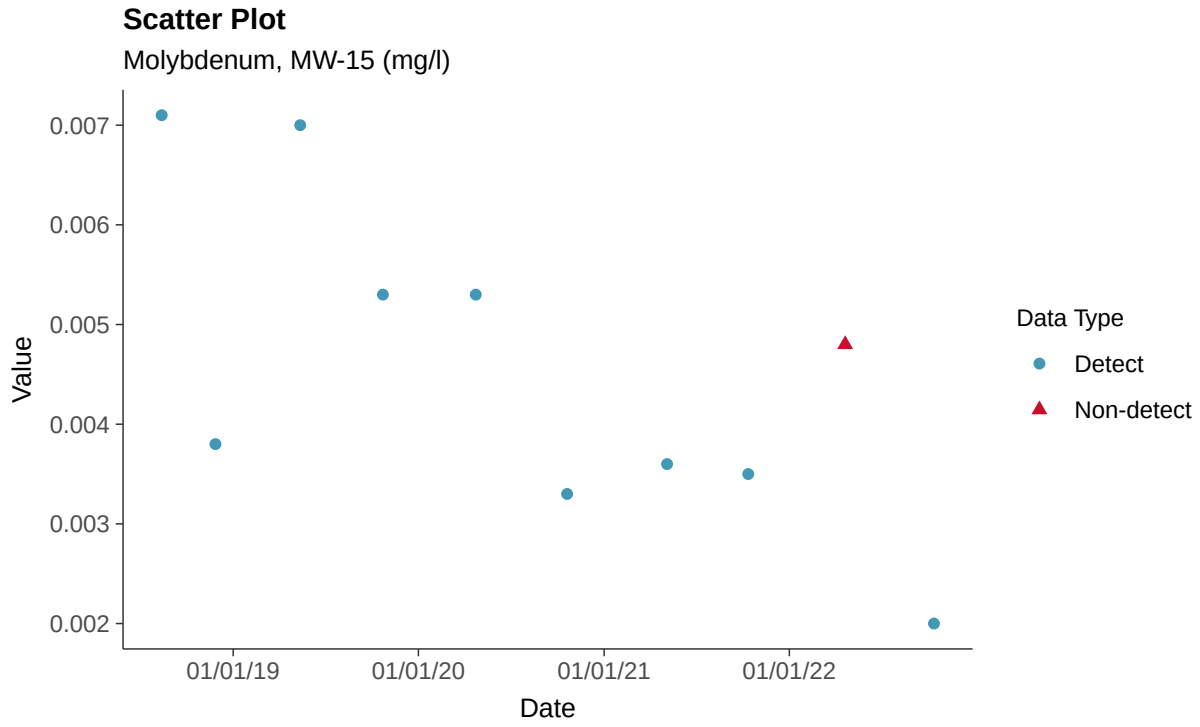
Boxplot by Season

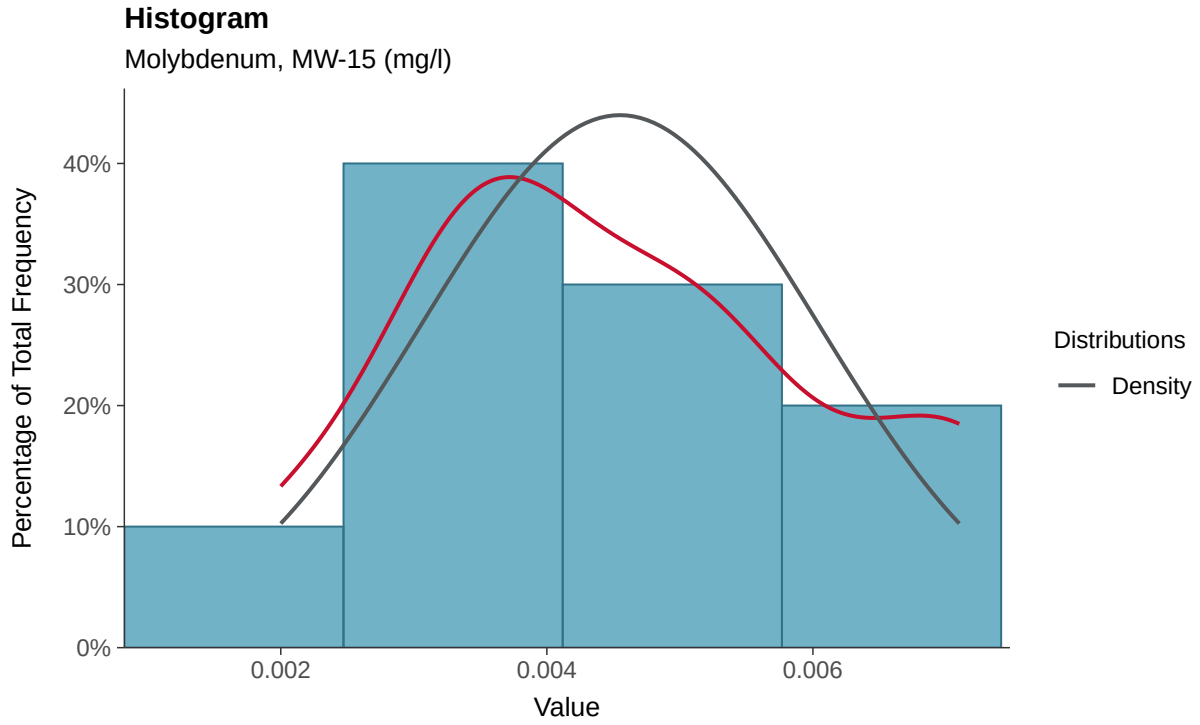
Mercury, MW-15 (mg/l)



Appendix IV: Molybdenum, MW-15

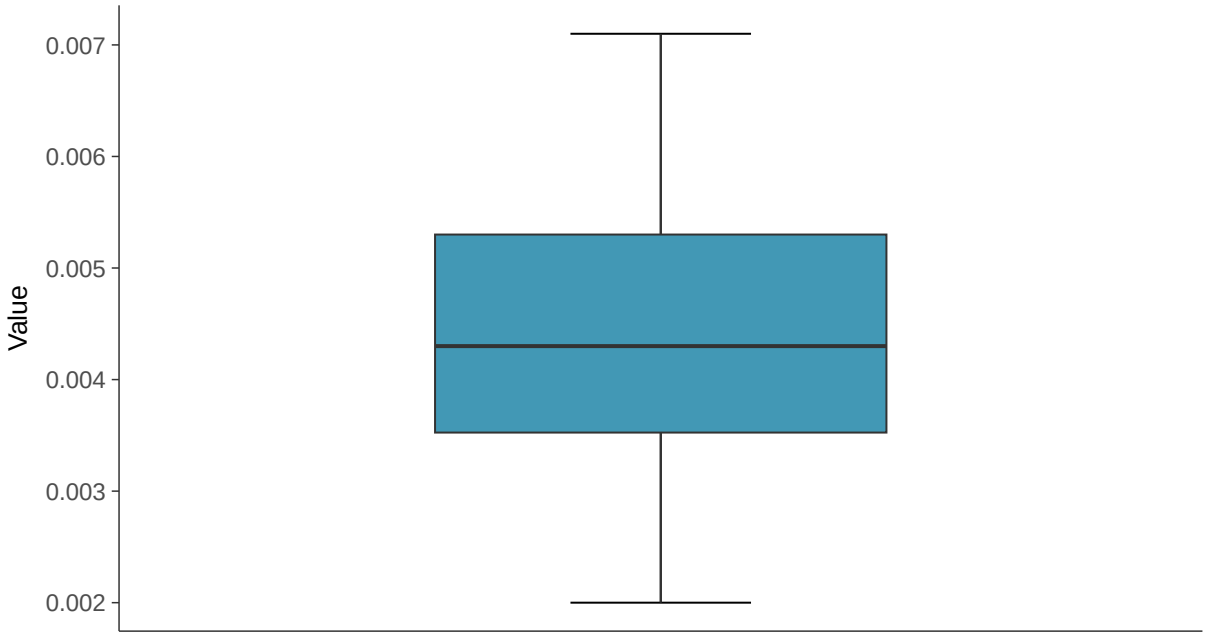
ID: 14_2_121





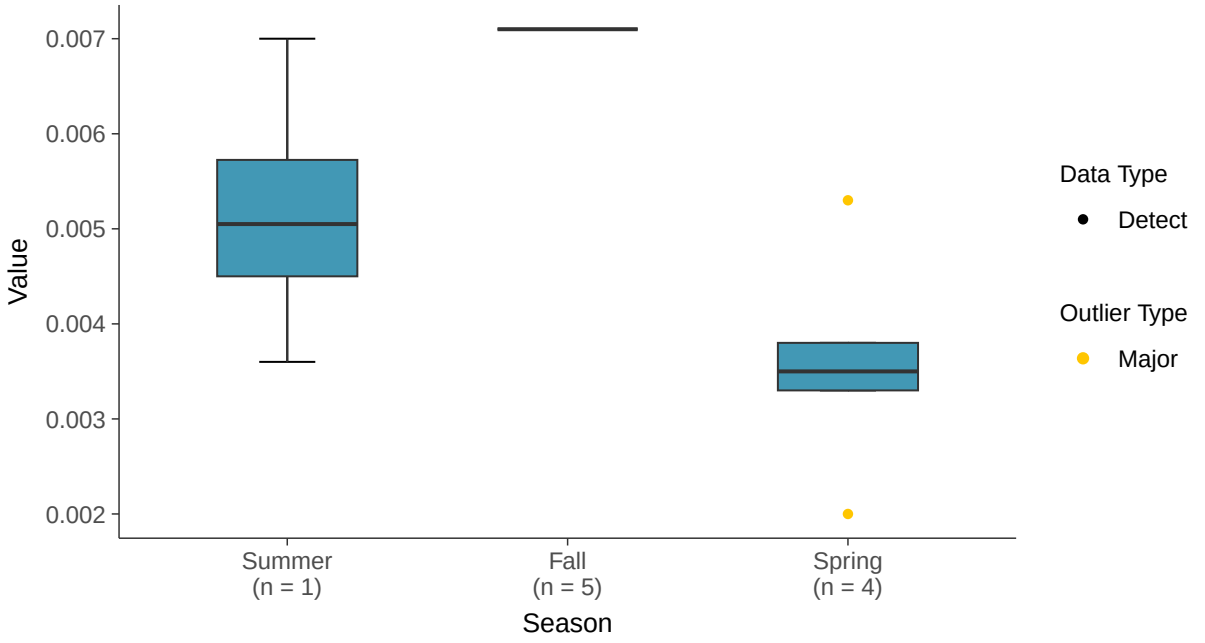
Boxplot

Molybdenum, MW-15 (mg/l)



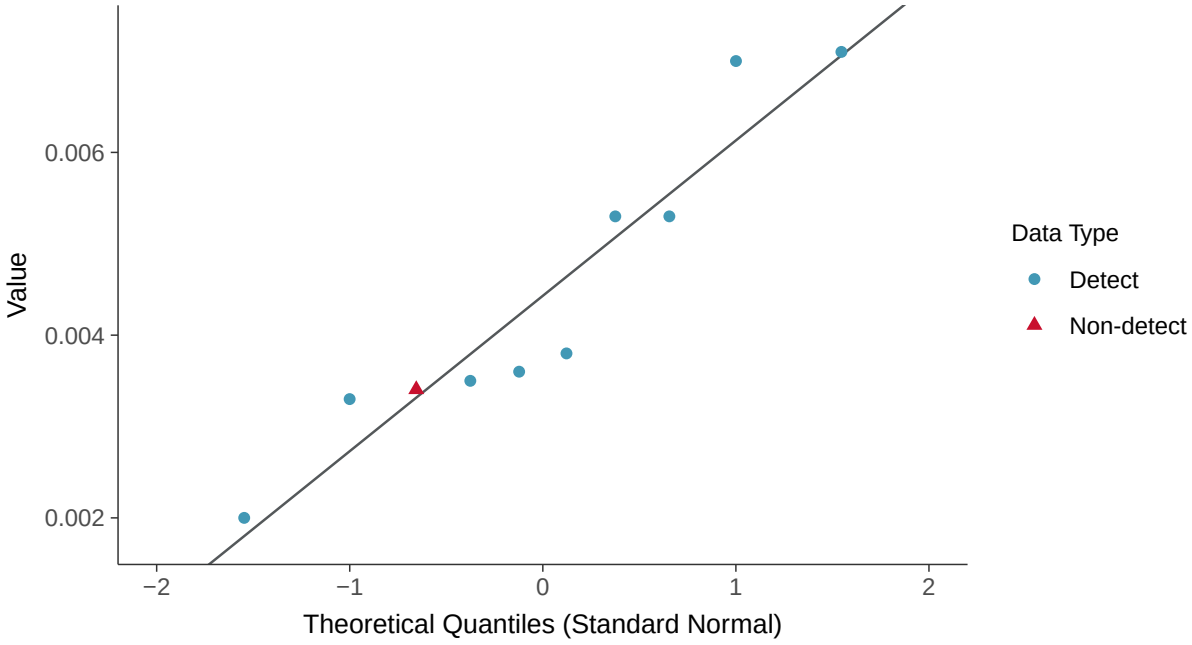
Boxplot by Season

Molybdenum, MW-15 (mg/l)



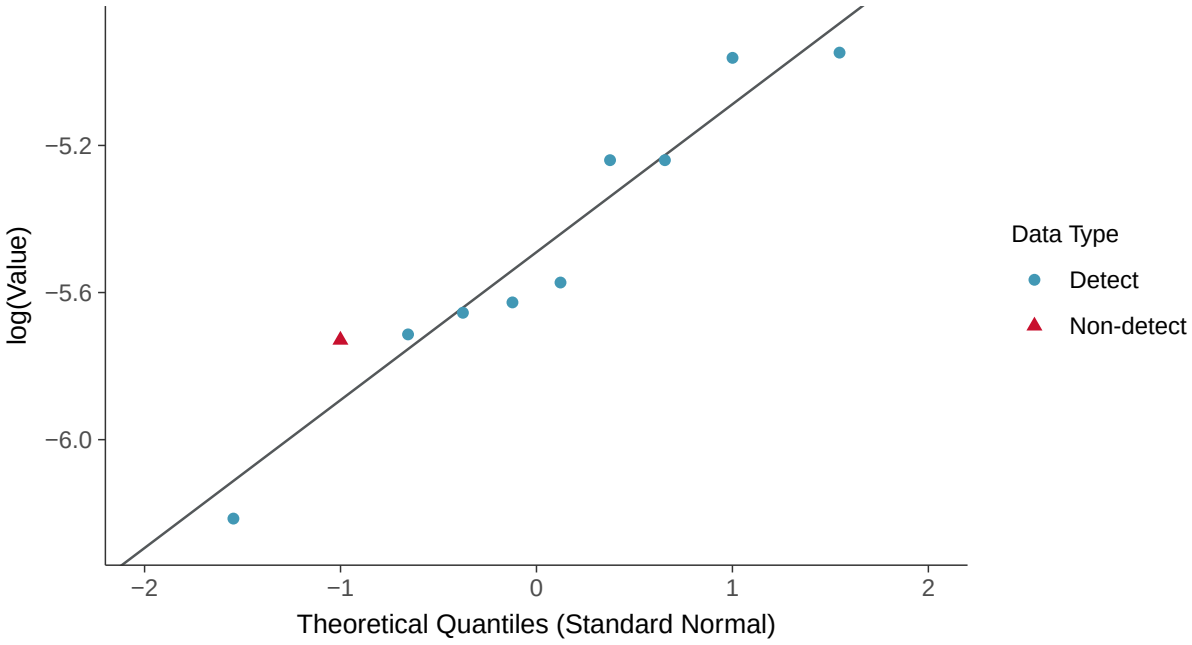
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-15 (mg/l)



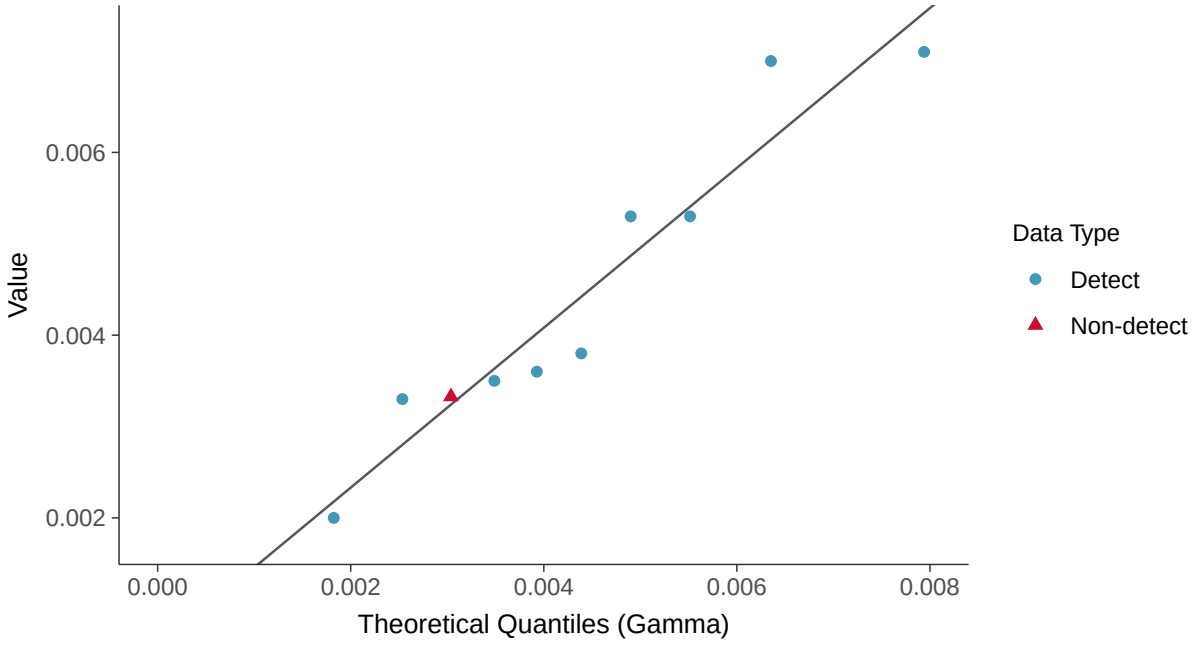
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-15 (mg/l)



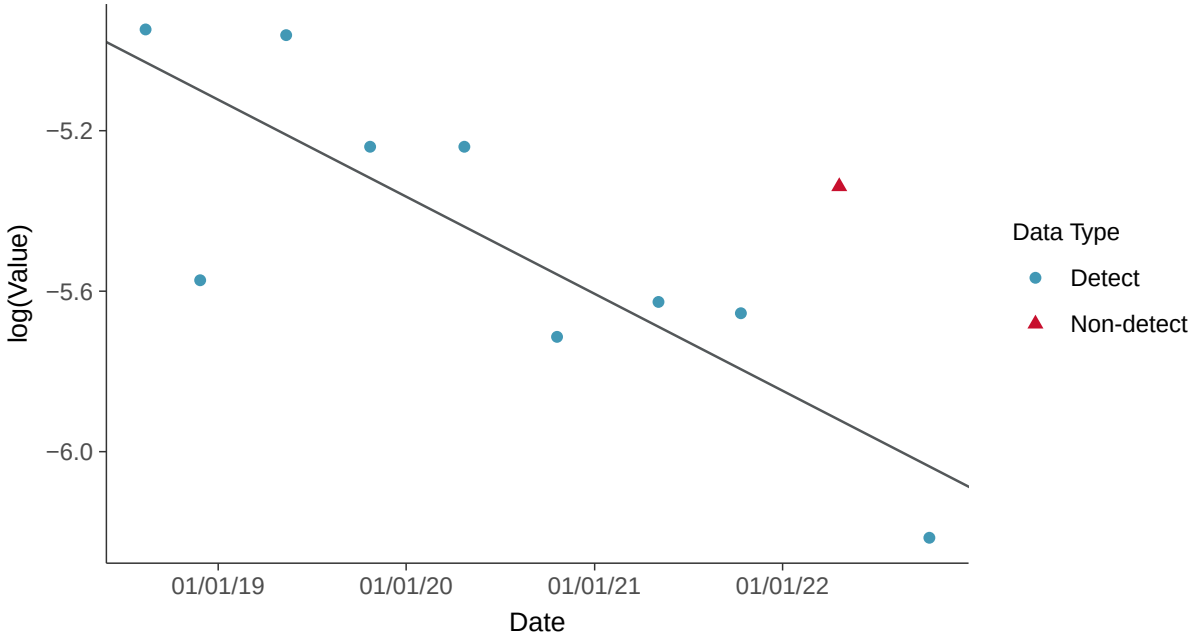
Gamma Q-Q plot using ROS Imputed Estimates

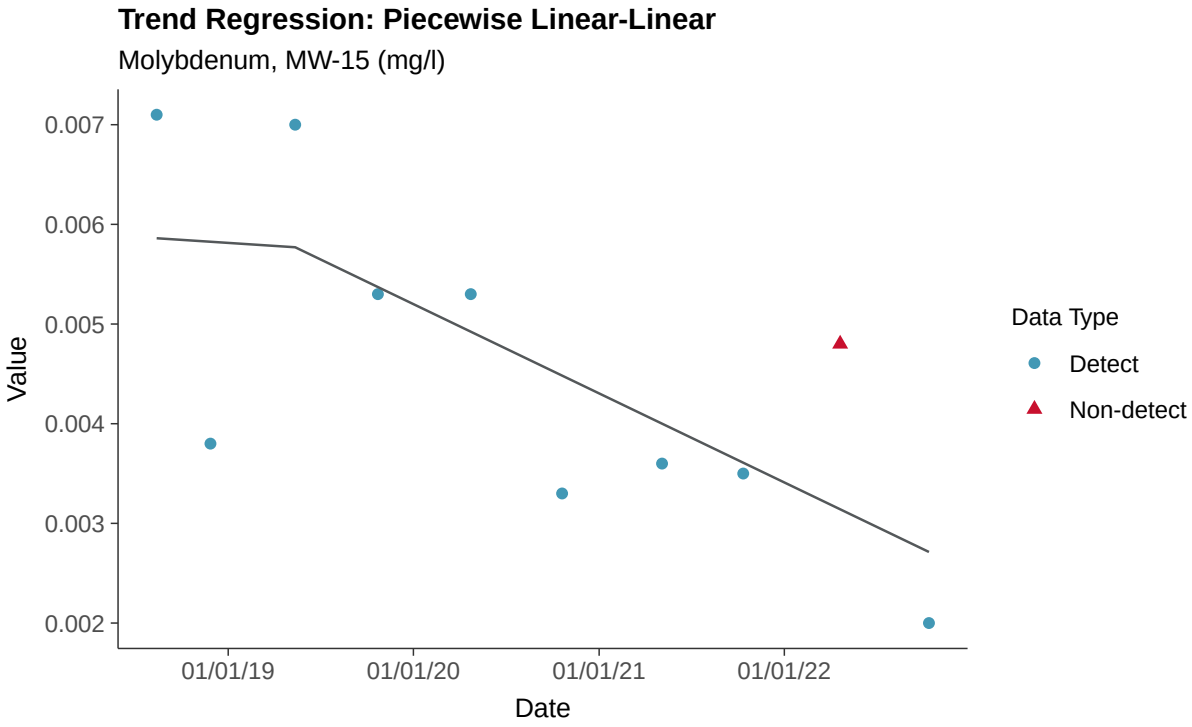
Molybdenum, MW-15 (mg/l)



Trend Regression: Lognormal MLE

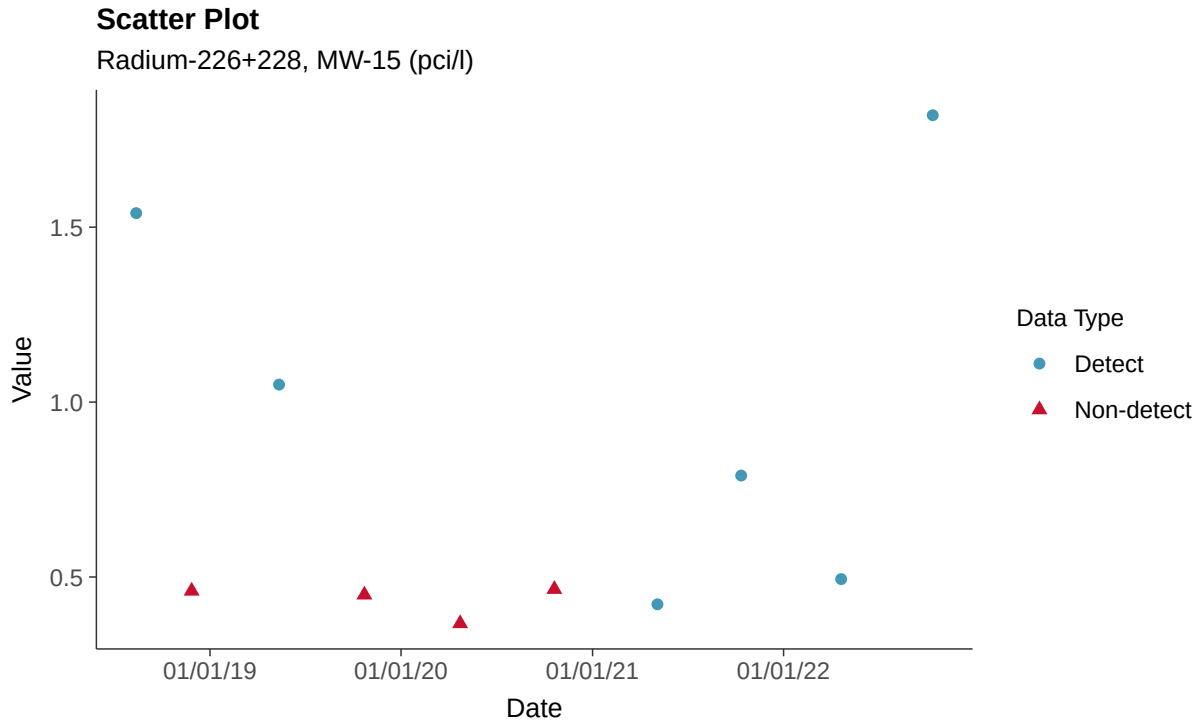
Molybdenum, MW-15 (mg/l)

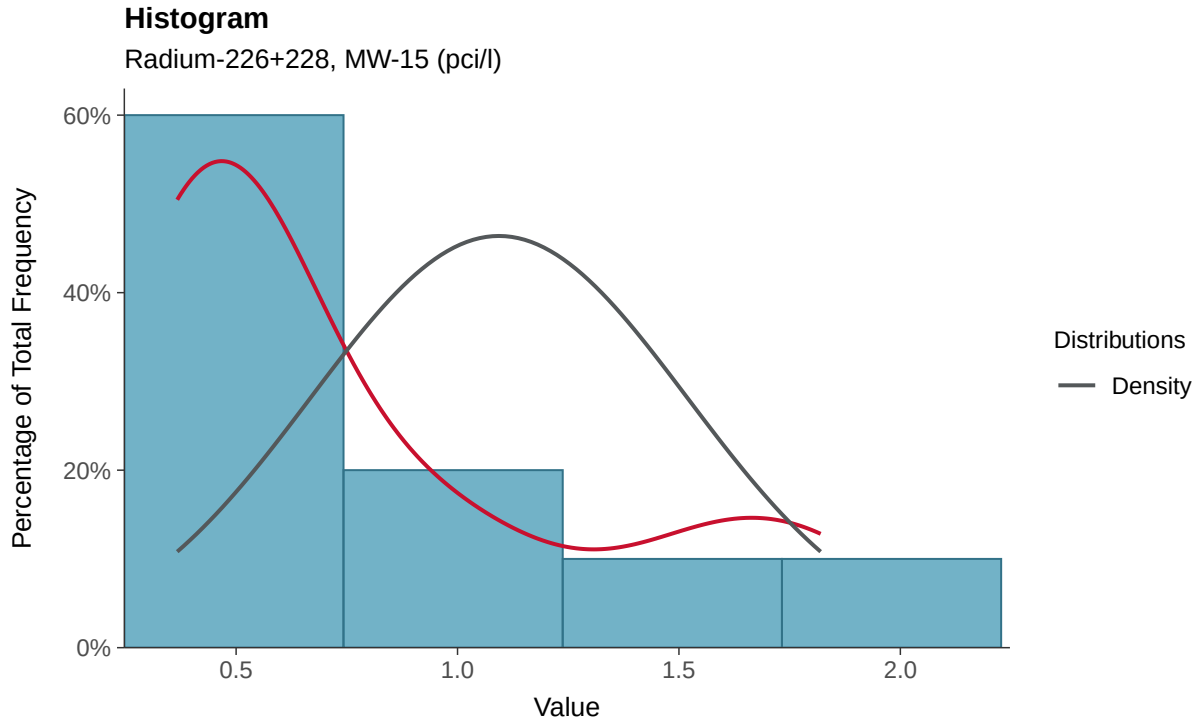



Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-15 (mg/l)
Value
0.007
0.006
0.005
0.004
0.003
0.002
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Radium-226+228, MW-15

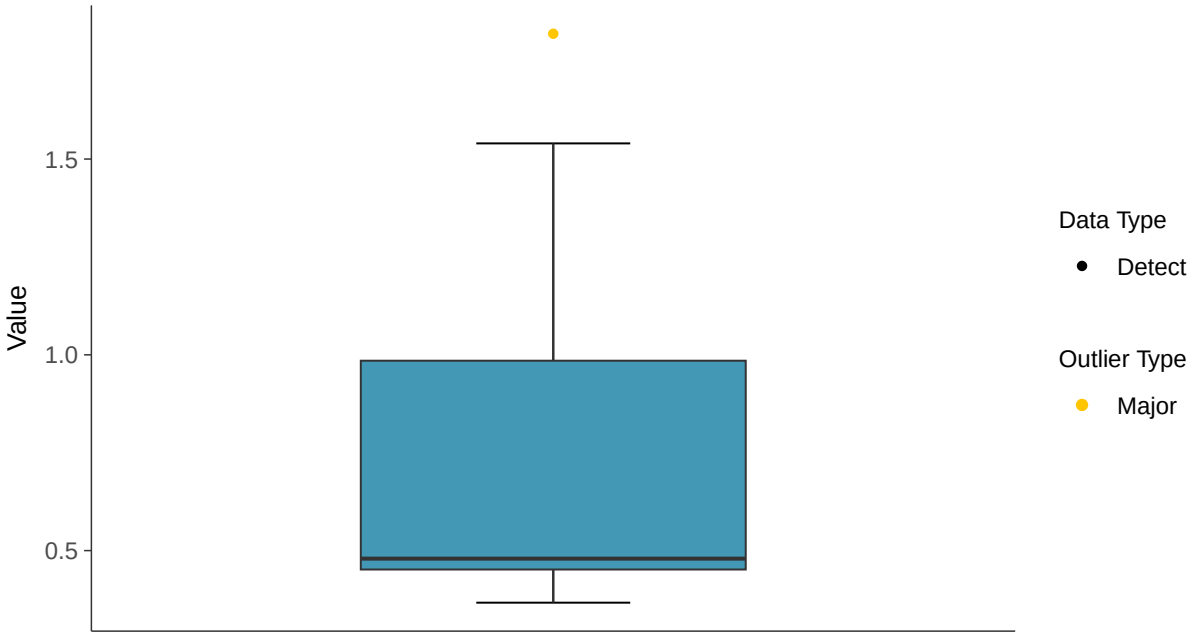
ID: 14_2_127





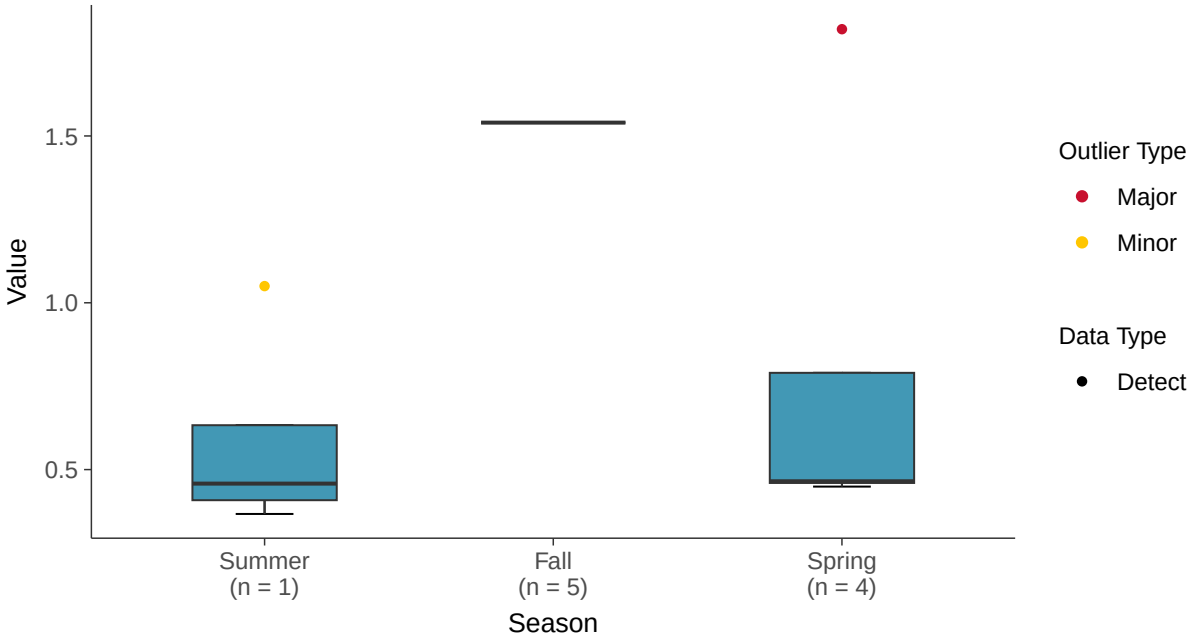
Boxplot

Radium-226+228, MW-15 (pci/l)



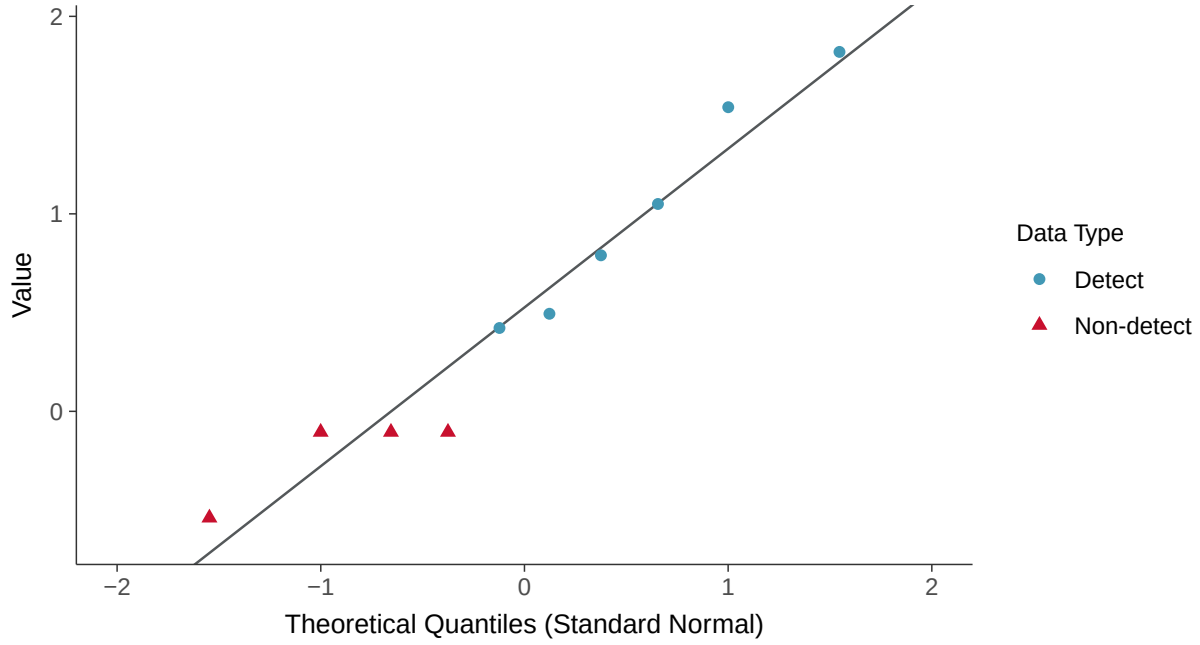
Boxplot by Season

Radium-226+228, MW-15 (pci/l)



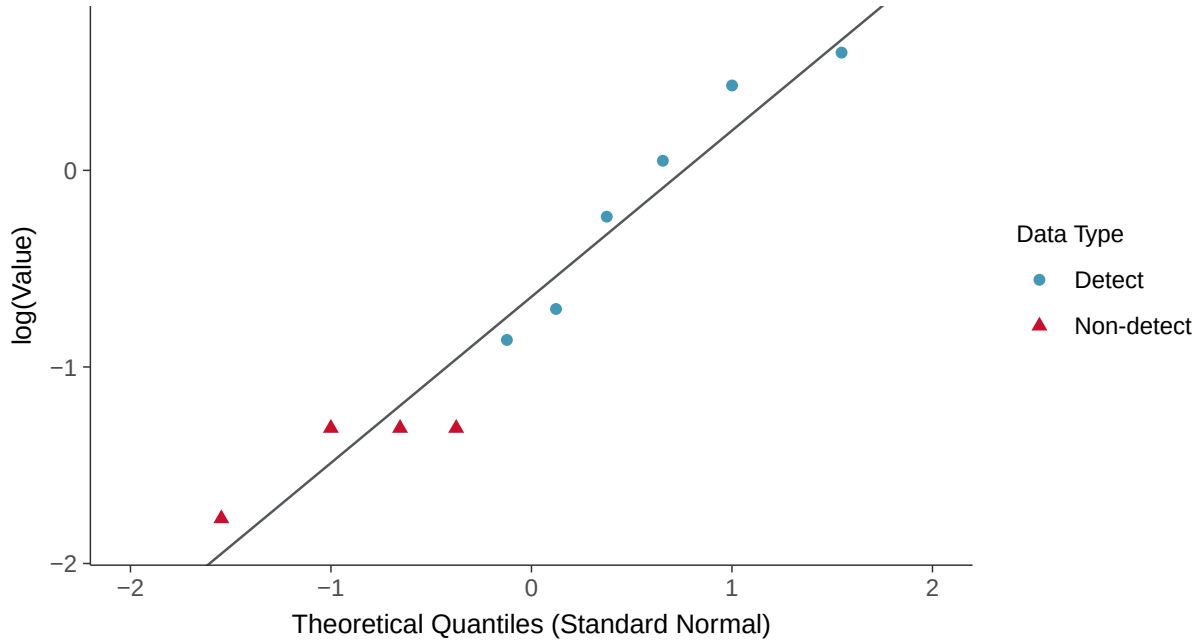
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



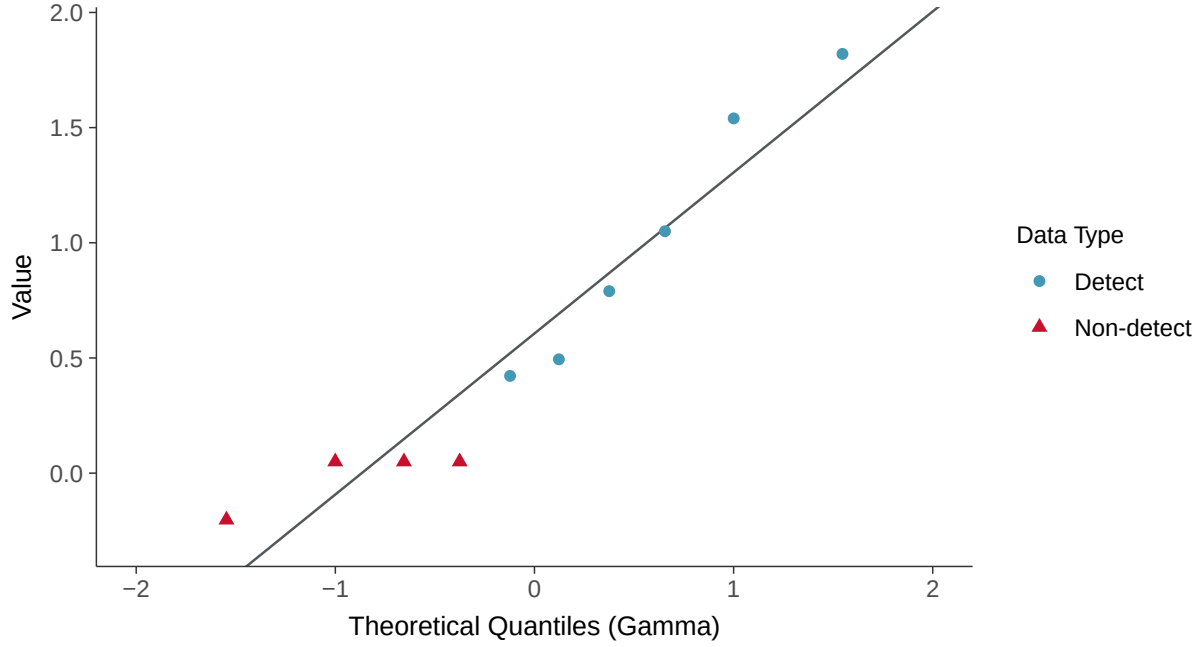
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



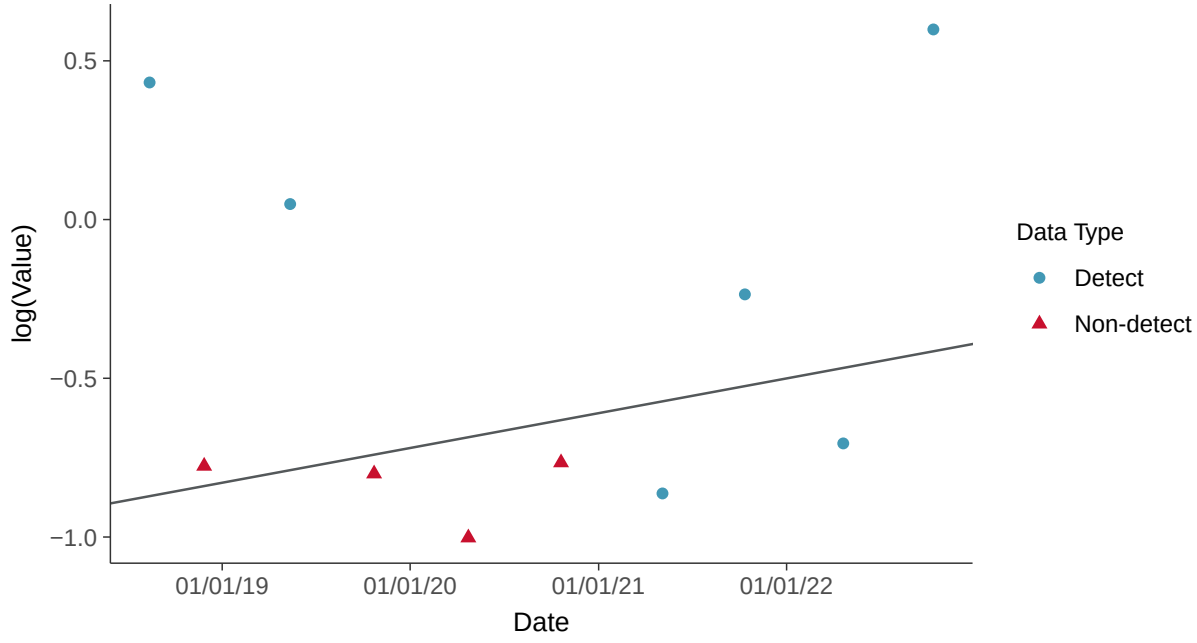
Gamma Q-Q plot using ROS Imputed Estimates

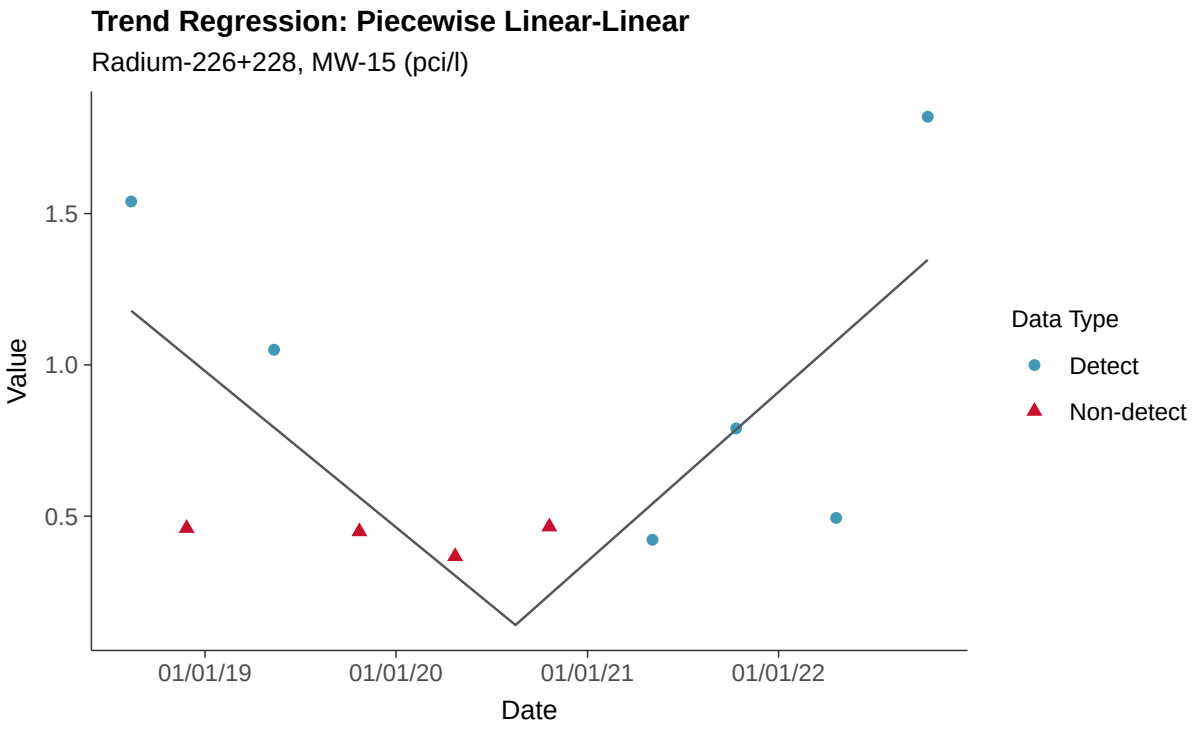
Radium-226+228, MW-15 (pci/l)



Trend Regression: Lognormal MLE

Radium-226+228, MW-15 (pci/l)



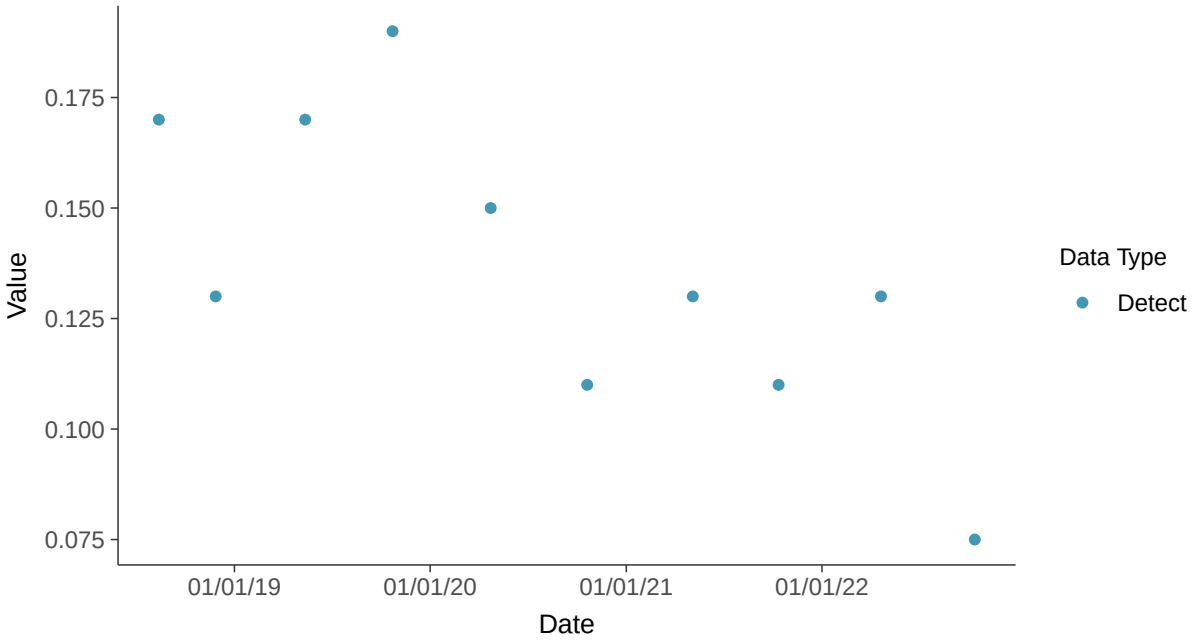

Trend Regression: Piecewise Linear-Linear
Radium-226+228, MW-15 (pci/l)
Value
1.5
1.0
0.5
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-15

ID: 14_2_129

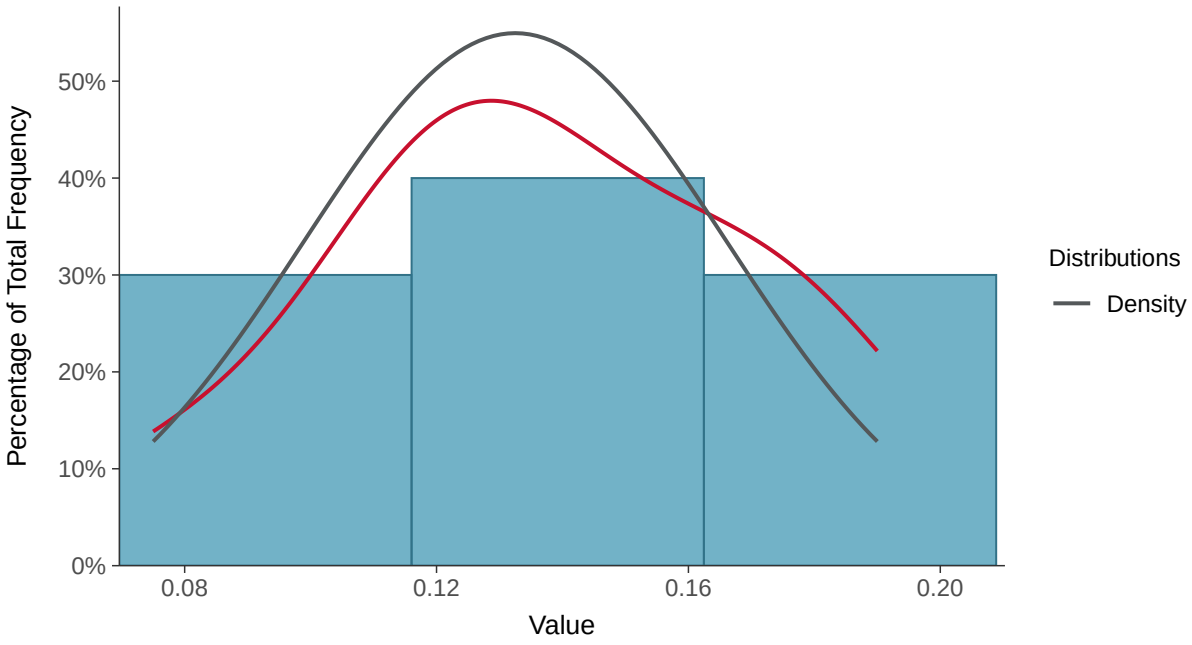
Scatter Plot

Selenium, MW-15 (mg/l)



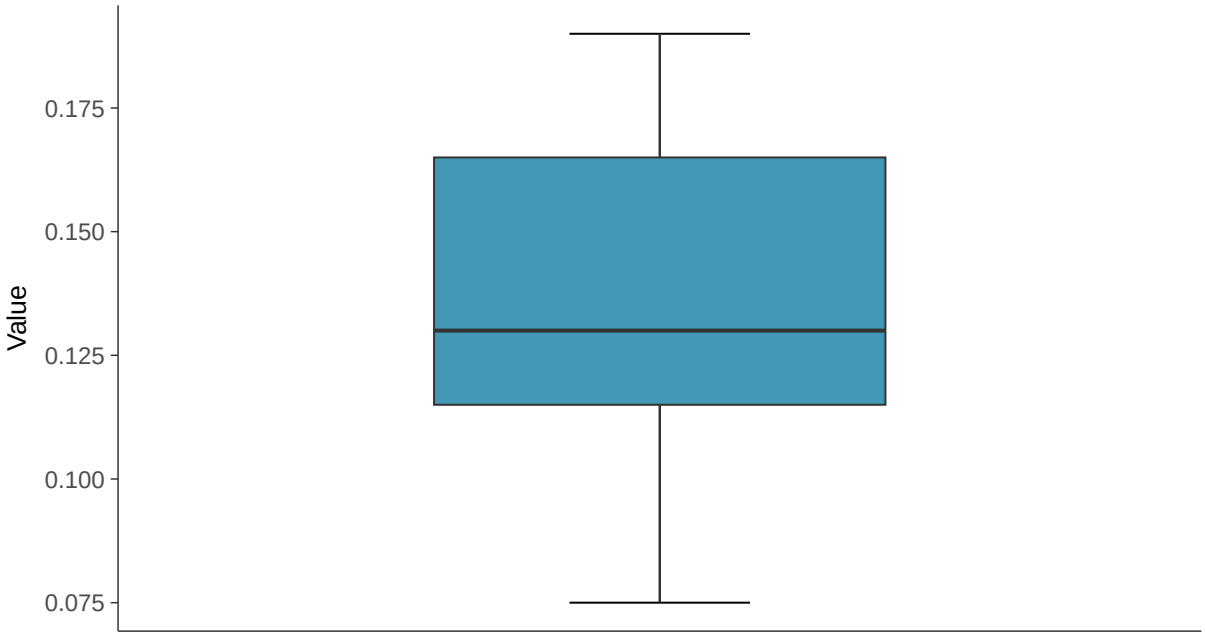
Histogram

Selenium, MW-15 (mg/l)



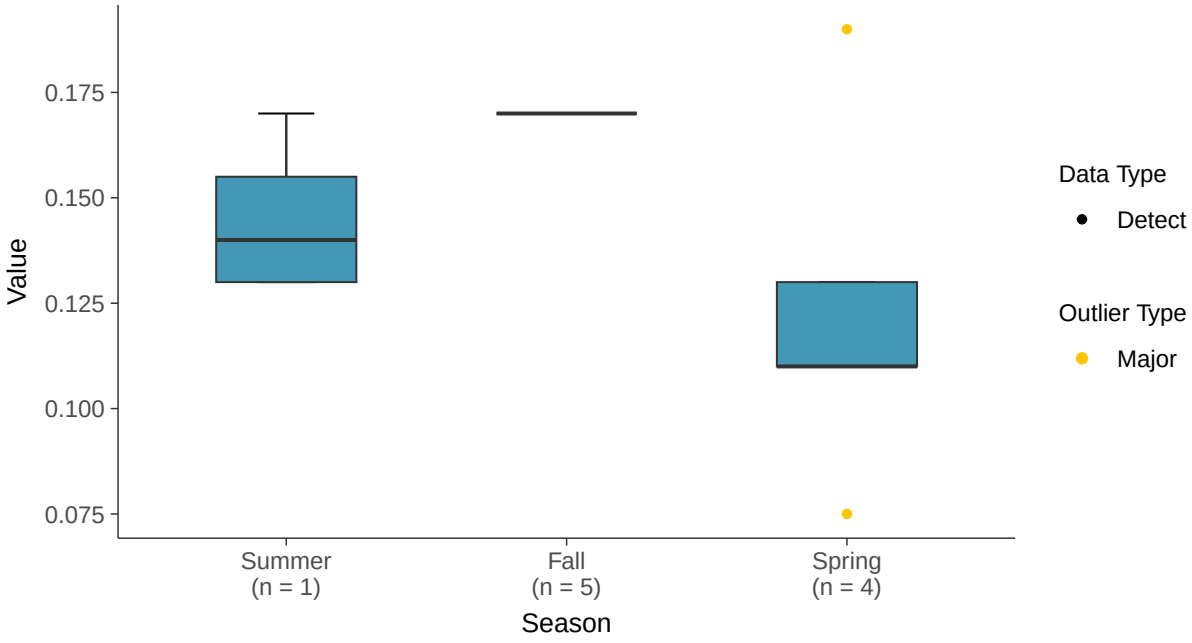
Boxplot

Selenium, MW-15 (mg/l)



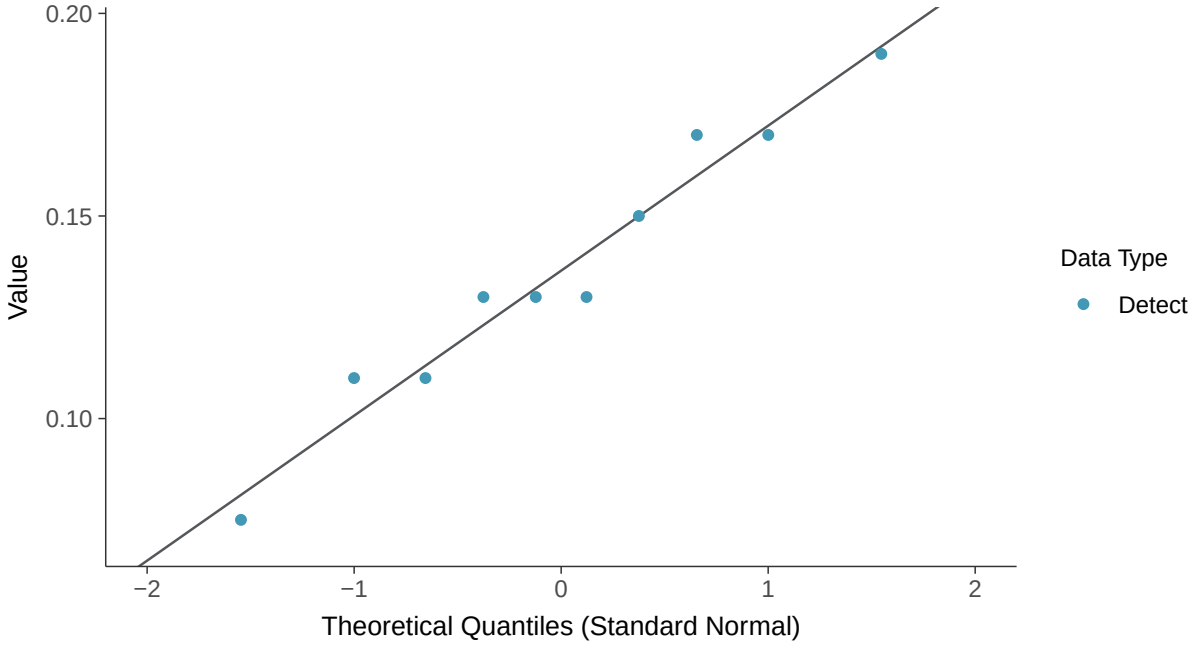
Boxplot by Season

Selenium, MW-15 (mg/l)



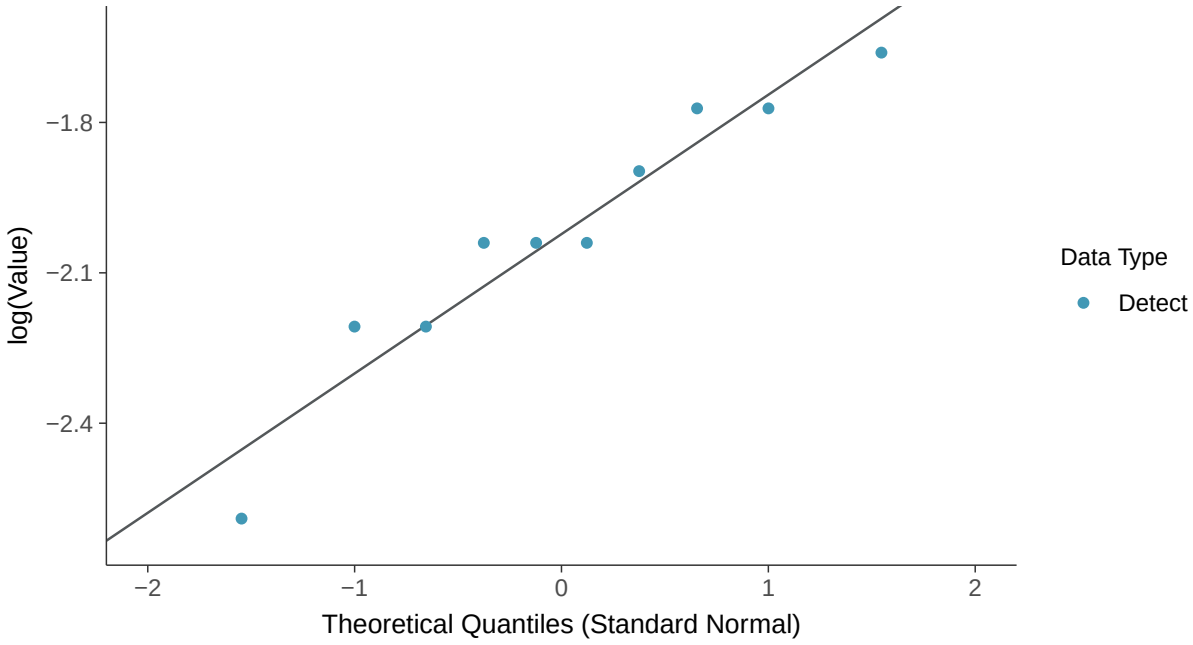
Normal Q-Q plot

Selenium, MW-15 (mg/l)



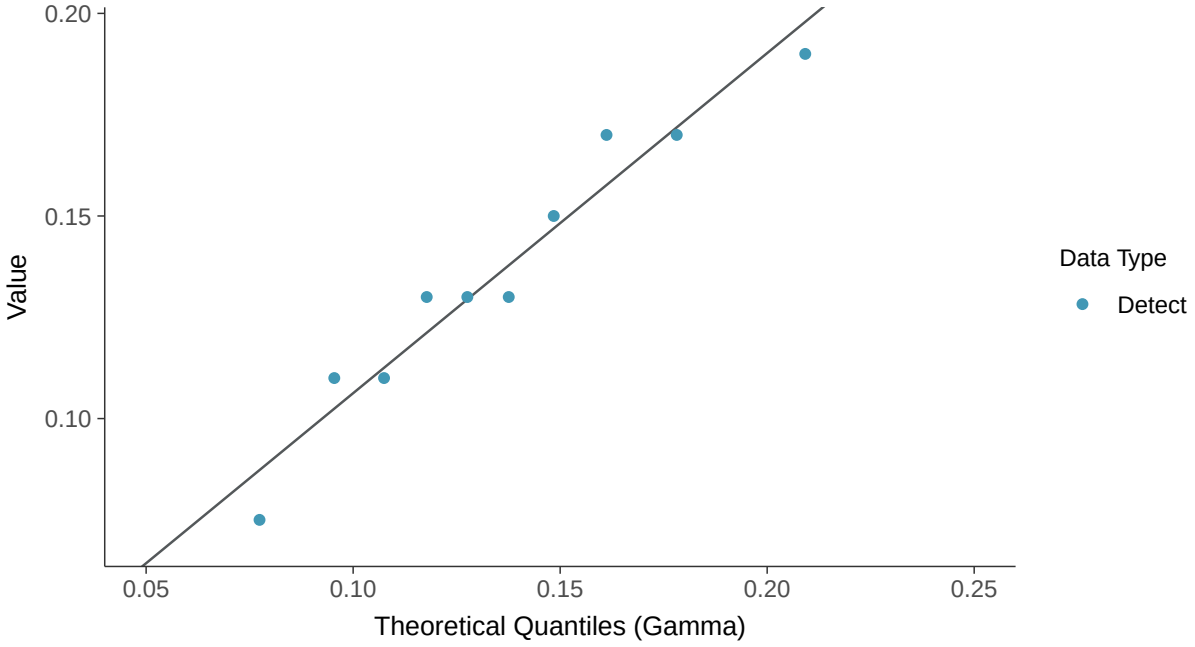
Lognormal Q-Q plot

Selenium, MW-15 (mg/l)



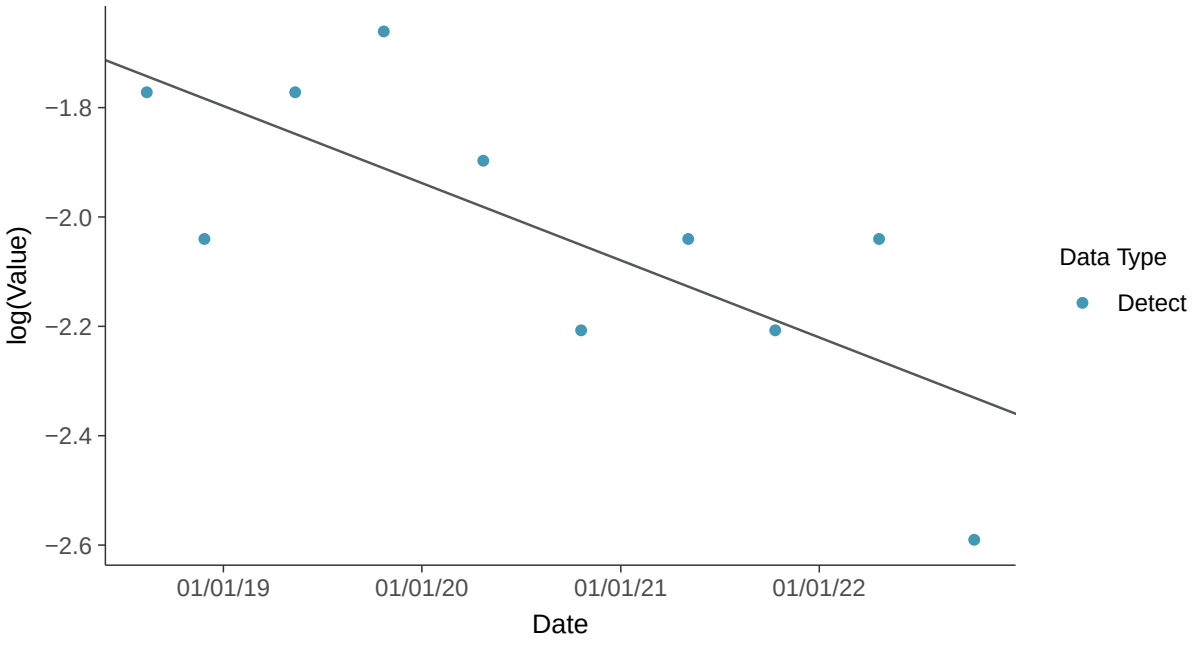
Gamma Q-Q plot

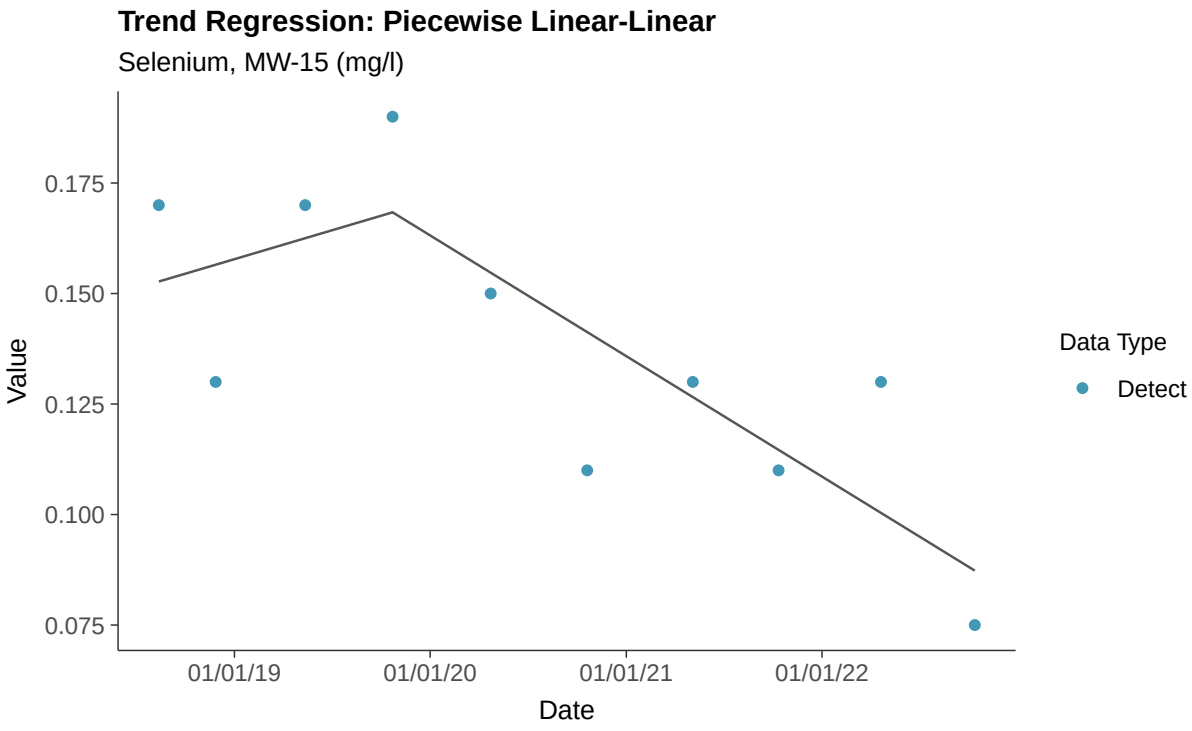
Selenium, MW-15 (mg/l)



Trend Regression: Lognormal MLE

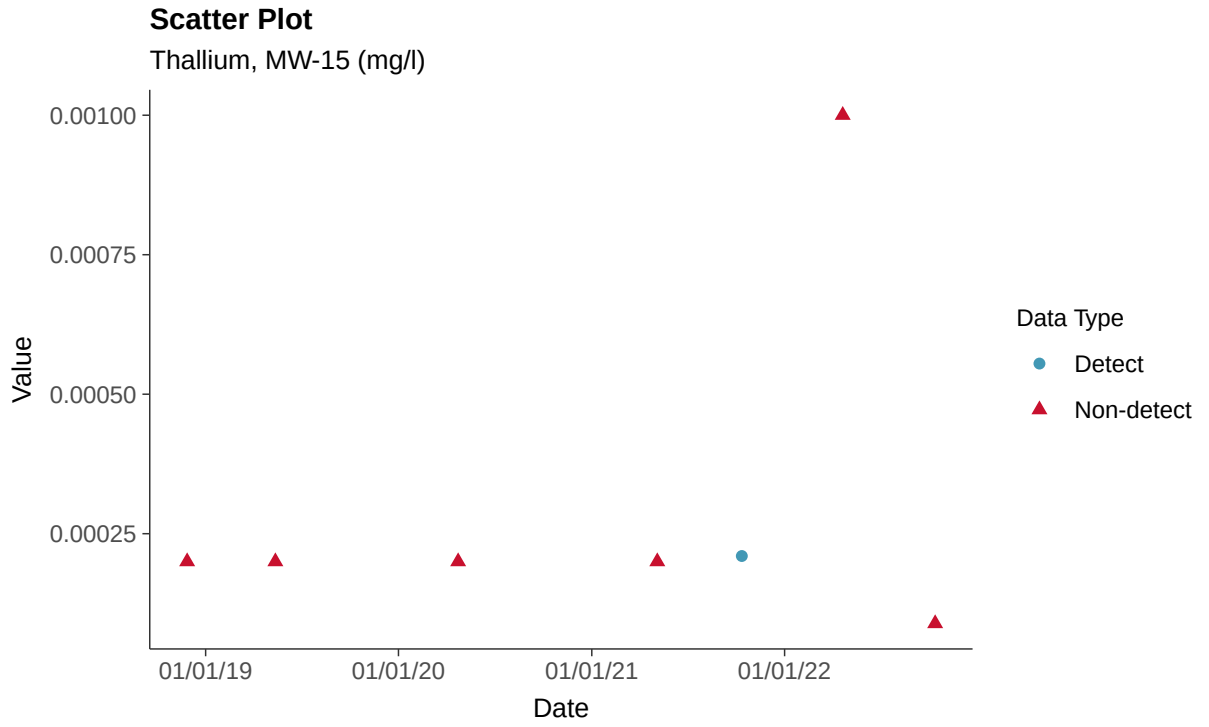
Selenium, MW-15 (mg/l)

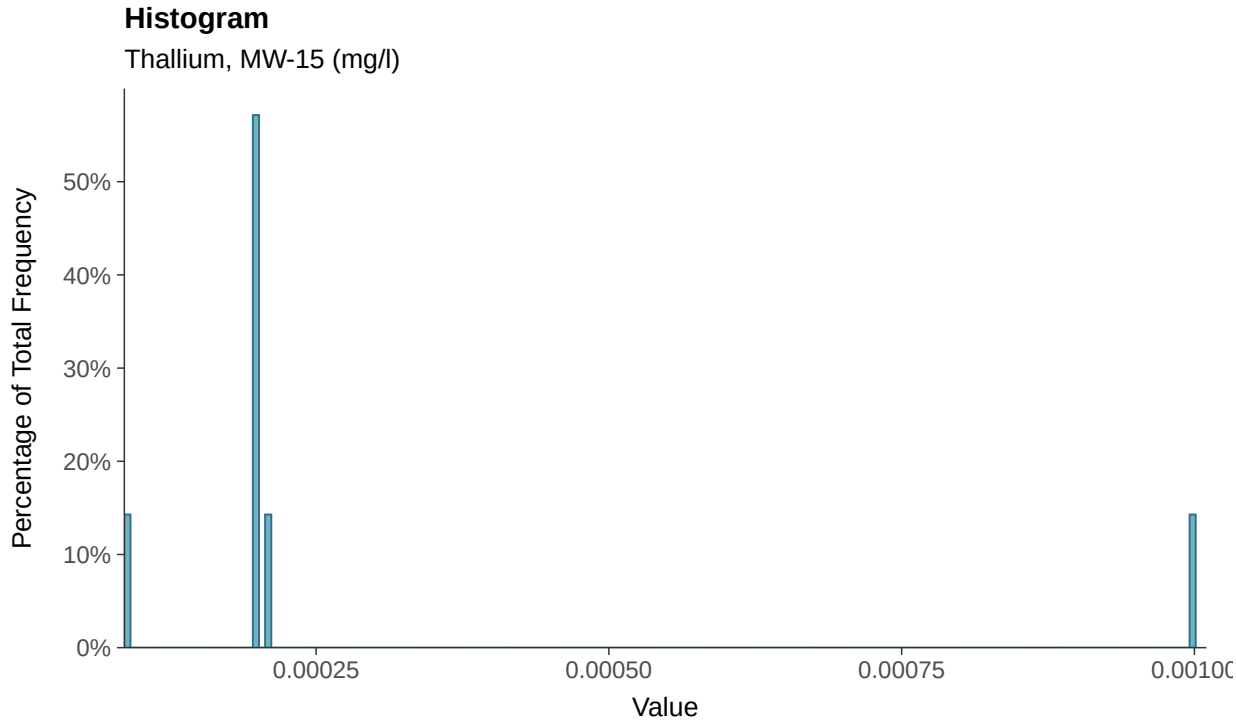



Trend Regression: Piecewise Linear-Linear
Selenium, MW-15 (mg/l)
Value
0.175
0.150
0.125
0.100
0.075
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect

Appendix IV: Thallium, MW-15

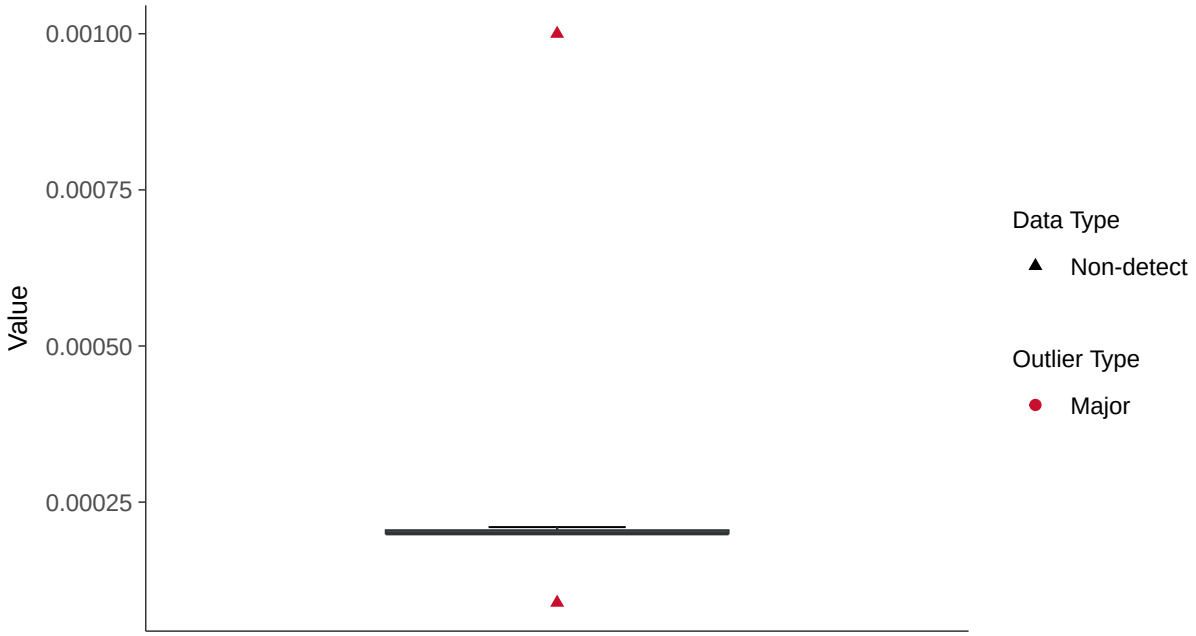
ID: 14_2_134





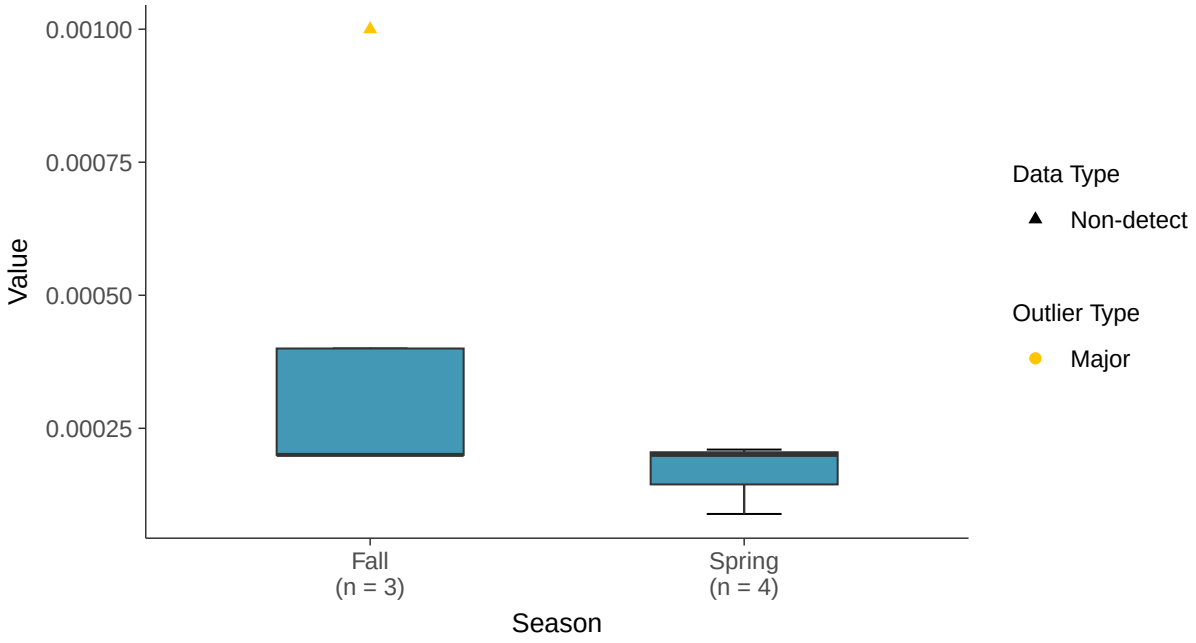
Boxplot

Thallium, MW-15 (mg/l)



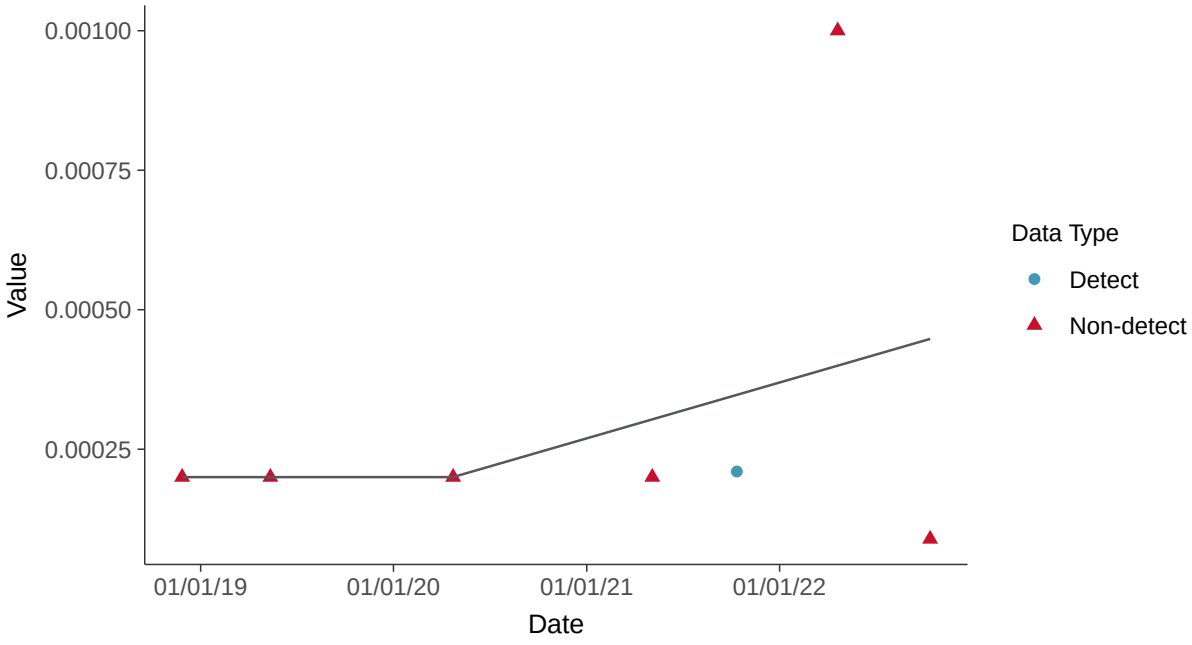
Boxplot by Season

Thallium, MW-15 (mg/l)



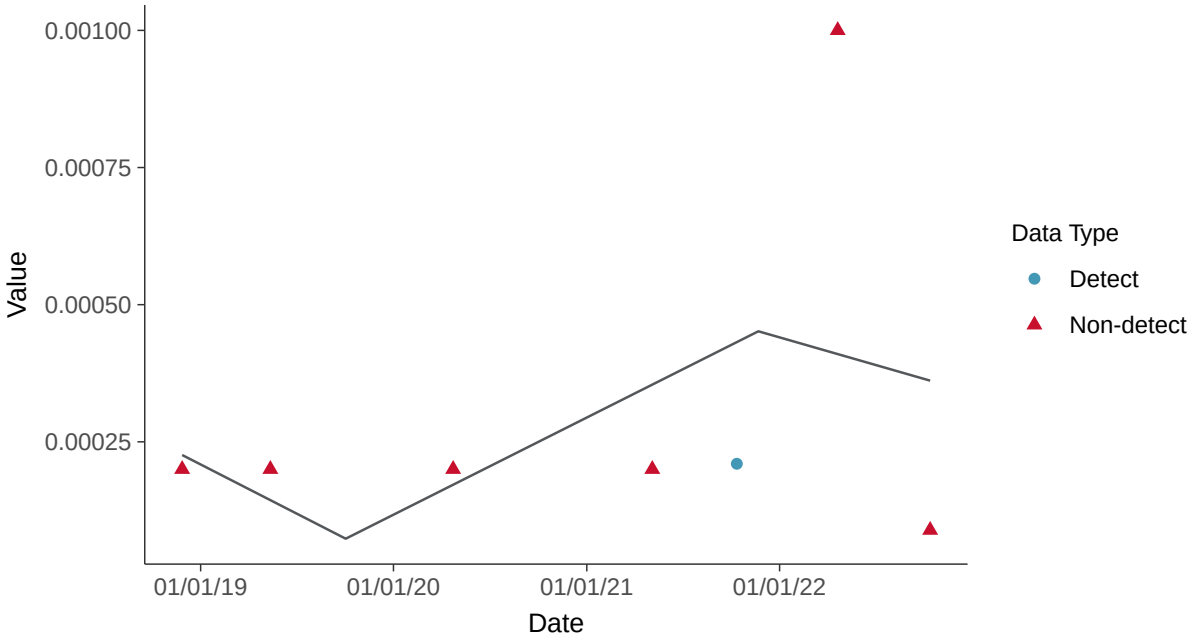
Trend Regression: Piecewise Linear-Linear

Thallium, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-15 (mg/l)

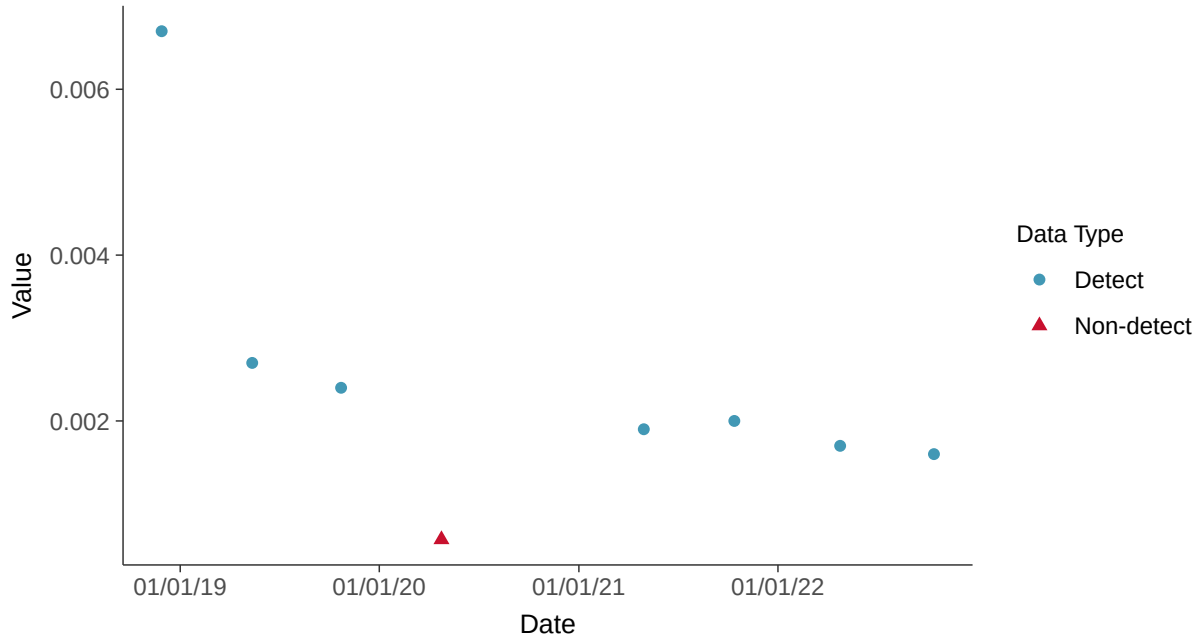


Appendix IV: Antimony, MW-16

ID: 15_2_104

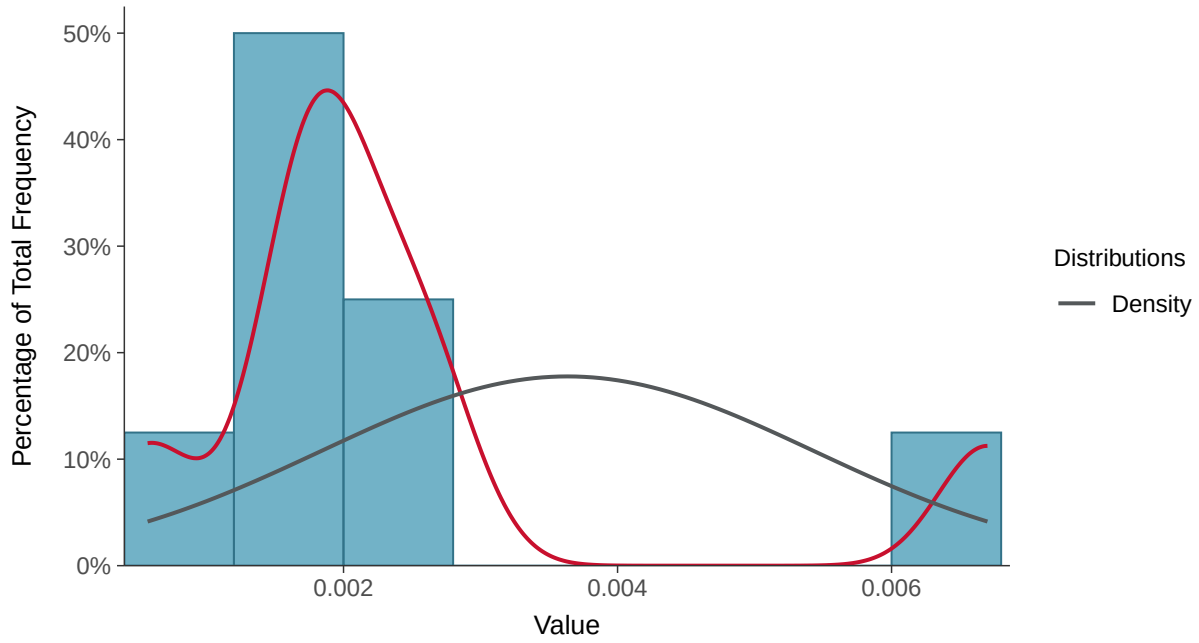
Scatter Plot

Antimony, MW-16 (mg/l)



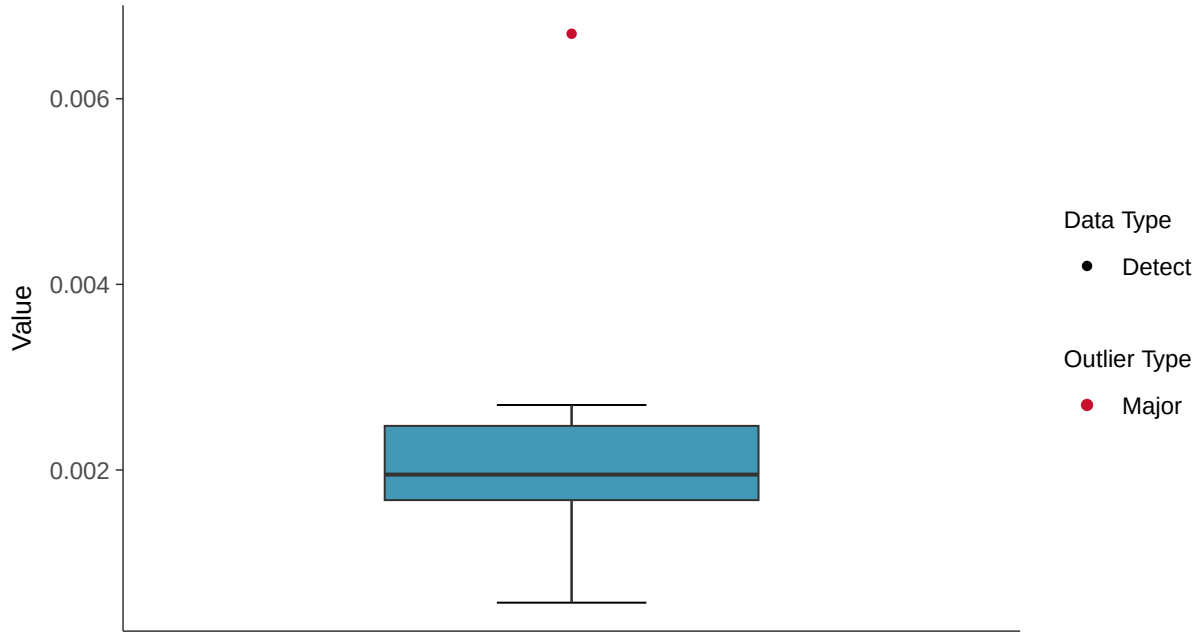
Histogram

Antimony, MW-16 (mg/l)



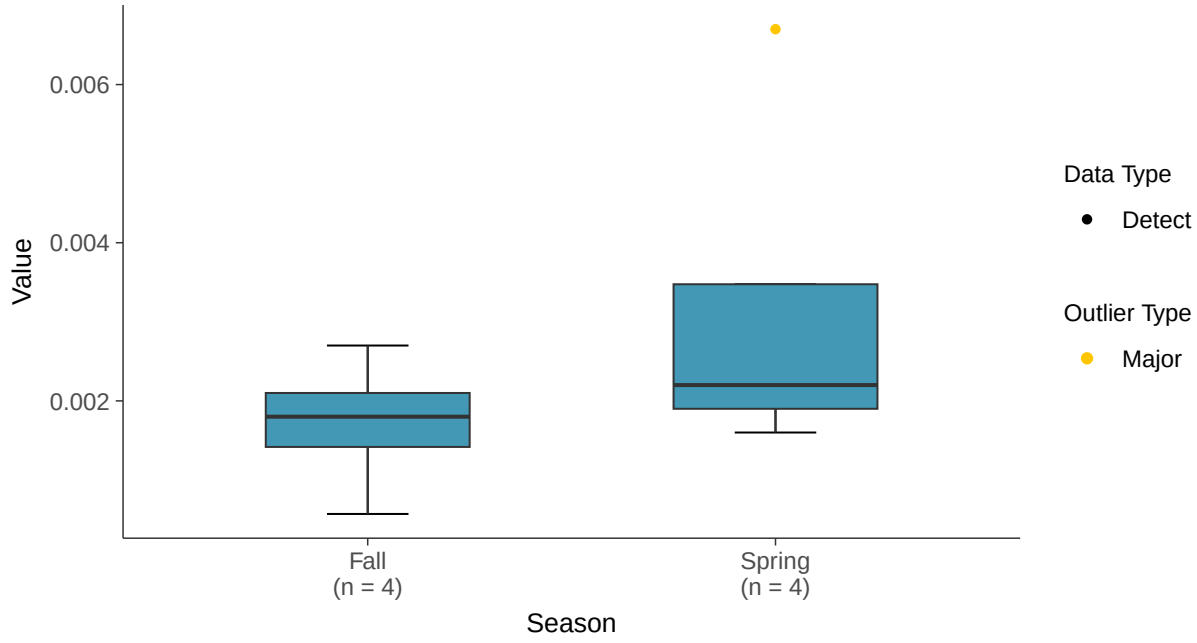
Boxplot

Antimony, MW-16 (mg/l)



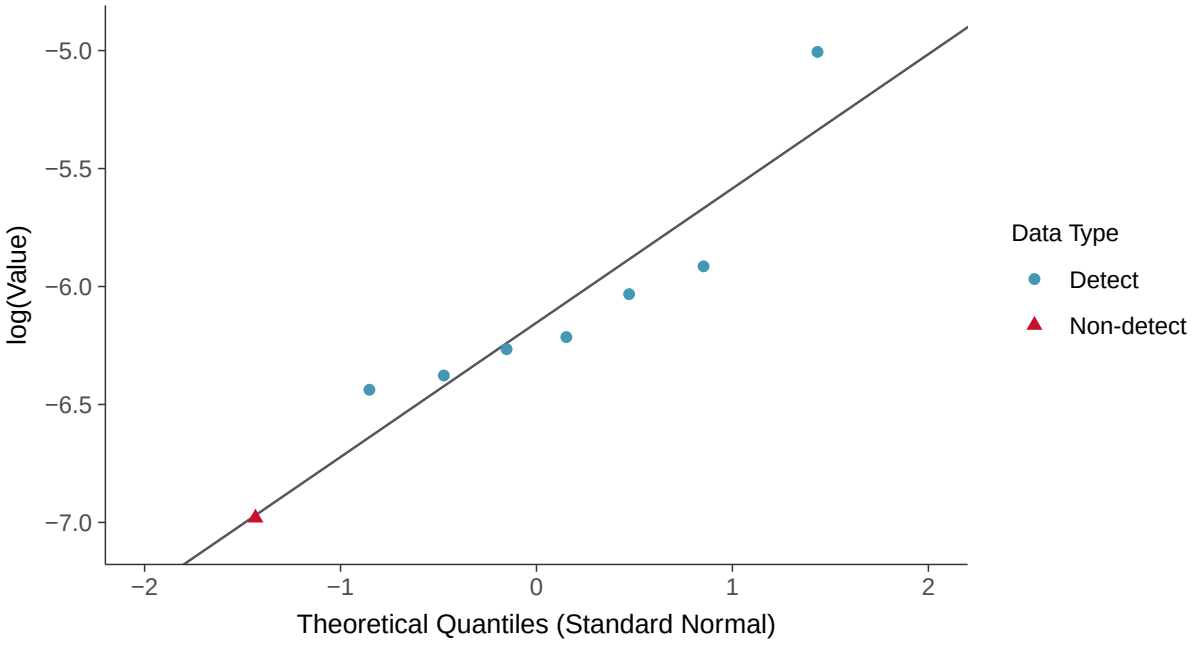
Boxplot by Season

Antimony, MW-16 (mg/l)



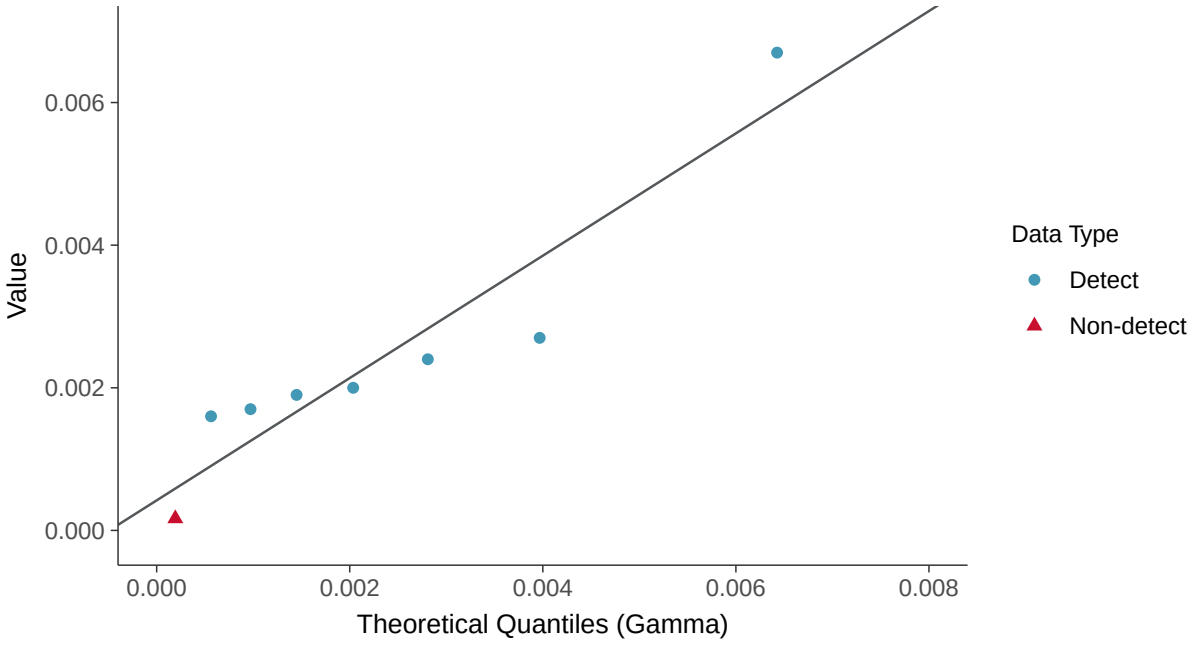
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



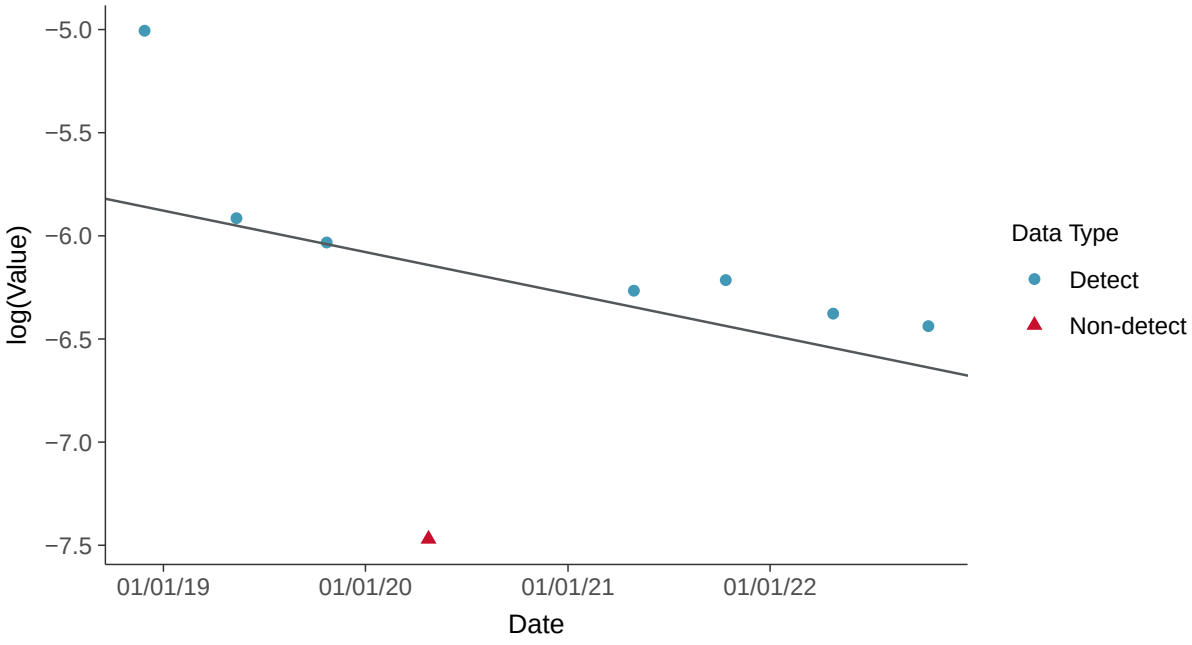
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



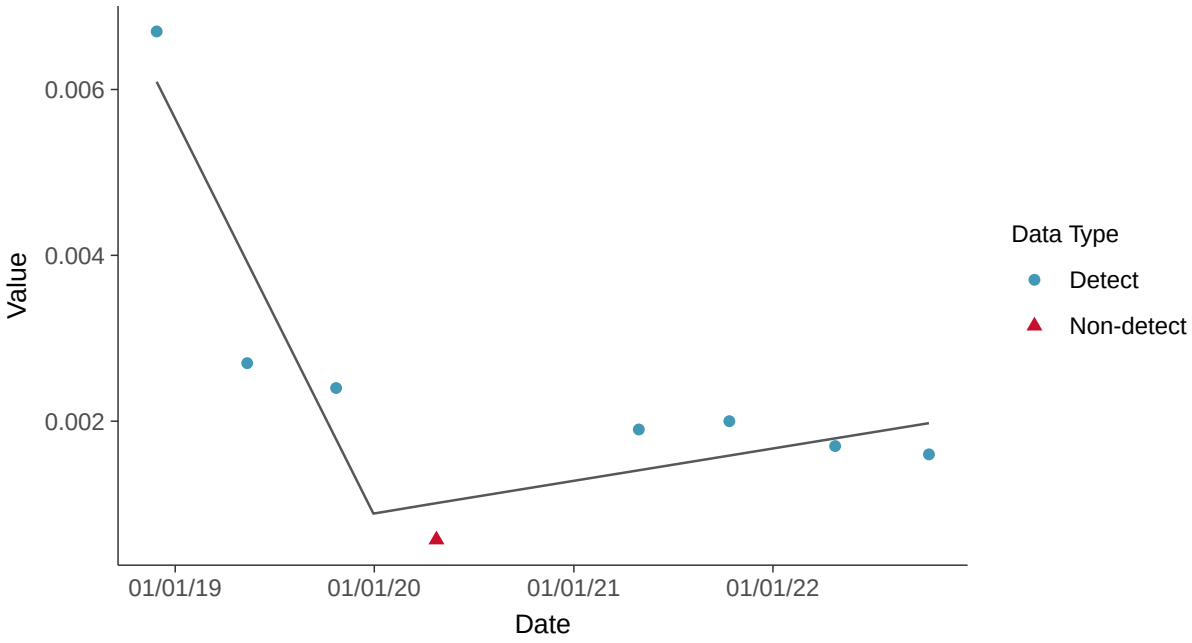
Trend Regression: Lognormal MLE

Antimony, MW-16 (mg/l)



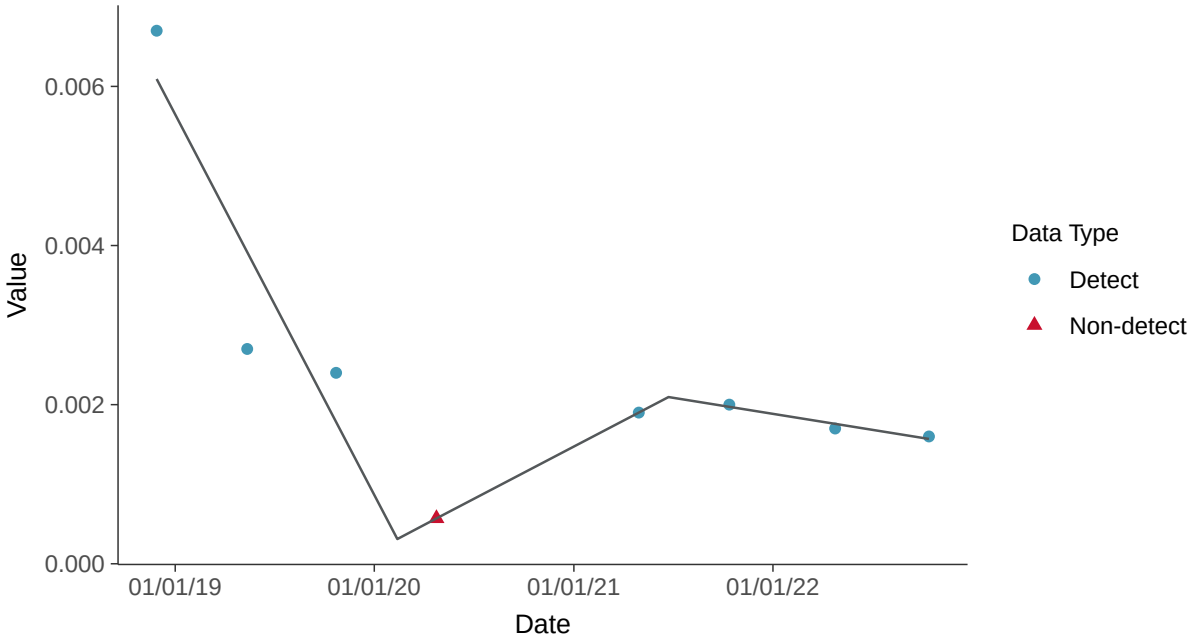
Trend Regression: Piecewise Linear-Linear

Antimony, MW-16 (mg/l)



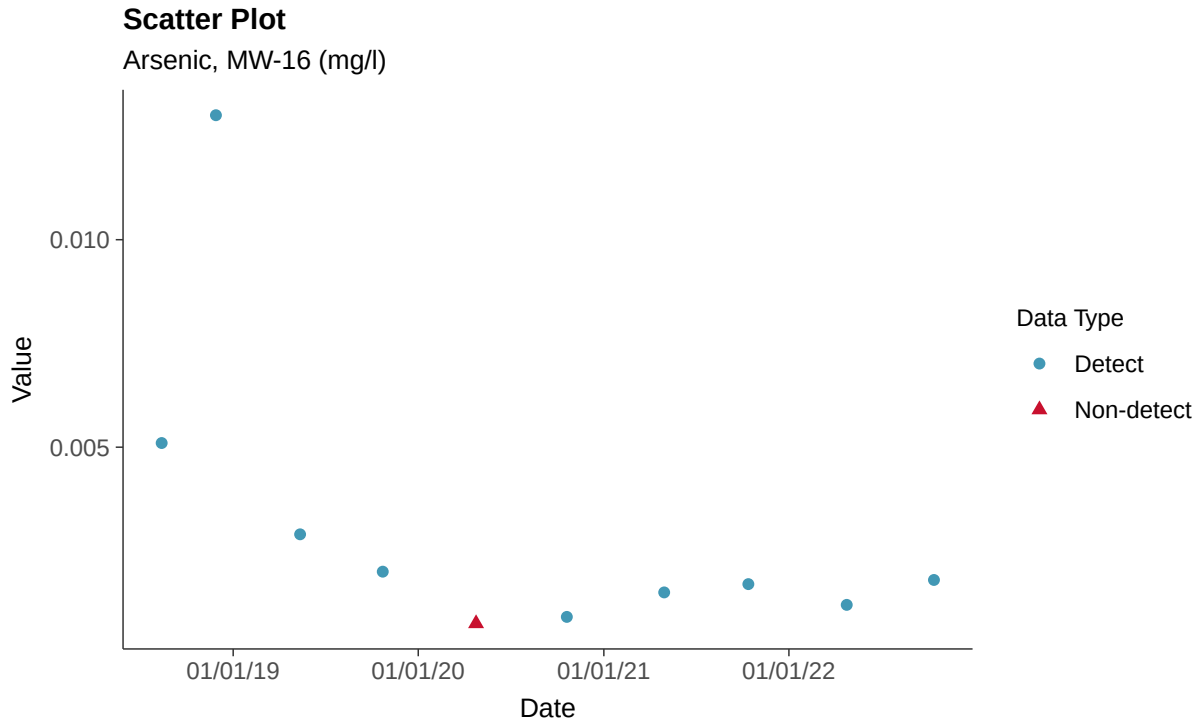
Trend Regression: Piecewise Linear-Linear-Linear

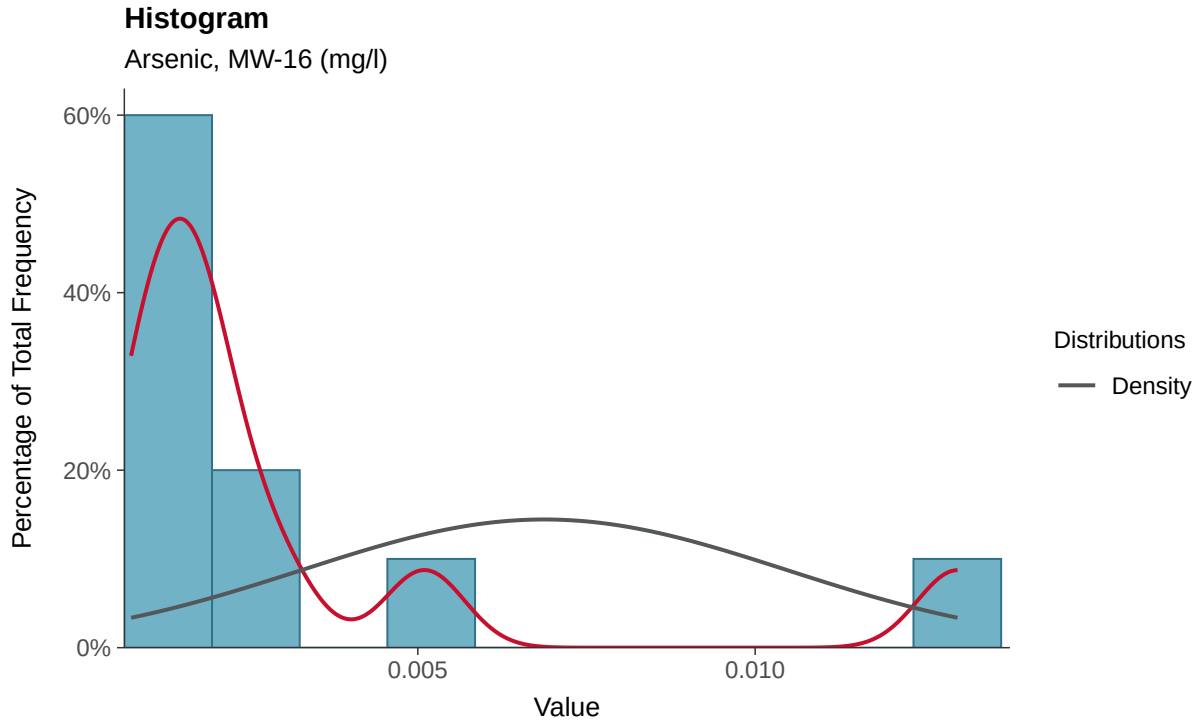
Antimony, MW-16 (mg/l)



Appendix IV: Arsenic, MW-16

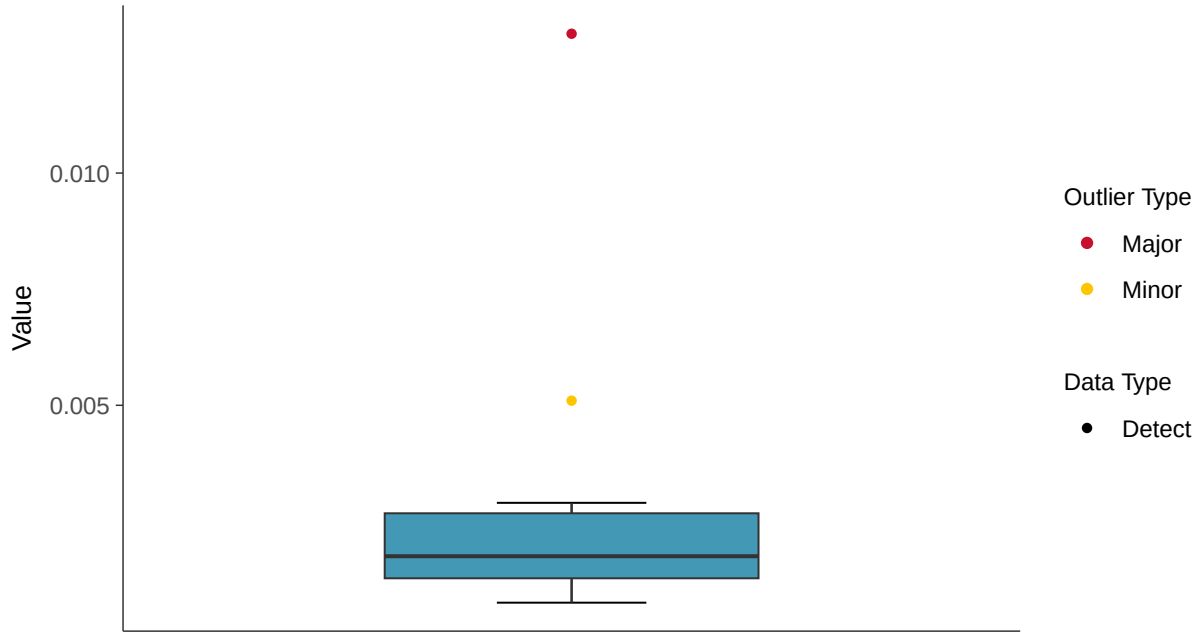
ID: 15_2_105





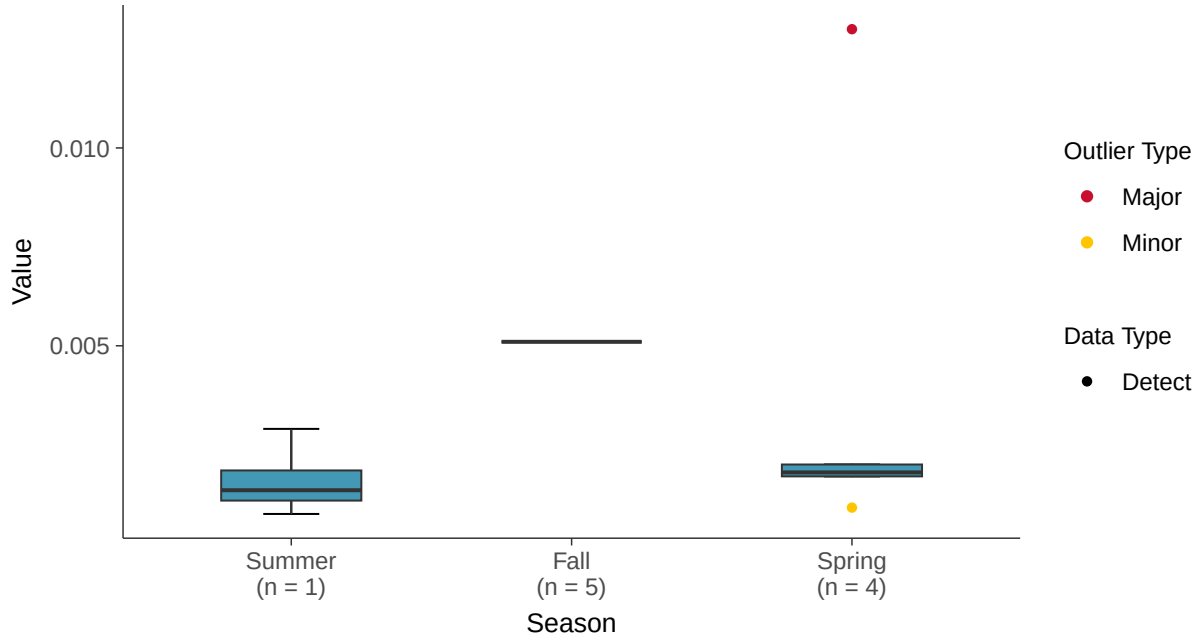
Boxplot

Arsenic, MW-16 (mg/l)



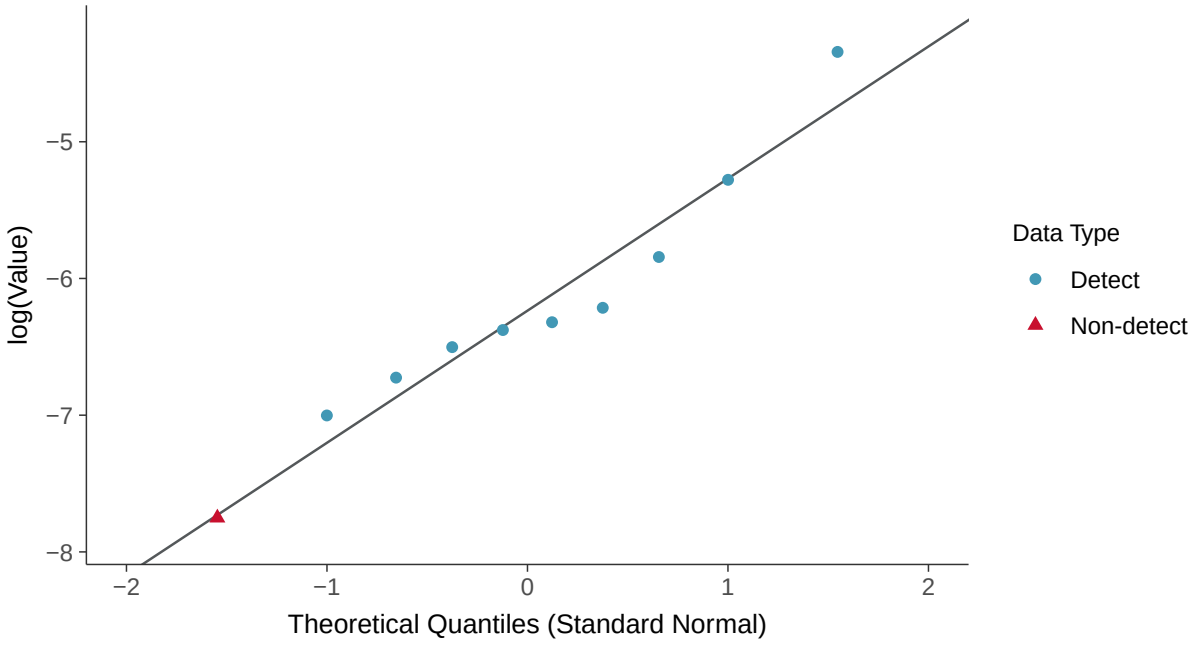
Boxplot by Season

Arsenic, MW-16 (mg/l)



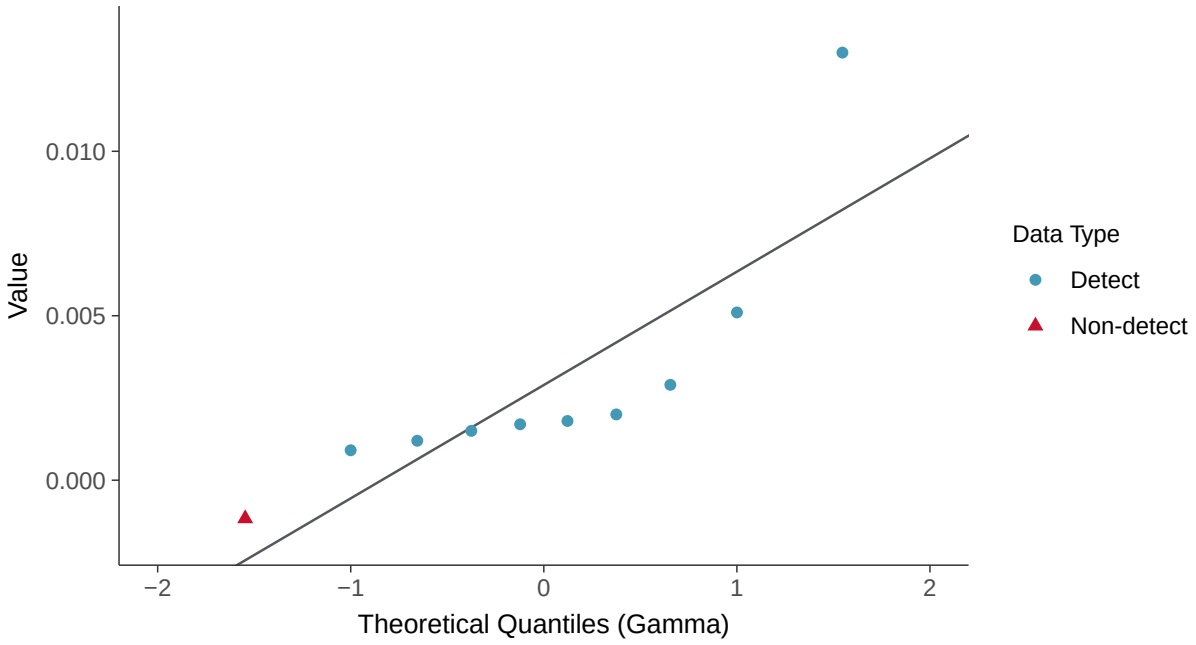
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-16 (mg/l)



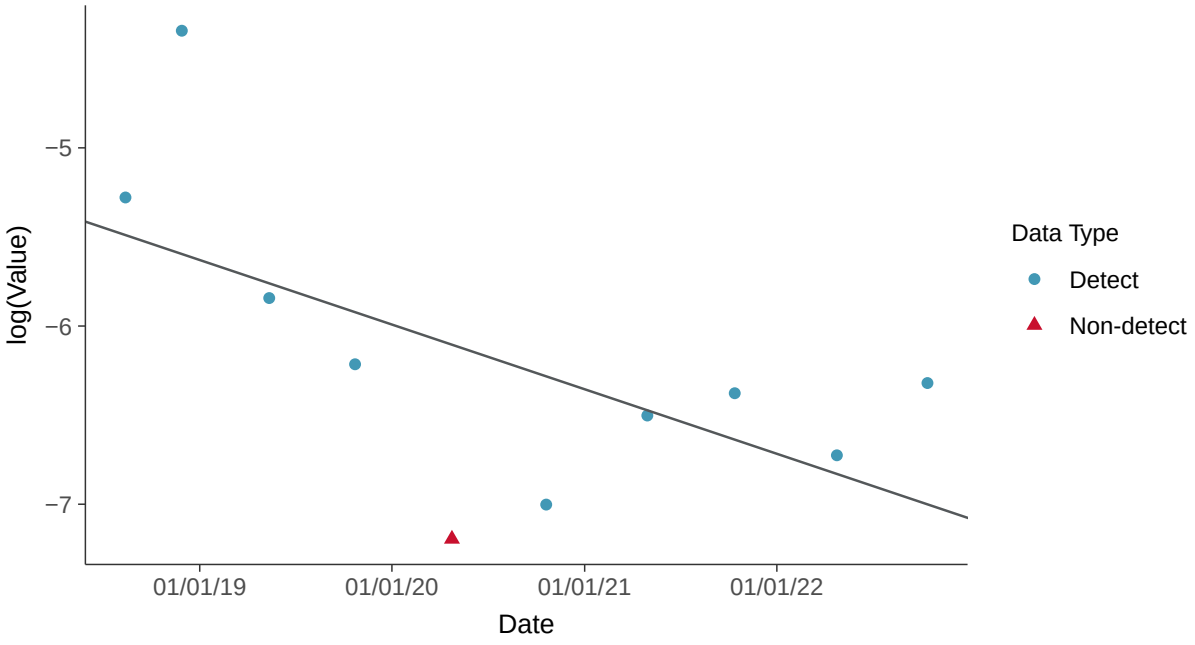
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-16 (mg/l)



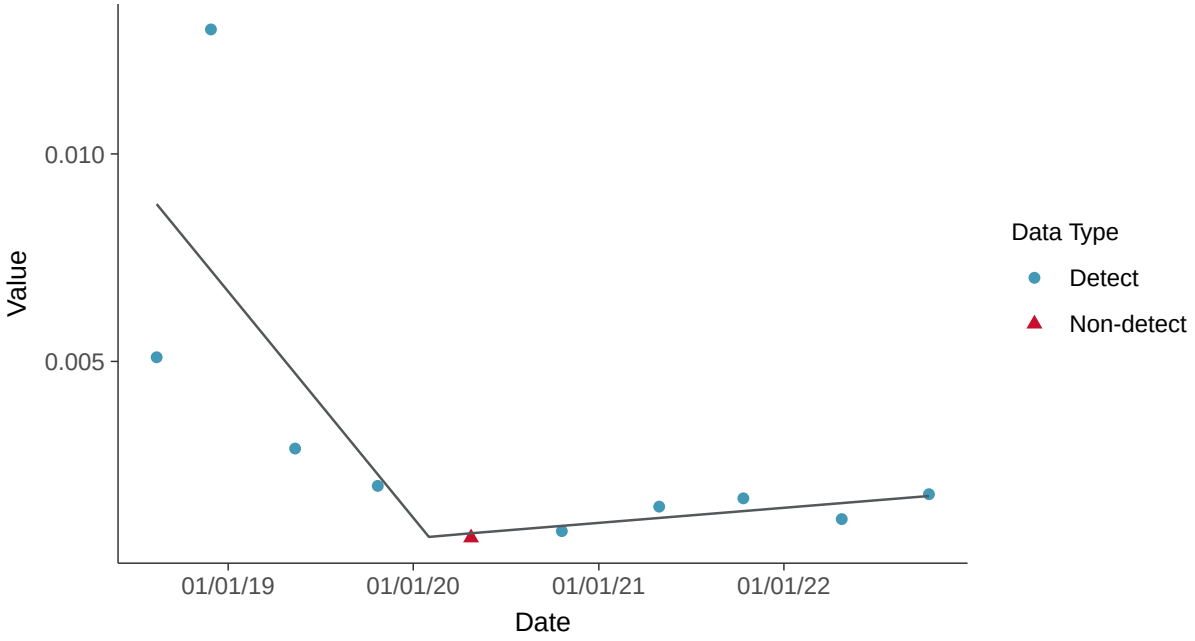
Trend Regression: Lognormal MLE

Arsenic, MW-16 (mg/l)



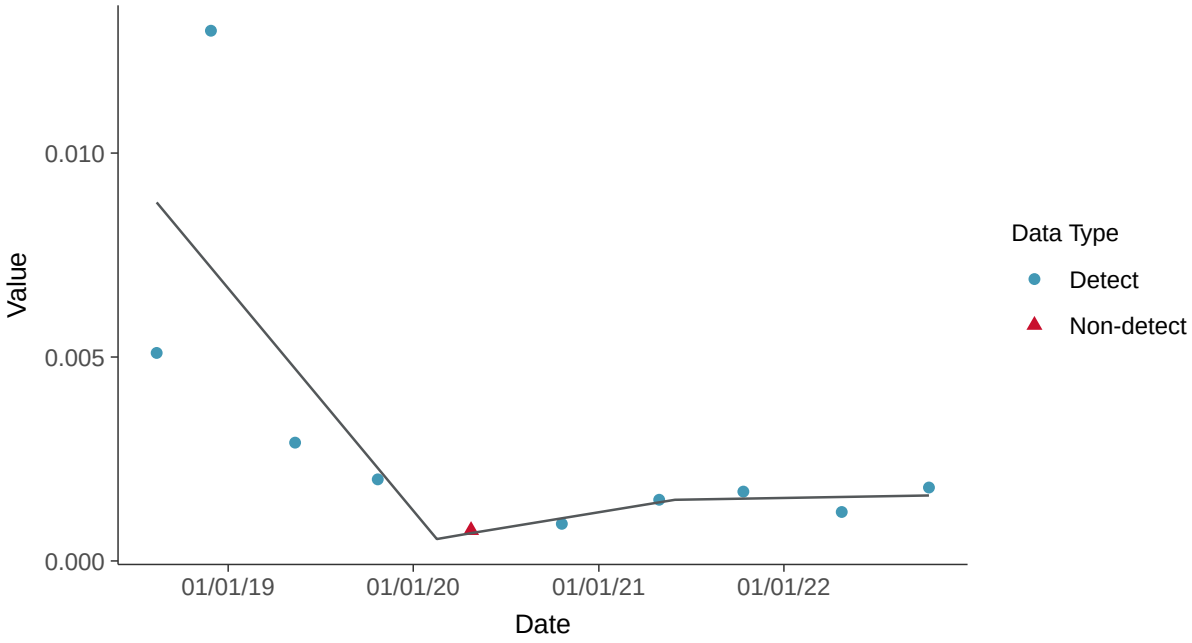
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-16 (mg/l)



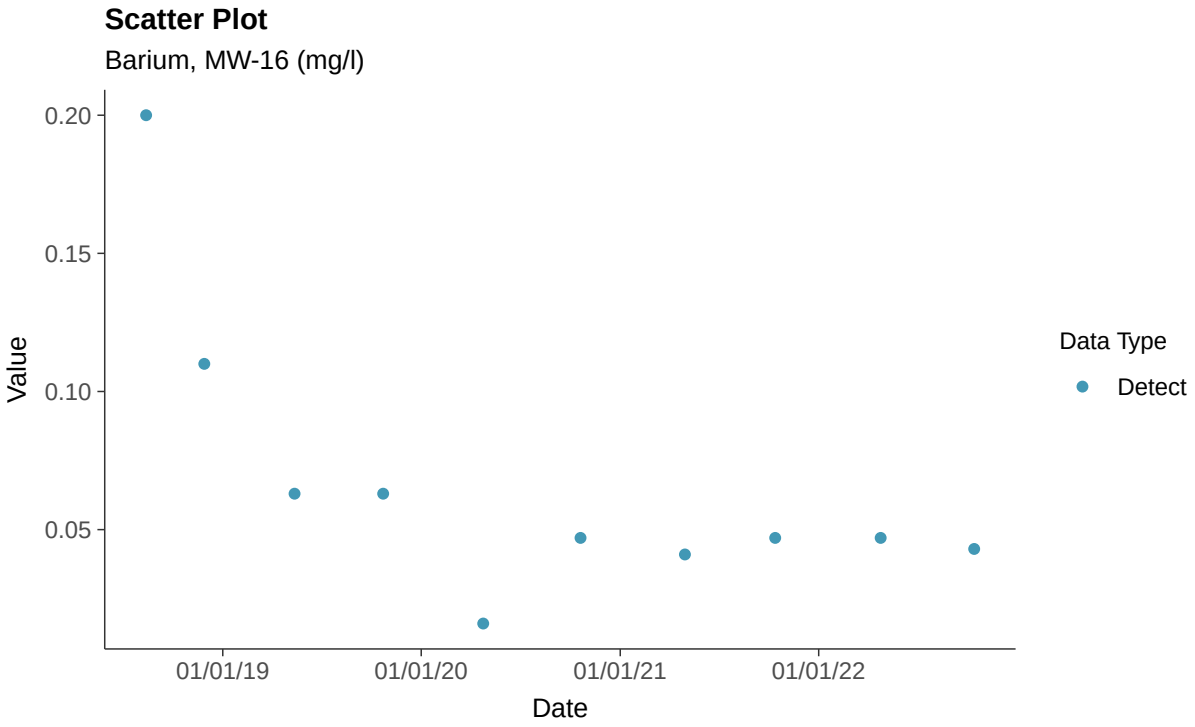
Trend Regression: Piecewise Linear-Linear-Linear

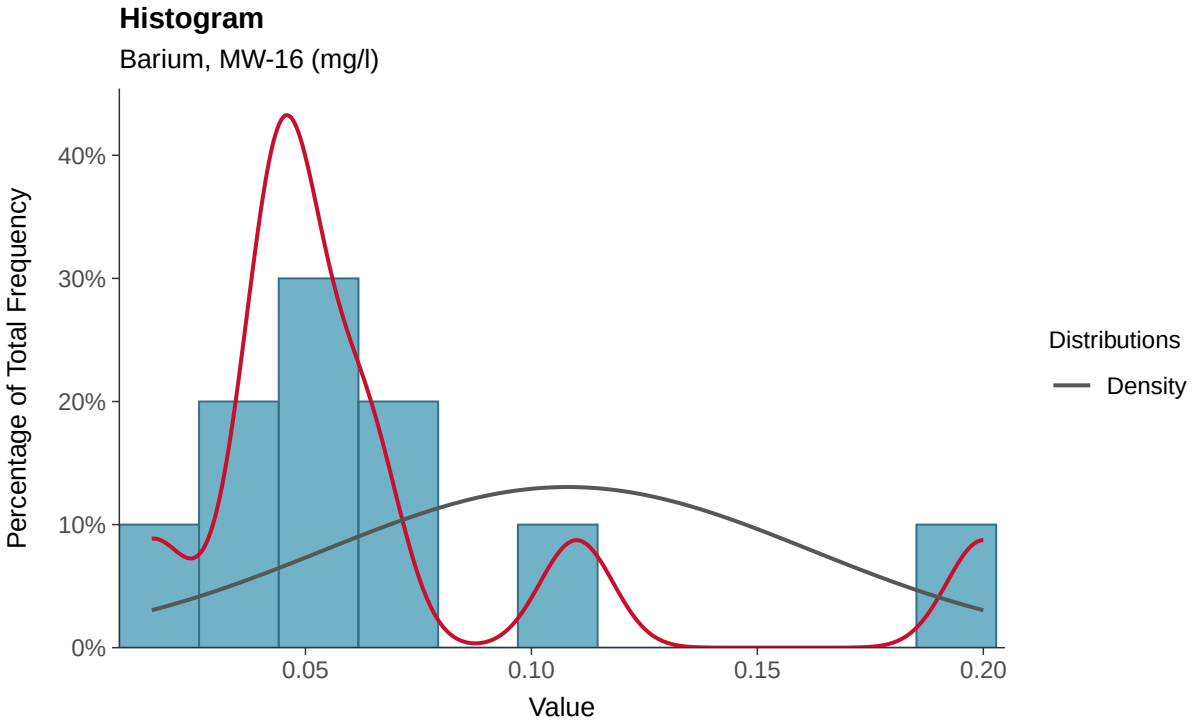
Arsenic, MW-16 (mg/l)



Appendix IV: Barium, MW-16

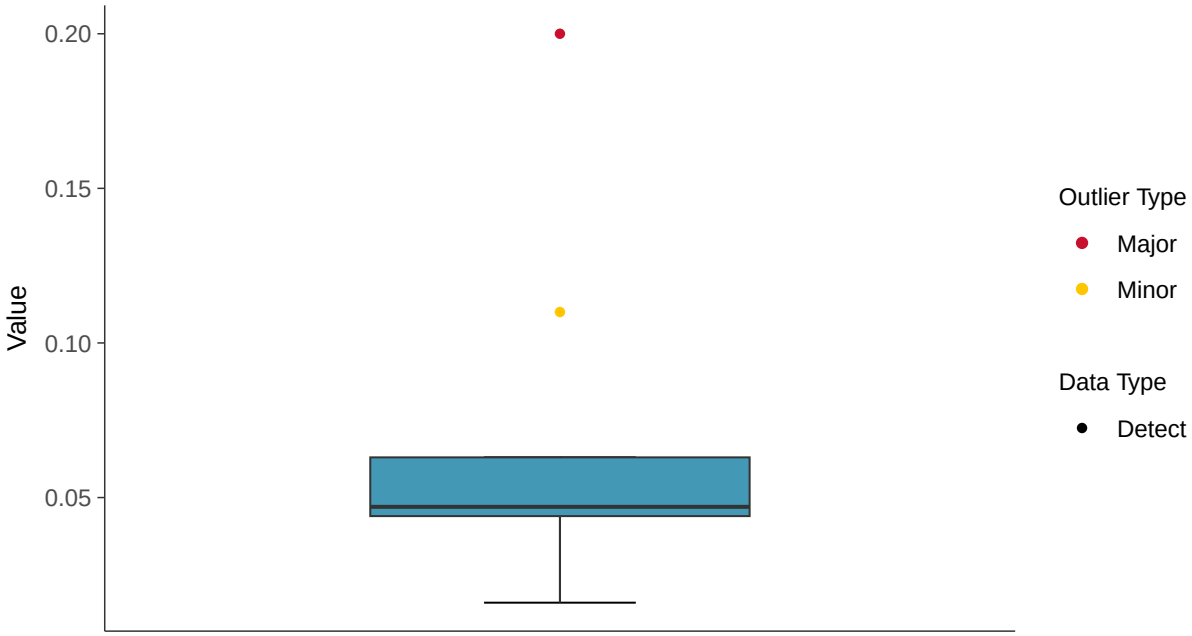
ID: 15_2_106





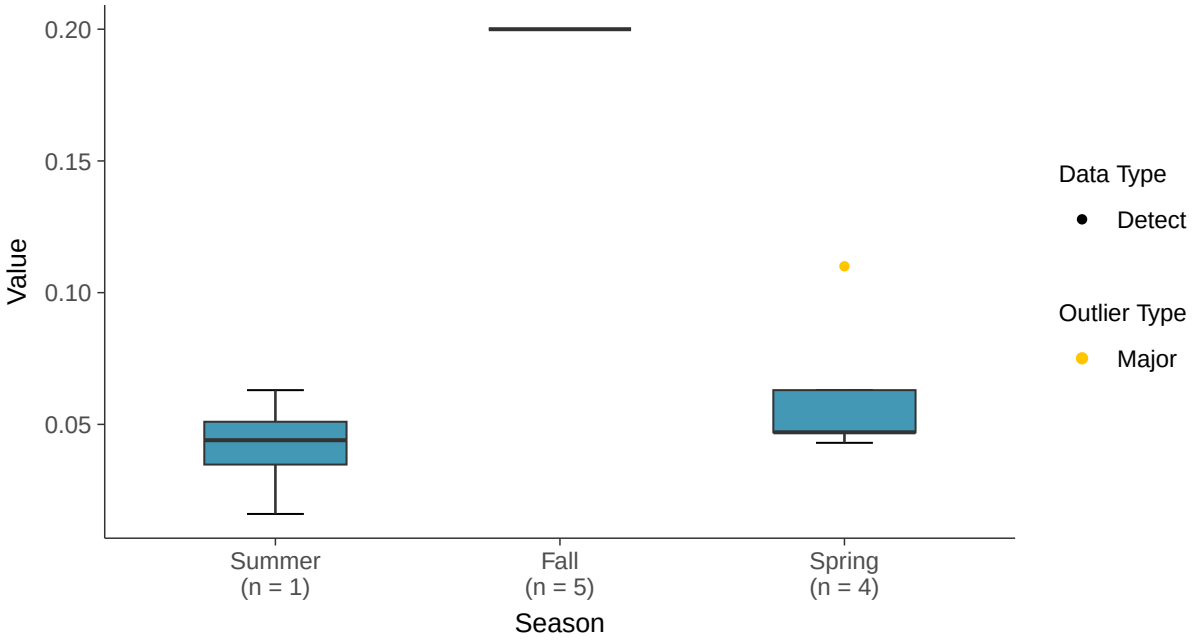
Boxplot

Barium, MW-16 (mg/l)



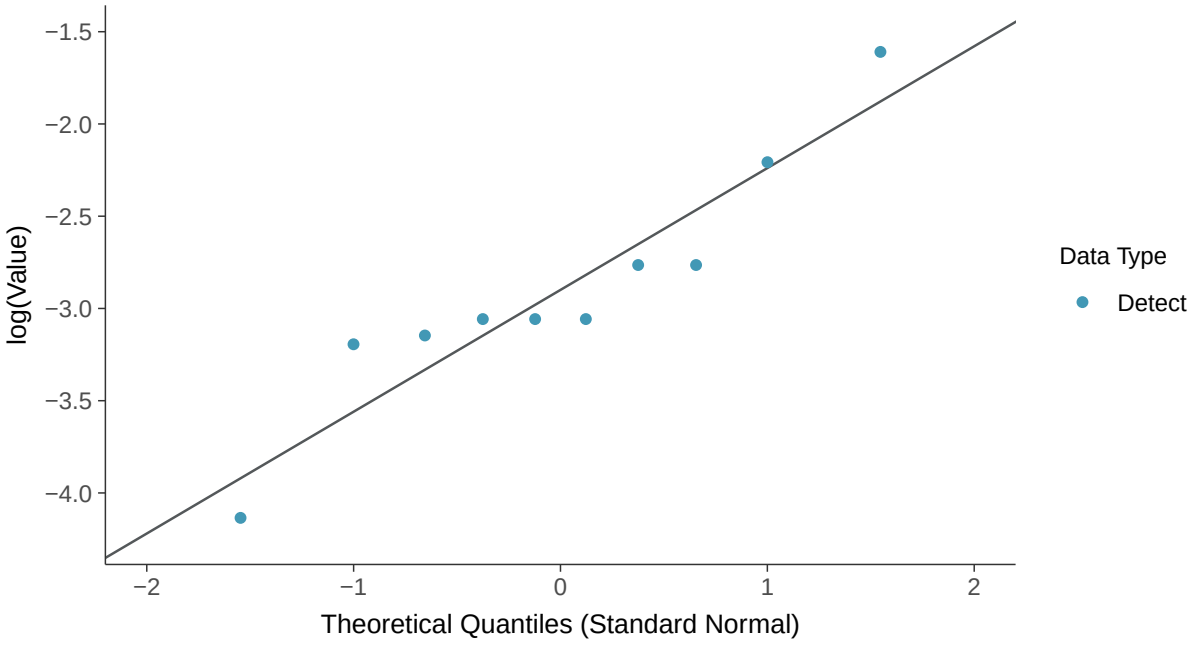
Boxplot by Season

Barium, MW-16 (mg/l)



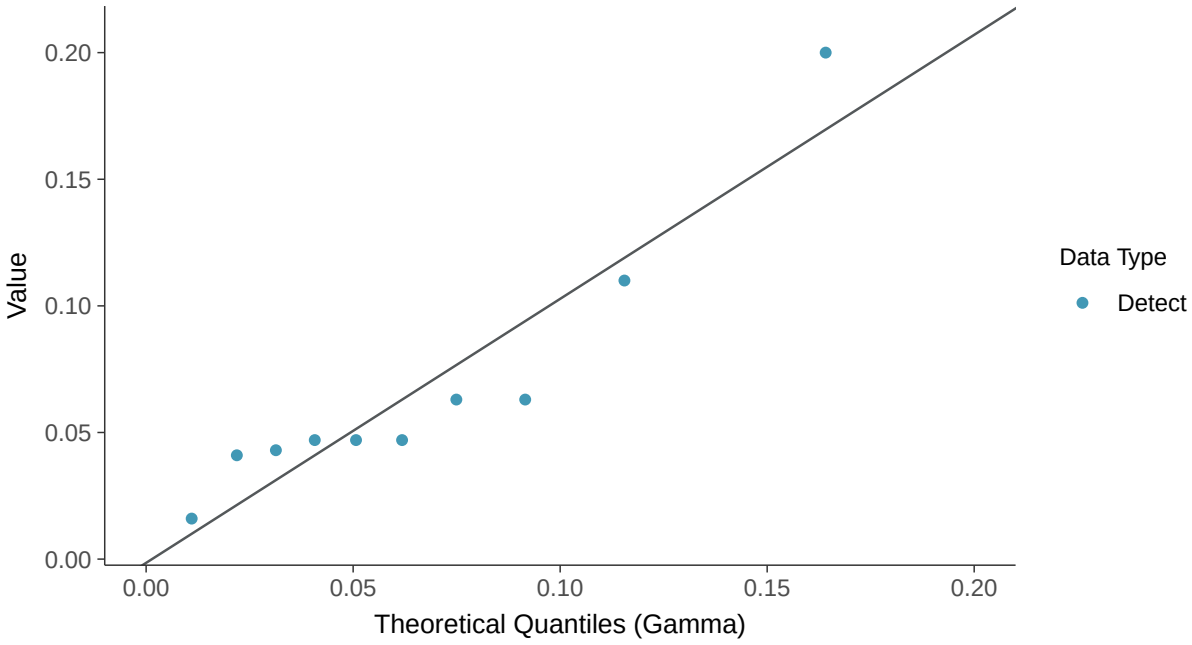
Lognormal Q-Q plot

Barium, MW-16 (mg/l)



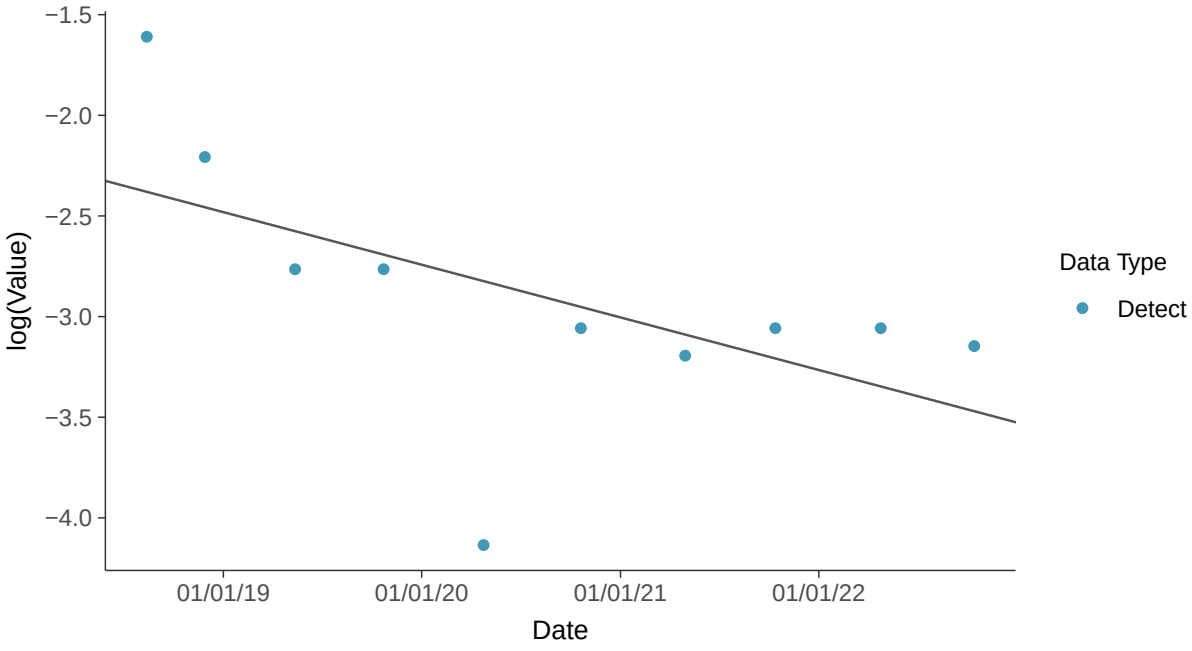
Gamma Q-Q plot

Barium, MW-16 (mg/l)



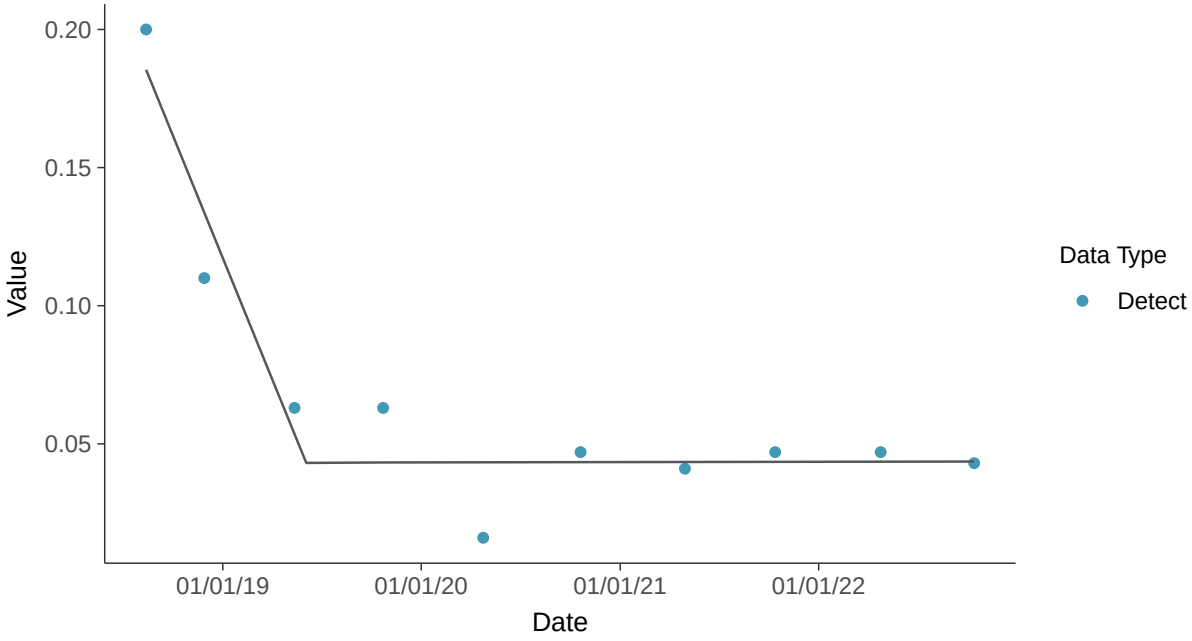
Trend Regression: Lognormal MLE

Barium, MW-16 (mg/l)



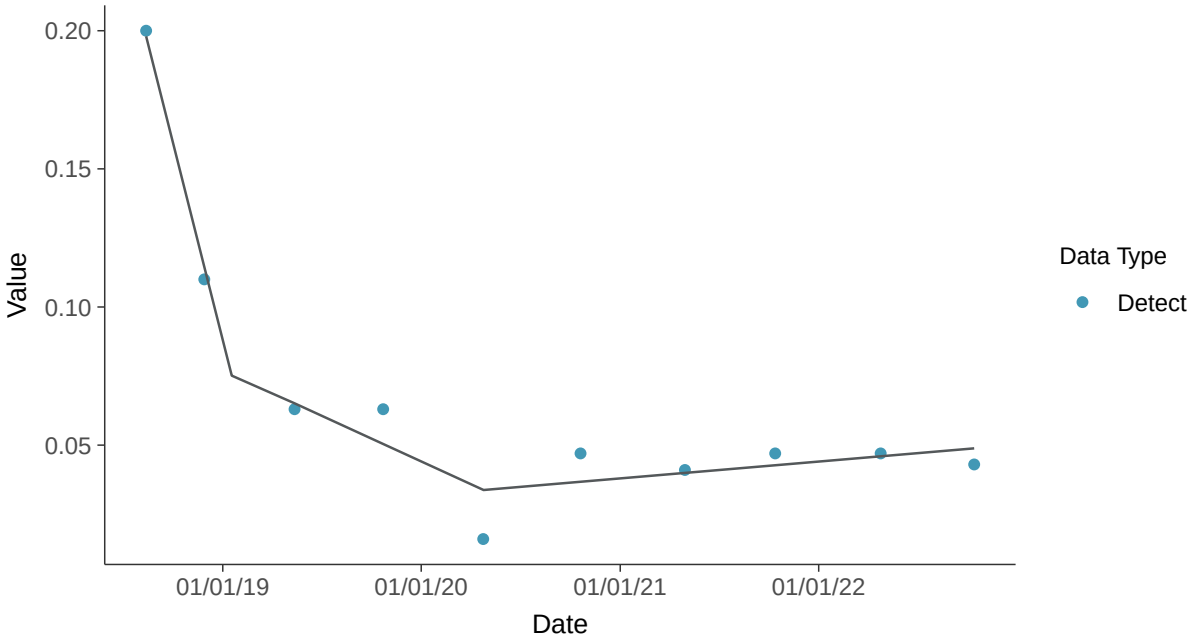
Trend Regression: Piecewise Linear-Linear

Barium, MW-16 (mg/l)



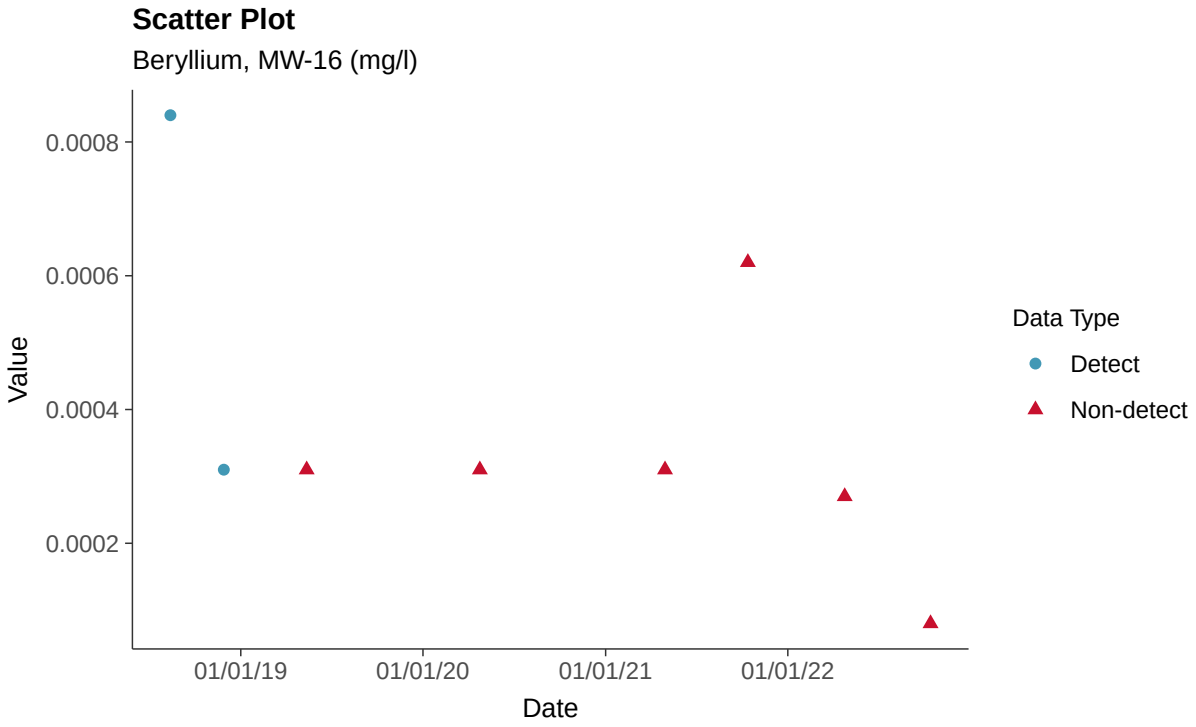
Trend Regression: Piecewise Linear-Linear-Linear

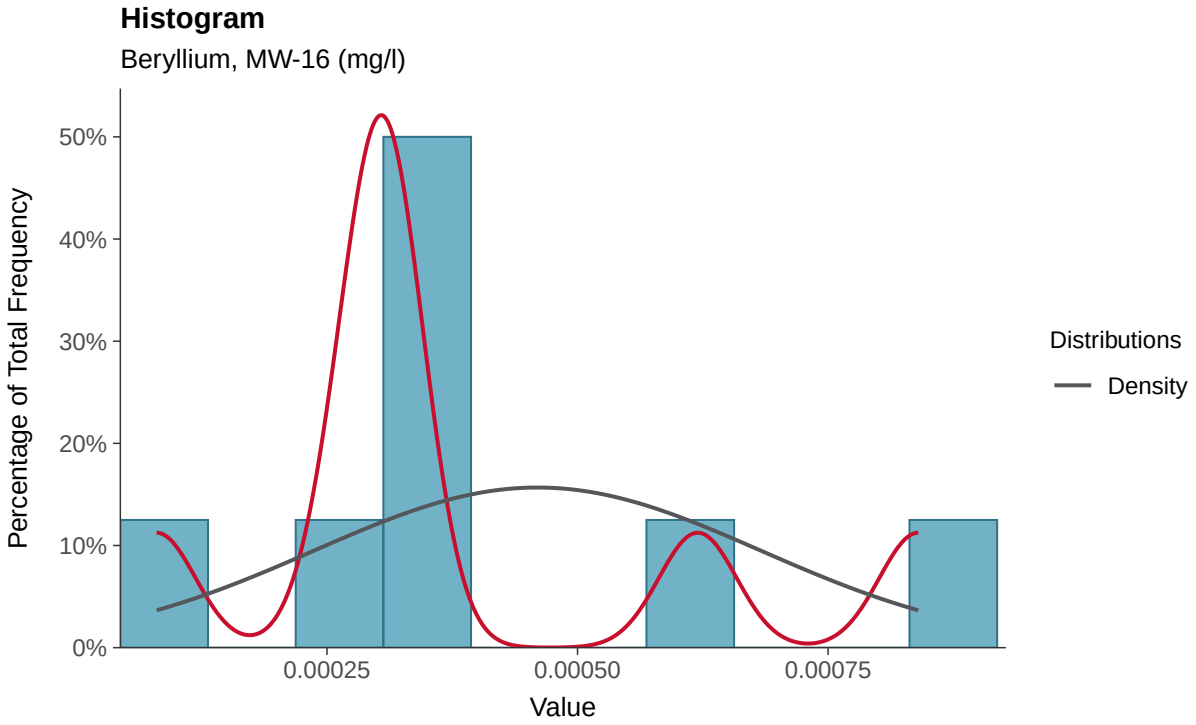
Barium, MW-16 (mg/l)



Appendix IV: Beryllium, MW-16

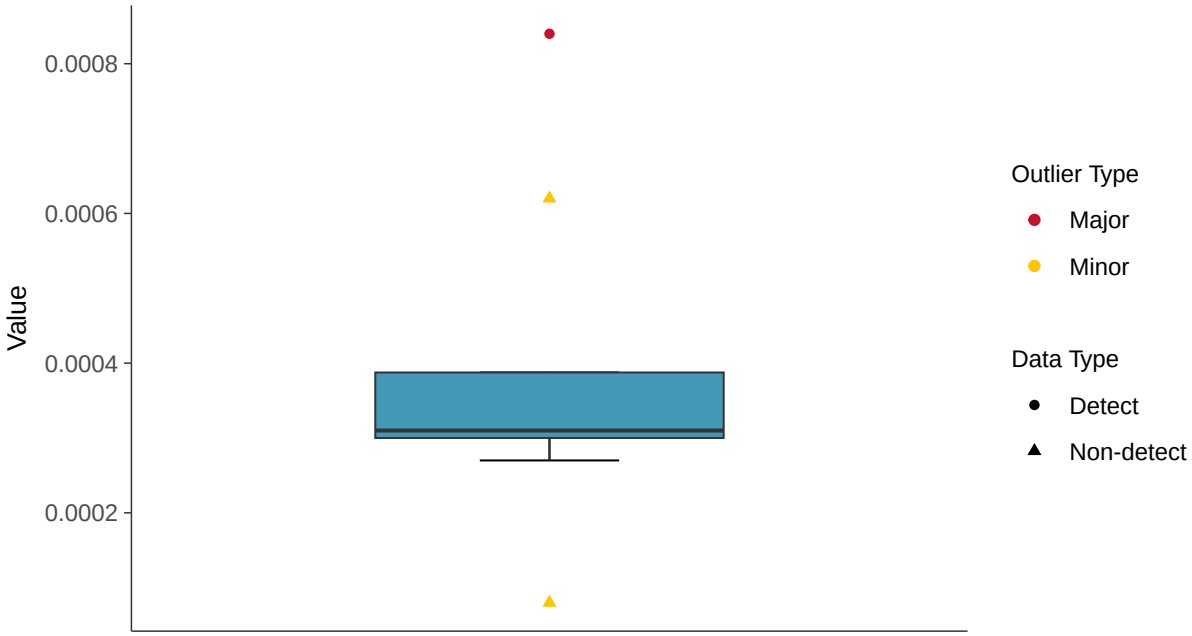
ID: 15_2_107





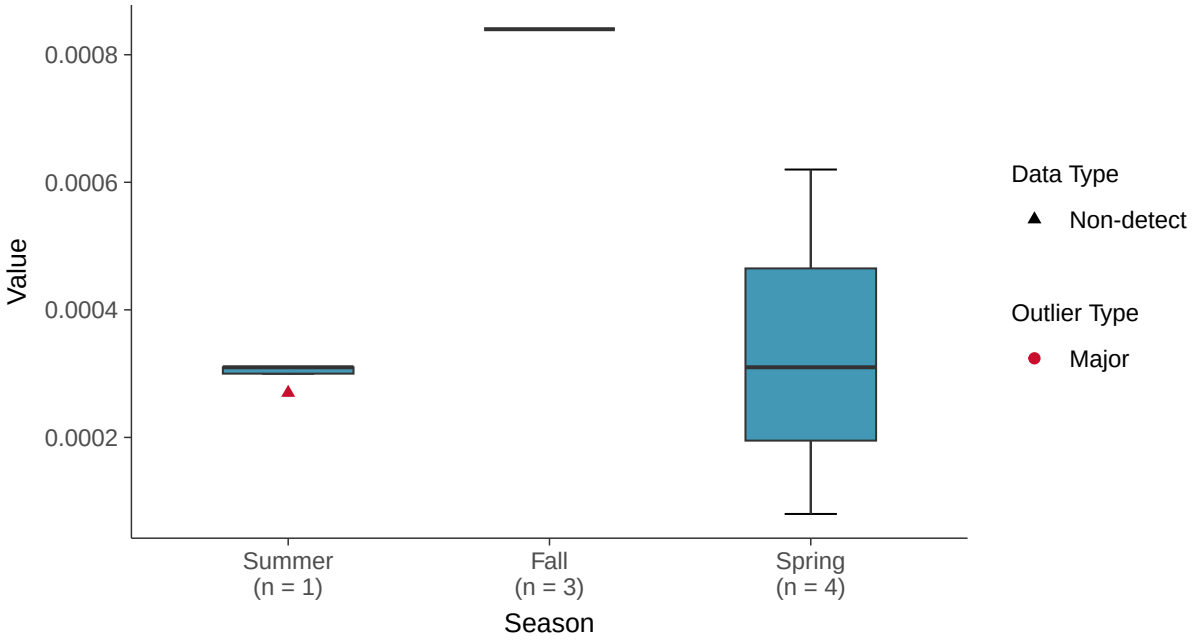
Boxplot

Beryllium, MW-16 (mg/l)



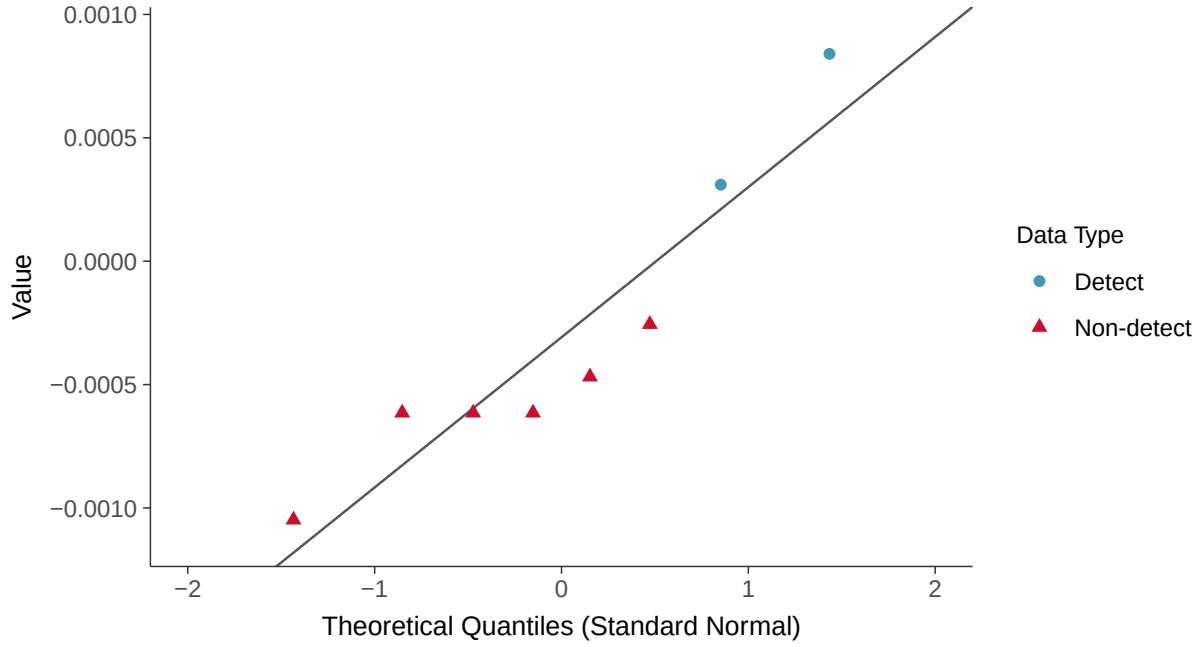
Boxplot by Season

Beryllium, MW-16 (mg/l)



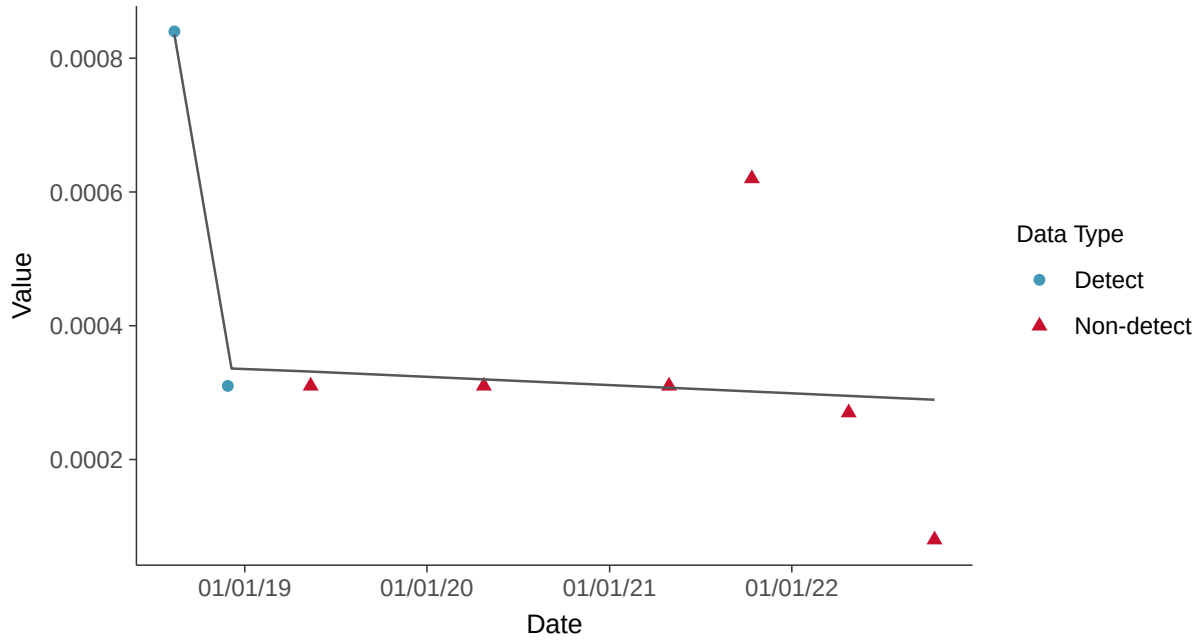
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-16 (mg/l)



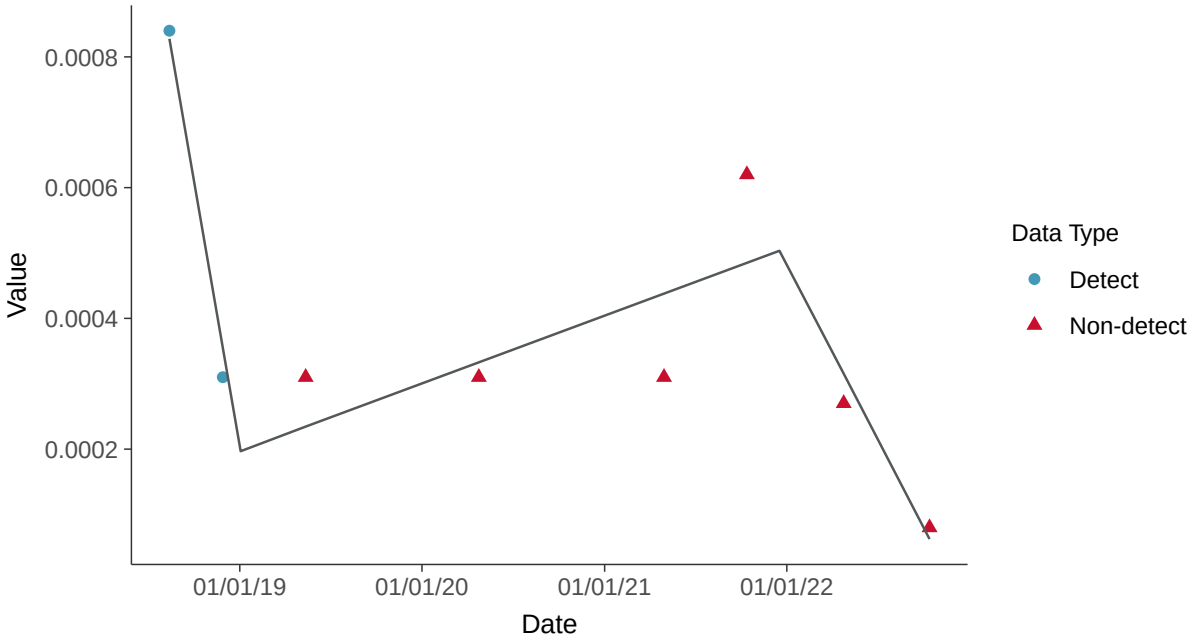
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-16 (mg/l)



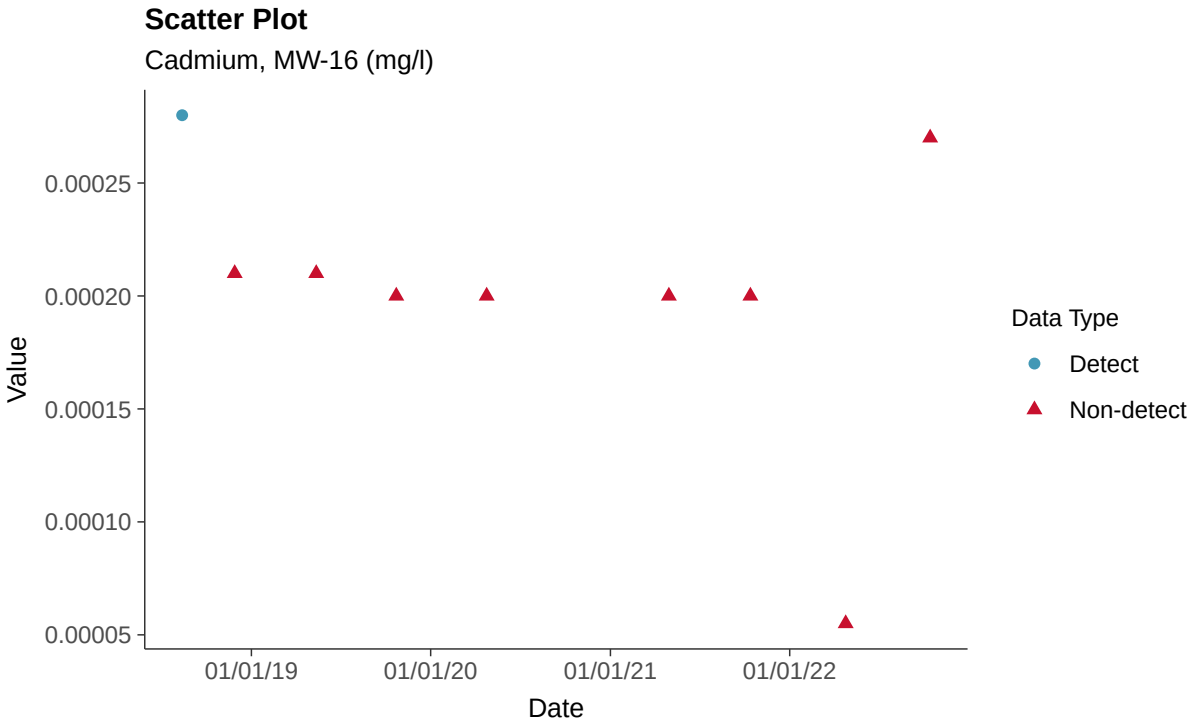
Trend Regression: Piecewise Linear-Linear-Linear

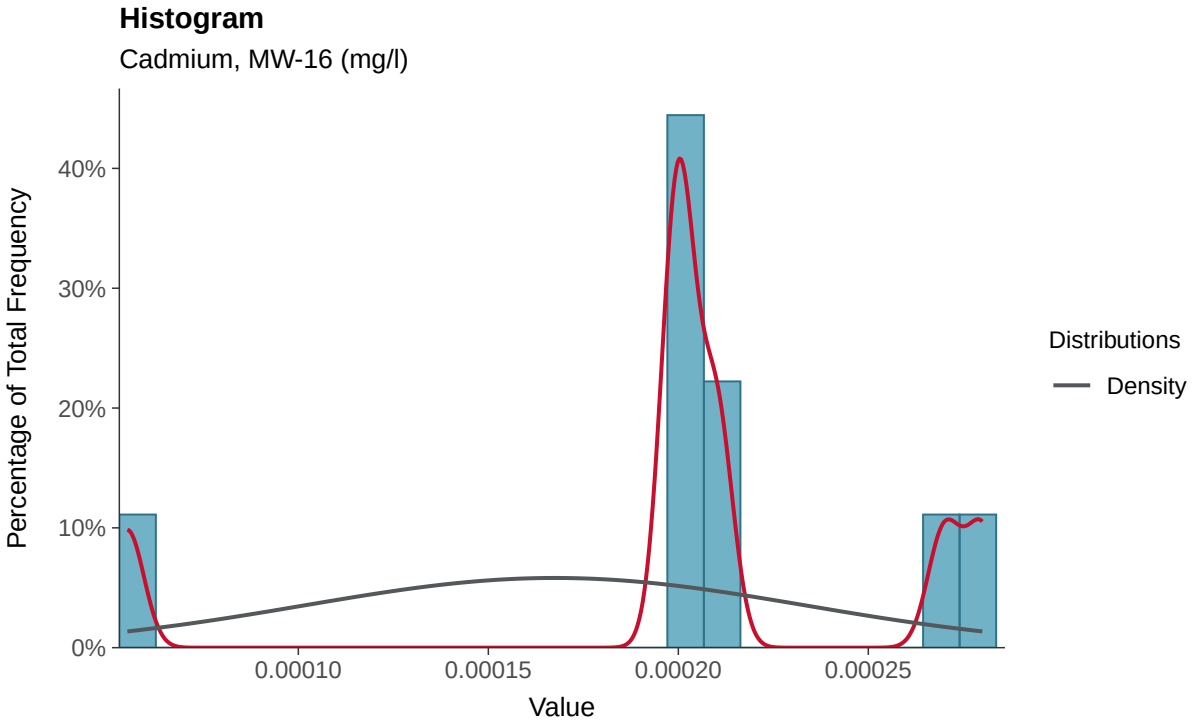
Beryllium, MW-16 (mg/l)



Appendix IV: Cadmium, MW-16

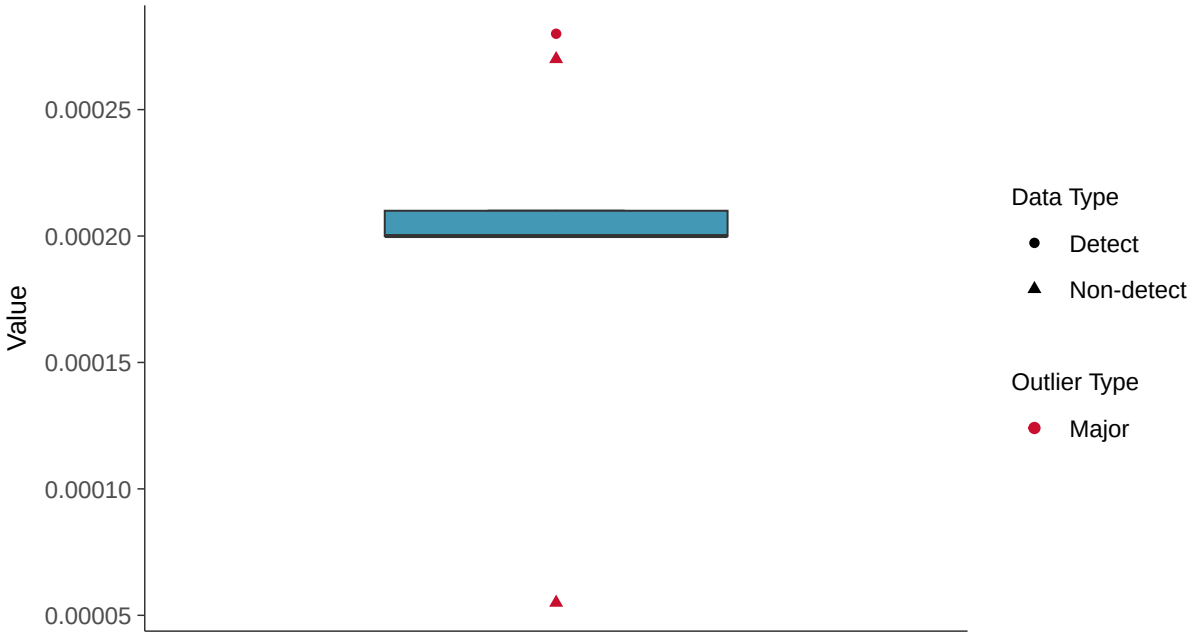
ID: 15_2_109





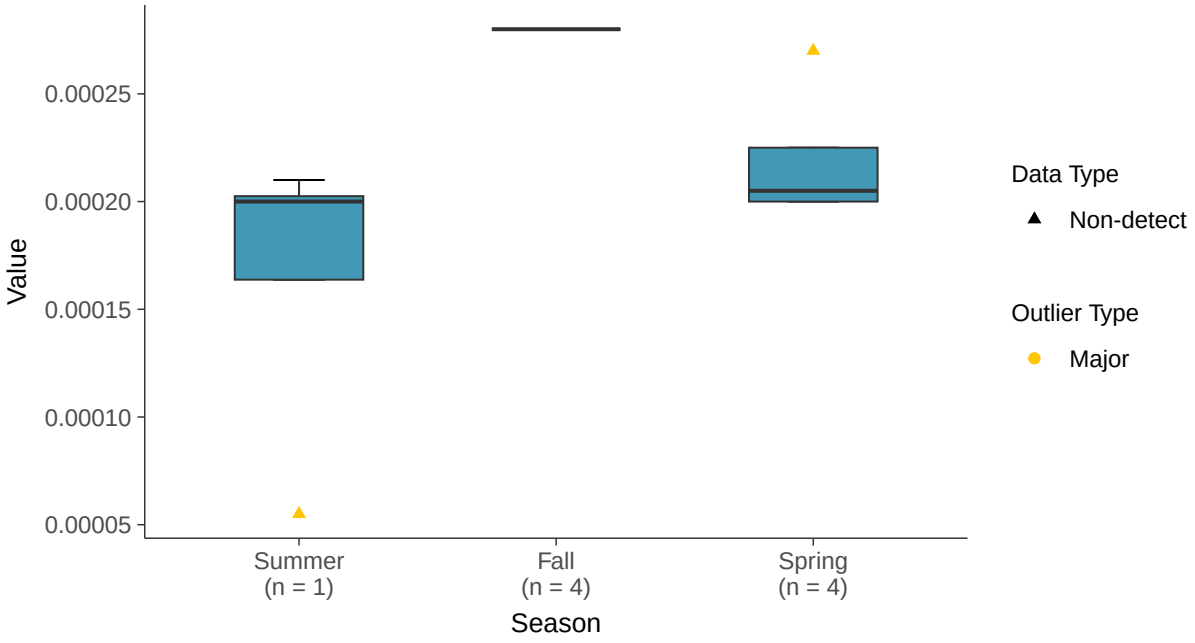
Boxplot

Cadmium, MW-16 (mg/l)



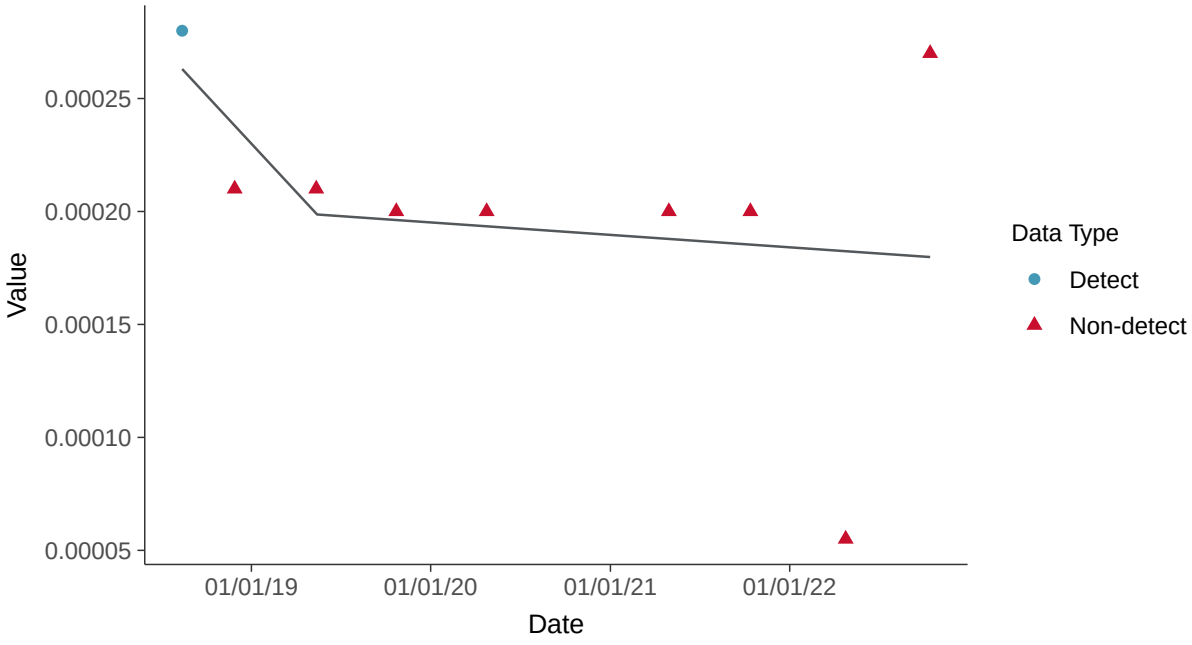
Boxplot by Season

Cadmium, MW-16 (mg/l)



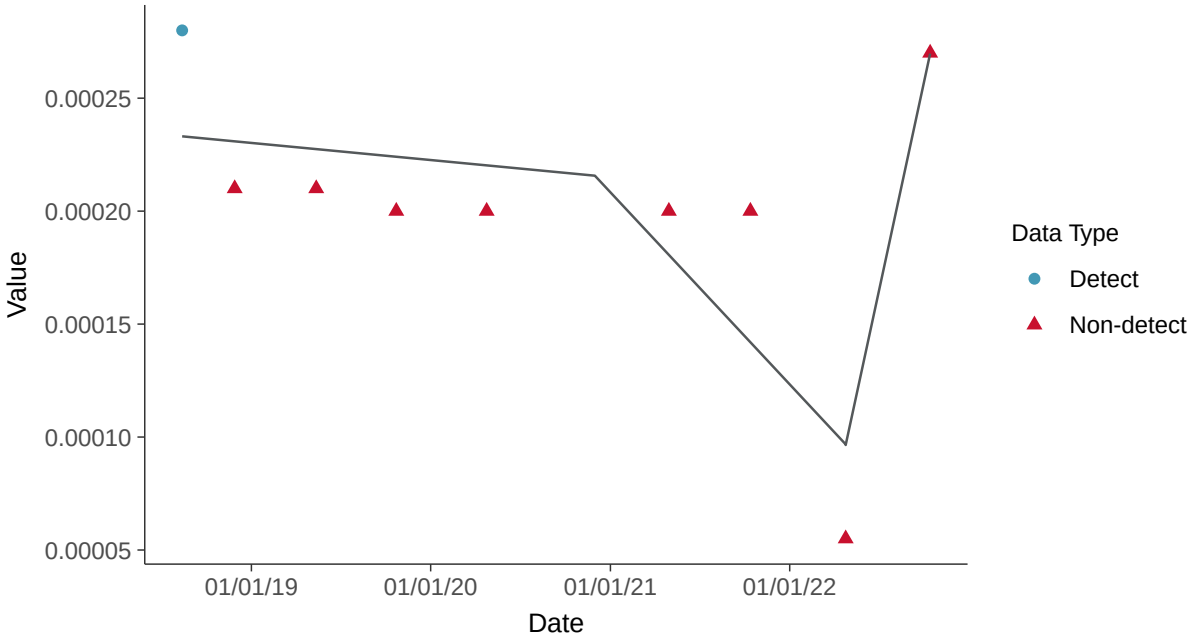
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-16 (mg/l)



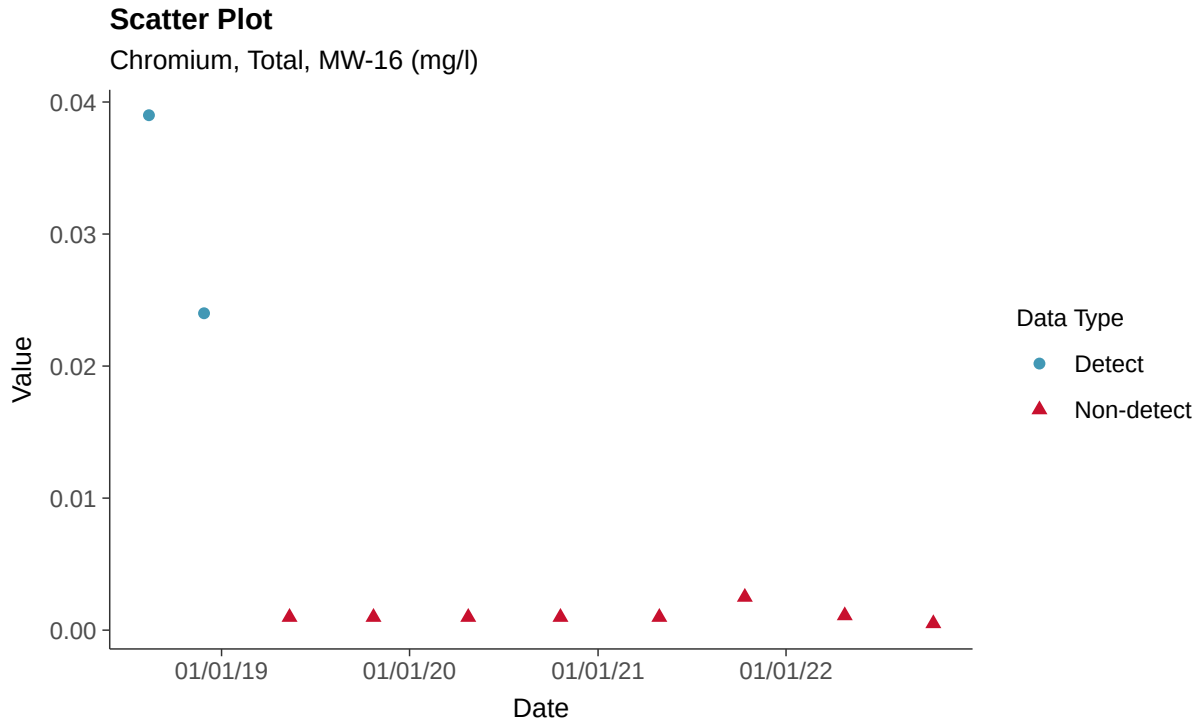
Trend Regression: Piecewise Linear-Linear-Linear

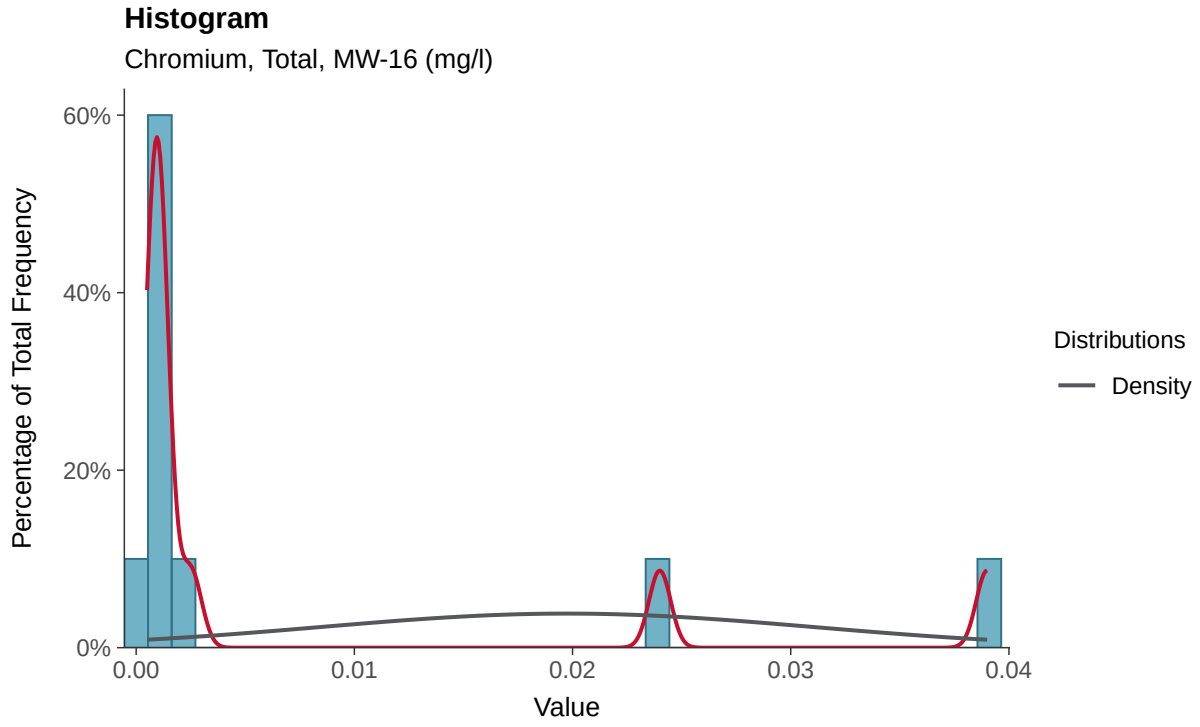
Cadmium, MW-16 (mg/l)



Appendix IV: Chromium, Total, MW-16

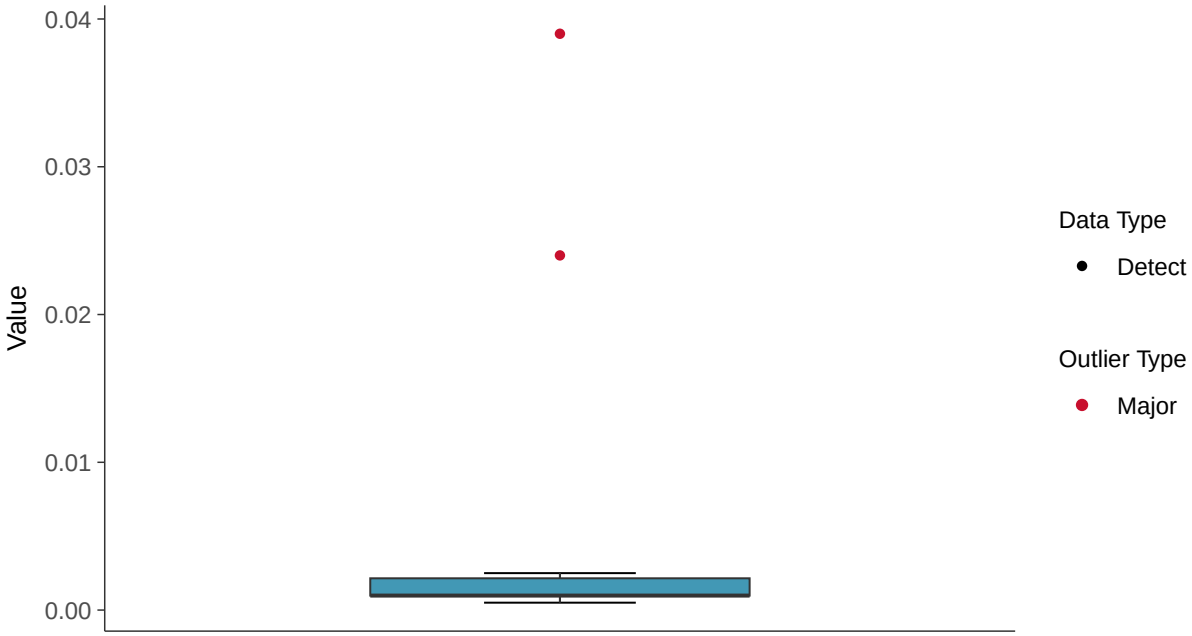
ID: 15_2_112





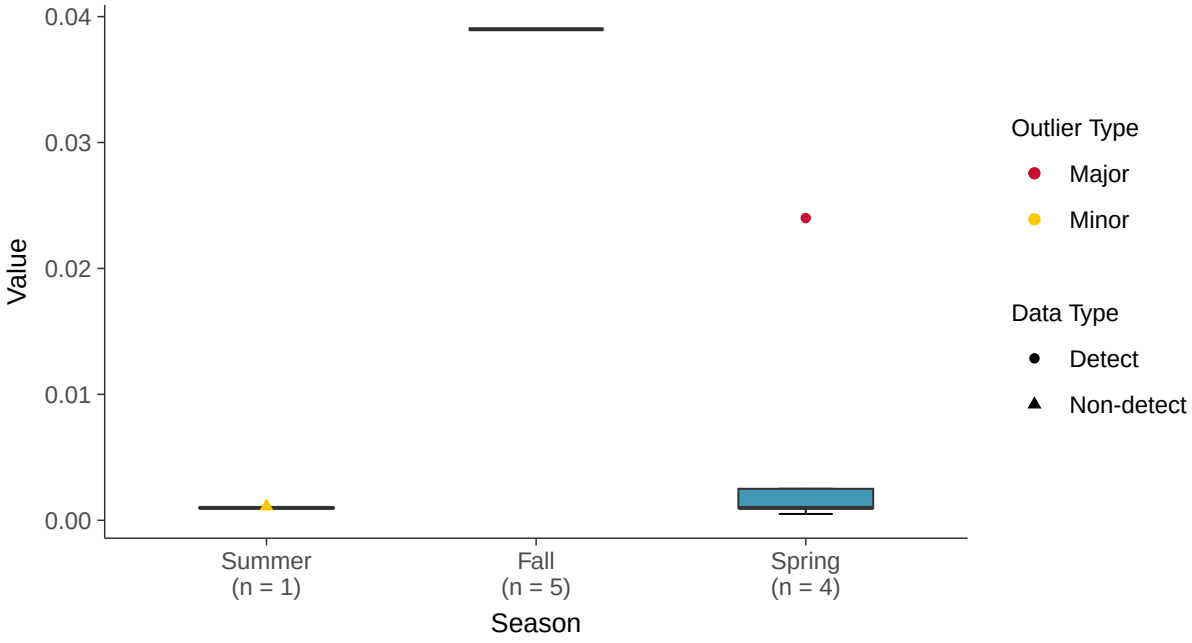
Boxplot

Chromium, Total, MW-16 (mg/l)



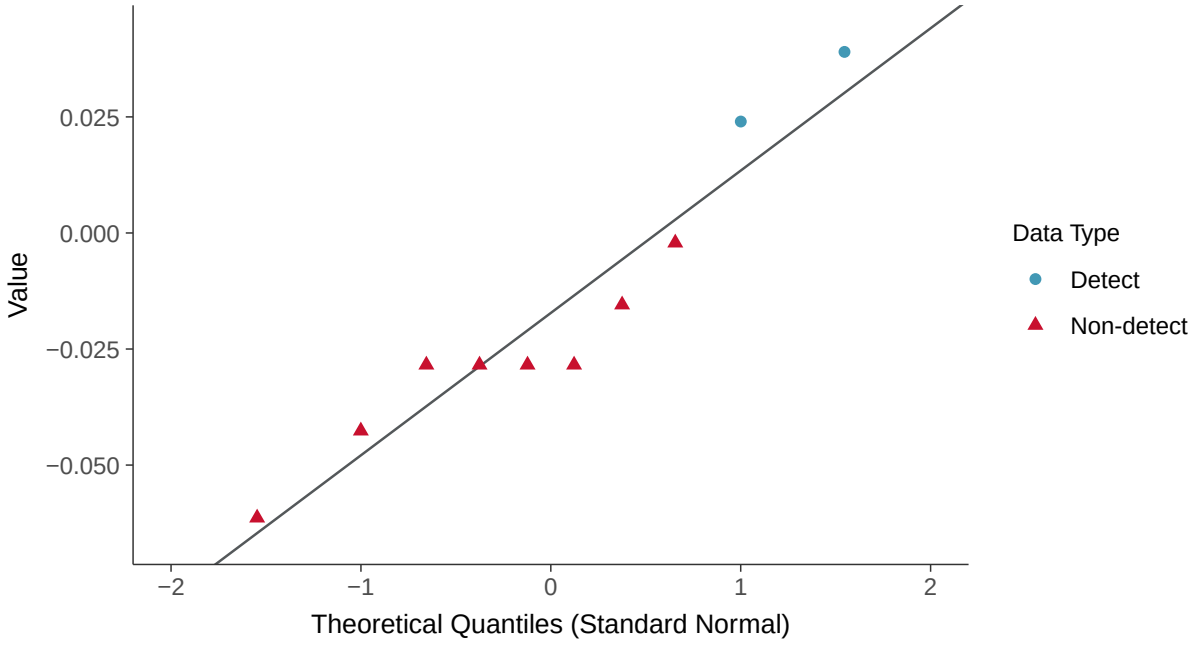
Boxplot by Season

Chromium, Total, MW-16 (mg/l)



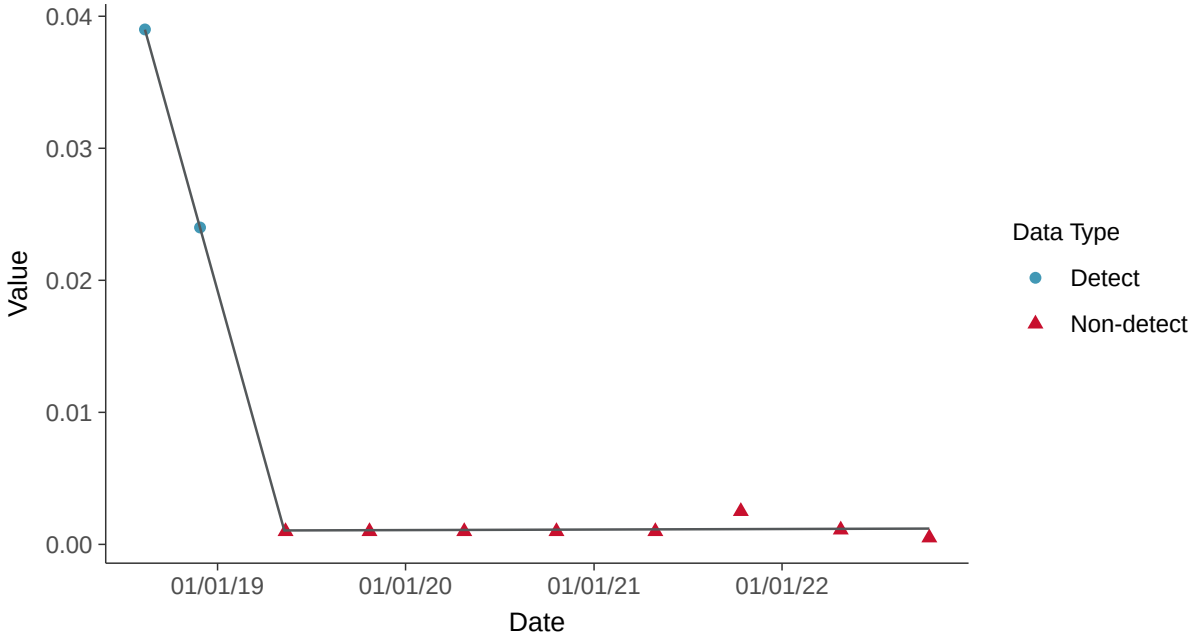
Normal Q-Q plot using ROS Imputed Estimates

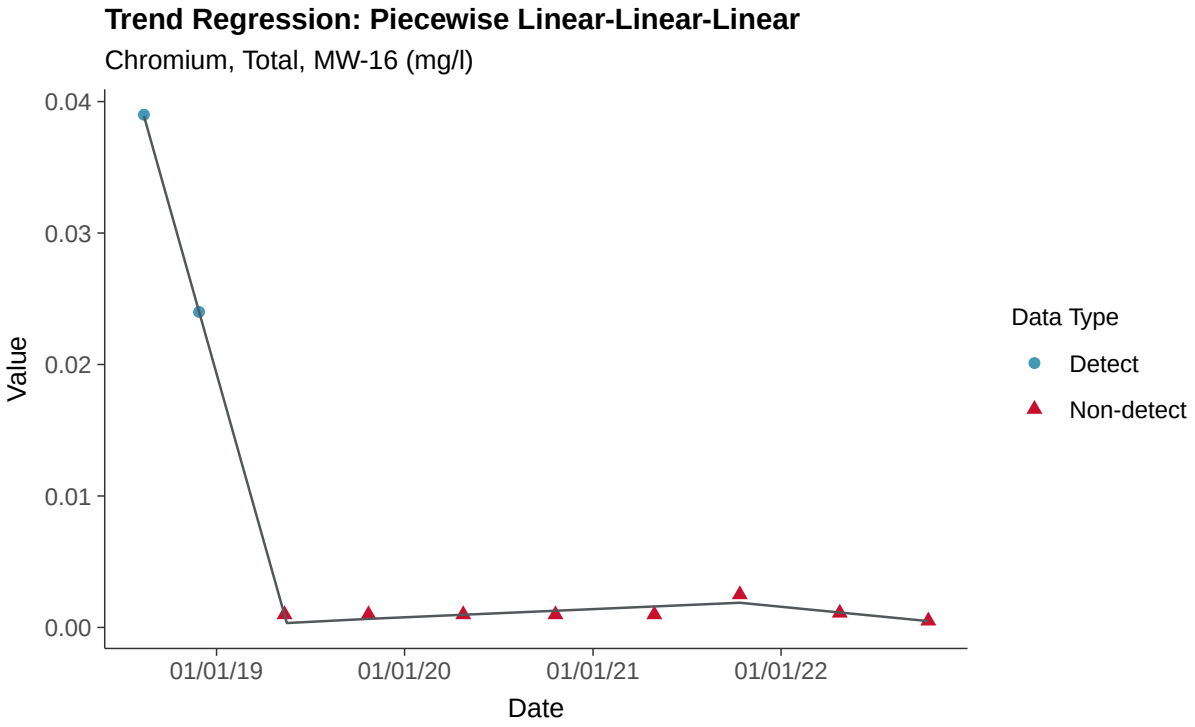
Chromium, Total, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear

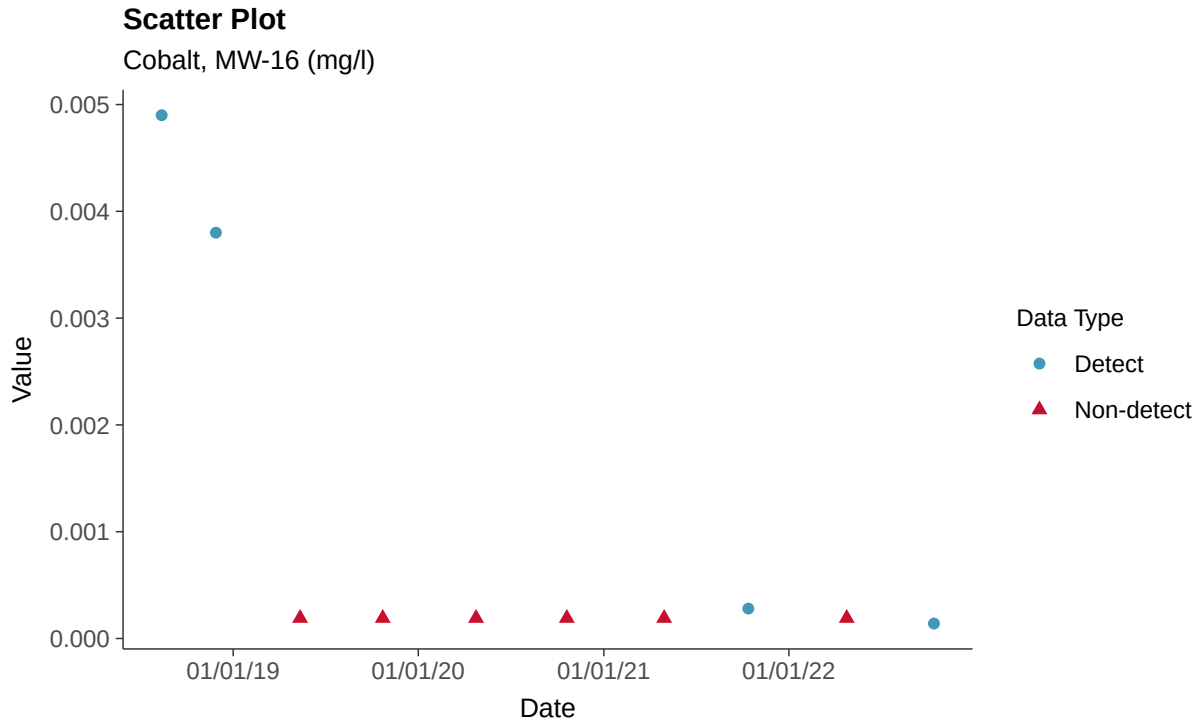
Chromium, Total, MW-16 (mg/l)

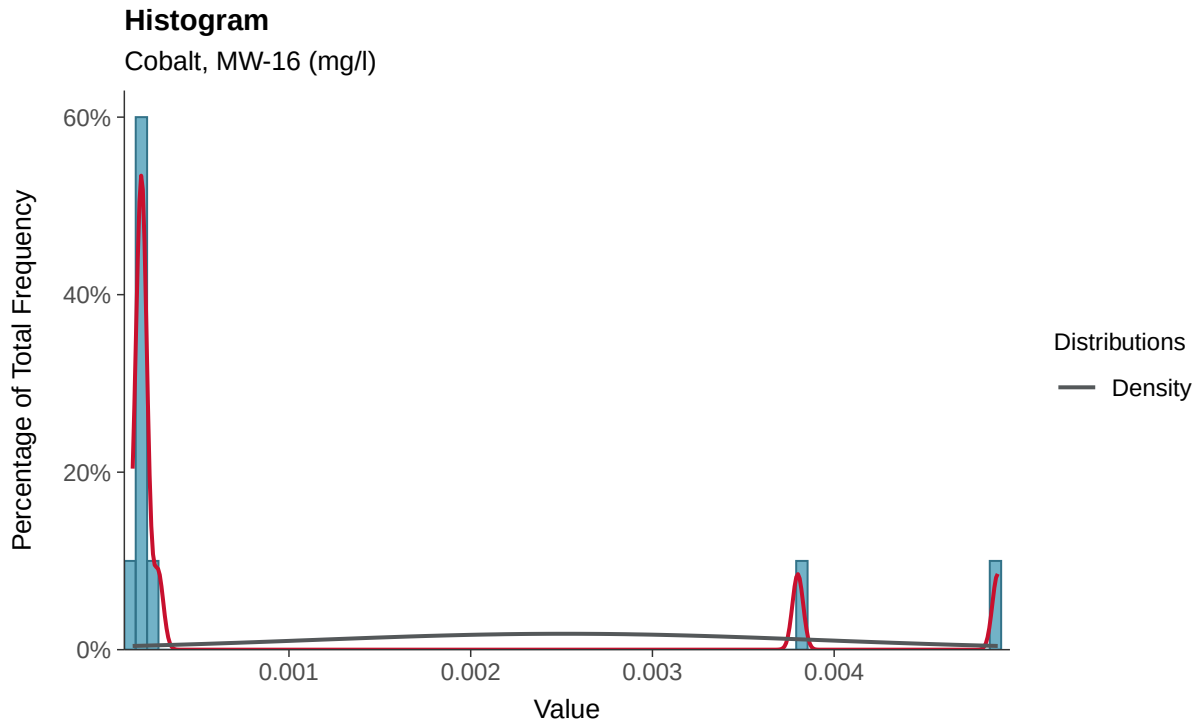



Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-16 (mg/l)
0.04
0.03
0.02
0.01
0.00
Value
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-16

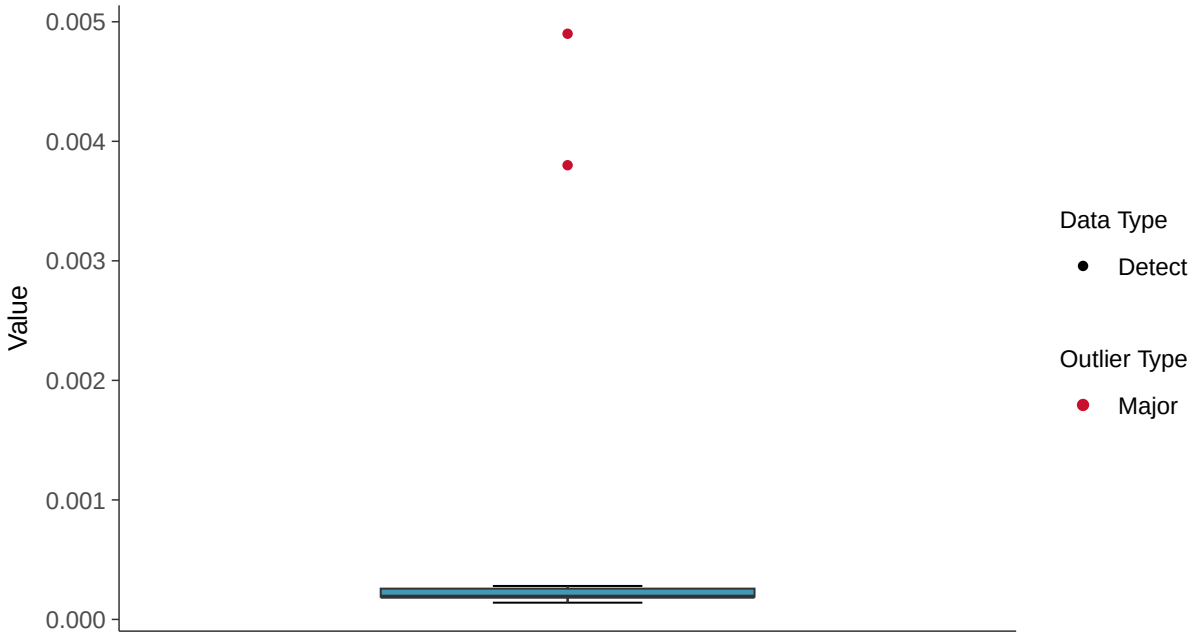
ID: 15_2_113





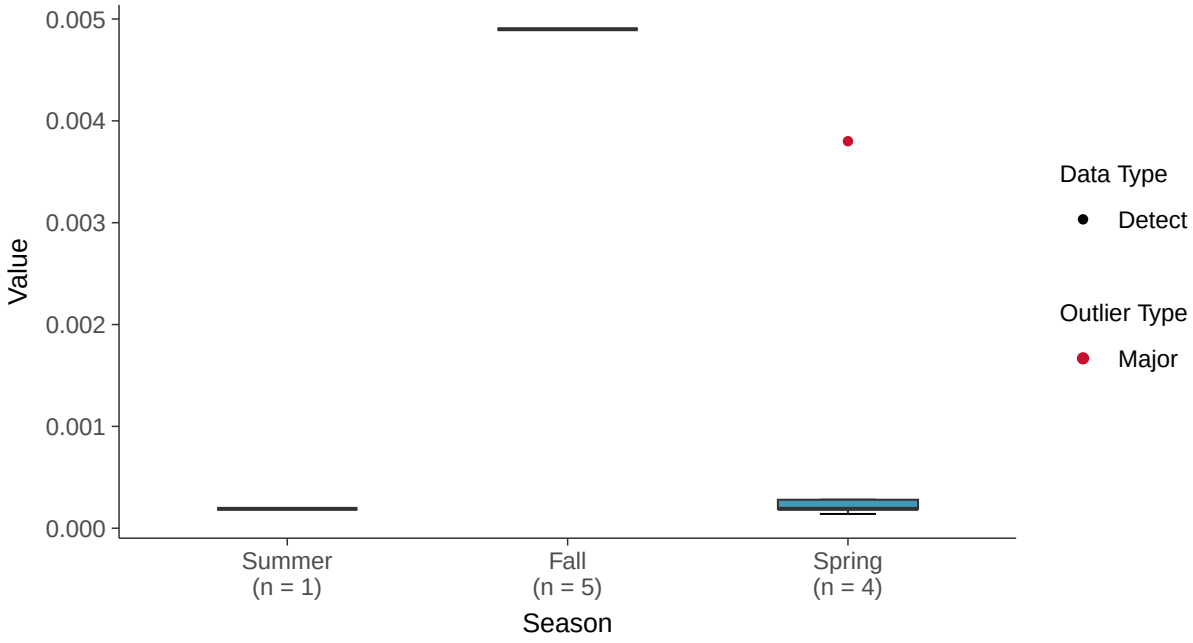
Boxplot

Cobalt, MW-16 (mg/l)



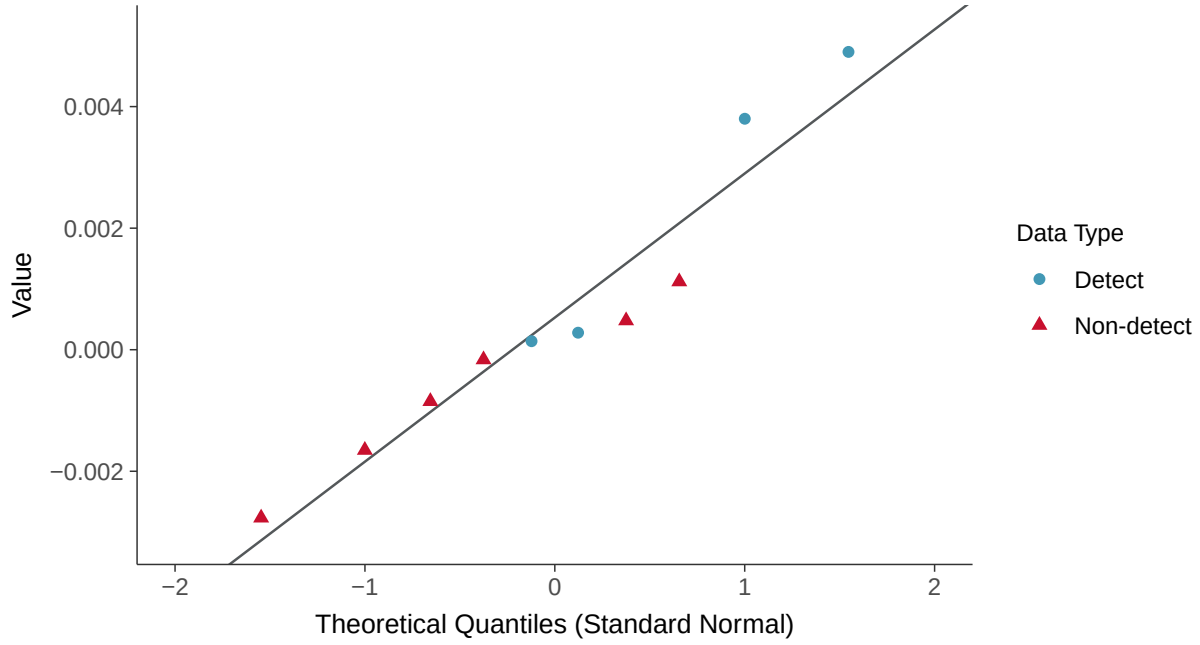
Boxplot by Season

Cobalt, MW-16 (mg/l)



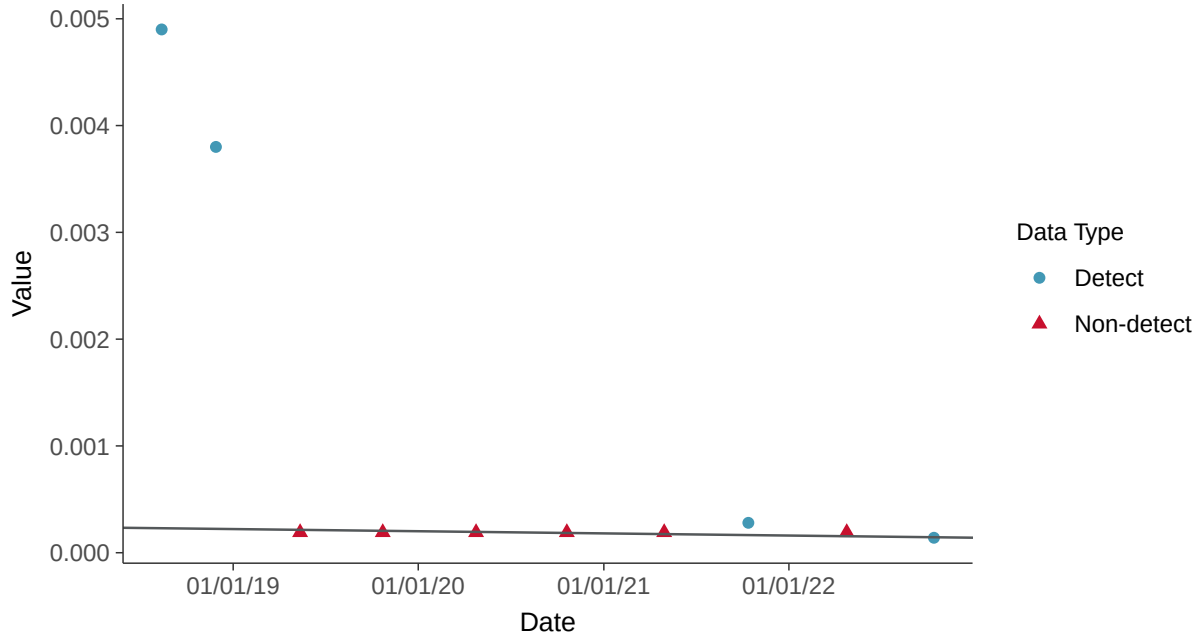
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-16 (mg/l)



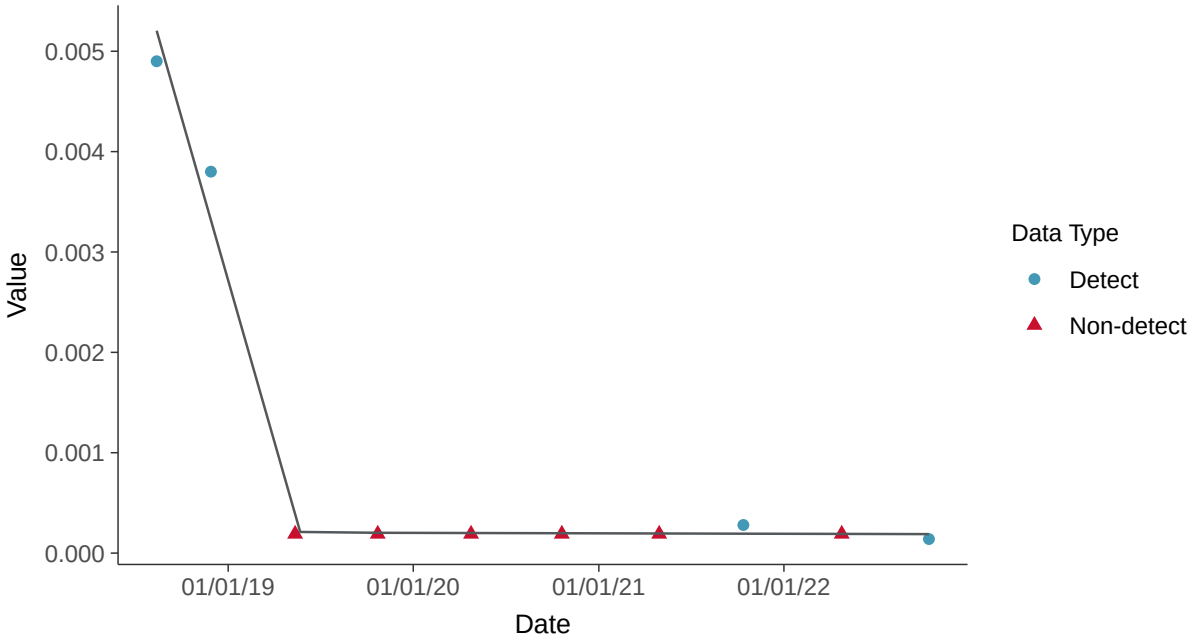
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Cobalt, MW-16 (mg/l)



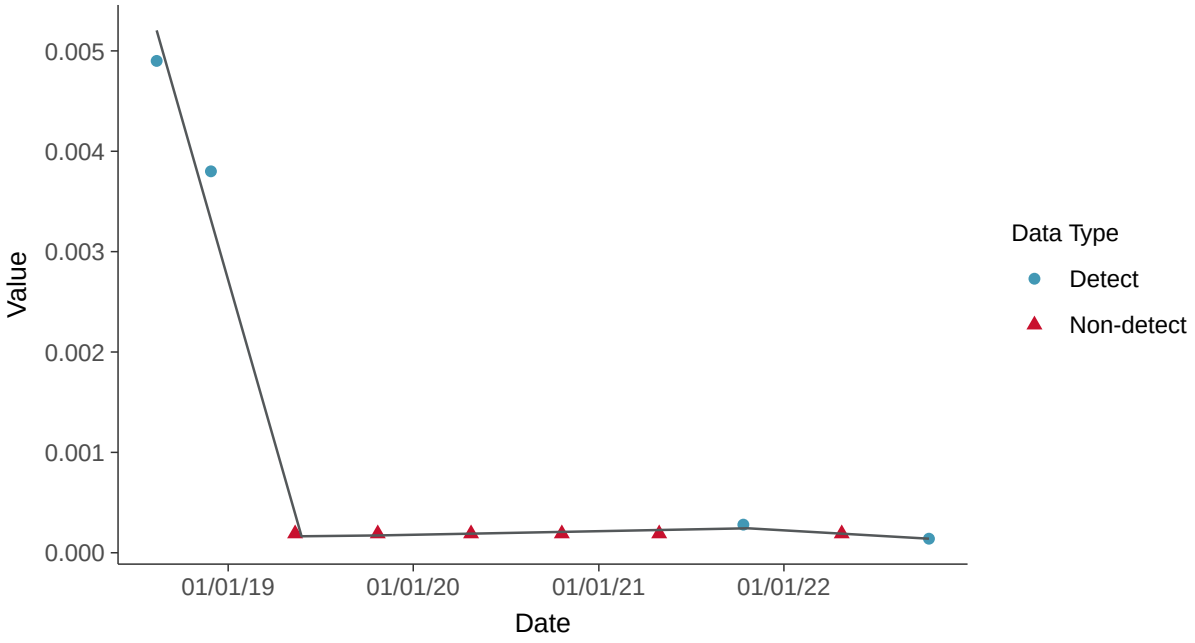
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-16 (mg/l)



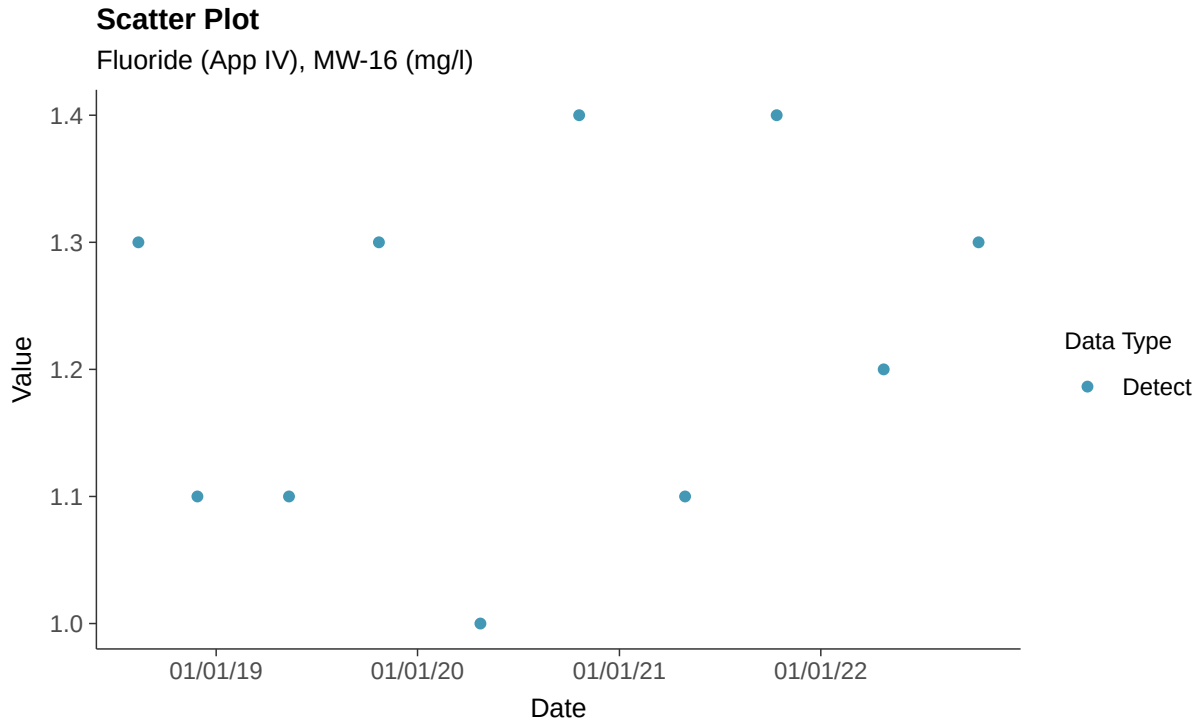
Trend Regression: Piecewise Linear-Linear-Linear

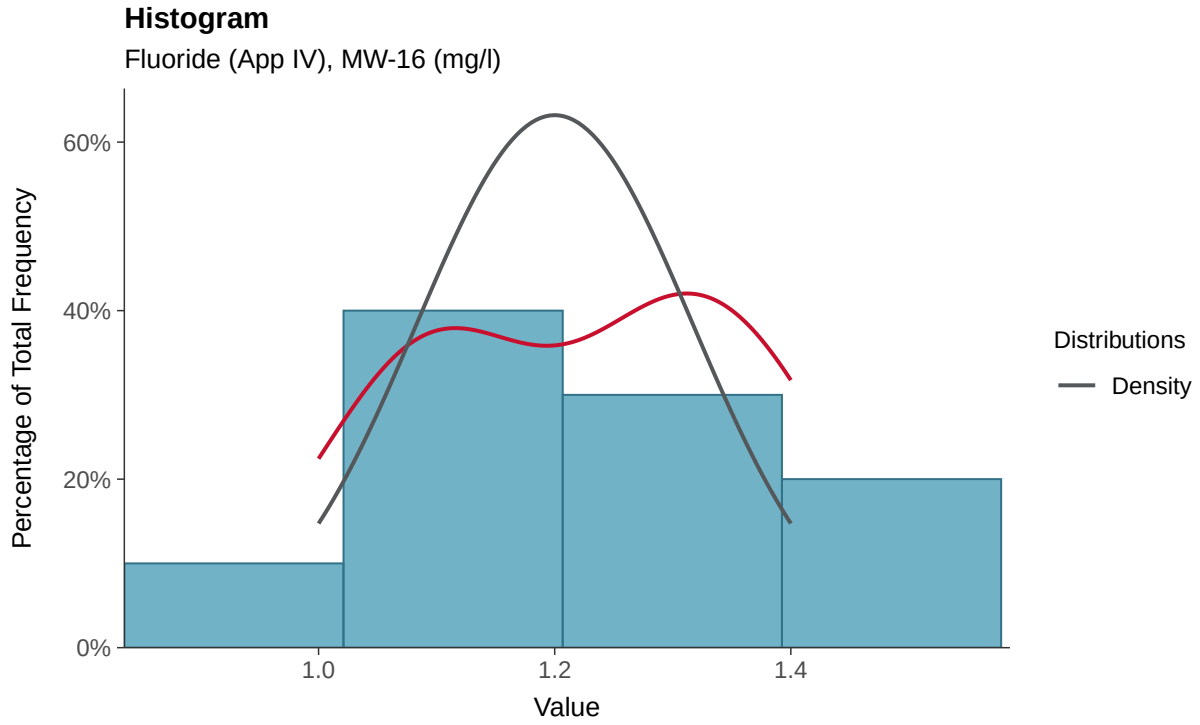
Cobalt, MW-16 (mg/l)



Appendix IV: Fluoride (App IV), MW-16

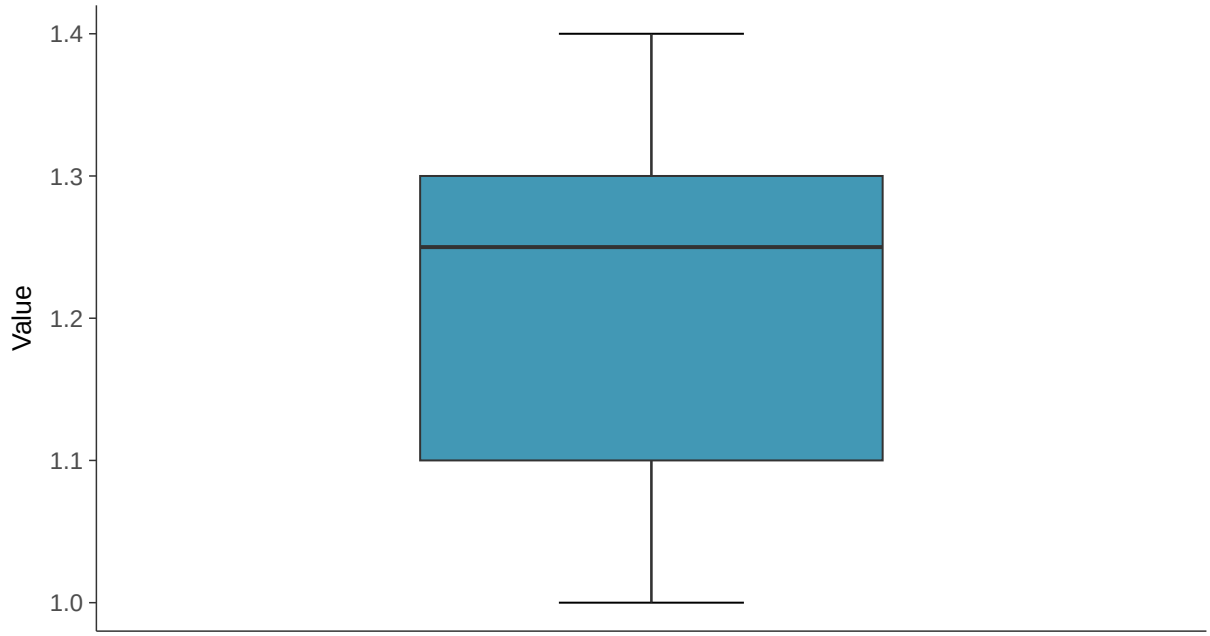
ID: 15_2_116





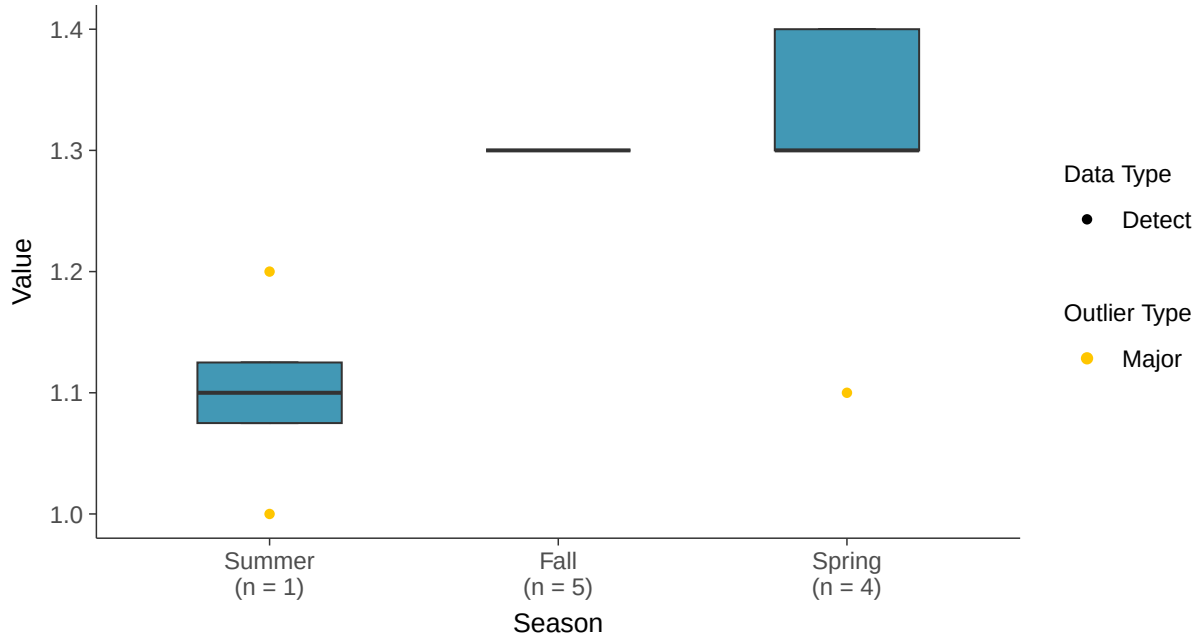
Boxplot

Fluoride (App IV), MW-16 (mg/l)



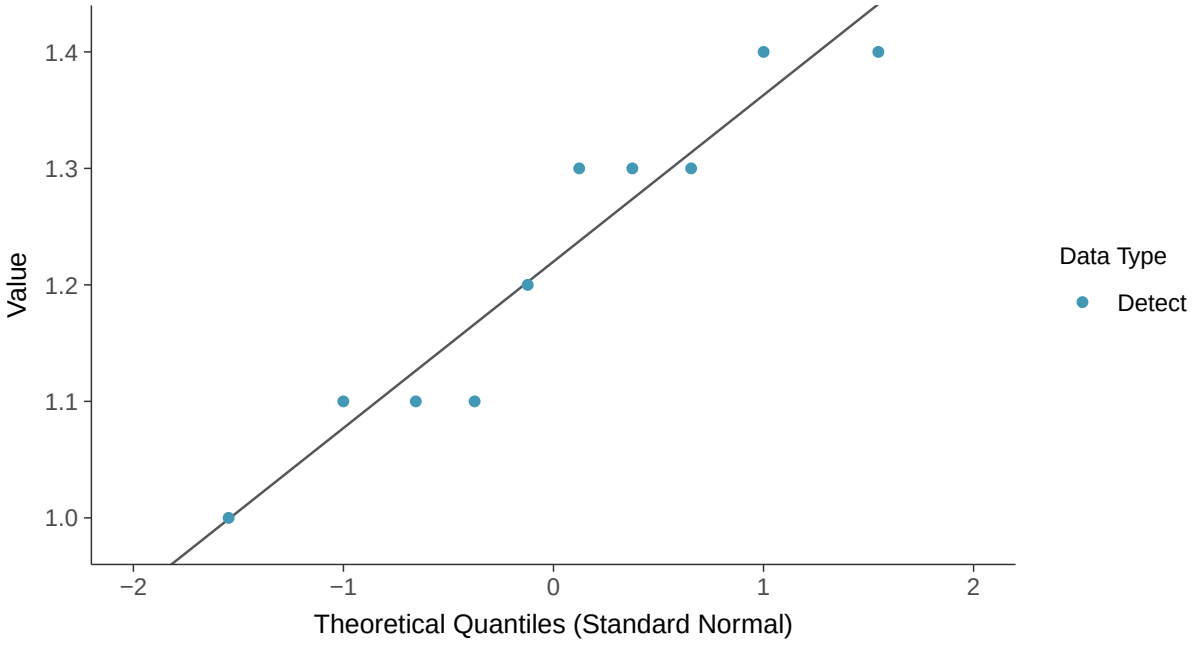
Boxplot by Season

Fluoride (App IV), MW-16 (mg/l)



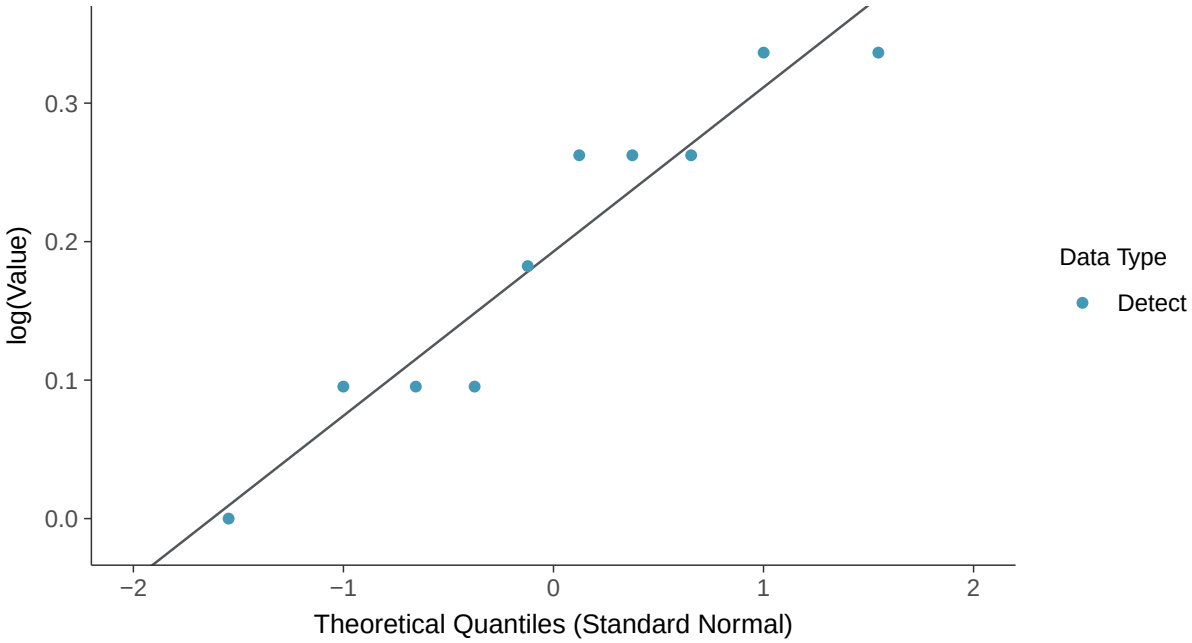
Normal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



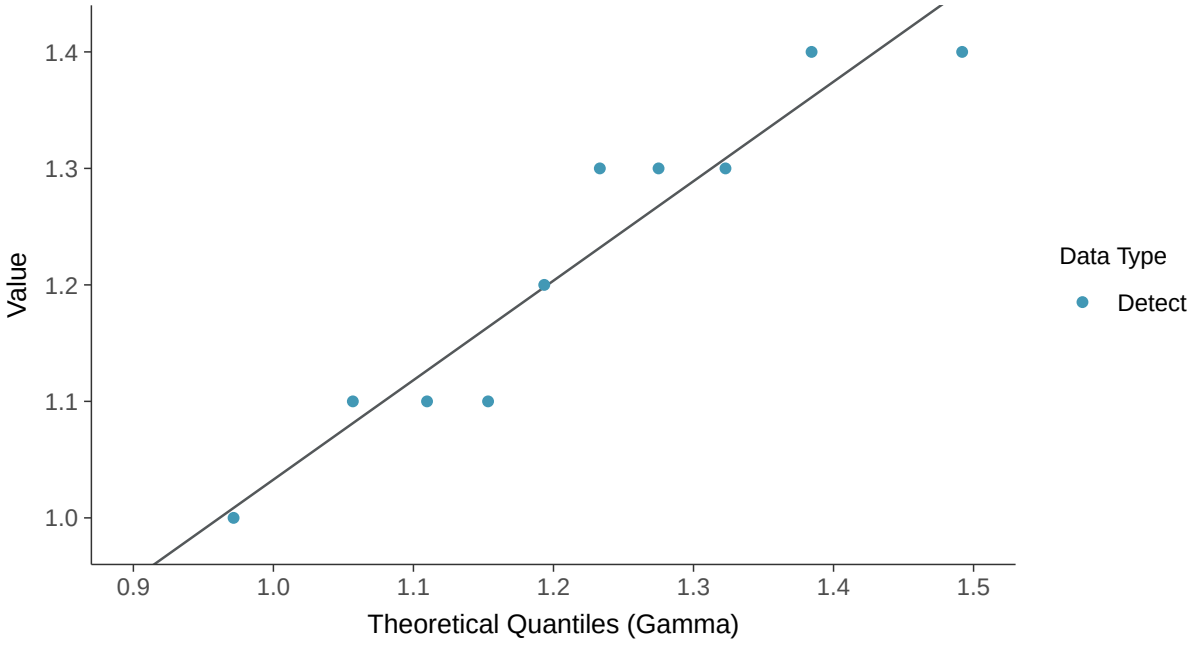
Lognormal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



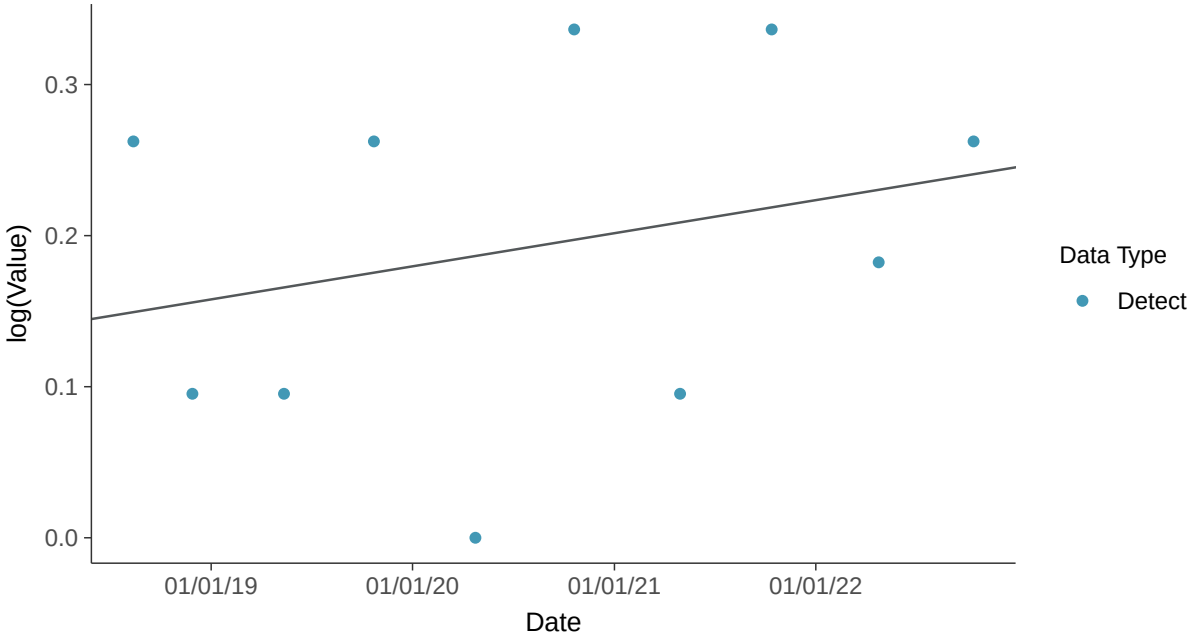
Gamma Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



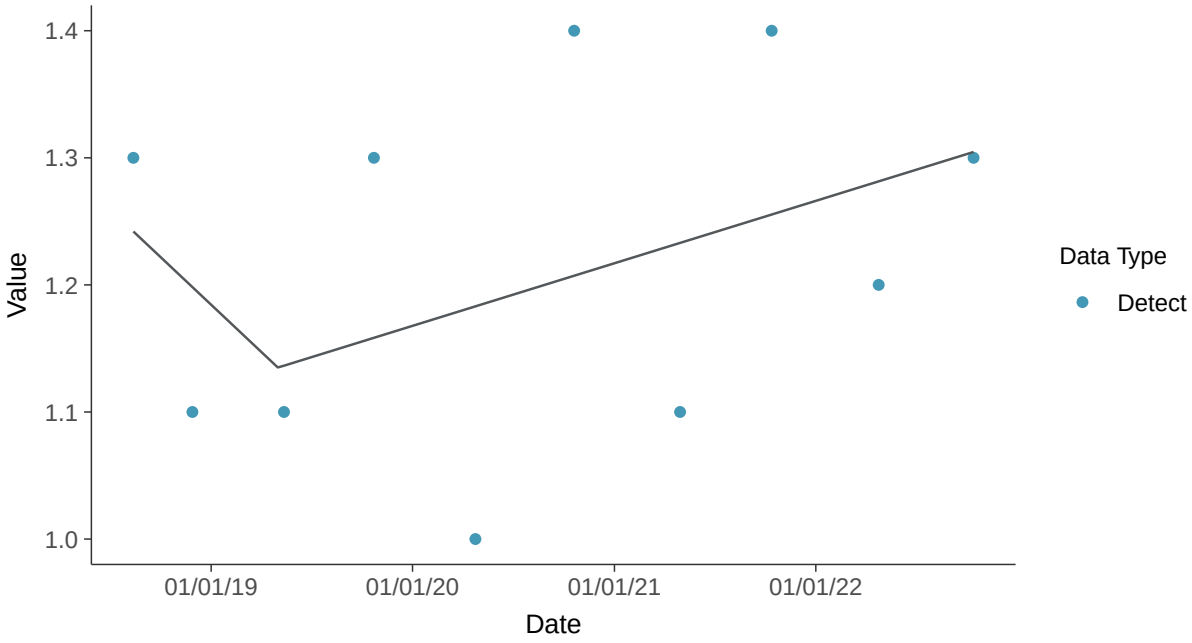
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-16 (mg/l)



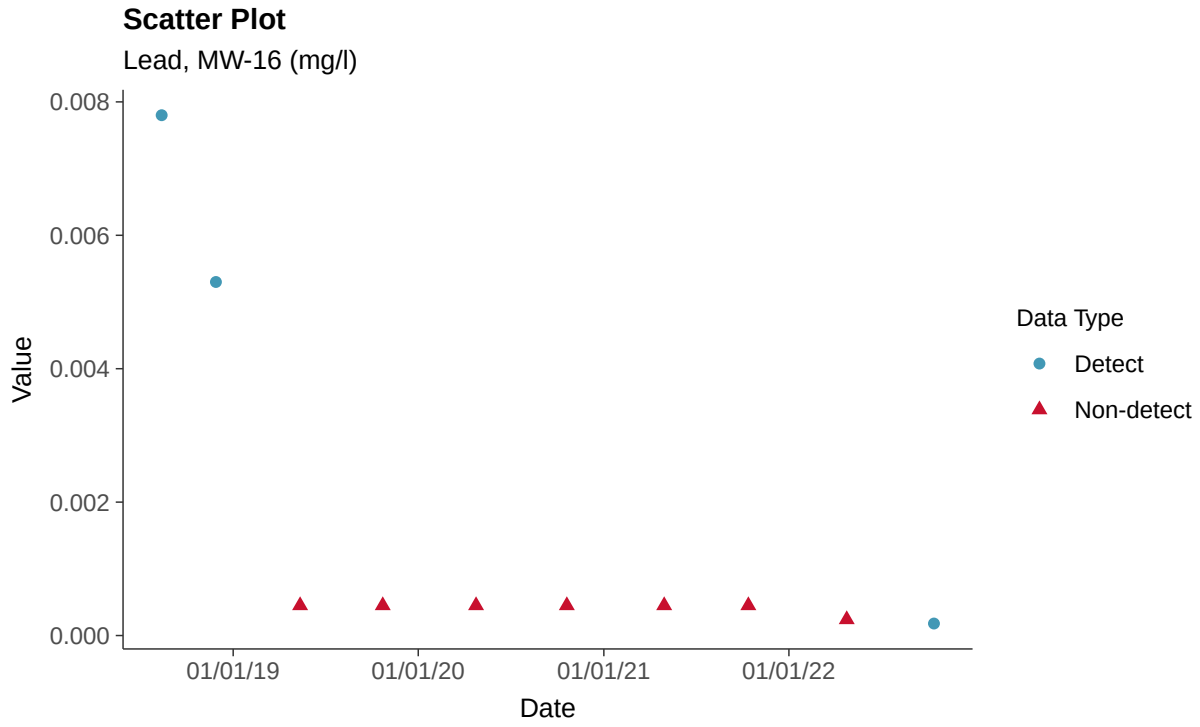
Trend Regression: Piecewise Linear-Linear

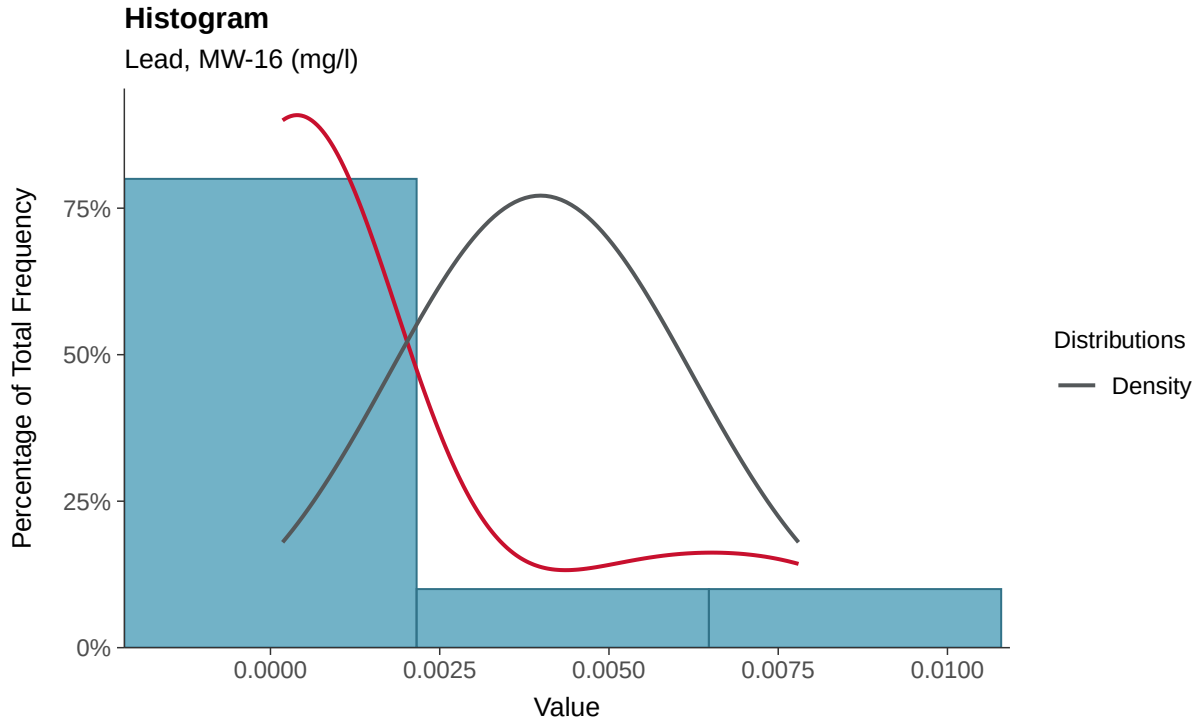
Fluoride (App IV), MW-16 (mg/l)



Appendix IV: Lead, MW-16

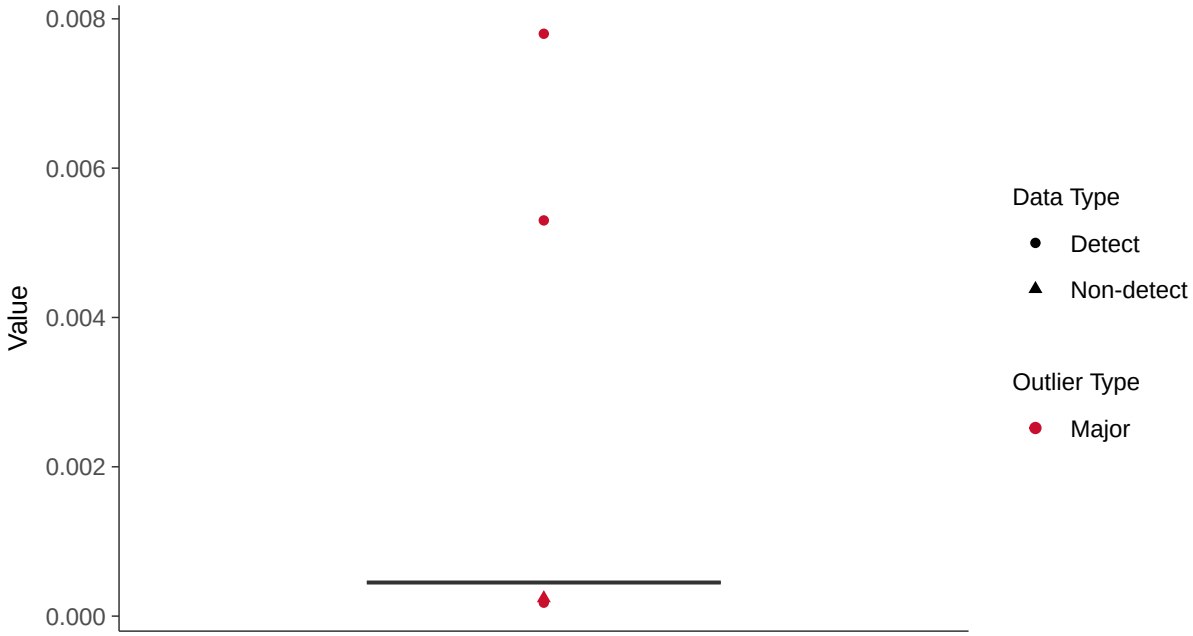
ID: 15_2_117





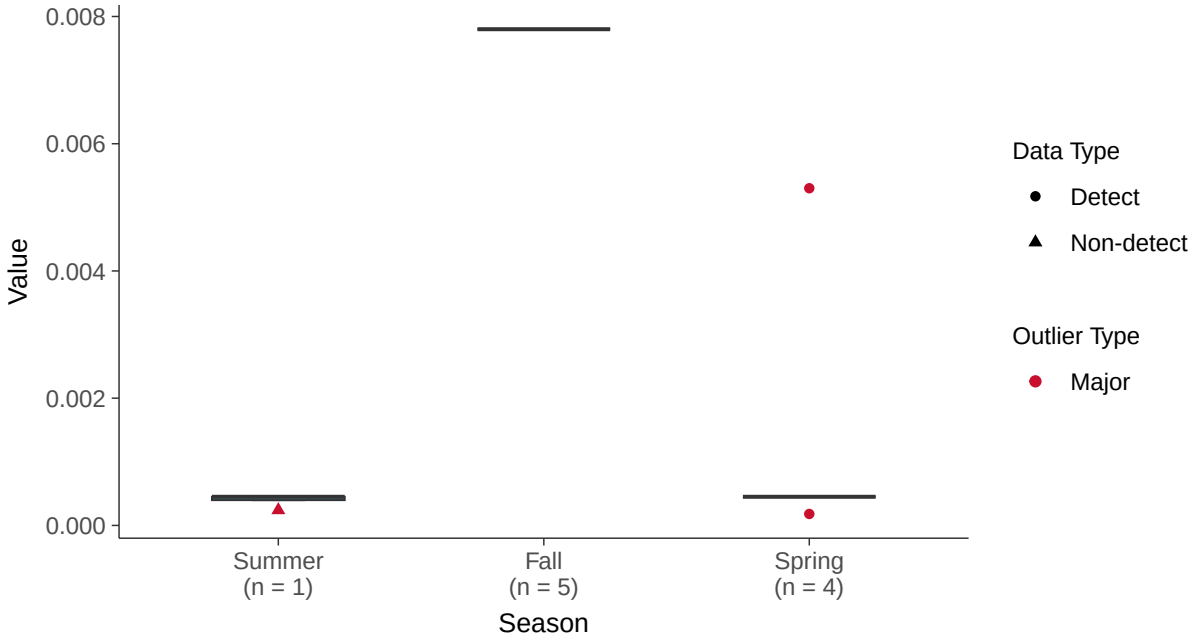
Boxplot

Lead, MW-16 (mg/l)



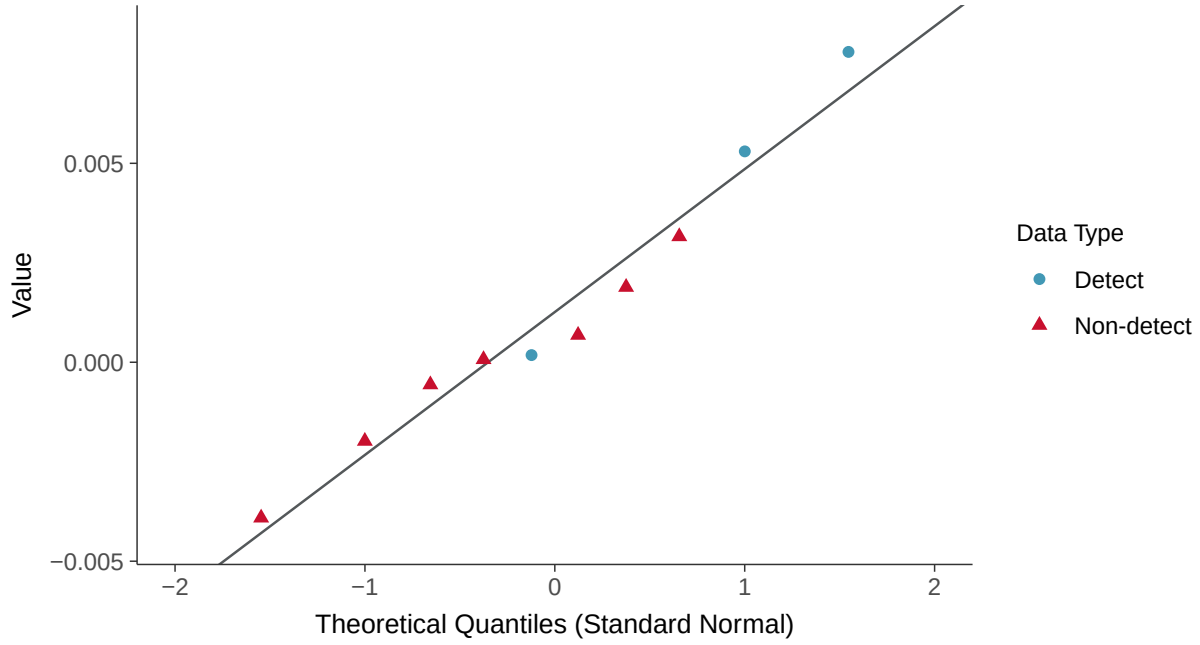
Boxplot by Season

Lead, MW-16 (mg/l)



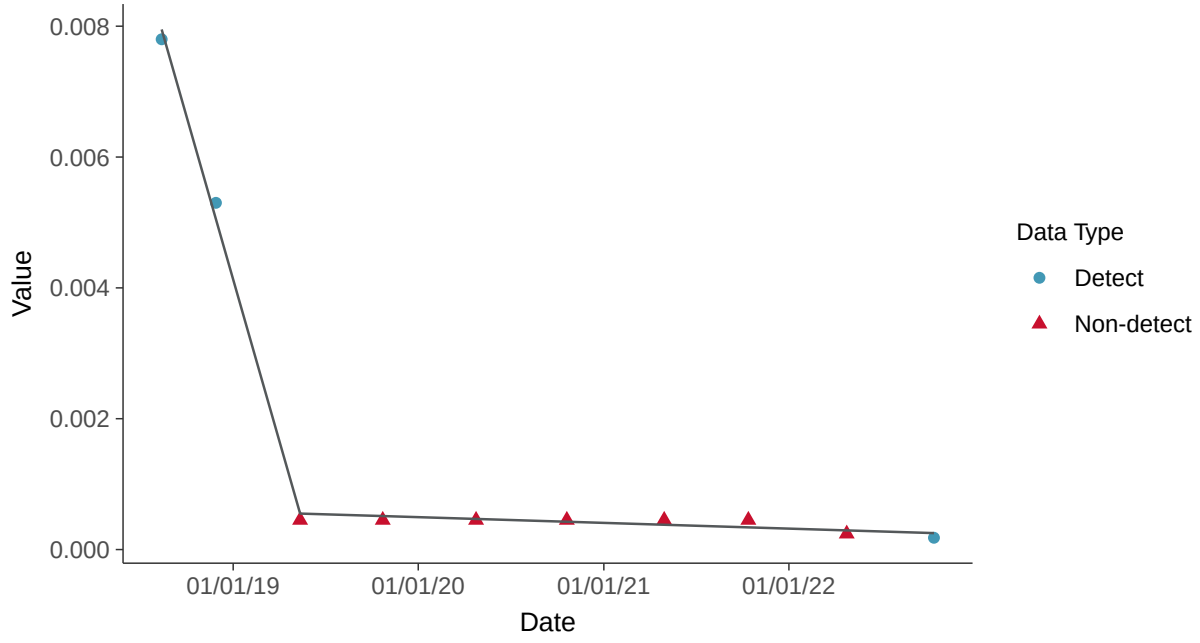
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-16 (mg/l)



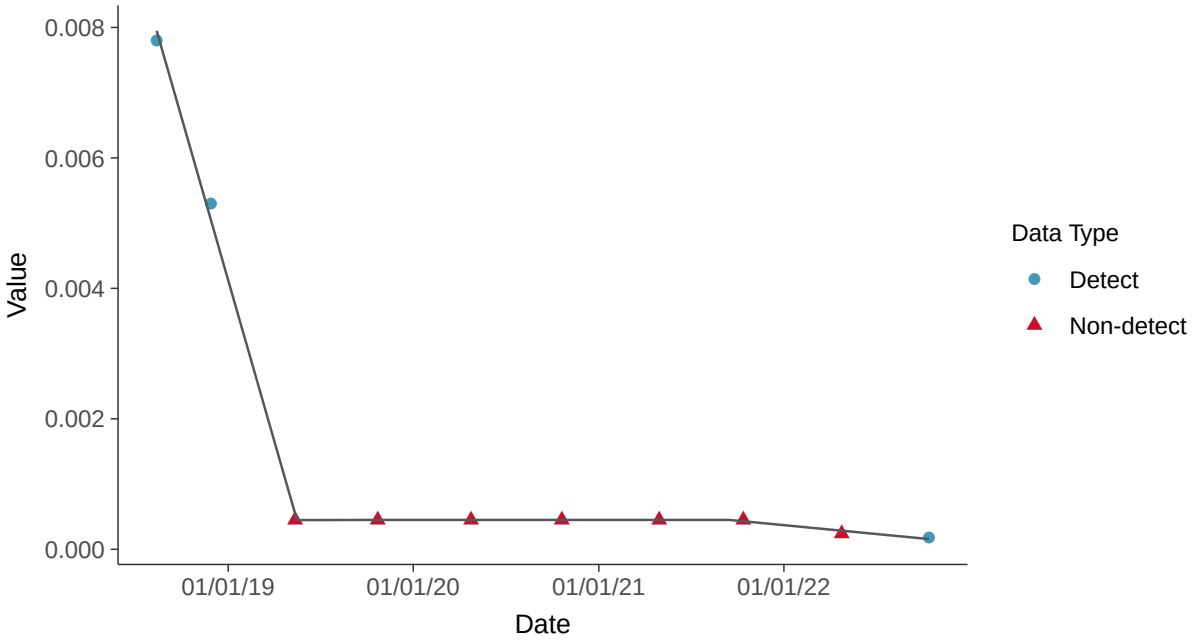
Trend Regression: Piecewise Linear-Linear

Lead, MW-16 (mg/l)



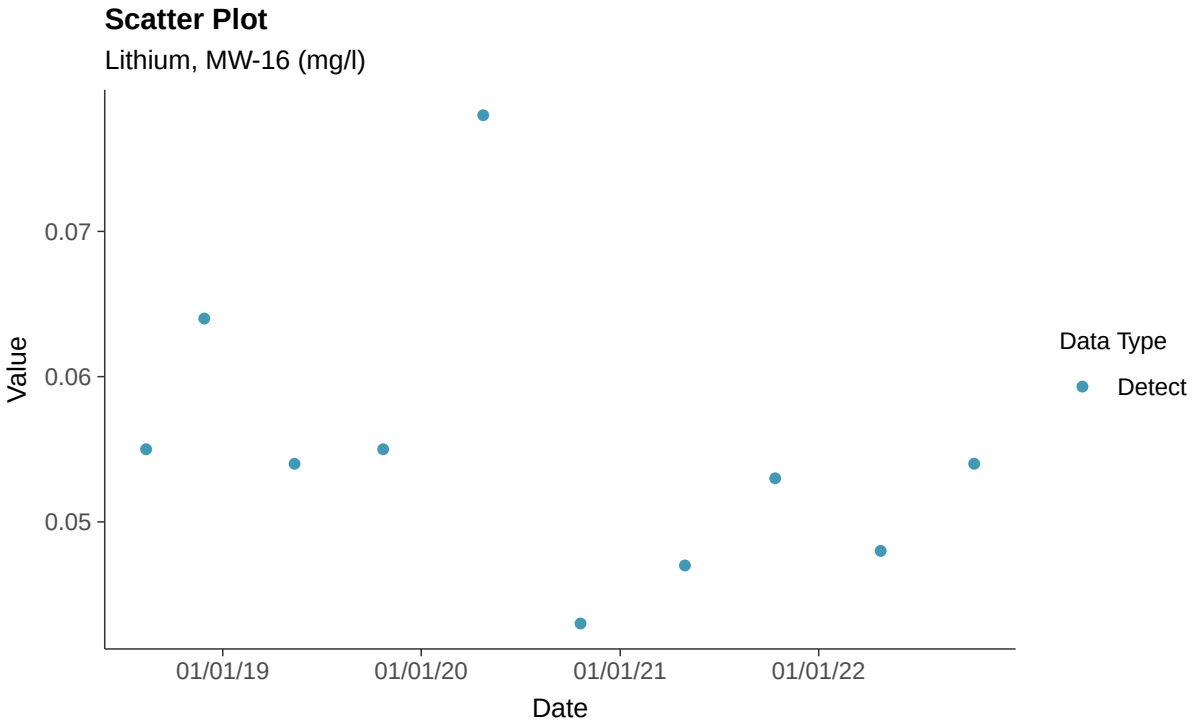
Trend Regression: Piecewise Linear-Linear-Linear

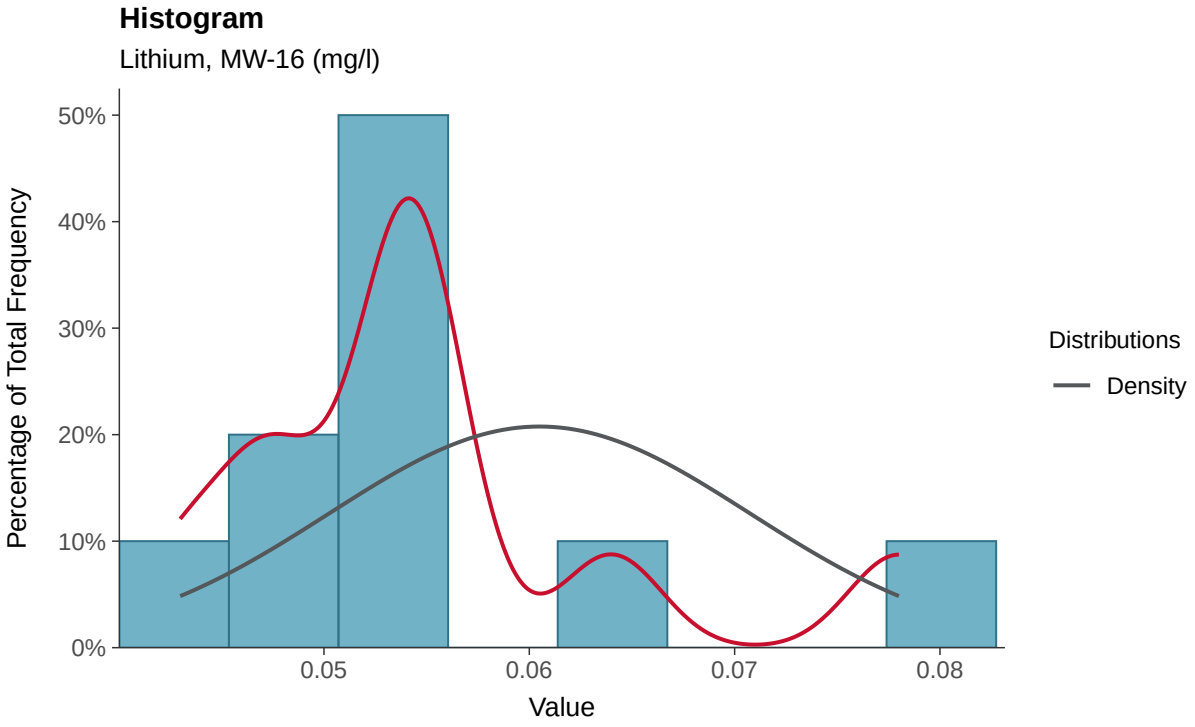
Lead, MW-16 (mg/l)



Appendix IV: Lithium, MW-16

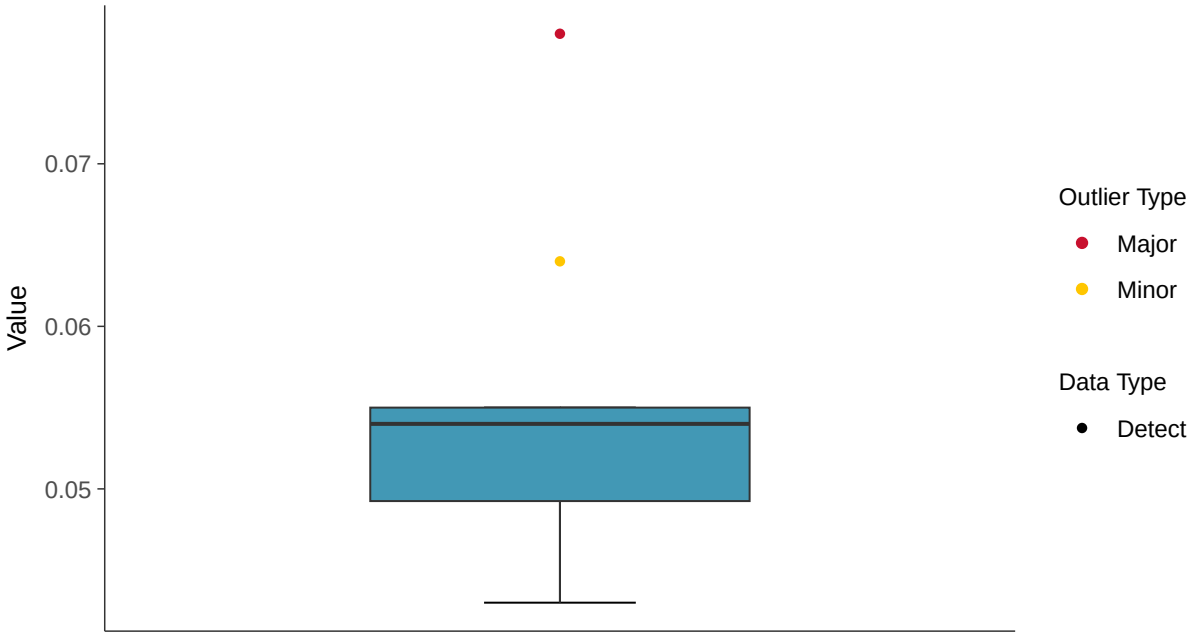
ID: 15_2_118





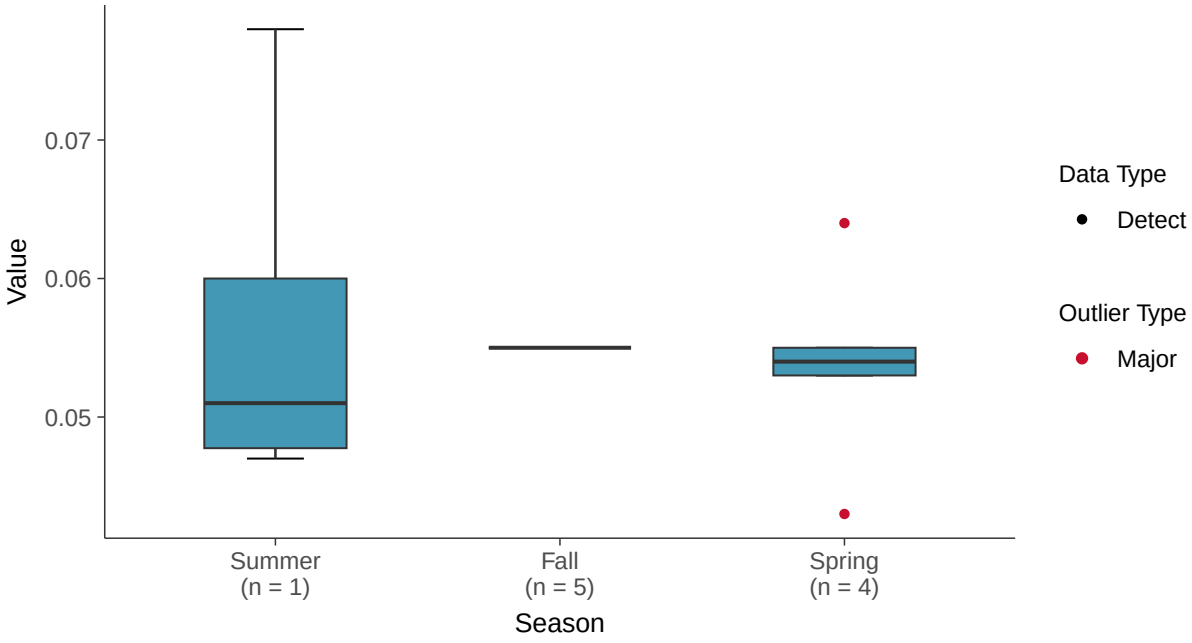
Boxplot

Lithium, MW-16 (mg/l)



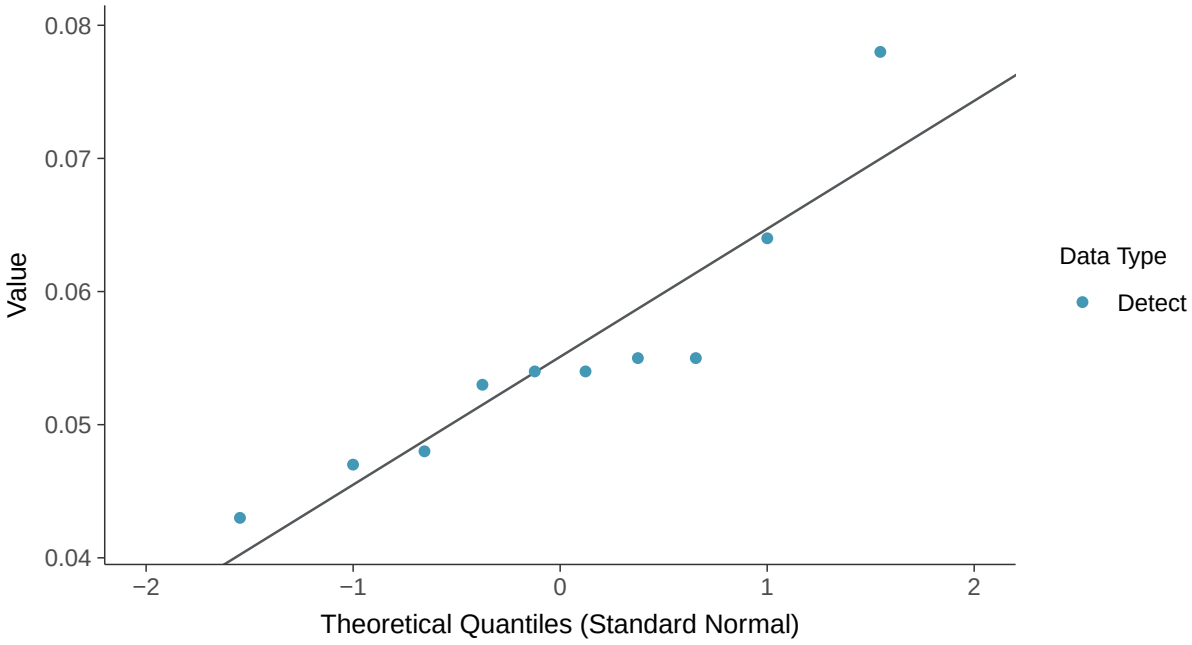
Boxplot by Season

Lithium, MW-16 (mg/l)



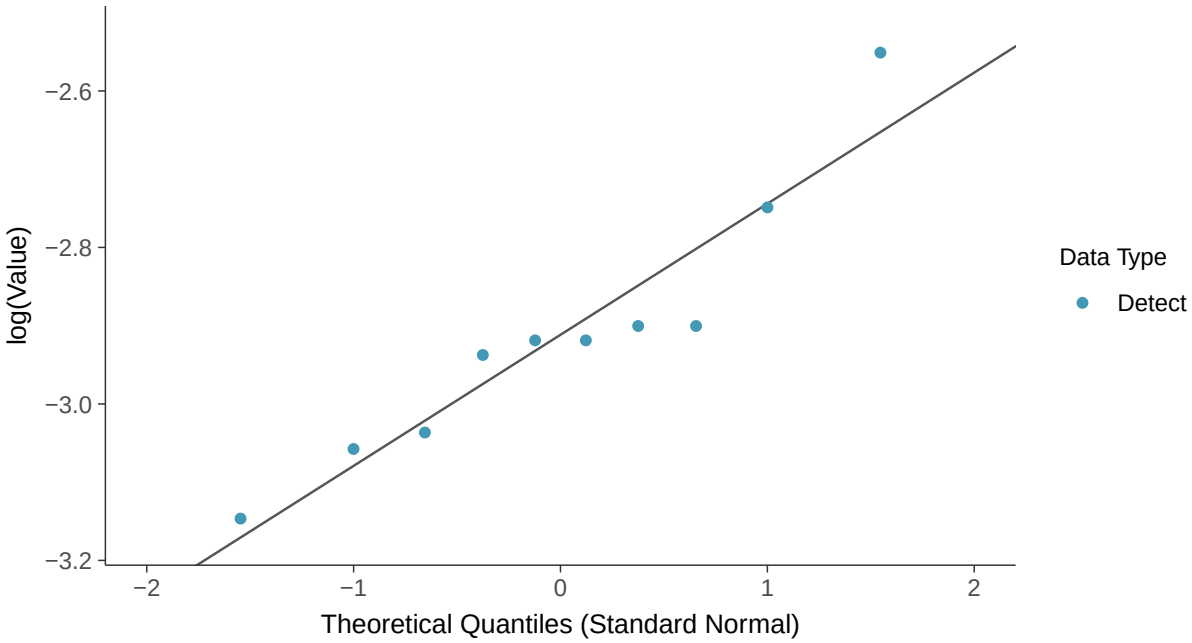
Normal Q-Q plot

Lithium, MW-16 (mg/l)



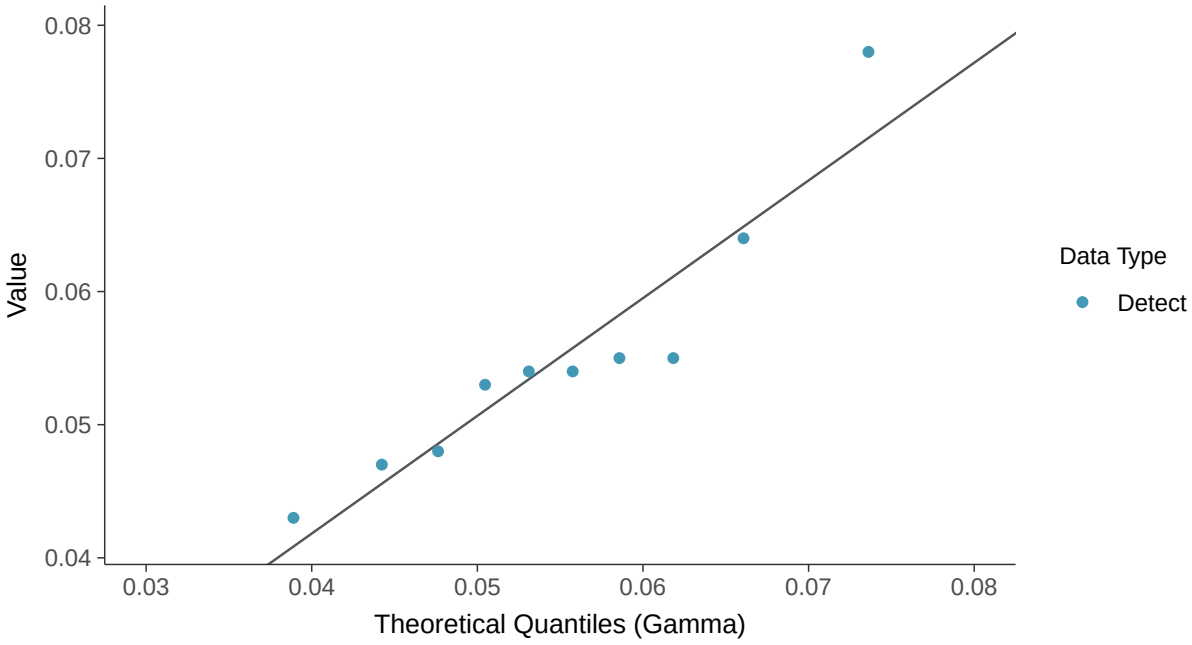
Lognormal Q-Q plot

Lithium, MW-16 (mg/l)



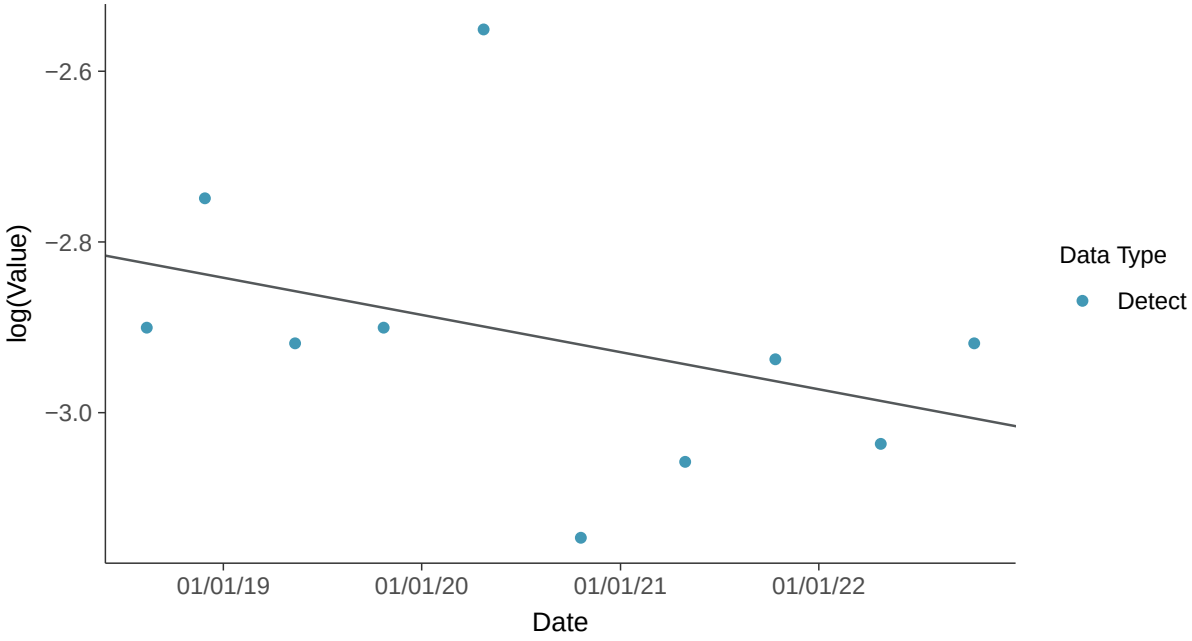
Gamma Q-Q plot

Lithium, MW-16 (mg/l)



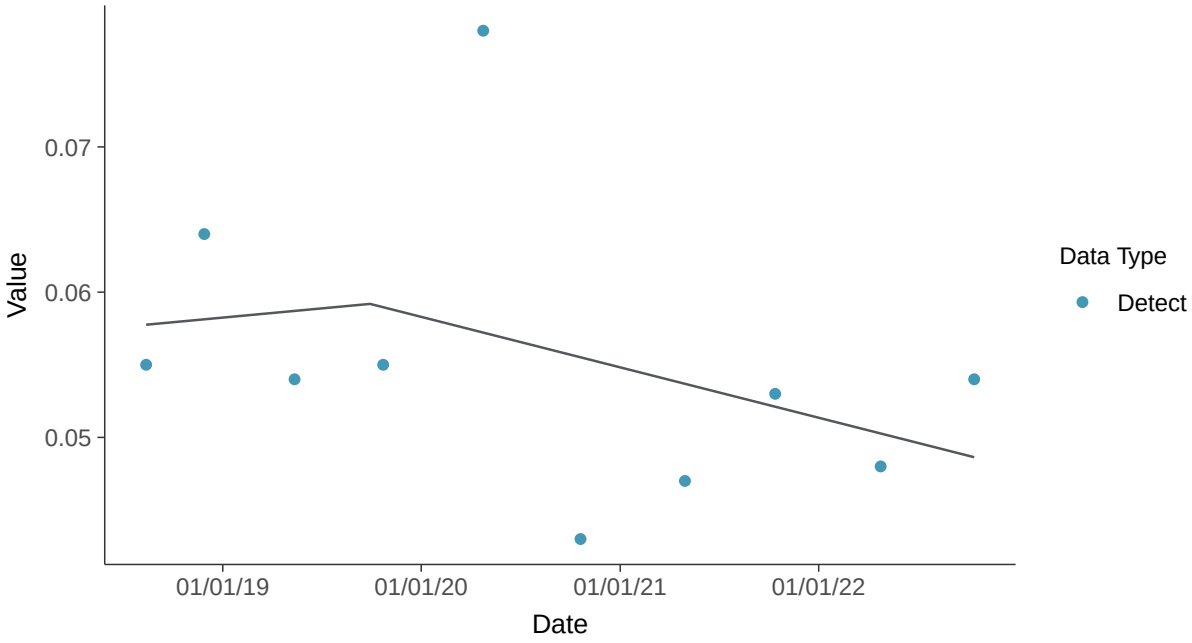
Trend Regression: Lognormal MLE

Lithium, MW-16 (mg/l)



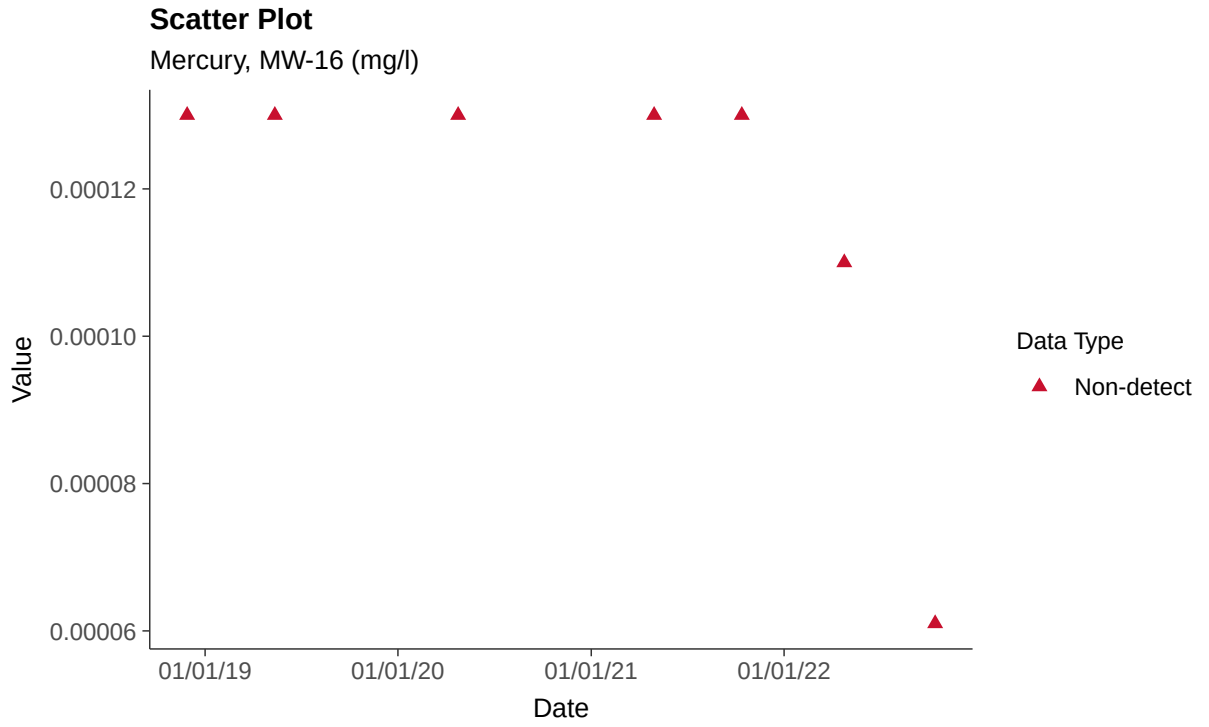
Trend Regression: Piecewise Linear-Linear

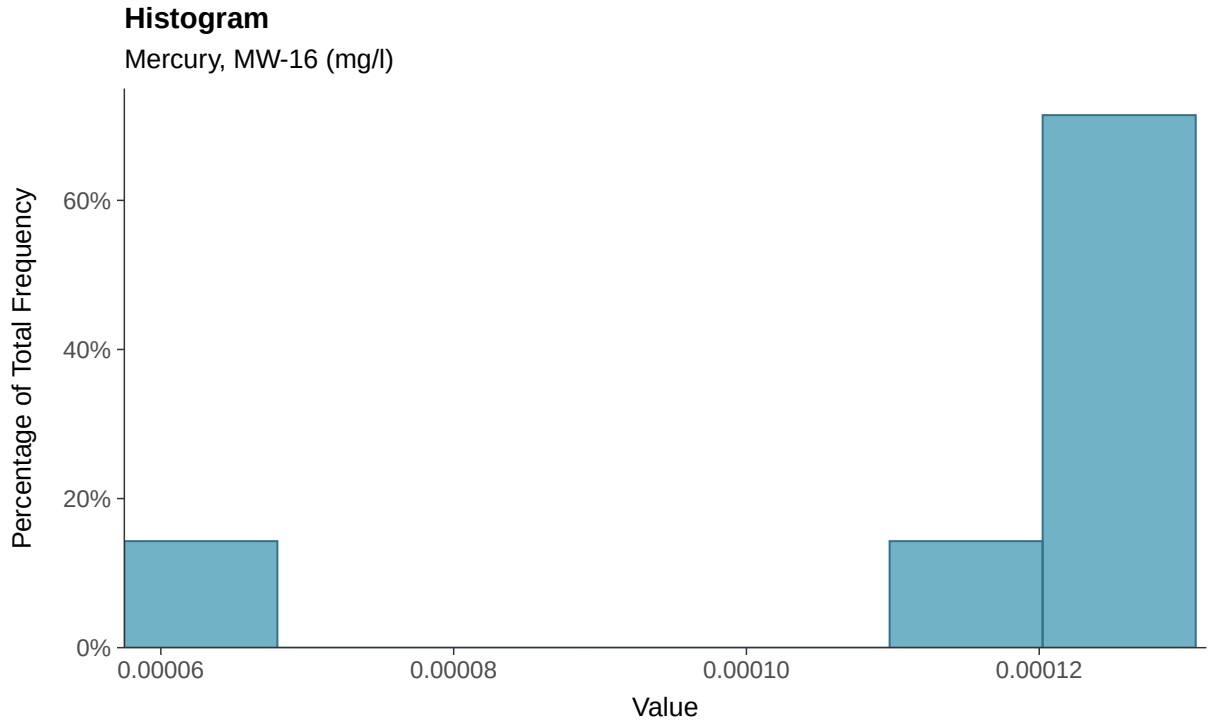
Lithium, MW-16 (mg/l)



Appendix IV: Mercury, MW-16

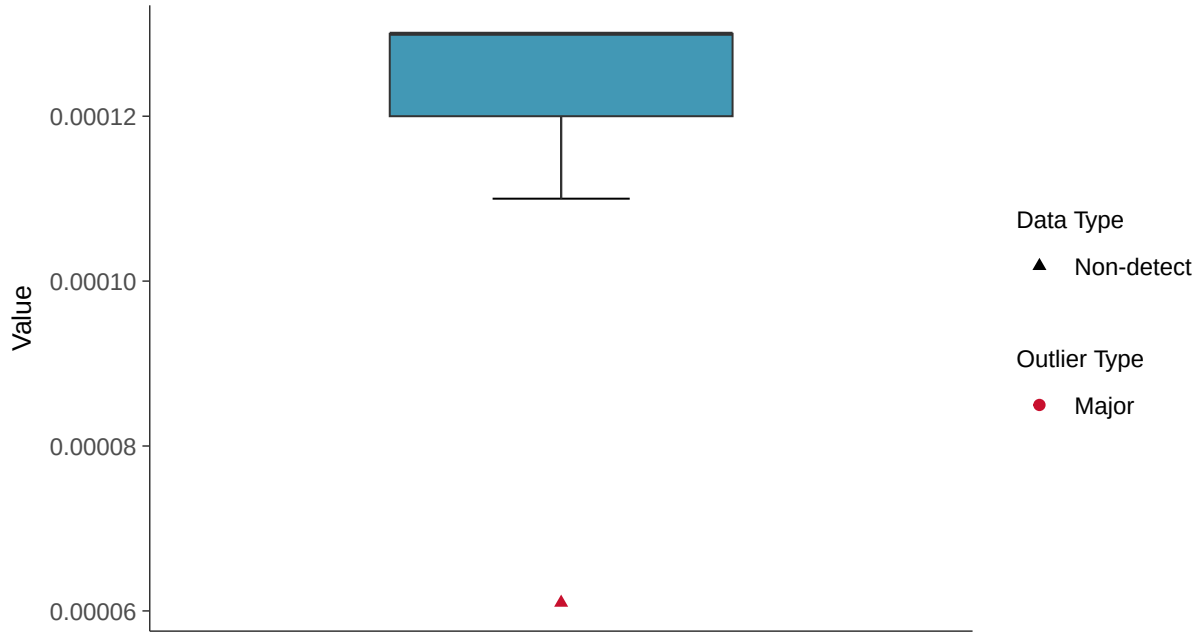
ID: 15_2_120





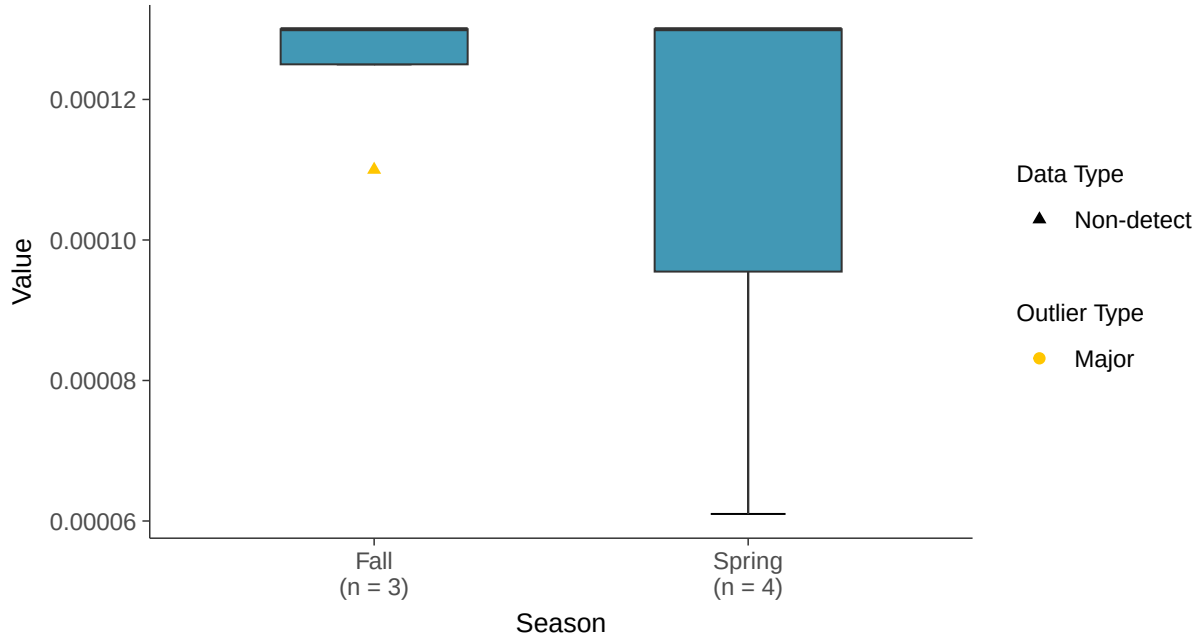
Boxplot

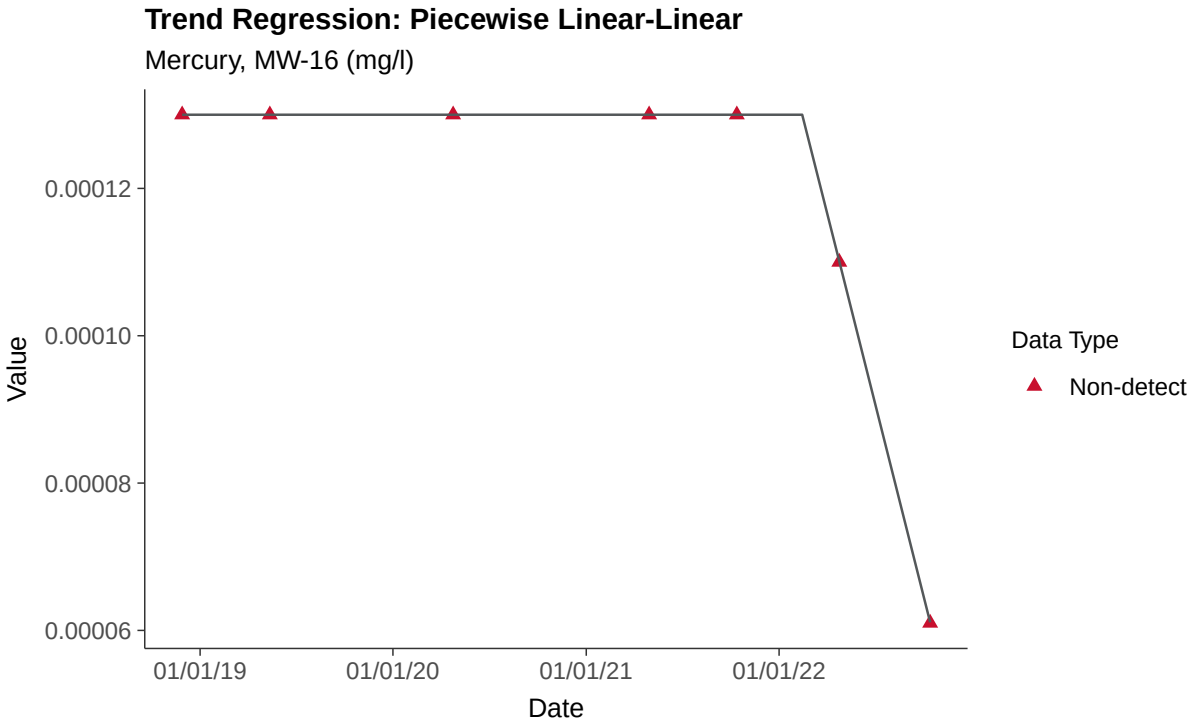
Mercury, MW-16 (mg/l)



Boxplot by Season

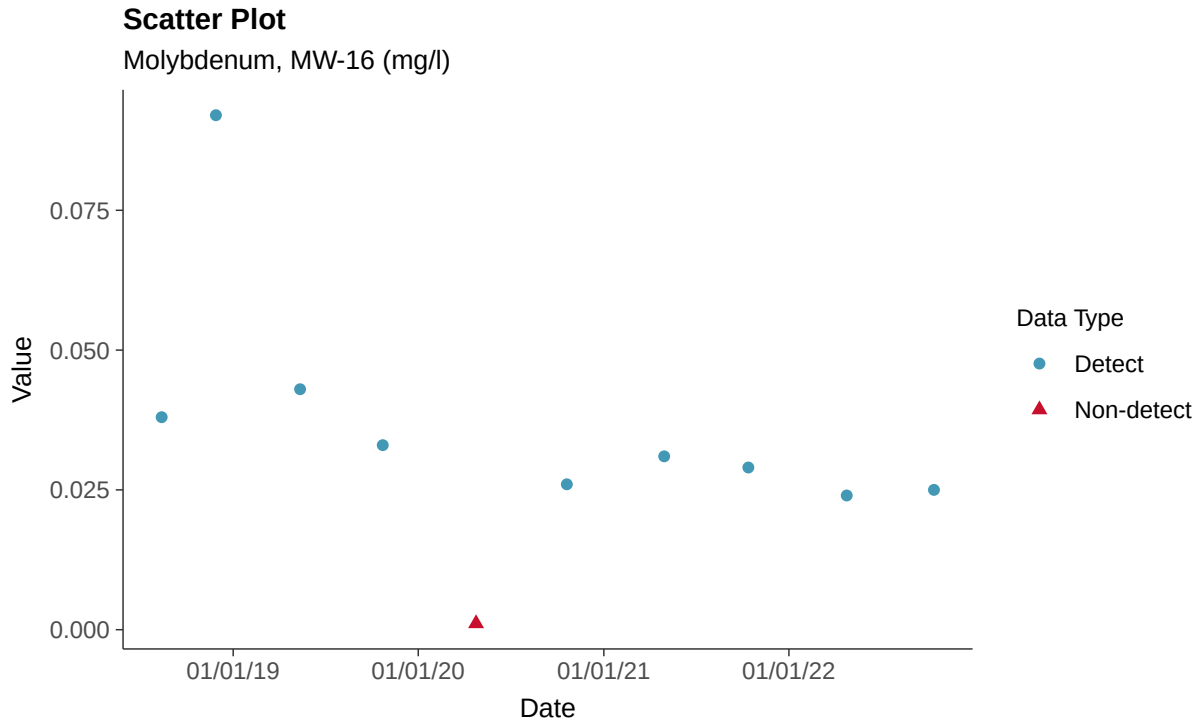
Mercury, MW-16 (mg/l)

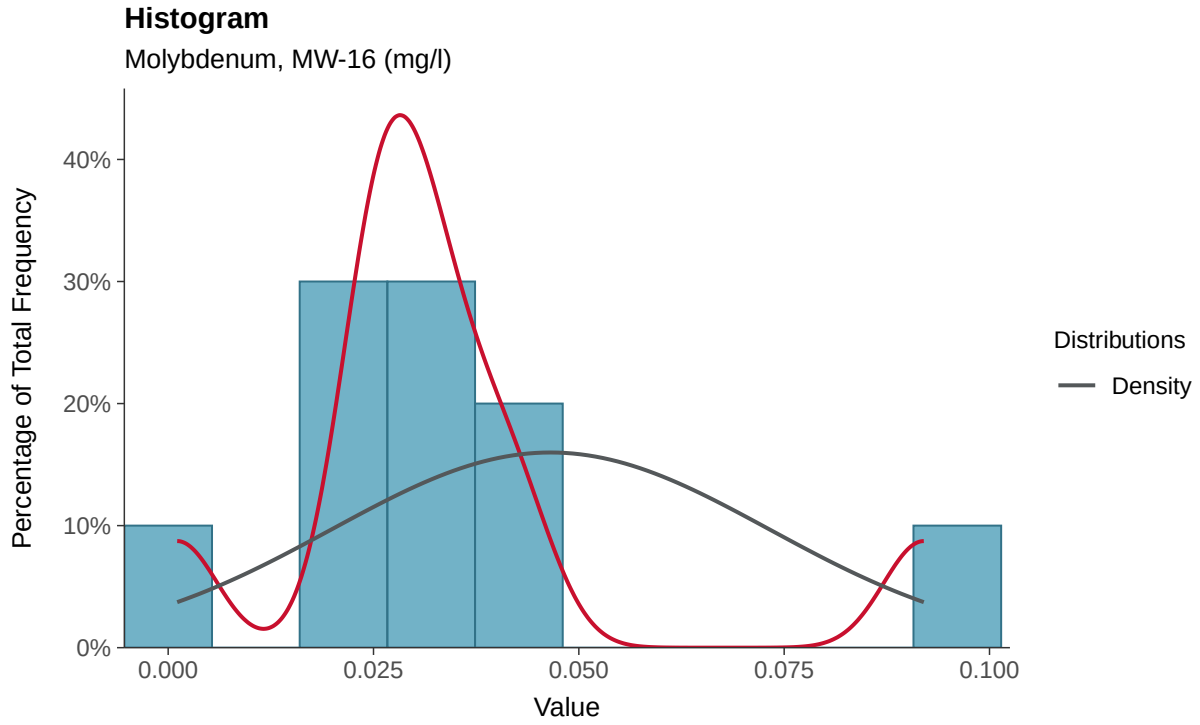



Trend Regression: Piecewise Linear-Linear
Mercury, MW-16 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-16

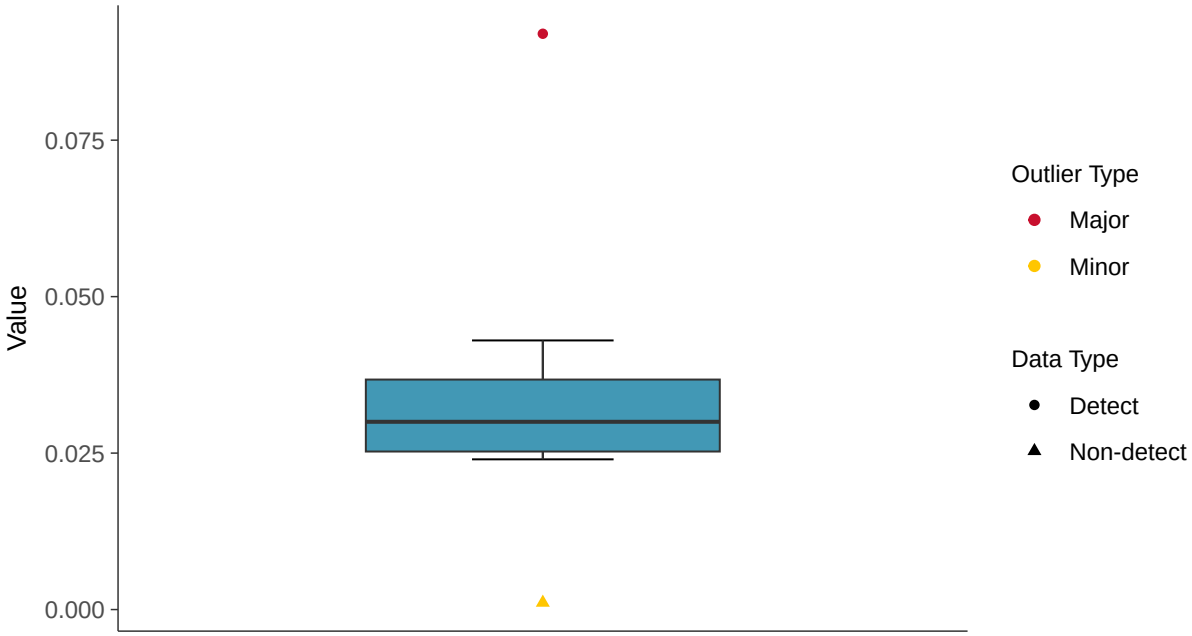
ID: 15_2_121





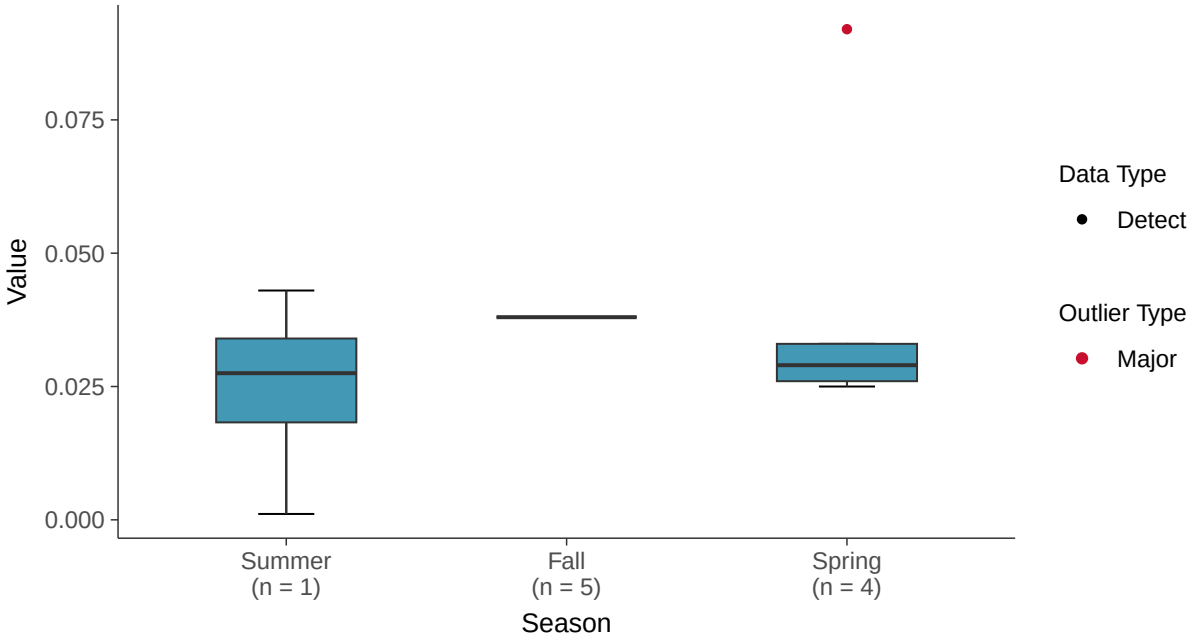
Boxplot

Molybdenum, MW-16 (mg/l)



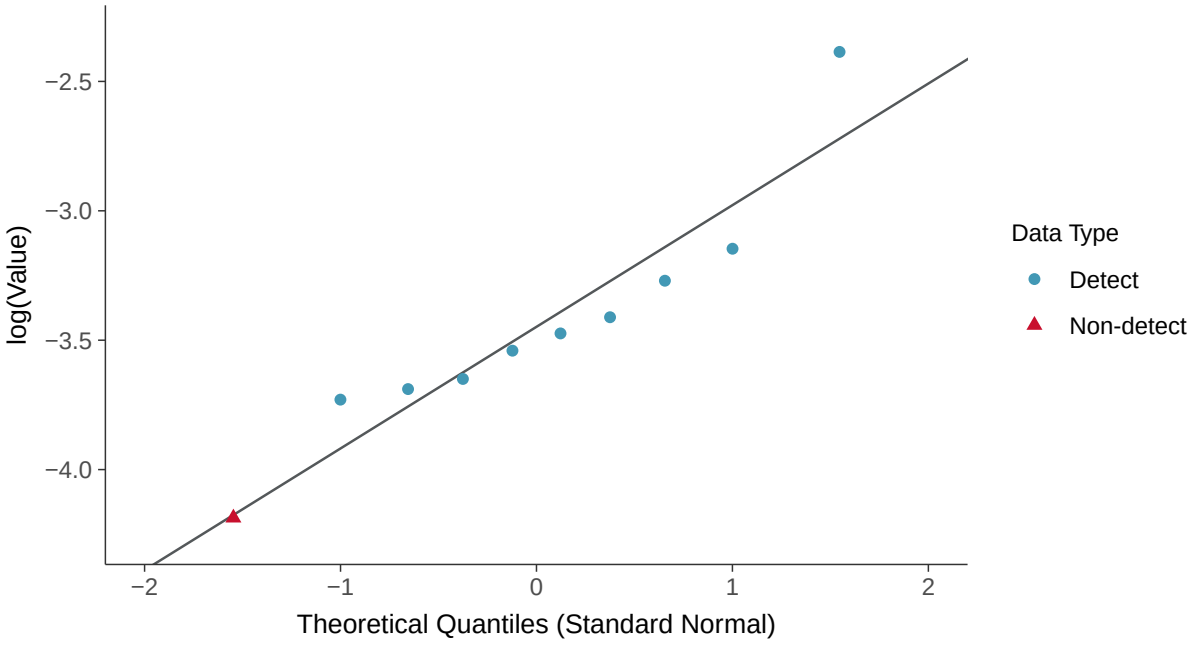
Boxplot by Season

Molybdenum, MW-16 (mg/l)



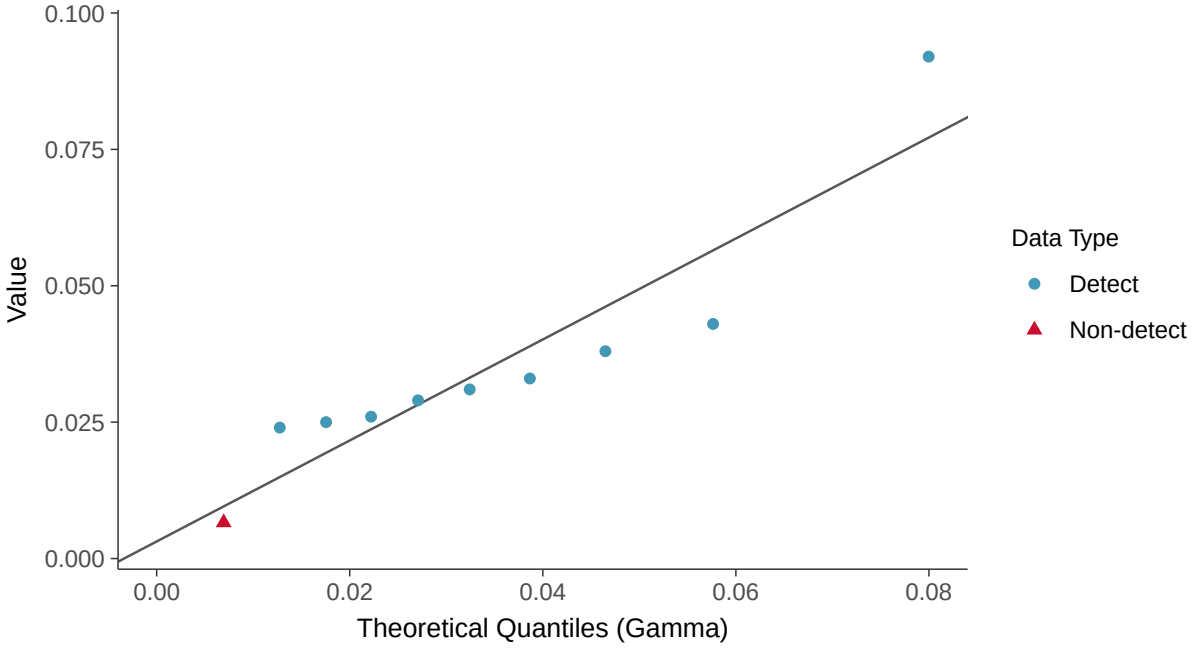
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-16 (mg/l)



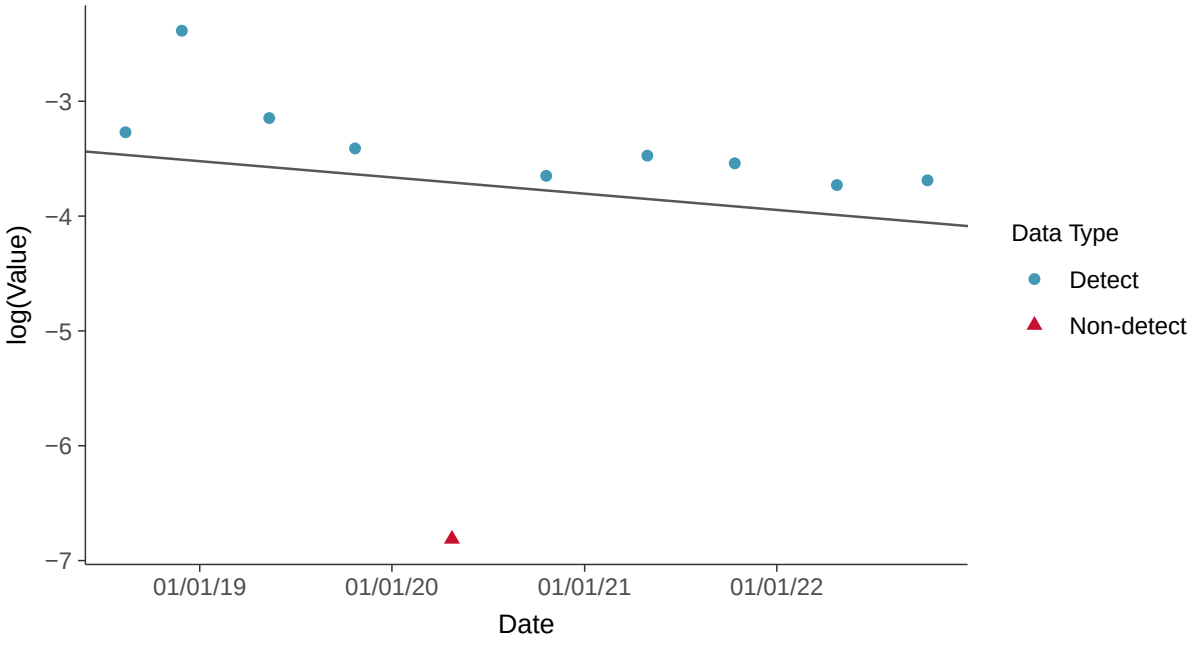
Gamma Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-16 (mg/l)



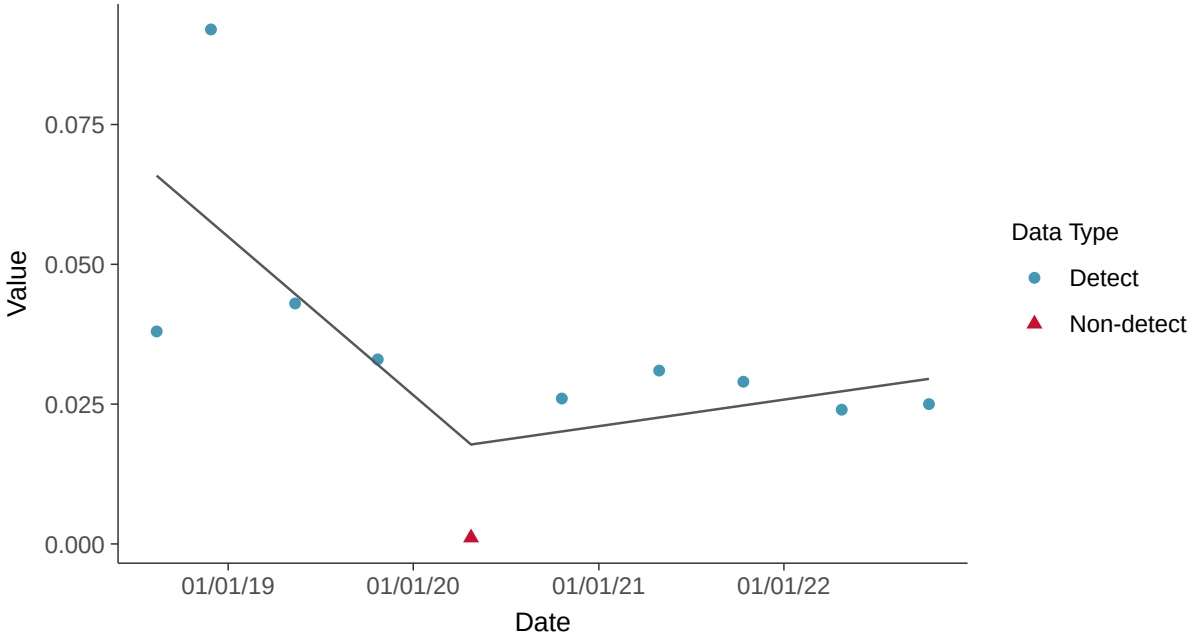
Trend Regression: Lognormal MLE

Molybdenum, MW-16 (mg/l)



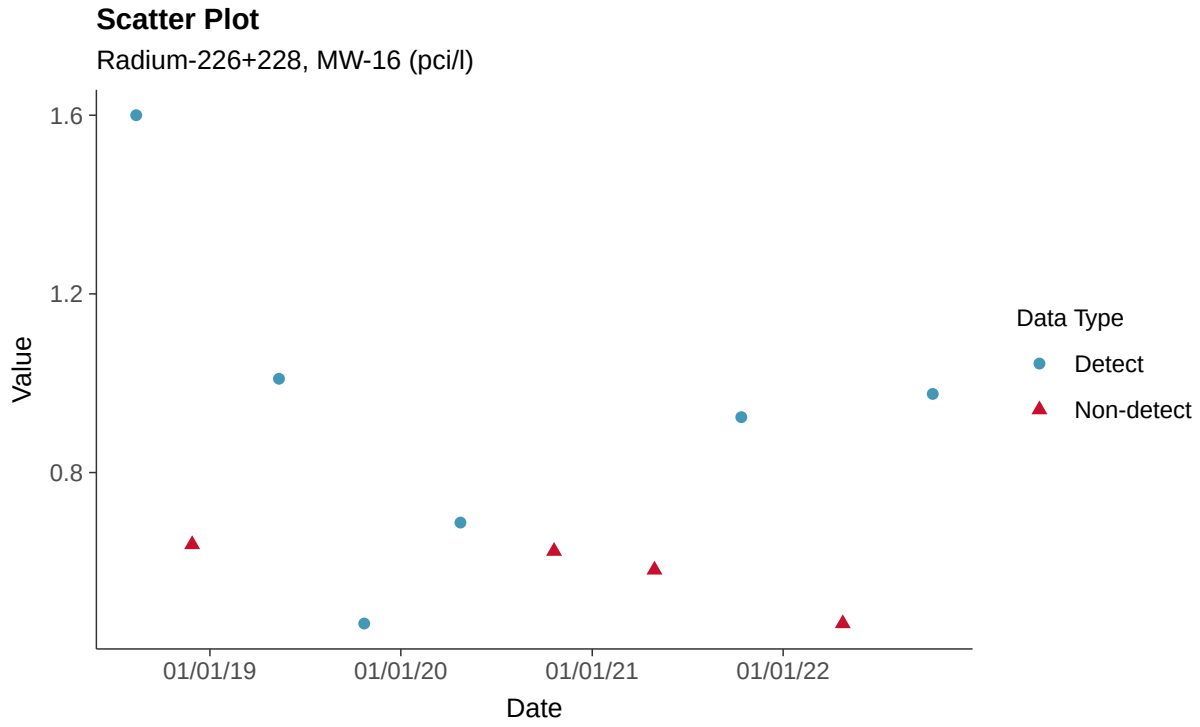
Trend Regression: Piecewise Linear-Linear

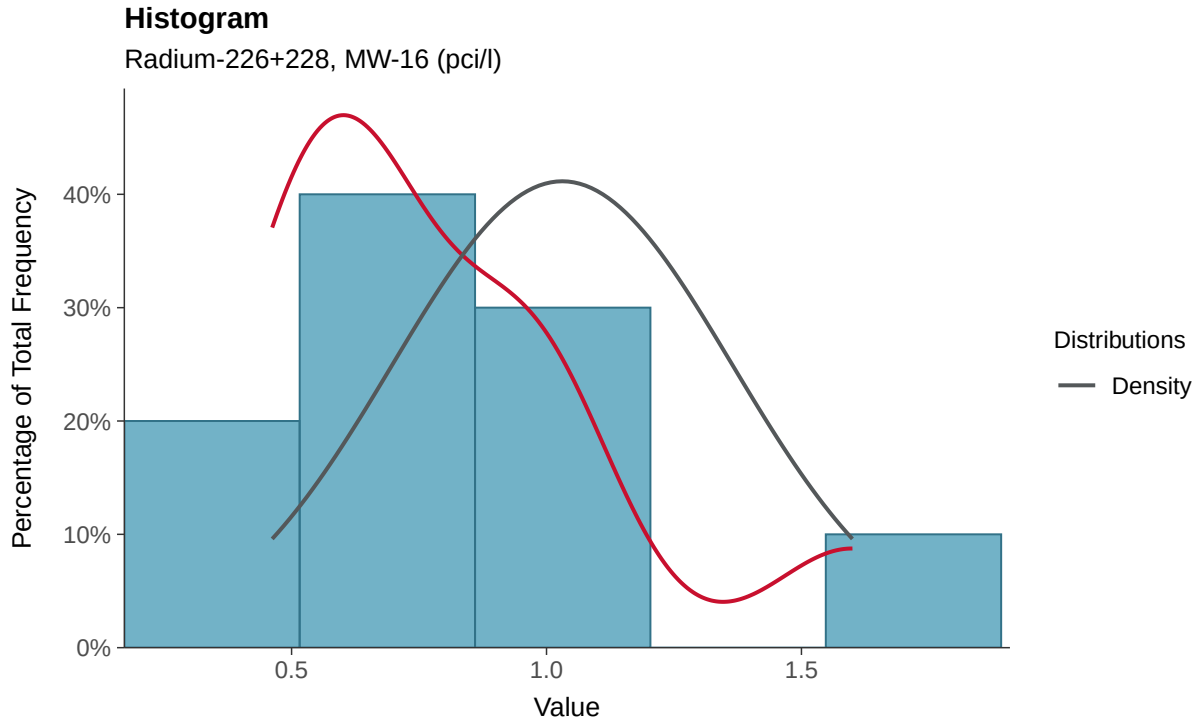
Molybdenum, MW-16 (mg/l)



Appendix IV: Radium-226+228, MW-16

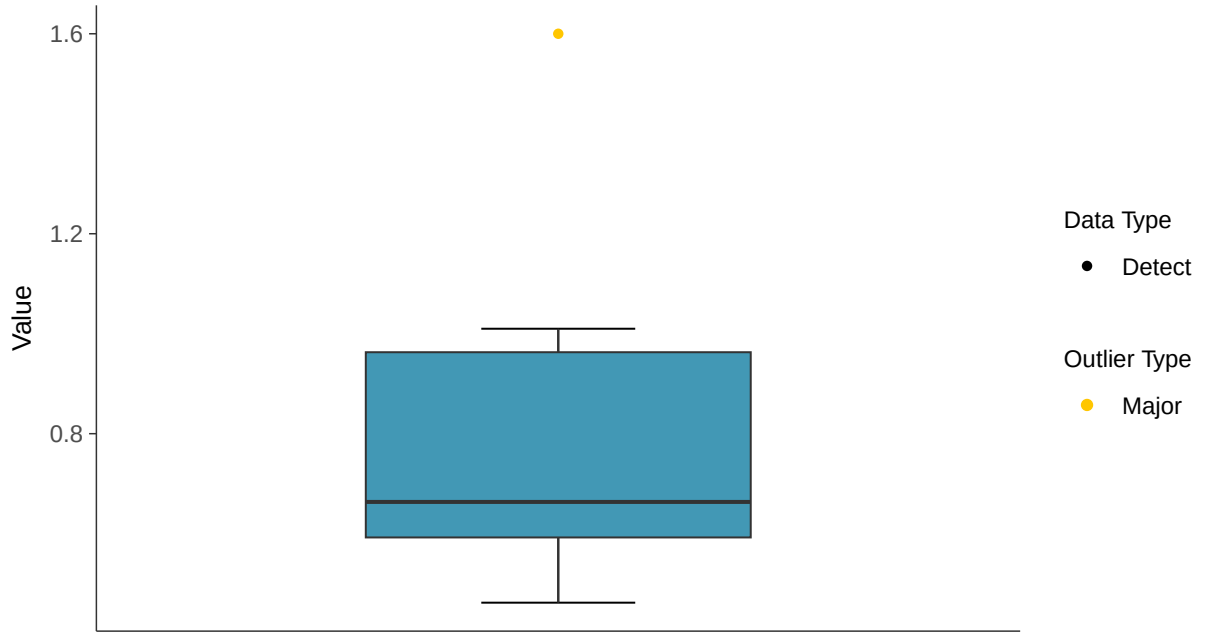
ID: 15_2_127





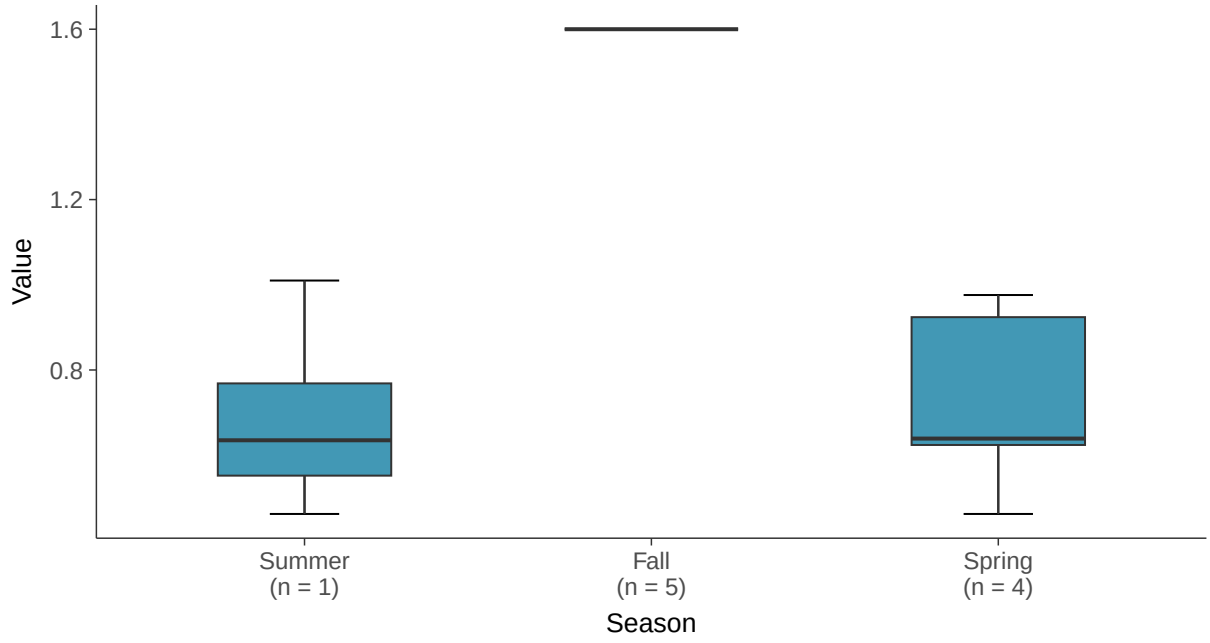
Boxplot

Radium-226+228, MW-16 (pci/l)



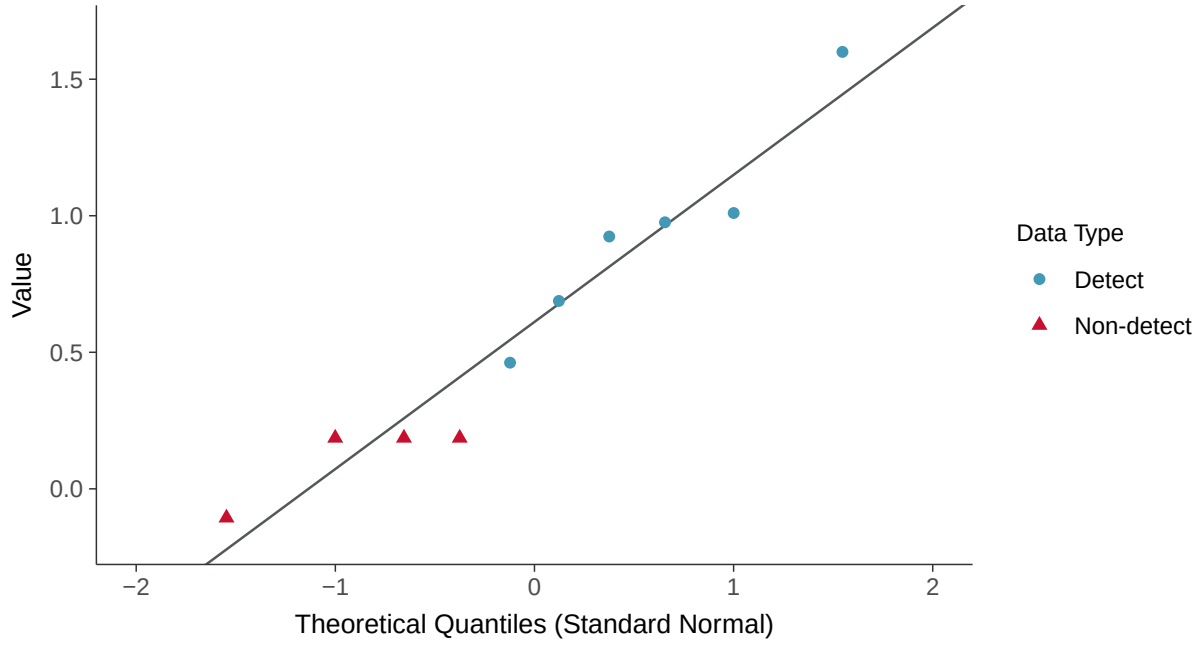
Boxplot by Season

Radium-226+228, MW-16 (pci/l)



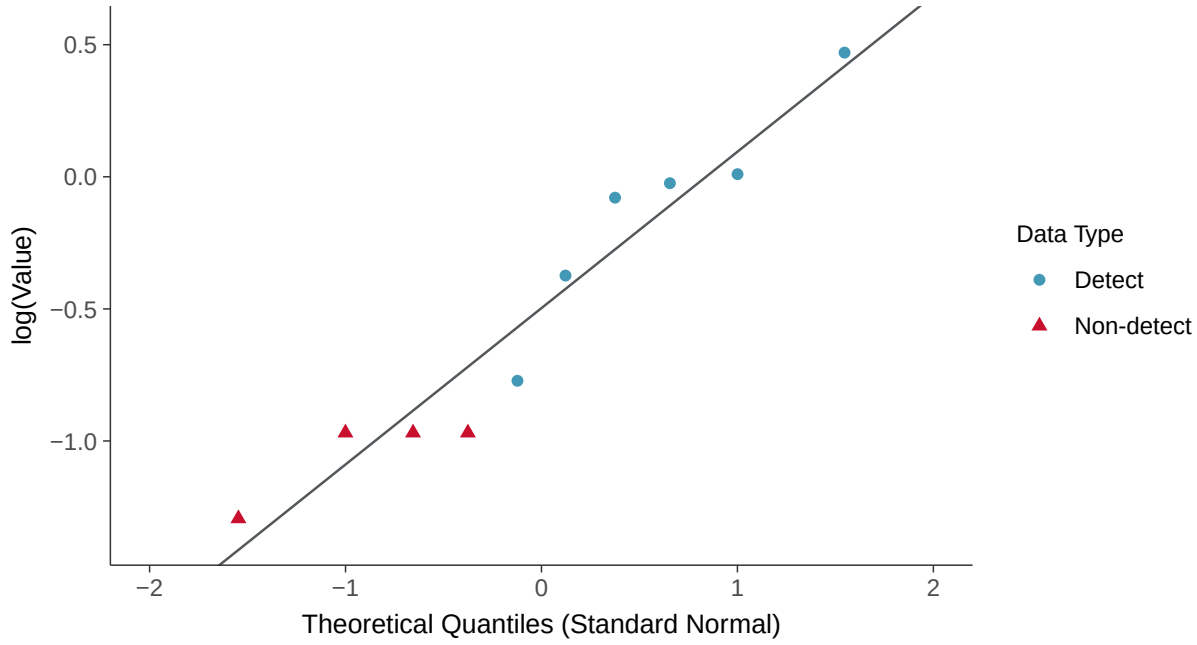
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-16 (pci/l)



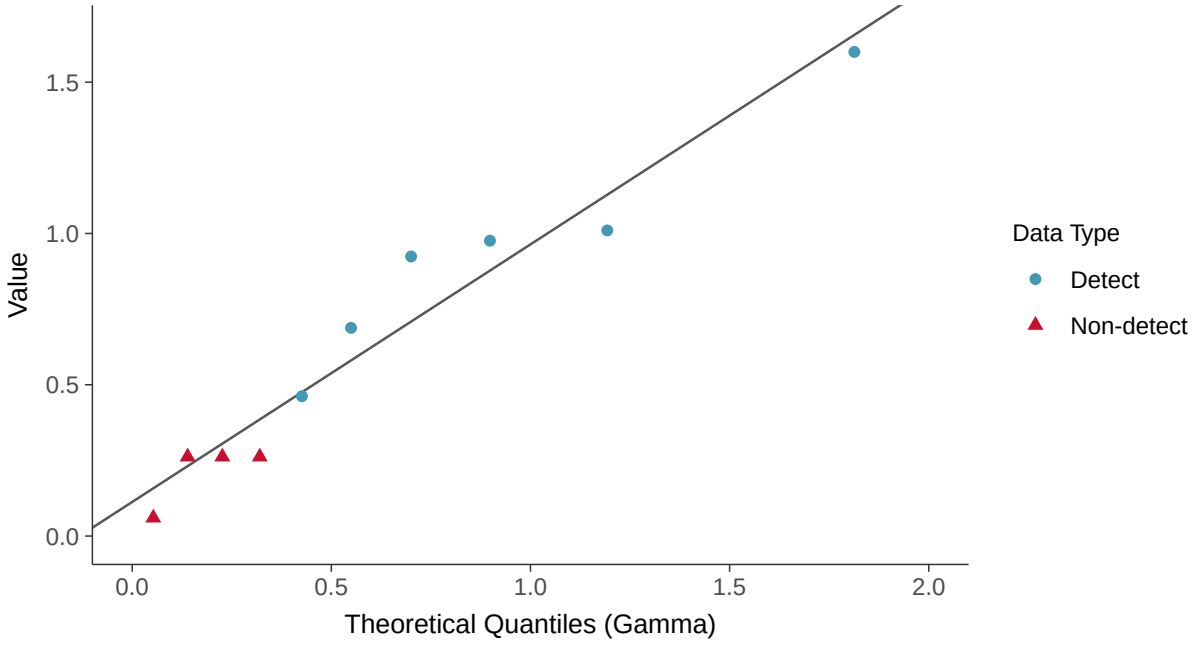
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-16 (pci/l)



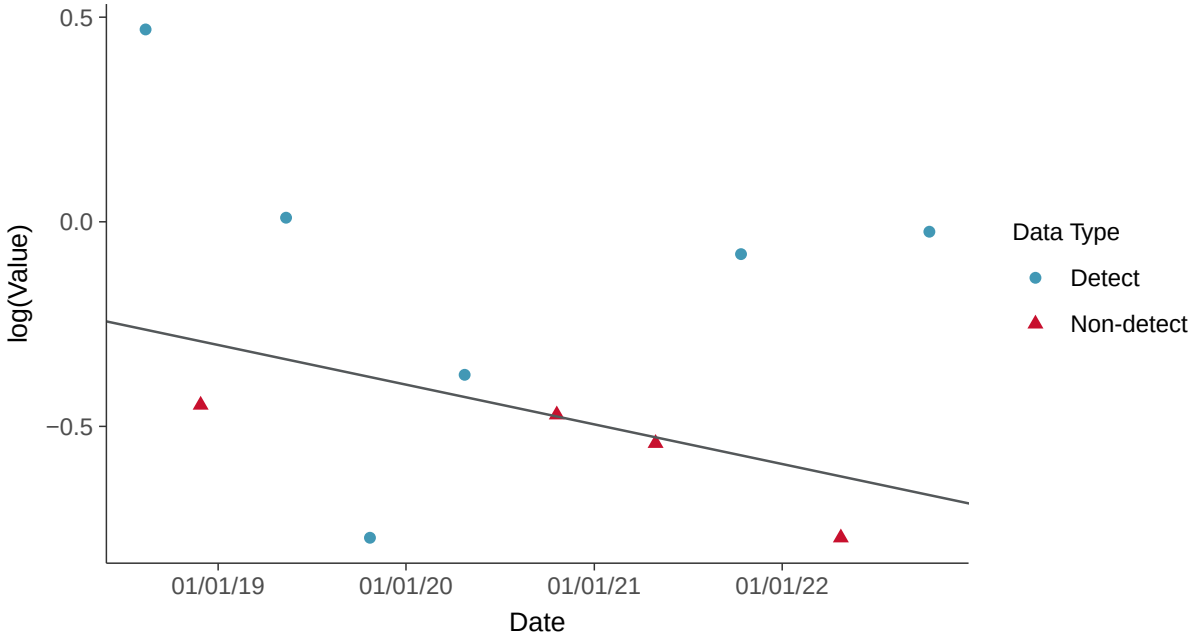
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-16 (pci/l)



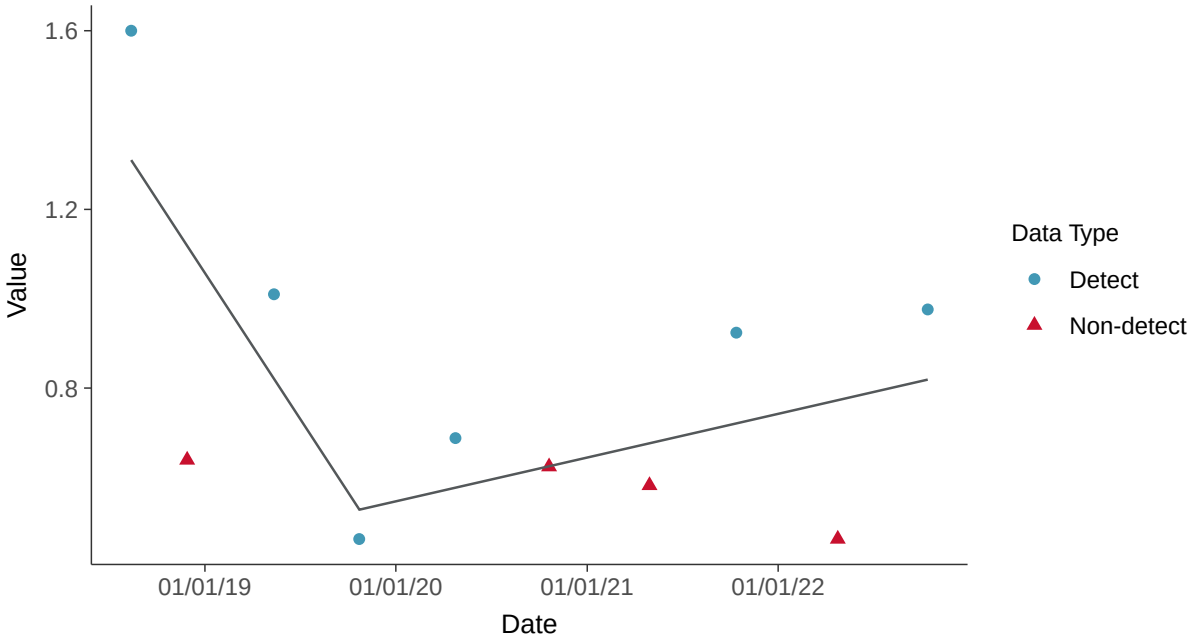
Trend Regression: Lognormal MLE

Radium-226+228, MW-16 (pci/l)



Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-16 (pci/l)

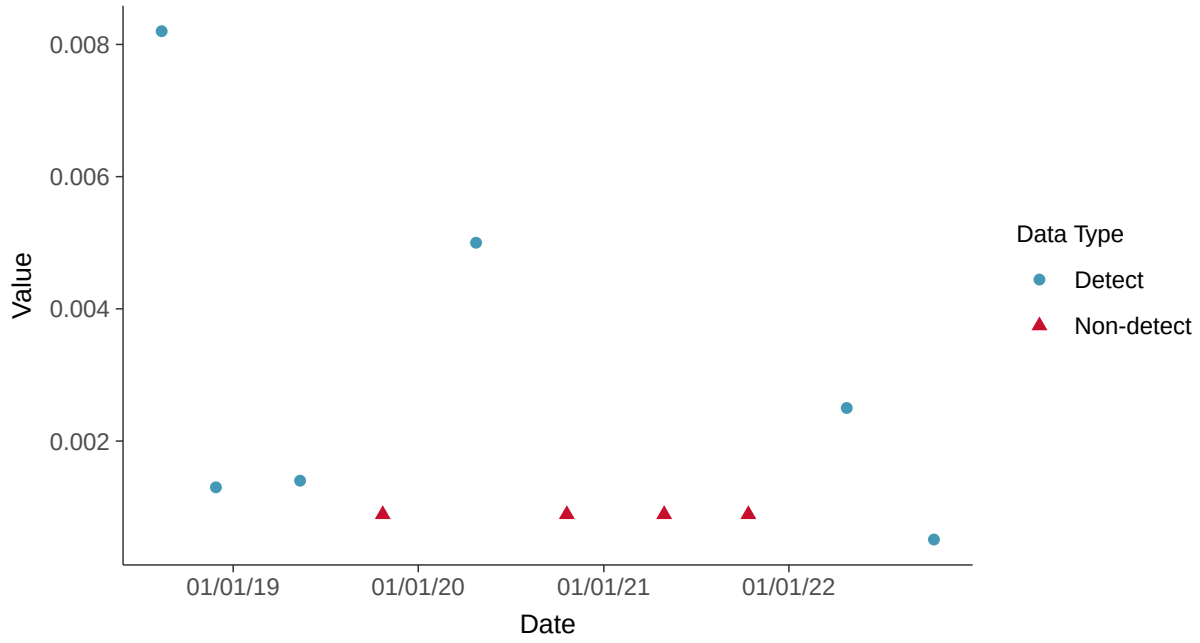


Appendix IV: Selenium, MW-16

ID: 15_2_129

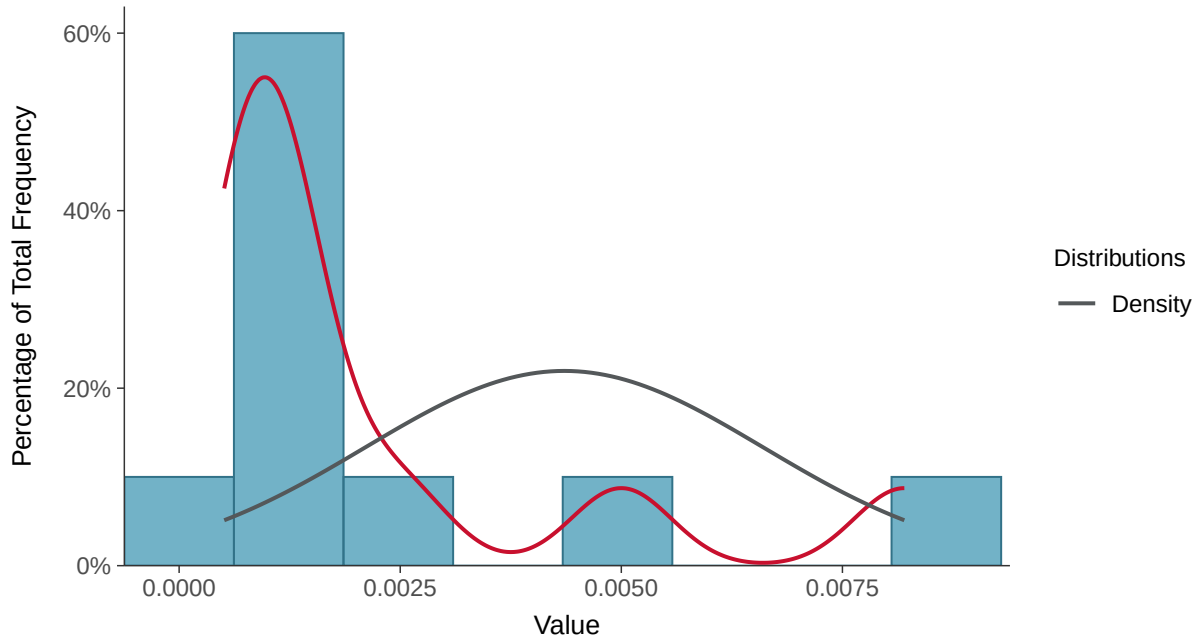
Scatter Plot

Selenium, MW-16 (mg/l)



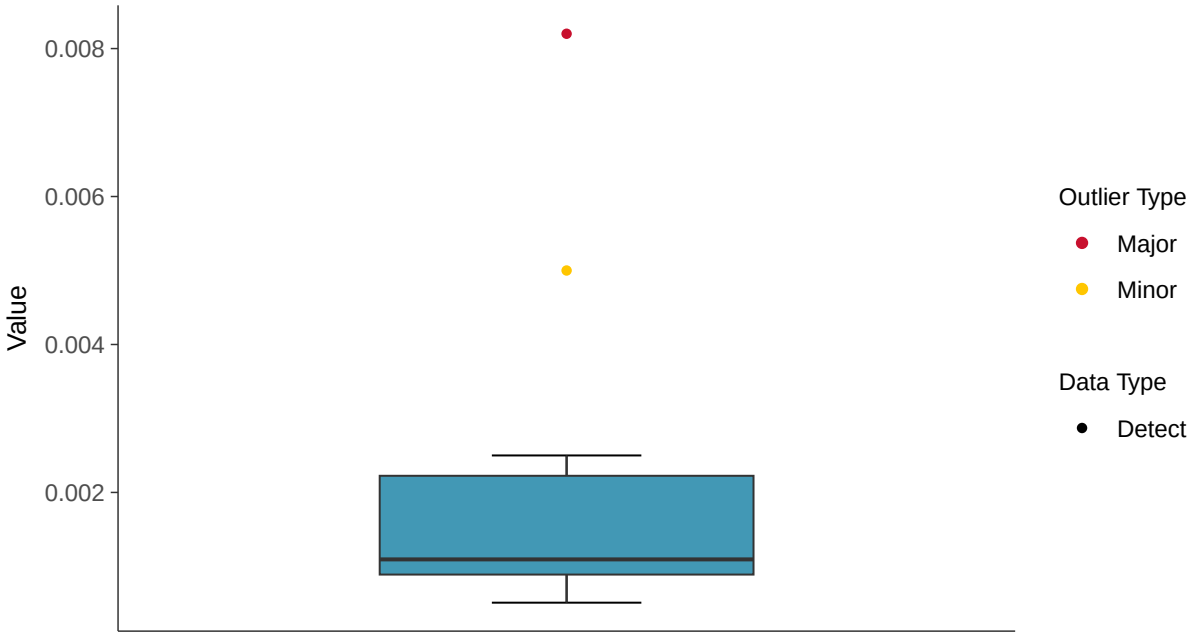
Histogram

Selenium, MW-16 (mg/l)



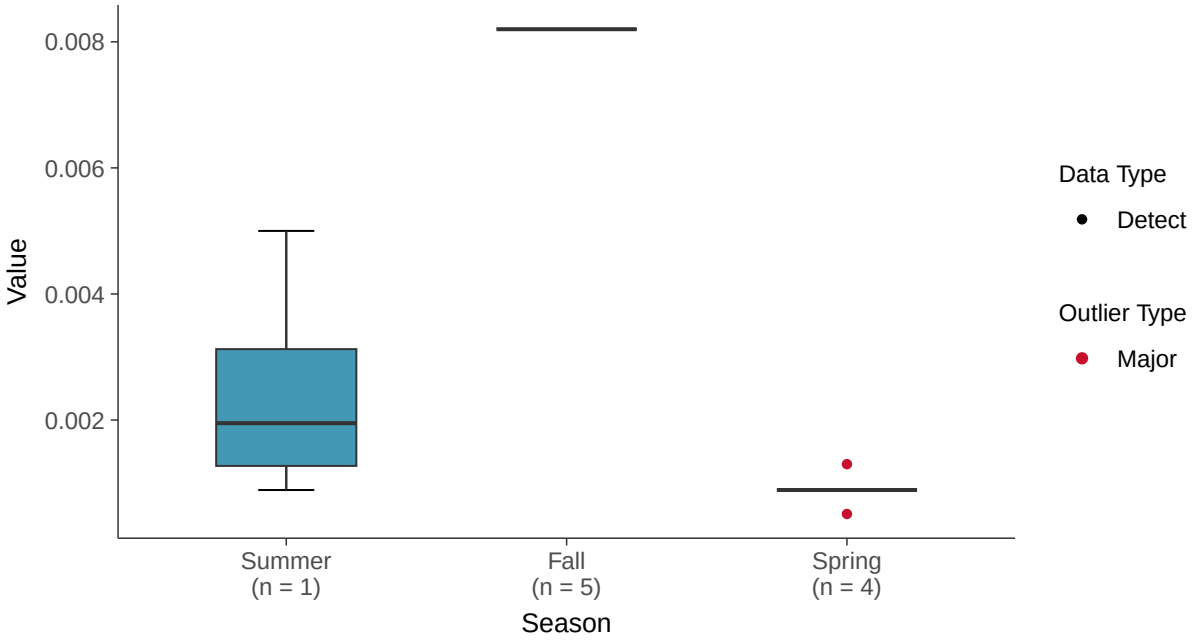
Boxplot

Selenium, MW-16 (mg/l)



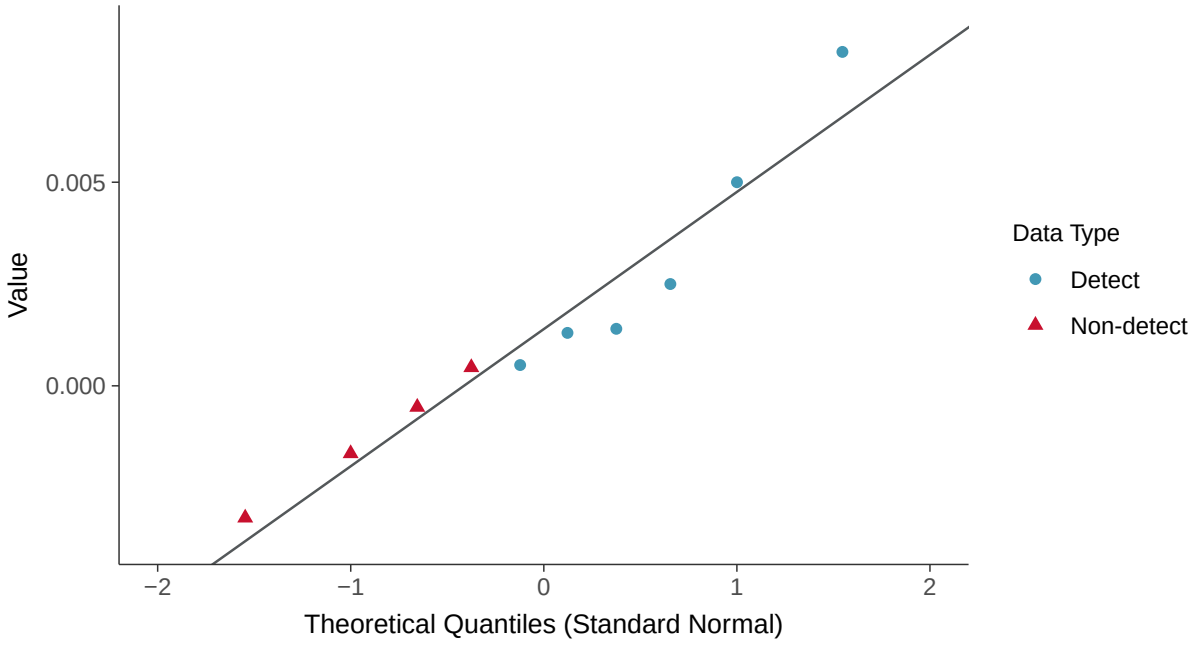
Boxplot by Season

Selenium, MW-16 (mg/l)



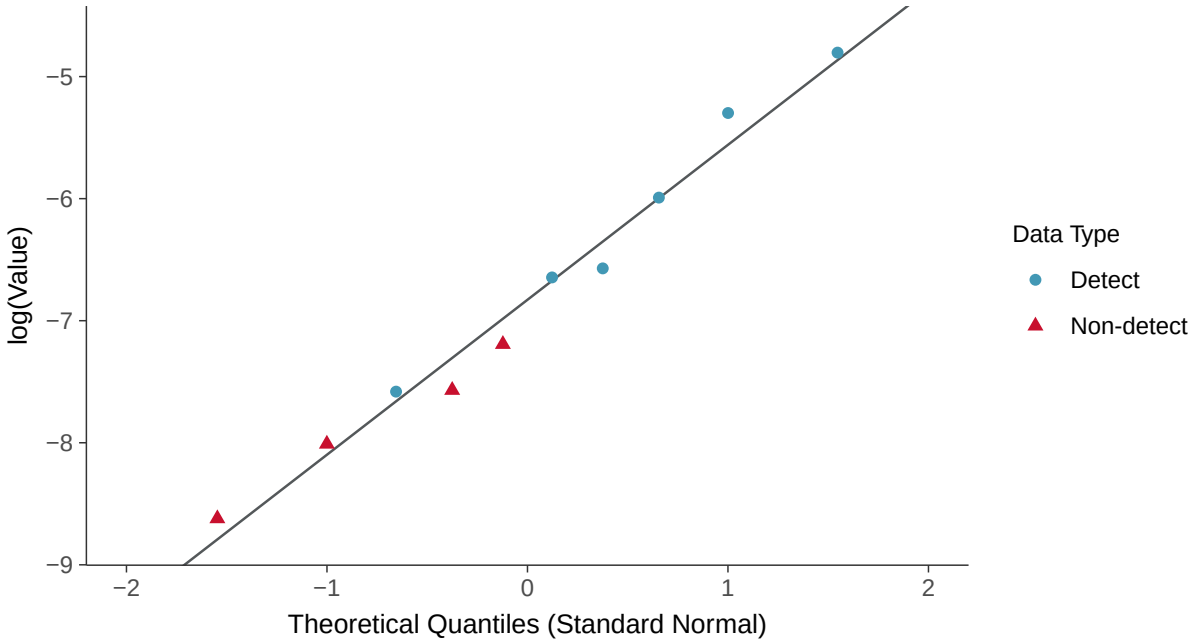
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-16 (mg/l)



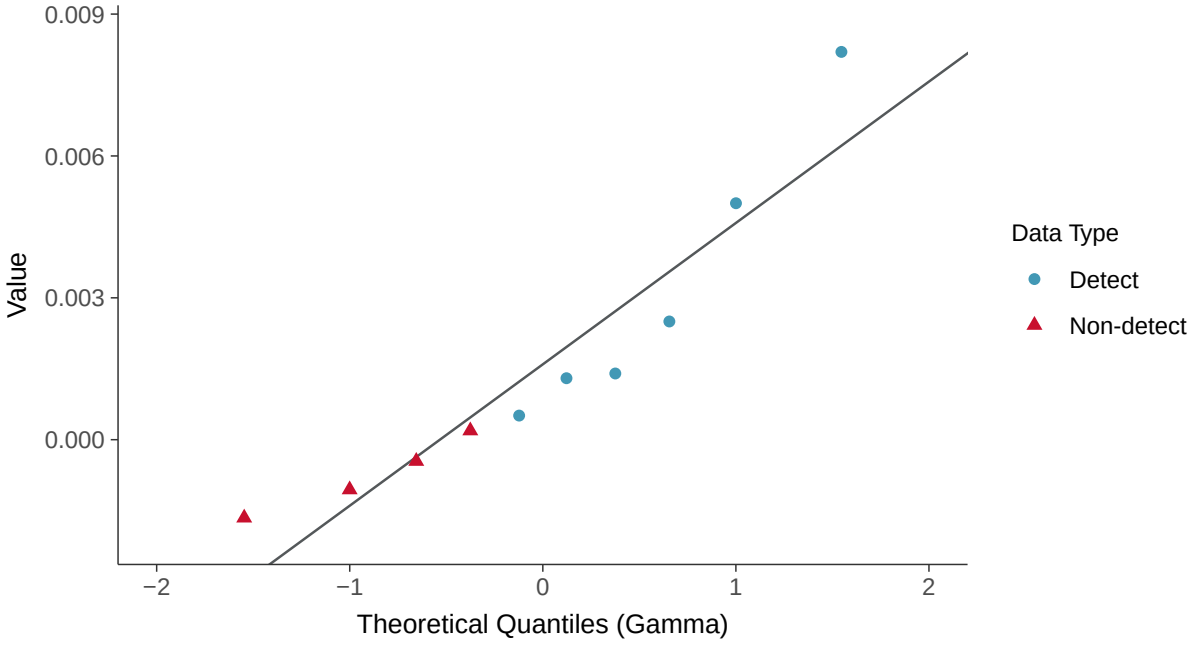
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-16 (mg/l)



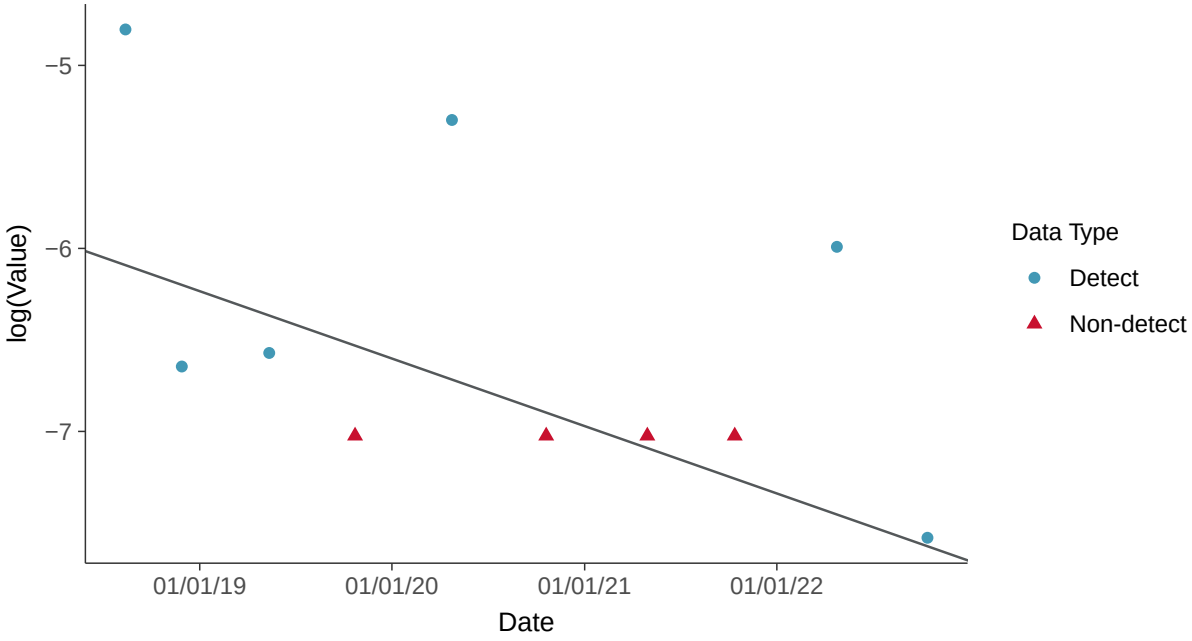
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-16 (mg/l)



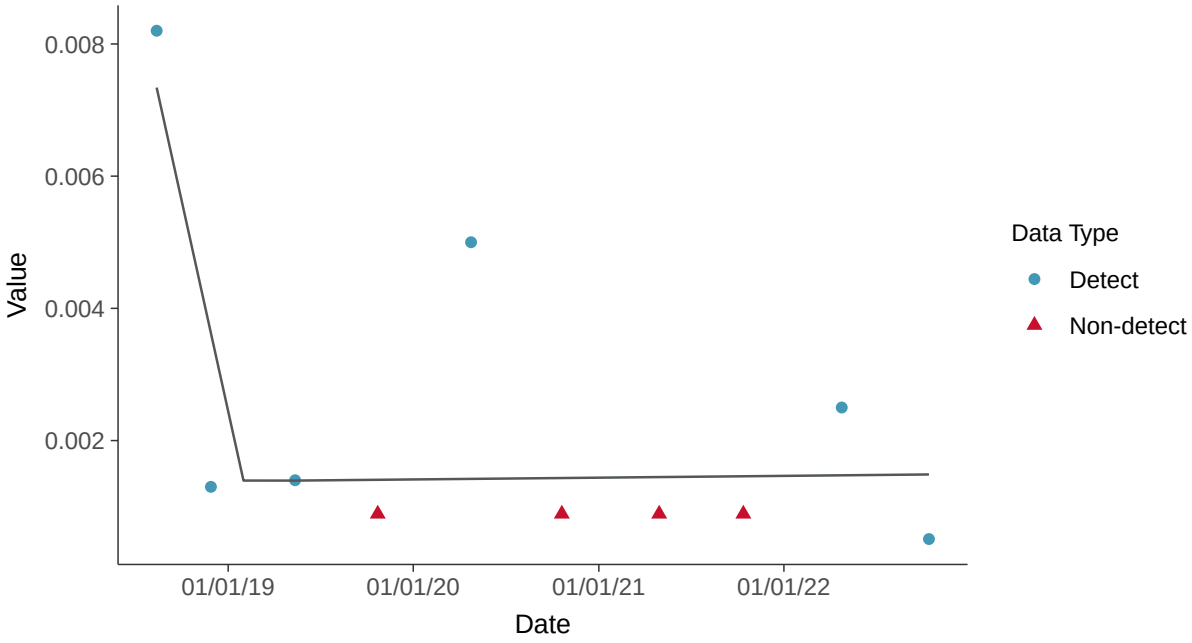
Trend Regression: Lognormal MLE

Selenium, MW-16 (mg/l)



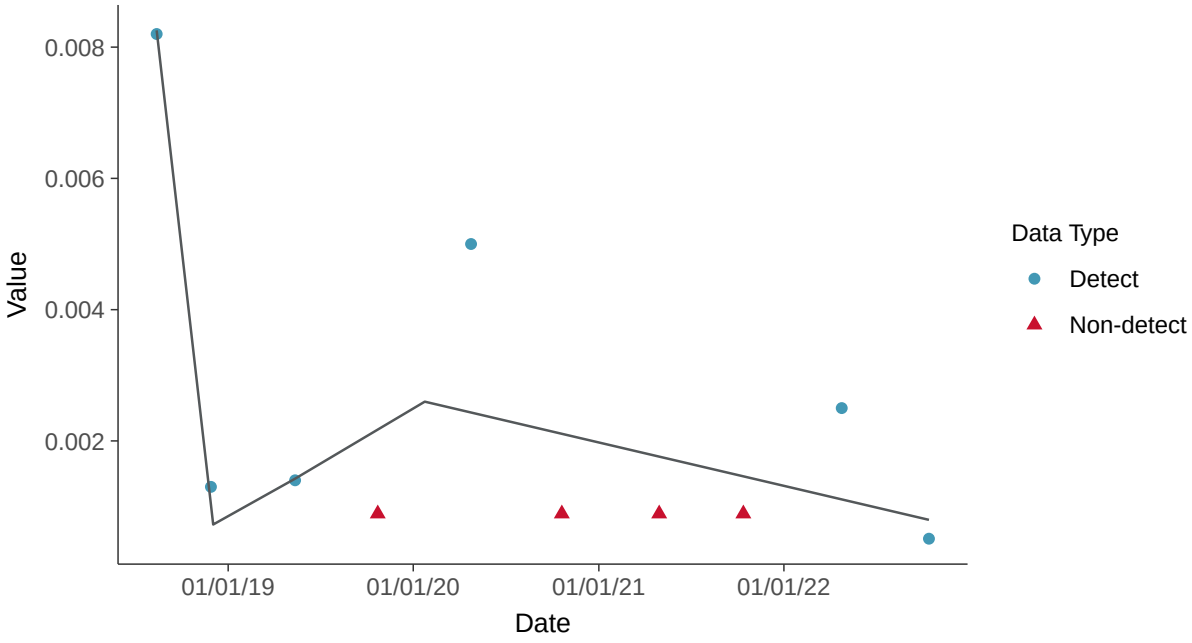
Trend Regression: Piecewise Linear-Linear

Selenium, MW-16 (mg/l)



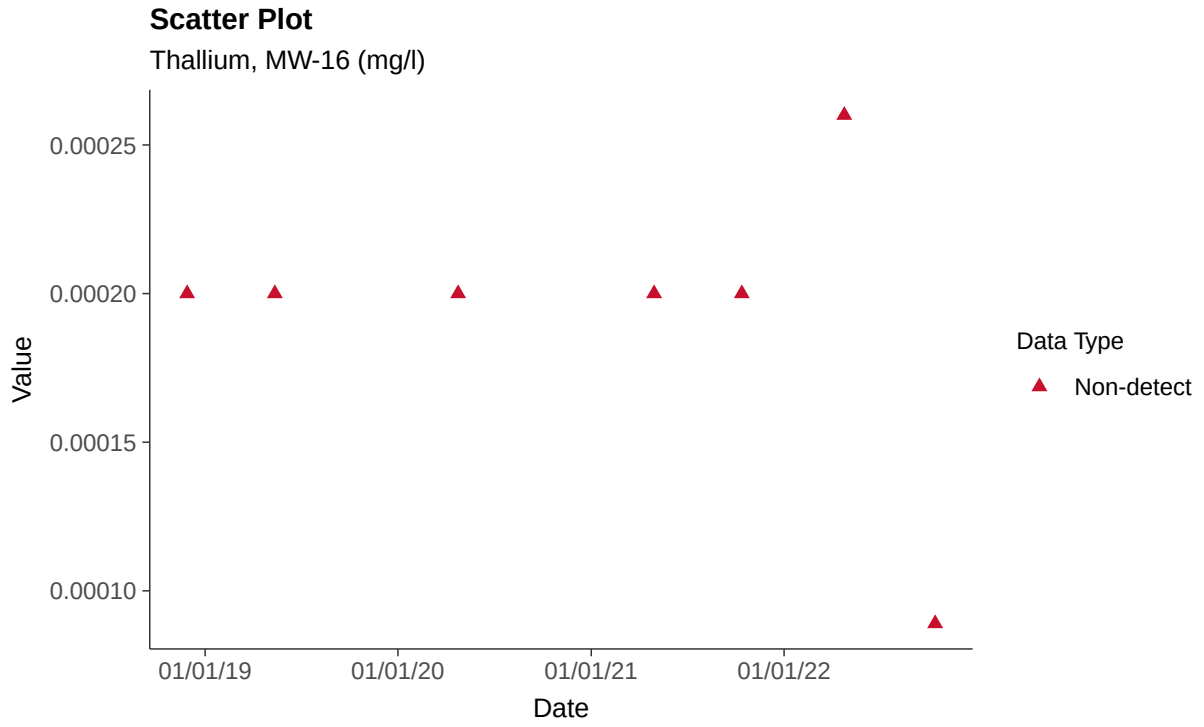
Trend Regression: Piecewise Linear-Linear-Linear

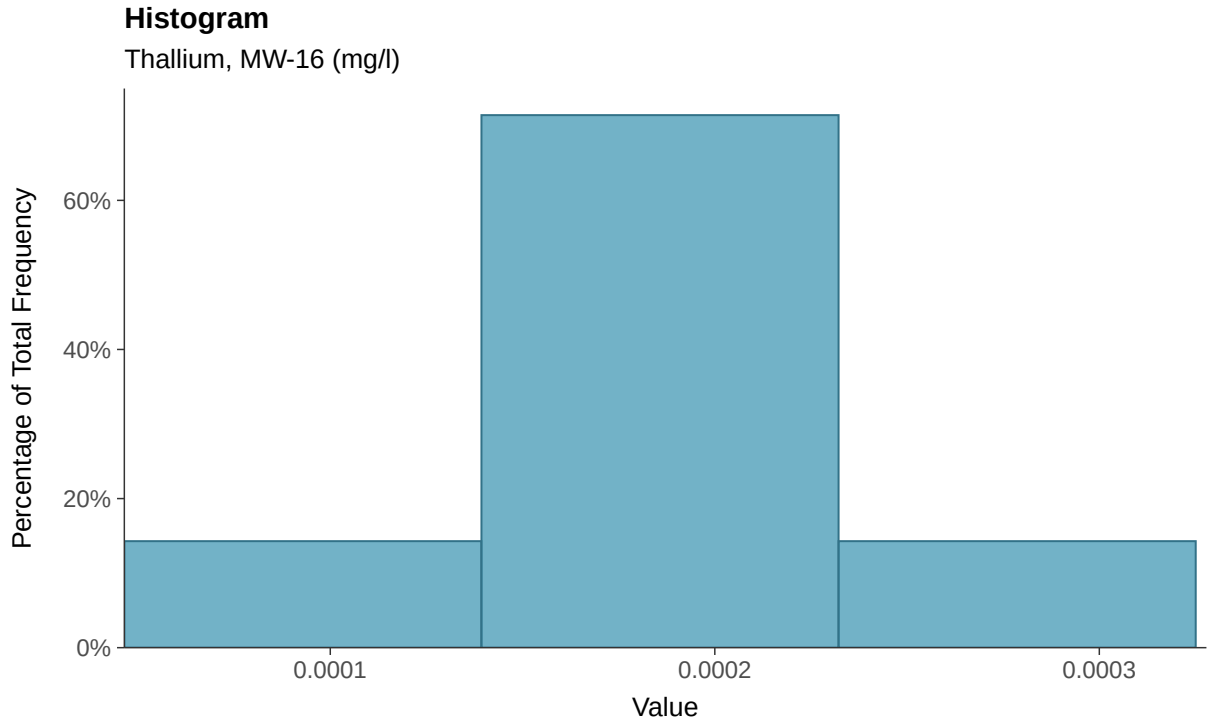
Selenium, MW-16 (mg/l)



Appendix IV: Thallium, MW-16

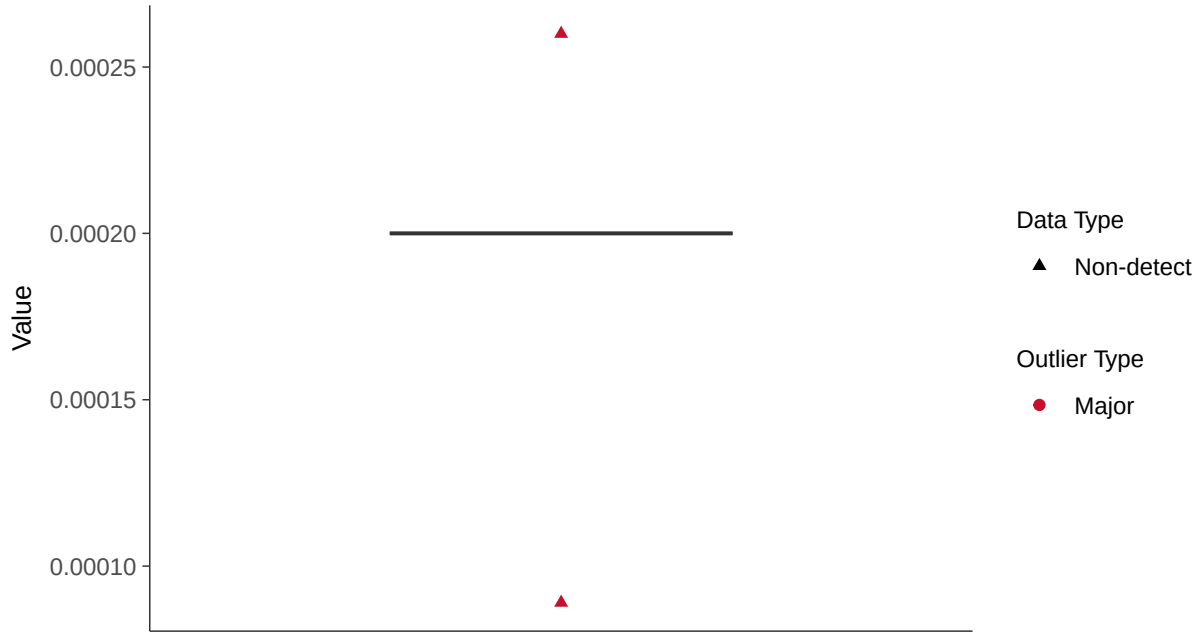
ID: 15_2_134





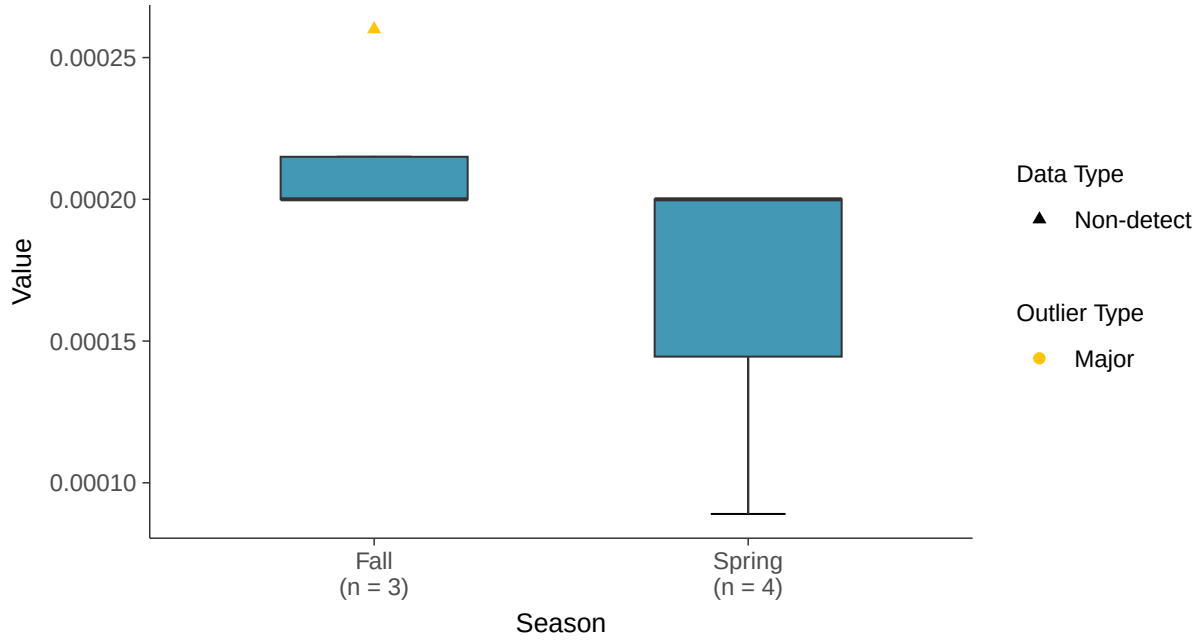
Boxplot

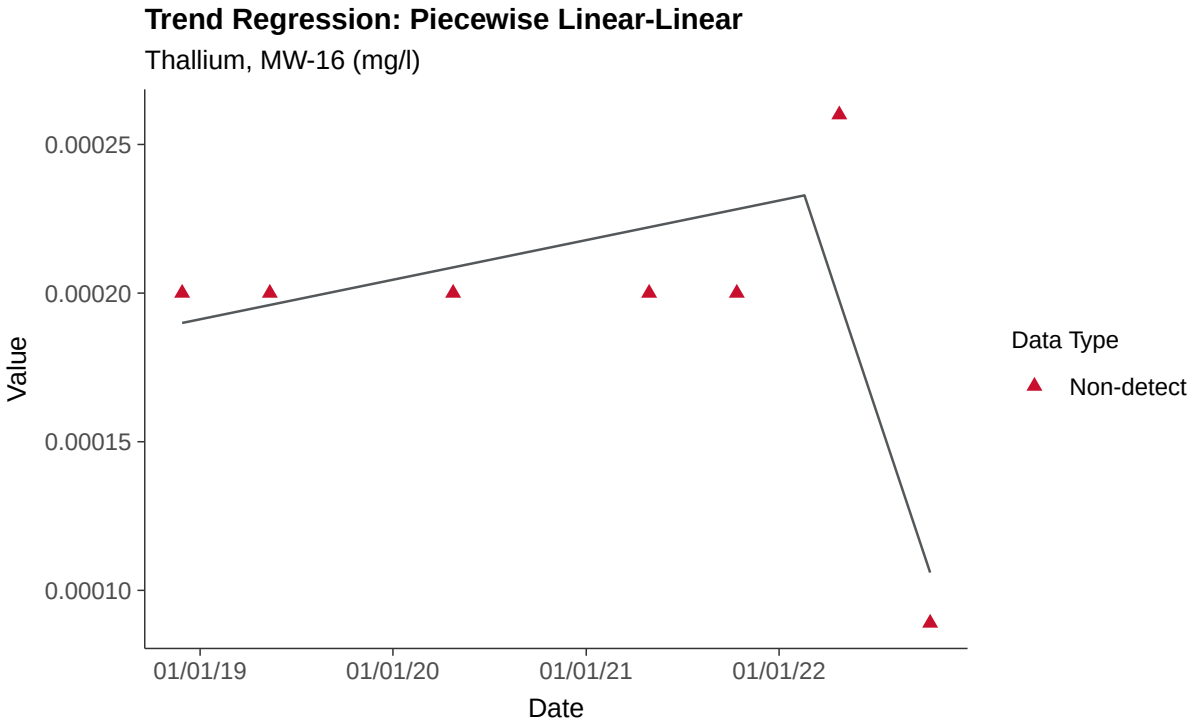
Thallium, MW-16 (mg/l)



Boxplot by Season

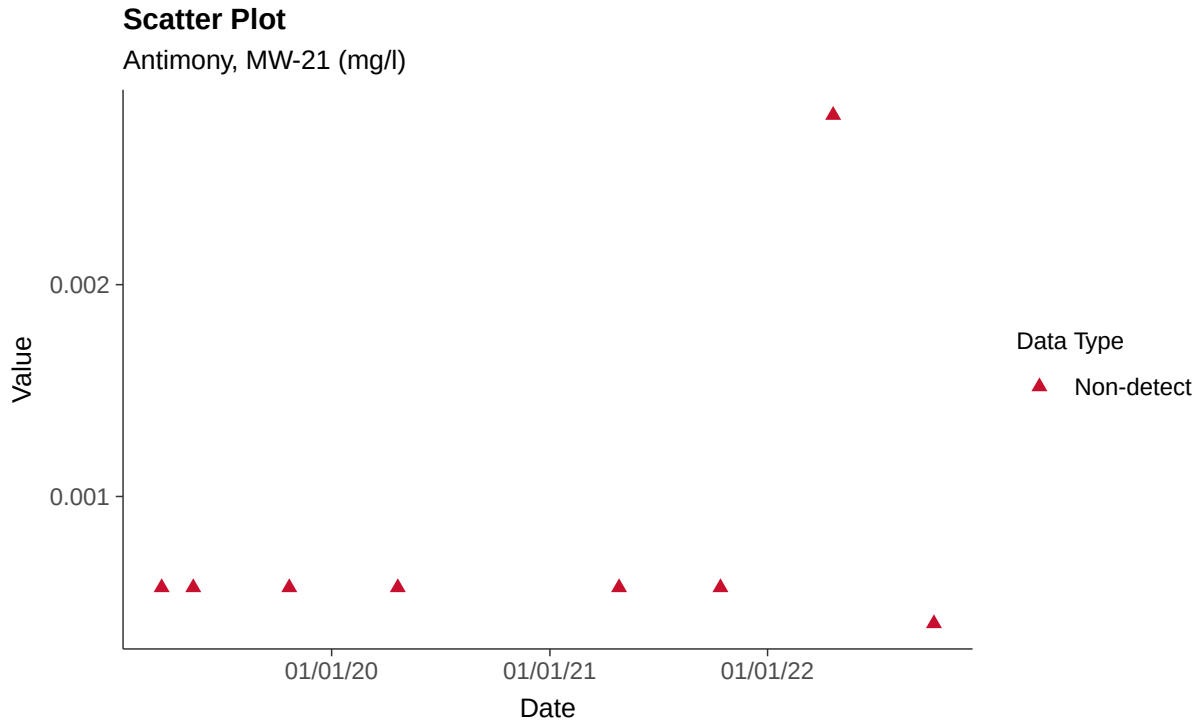
Thallium, MW-16 (mg/l)

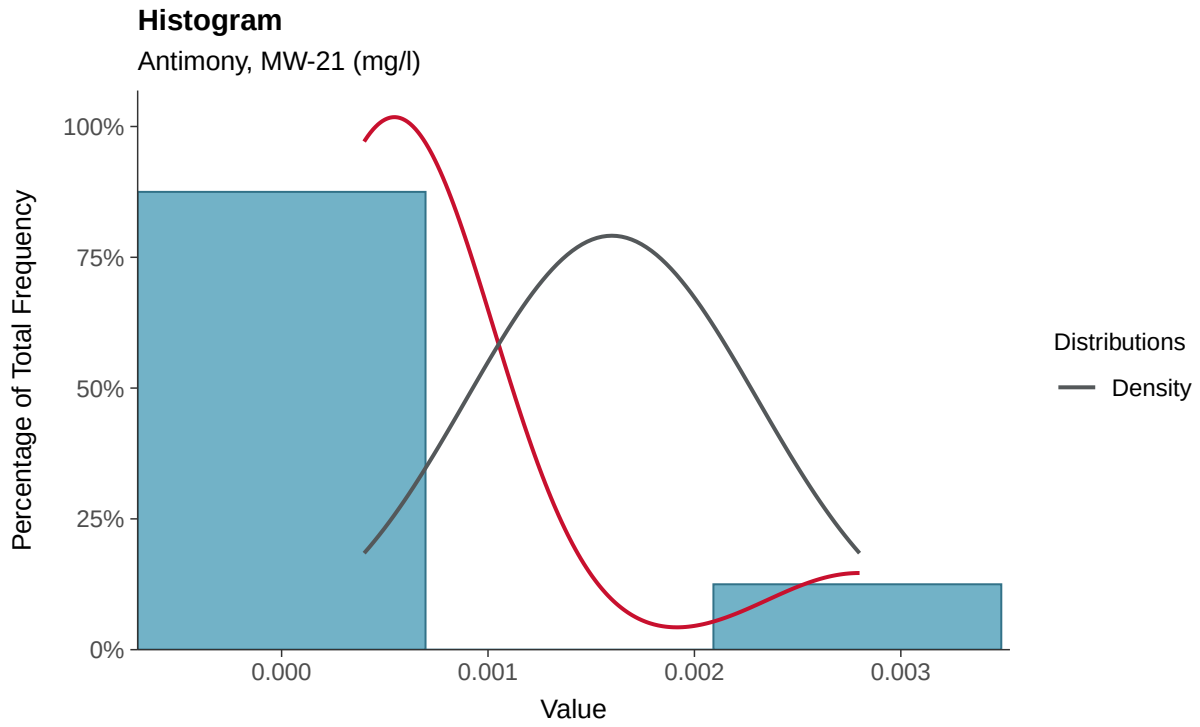



Trend Regression: Piecewise Linear-Linear
Thallium, MW-16 (mg/l)
0.00025
0.00020
0.00015
0.00010
Value
01/01/19
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Antimony, MW-21

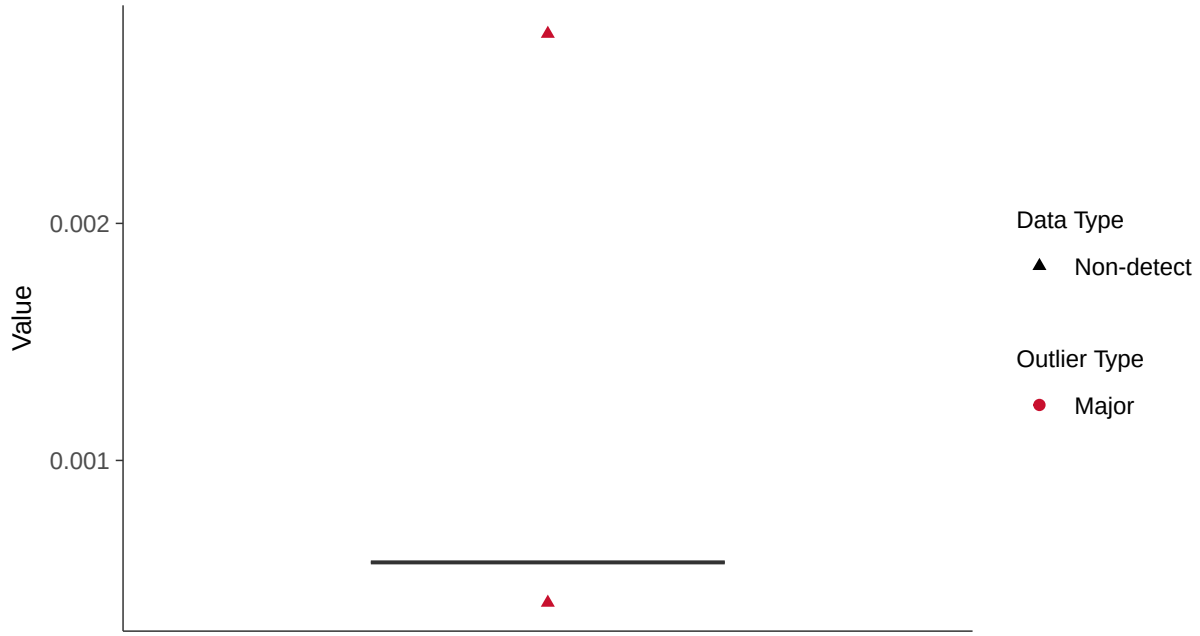
ID: 16_2_104





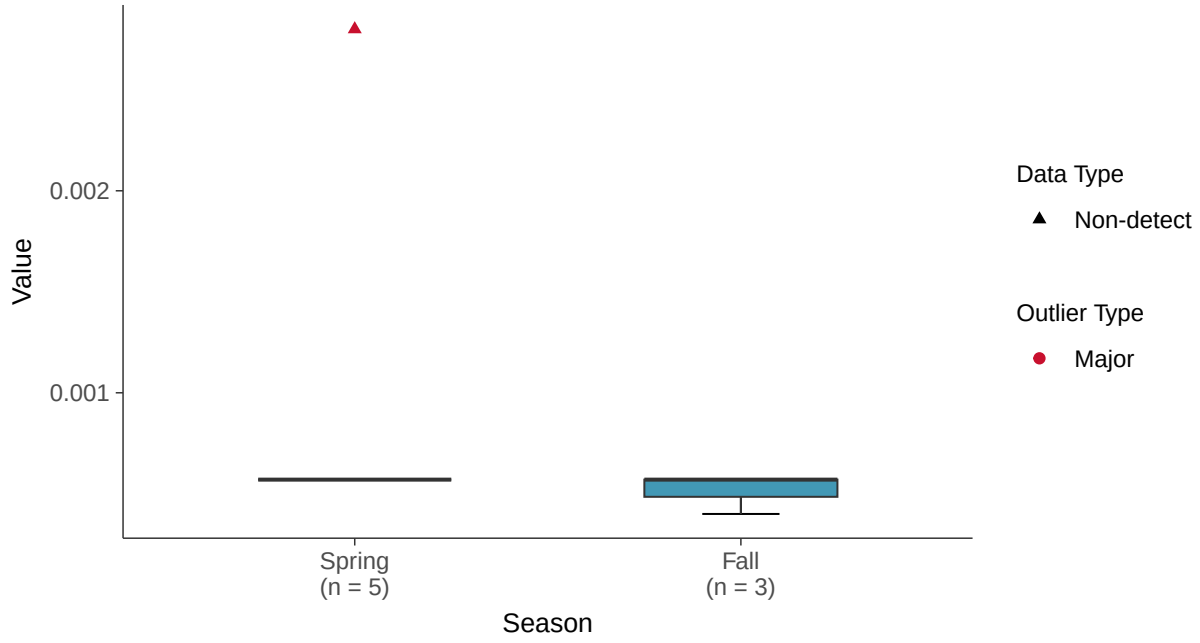
Boxplot

Antimony, MW-21 (mg/l)



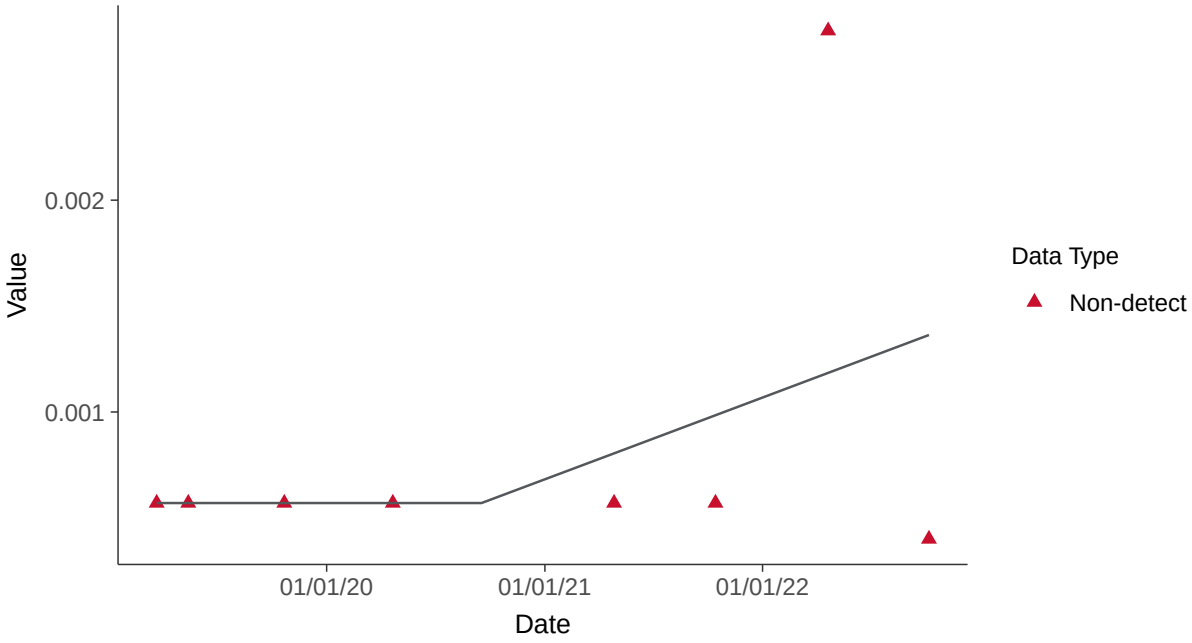
Boxplot by Season

Antimony, MW-21 (mg/l)



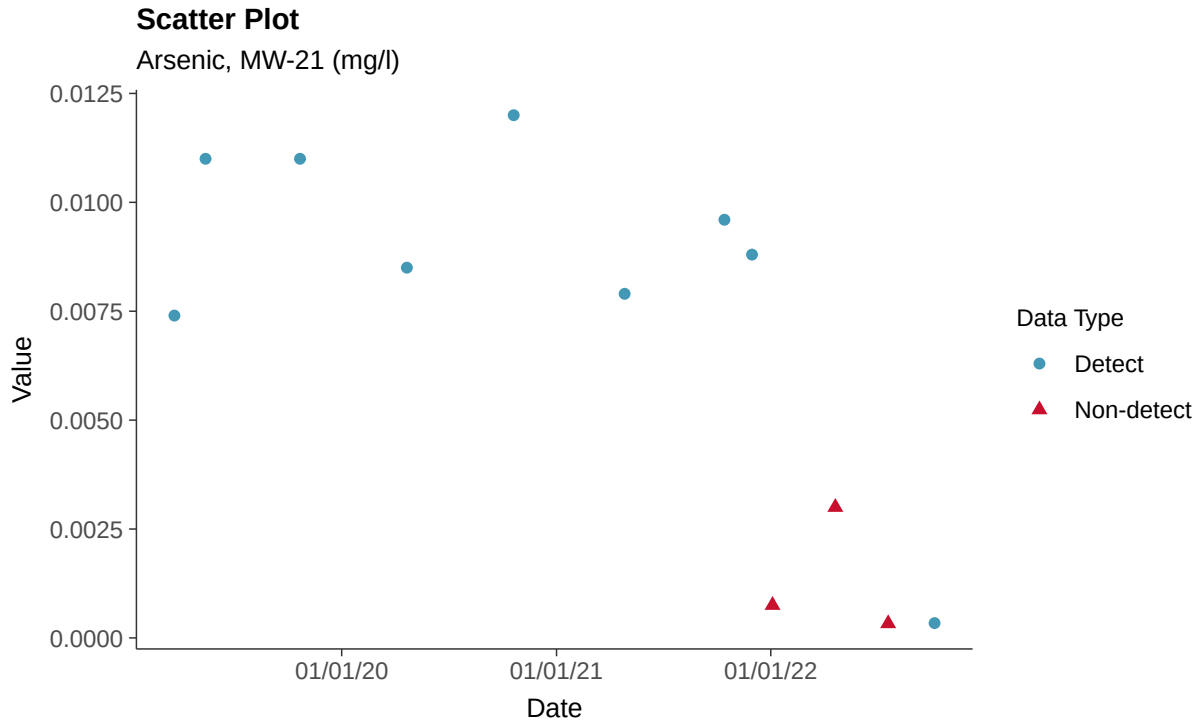
Trend Regression: Piecewise Linear-Linear

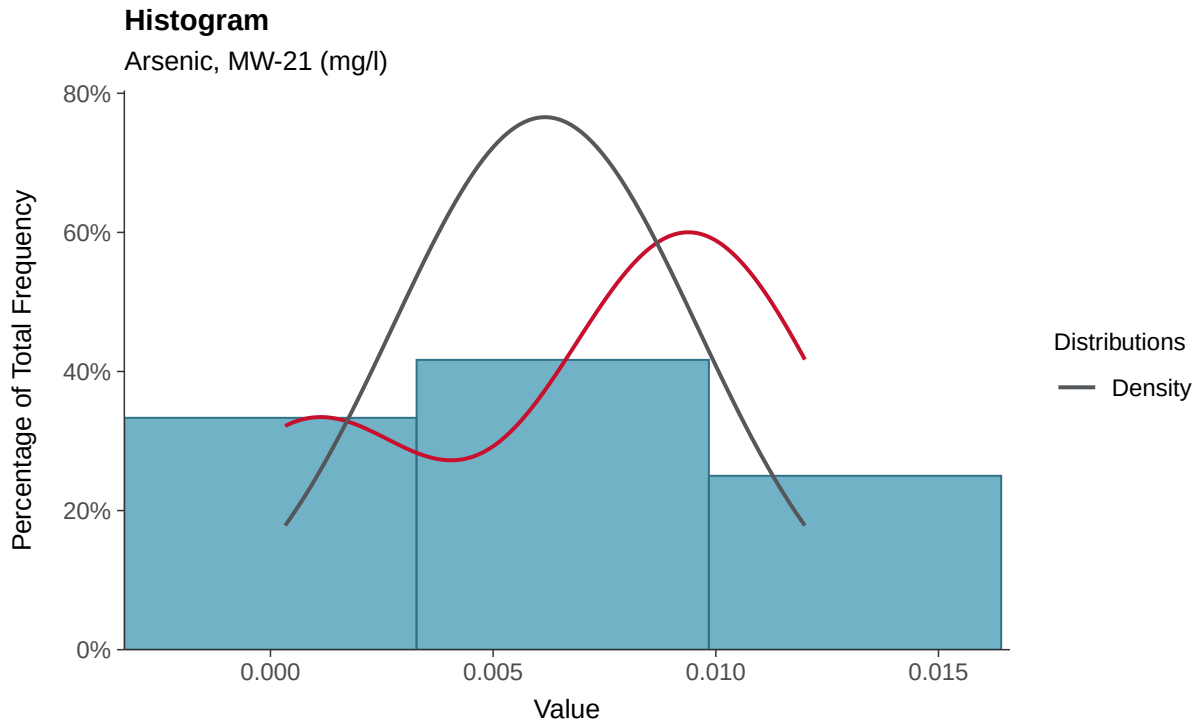
Antimony, MW-21 (mg/l)



Appendix IV: Arsenic, MW-21

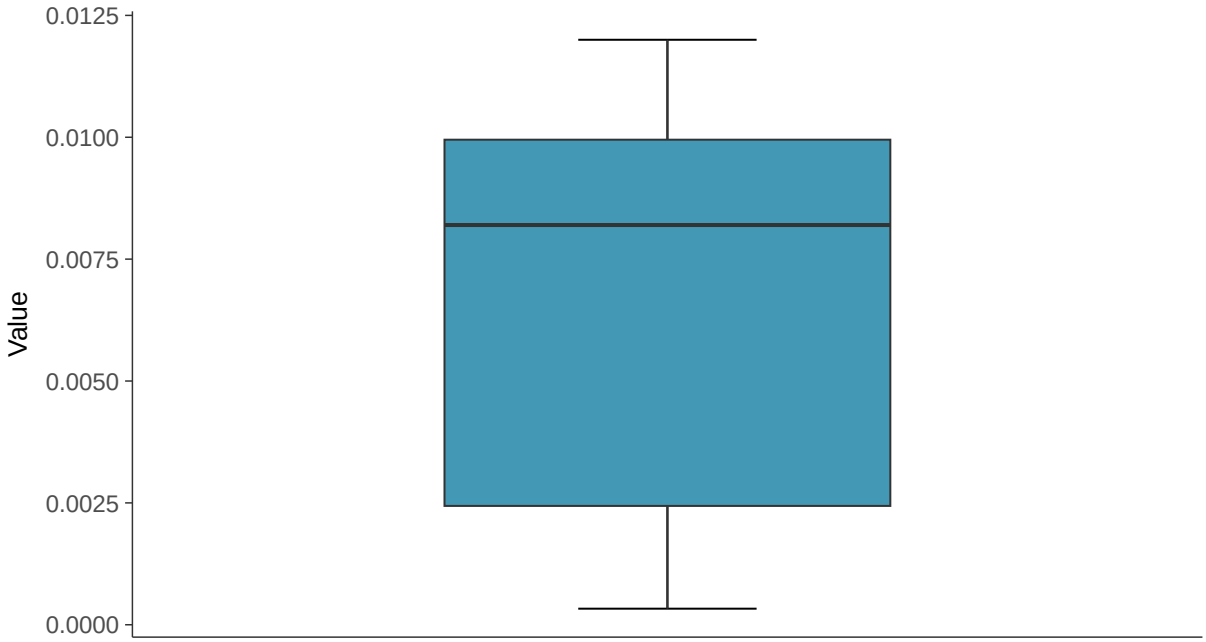
ID: 16_2_105





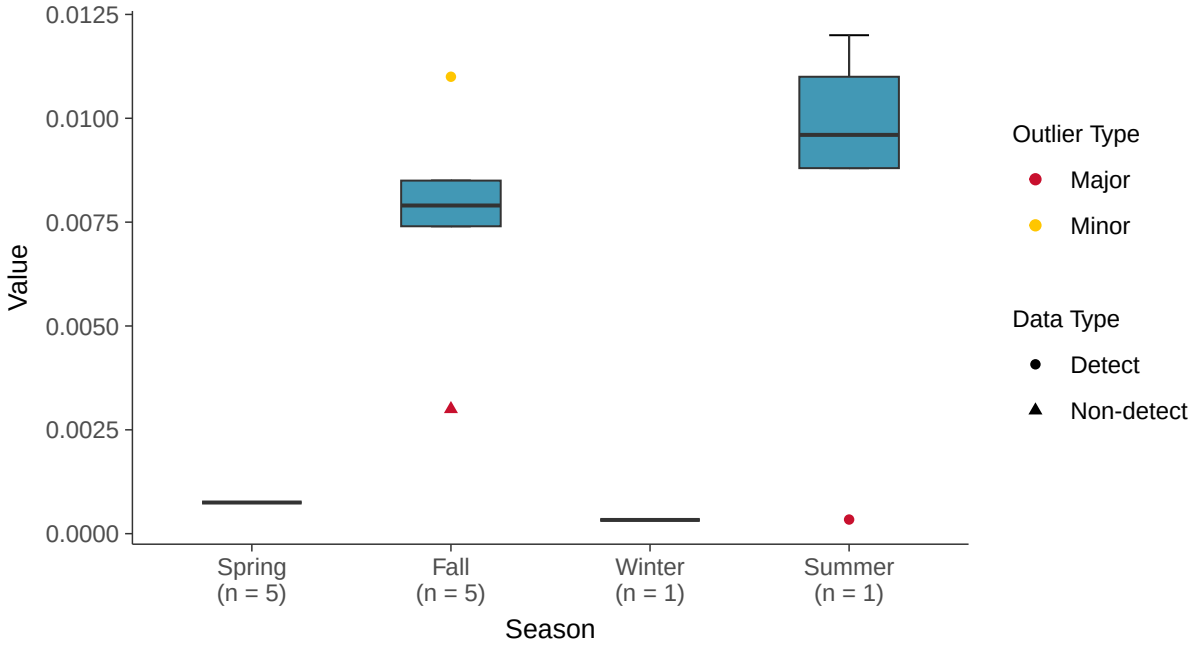
Boxplot

Arsenic, MW-21 (mg/l)



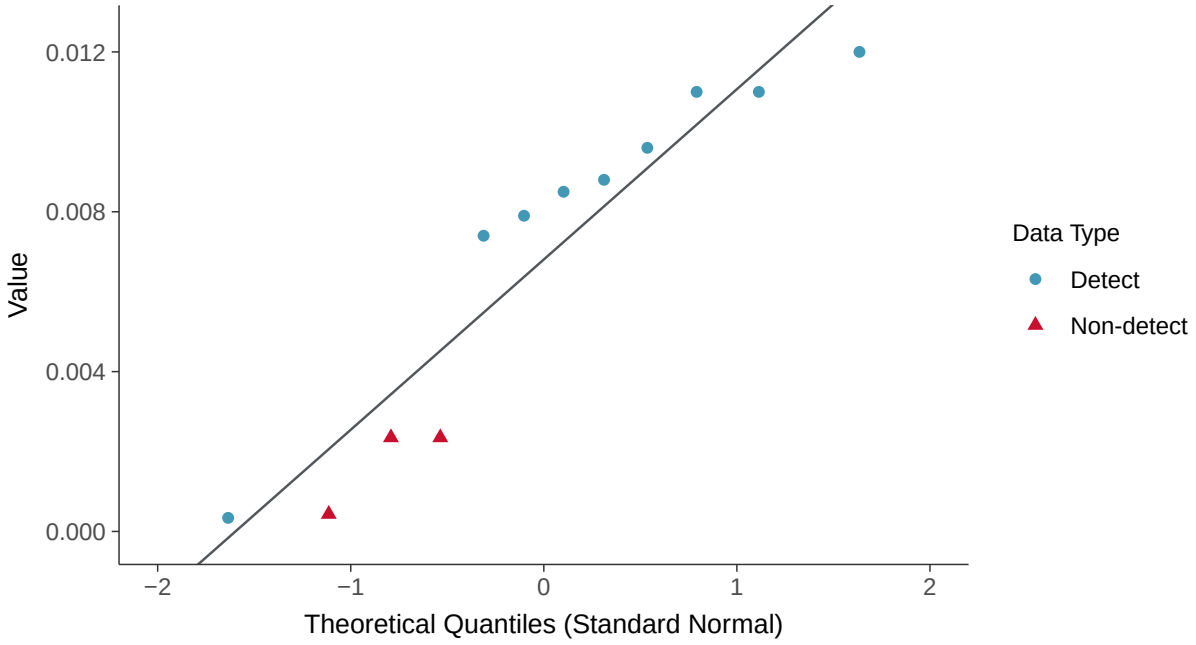
Boxplot by Season

Arsenic, MW-21 (mg/l)



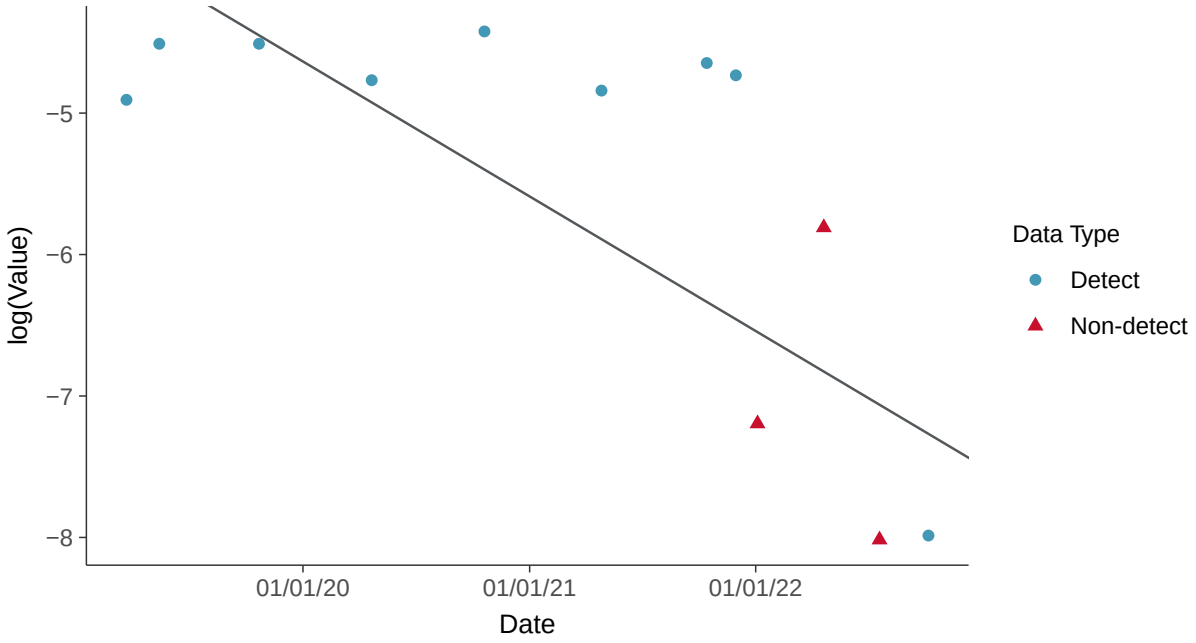
Normal Q-Q plot using ROS Imputed Estimates

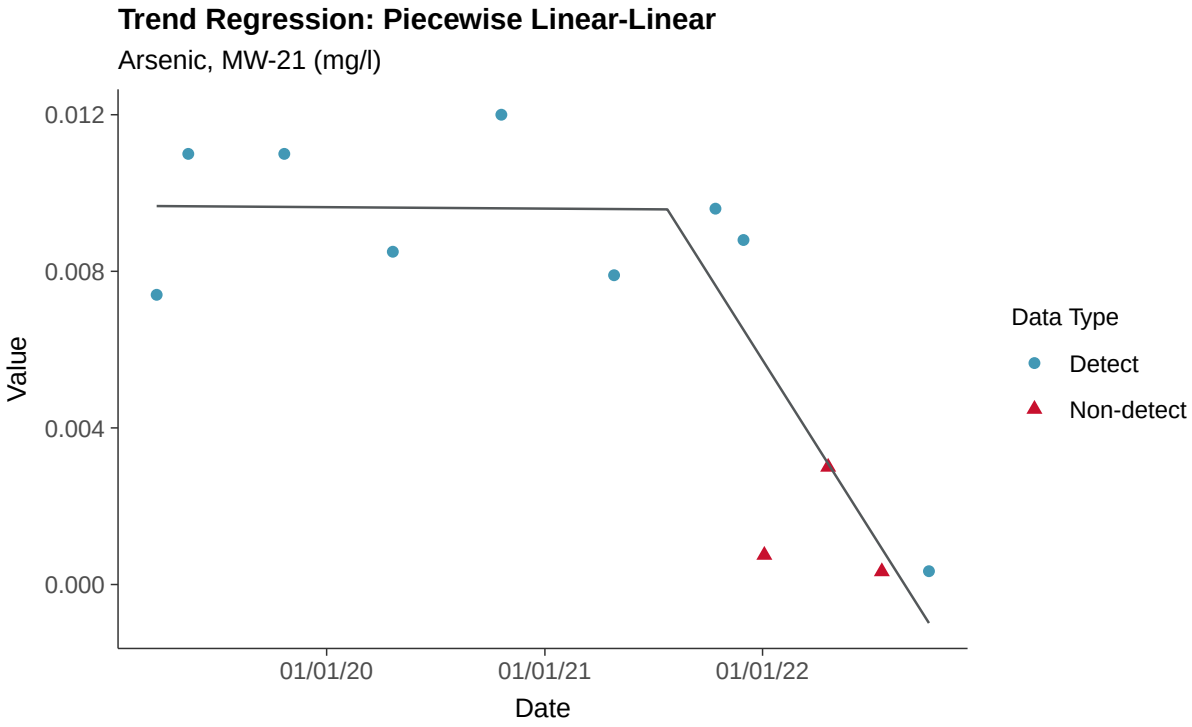
Arsenic, MW-21 (mg/l)



Trend Regression: Lognormal MLE

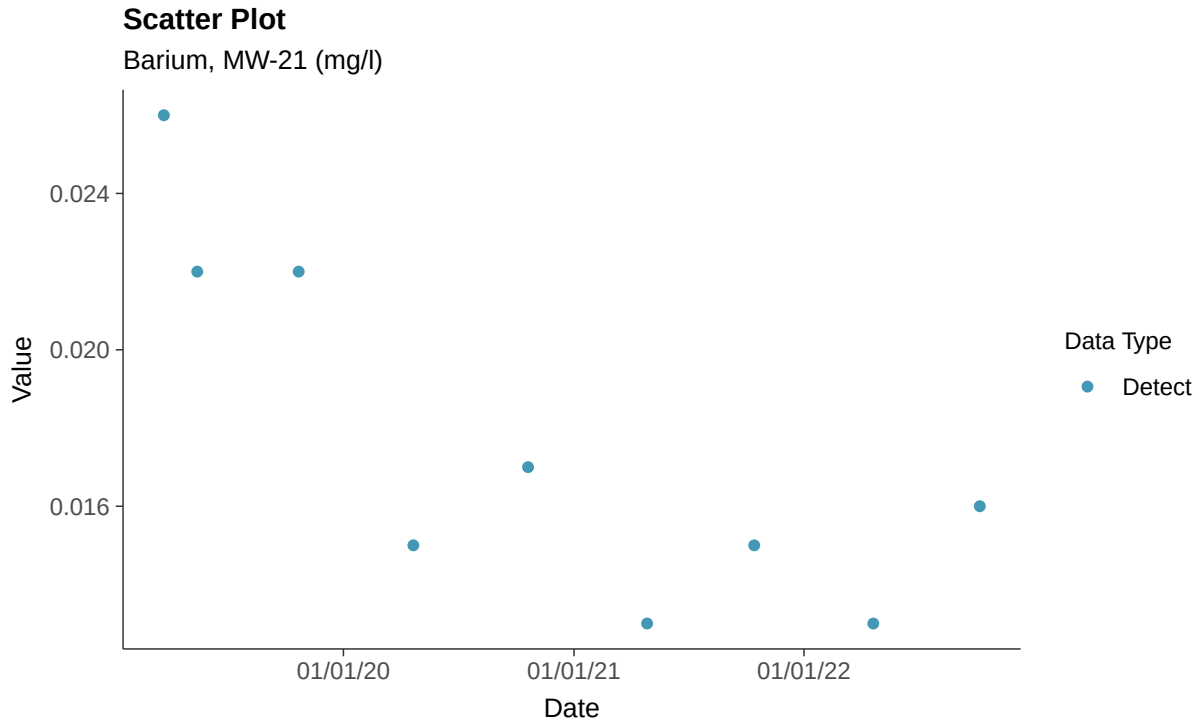
Arsenic, MW-21 (mg/l)

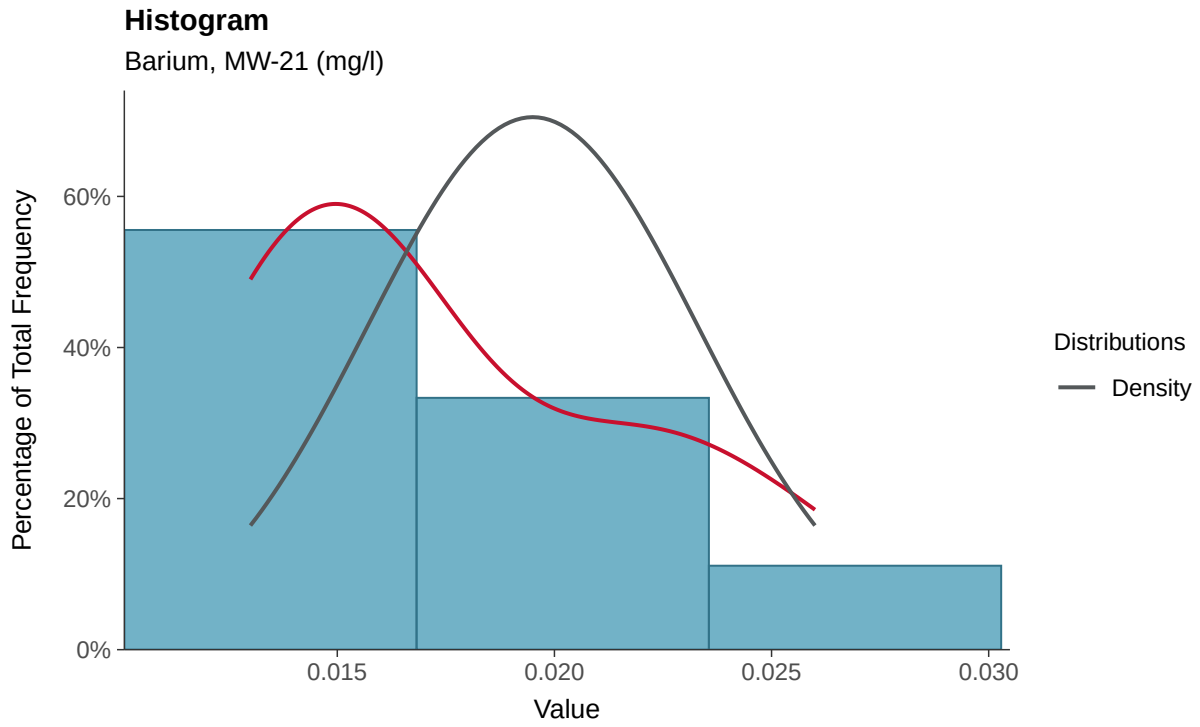



Trend Regression: Piecewise Linear-Linear
Arsenic, MW-21 (mg/l)
0.012
0.008
0.004
0.000
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-21

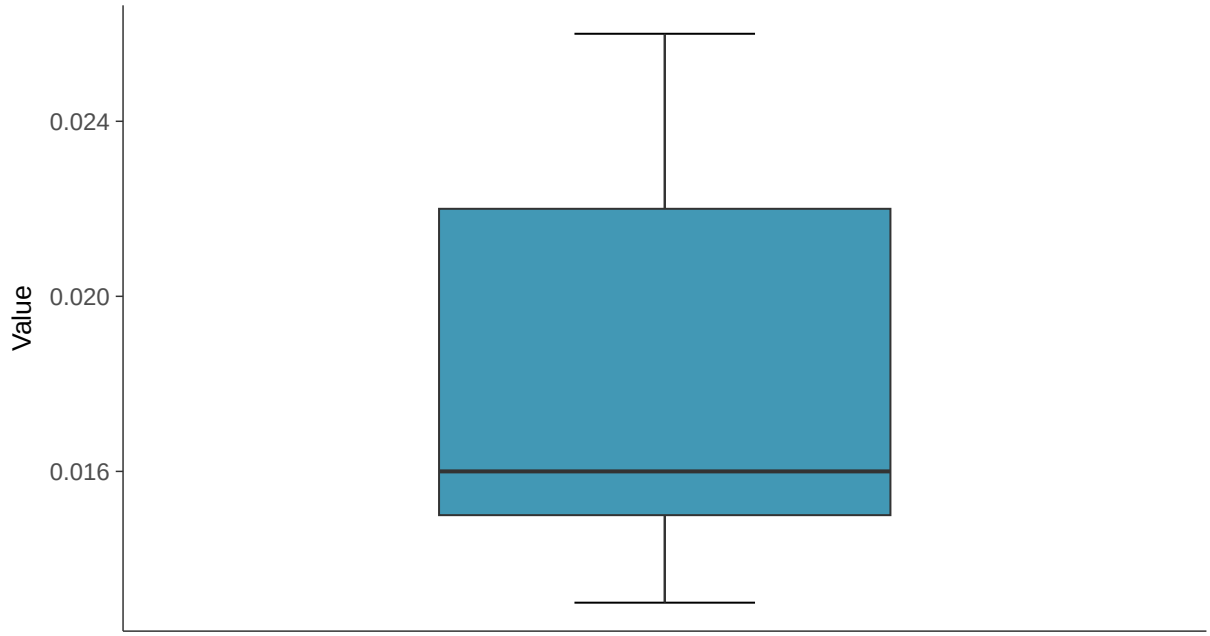
ID: 16_2_106





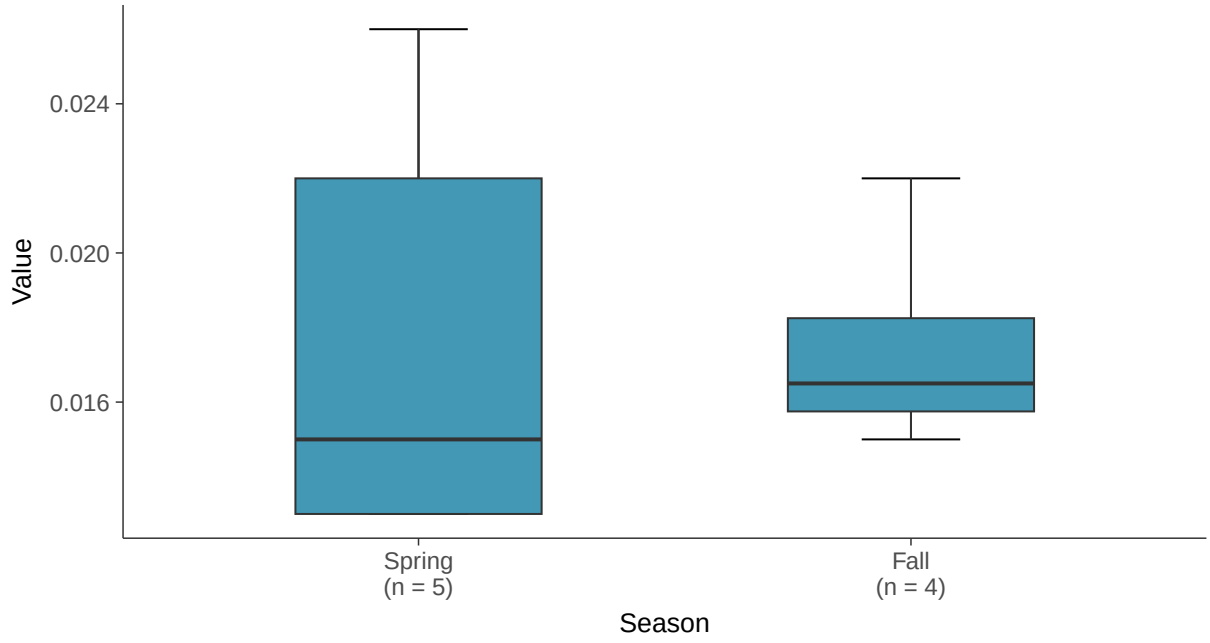
Boxplot

Barium, MW-21 (mg/l)



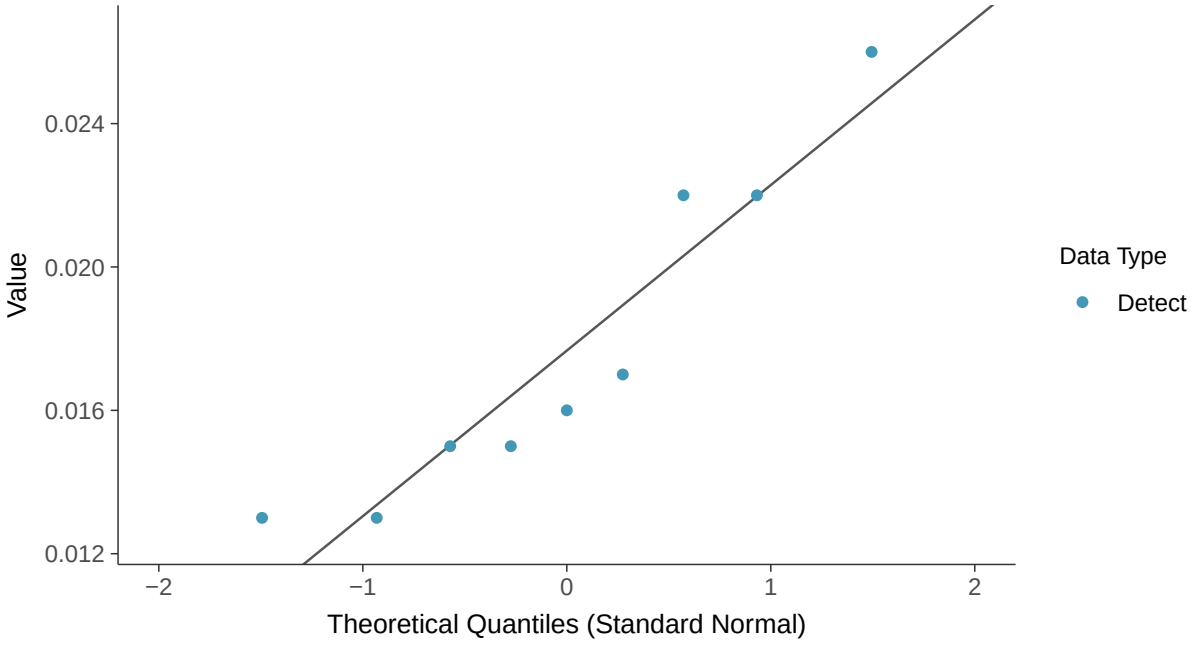
Boxplot by Season

Barium, MW-21 (mg/l)



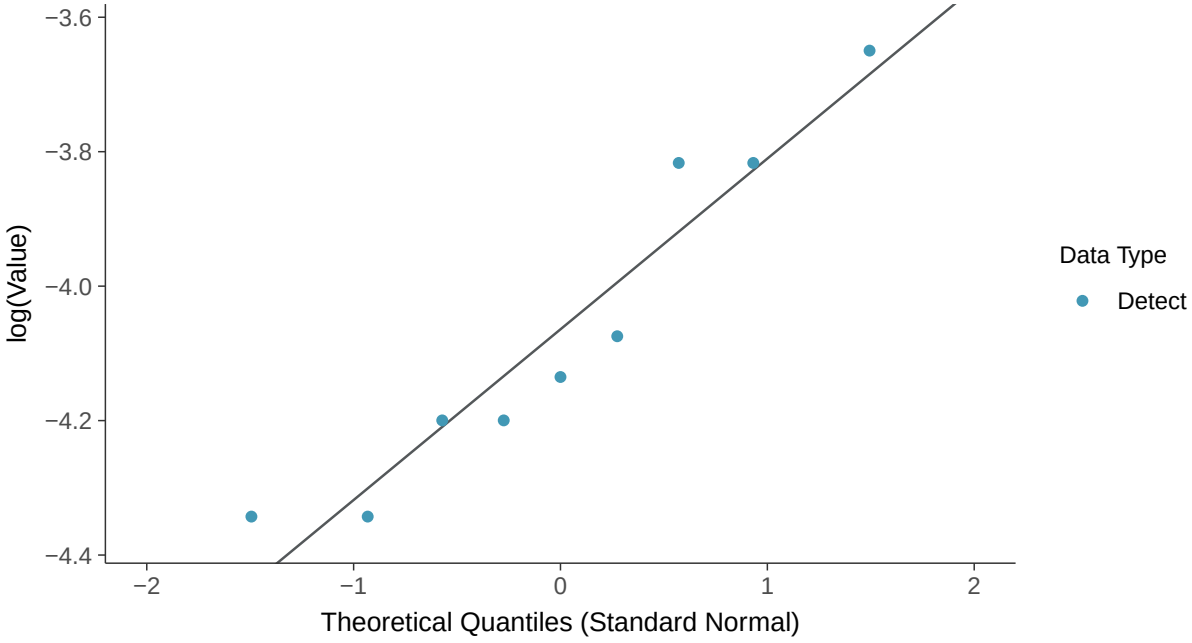
Normal Q-Q plot

Barium, MW-21 (mg/l)



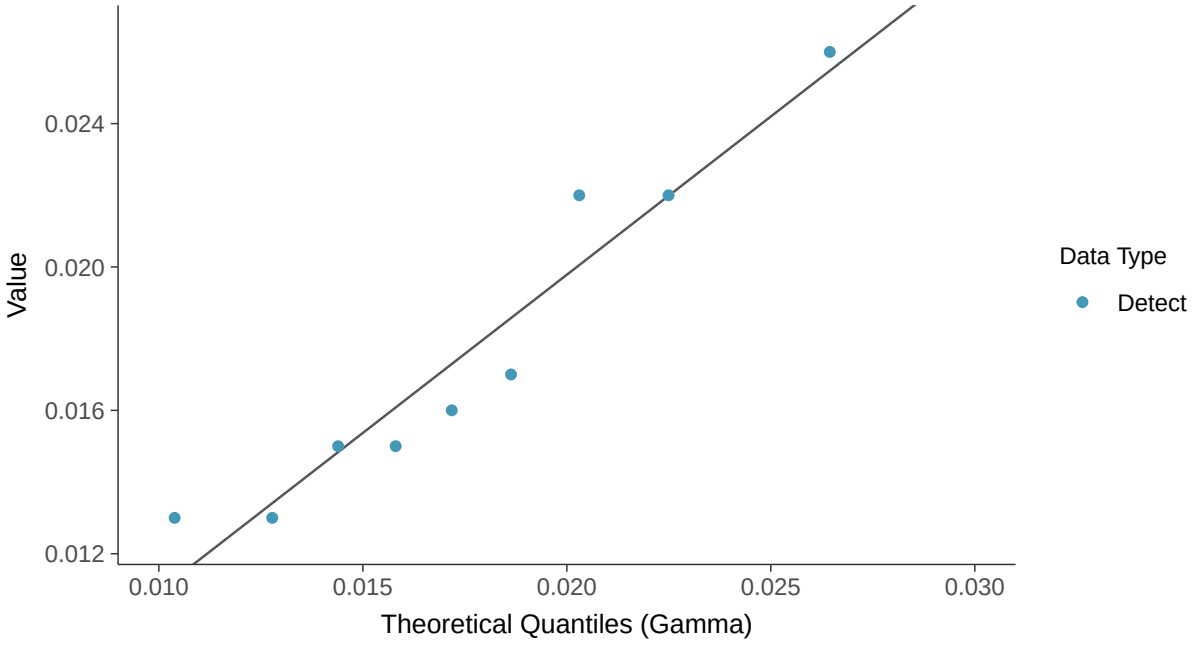
Lognormal Q-Q plot

Barium, MW-21 (mg/l)



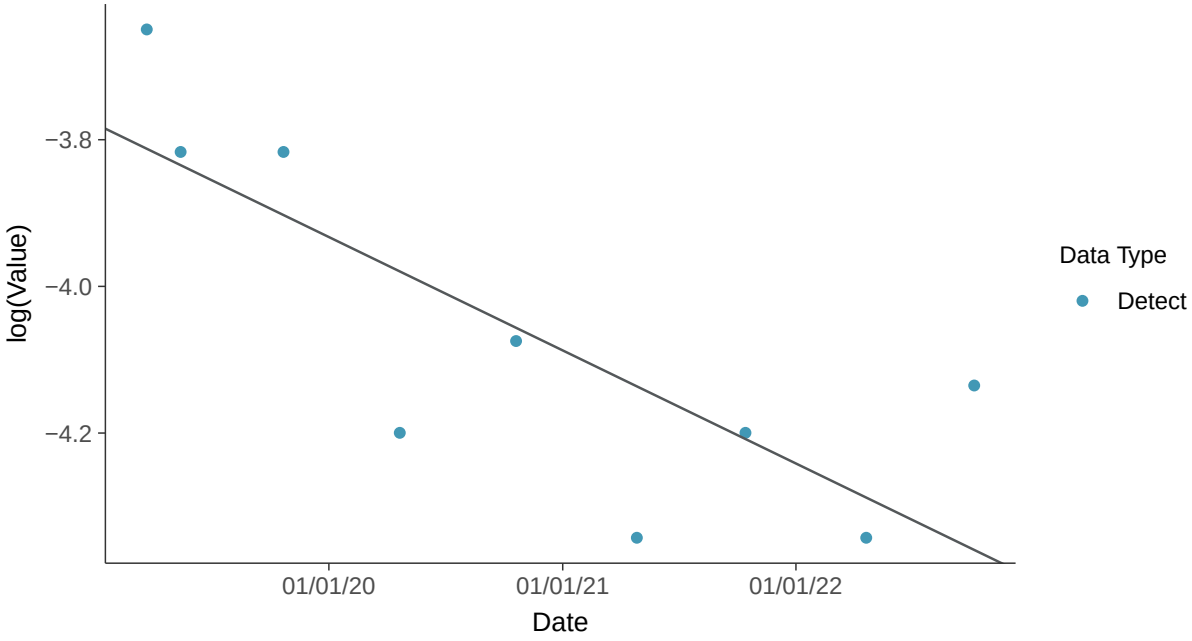
Gamma Q-Q plot

Barium, MW-21 (mg/l)



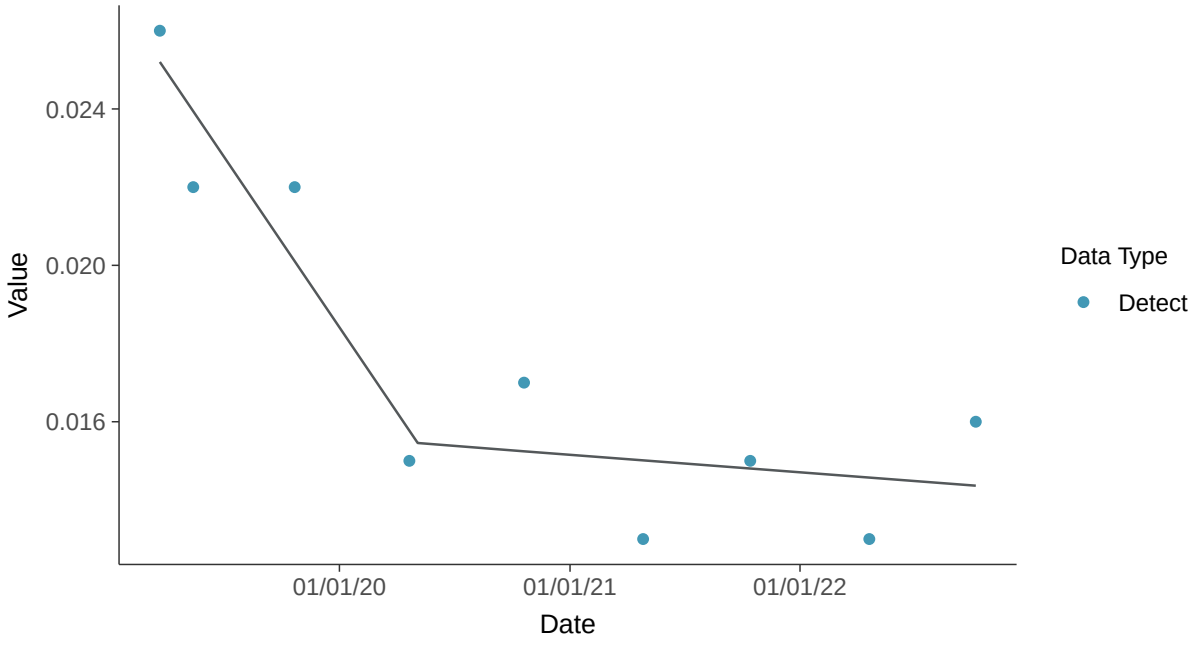
Trend Regression: Lognormal MLE

Barium, MW-21 (mg/l)



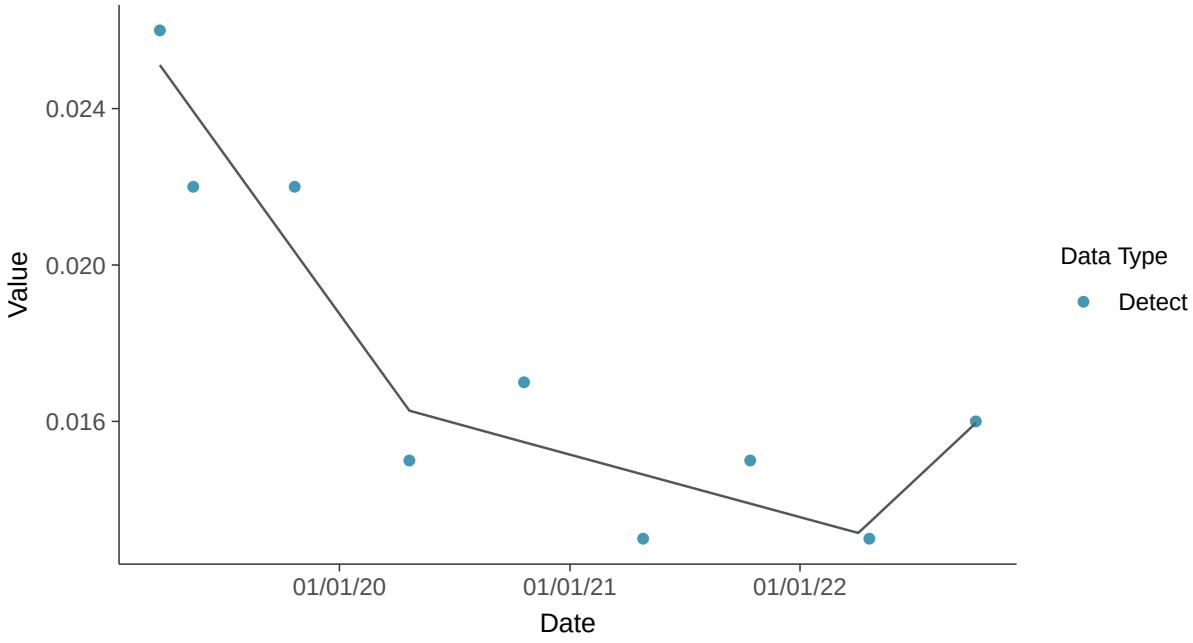
Trend Regression: Piecewise Linear-Linear

Barium, MW-21 (mg/l)



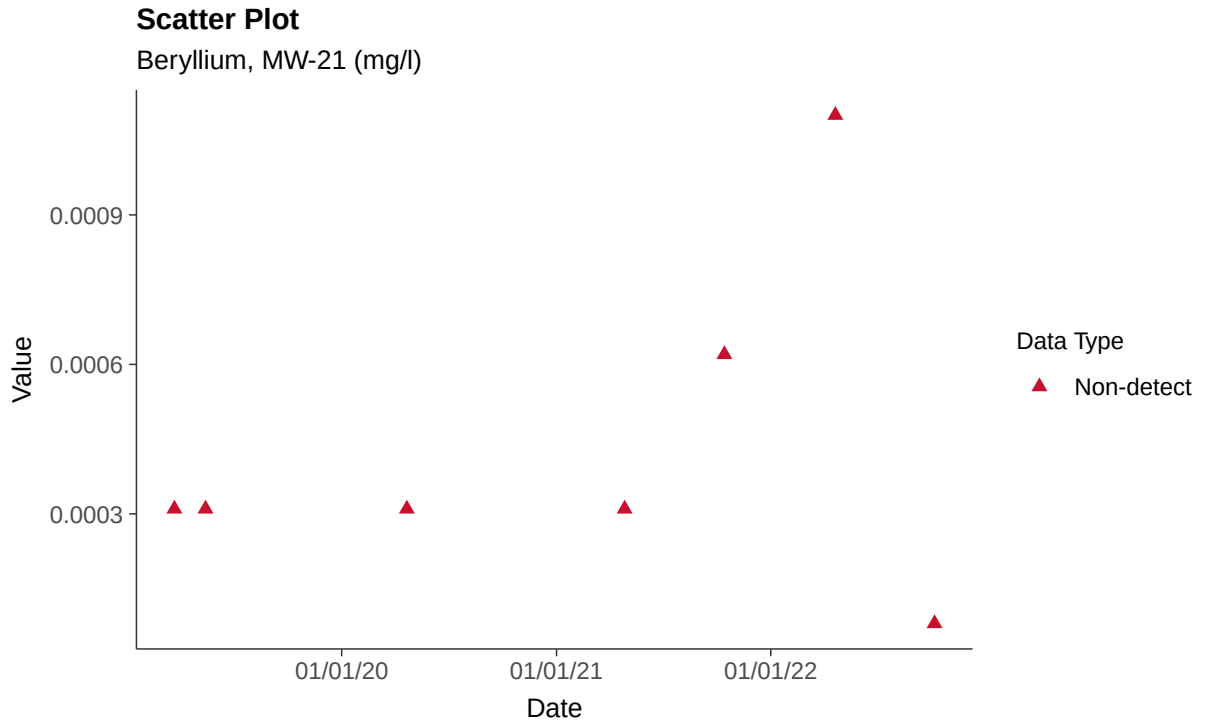
Trend Regression: Piecewise Linear-Linear-Linear

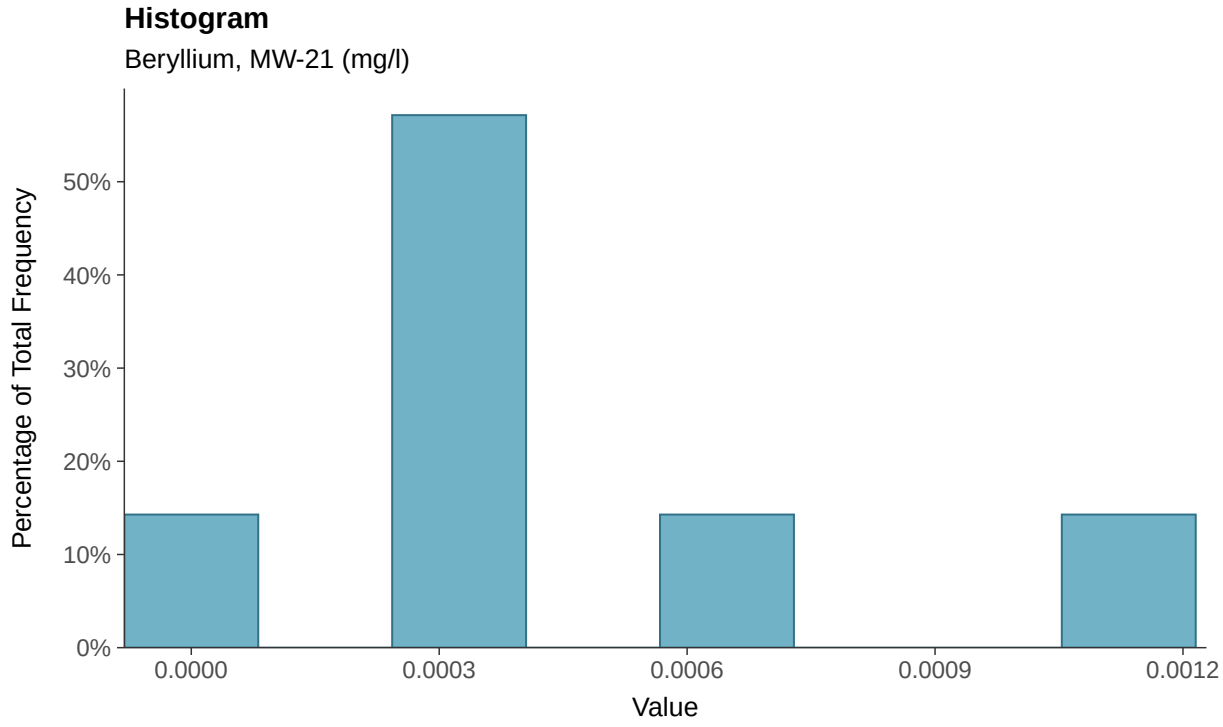
Barium, MW-21 (mg/l)



Appendix IV: Beryllium, MW-21

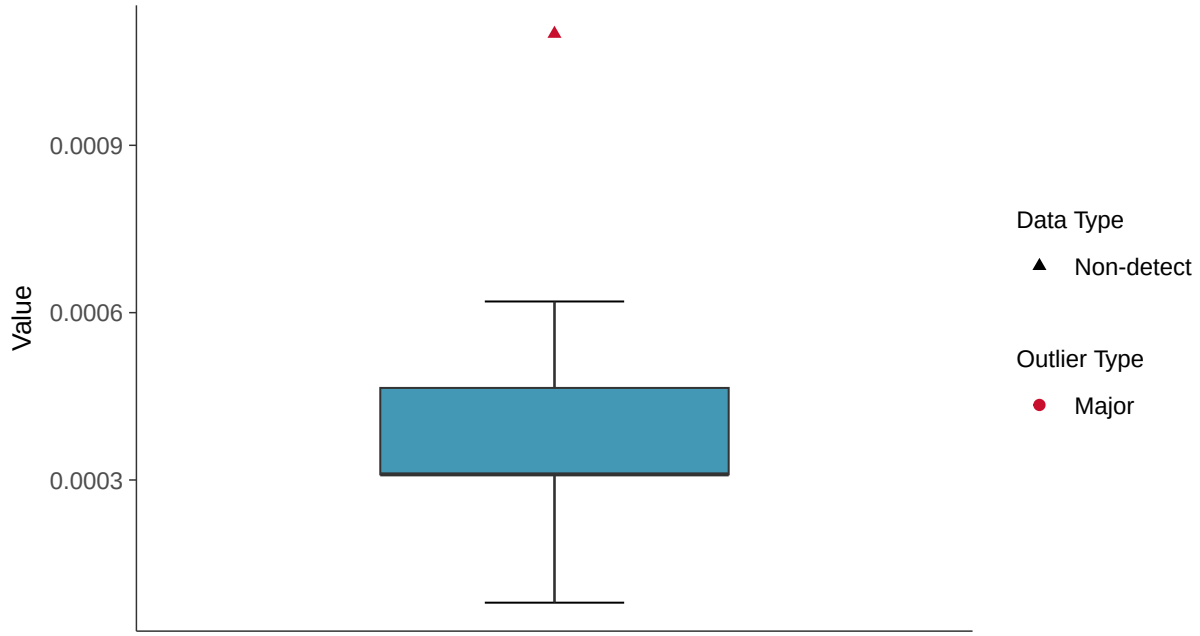
ID: 16_2_107





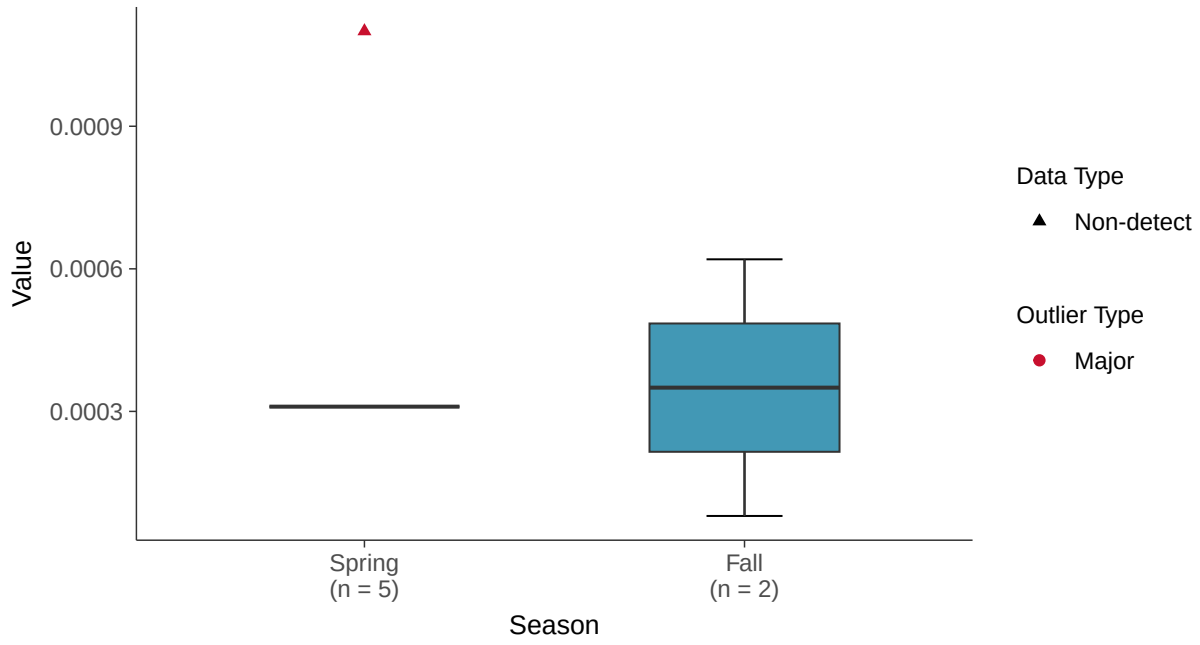
Boxplot

Beryllium, MW-21 (mg/l)



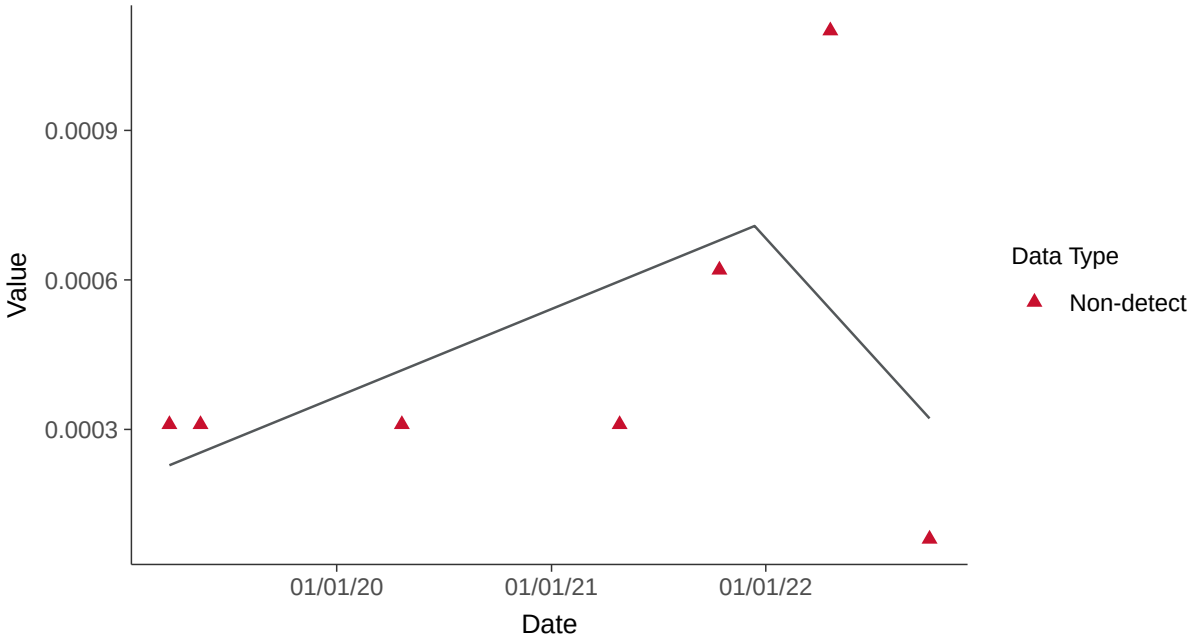
Boxplot by Season

Beryllium, MW-21 (mg/l)



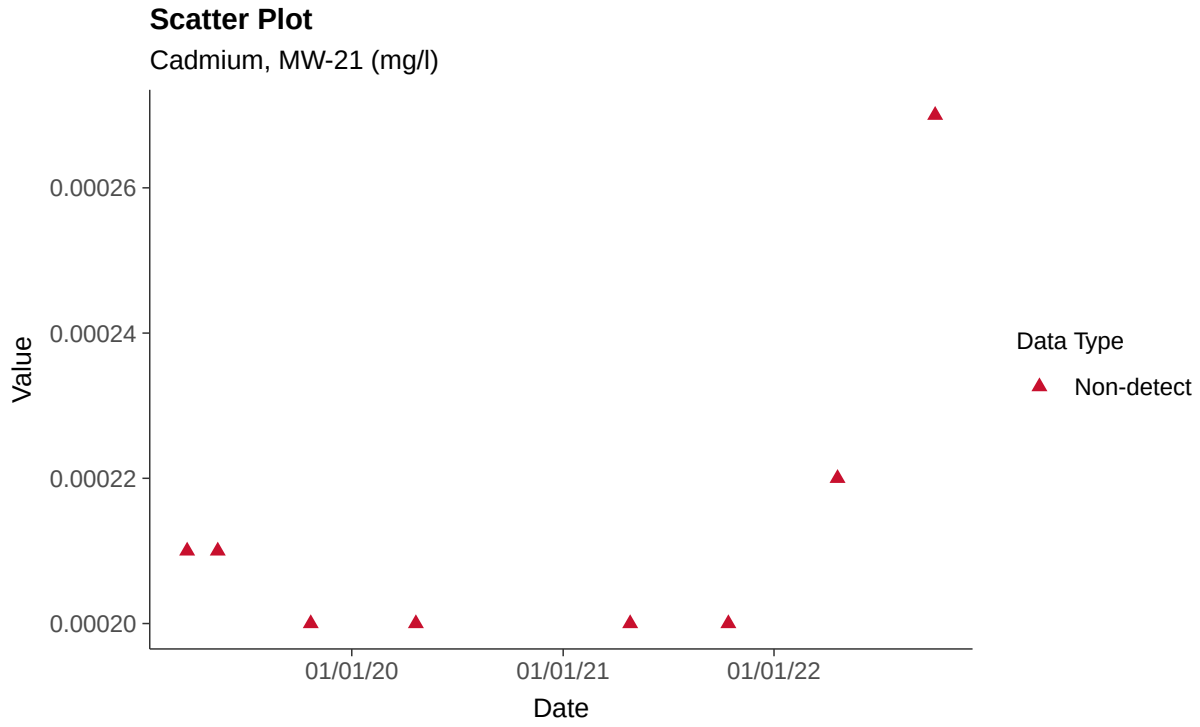
Trend Regression: Piecewise Linear-Linear

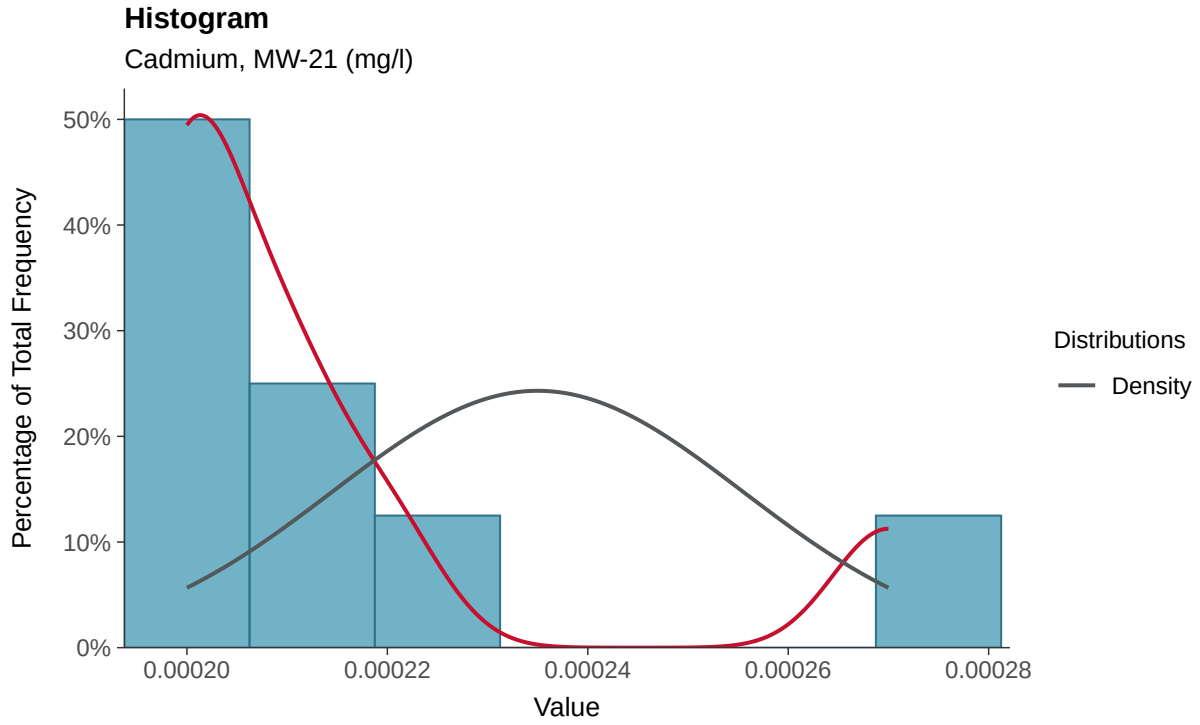
Beryllium, MW-21 (mg/l)



Appendix IV: Cadmium, MW-21

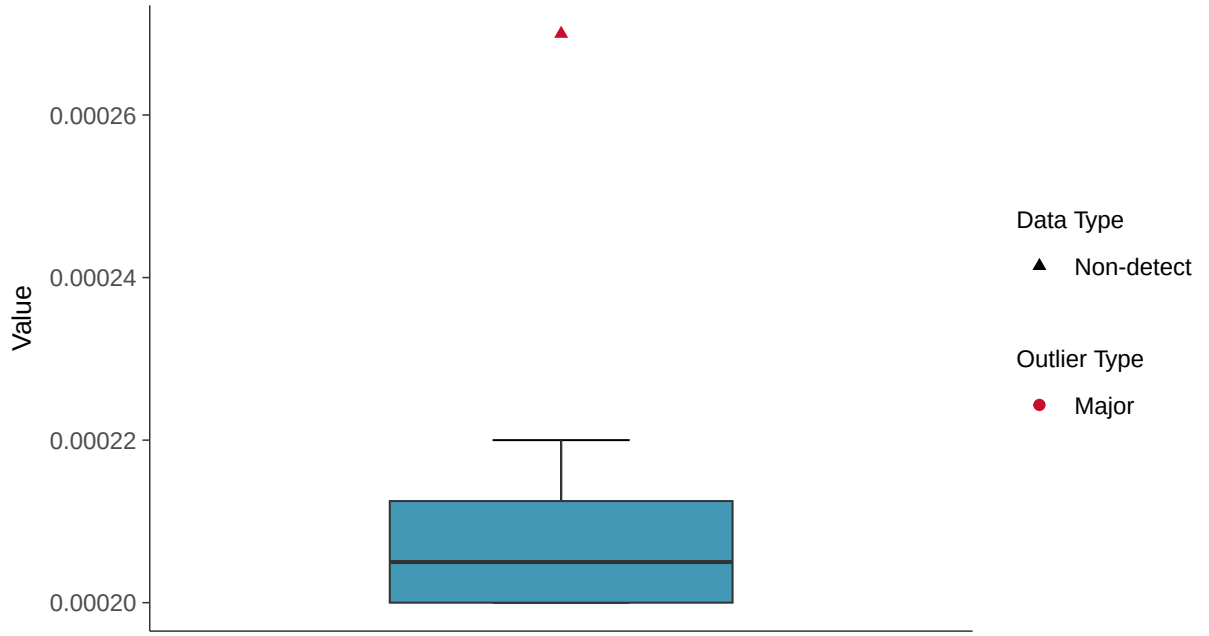
ID: 16_2_109





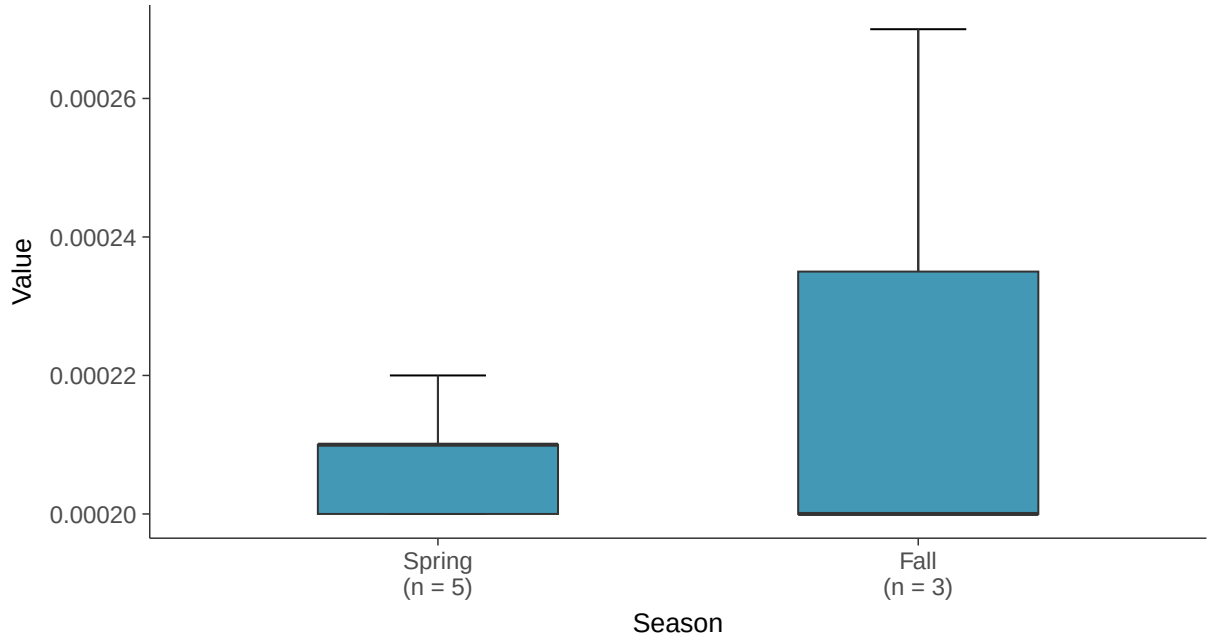
Boxplot

Cadmium, MW-21 (mg/l)



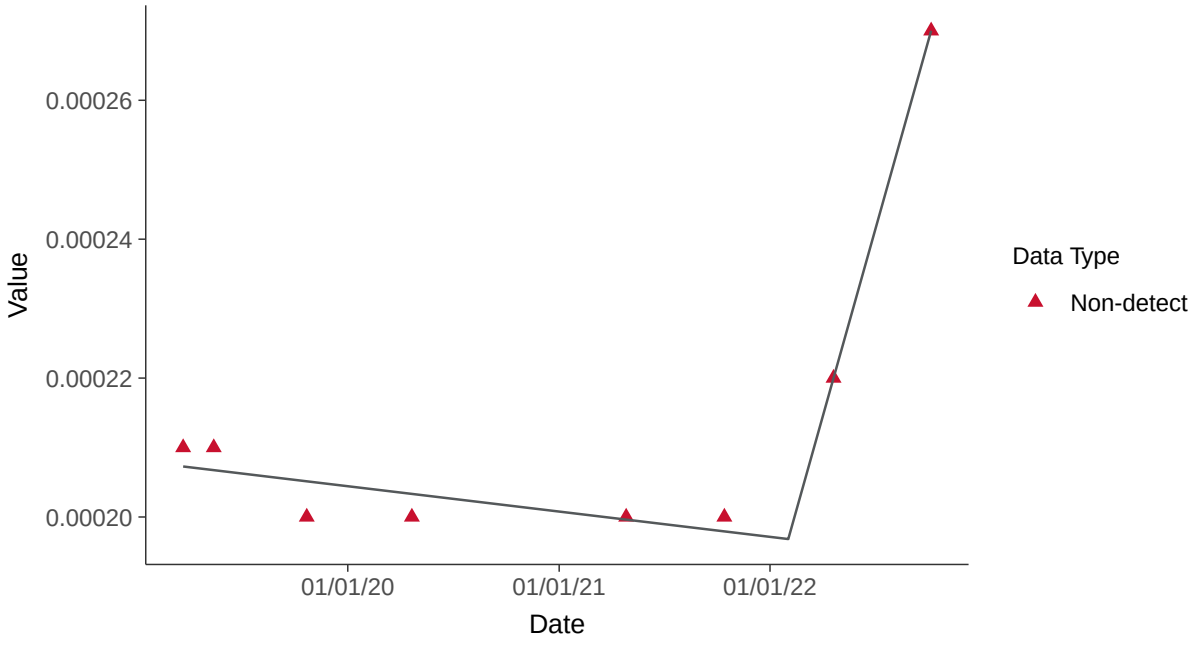
Boxplot by Season

Cadmium, MW-21 (mg/l)



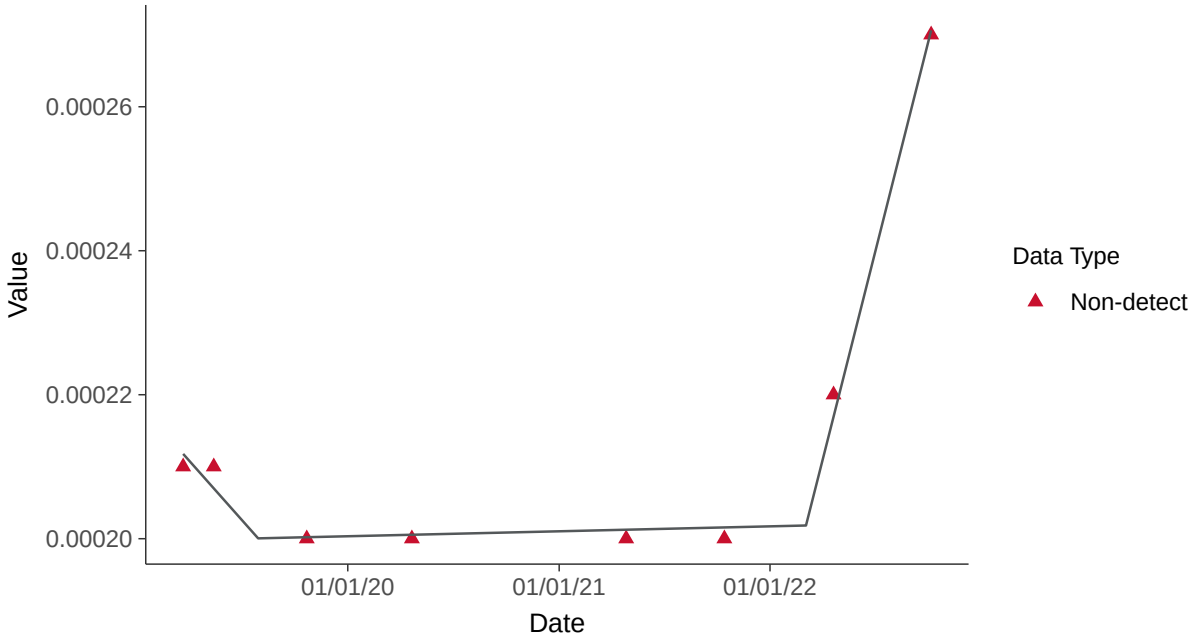
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-21 (mg/l)



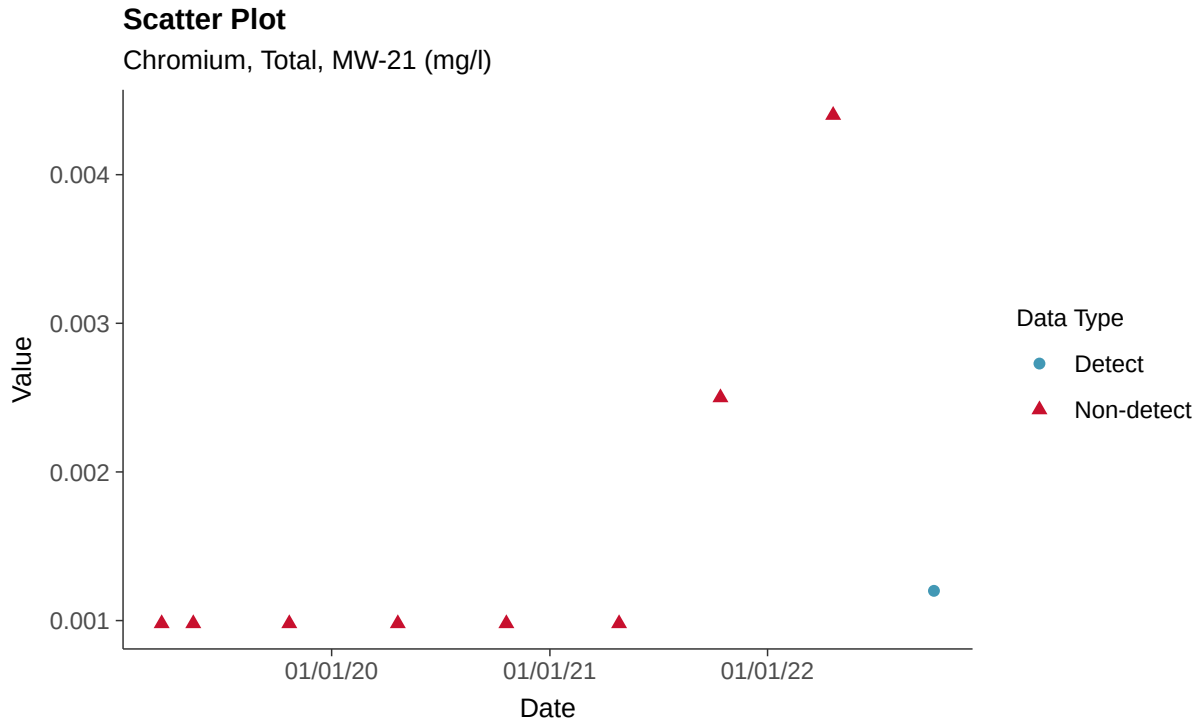
Trend Regression: Piecewise Linear-Linear-Linear

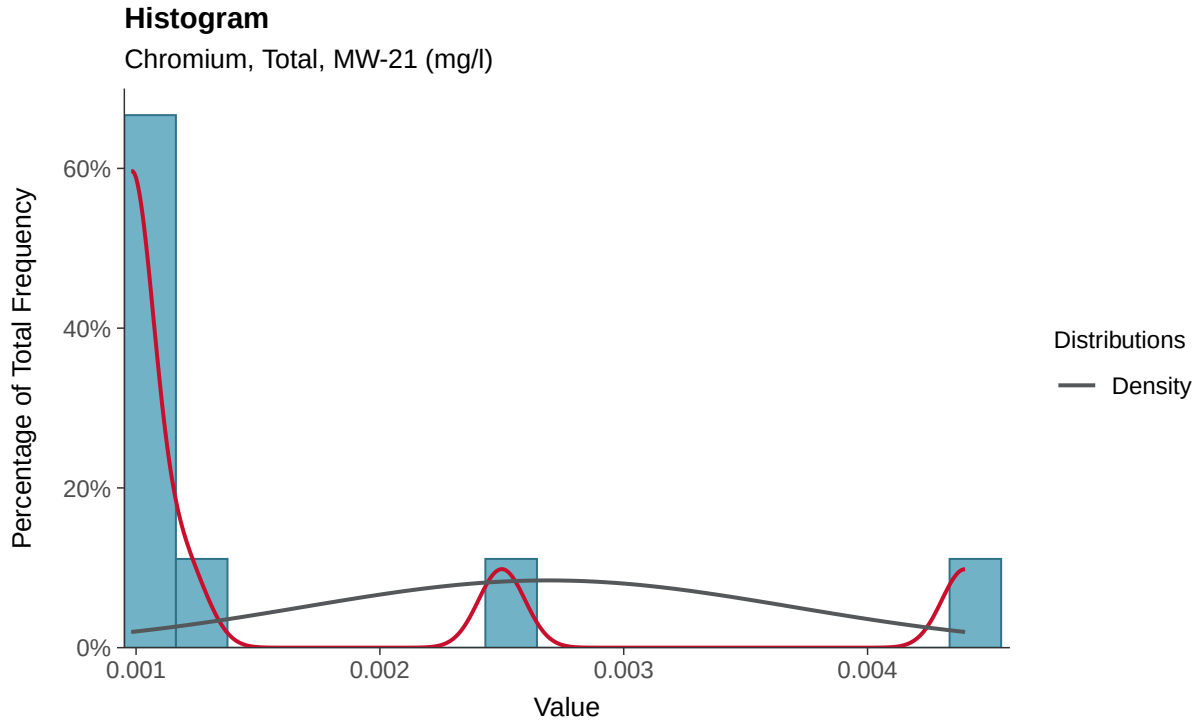
Cadmium, MW-21 (mg/l)



Appendix IV: Chromium, Total, MW-21

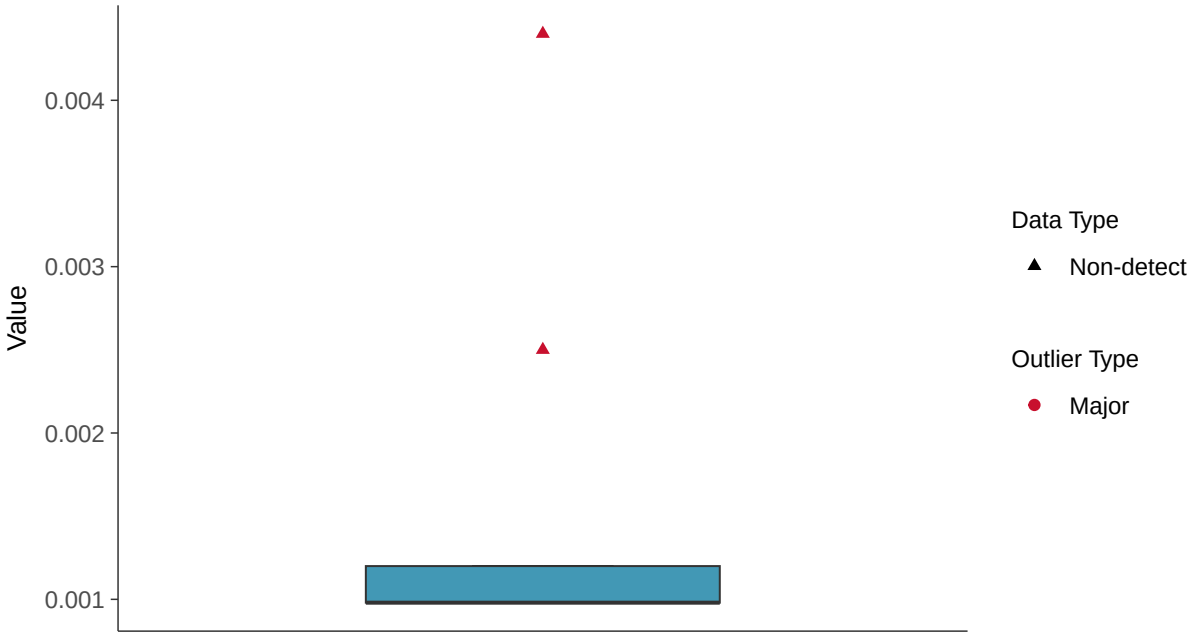
ID: 16_2_112





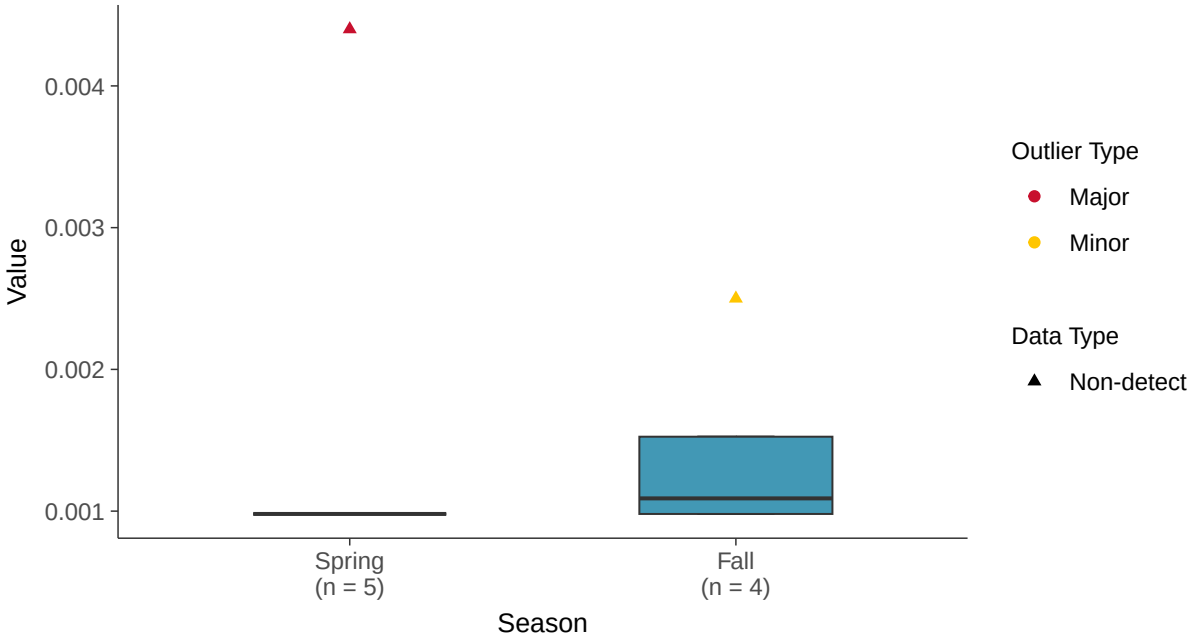
Boxplot

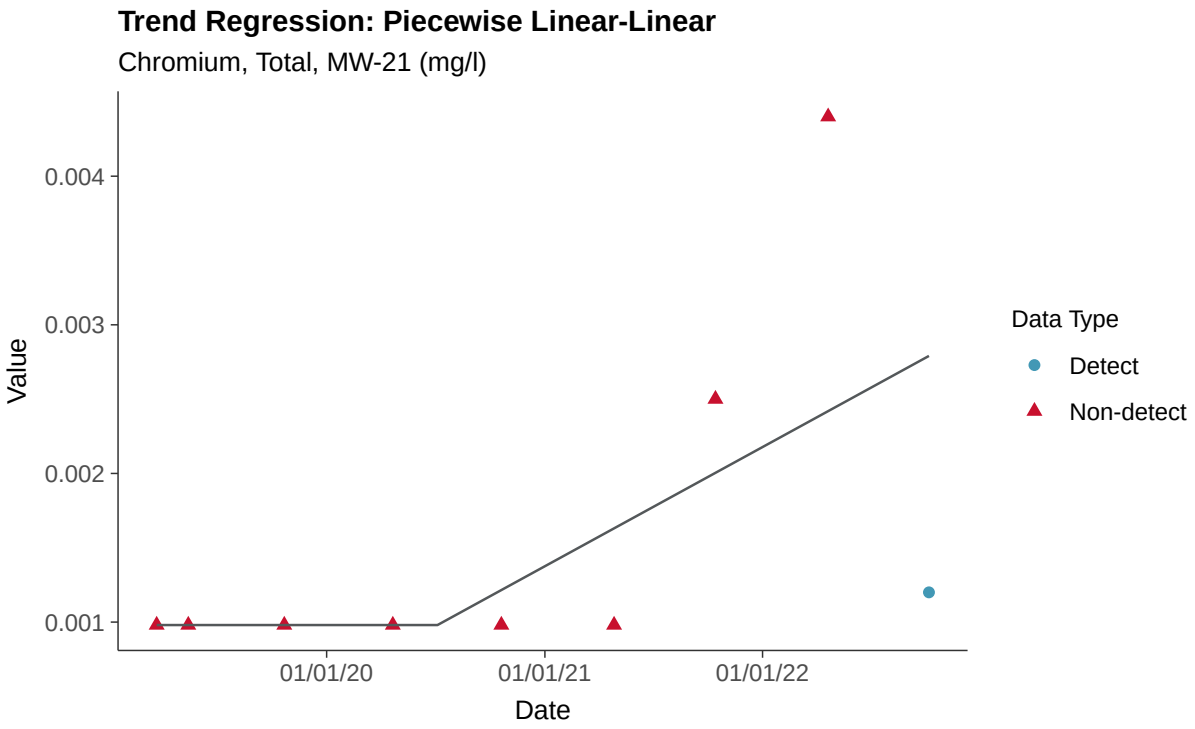
Chromium, Total, MW-21 (mg/l)



Boxplot by Season

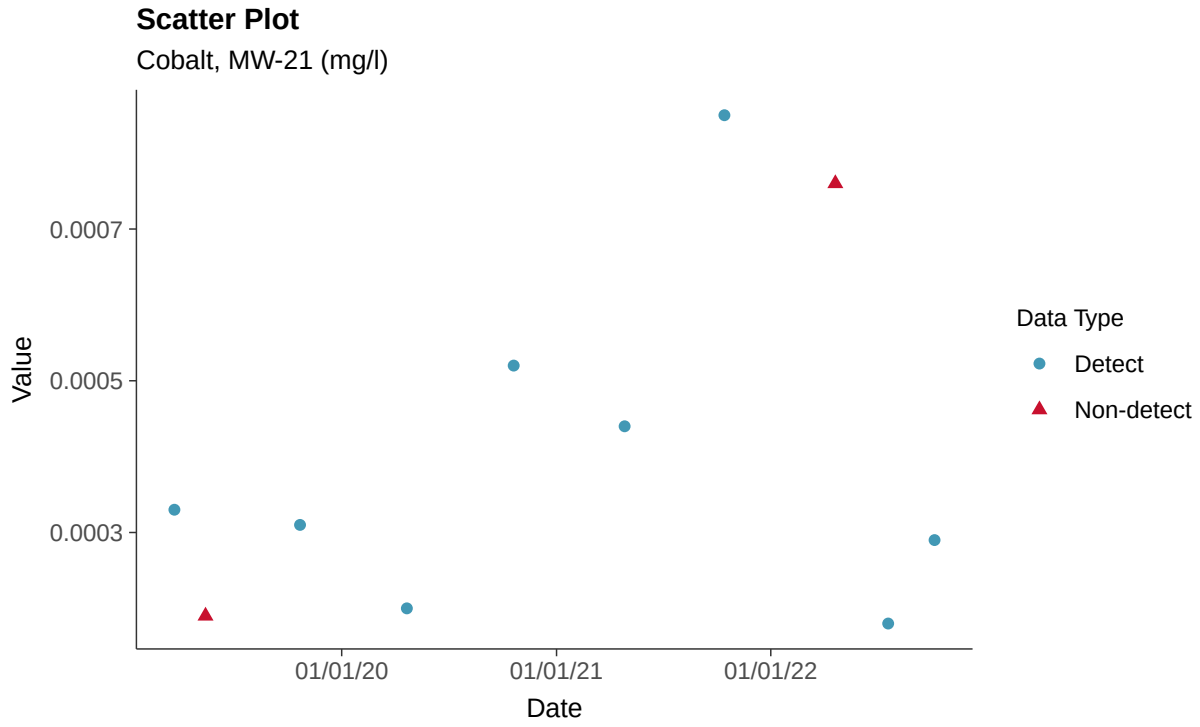
Chromium, Total, MW-21 (mg/l)

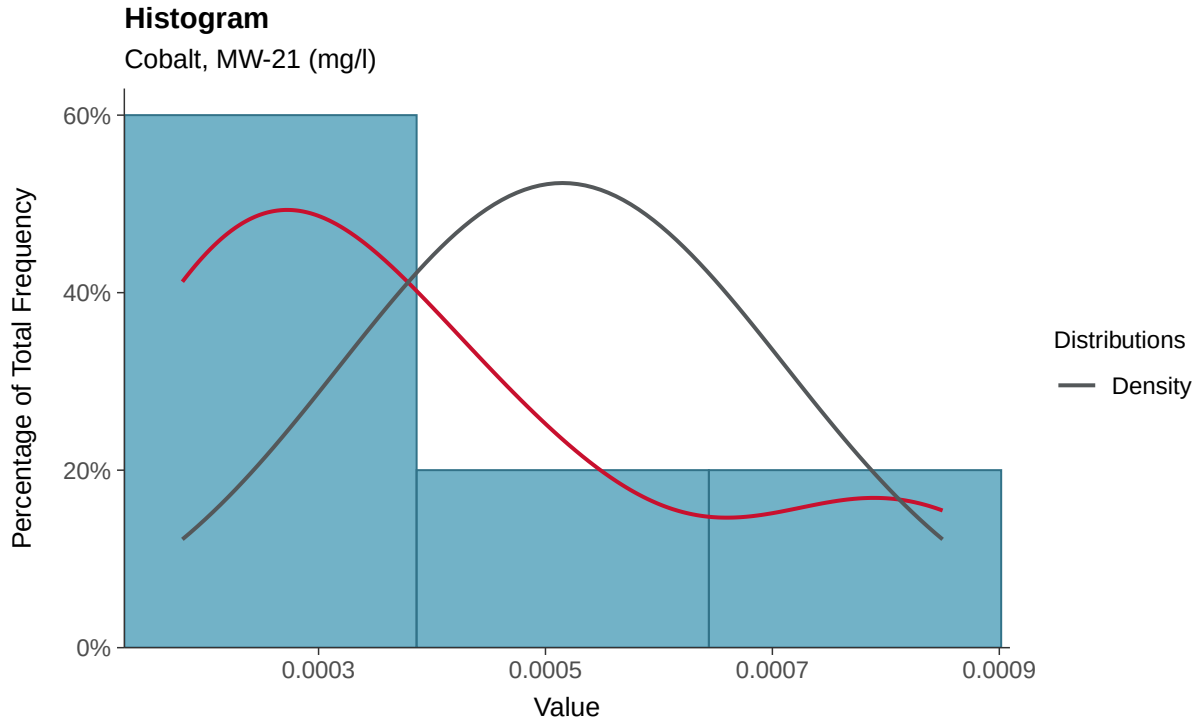



Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-21 (mg/l)
Value
0.004
0.003
0.002
0.001
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-21

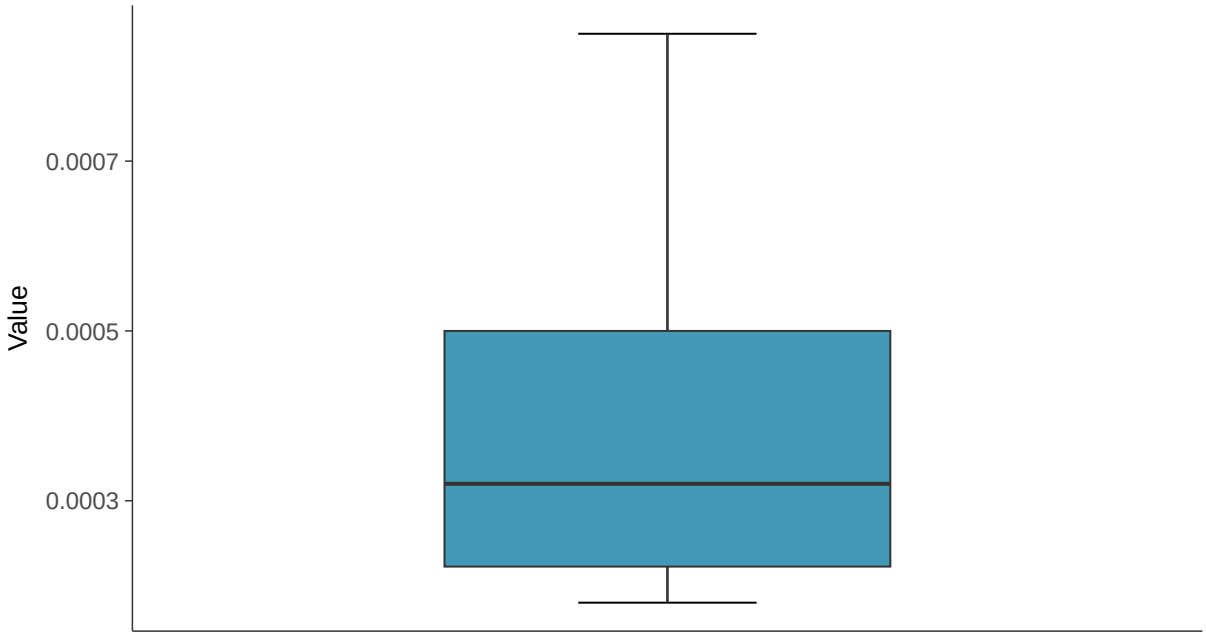
ID: 16_2_113





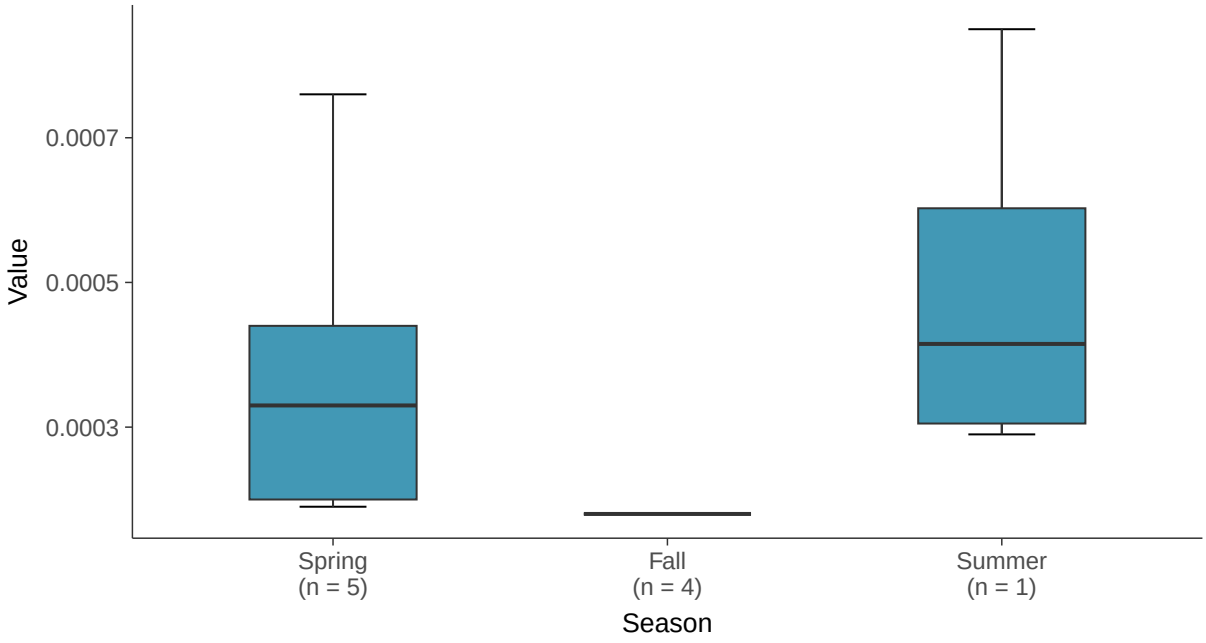
Boxplot

Cobalt, MW-21 (mg/l)



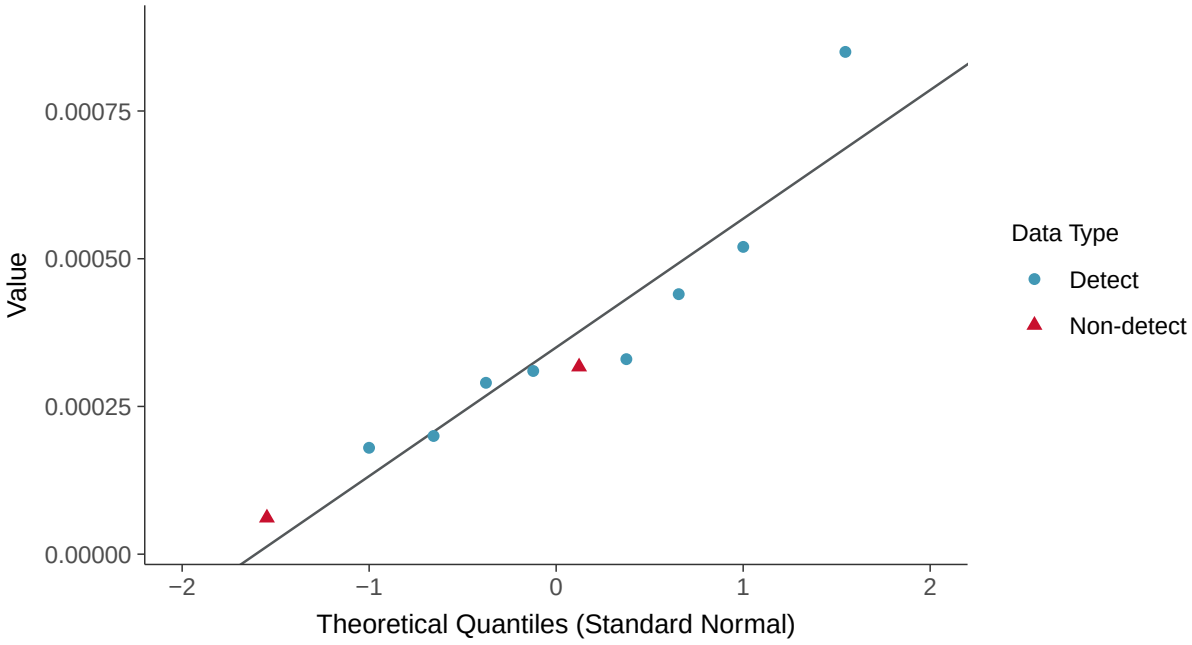
Boxplot by Season

Cobalt, MW-21 (mg/l)



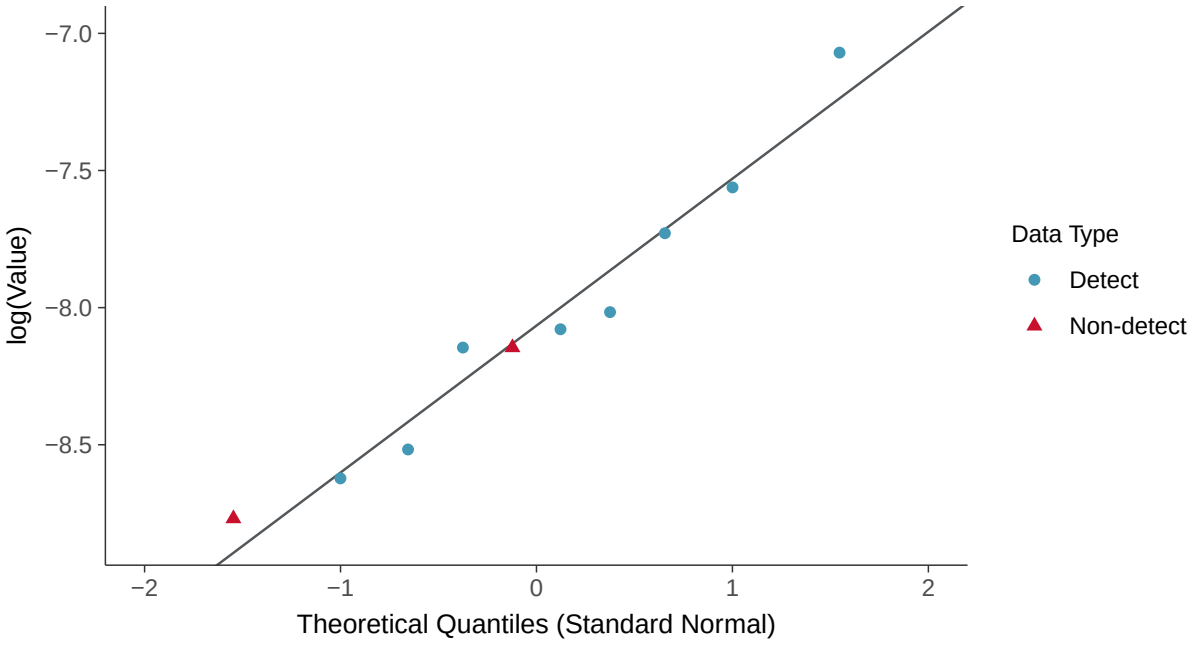
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-21 (mg/l)



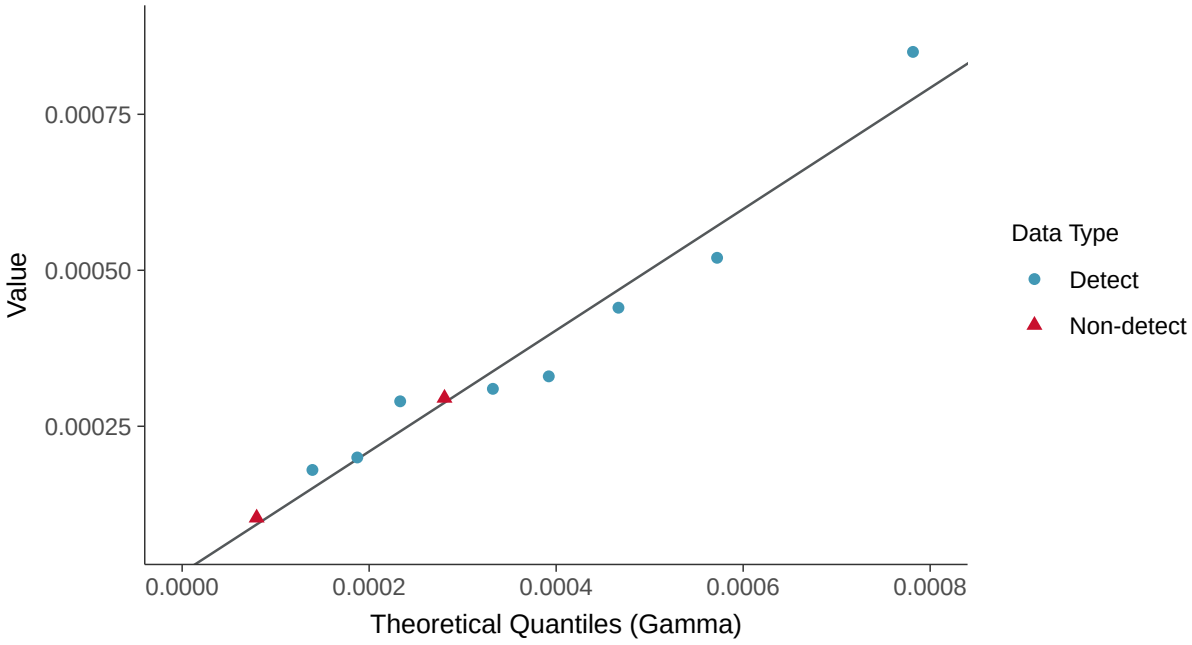
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-21 (mg/l)



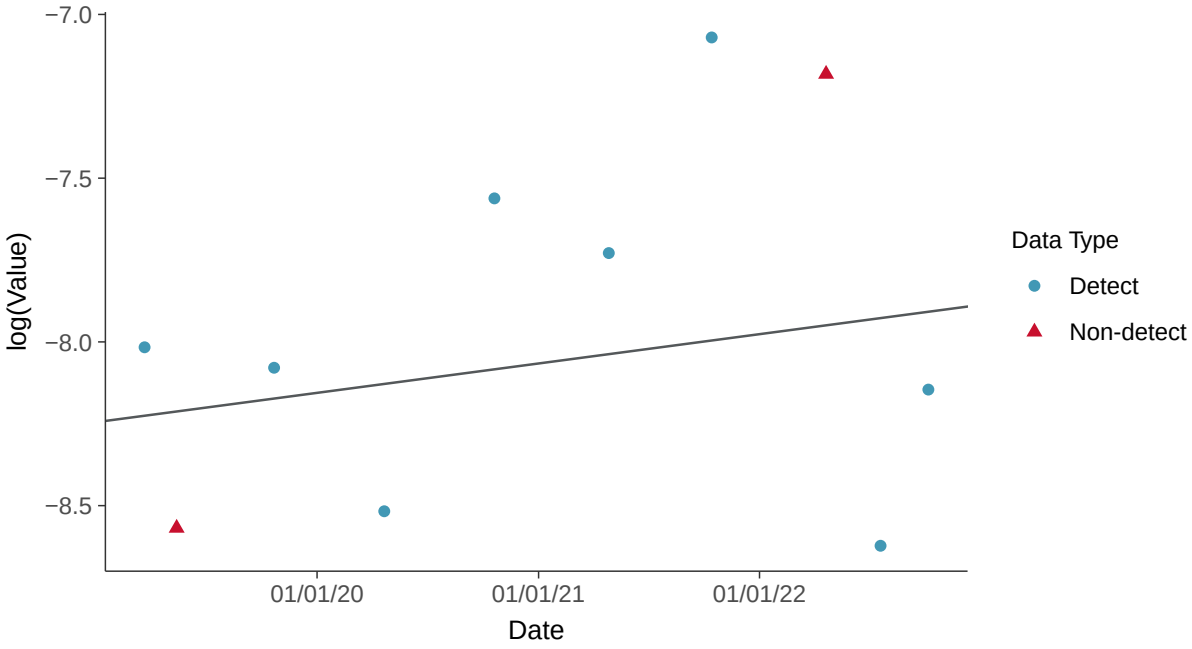
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-21 (mg/l)



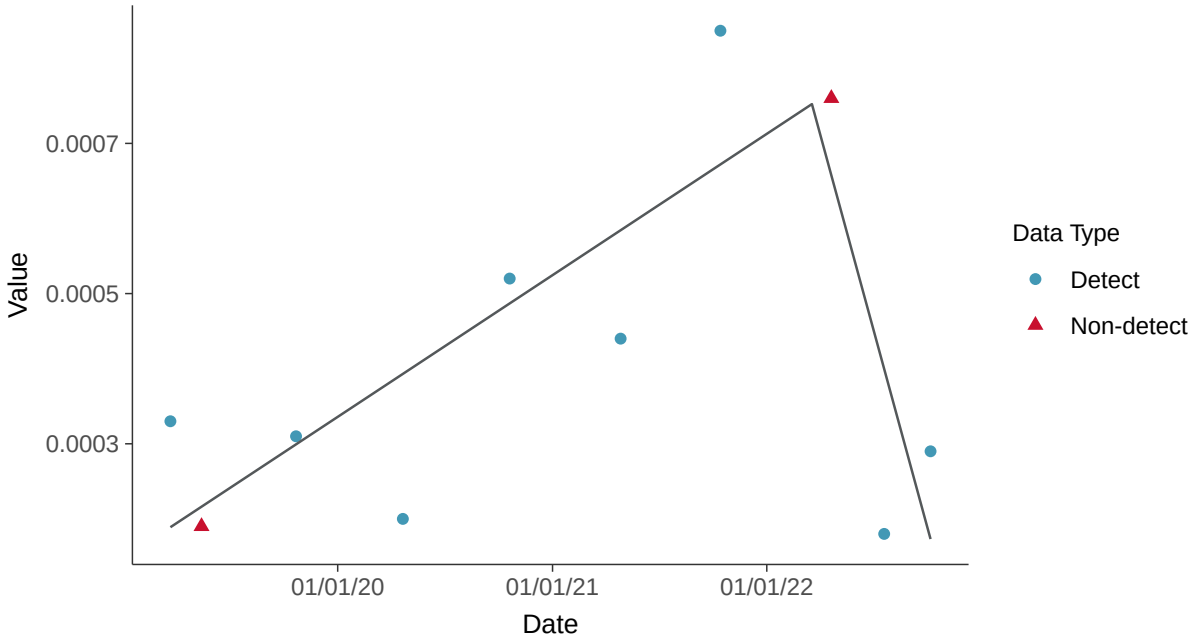
Trend Regression: Lognormal MLE

Cobalt, MW-21 (mg/l)



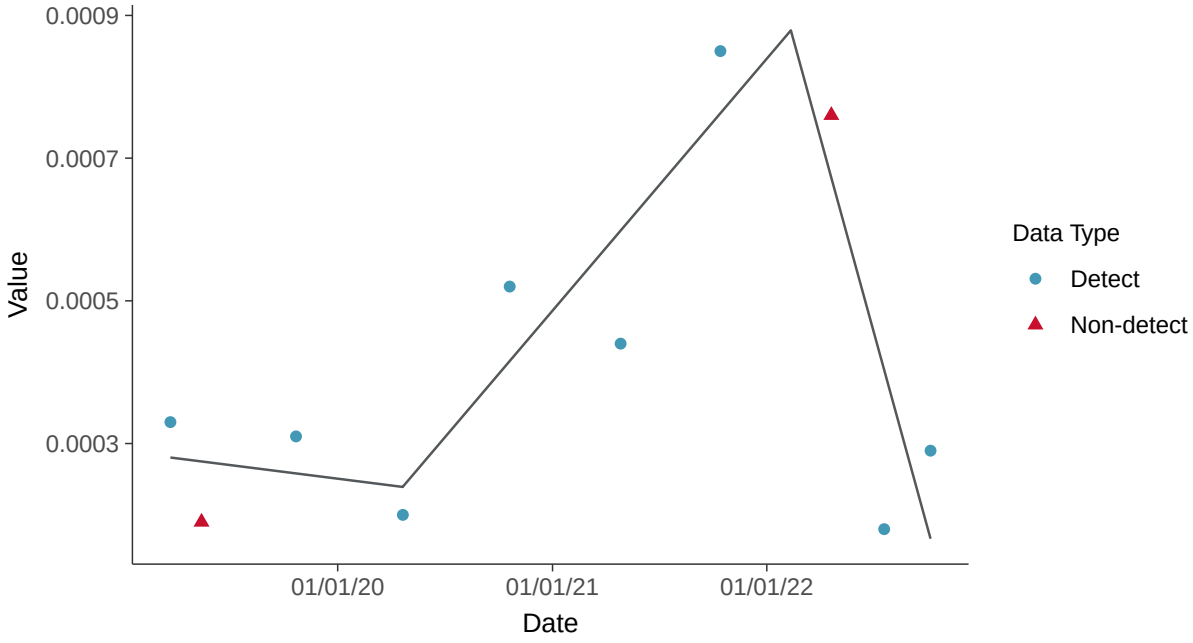
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-21 (mg/l)



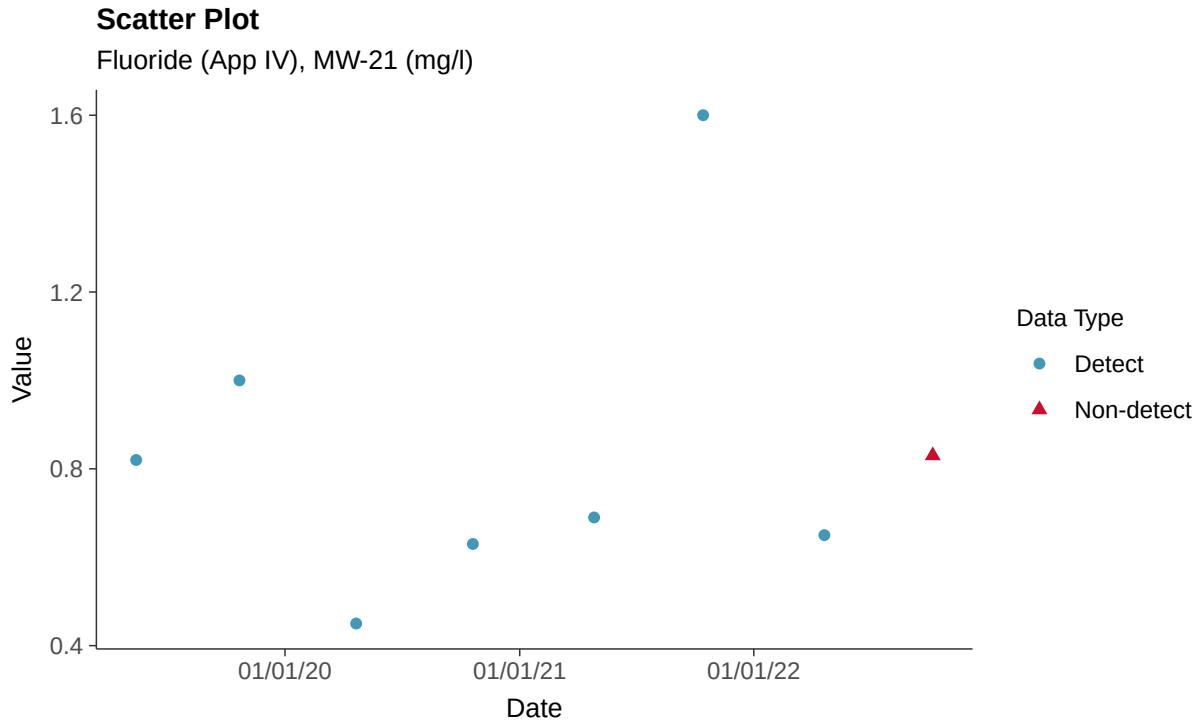
Trend Regression: Piecewise Linear-Linear-Linear

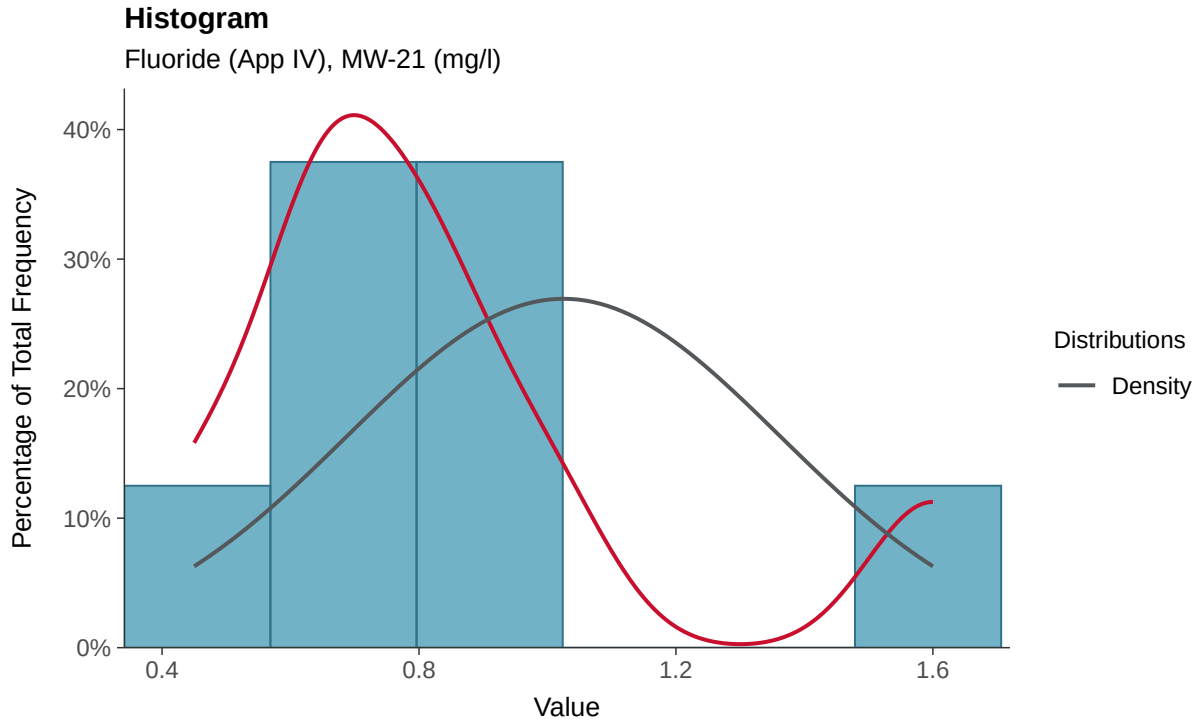
Cobalt, MW-21 (mg/l)



Appendix IV: Fluoride (App IV), MW-21

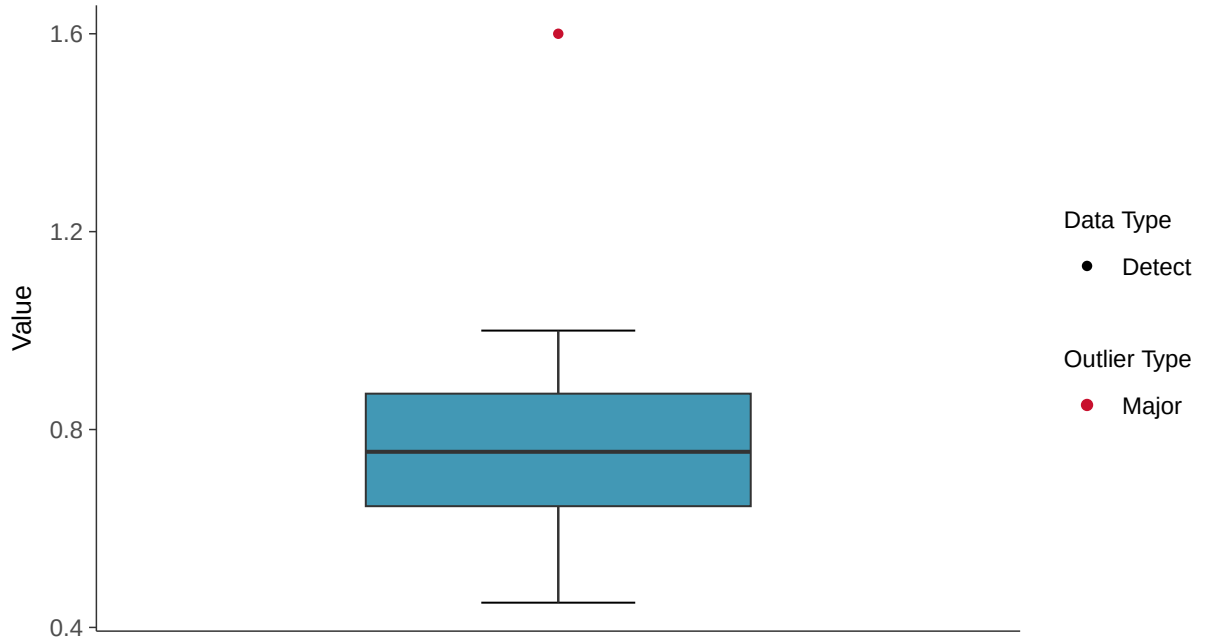
ID: 16_2_116





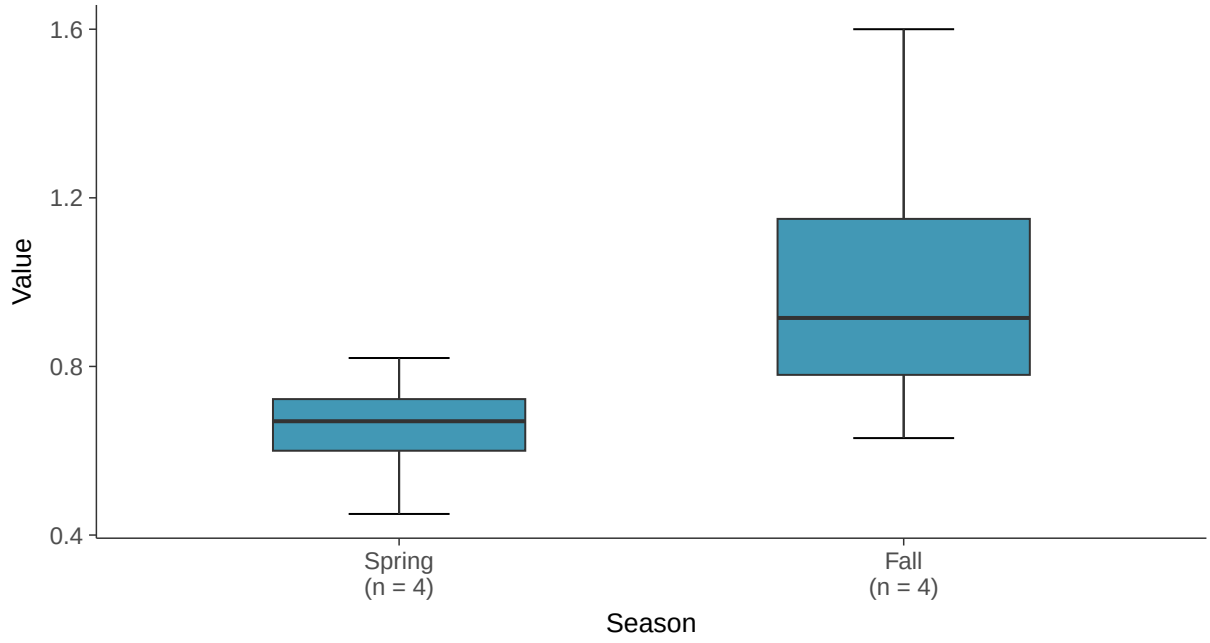
Boxplot

Fluoride (App IV), MW-21 (mg/l)



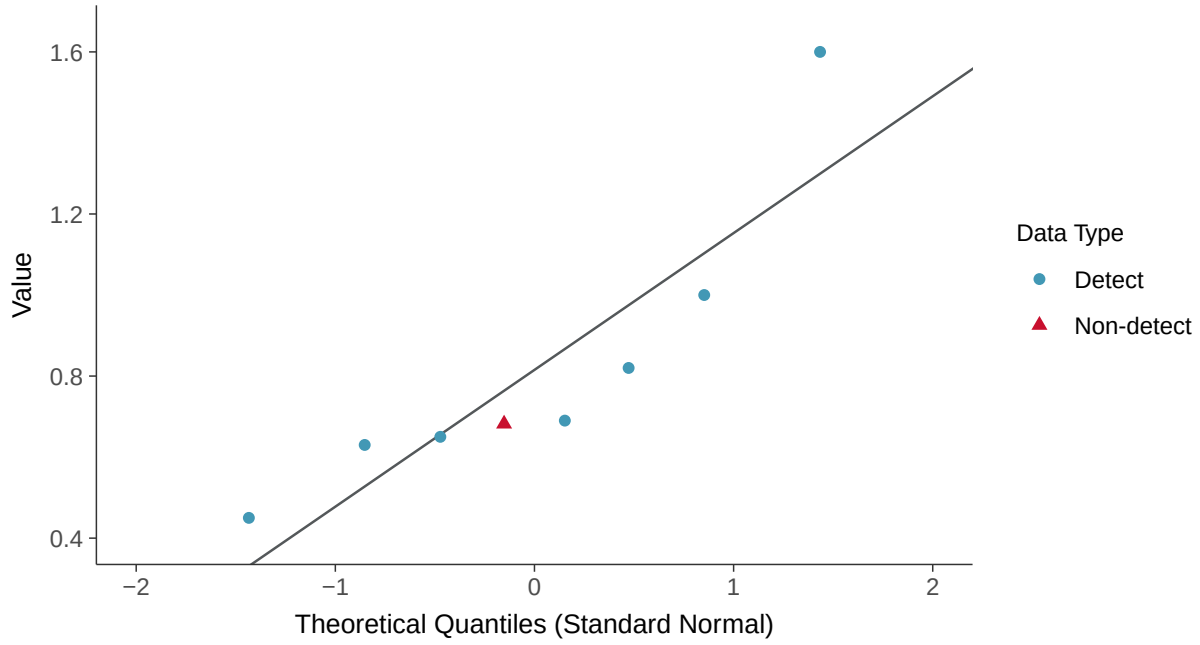
Boxplot by Season

Fluoride (App IV), MW-21 (mg/l)



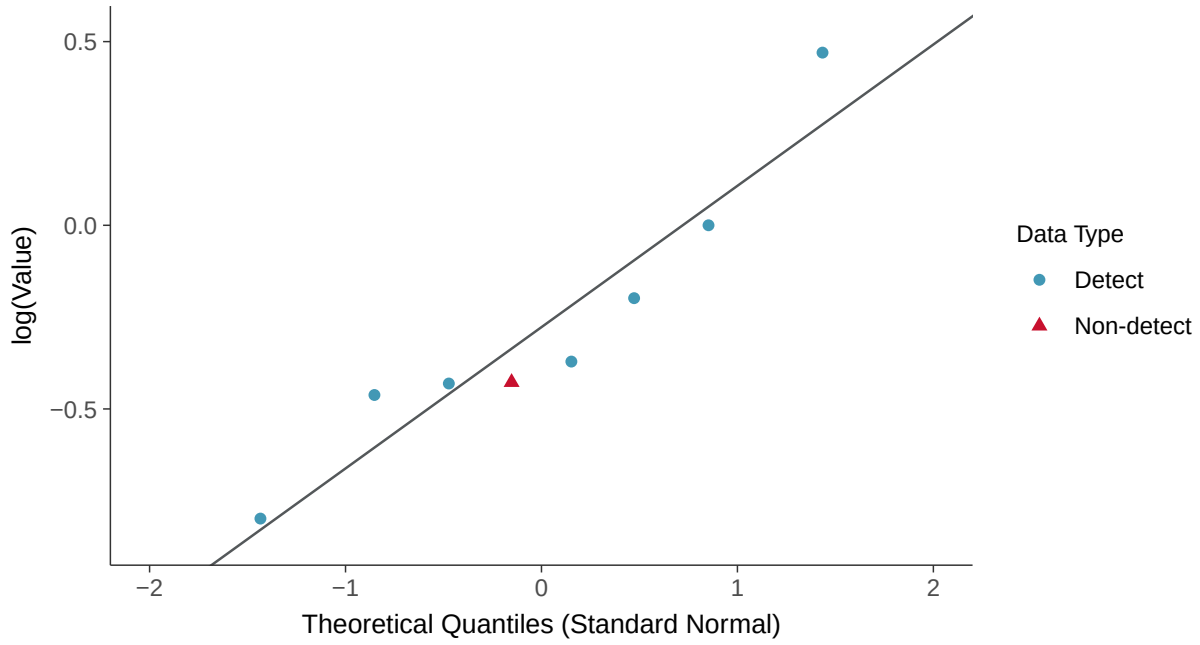
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-21 (mg/l)



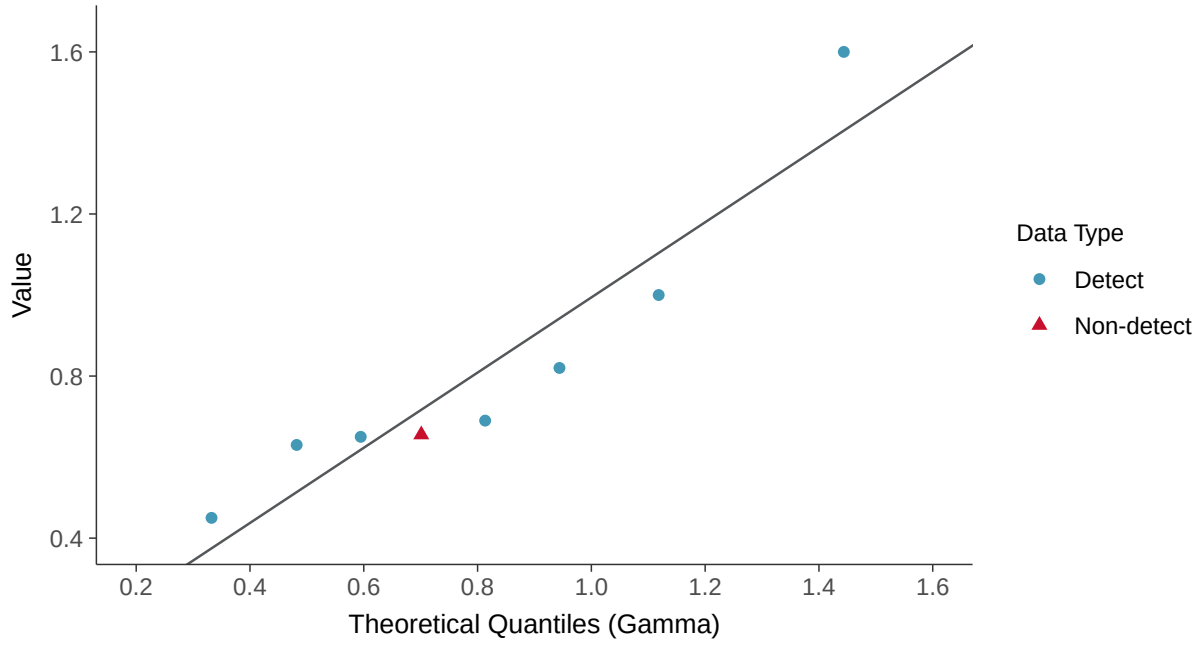
Lognormal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-21 (mg/l)



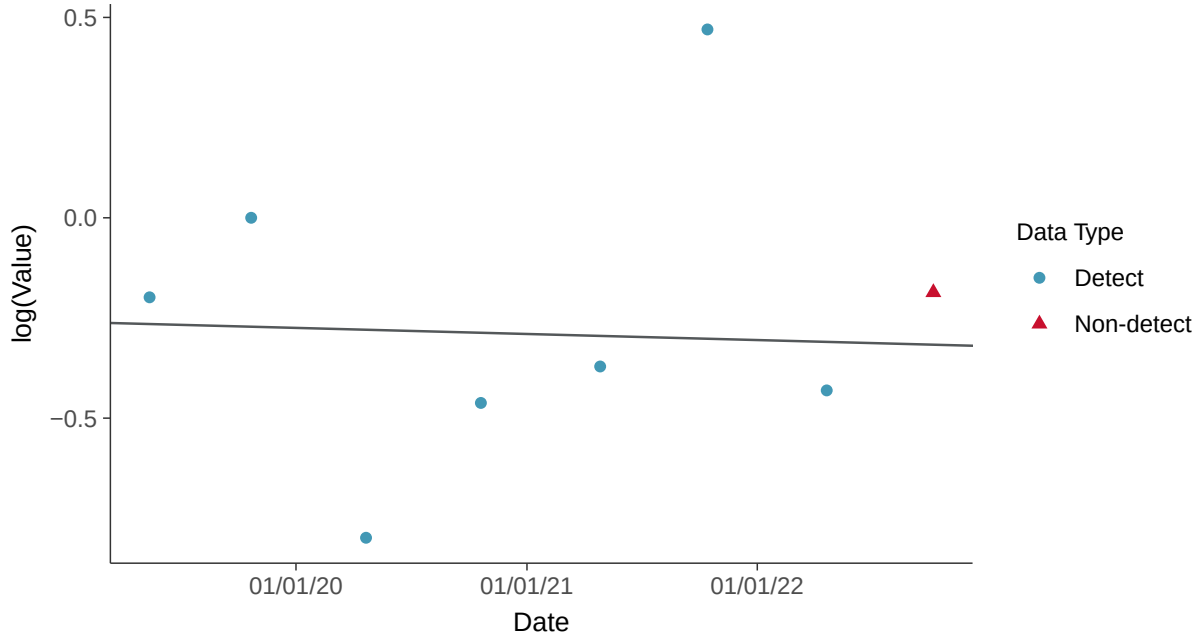
Gamma Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-21 (mg/l)



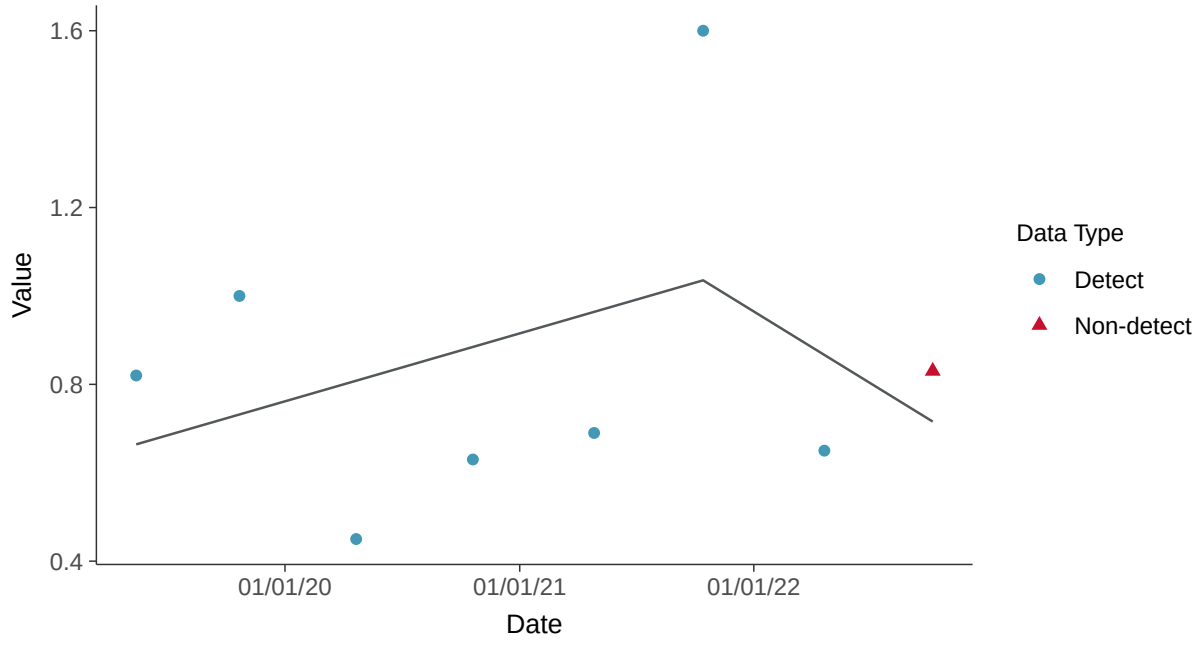
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-21 (mg/l)



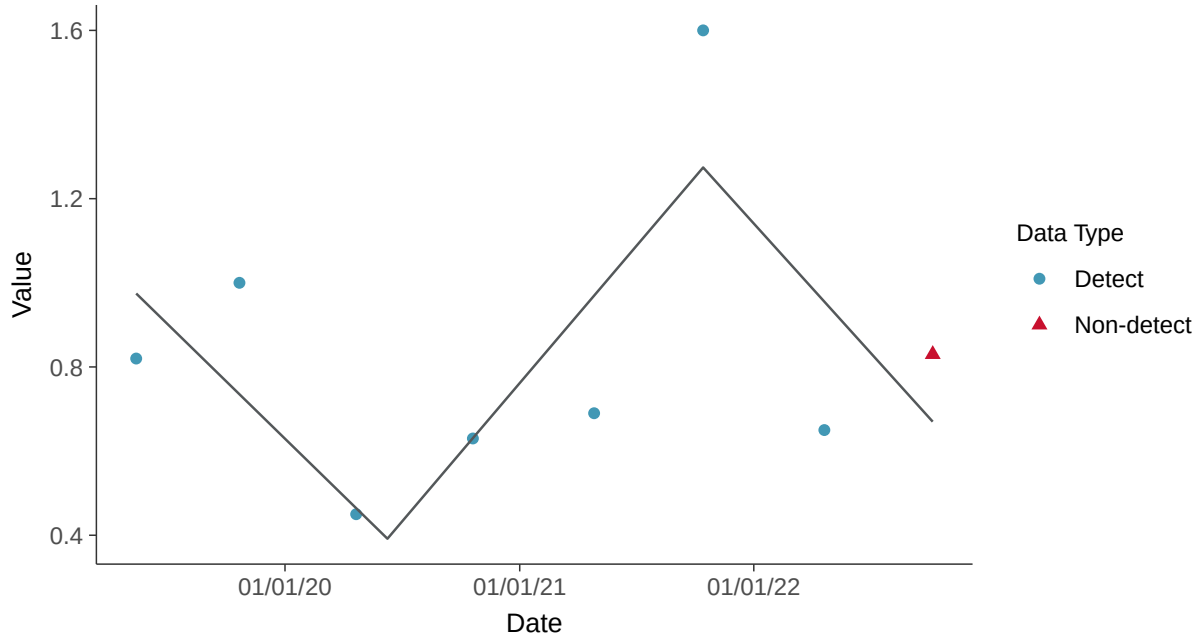
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-21 (mg/l)



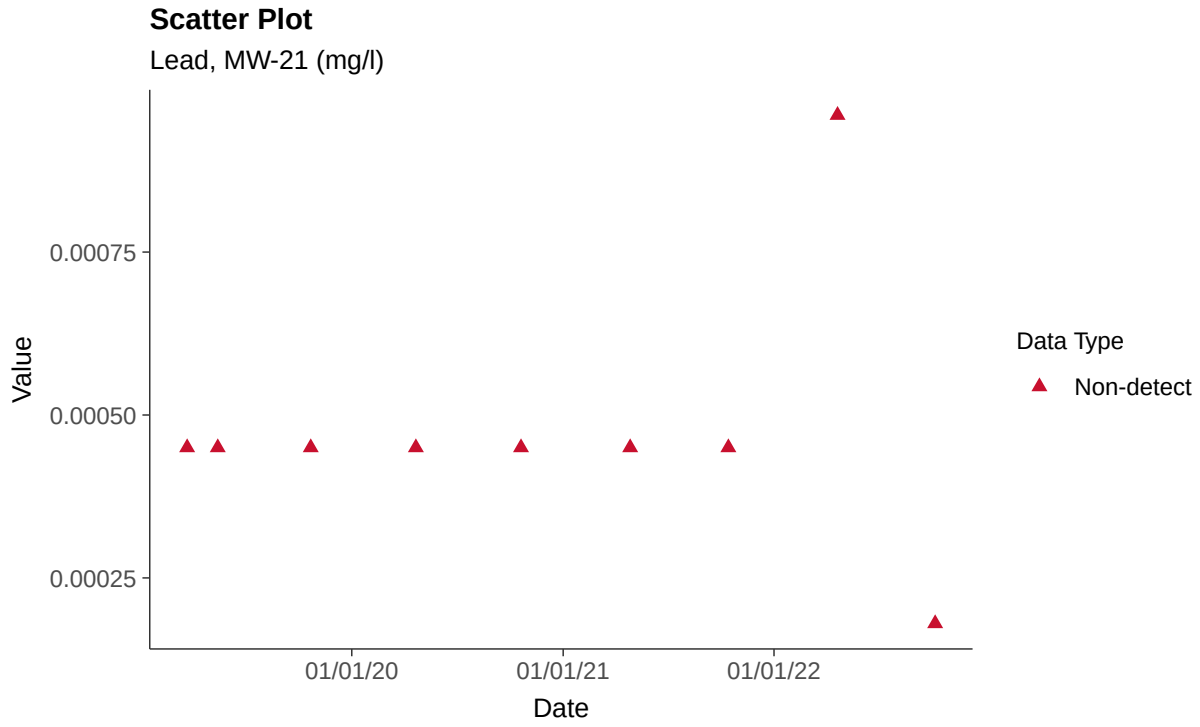
Trend Regression: Piecewise Linear-Linear-Linear

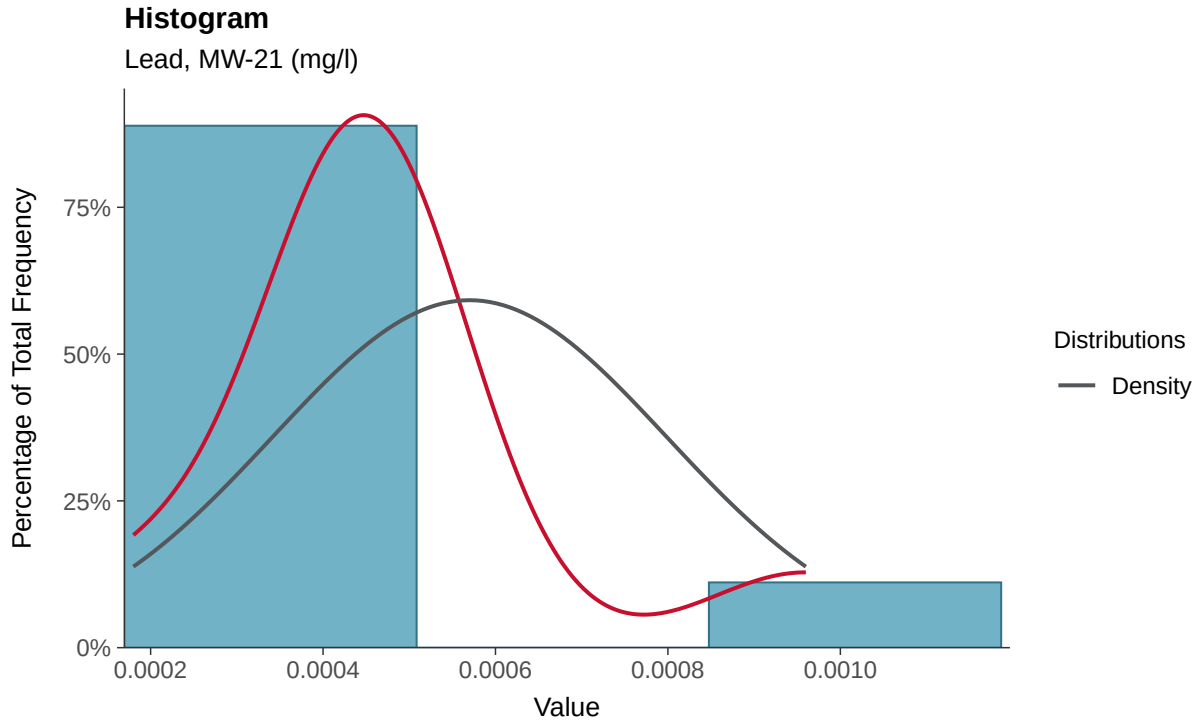
Fluoride (App IV), MW-21 (mg/l)



Appendix IV: Lead, MW-21

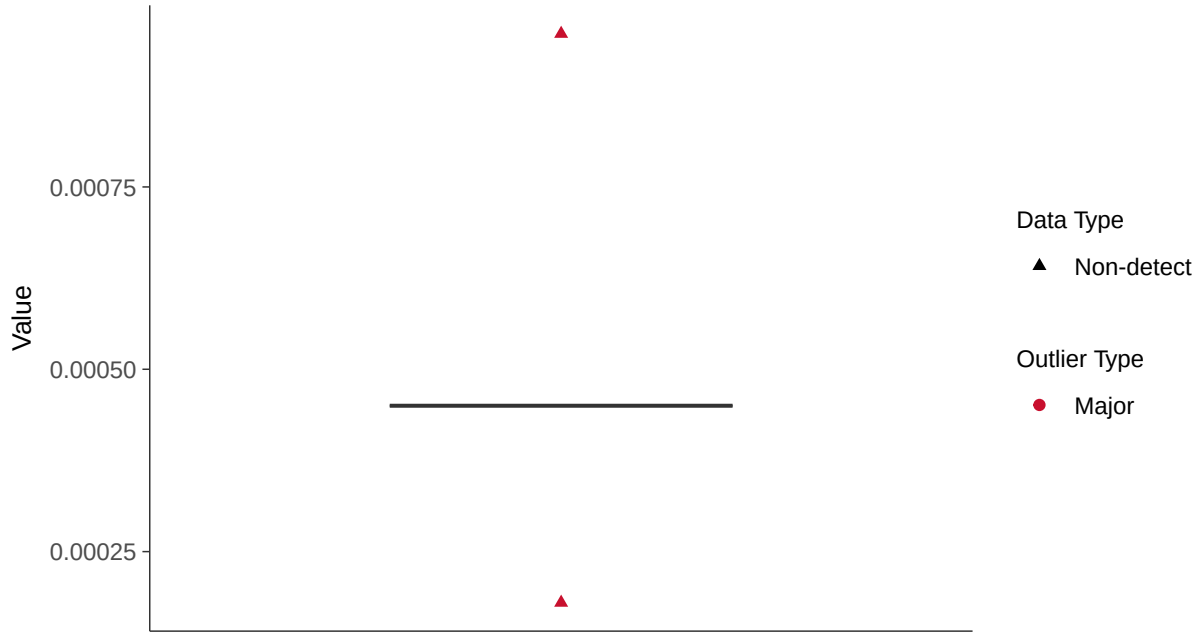
ID: 16_2_117





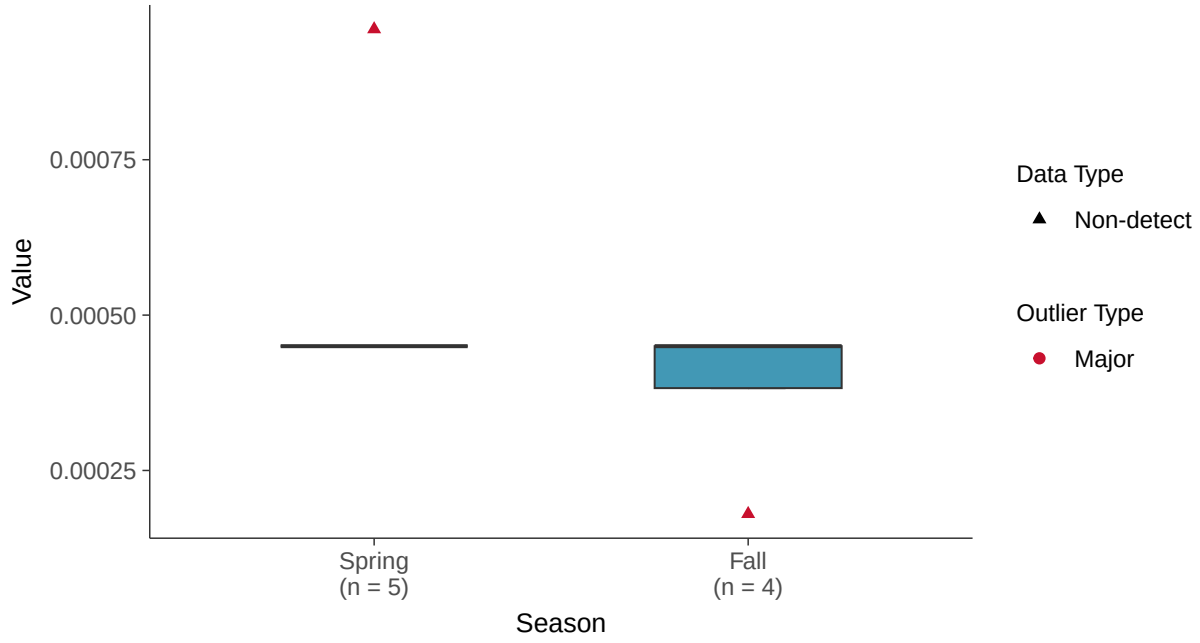
Boxplot

Lead, MW-21 (mg/l)



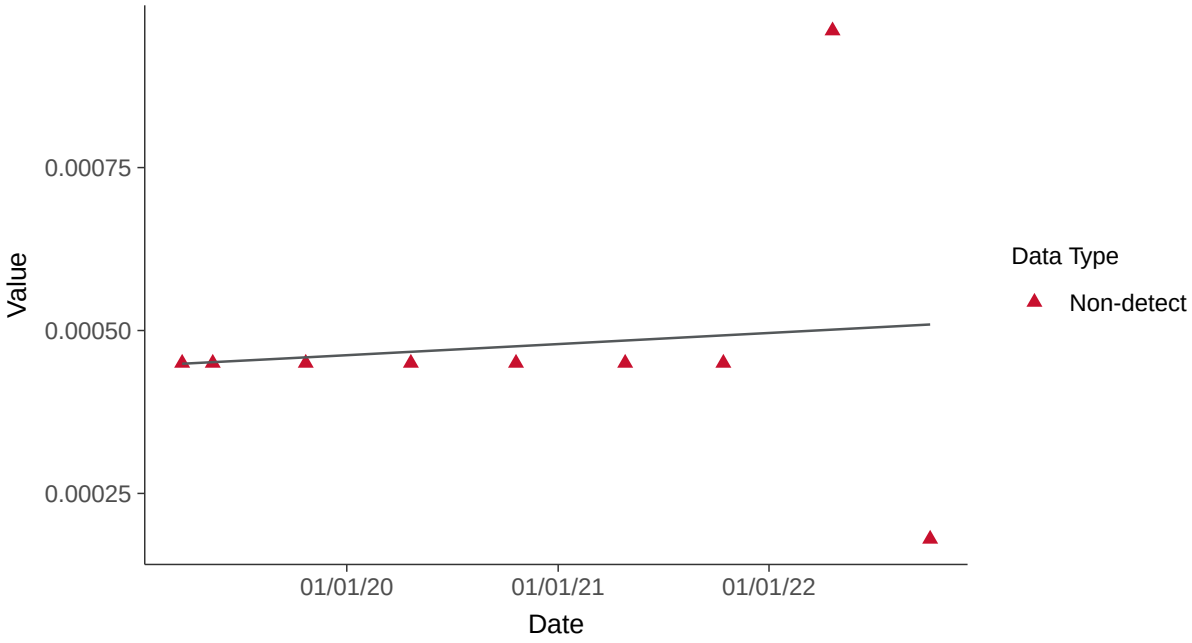
Boxplot by Season

Lead, MW-21 (mg/l)



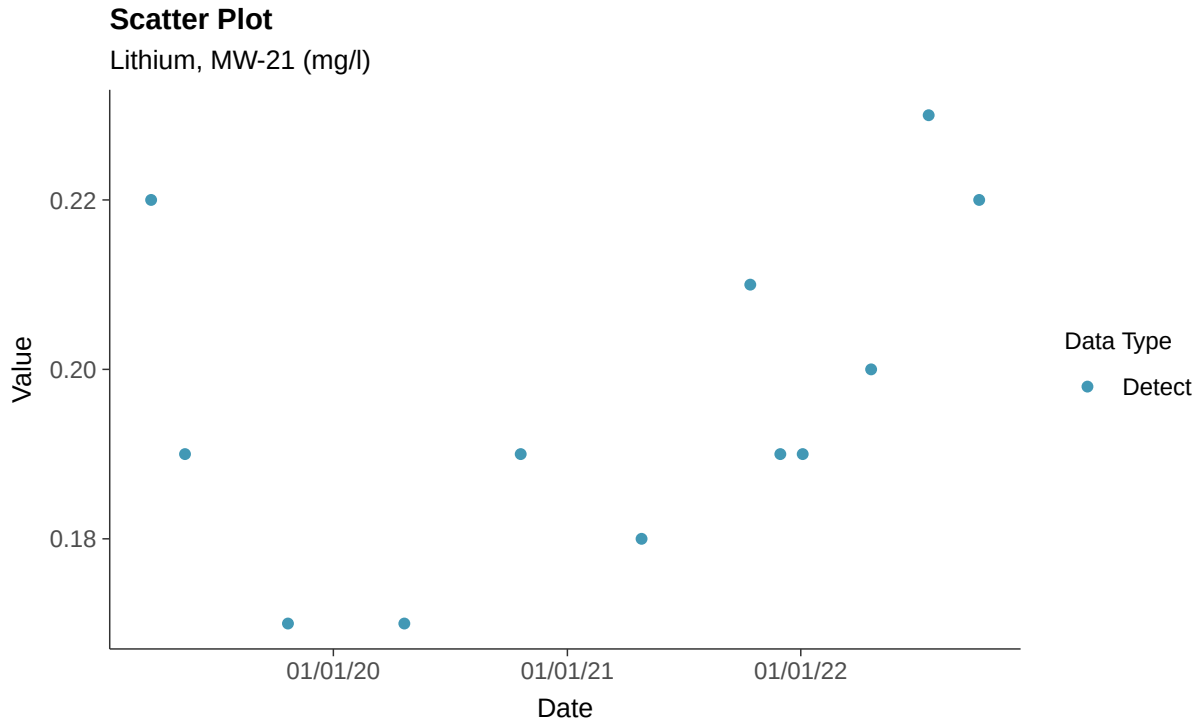
Trend Regression: Piecewise Linear-Linear

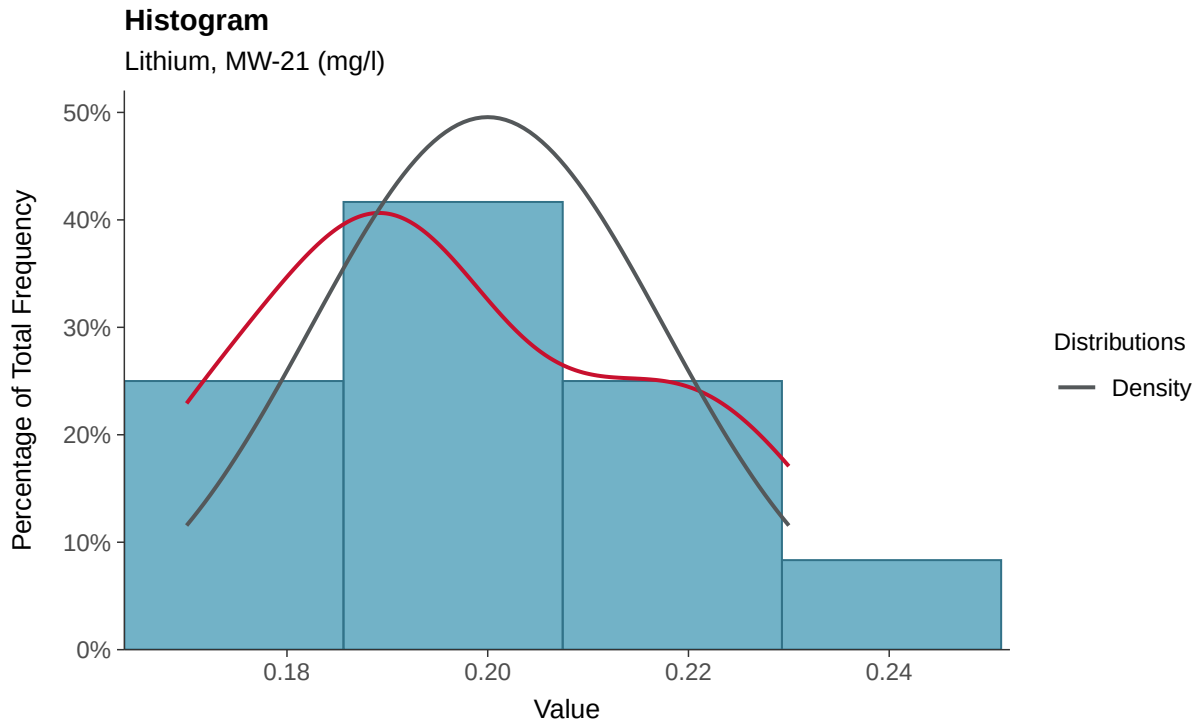
Lead, MW-21 (mg/l)



Appendix IV: Lithium, MW-21

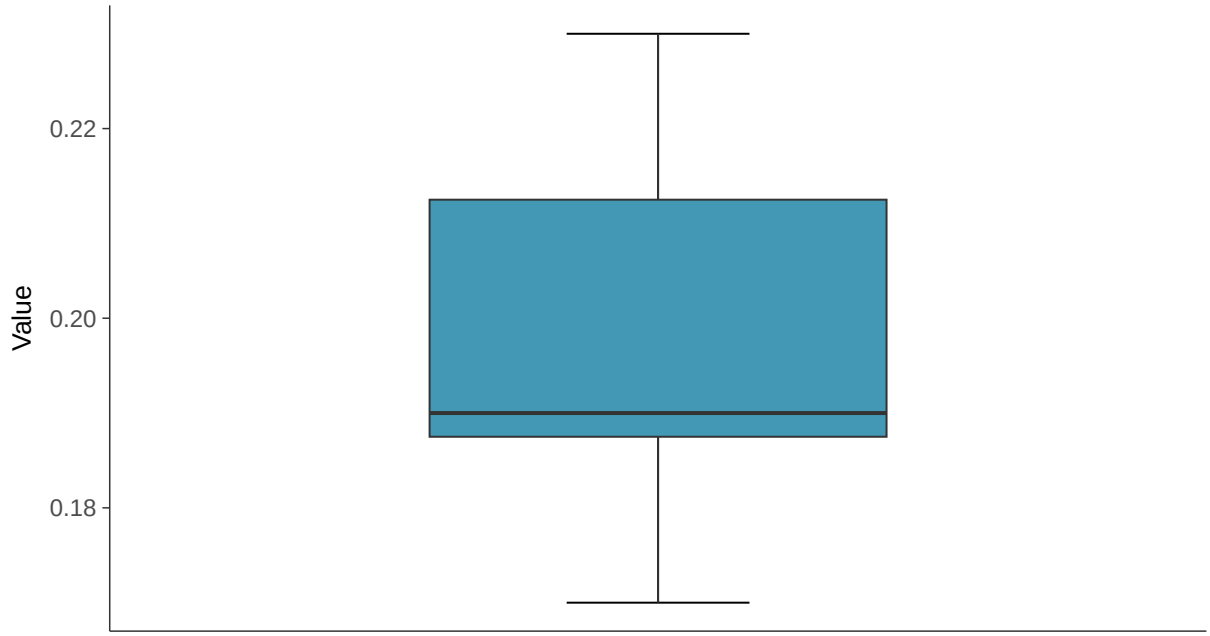
ID: 16_2_118





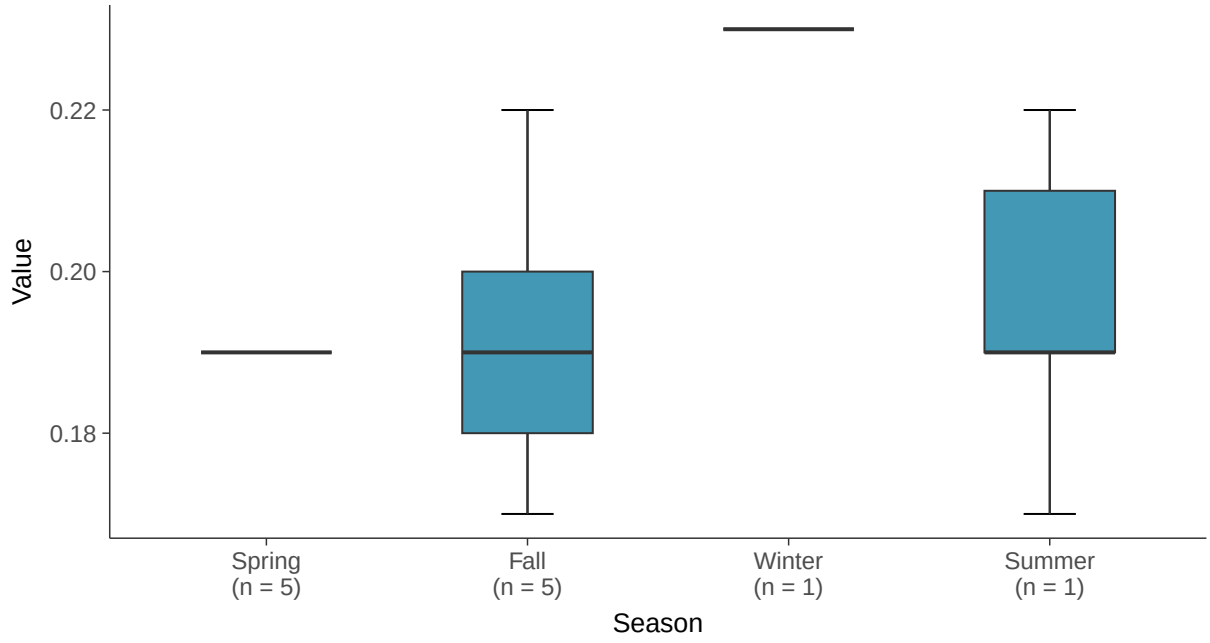
Boxplot

Lithium, MW-21 (mg/l)



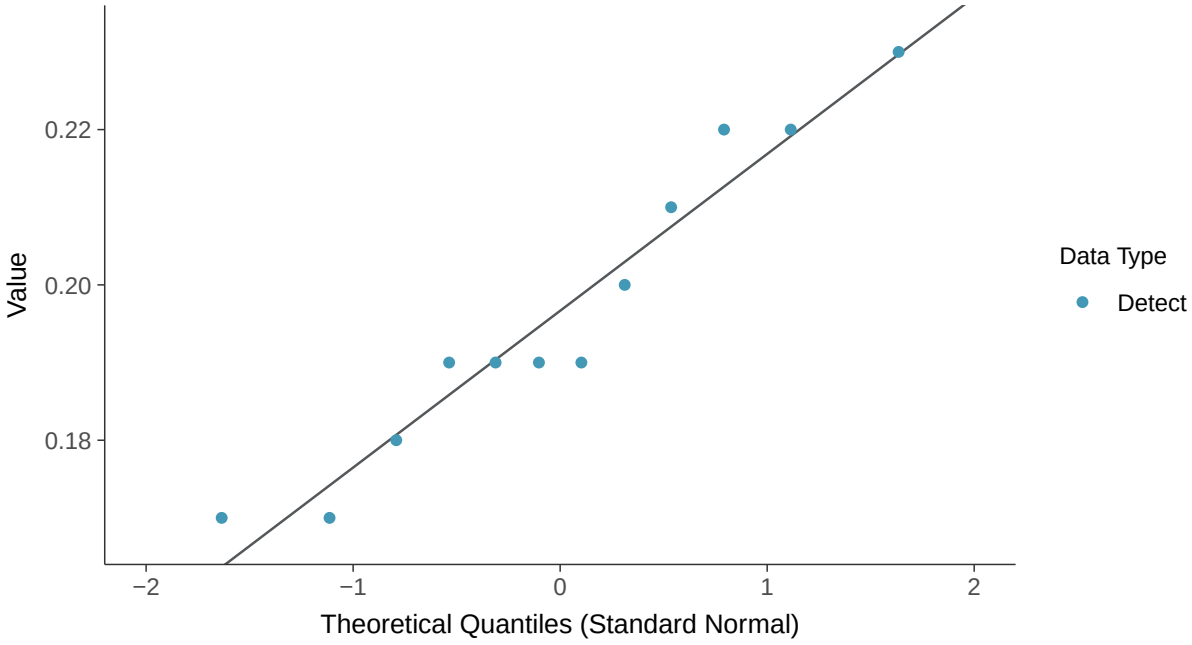
Boxplot by Season

Lithium, MW-21 (mg/l)



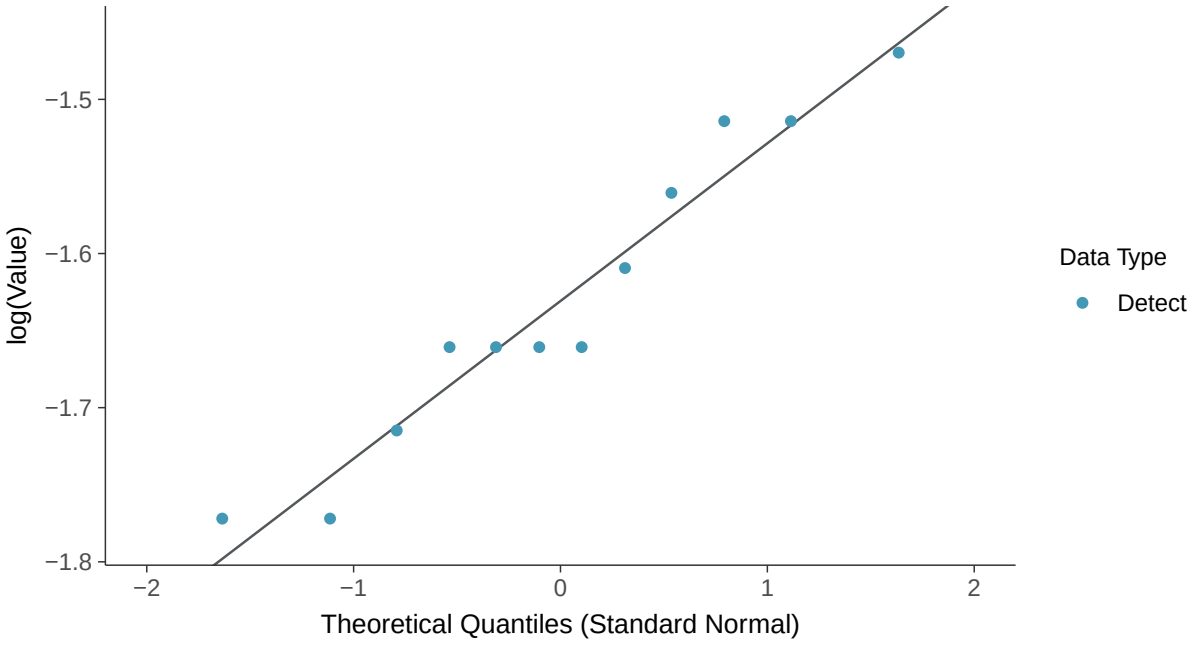
Normal Q-Q plot

Lithium, MW-21 (mg/l)



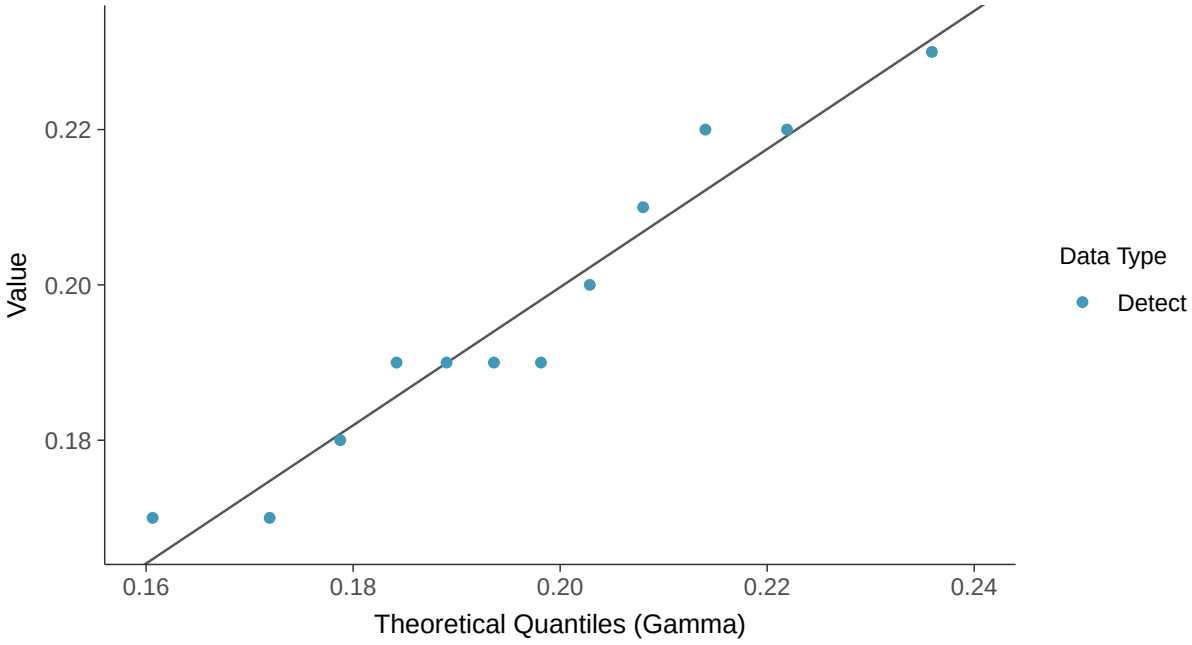
Lognormal Q-Q plot

Lithium, MW-21 (mg/l)



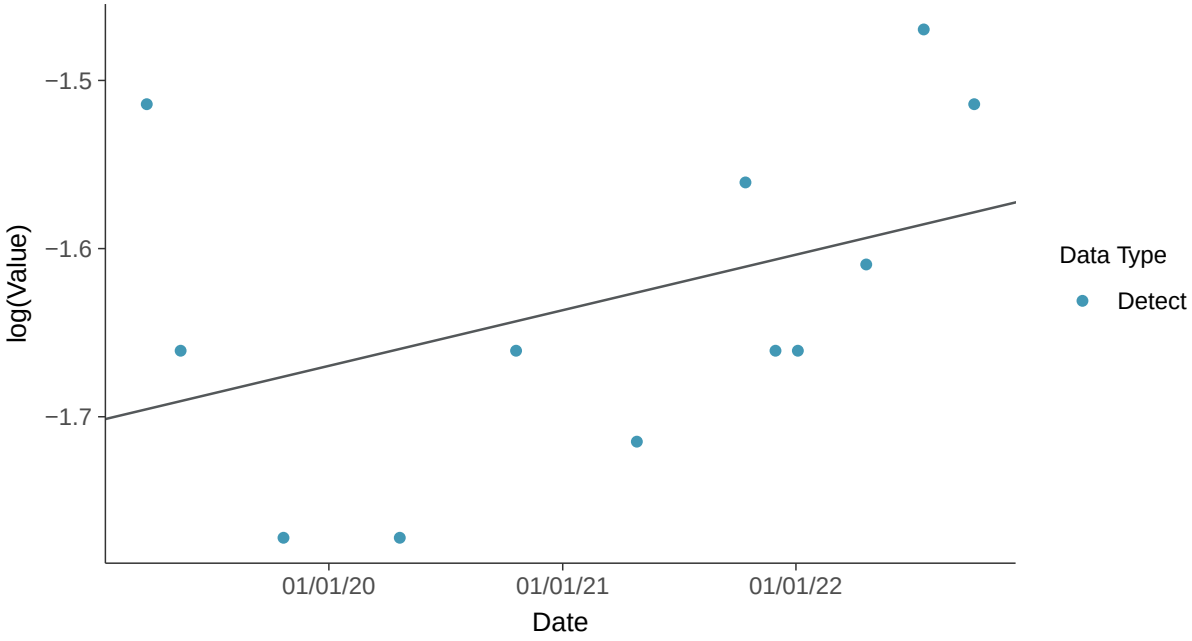
Gamma Q-Q plot

Lithium, MW-21 (mg/l)



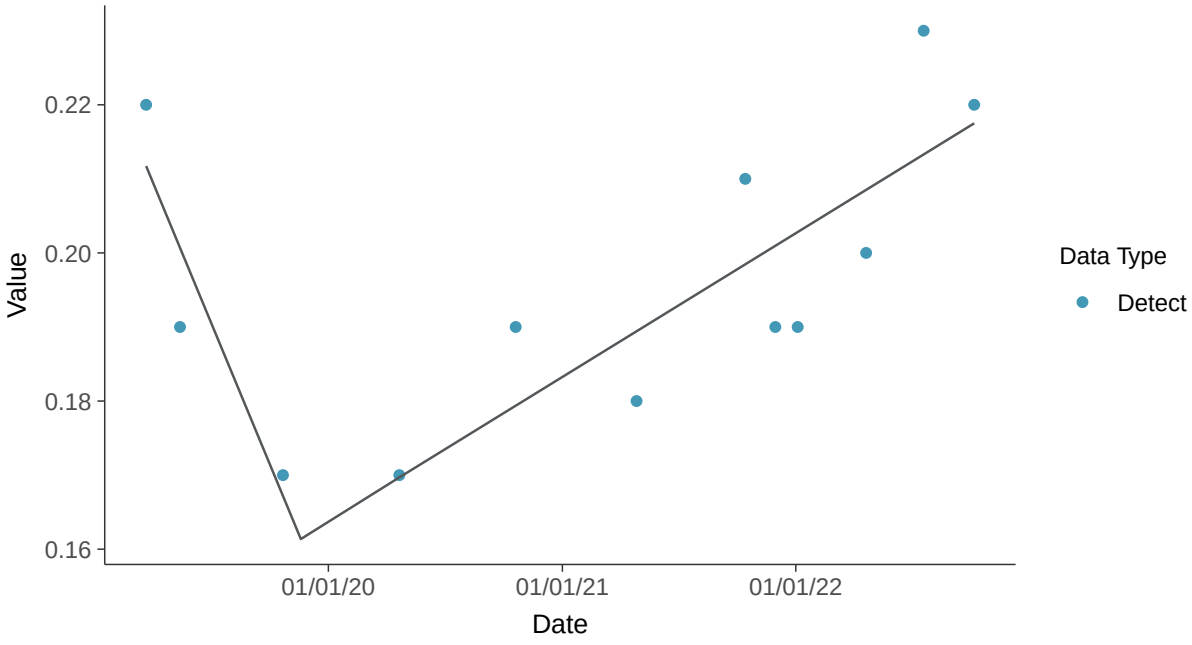
Trend Regression: Lognormal MLE

Lithium, MW-21 (mg/l)



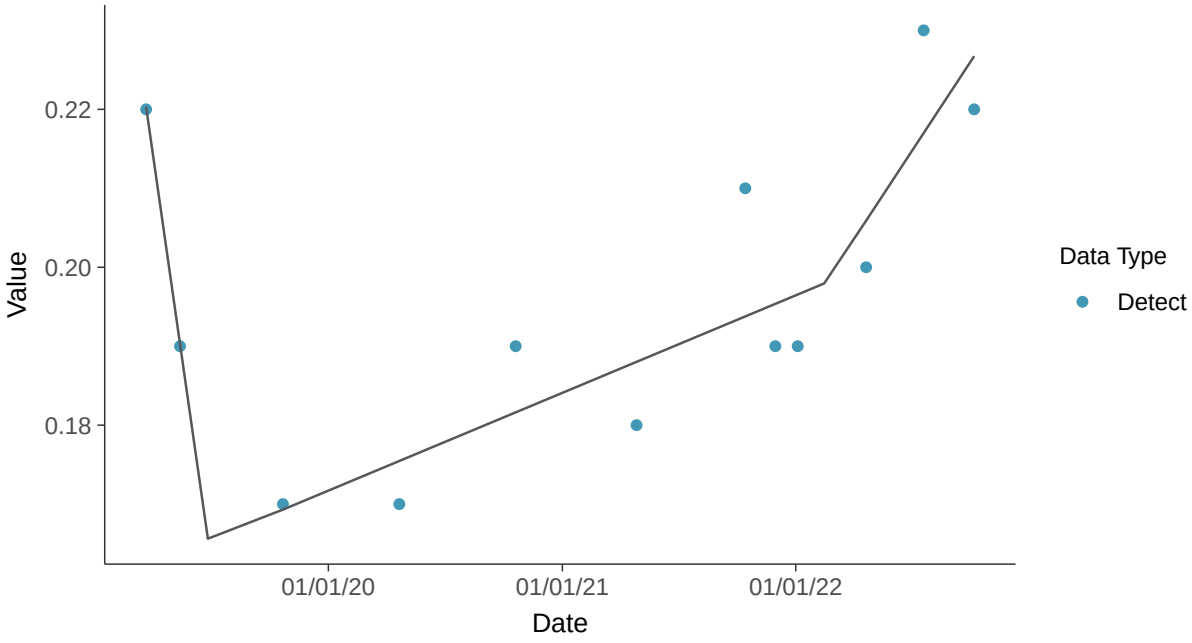
Trend Regression: Piecewise Linear-Linear

Lithium, MW-21 (mg/l)



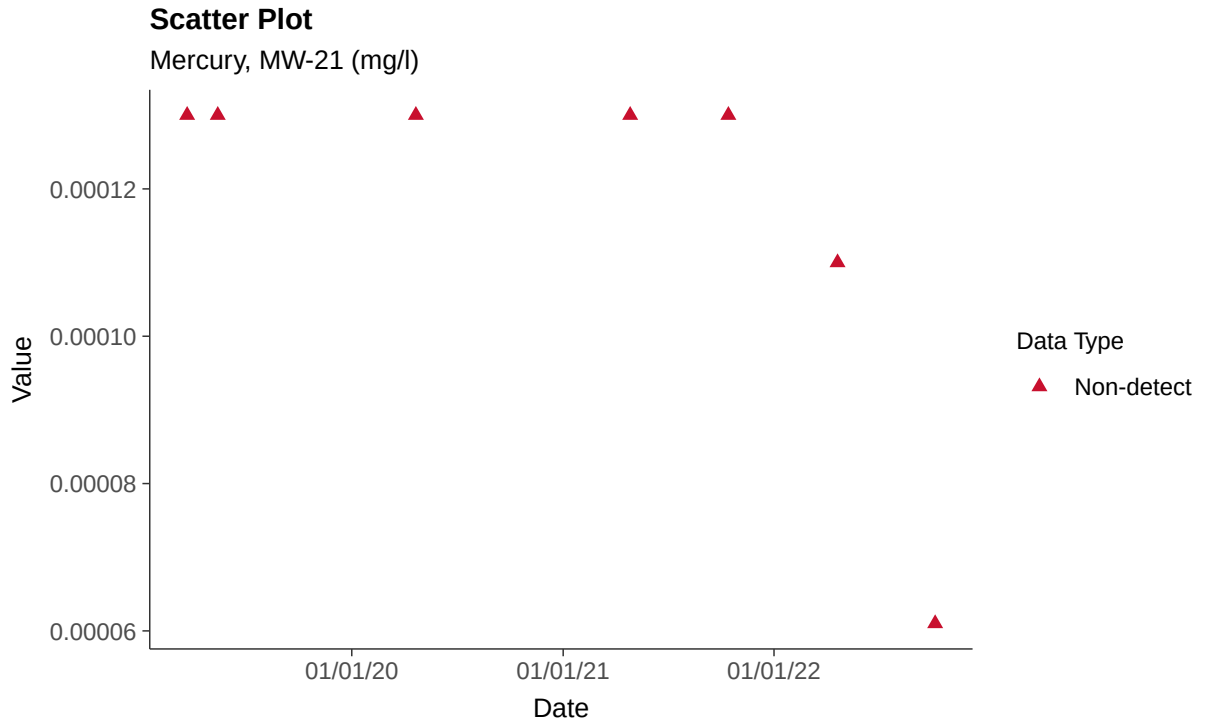
Trend Regression: Piecewise Linear-Linear-Linear

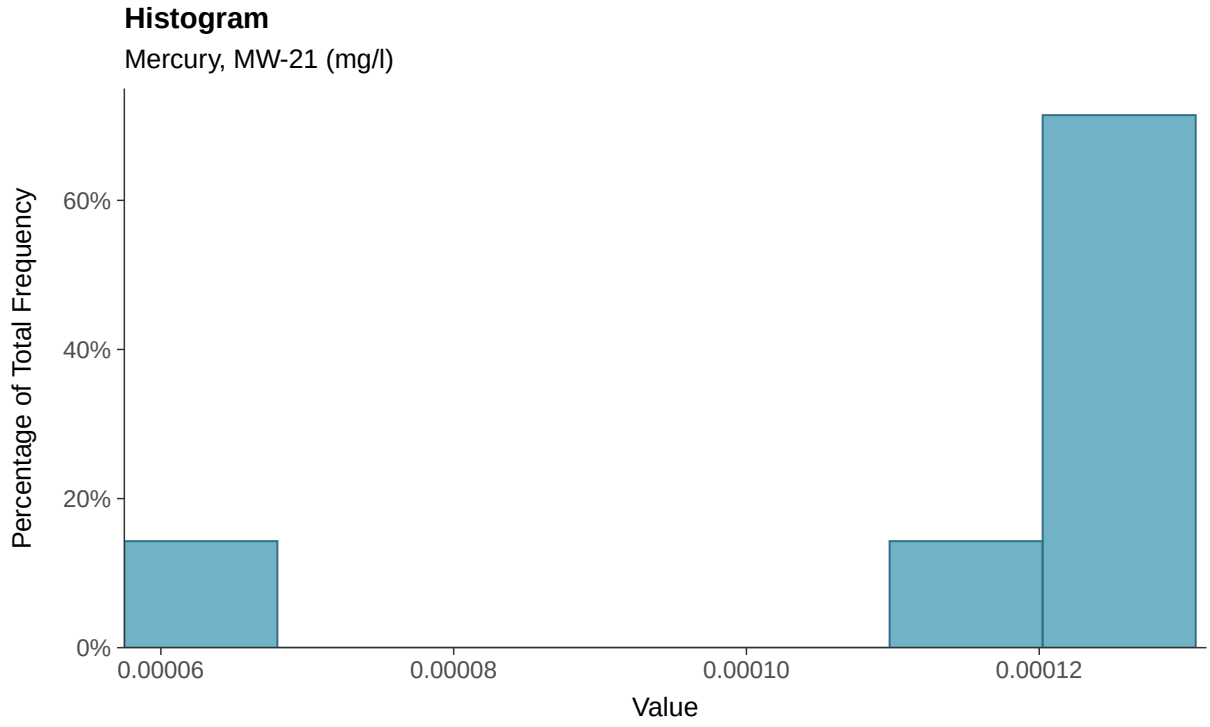
Lithium, MW-21 (mg/l)



Appendix IV: Mercury, MW-21

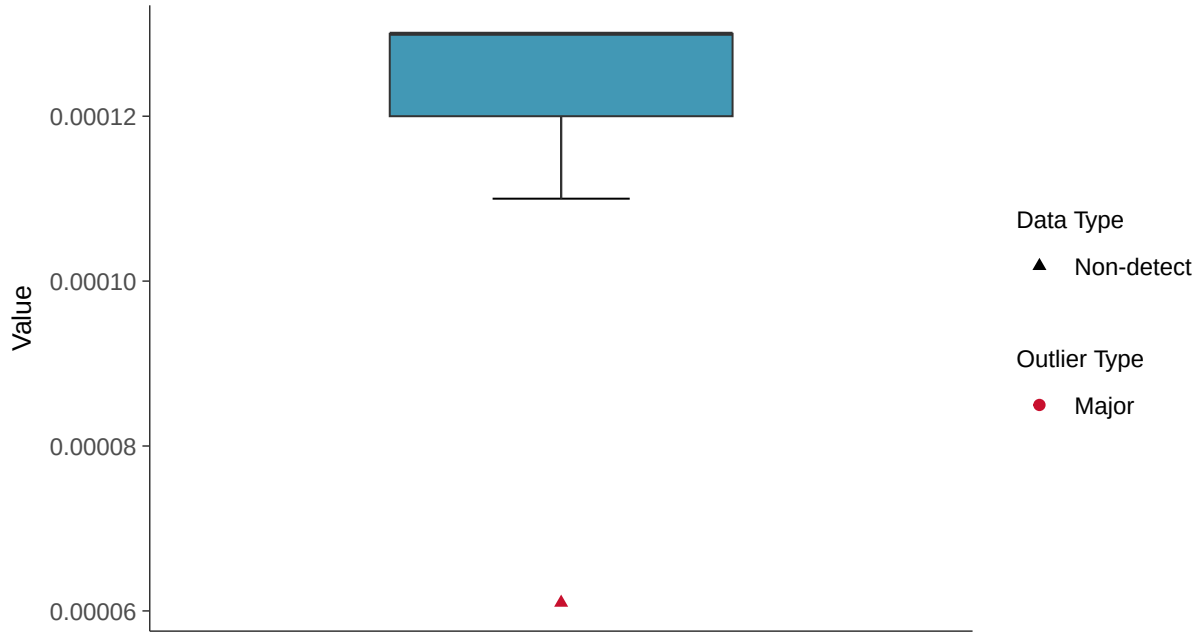
ID: 16_2_120





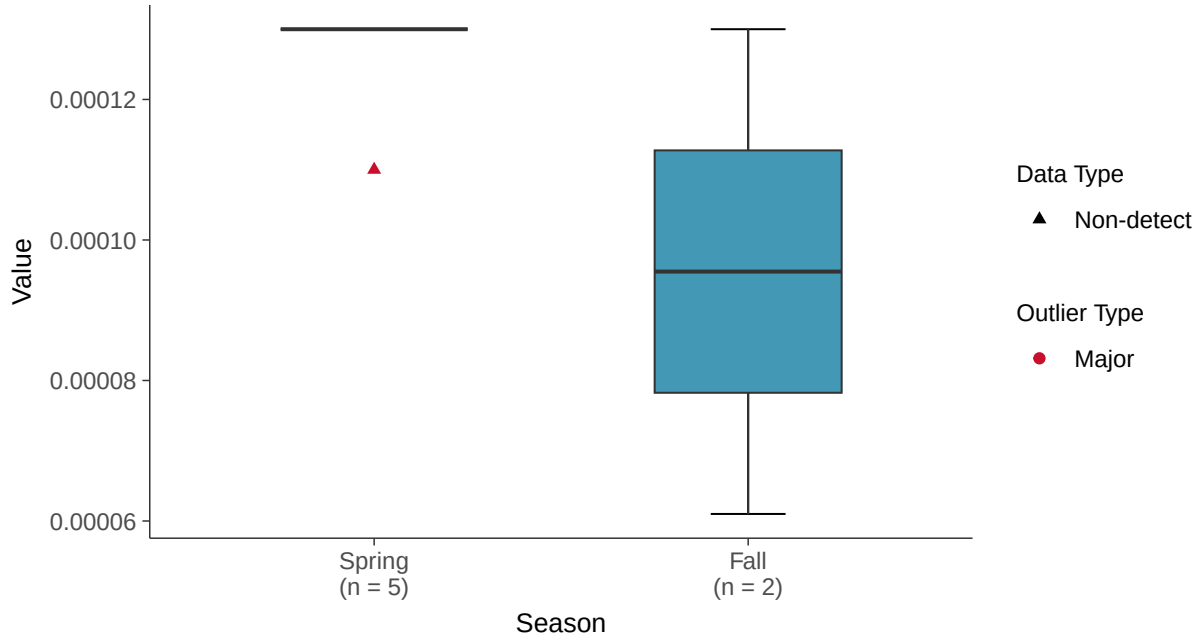
Boxplot

Mercury, MW-21 (mg/l)



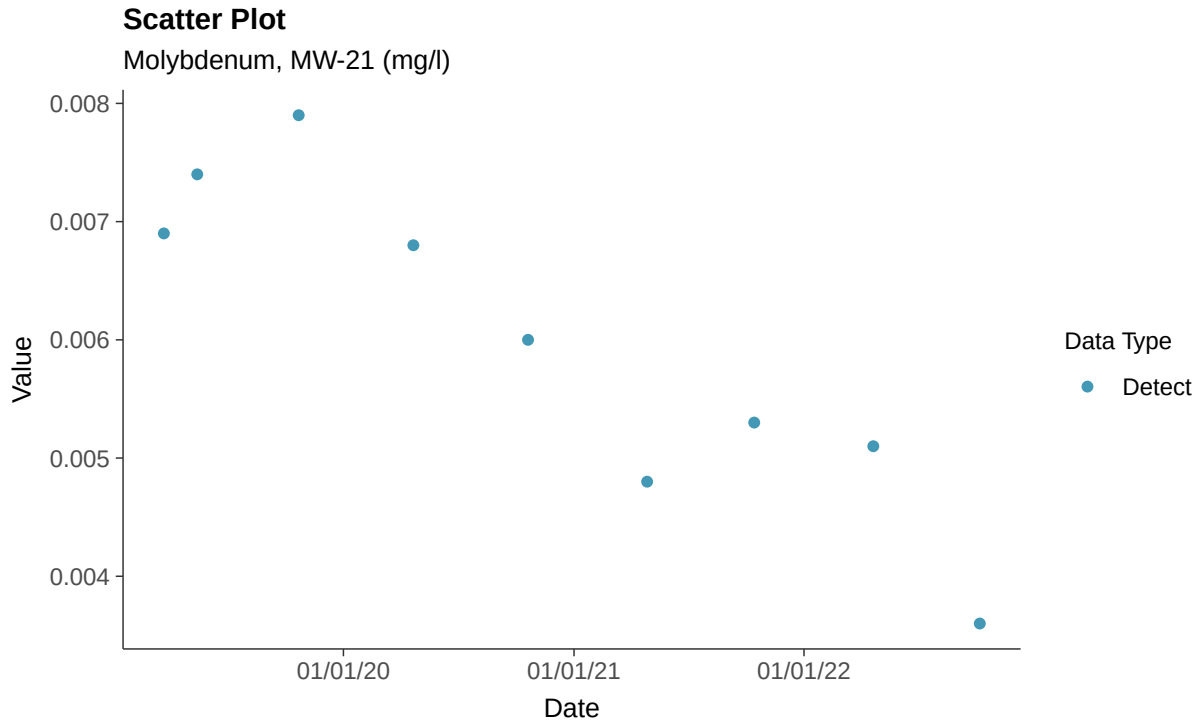
Boxplot by Season

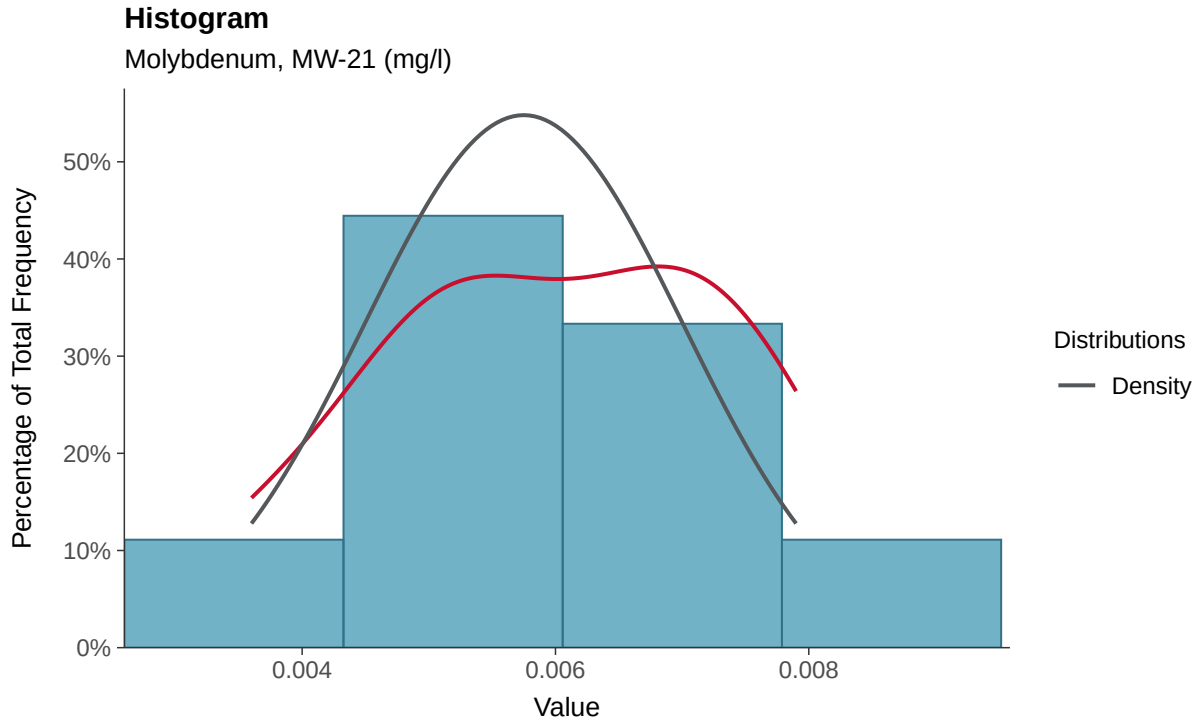
Mercury, MW-21 (mg/l)



Appendix IV: Molybdenum, MW-21

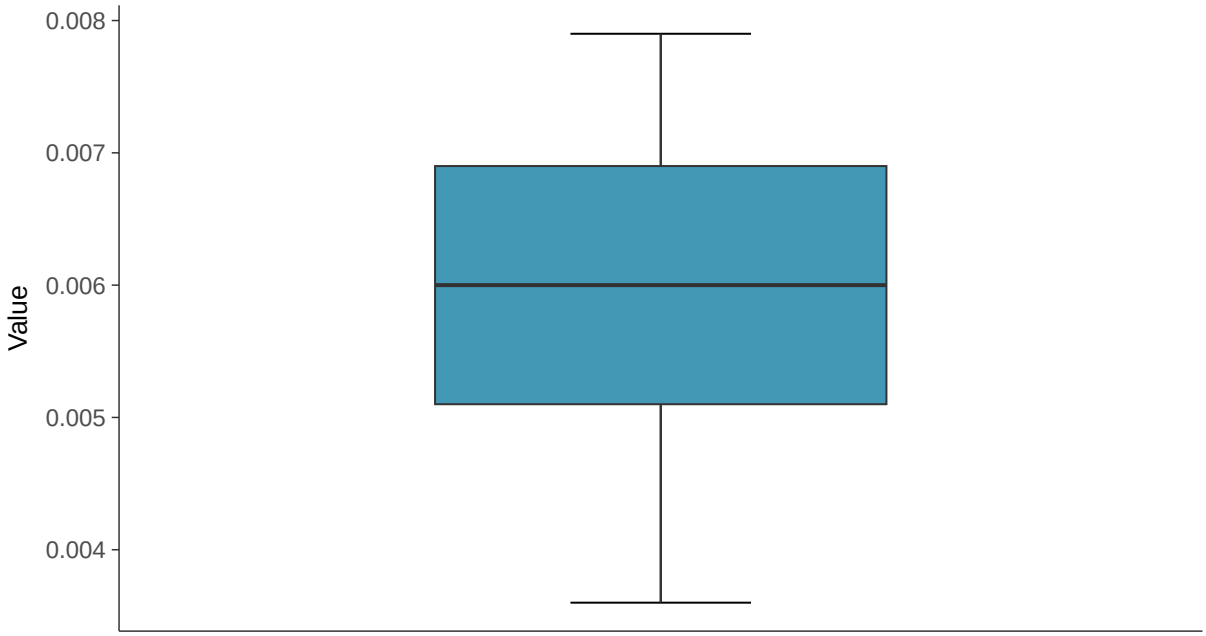
ID: 16_2_121





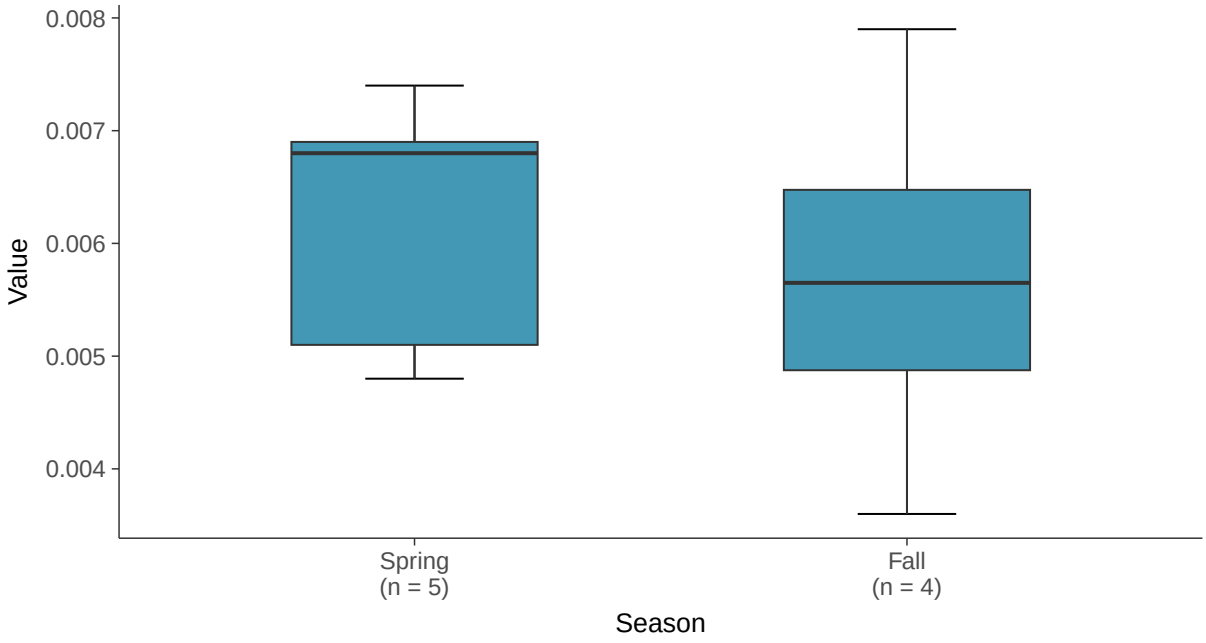
Boxplot

Molybdenum, MW-21 (mg/l)



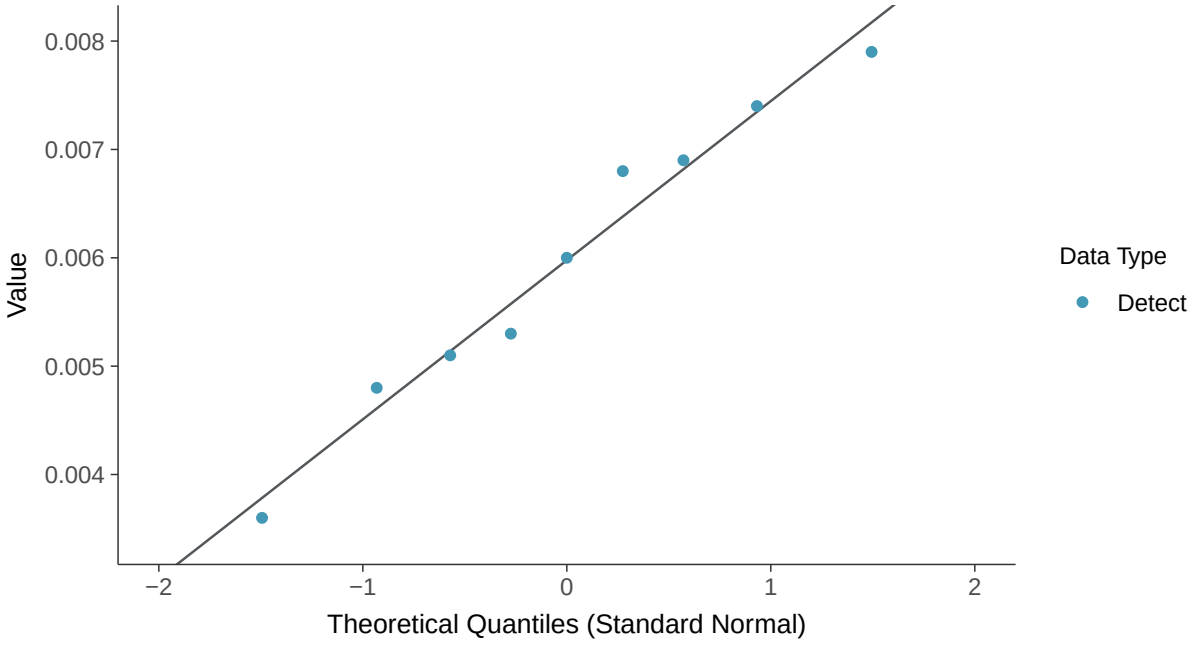
Boxplot by Season

Molybdenum, MW-21 (mg/l)



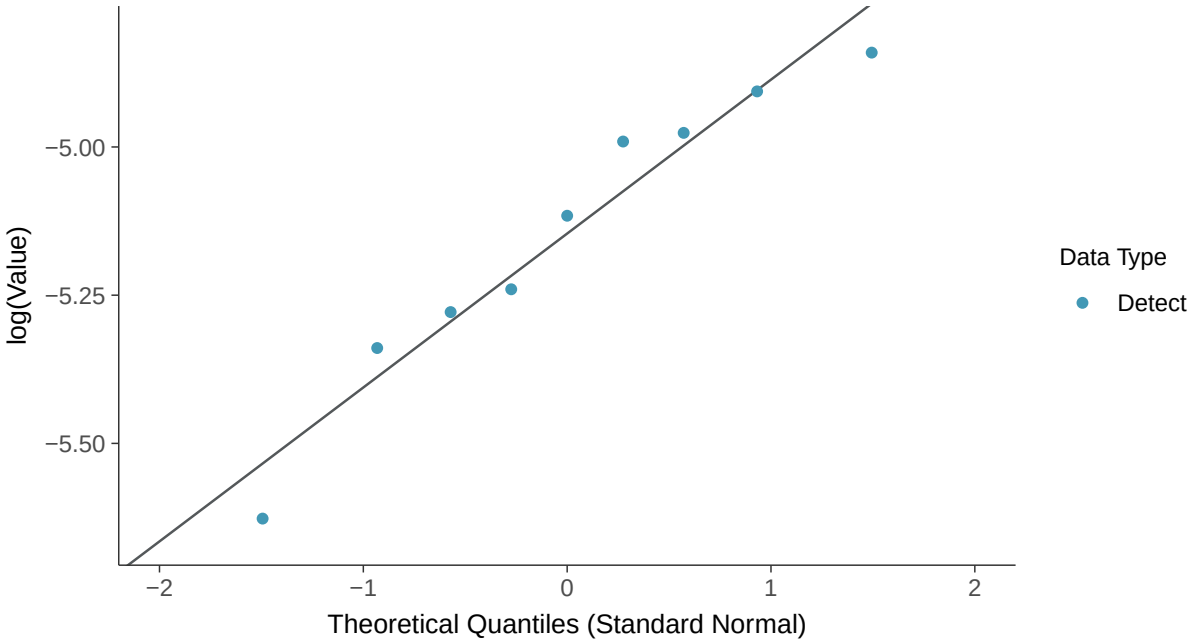
Normal Q-Q plot

Molybdenum, MW-21 (mg/l)



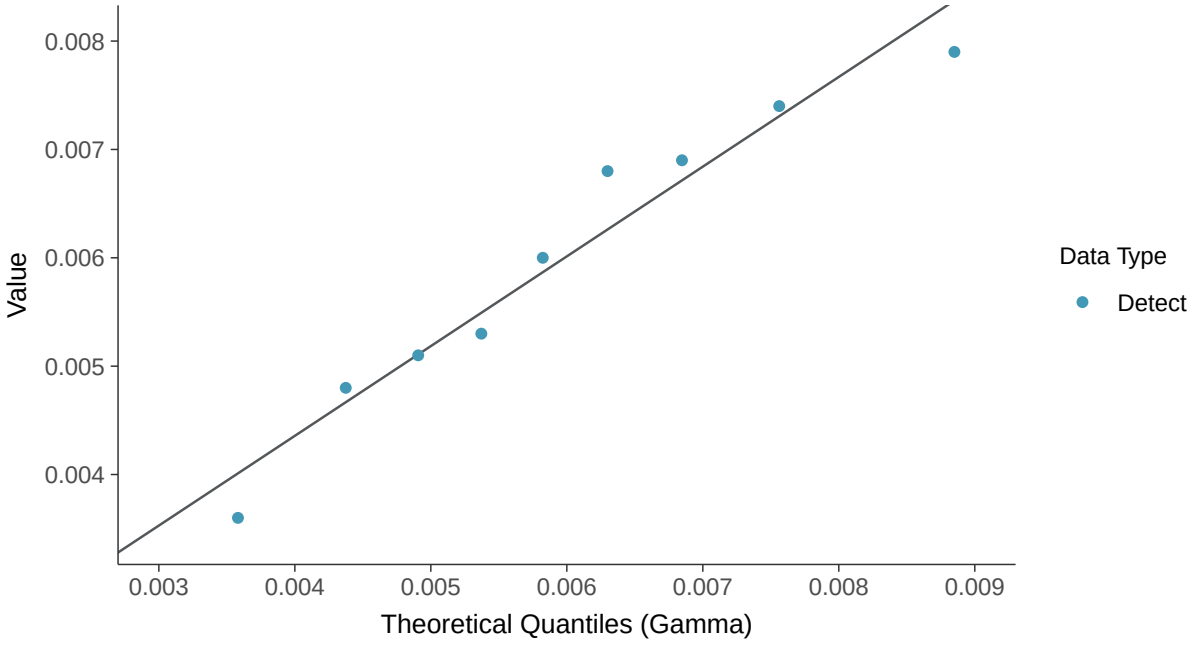
Lognormal Q-Q plot

Molybdenum, MW-21 (mg/l)



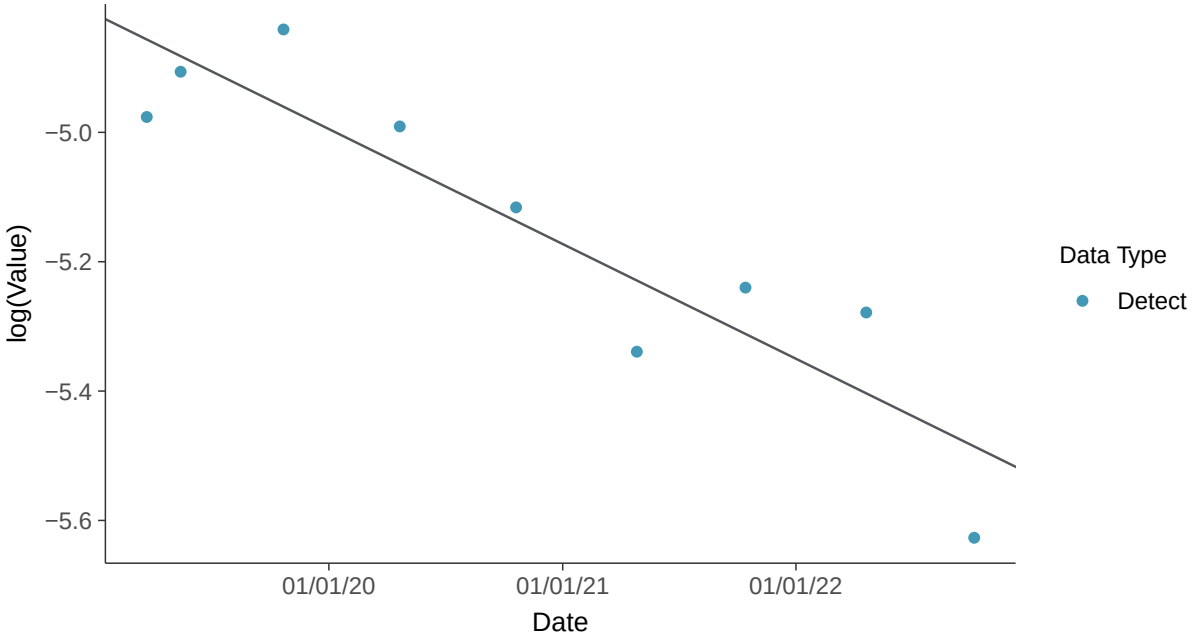
Gamma Q-Q plot

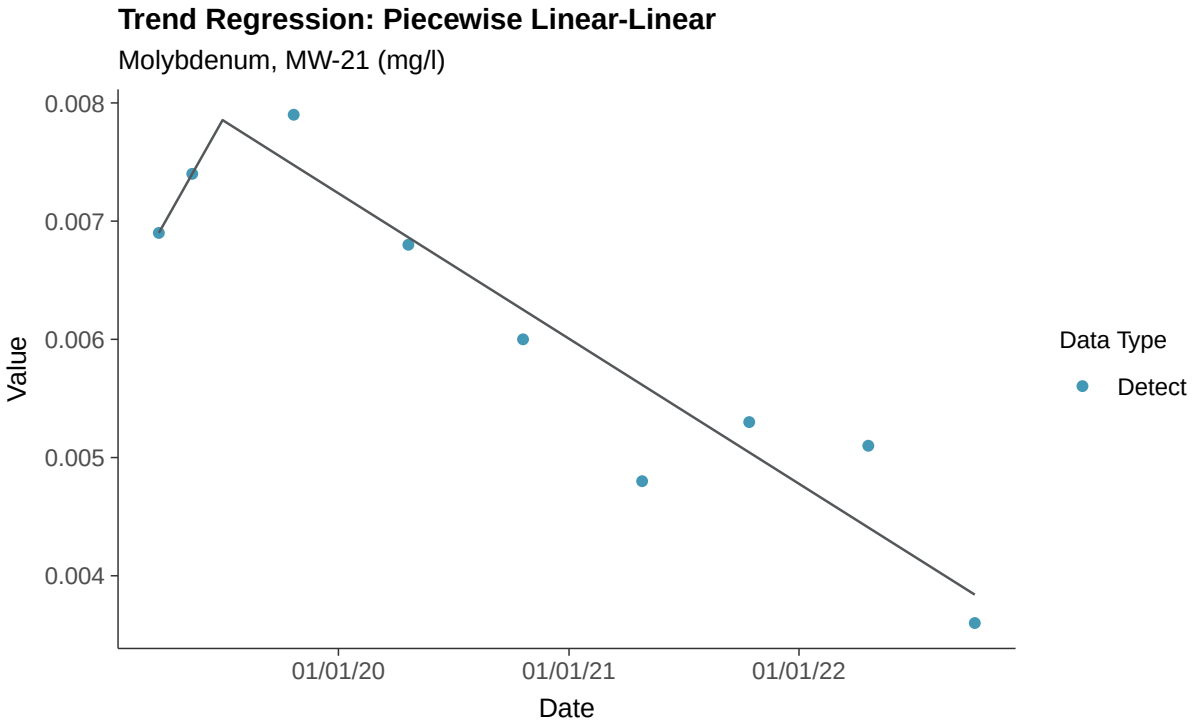
Molybdenum, MW-21 (mg/l)



Trend Regression: Lognormal MLE

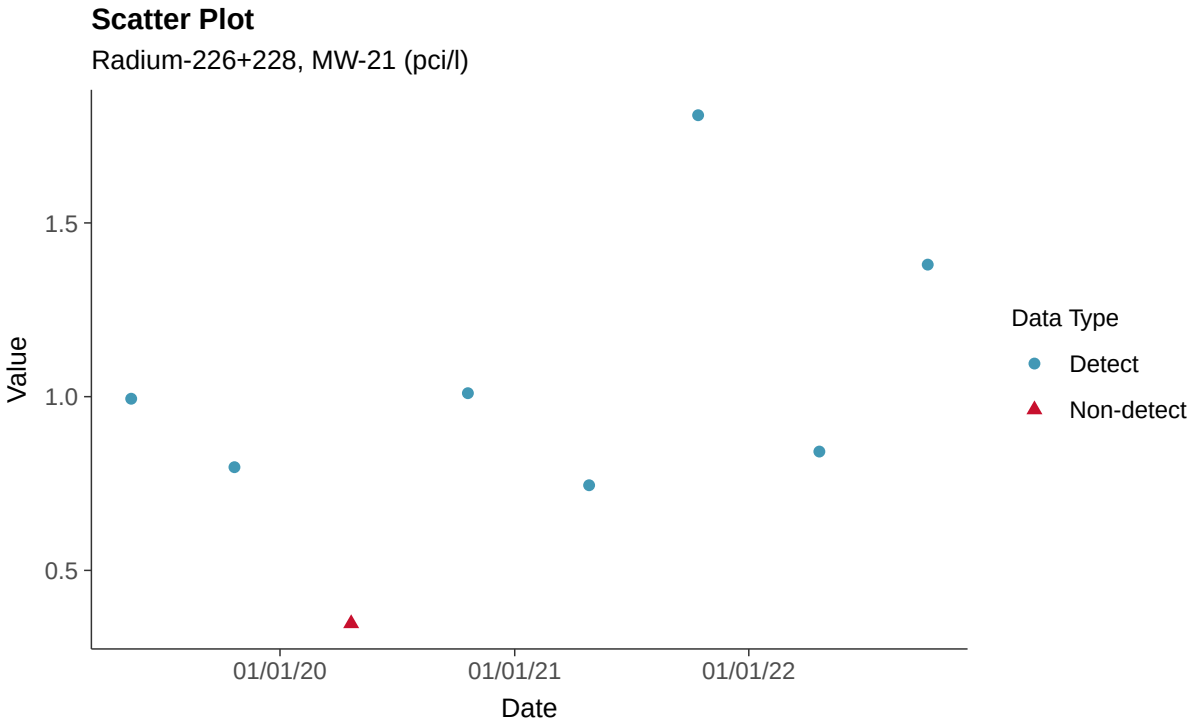
Molybdenum, MW-21 (mg/l)

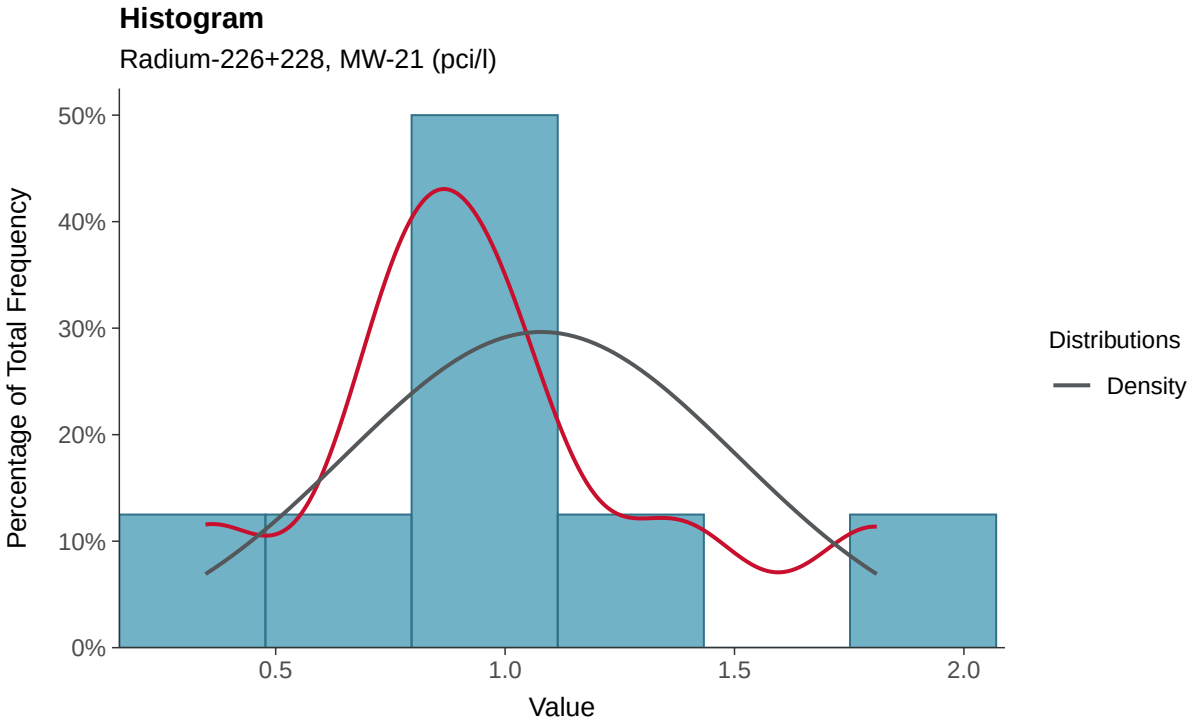



Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-21 (mg/l)
0.008
0.007
0.006
0.005
0.004
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect

Appendix IV: Radium-226+228, MW-21

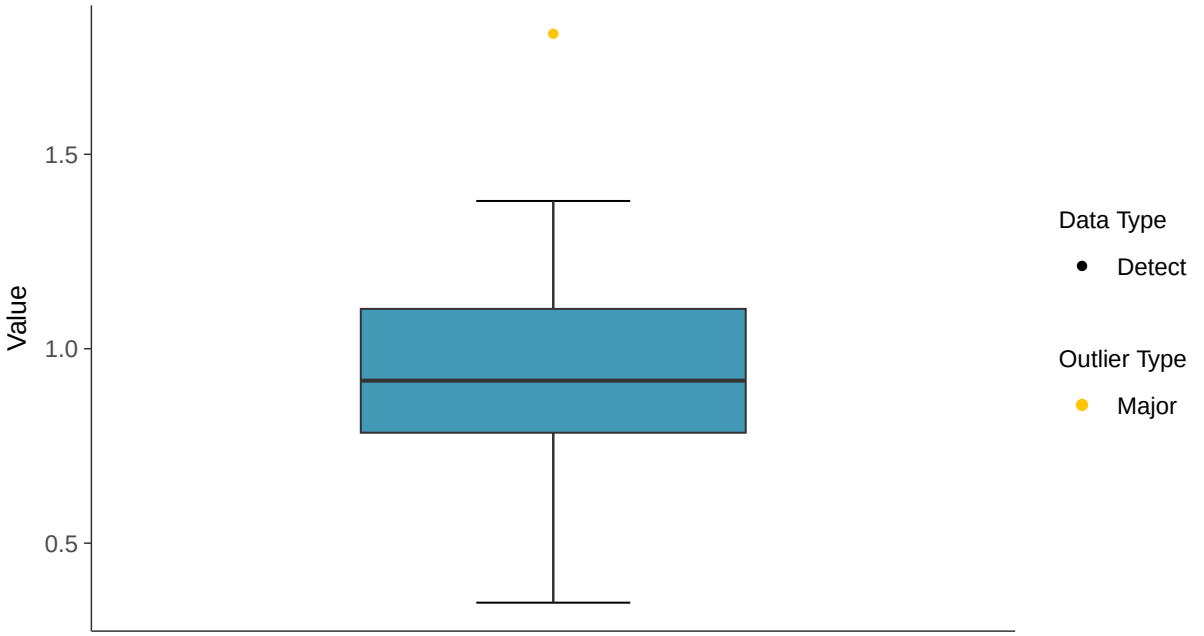
ID: 16_2_127





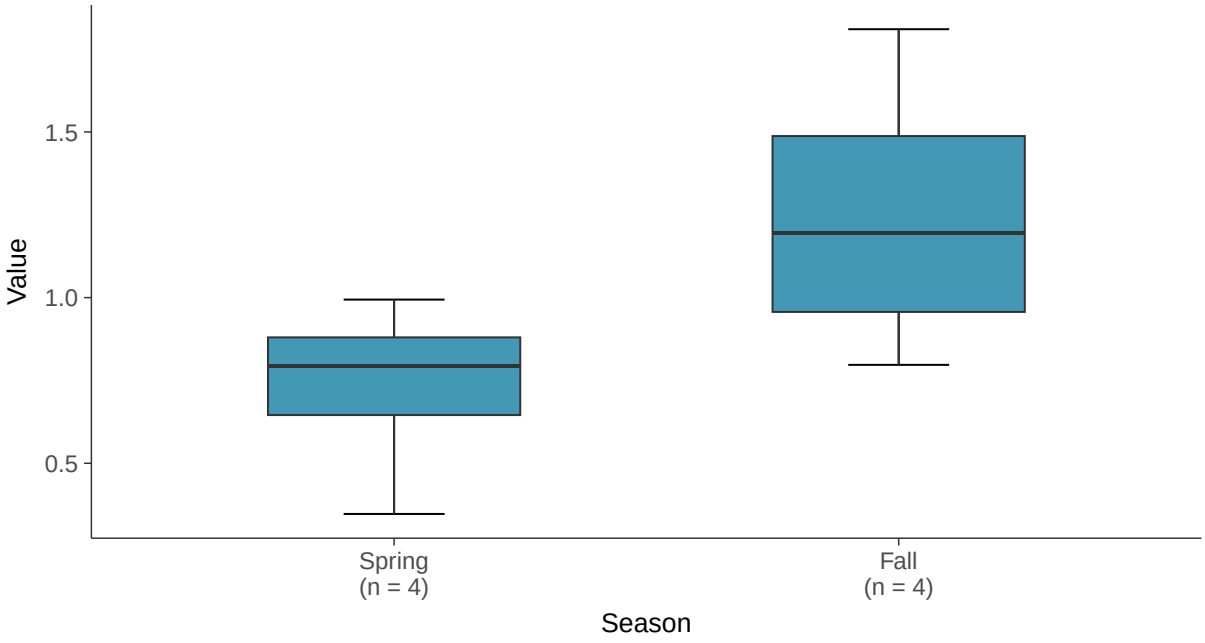
Boxplot

Radium-226+228, MW-21 (pci/l)



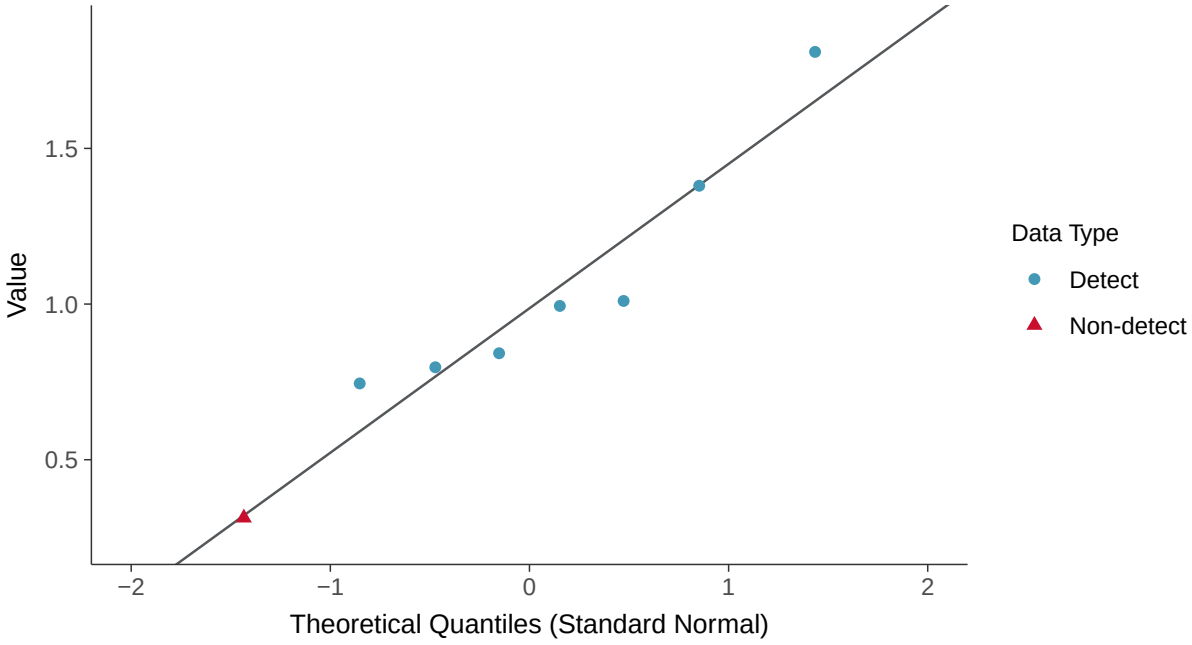
Boxplot by Season

Radium-226+228, MW-21 (pci/l)



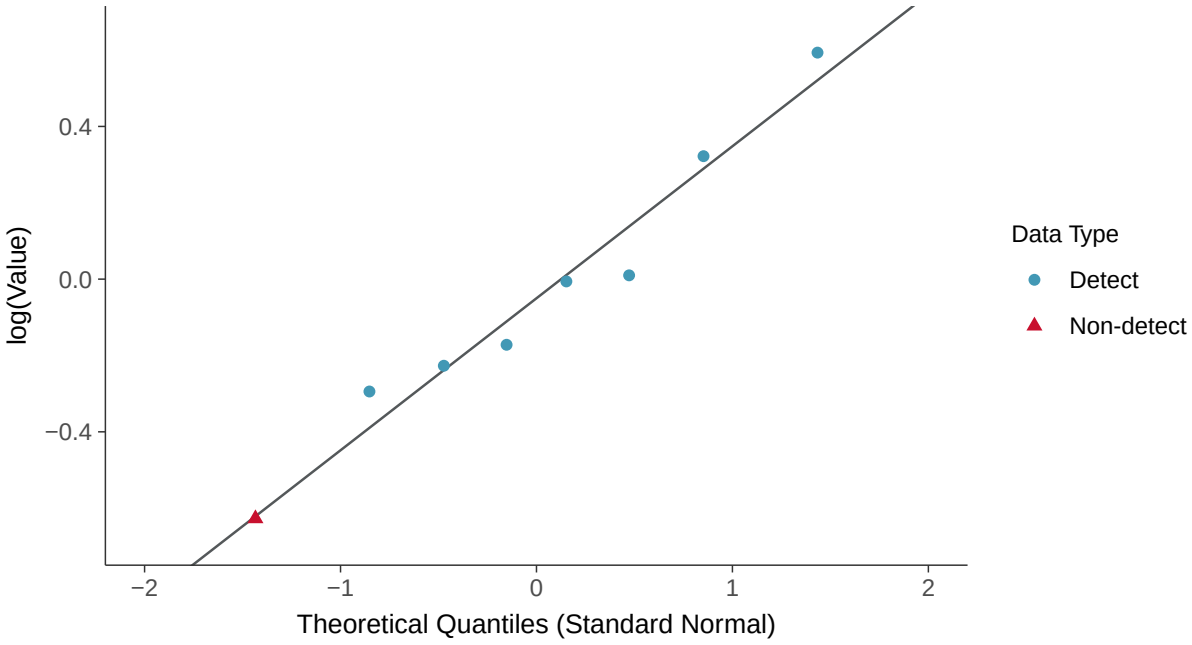
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-21 (pci/l)



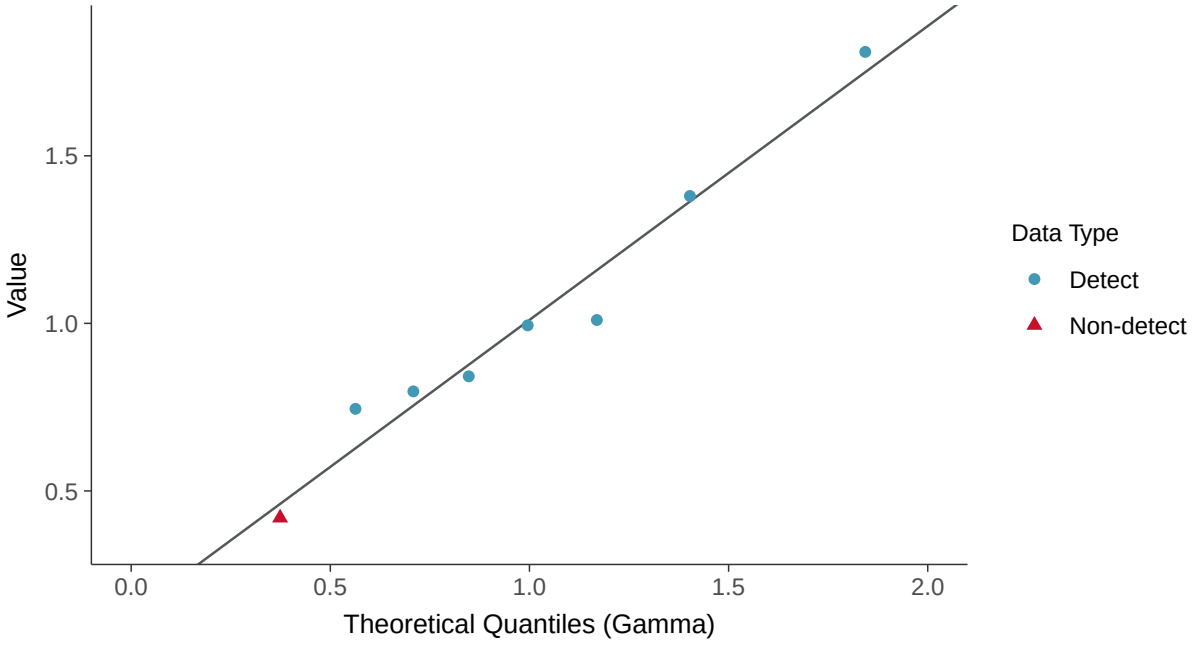
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-21 (pci/l)



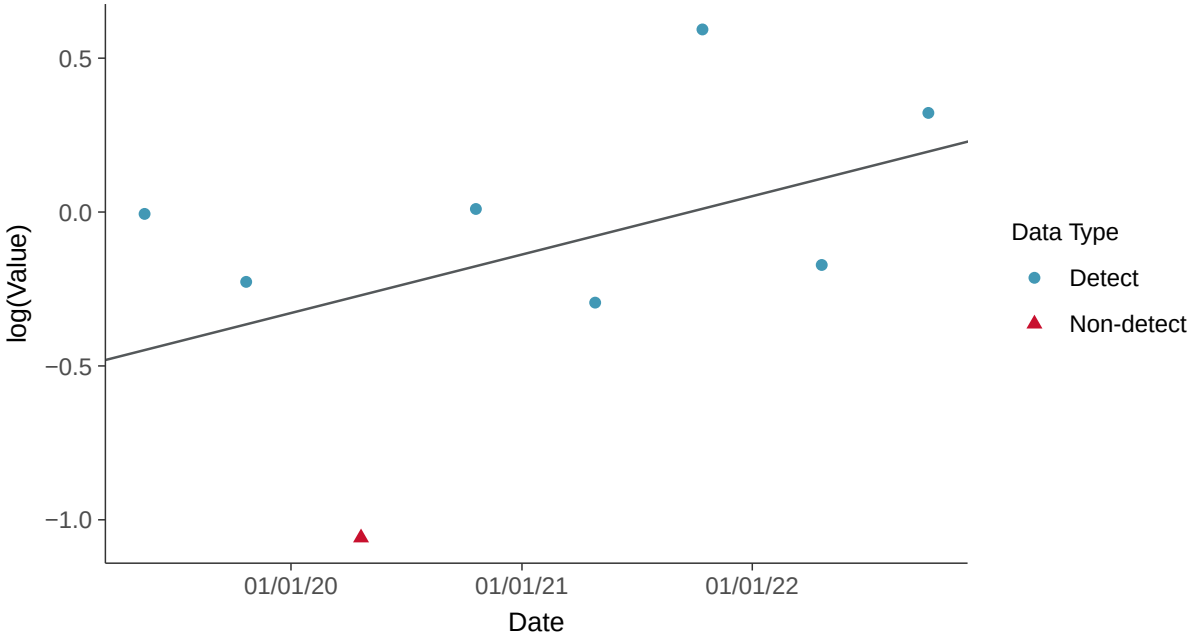
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-21 (pci/l)



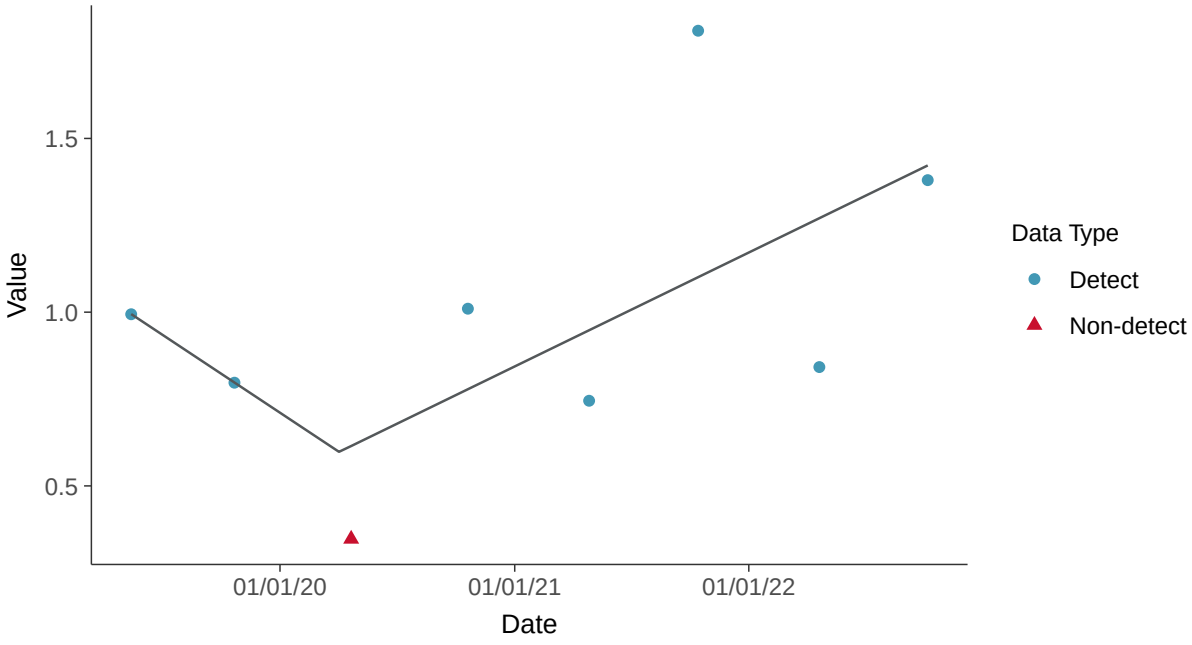
Trend Regression: Lognormal MLE

Radium-226+228, MW-21 (pci/l)



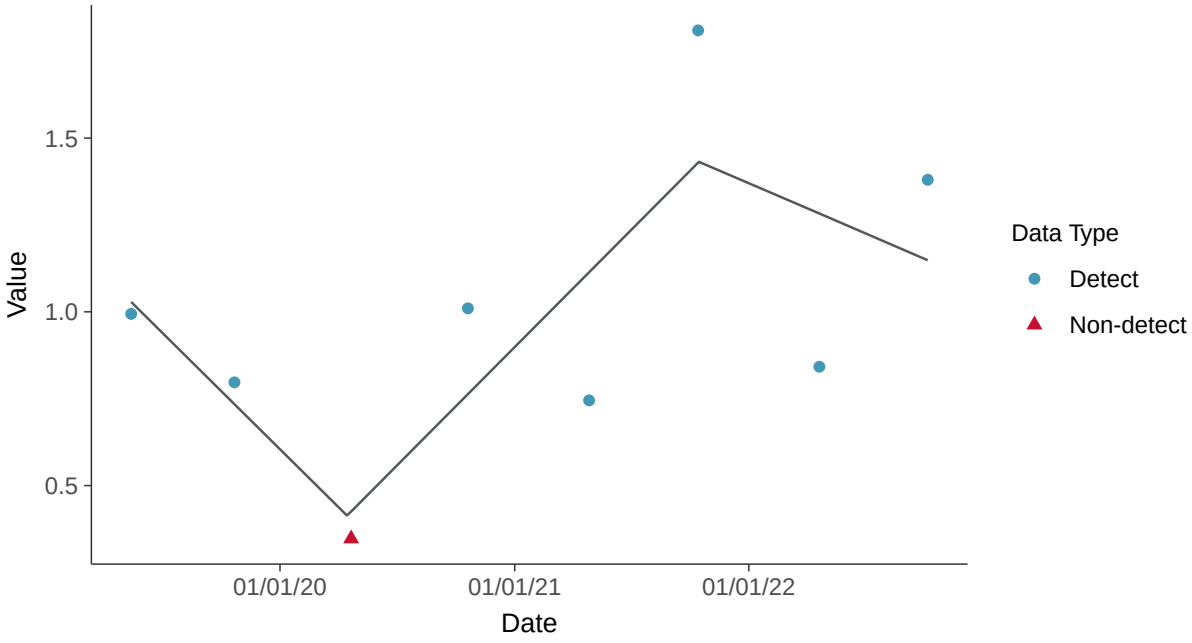
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-21 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-21 (pci/l)

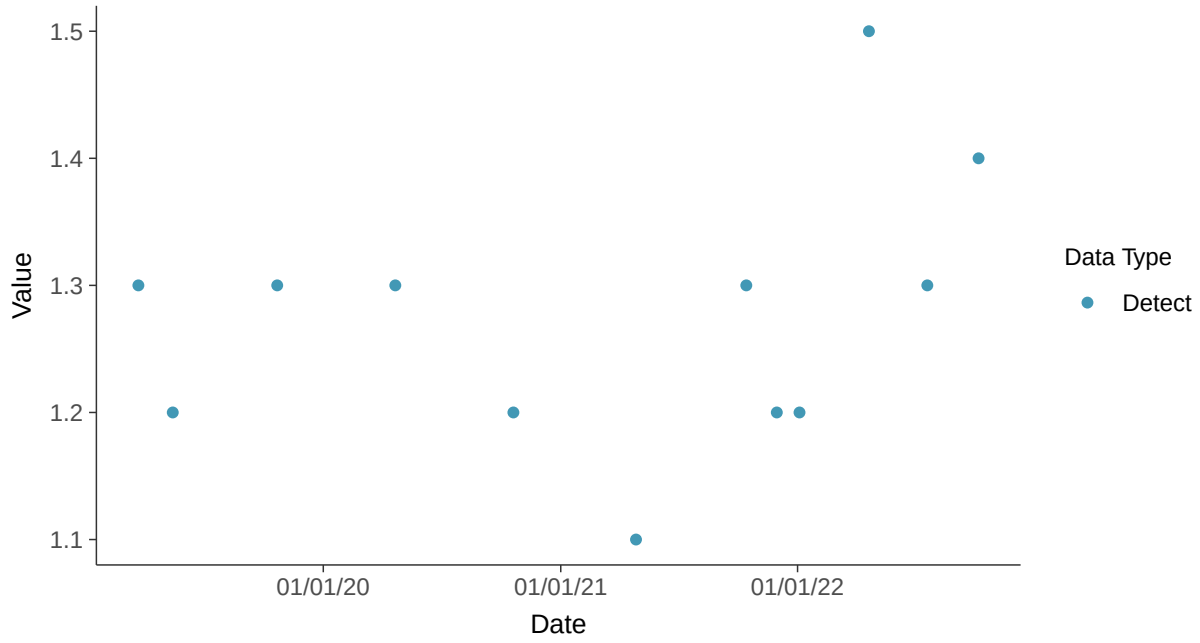


Appendix IV: Selenium, MW-21

ID: 16_2_129

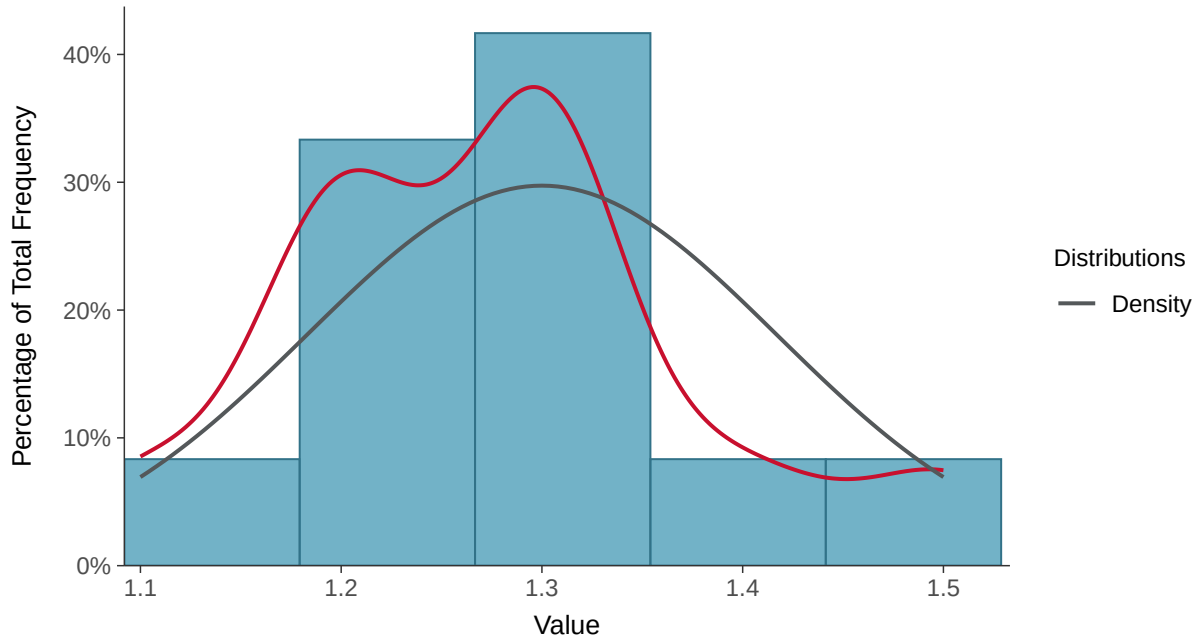
Scatter Plot

Selenium, MW-21 (mg/l)



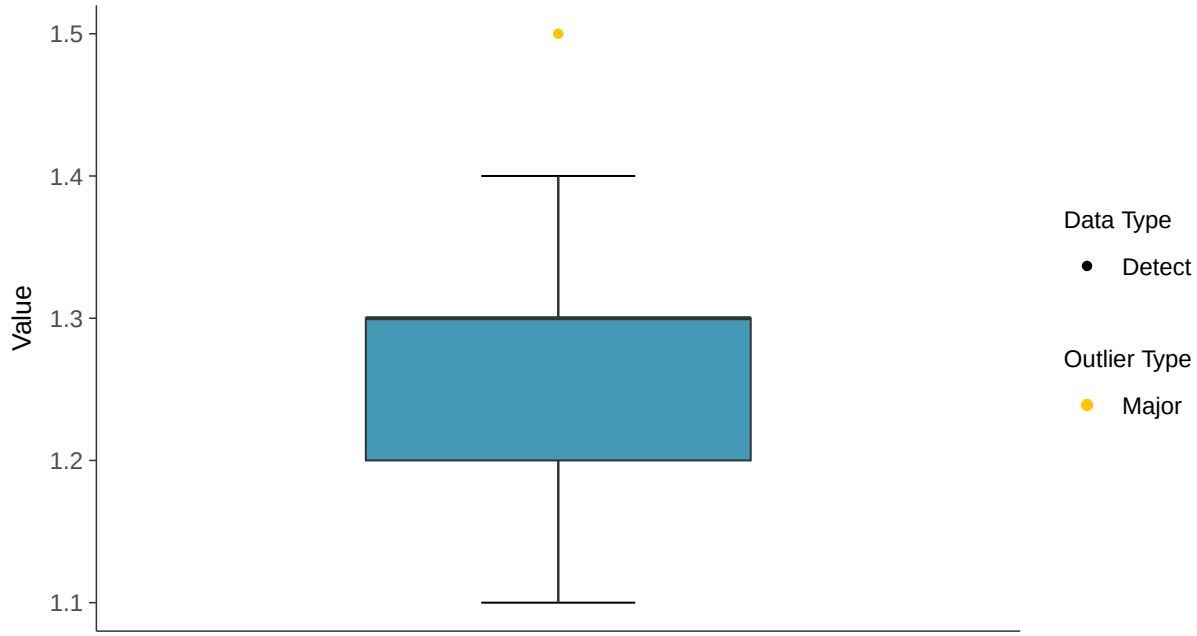
Histogram

Selenium, MW-21 (mg/l)



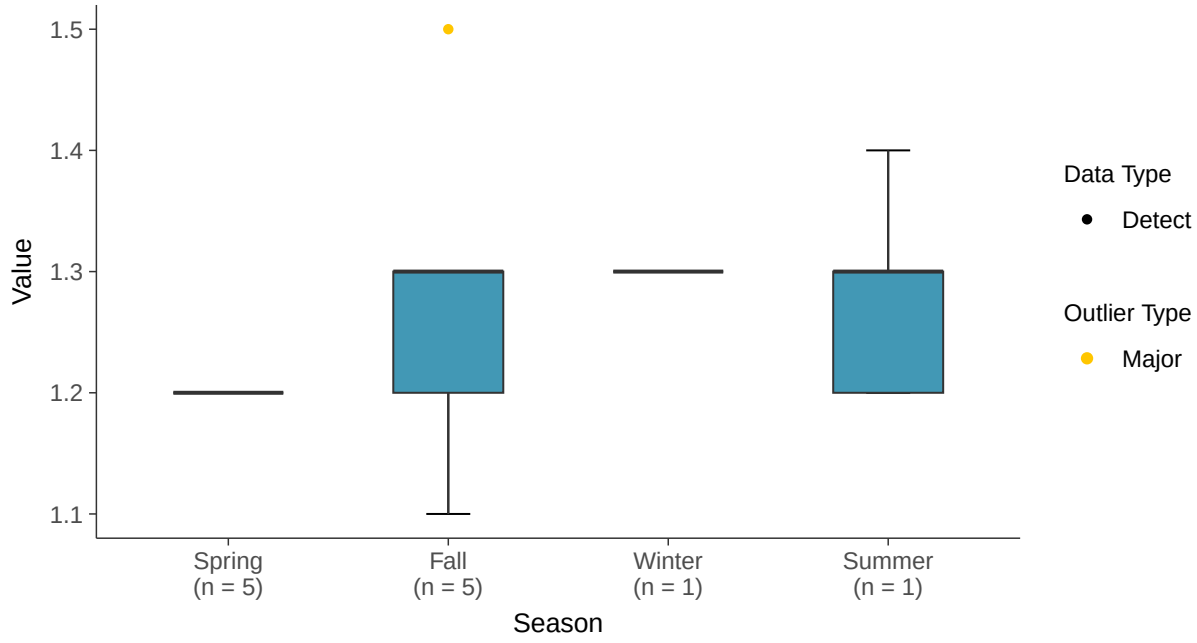
Boxplot

Selenium, MW-21 (mg/l)



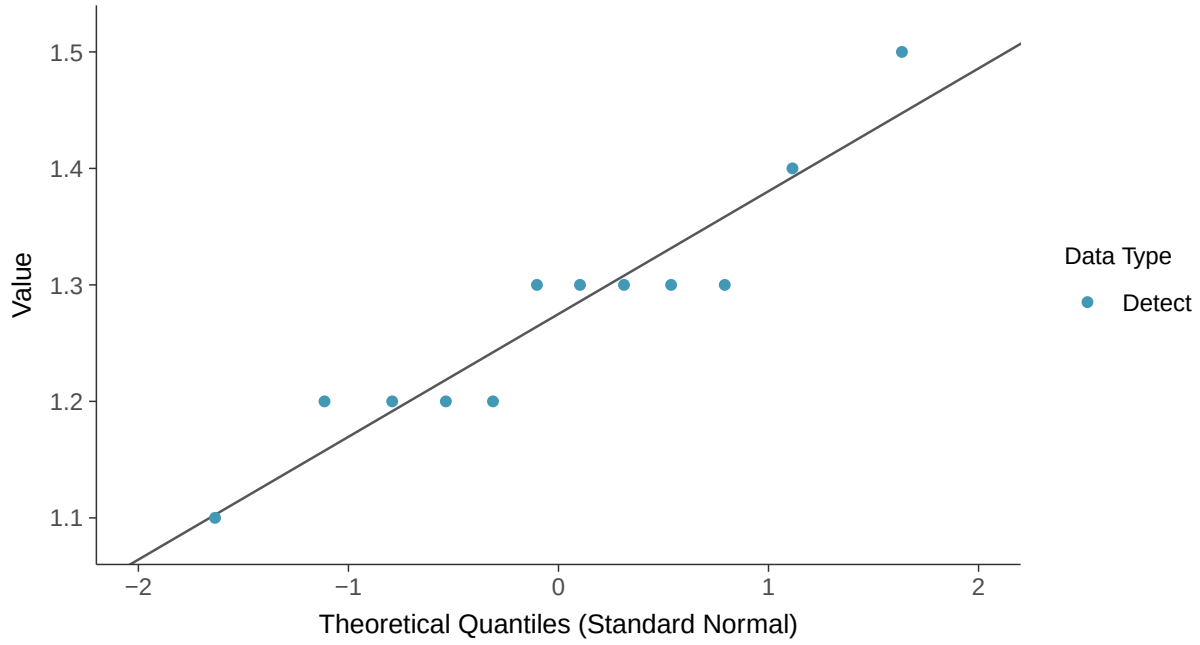
Boxplot by Season

Selenium, MW-21 (mg/l)



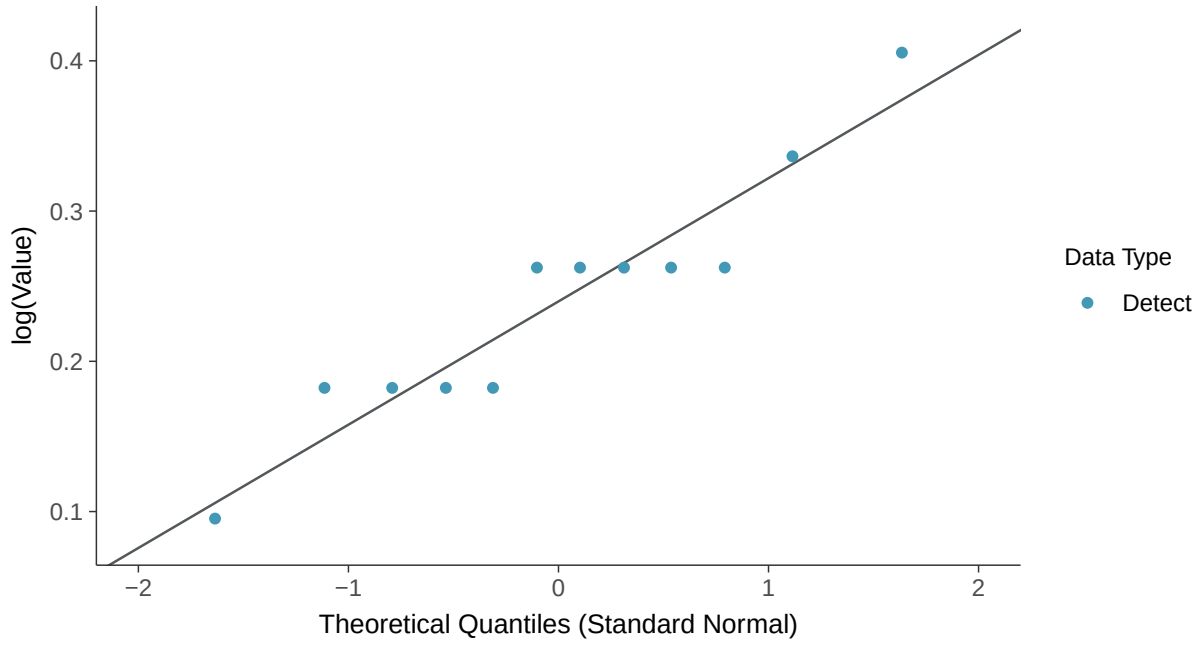
Normal Q-Q plot

Selenium, MW-21 (mg/l)



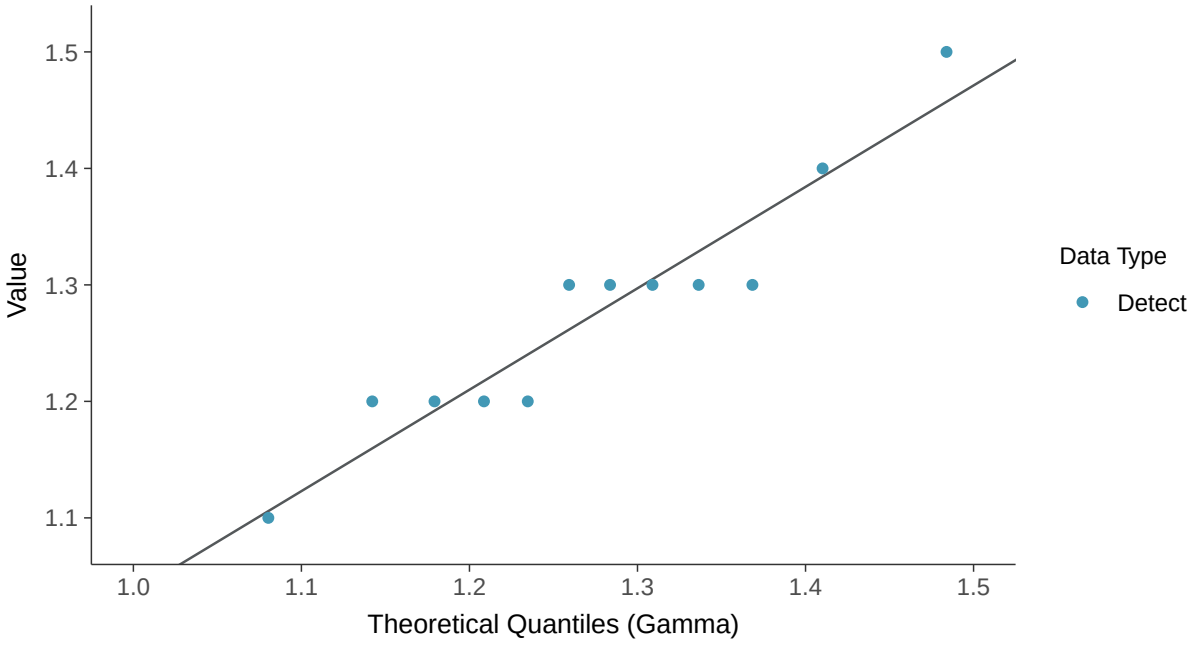
Lognormal Q-Q plot

Selenium, MW-21 (mg/l)



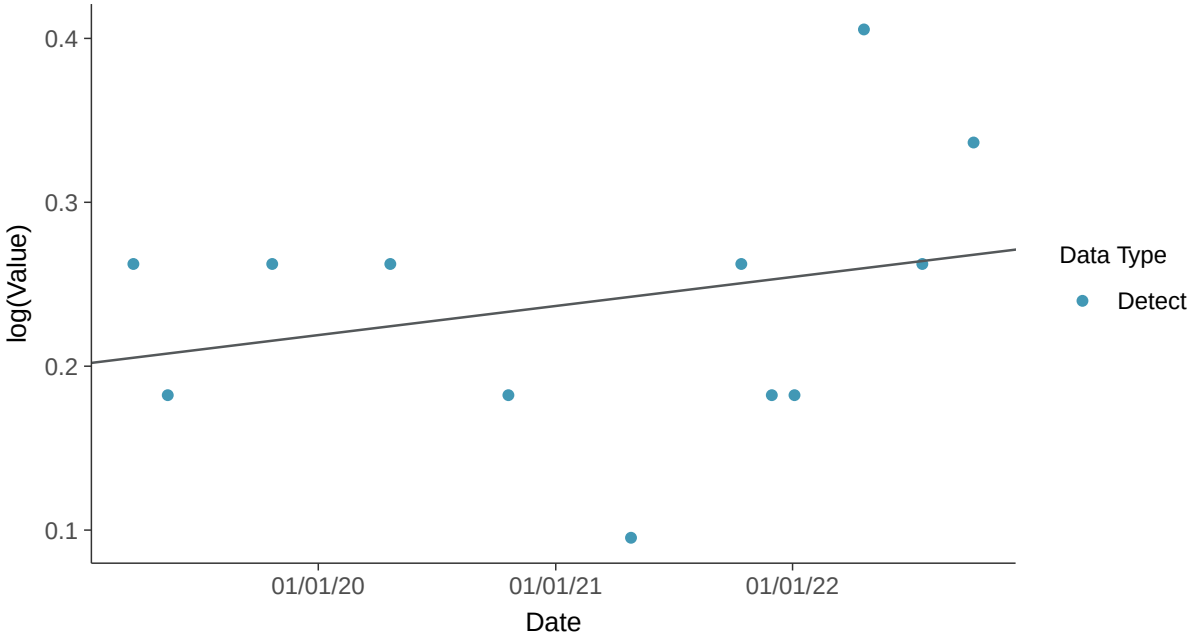
Gamma Q-Q plot

Selenium, MW-21 (mg/l)



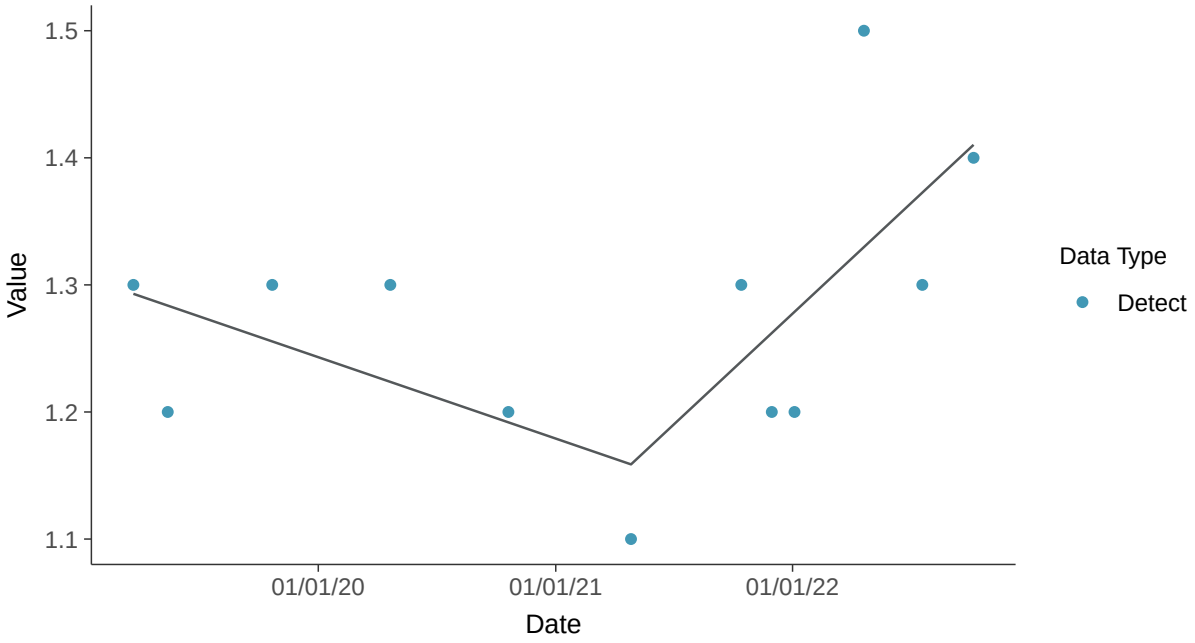
Trend Regression: Lognormal MLE

Selenium, MW-21 (mg/l)



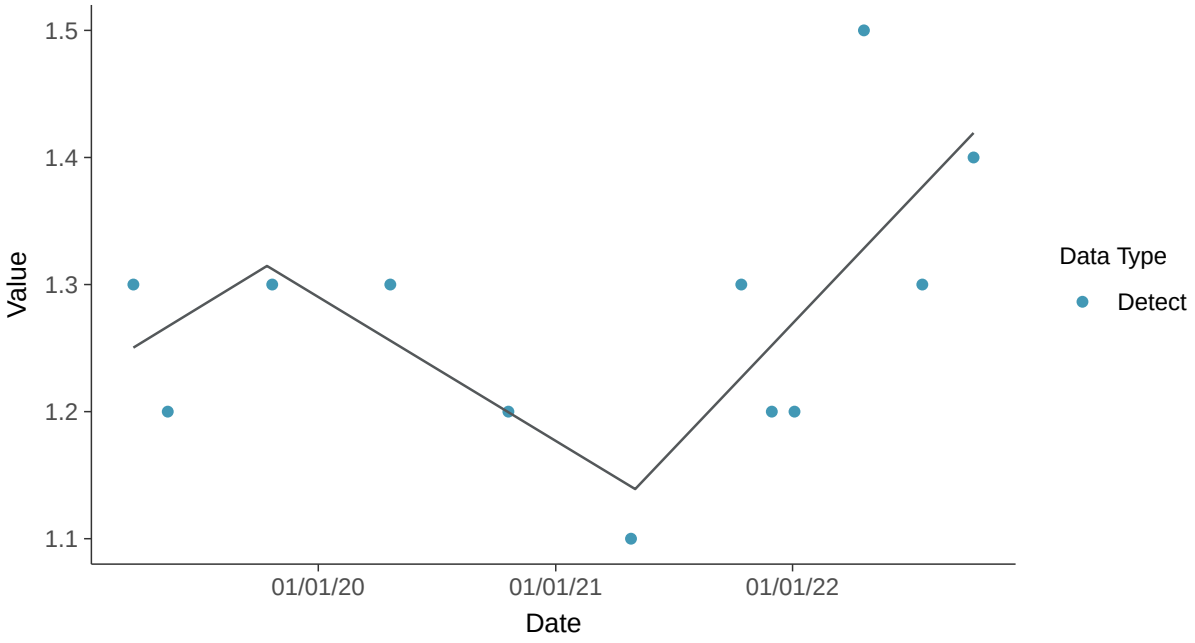
Trend Regression: Piecewise Linear-Linear

Selenium, MW-21 (mg/l)



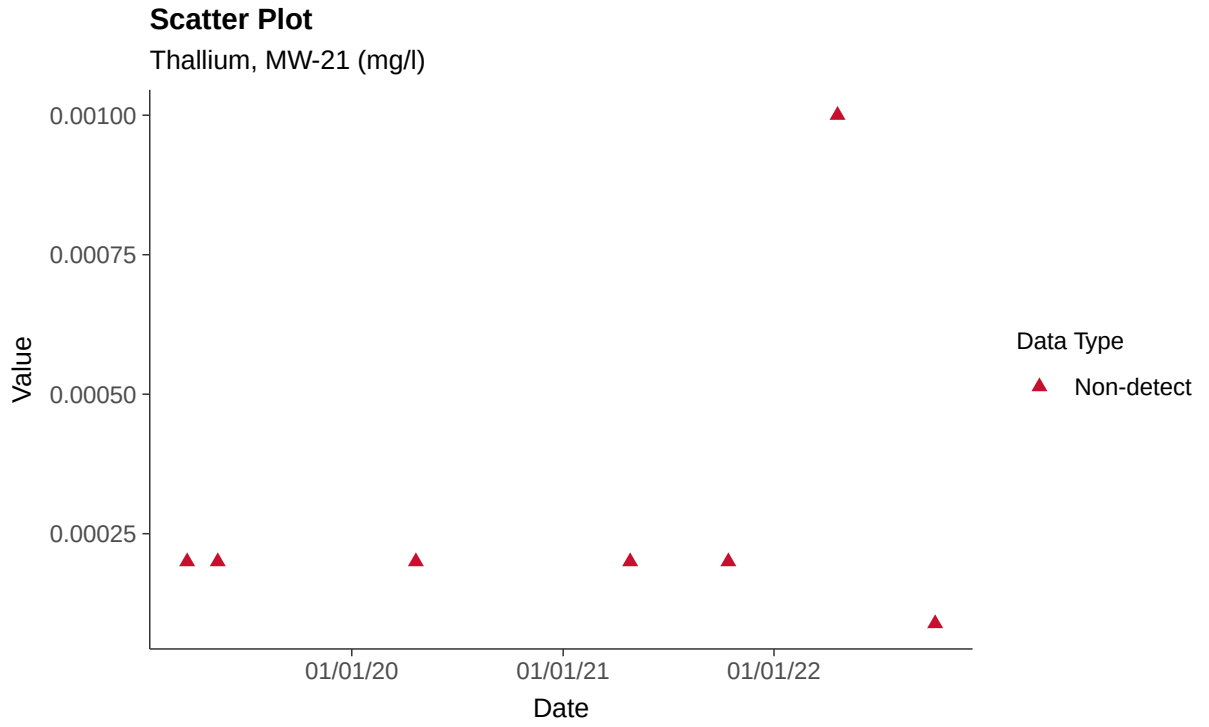
Trend Regression: Piecewise Linear-Linear-Linear

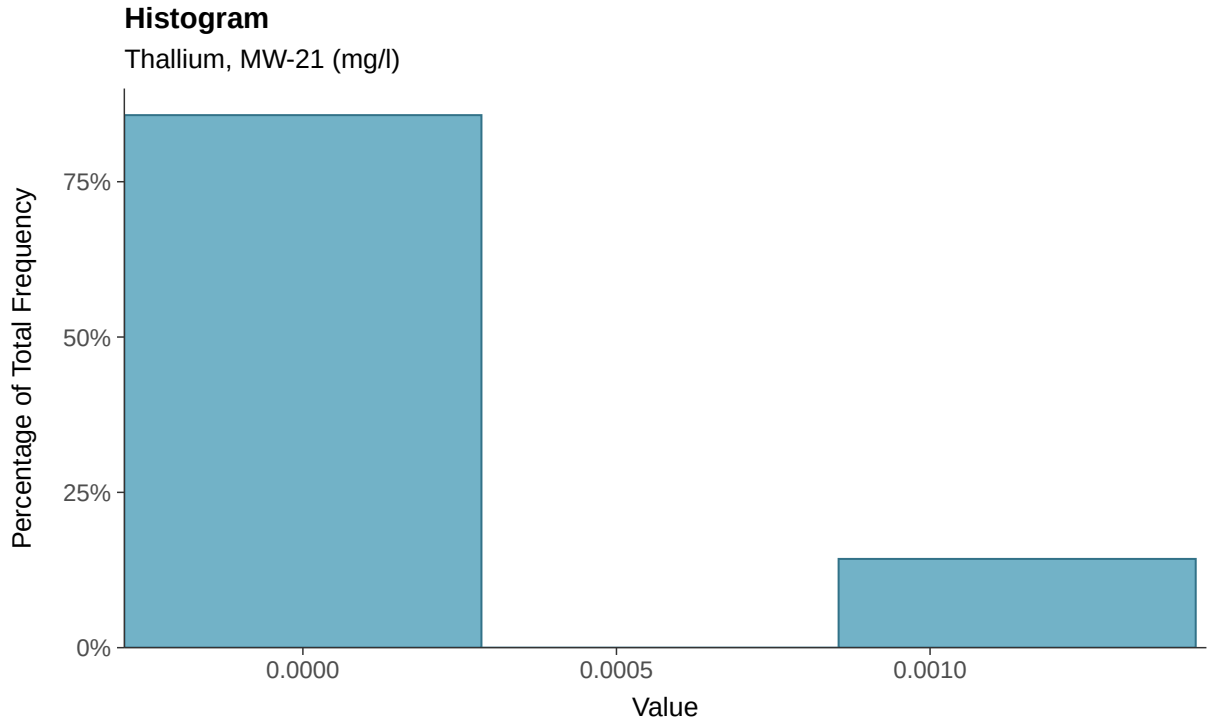
Selenium, MW-21 (mg/l)



Appendix IV: Thallium, MW-21

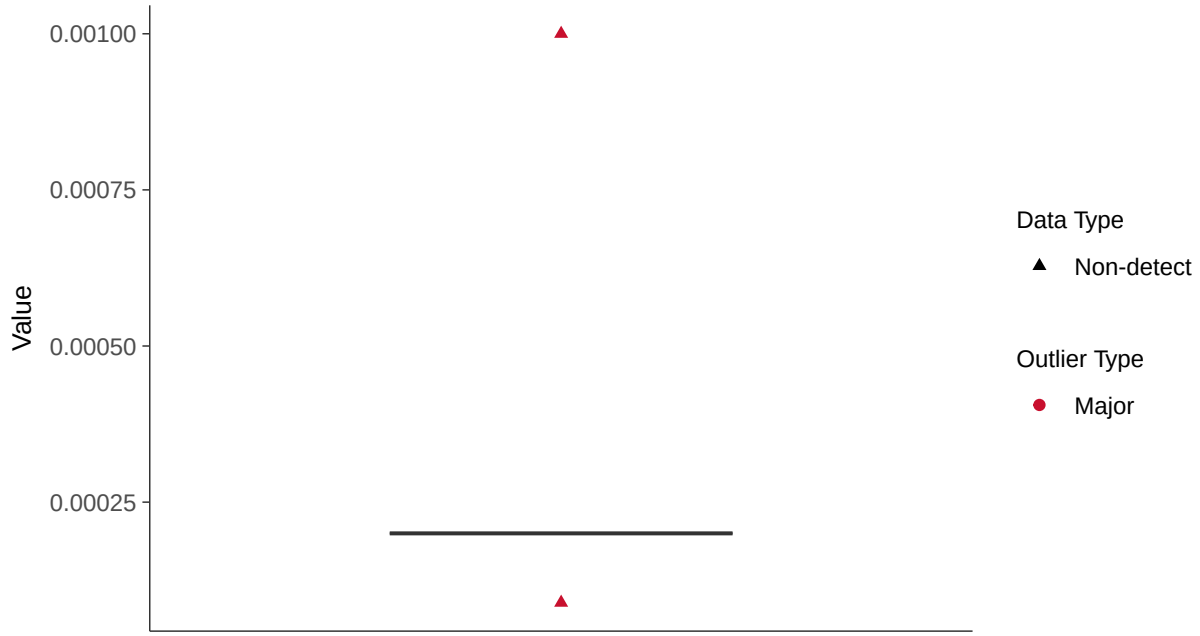
ID: 16_2_134





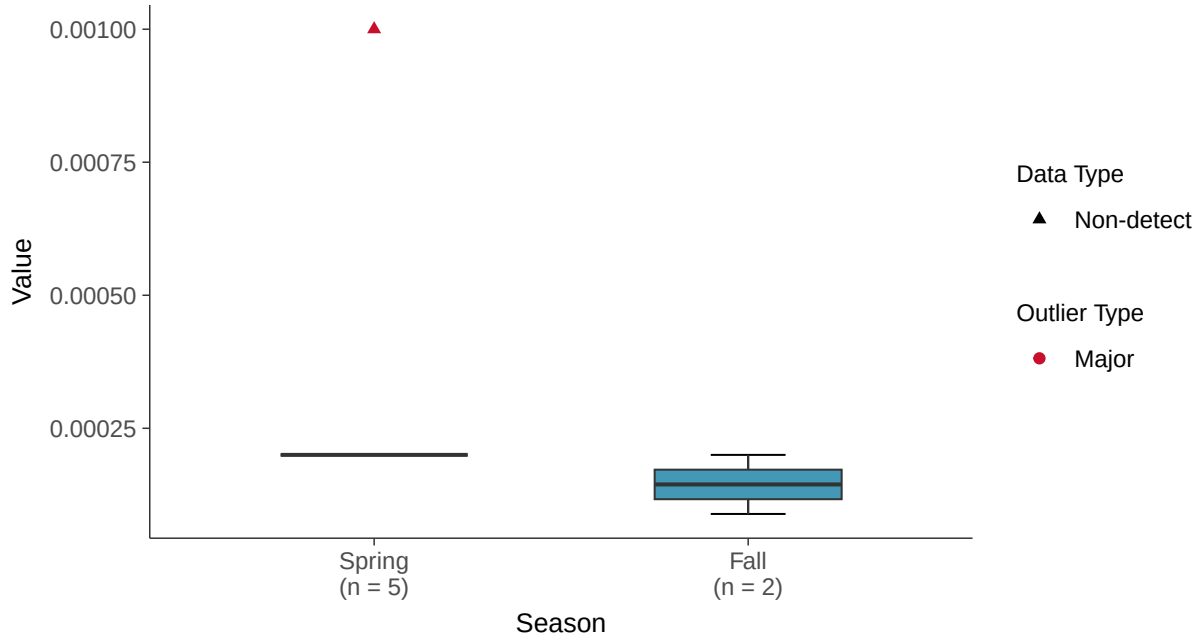
Boxplot

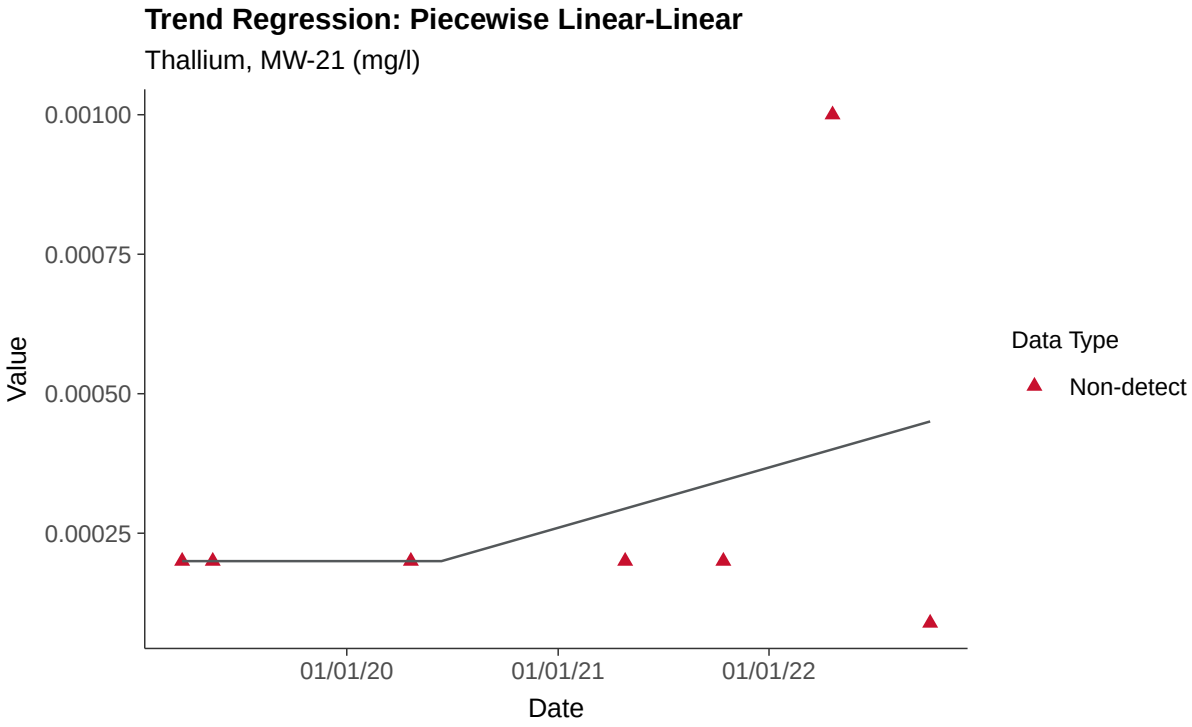
Thallium, MW-21 (mg/l)



Boxplot by Season

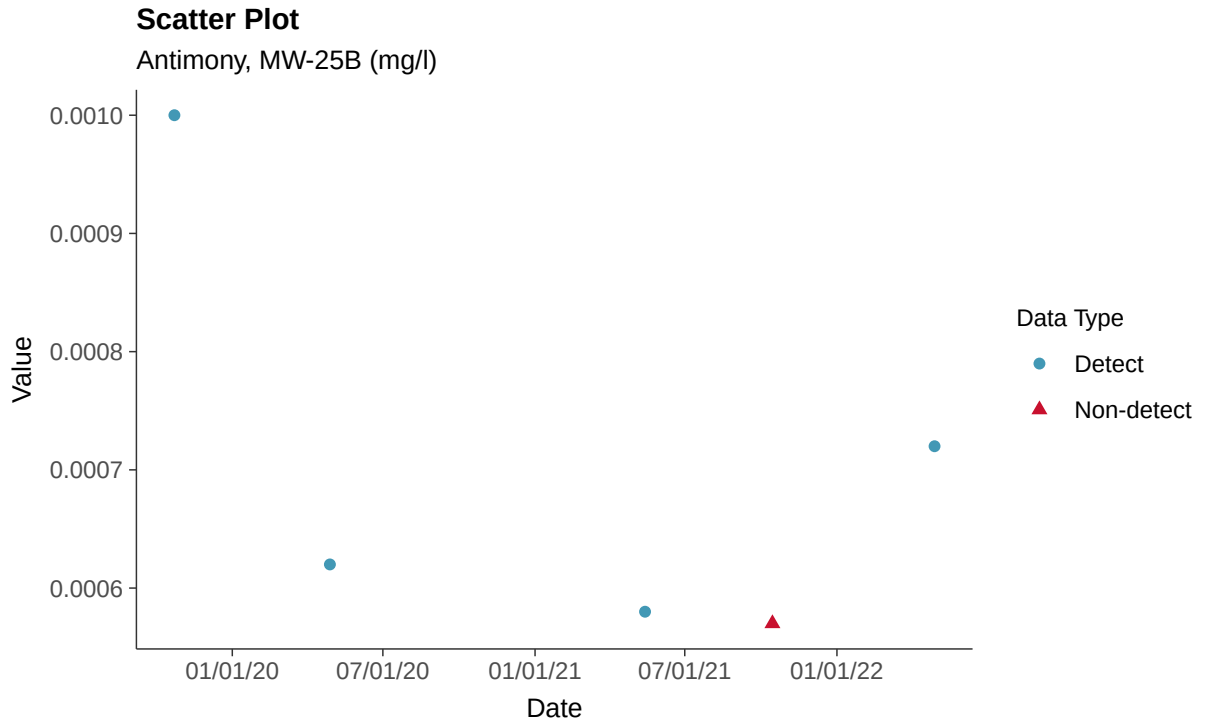
Thallium, MW-21 (mg/l)

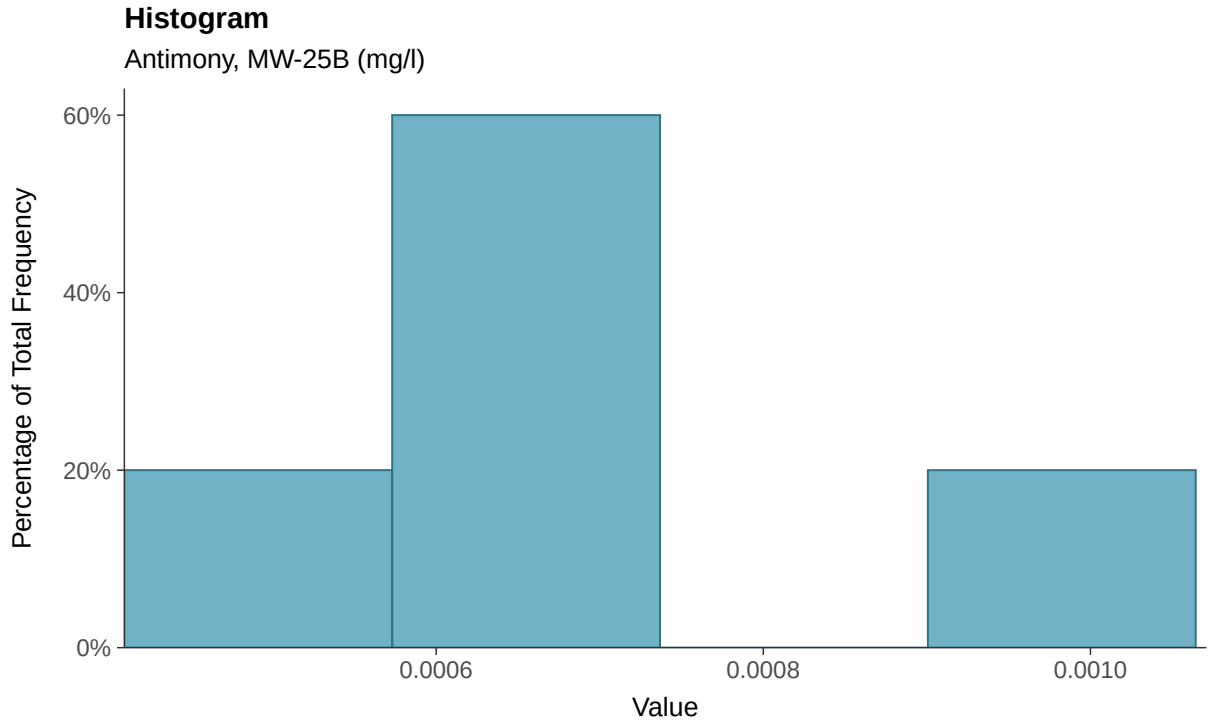



Trend Regression: Piecewise Linear-Linear
Thallium, MW-21 (mg/l)
0.00100
0.00075
0.00050
0.00025
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Antimony, MW-25B

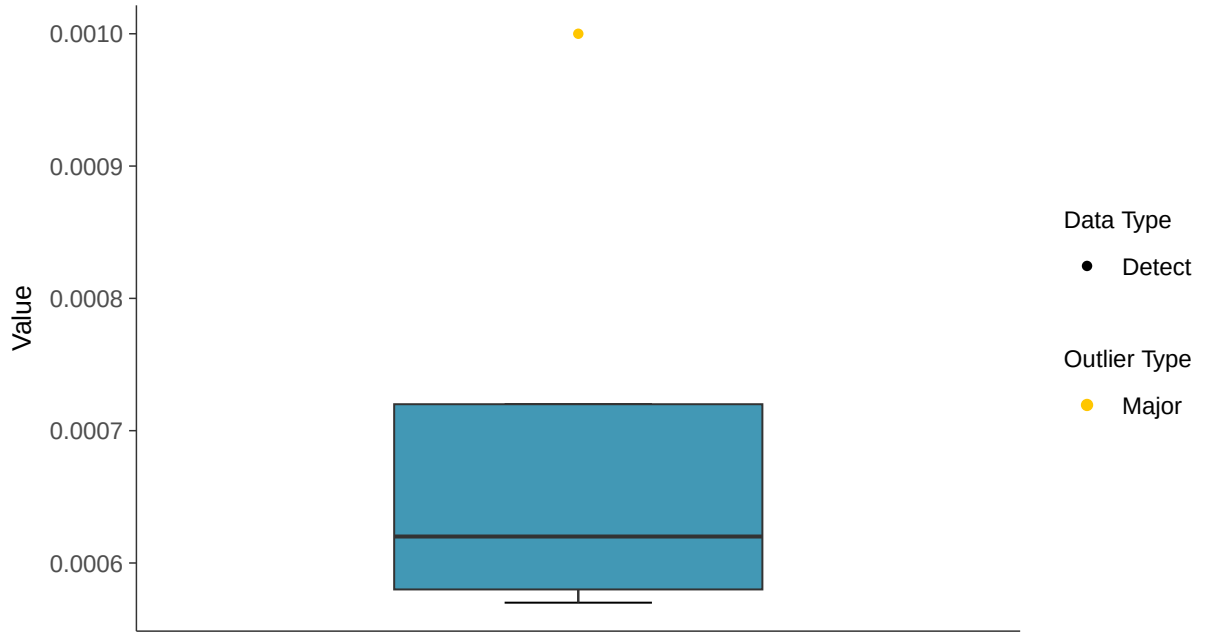
ID: 17_2_104





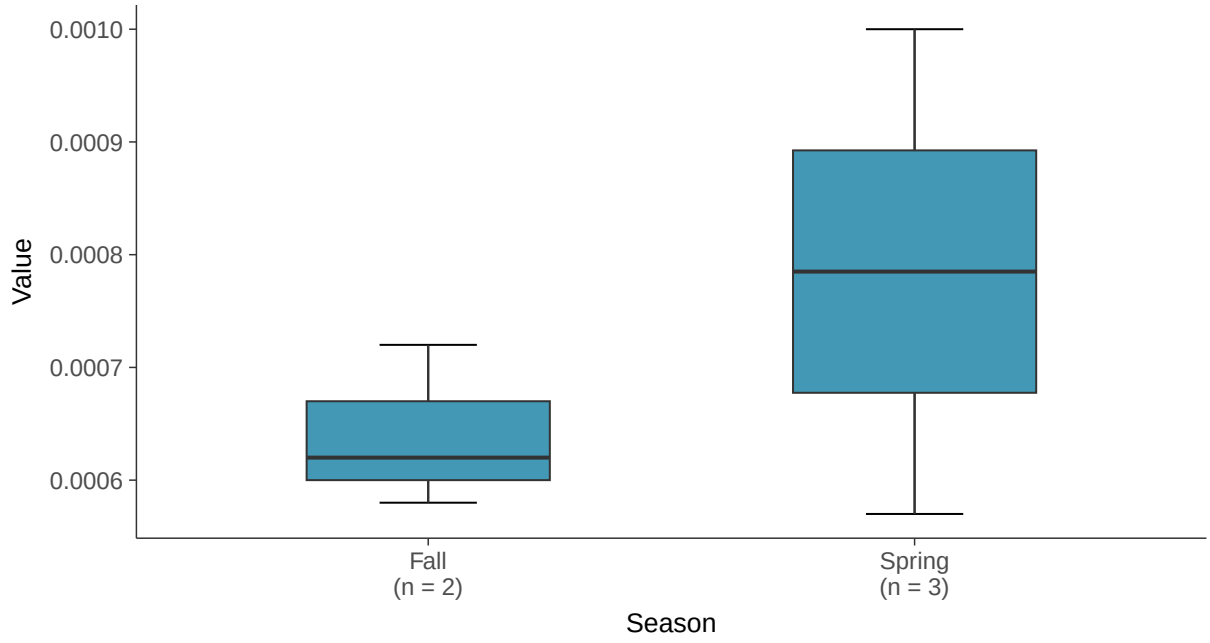
Boxplot

Antimony, MW-25B (mg/l)



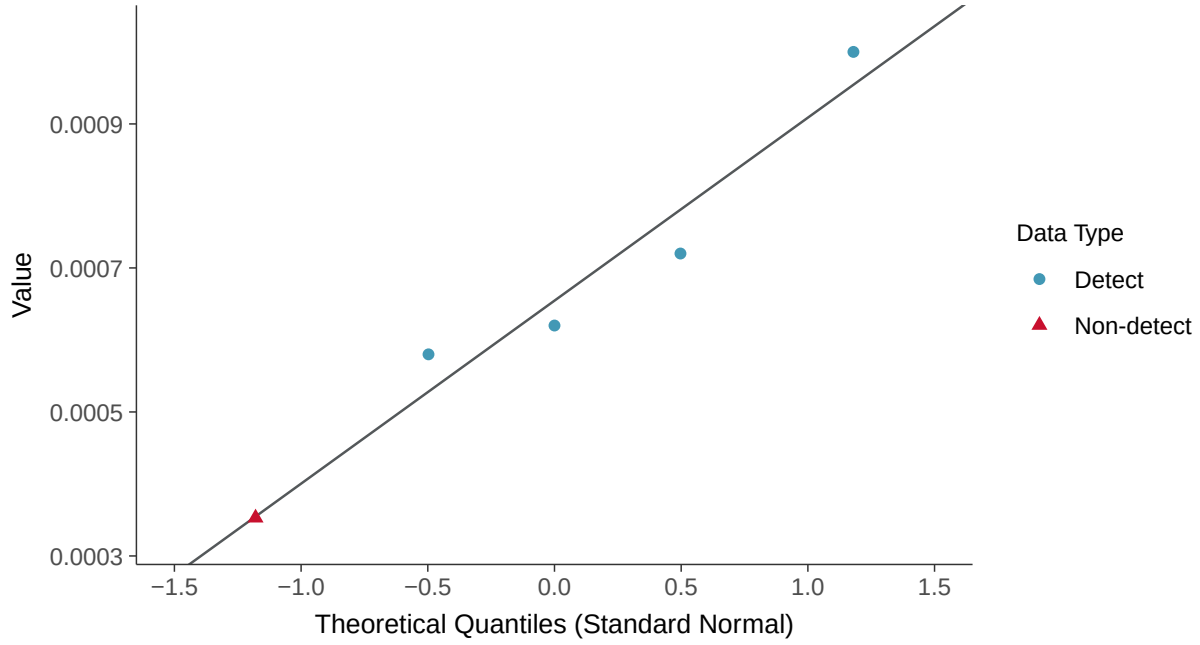
Boxplot by Season

Antimony, MW-25B (mg/l)



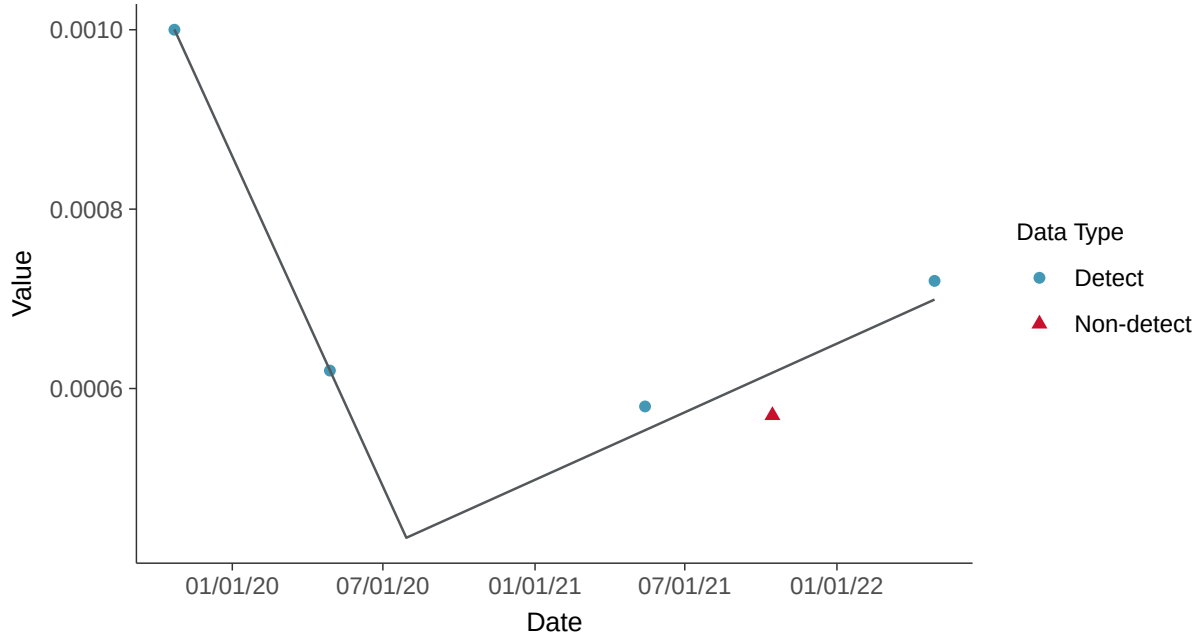
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-25B (mg/l)



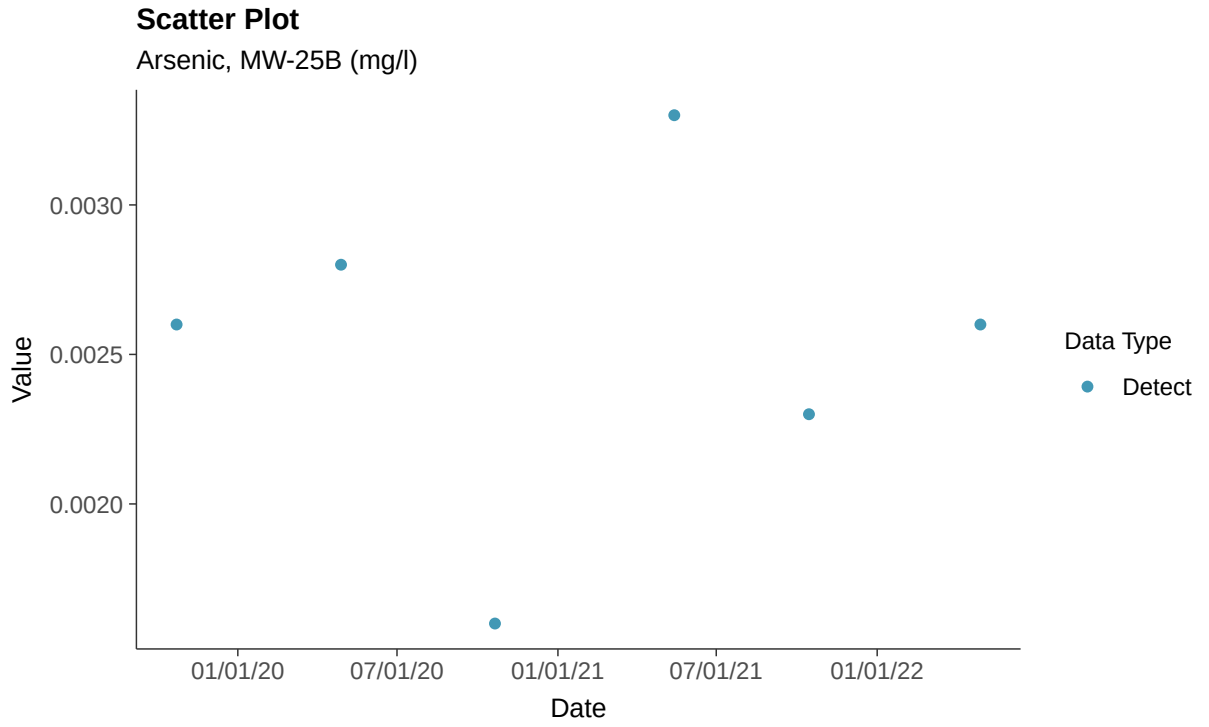
Trend Regression: Piecewise Linear-Linear

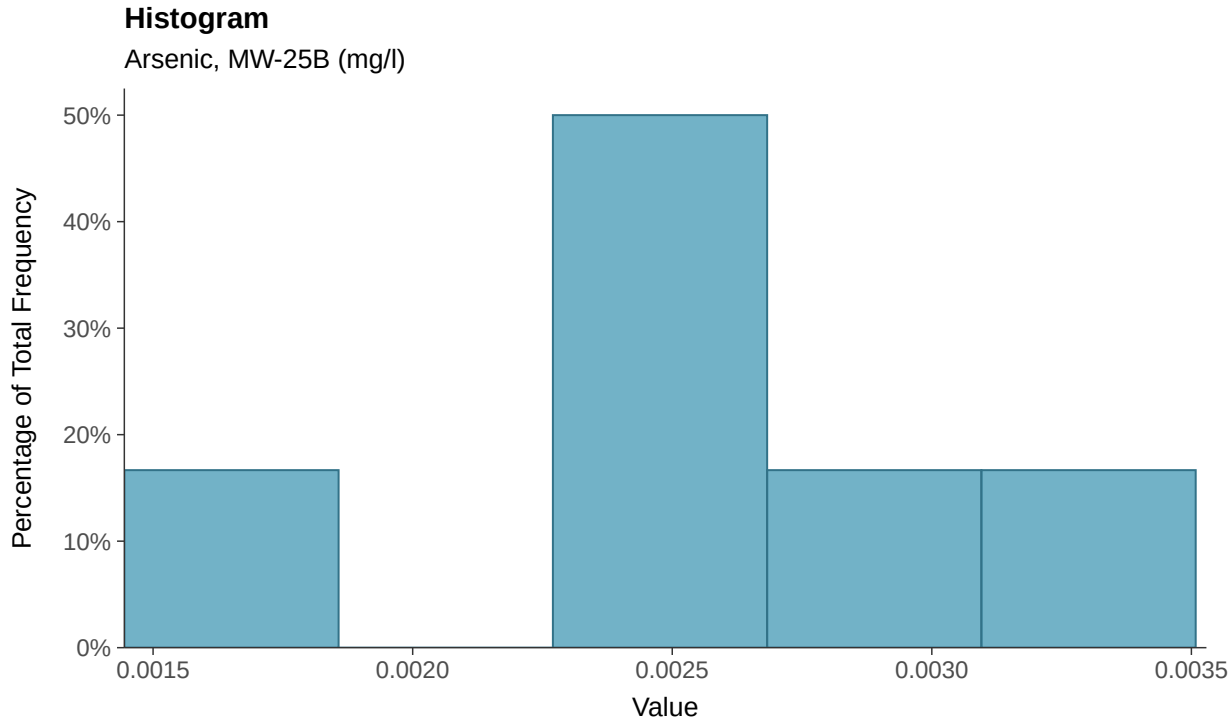
Antimony, MW-25B (mg/l)



Appendix IV: Arsenic, MW-25B

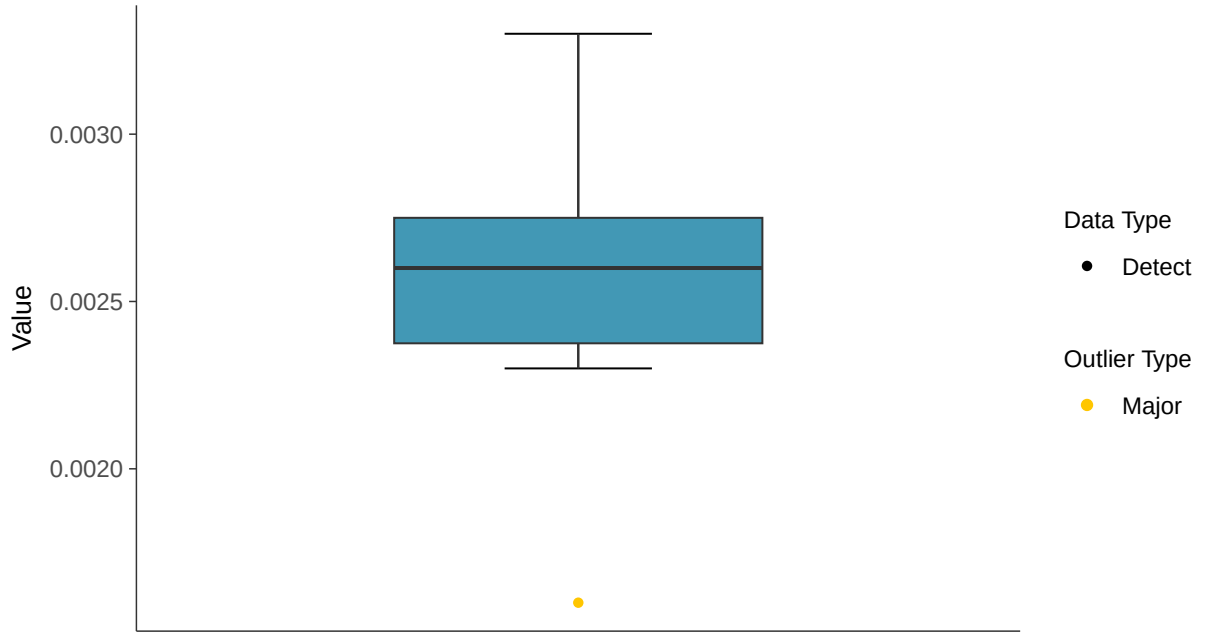
ID: 17_2_105





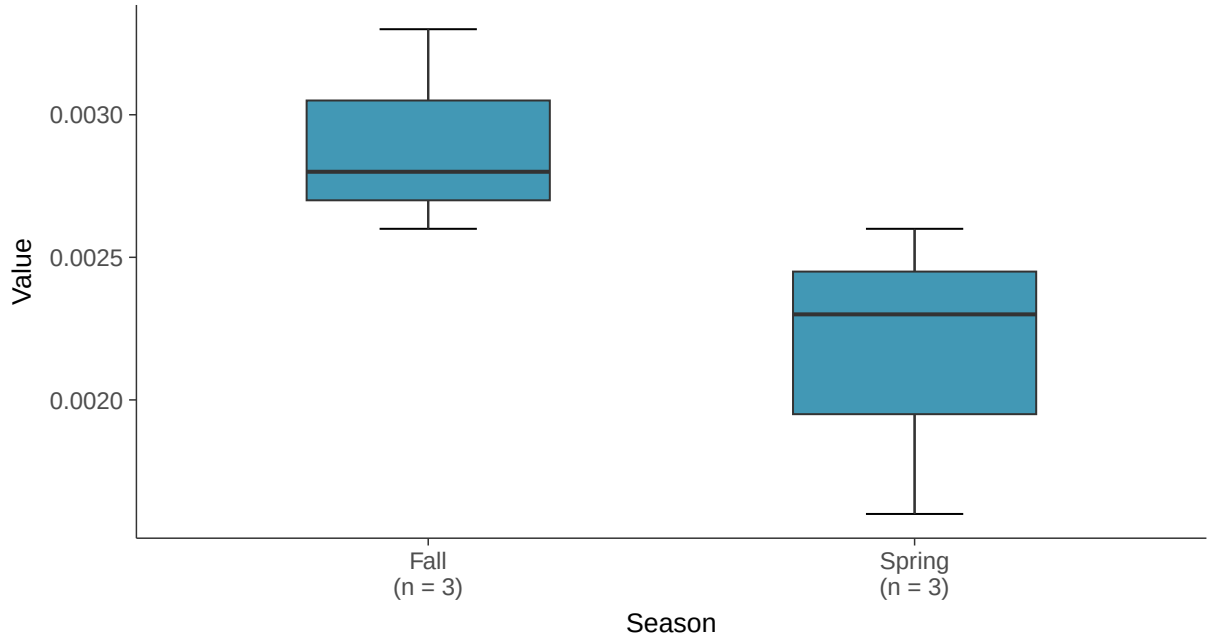
Boxplot

Arsenic, MW-25B (mg/l)



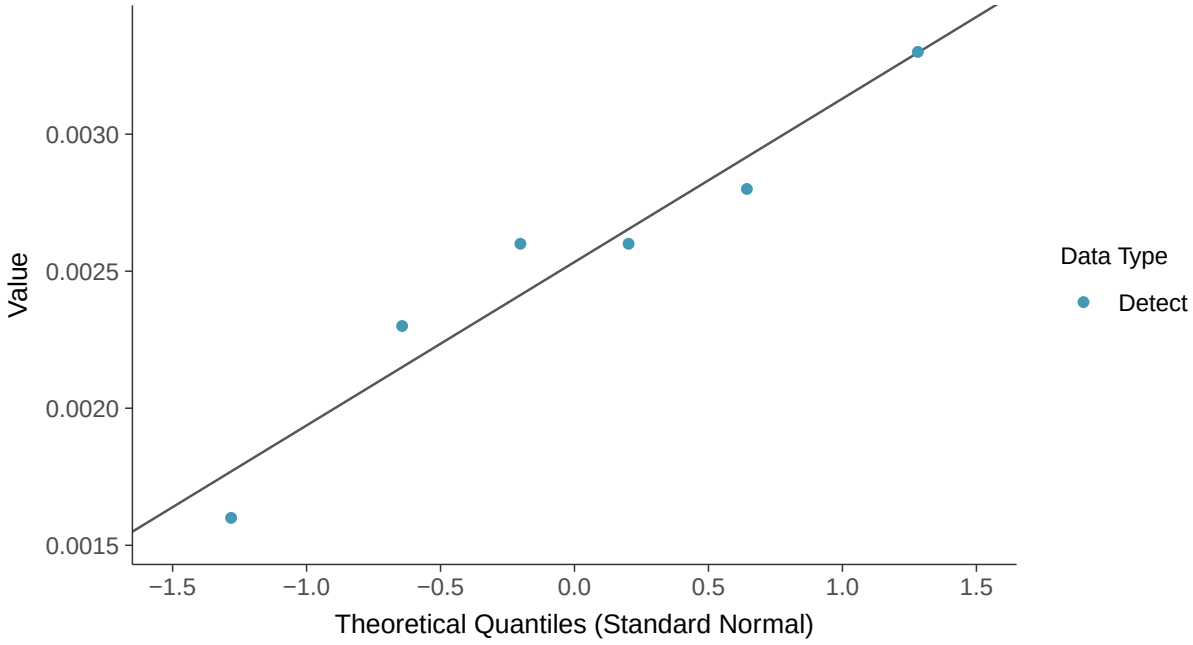
Boxplot by Season

Arsenic, MW-25B (mg/l)



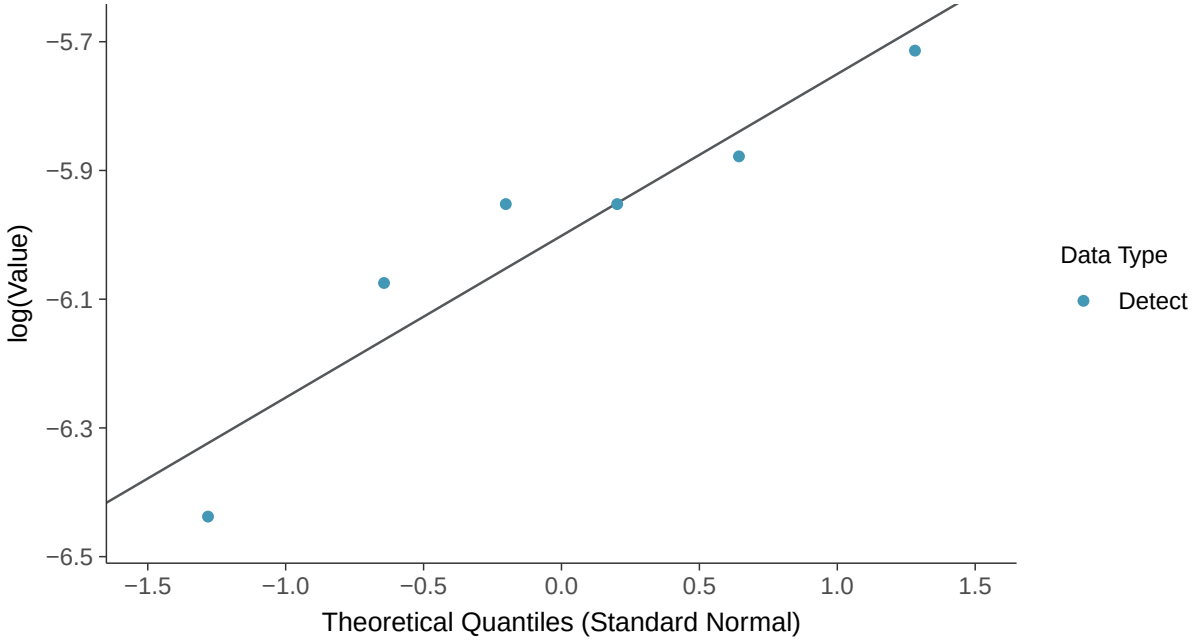
Normal Q-Q plot

Arsenic, MW-25B (mg/l)



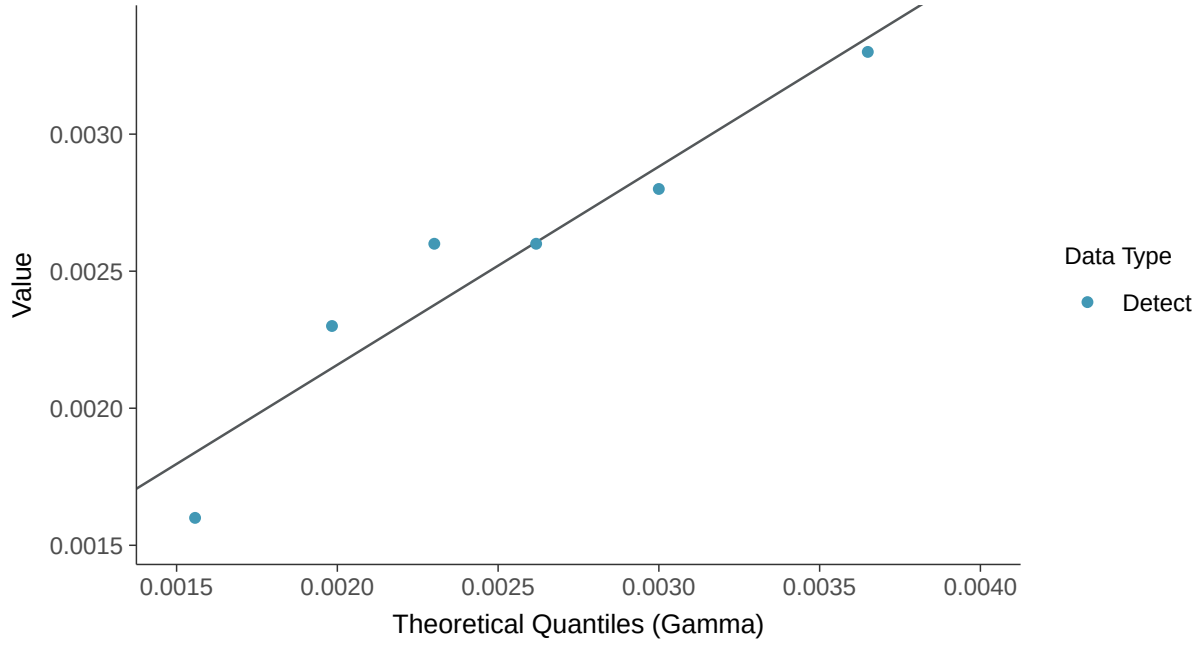
Lognormal Q-Q plot

Arsenic, MW-25B (mg/l)



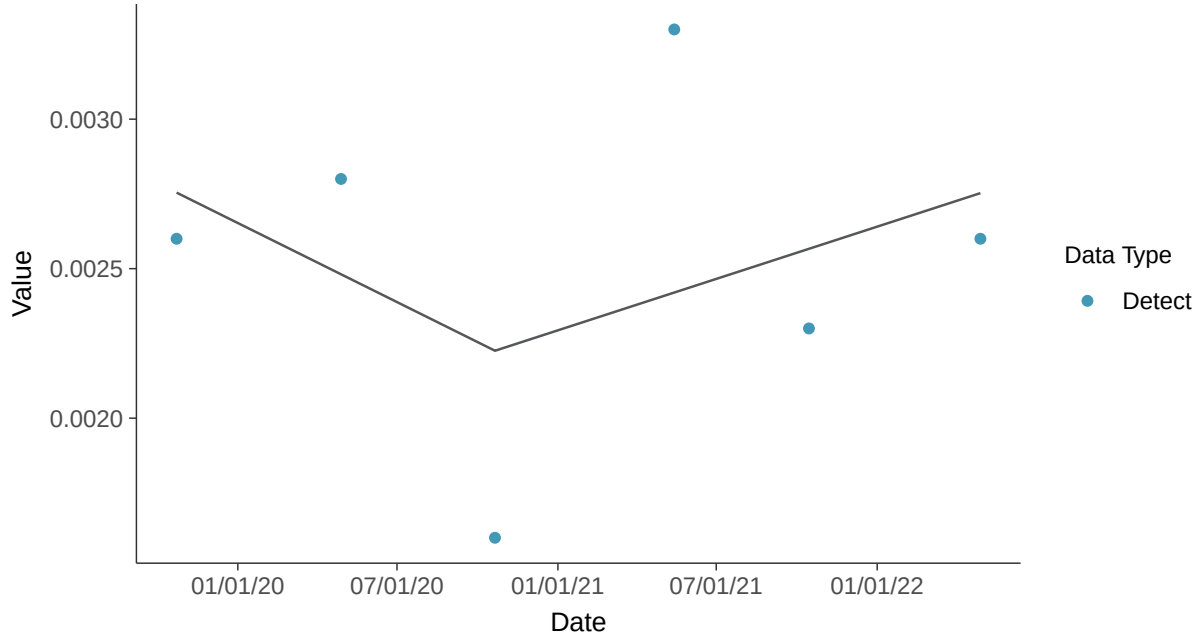
Gamma Q-Q plot

Arsenic, MW-25B (mg/l)



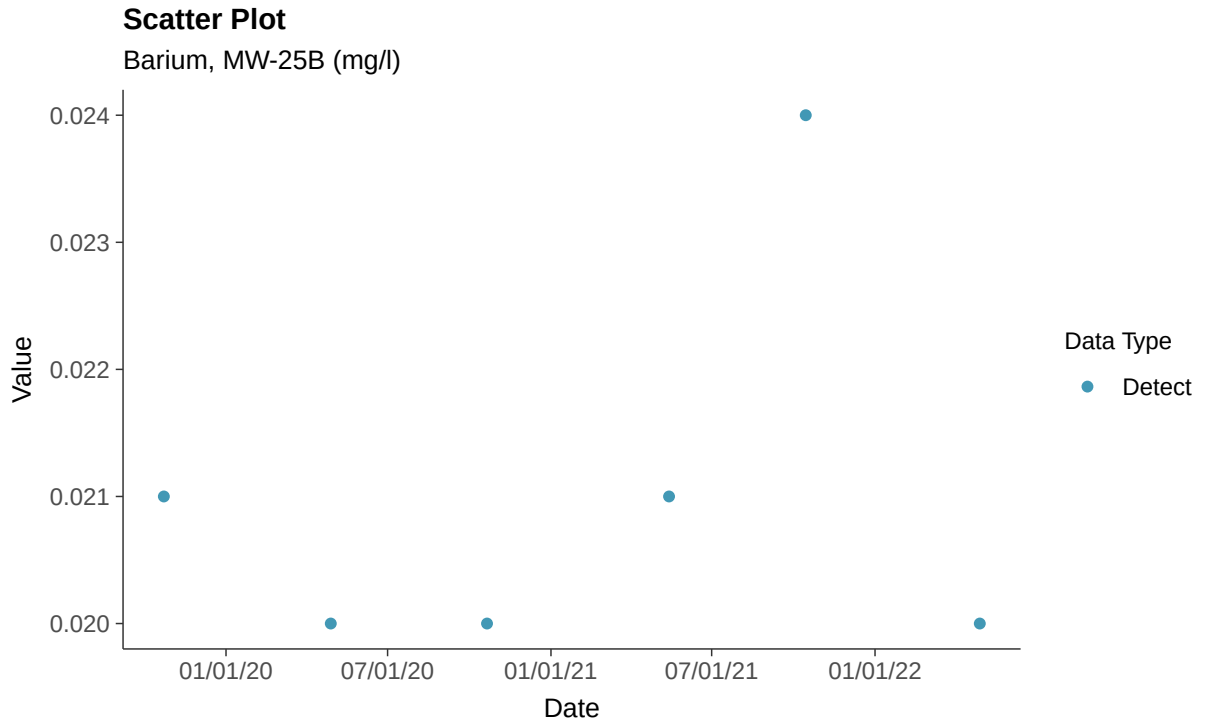
Trend Regression: Piecewise Linear-Linear

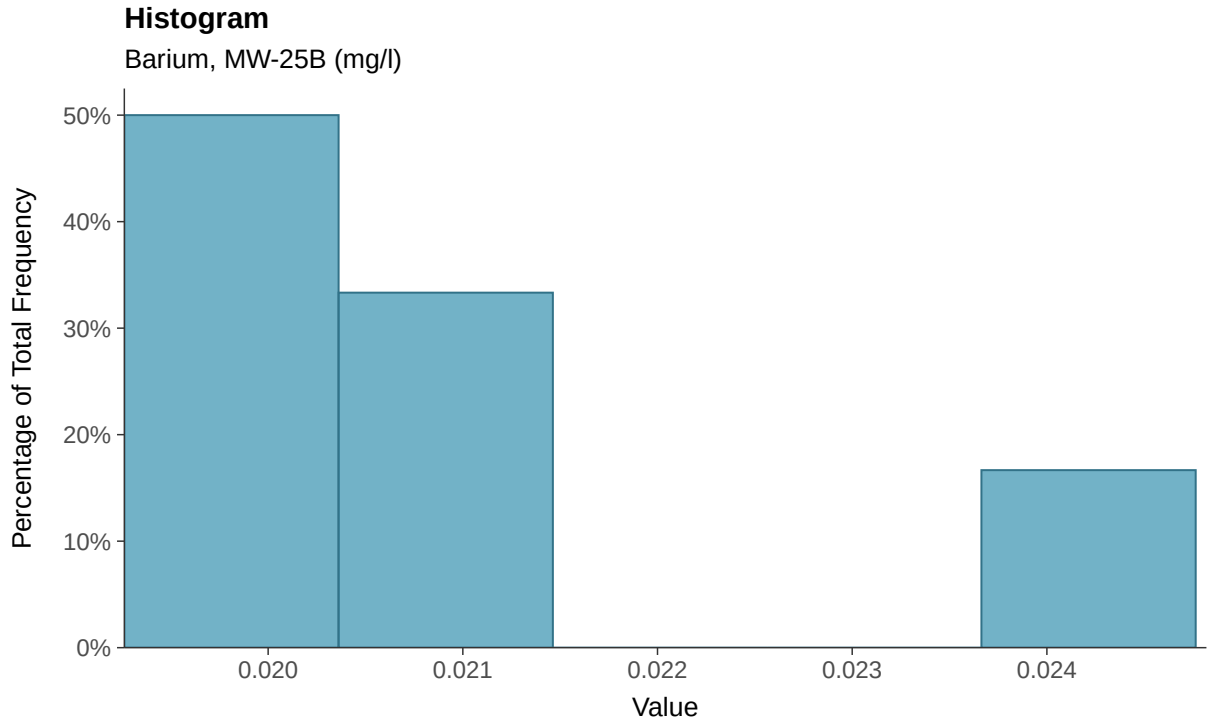
Arsenic, MW-25B (mg/l)



Appendix IV: Barium, MW-25B

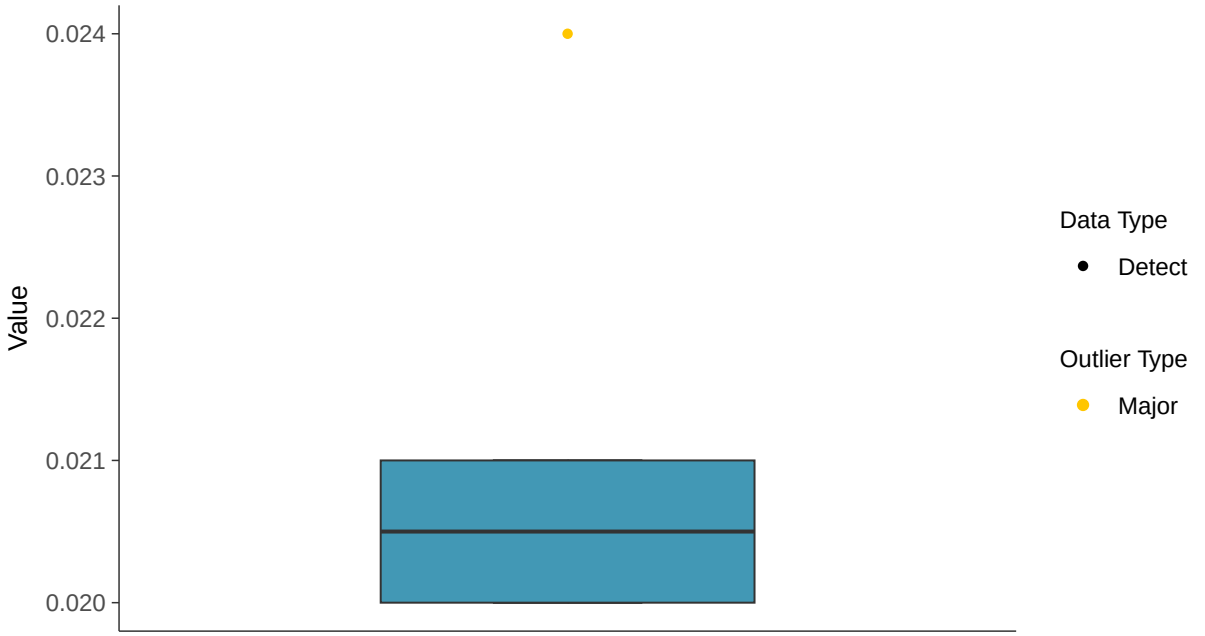
ID: 17_2_106





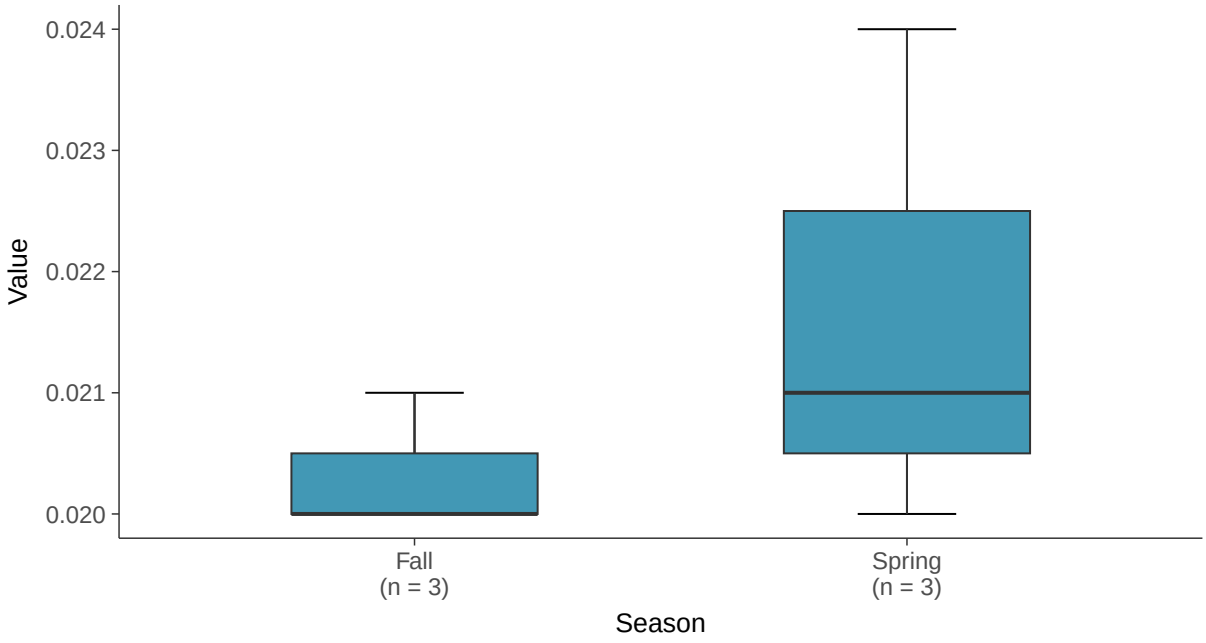
Boxplot

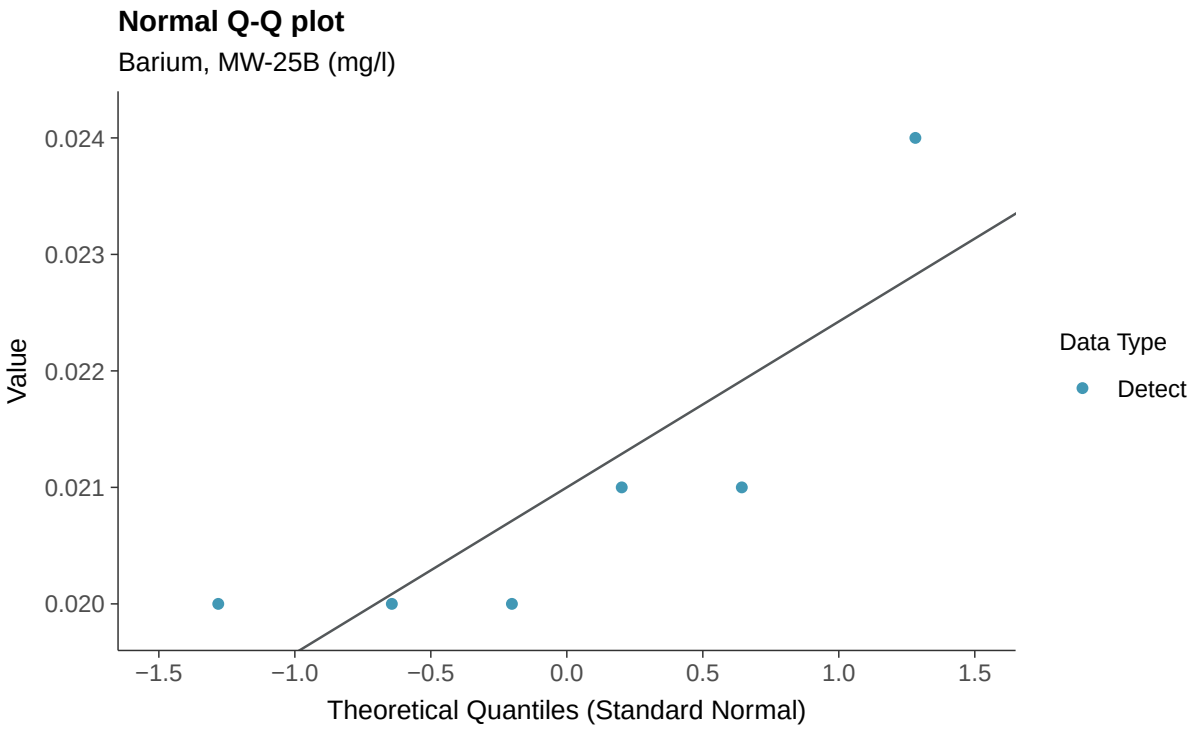
Barium, MW-25B (mg/l)



Boxplot by Season

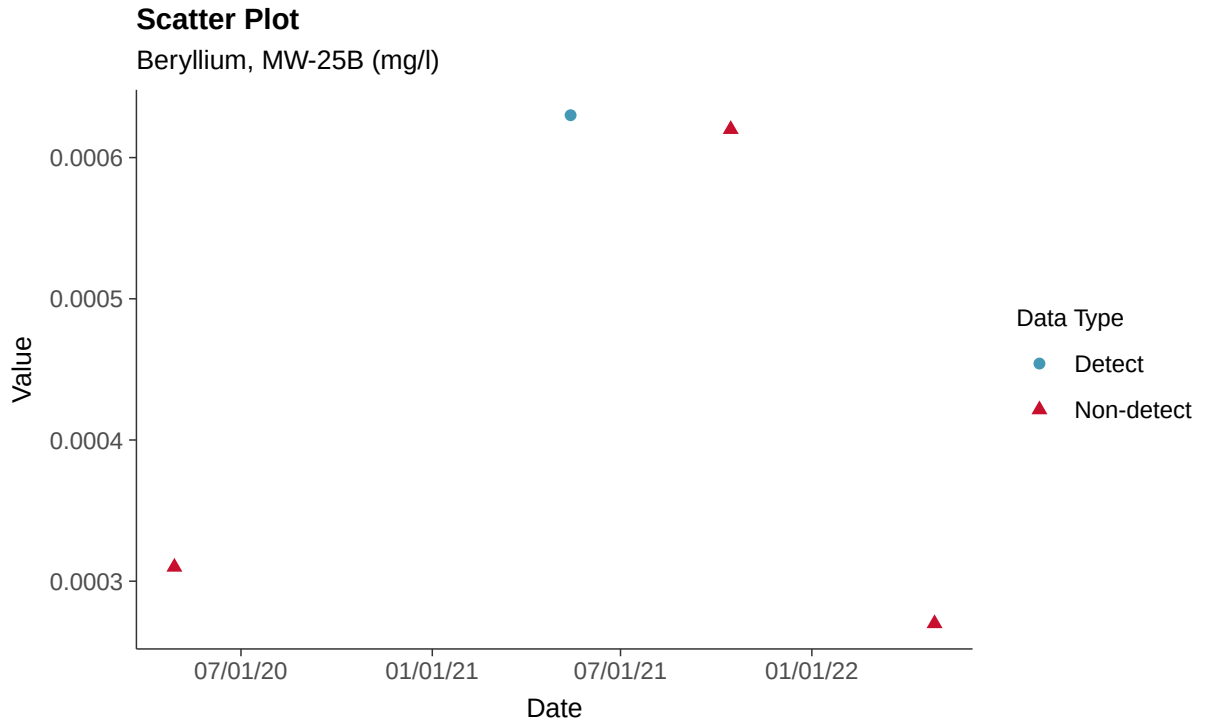
Barium, MW-25B (mg/l)

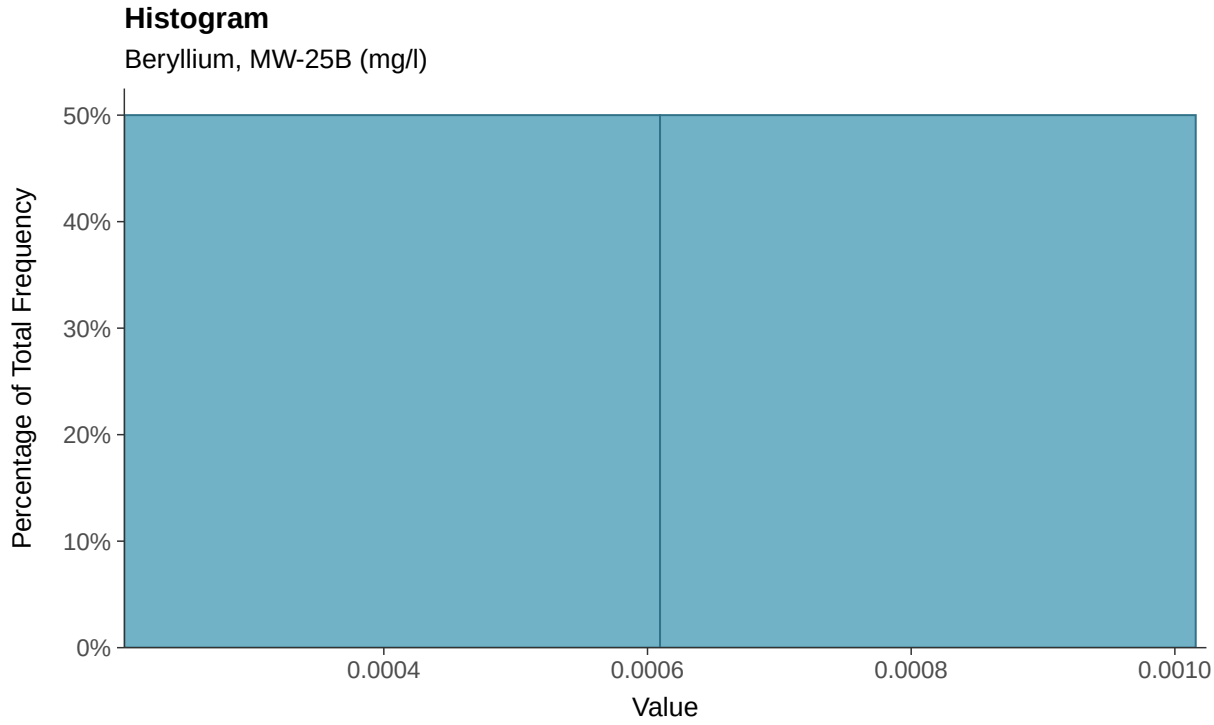



Normal Q-Q plot
Barium, MW-25B (mg/l)
Value
0.024
0.023
0.022
0.021
0.020
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Beryllium, MW-25B

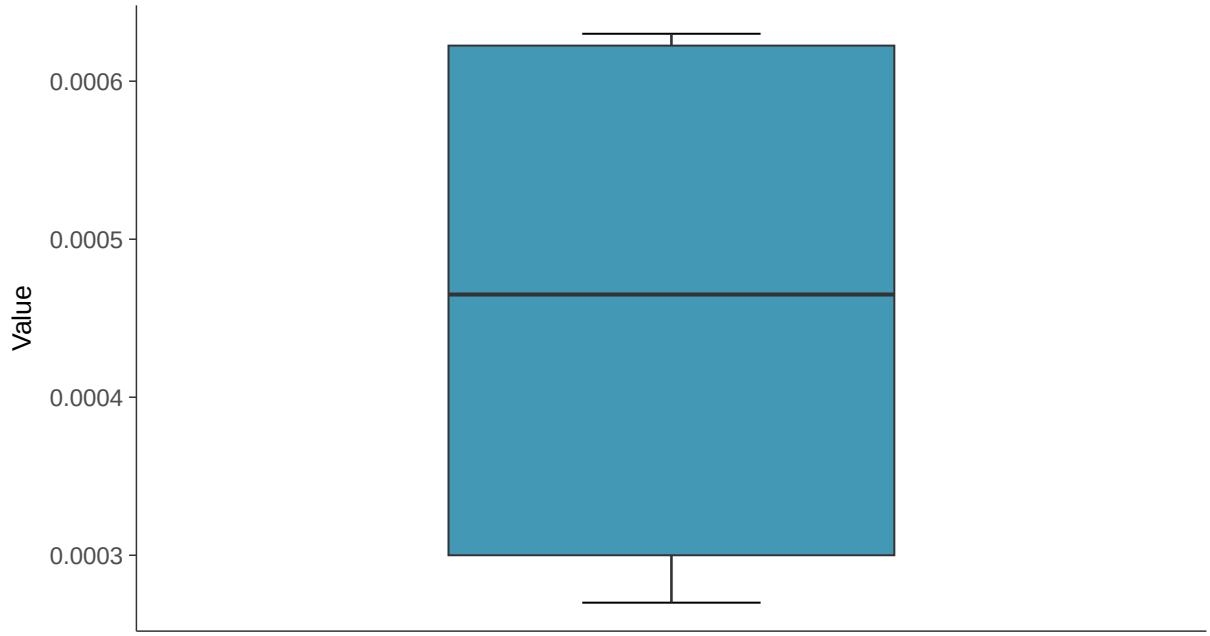
ID: 17_2_107





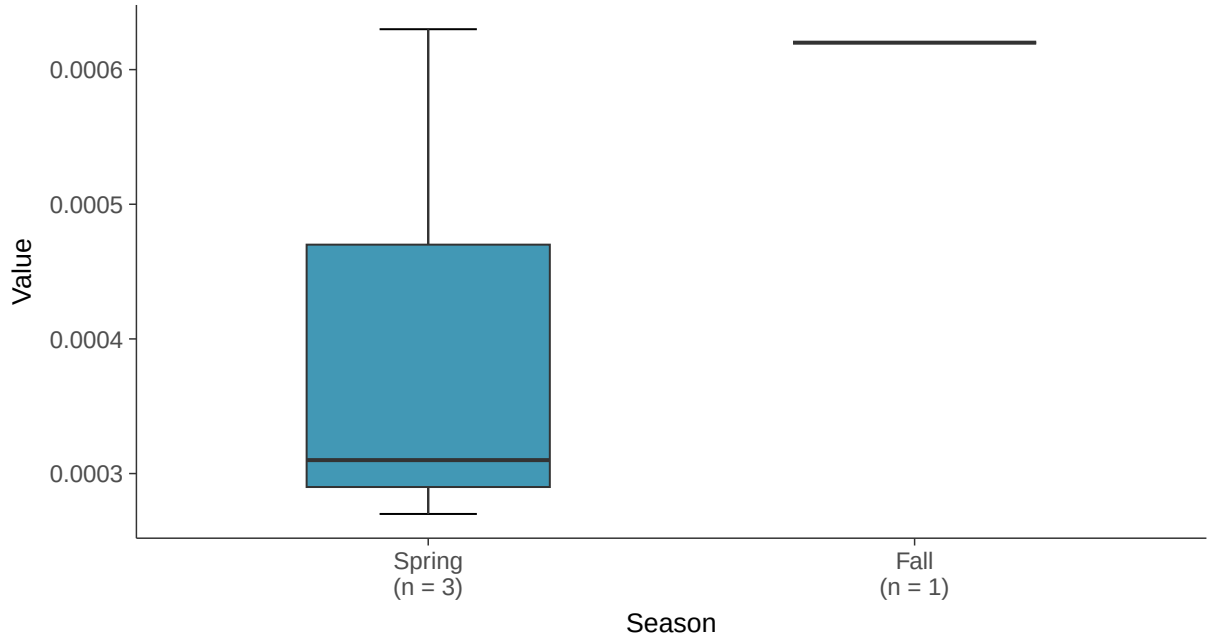
Boxplot

Beryllium, MW-25B (mg/l)



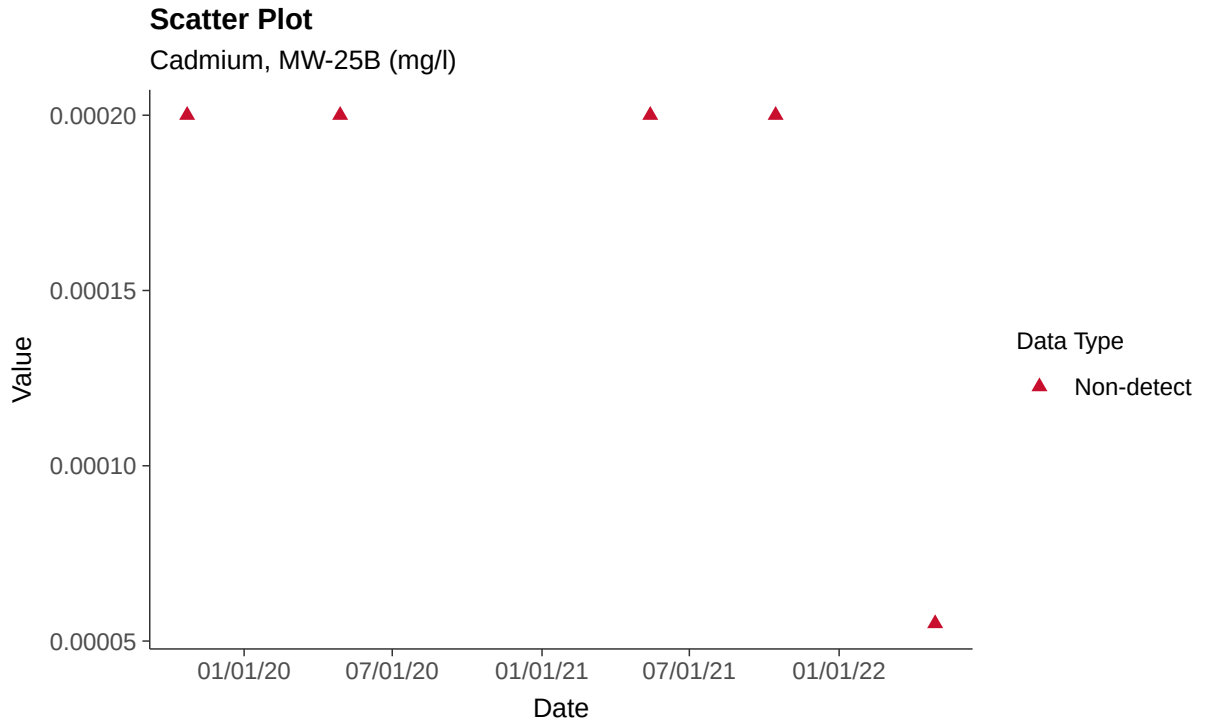
Boxplot by Season

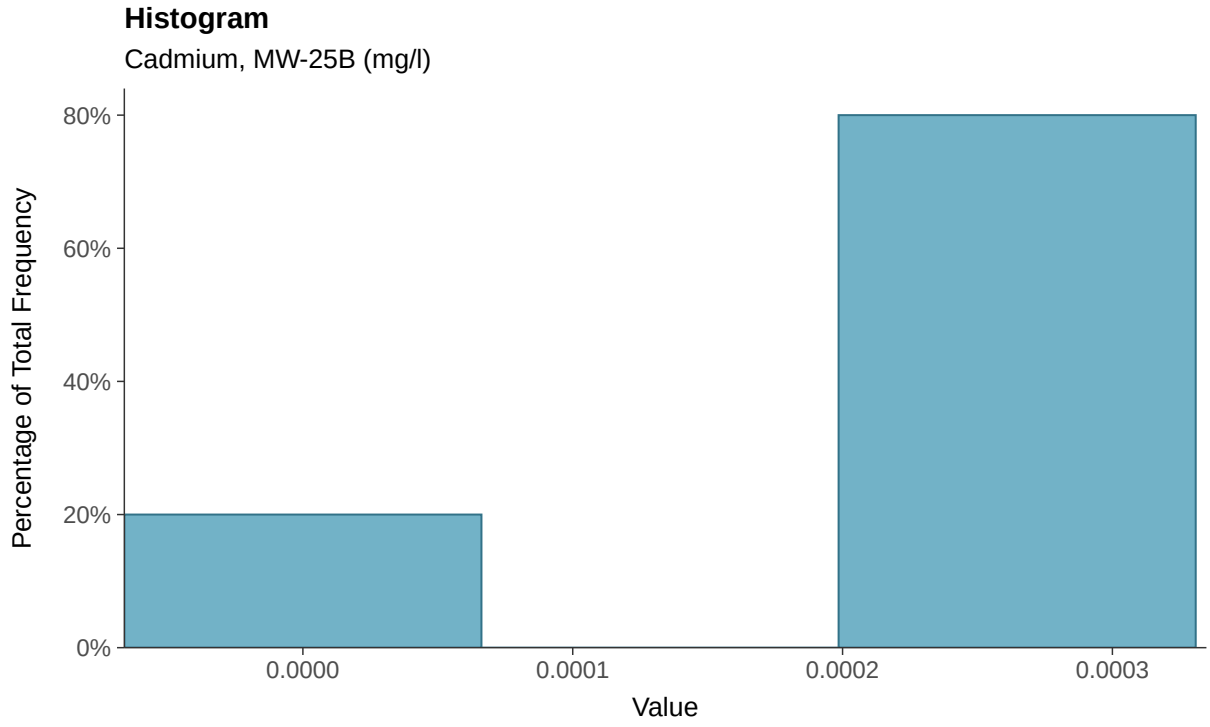
Beryllium, MW-25B (mg/l)



Appendix IV: Cadmium, MW-25B

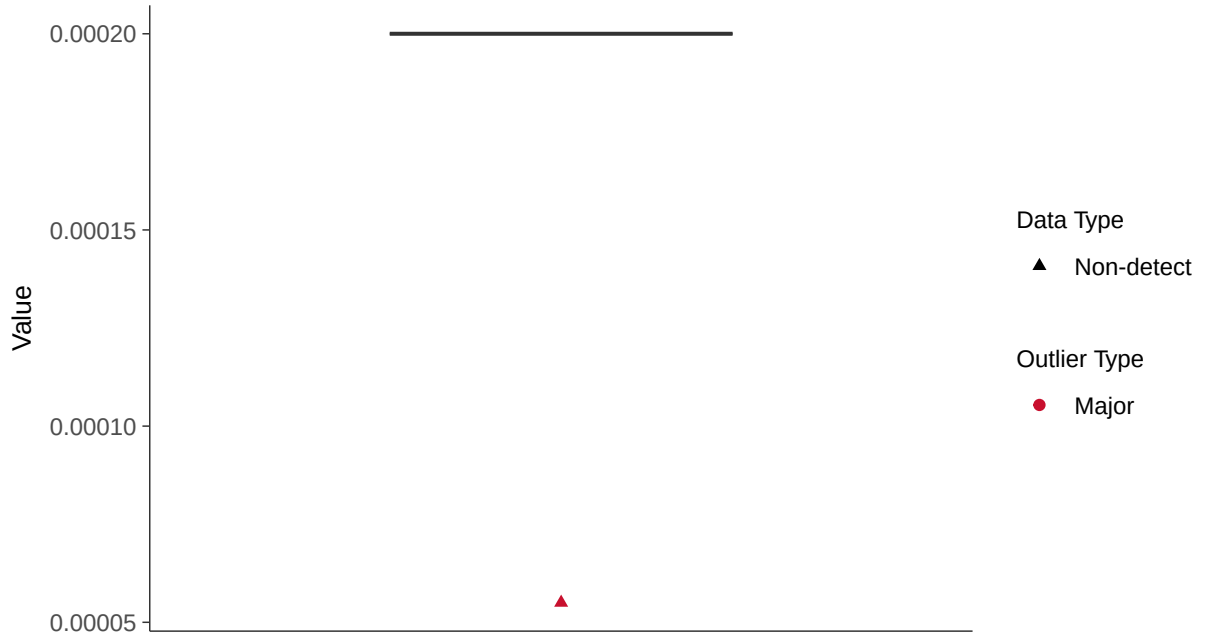
ID: 17_2_109





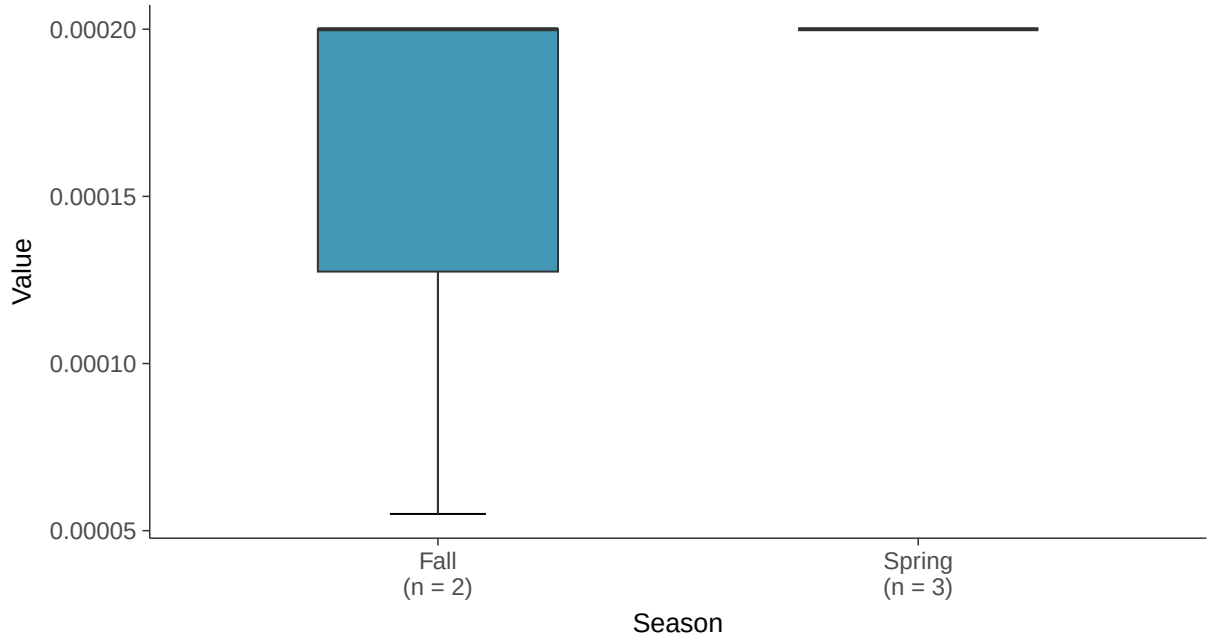
Boxplot

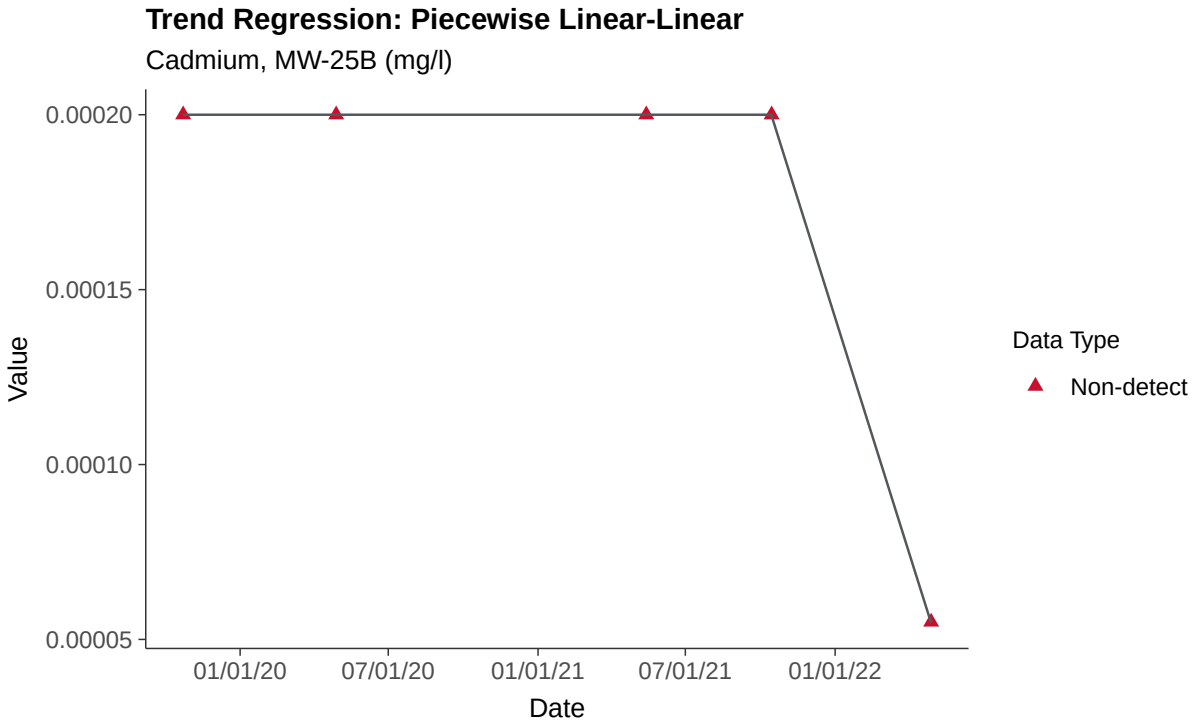
Cadmium, MW-25B (mg/l)



Boxplot by Season

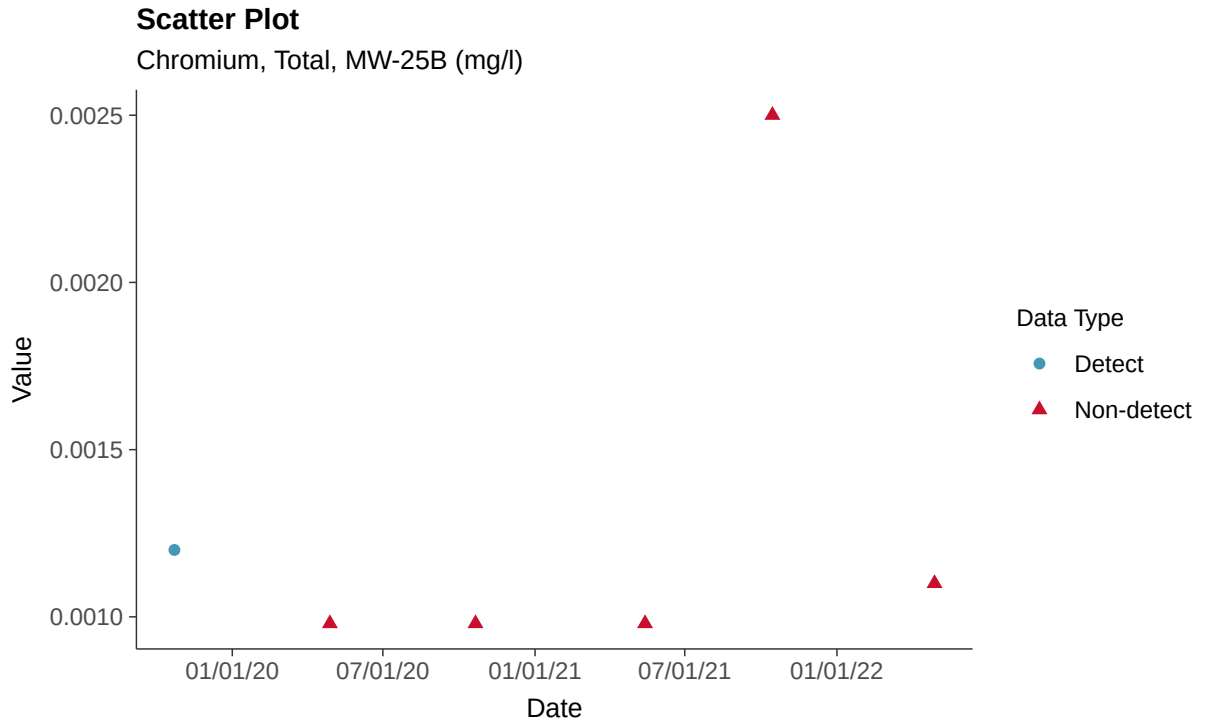
Cadmium, MW-25B (mg/l)

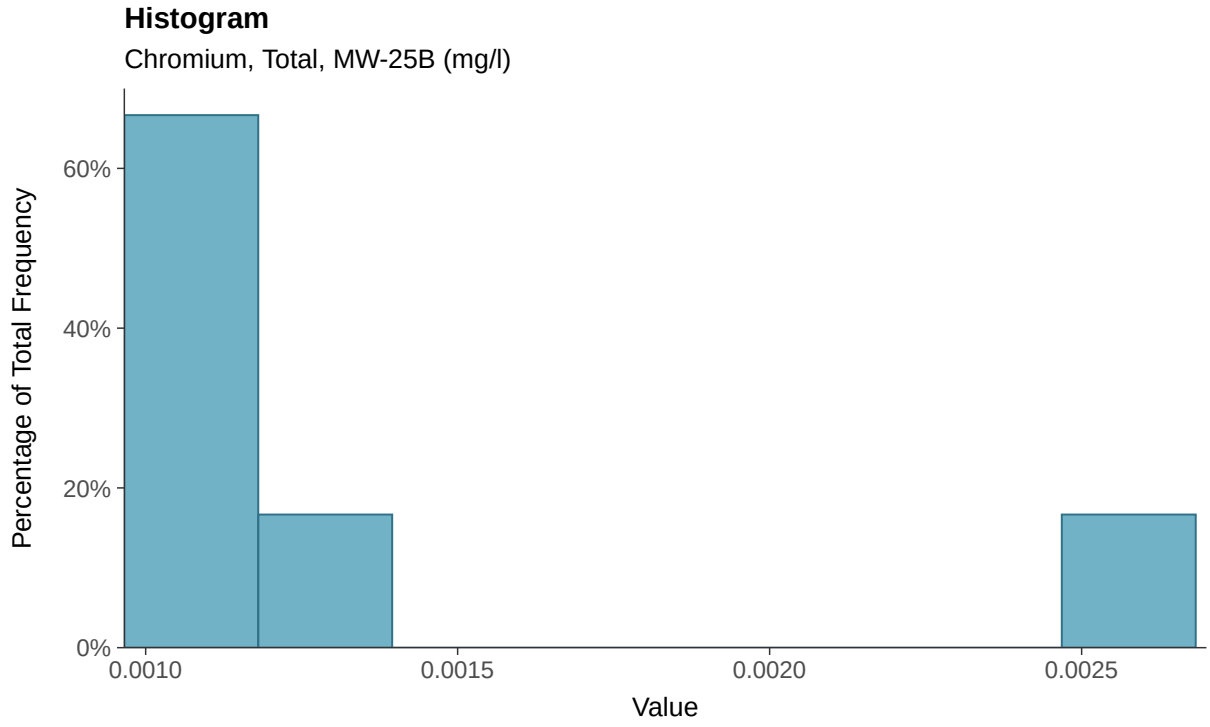



Trend Regression: Piecewise Linear-Linear
Cadmium, MW-25B (mg/l)
0.00020
0.00015
0.00010
0.00005
Value
01/01/20
07/01/20
01/01/21
07/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Chromium, Total, MW-25B

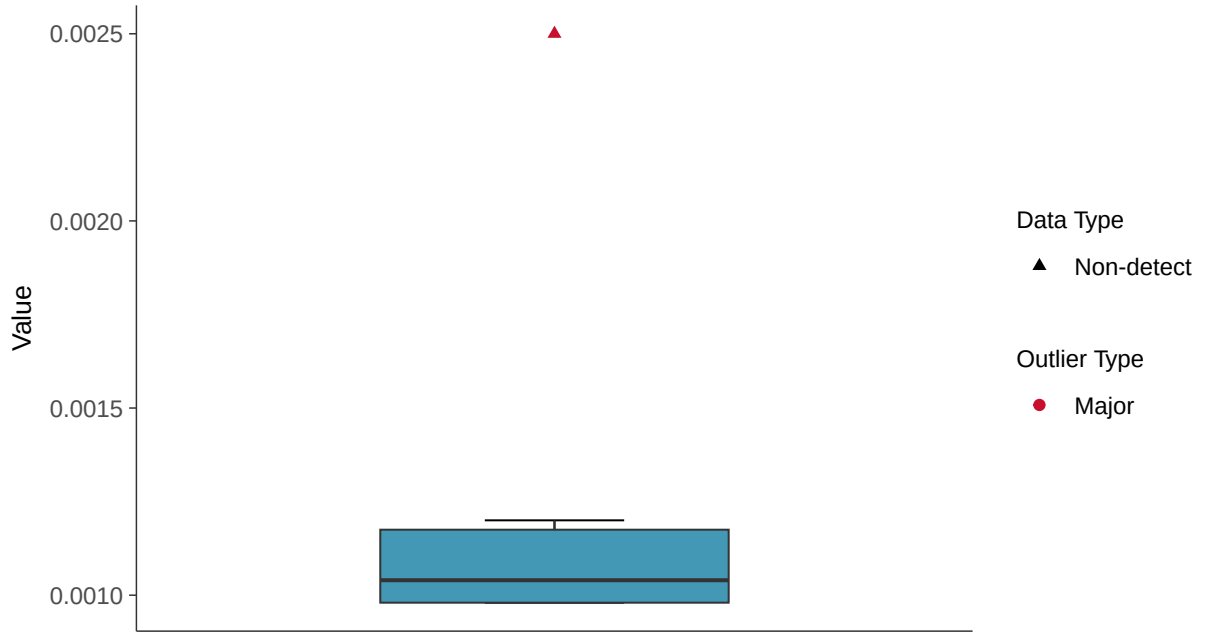
ID: 17_2_112





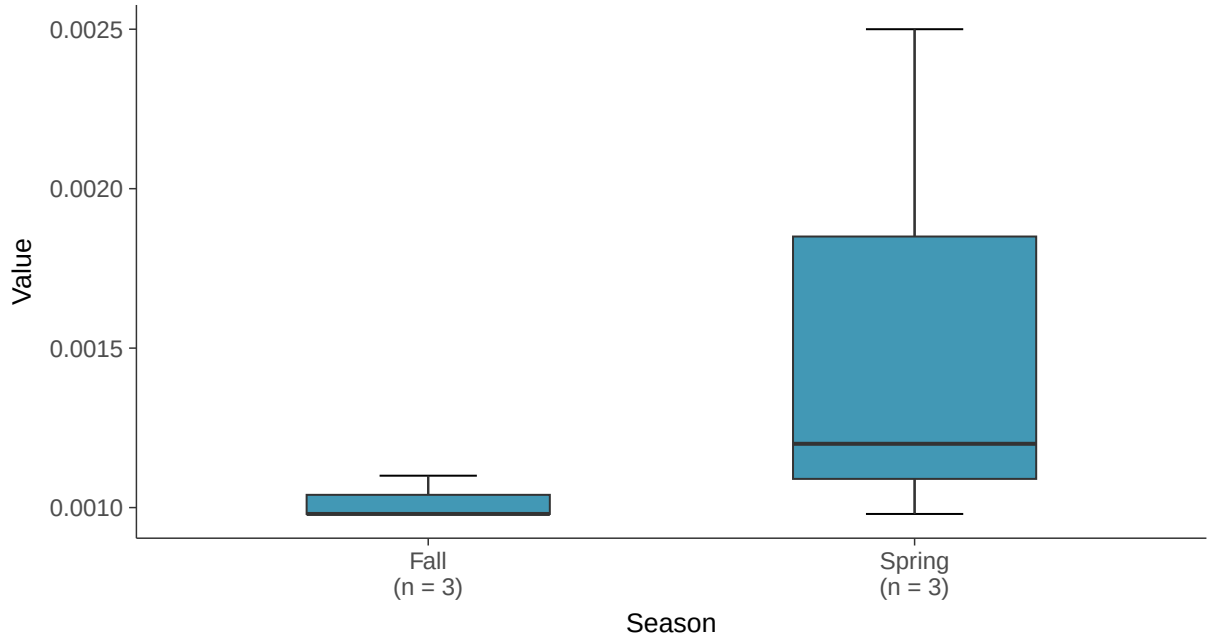
Boxplot

Chromium, Total, MW-25B (mg/l)



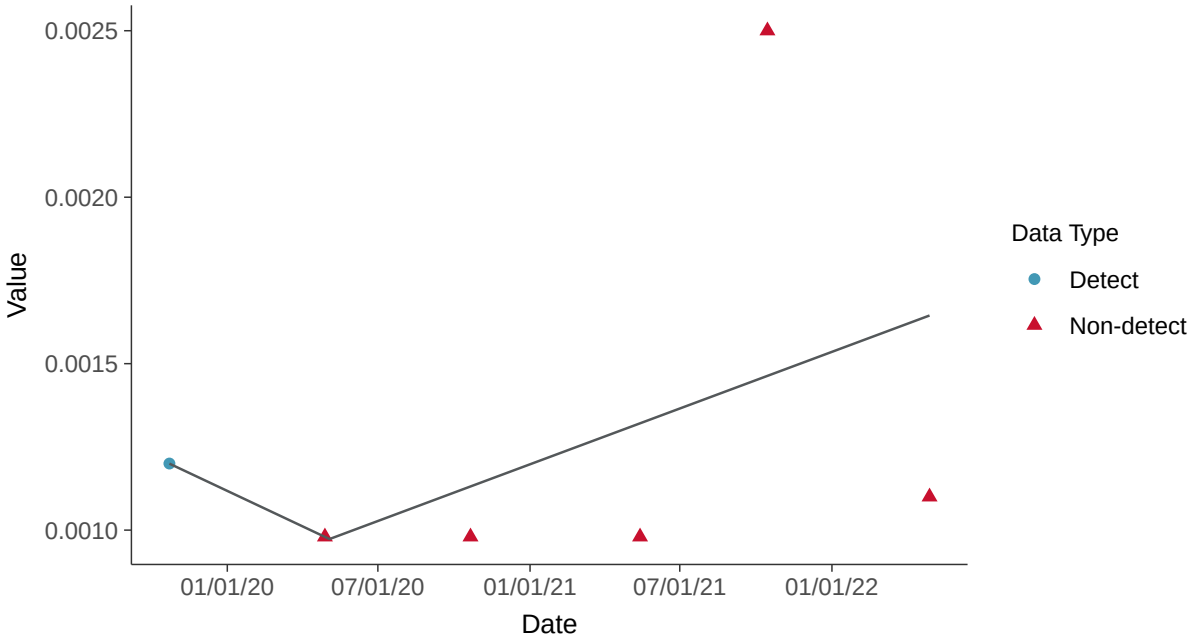
Boxplot by Season

Chromium, Total, MW-25B (mg/l)



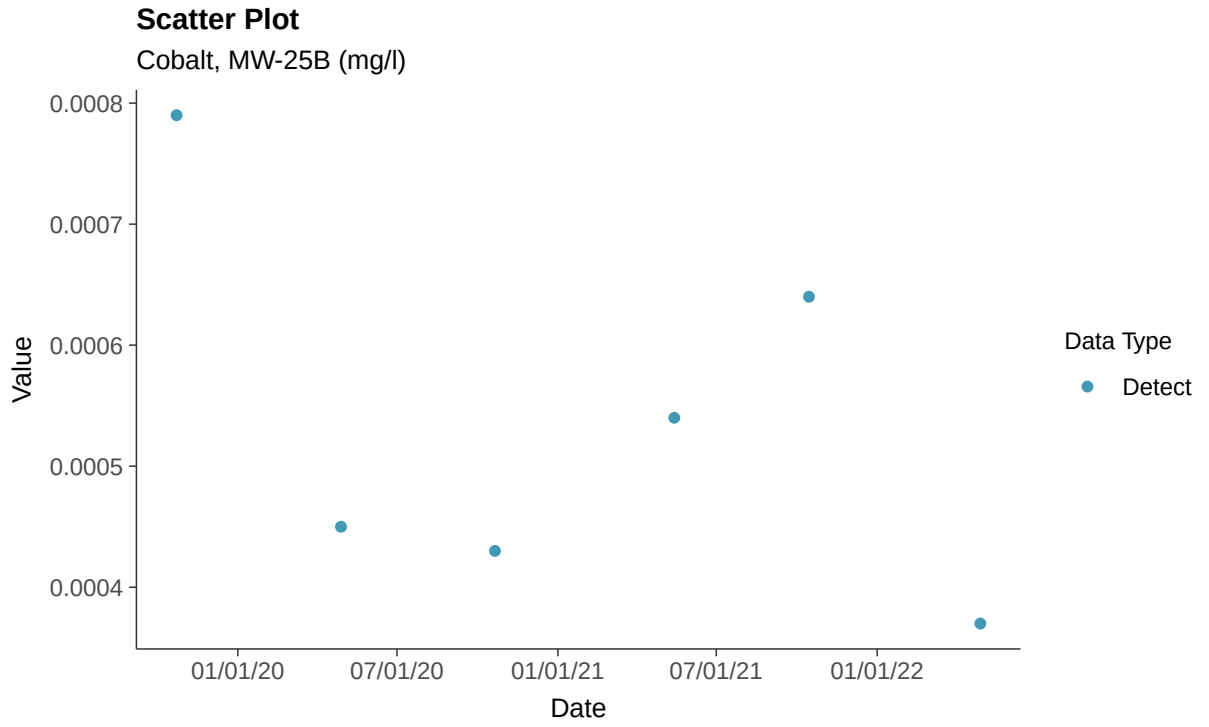
Trend Regression: Piecewise Linear-Linear

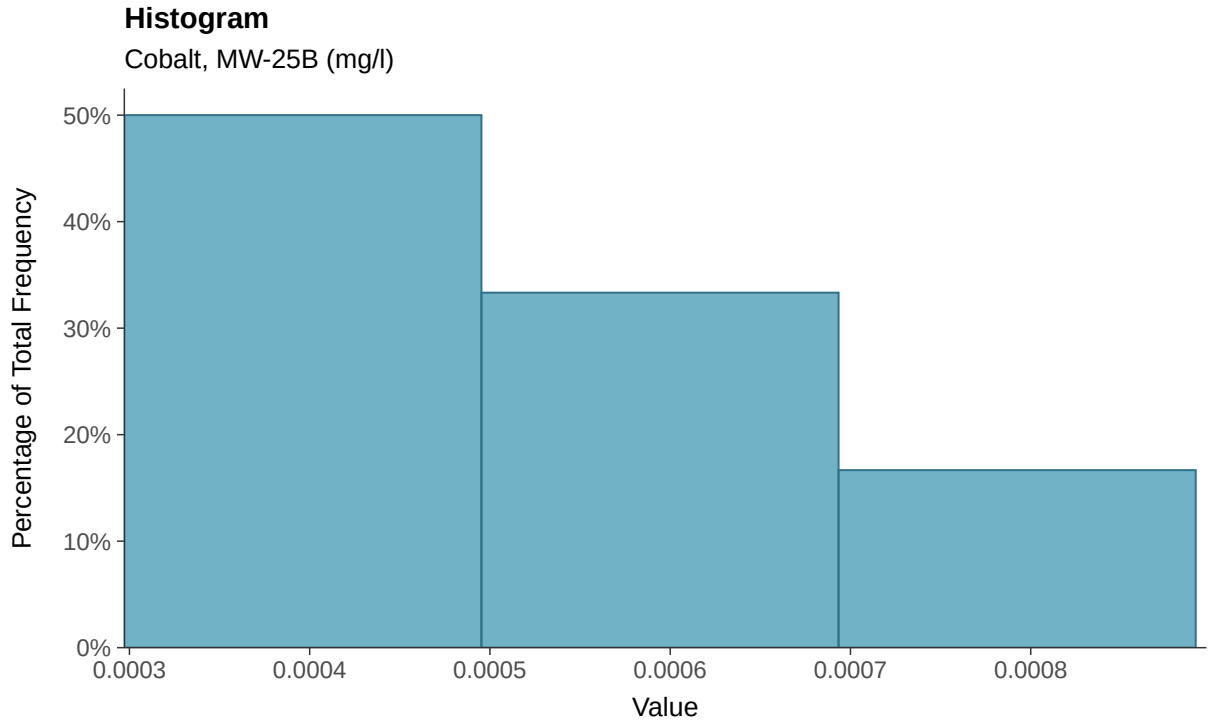
Chromium, Total, MW-25B (mg/l)



Appendix IV: Cobalt, MW-25B

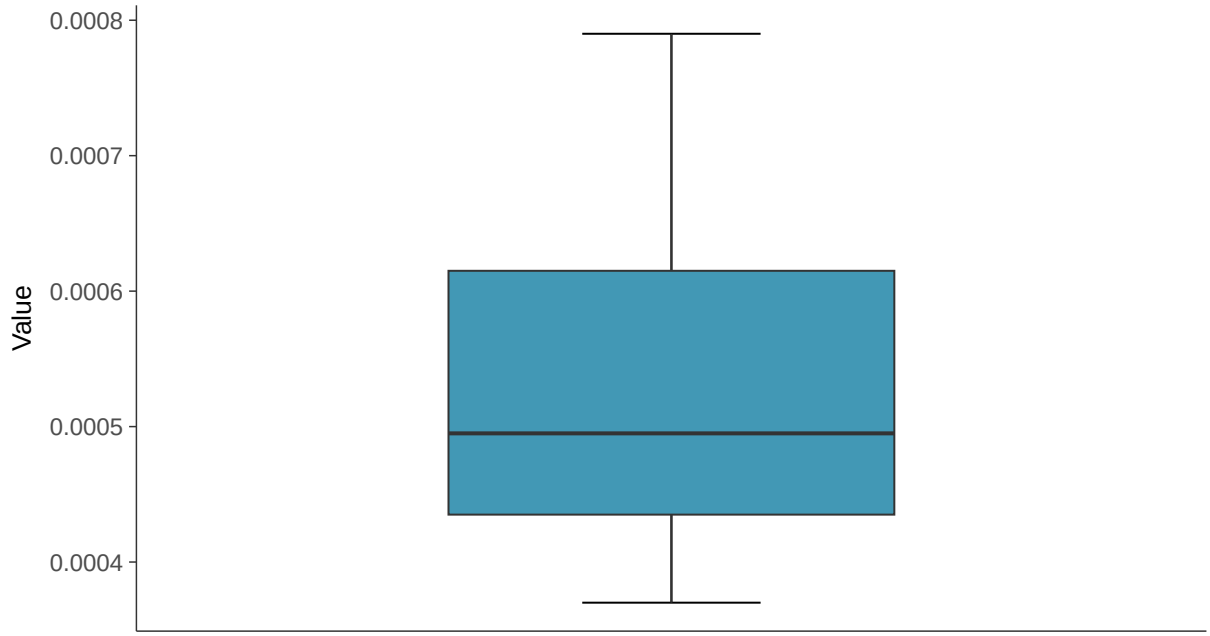
ID: 17_2_113





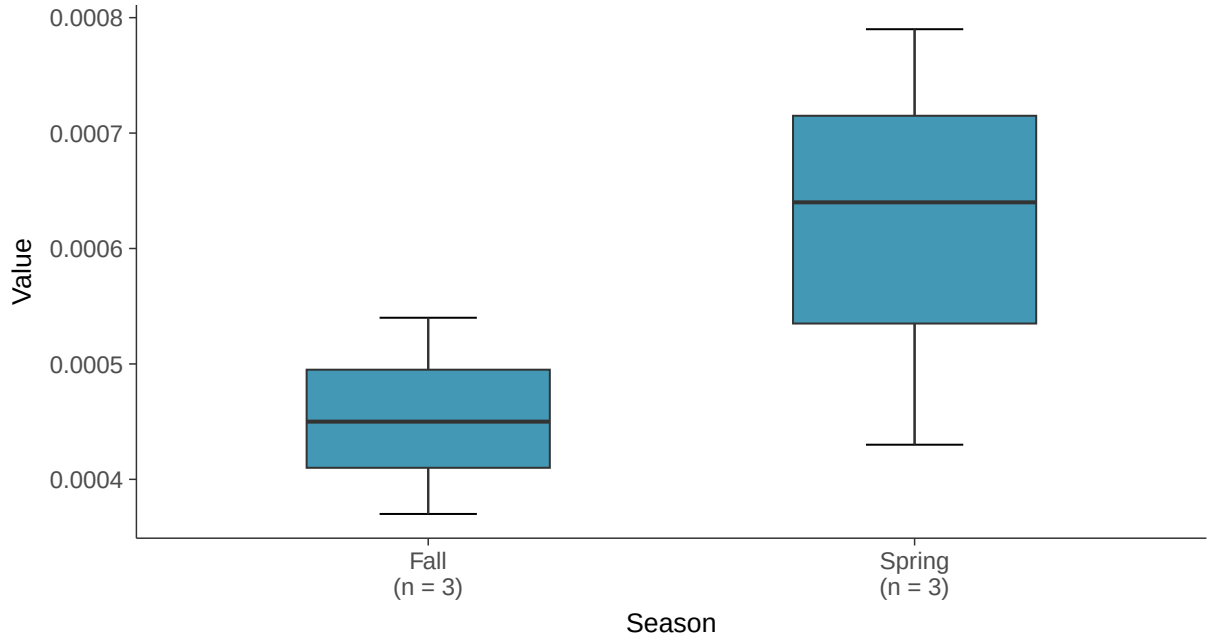
Boxplot

Cobalt, MW-25B (mg/l)



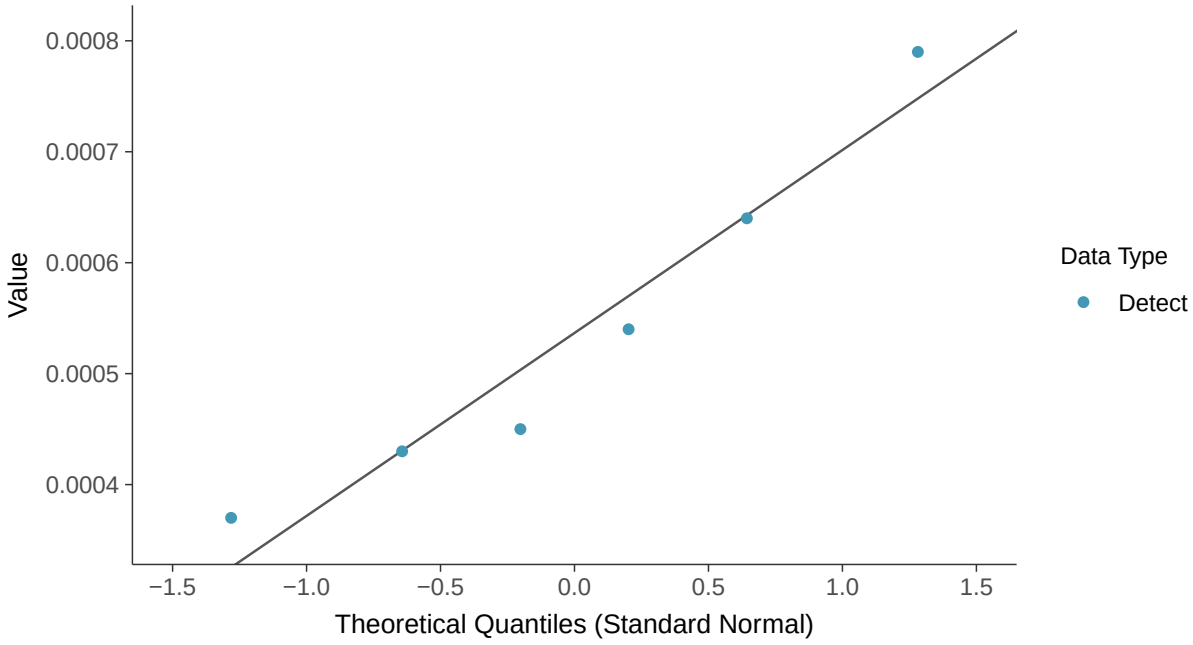
Boxplot by Season

Cobalt, MW-25B (mg/l)



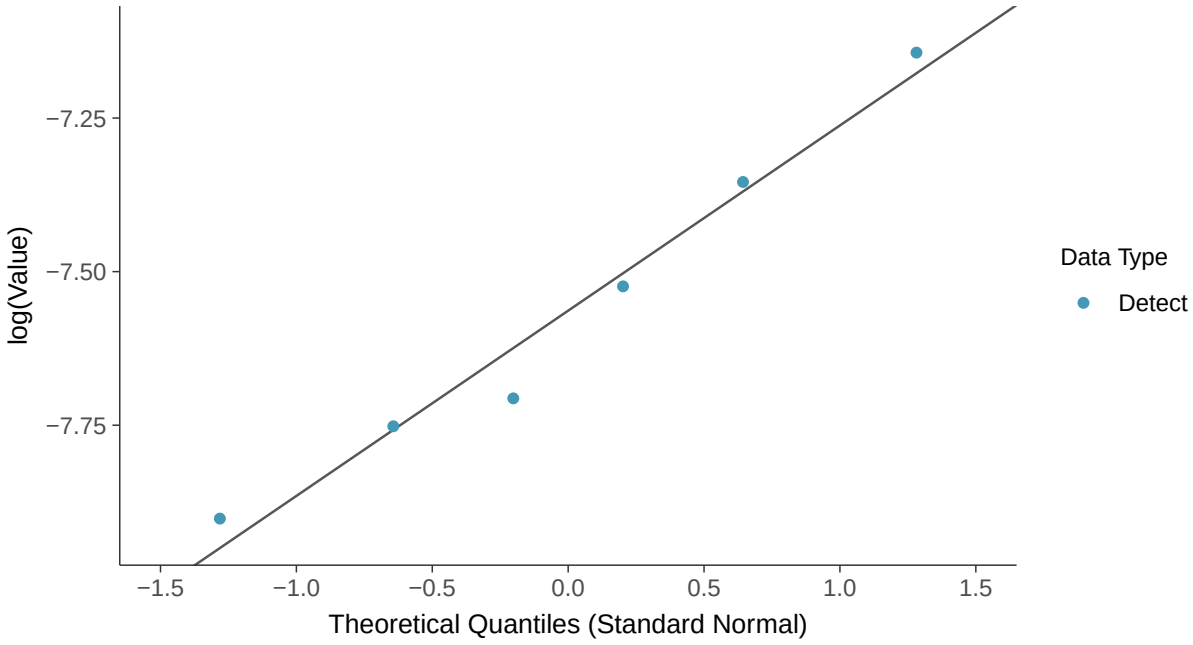
Normal Q-Q plot

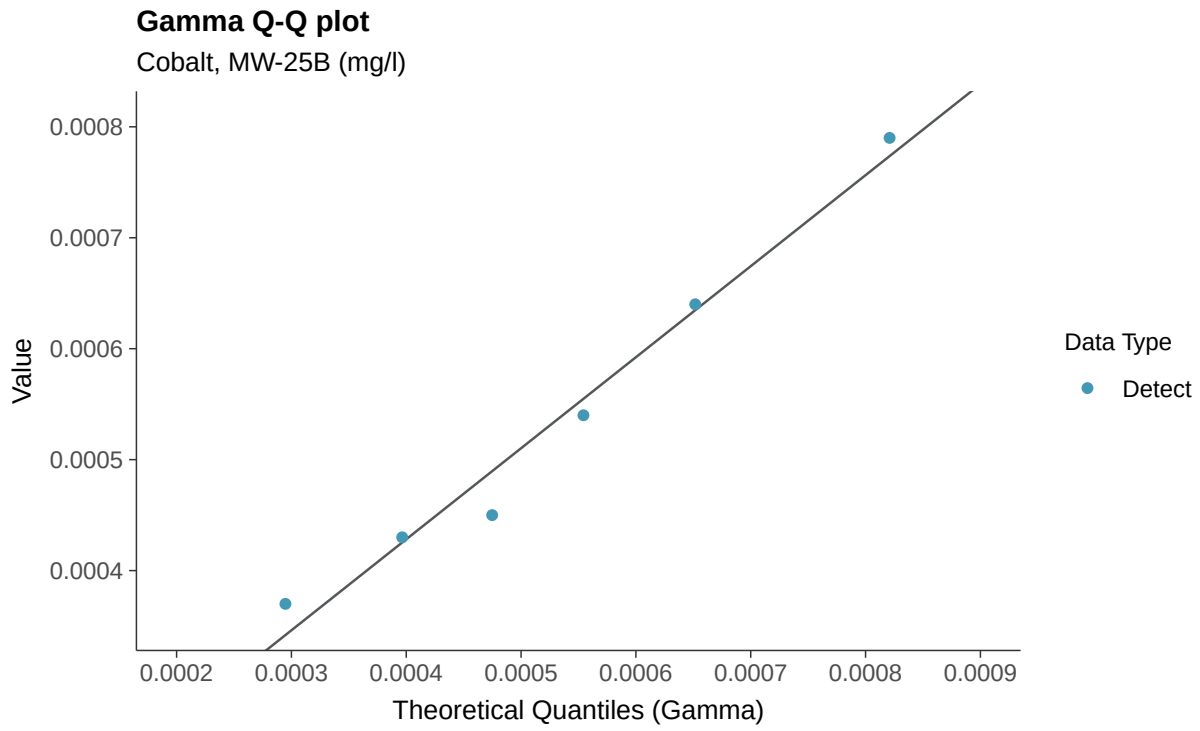
Cobalt, MW-25B (mg/l)



Lognormal Q-Q plot

Cobalt, MW-25B (mg/l)



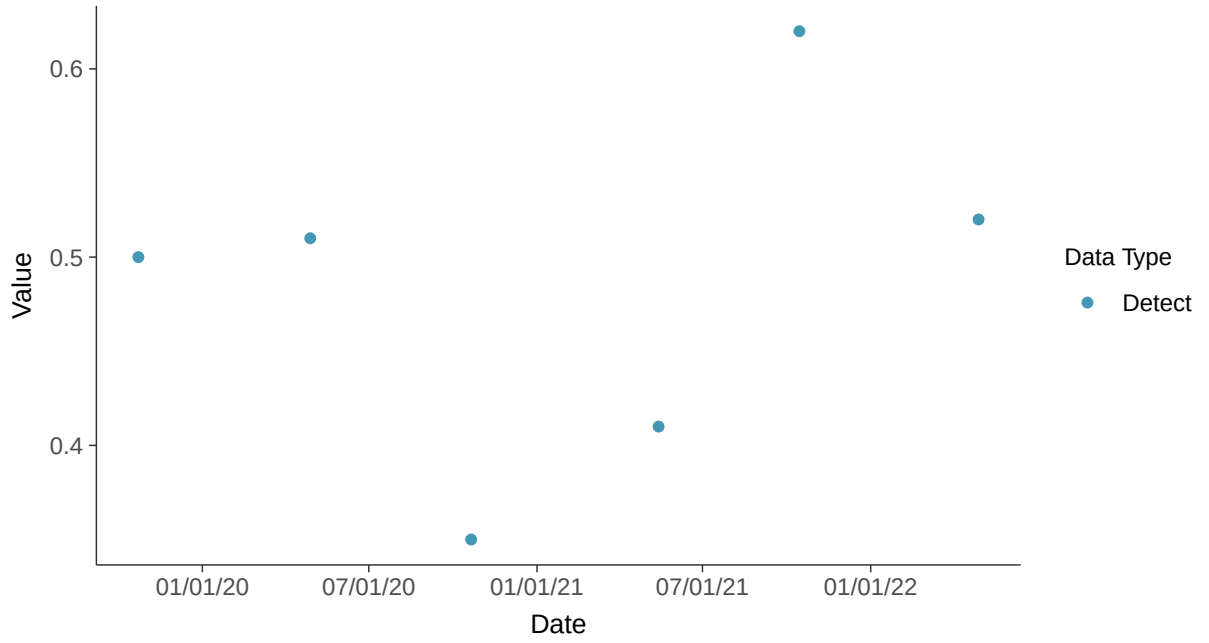

Gamma Q-Q plot
Cobalt, MW-25B (mg/l)
Value
0.0008
0.0007
0.0006
0.0005
0.0004
0.0002
0.0003
0.0004
0.0005
0.0006
0.0007
0.0008
0.0009
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-25B

ID: 17_2_116

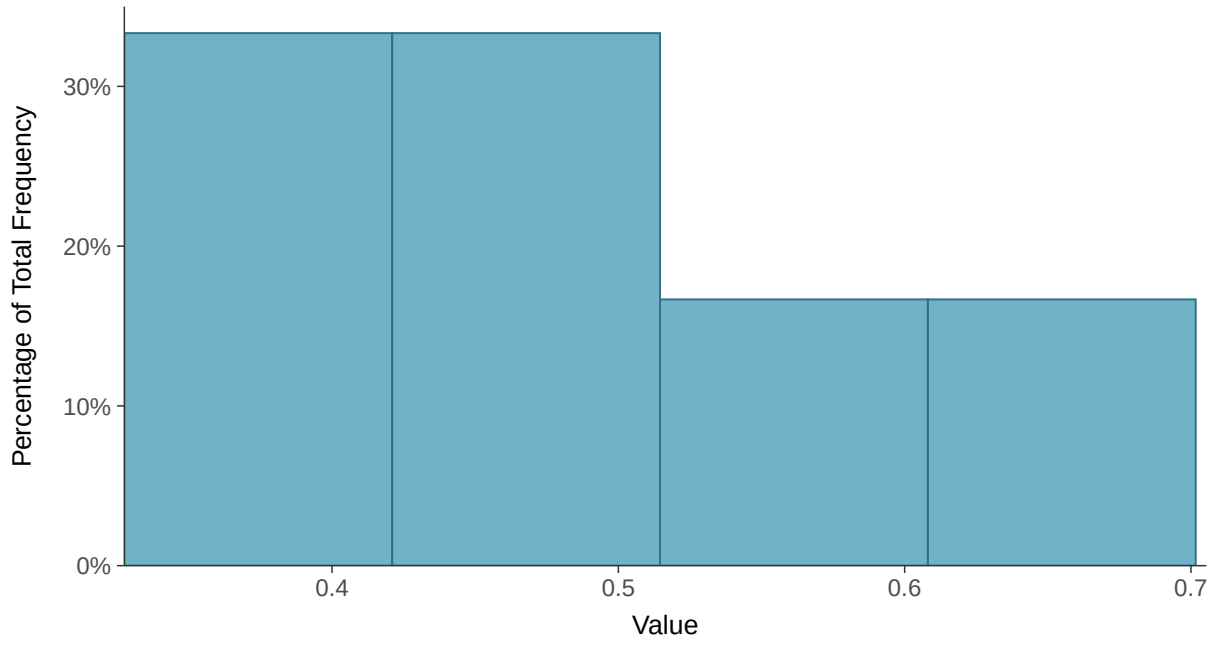
Scatter Plot

Fluoride (App IV), MW-25B (mg/l)



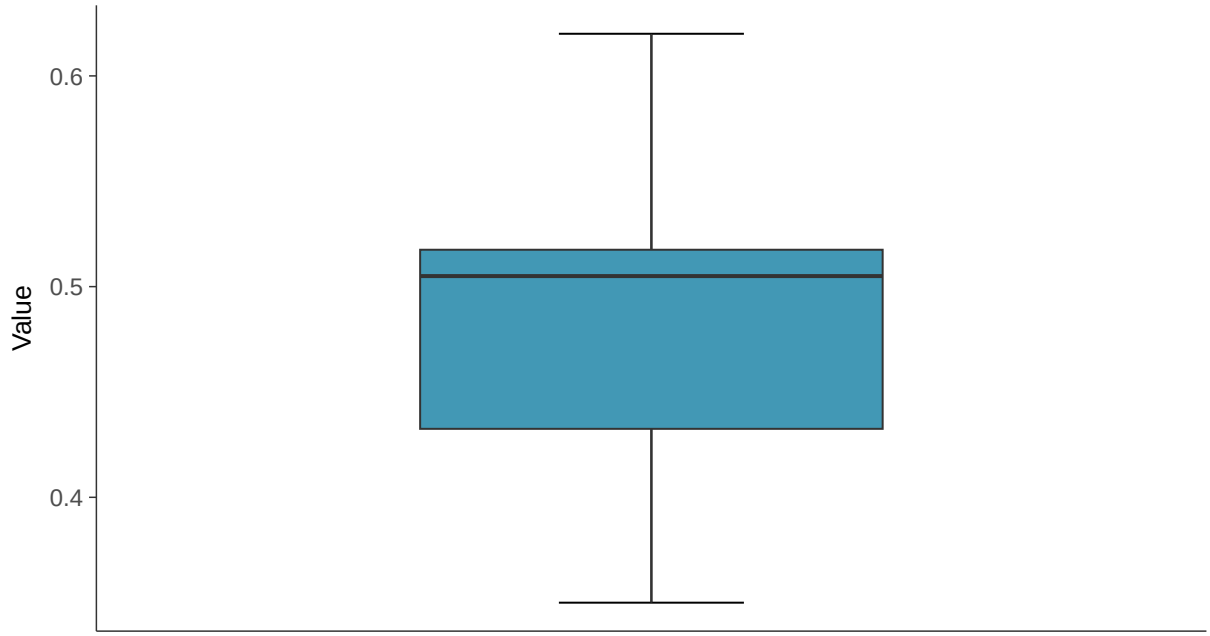
Histogram

Fluoride (App IV), MW-25B (mg/l)



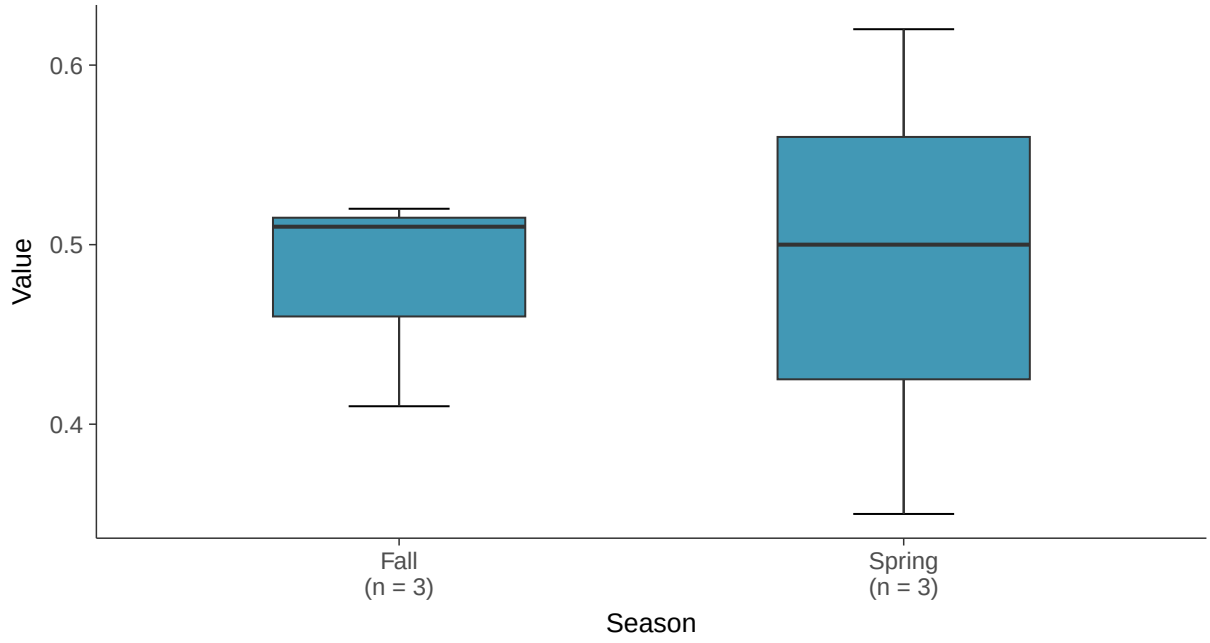
Boxplot

Fluoride (App IV), MW-25B (mg/l)



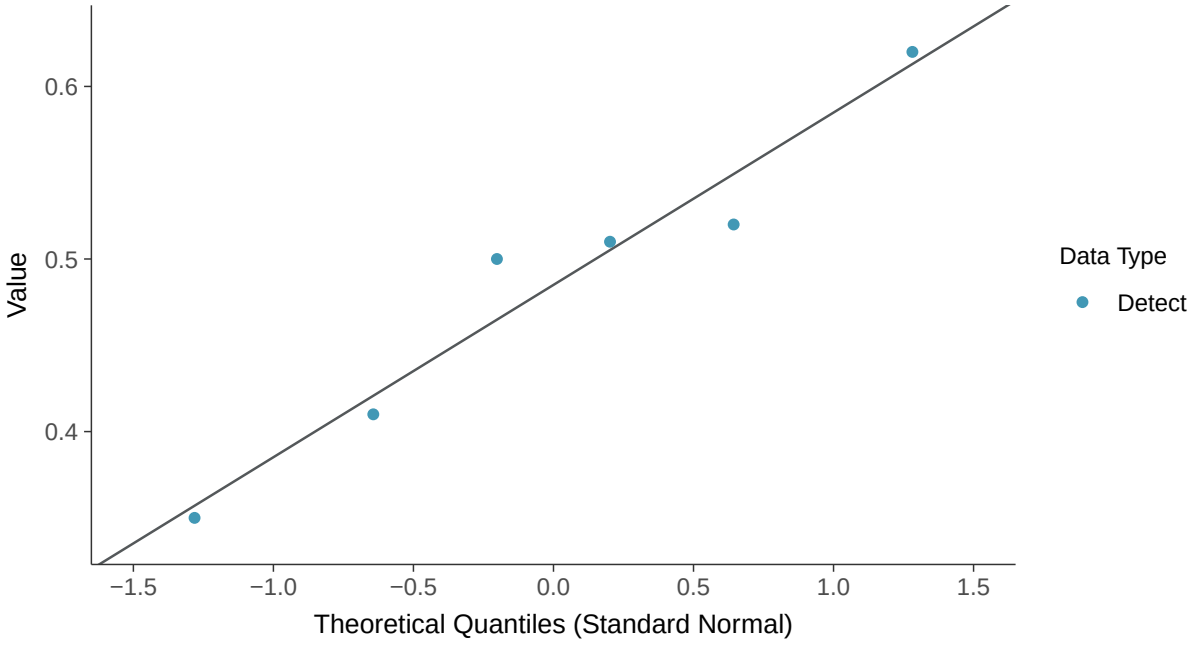
Boxplot by Season

Fluoride (App IV), MW-25B (mg/l)



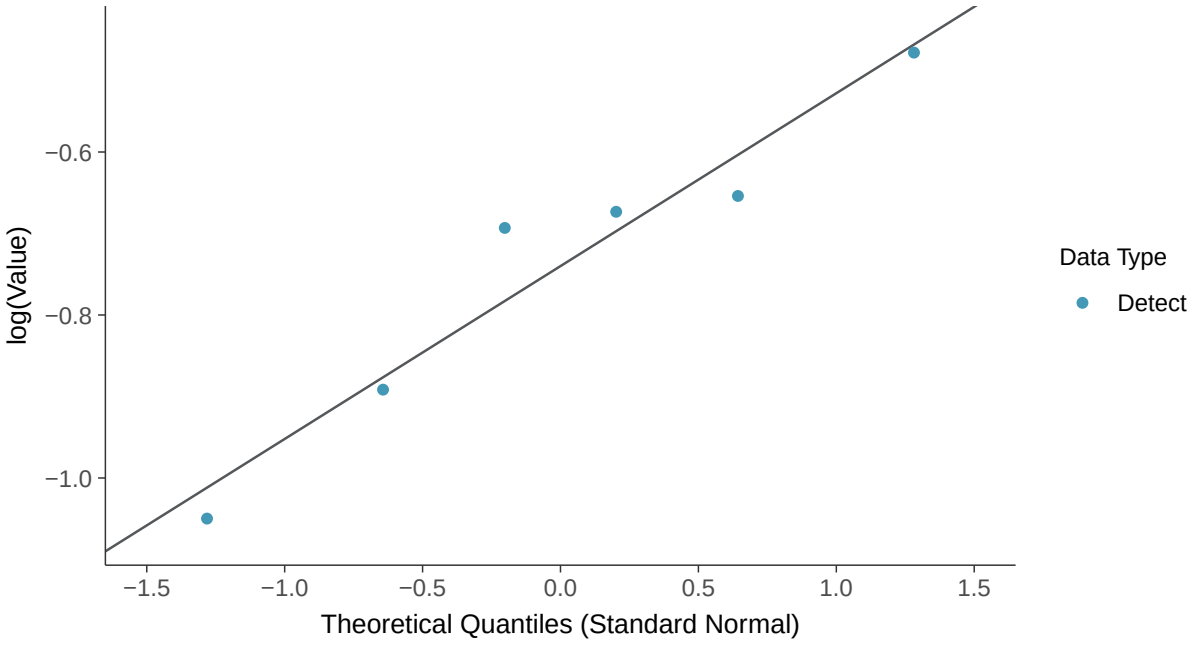
Normal Q-Q plot

Fluoride (App IV), MW-25B (mg/l)



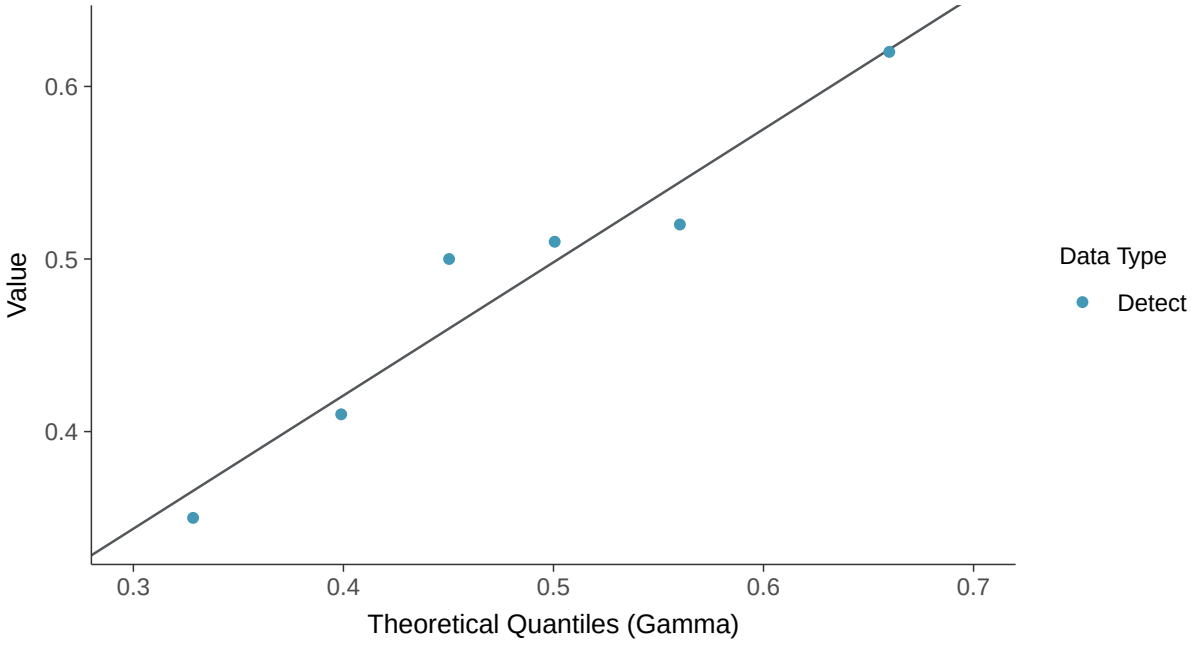
Lognormal Q-Q plot

Fluoride (App IV), MW-25B (mg/l)



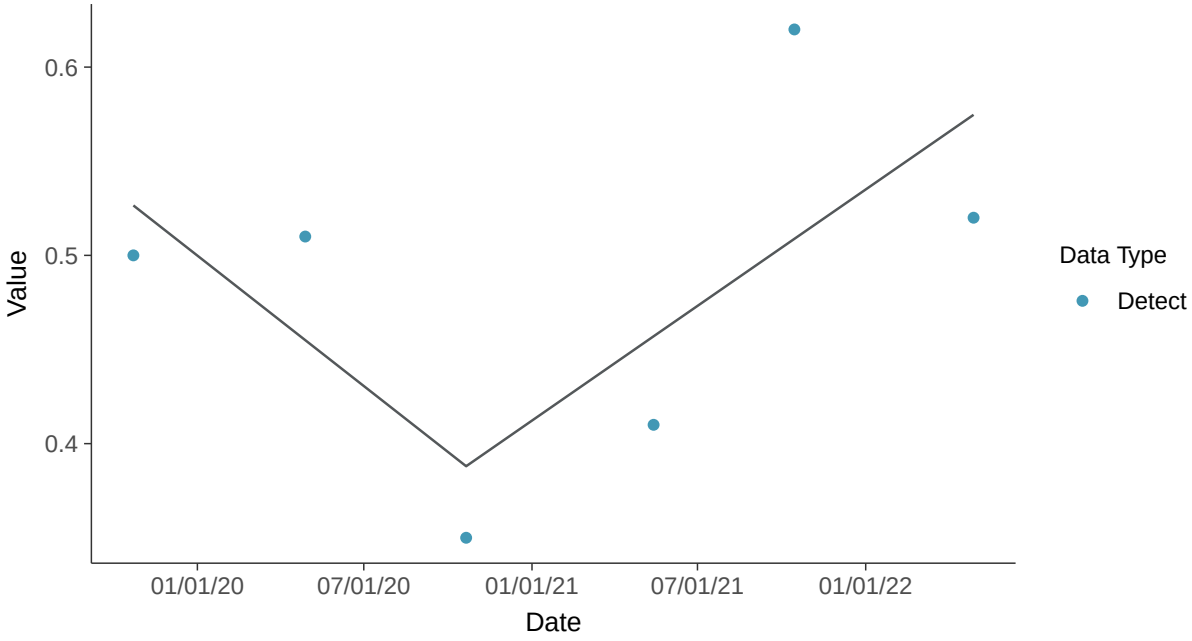
Gamma Q-Q plot

Fluoride (App IV), MW-25B (mg/l)



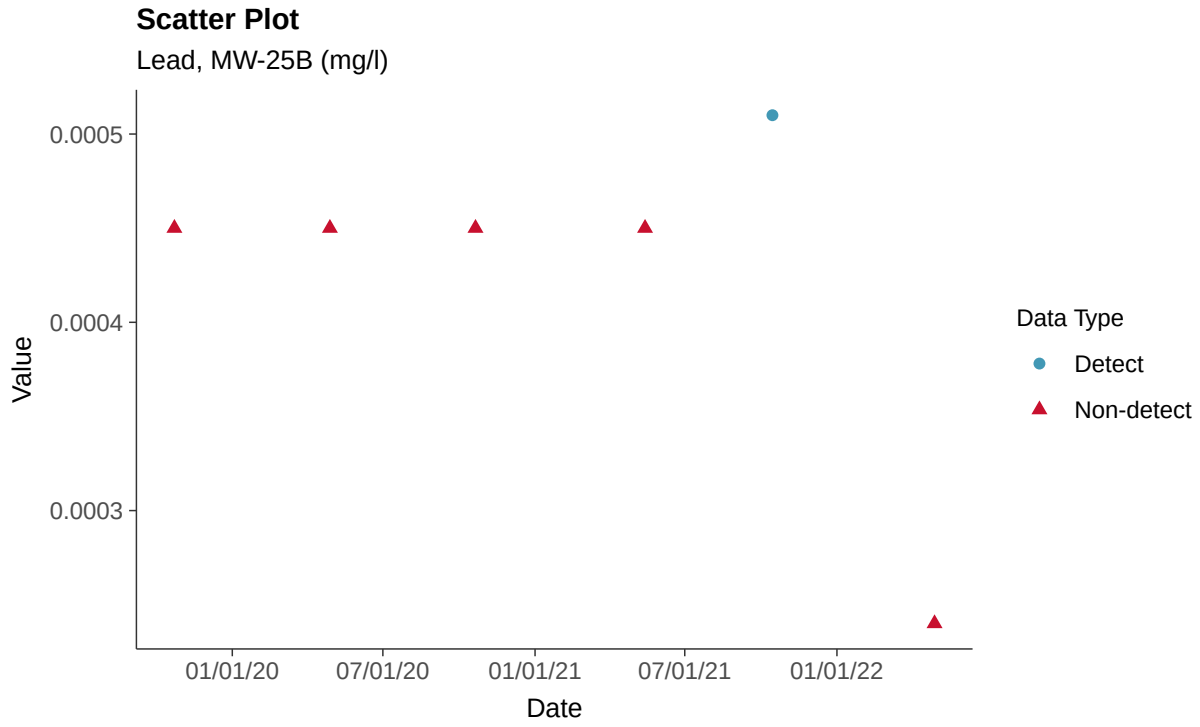
Trend Regression: Piecewise Linear-Linear

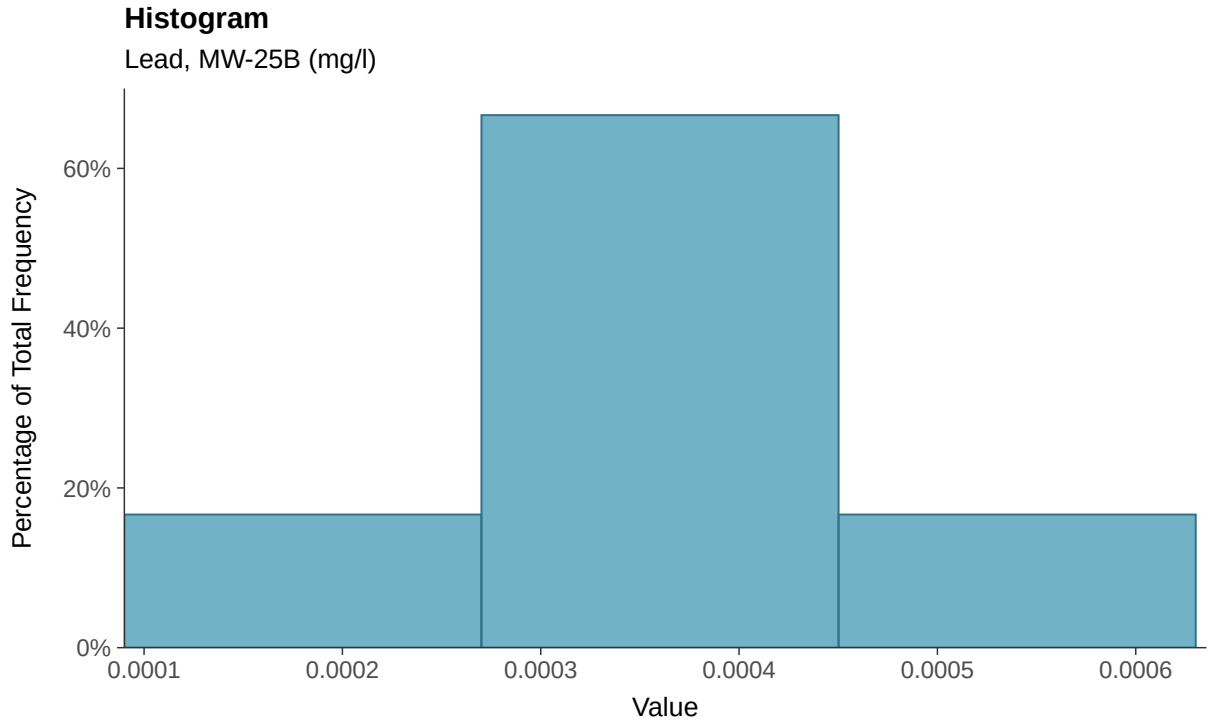
Fluoride (App IV), MW-25B (mg/l)



Appendix IV: Lead, MW-25B

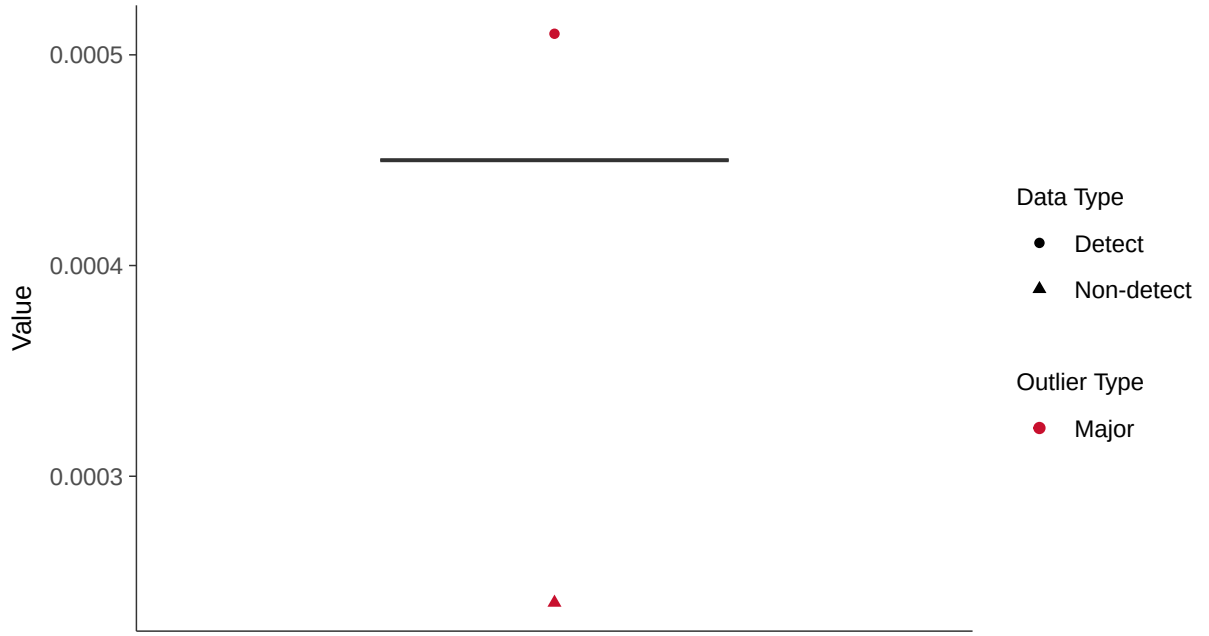
ID: 17_2_117





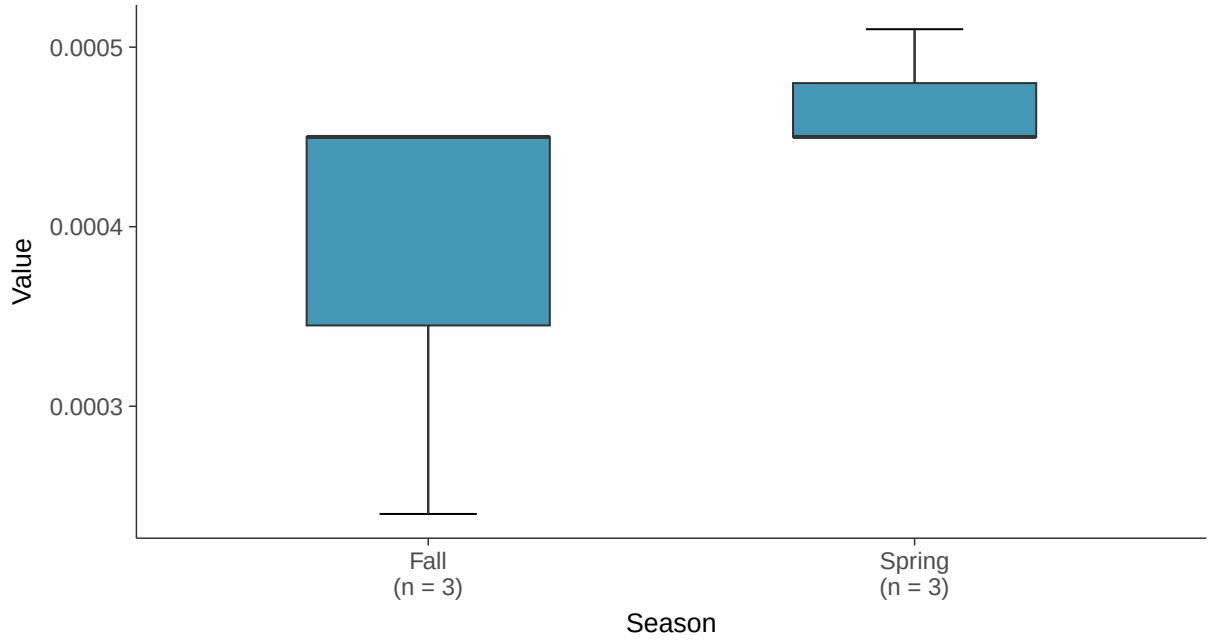
Boxplot

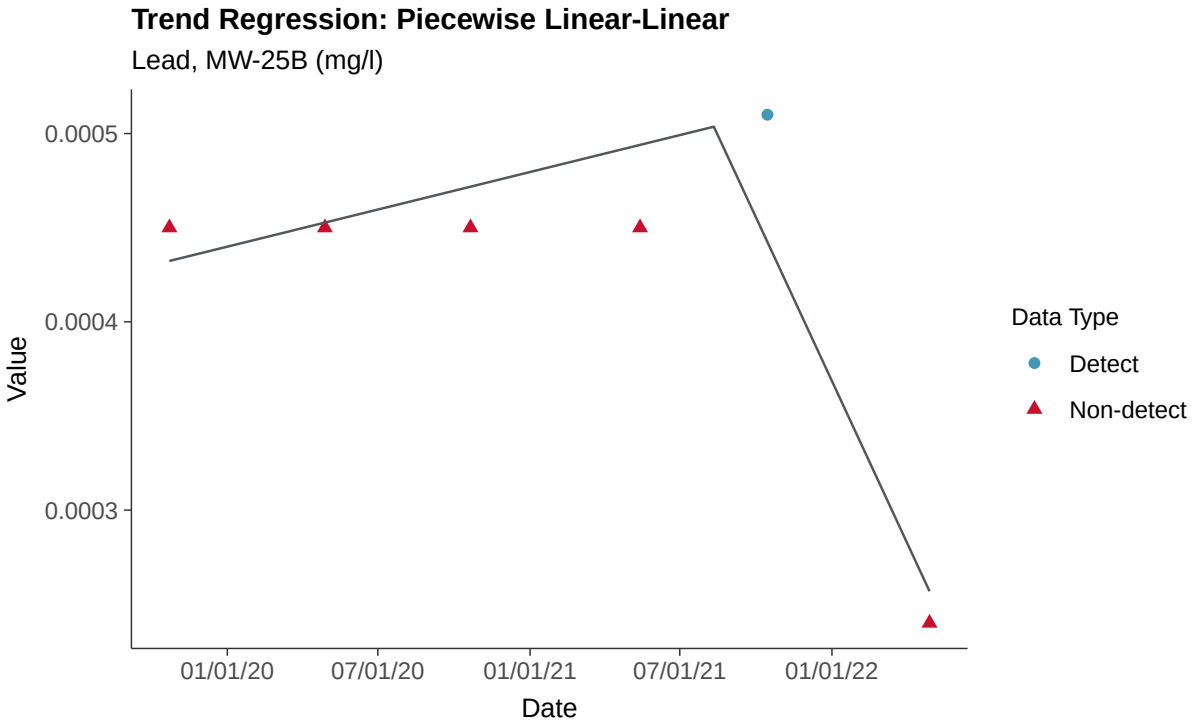
Lead, MW-25B (mg/l)



Boxplot by Season

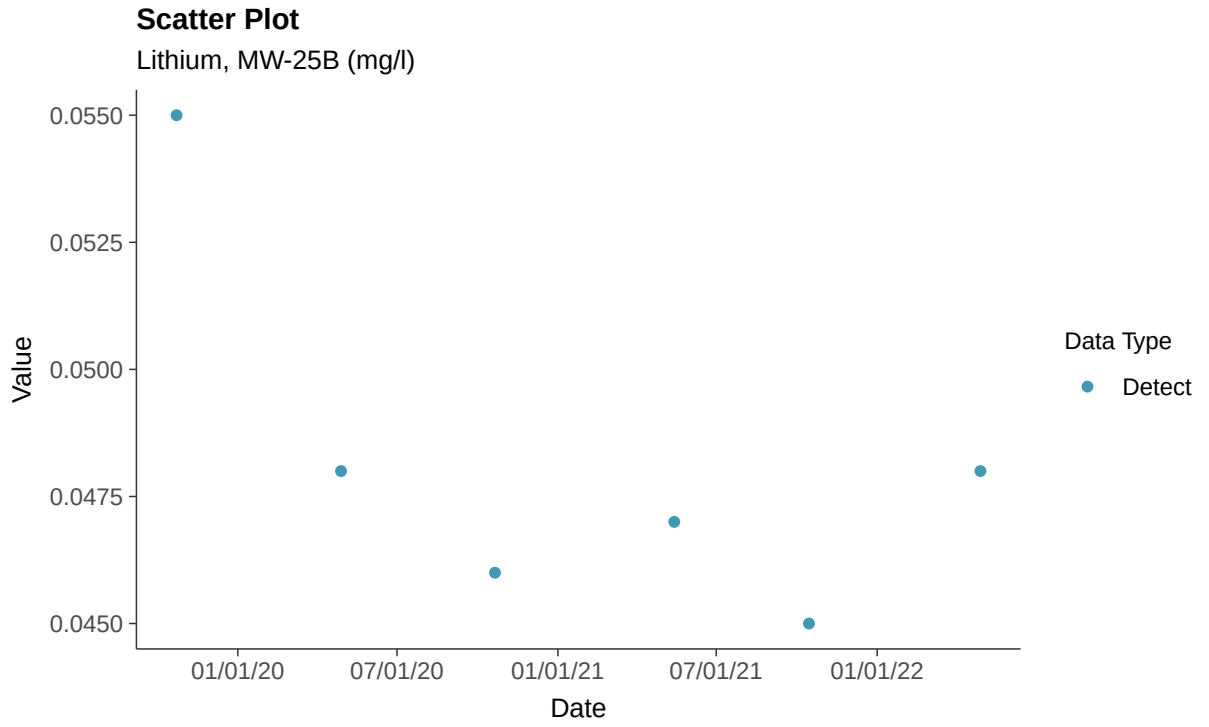
Lead, MW-25B (mg/l)

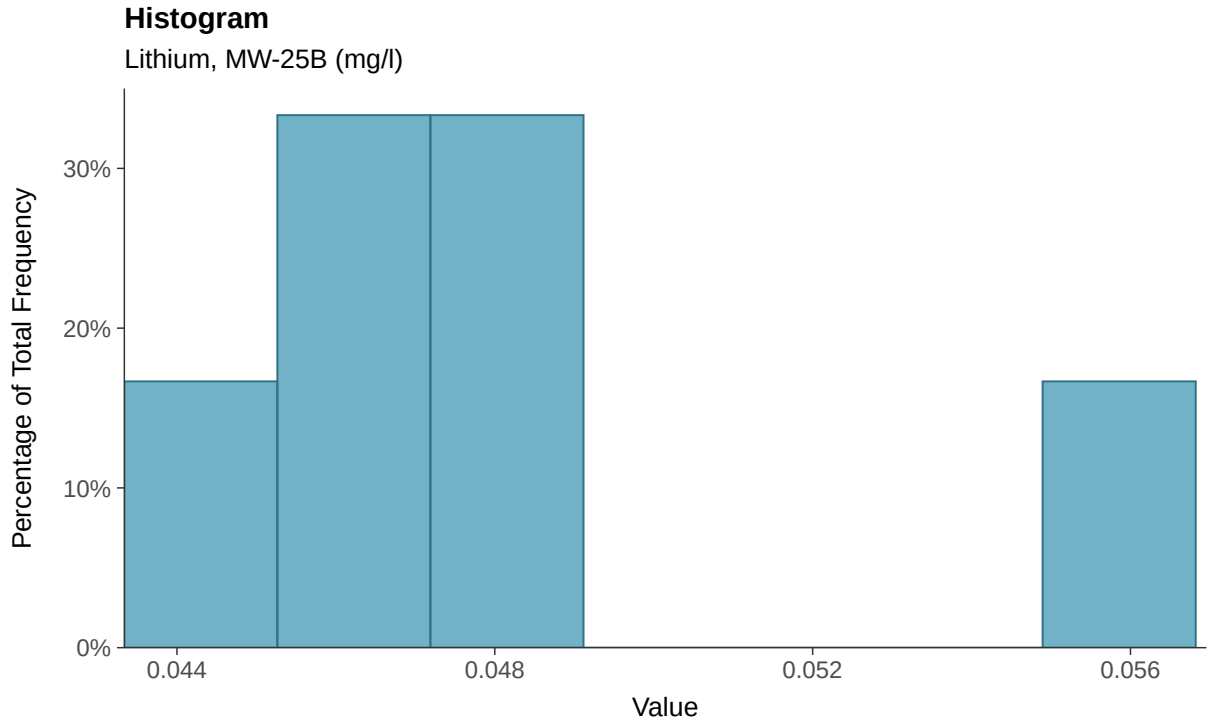



Trend Regression: Piecewise Linear-Linear
Lead, MW-25B (mg/l)
0.0005
0.0004
0.0003
Value
01/01/20
07/01/20
01/01/21
07/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-25B

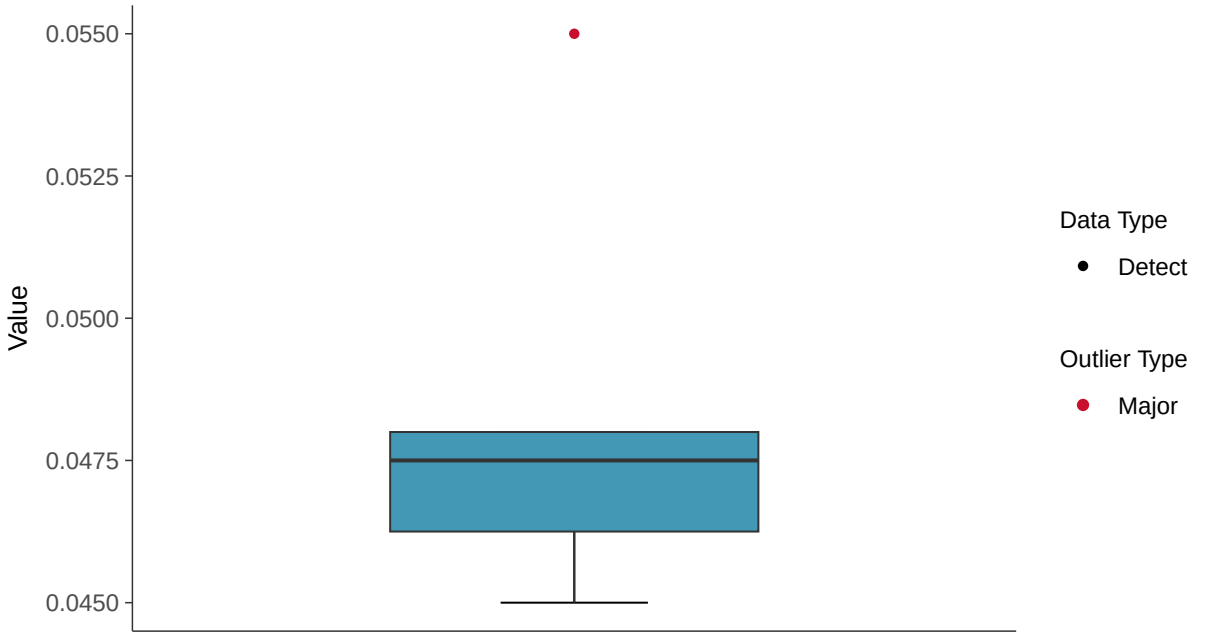
ID: 17_2_118





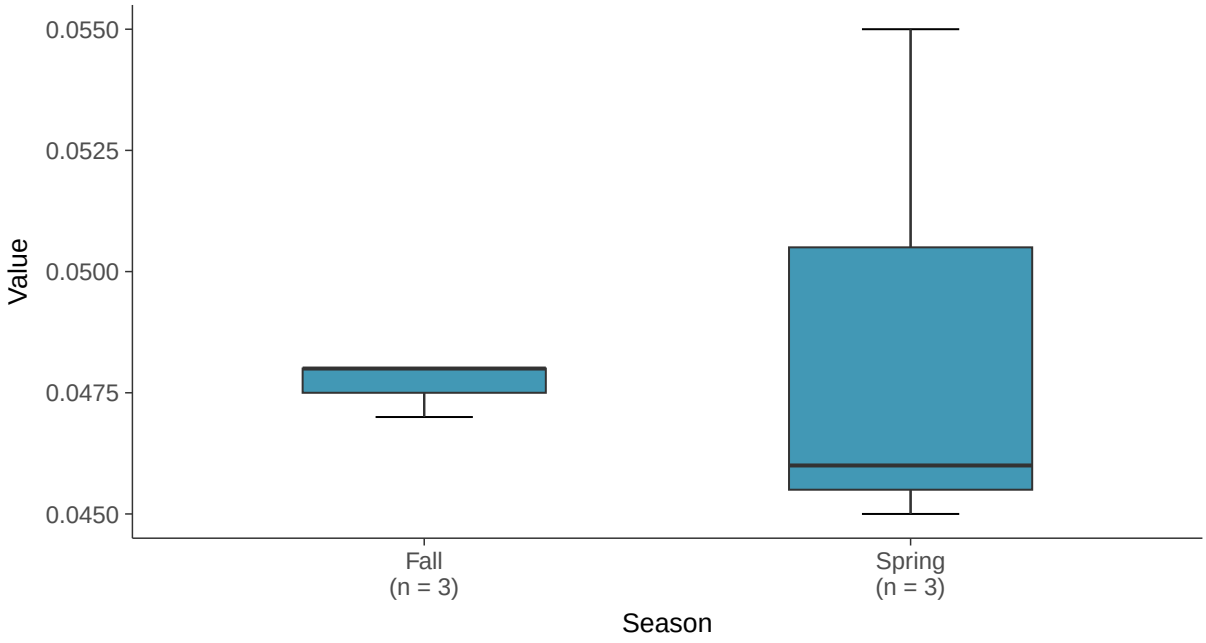
Boxplot

Lithium, MW-25B (mg/l)



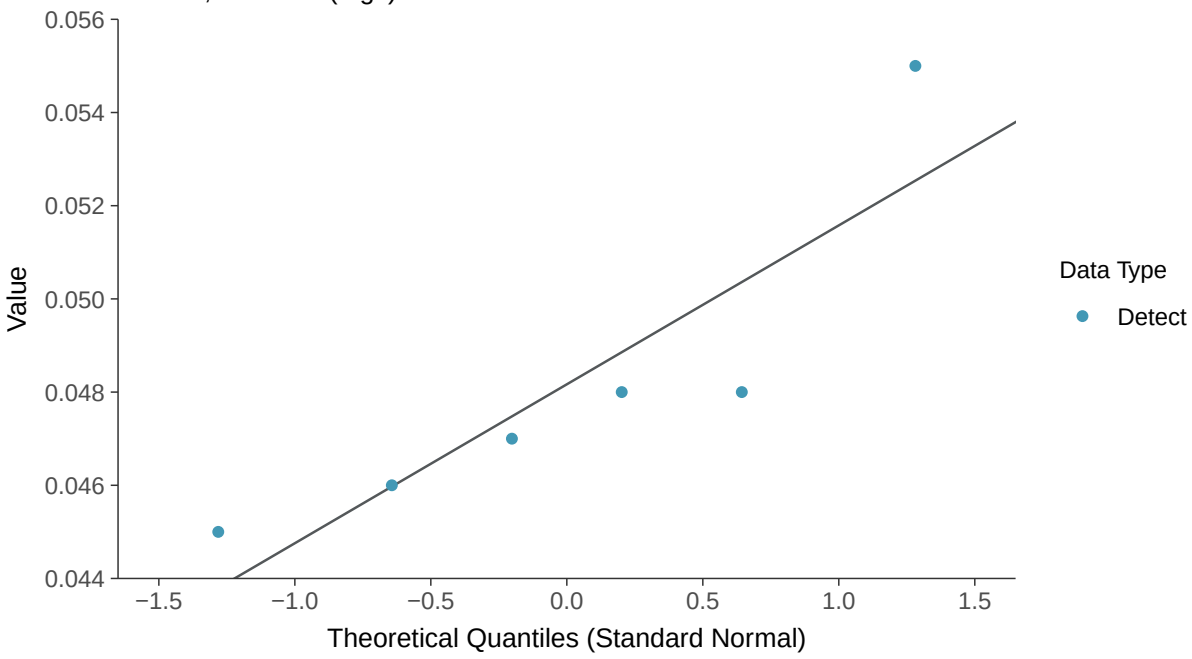
Boxplot by Season

Lithium, MW-25B (mg/l)



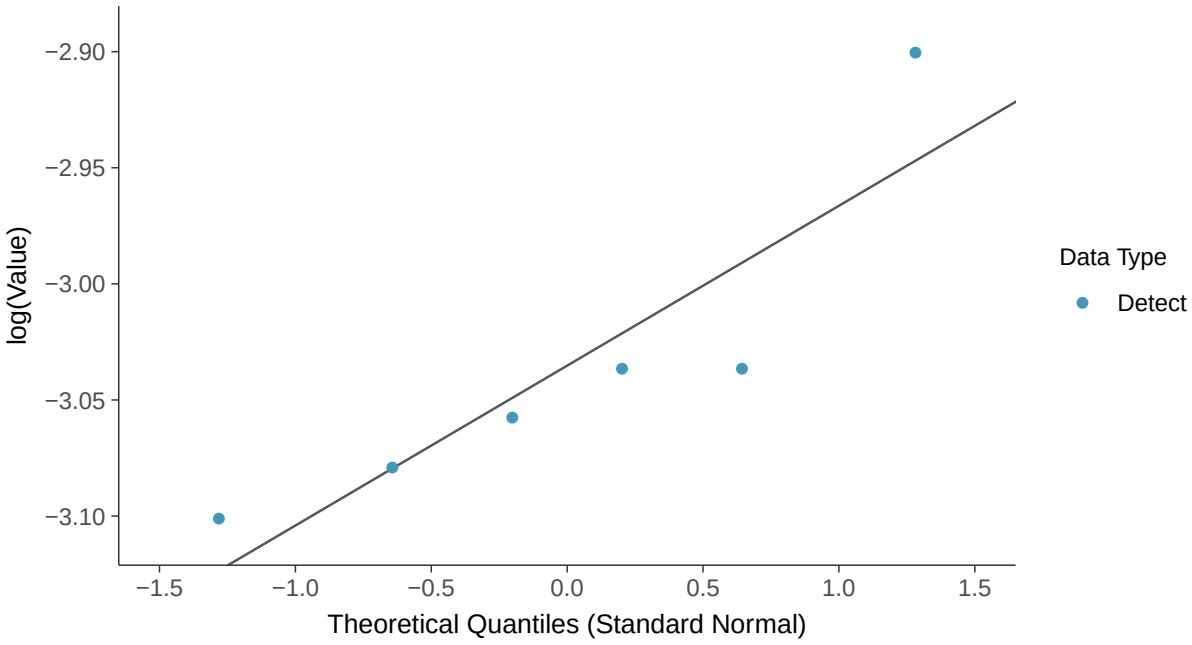
Normal Q-Q plot

Lithium, MW-25B (mg/l)



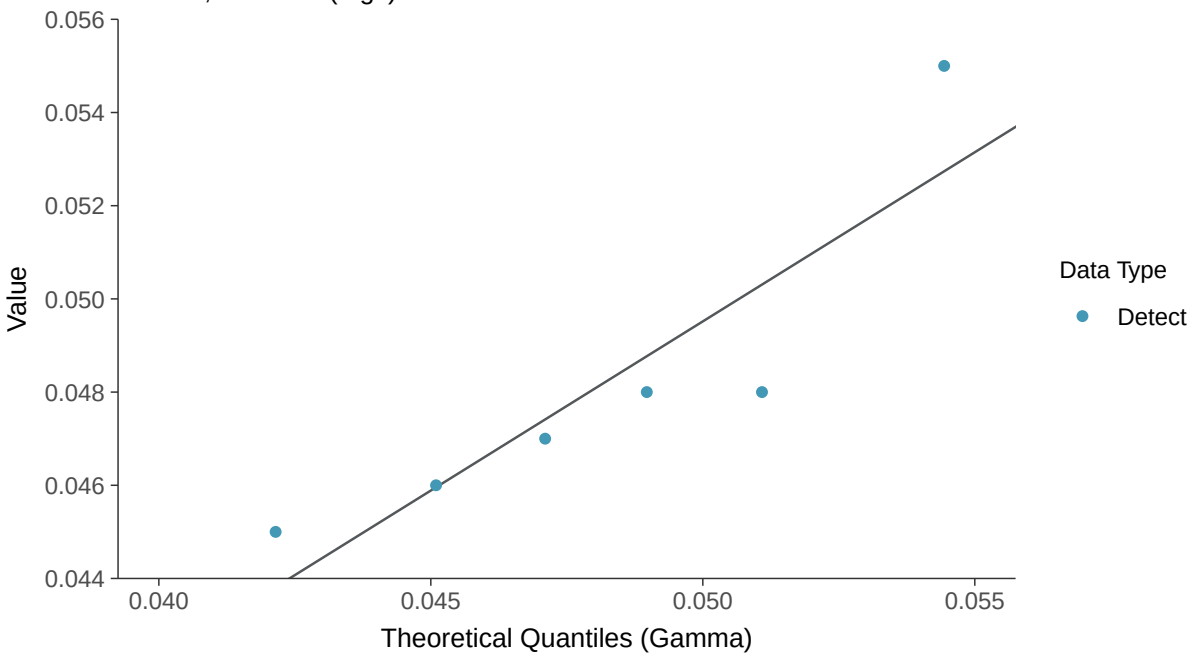
Lognormal Q-Q plot

Lithium, MW-25B (mg/l)



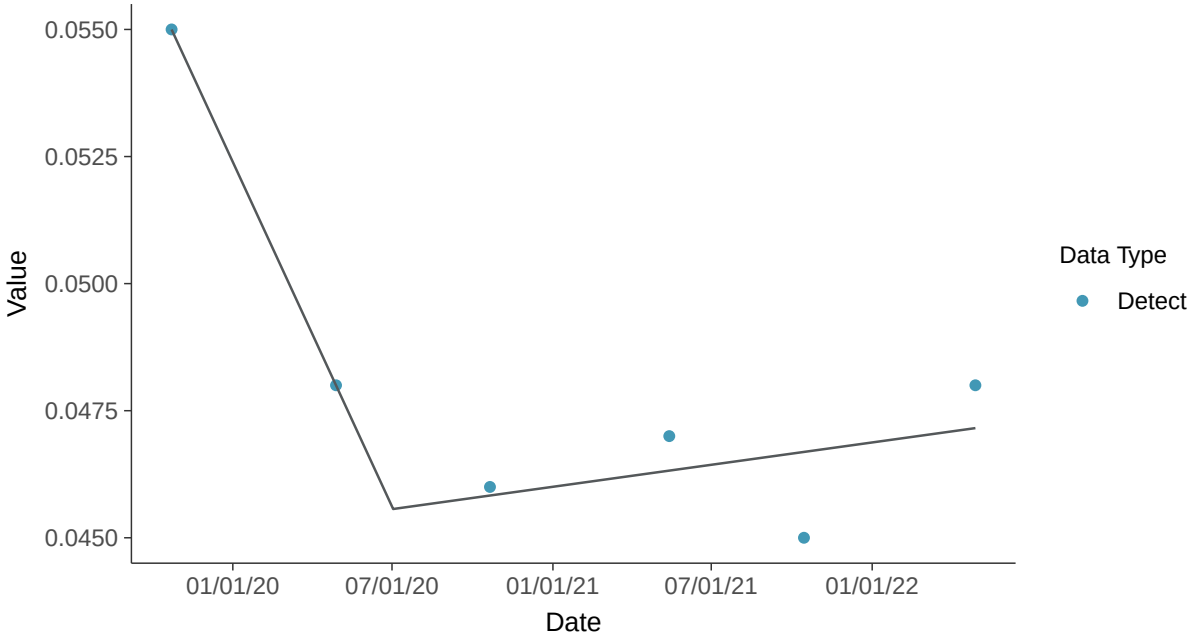
Gamma Q-Q plot

Lithium, MW-25B (mg/l)



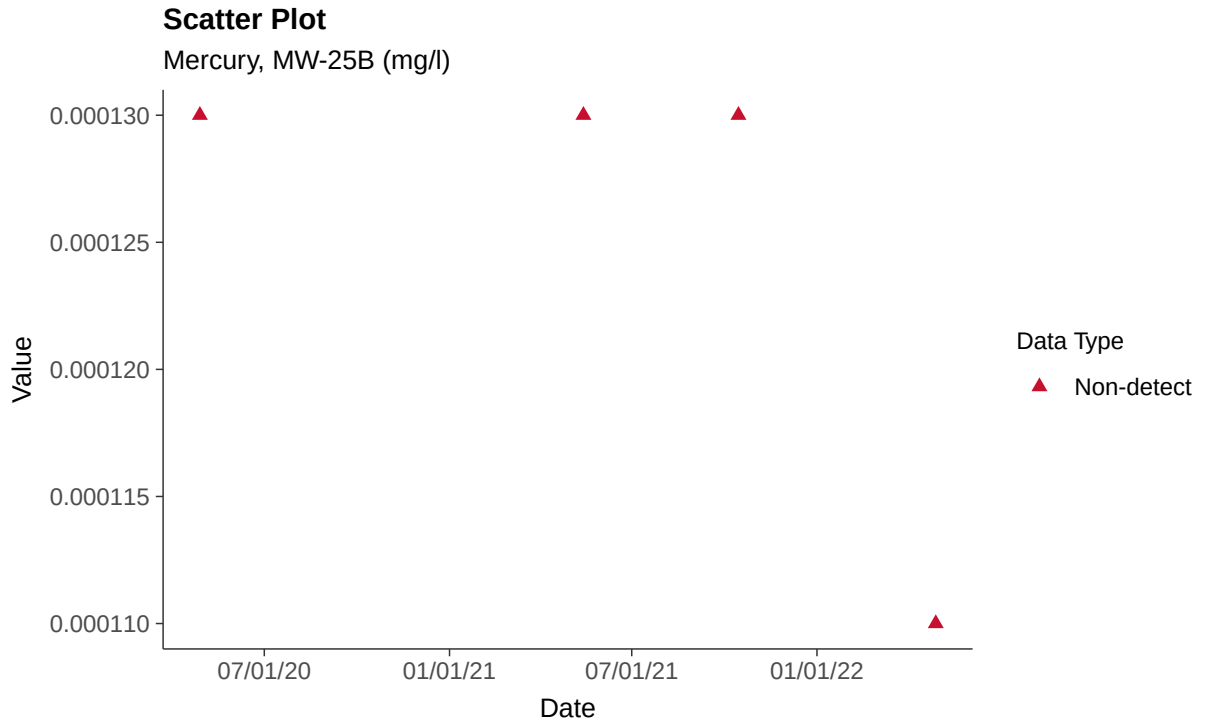
Trend Regression: Piecewise Linear-Linear

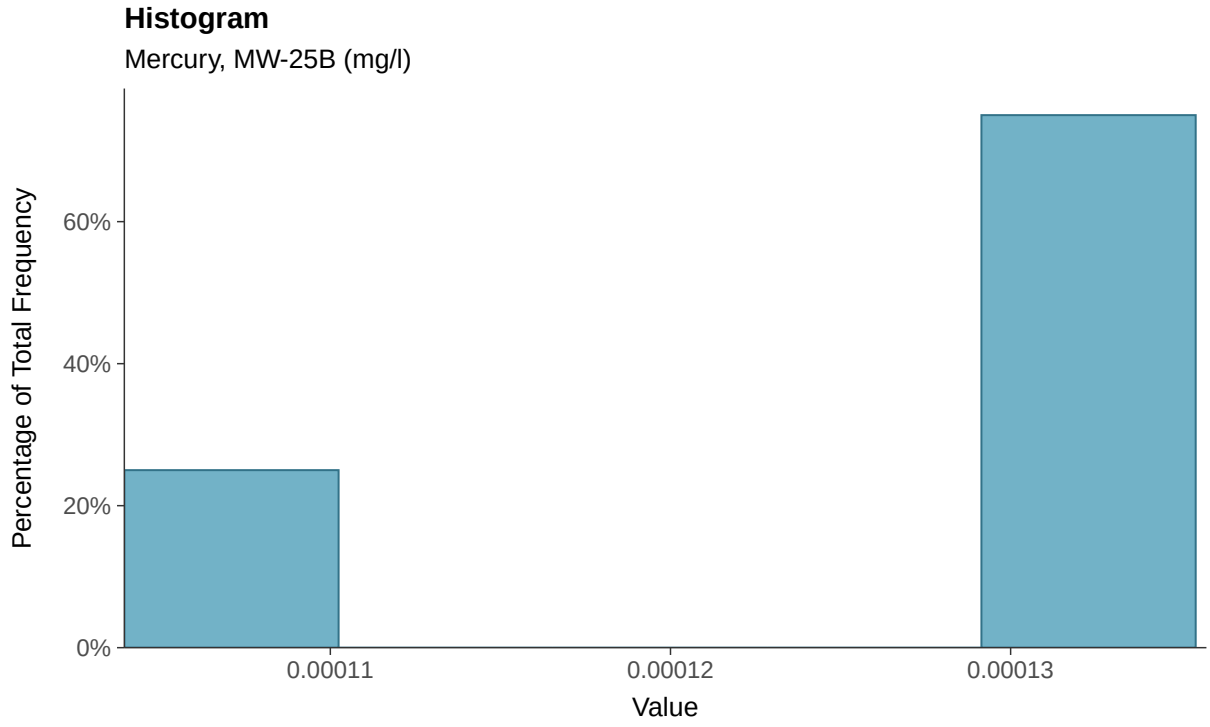
Lithium, MW-25B (mg/l)

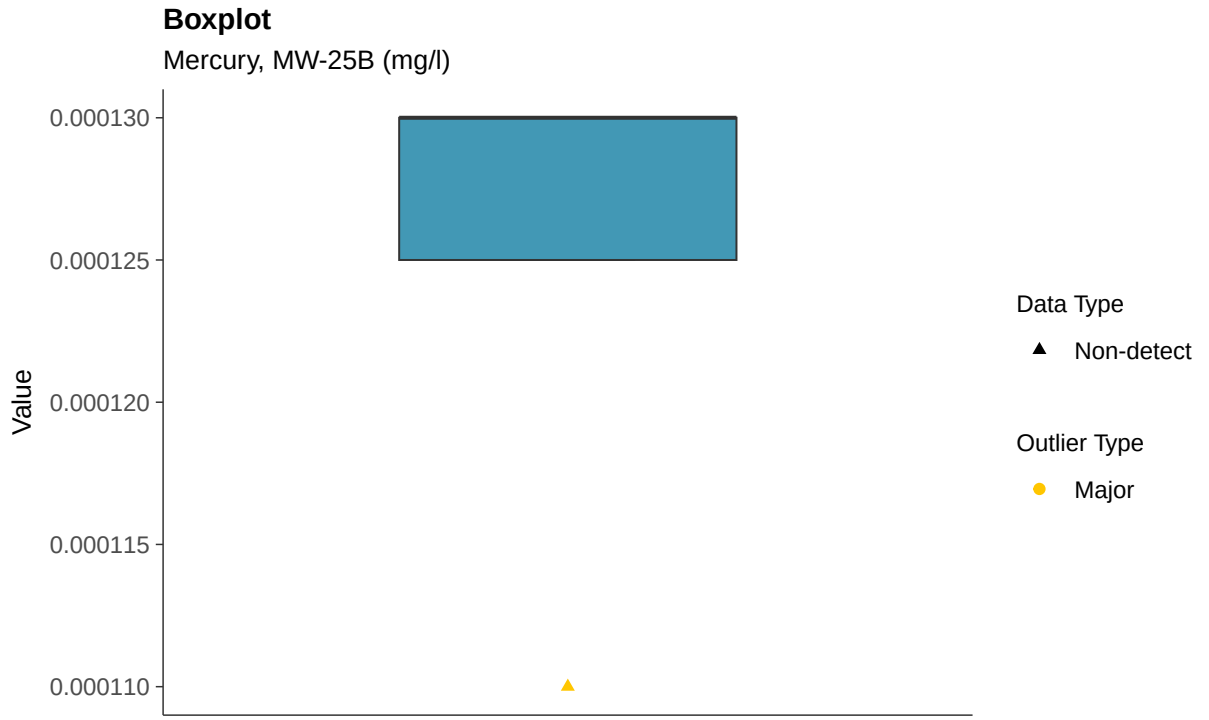


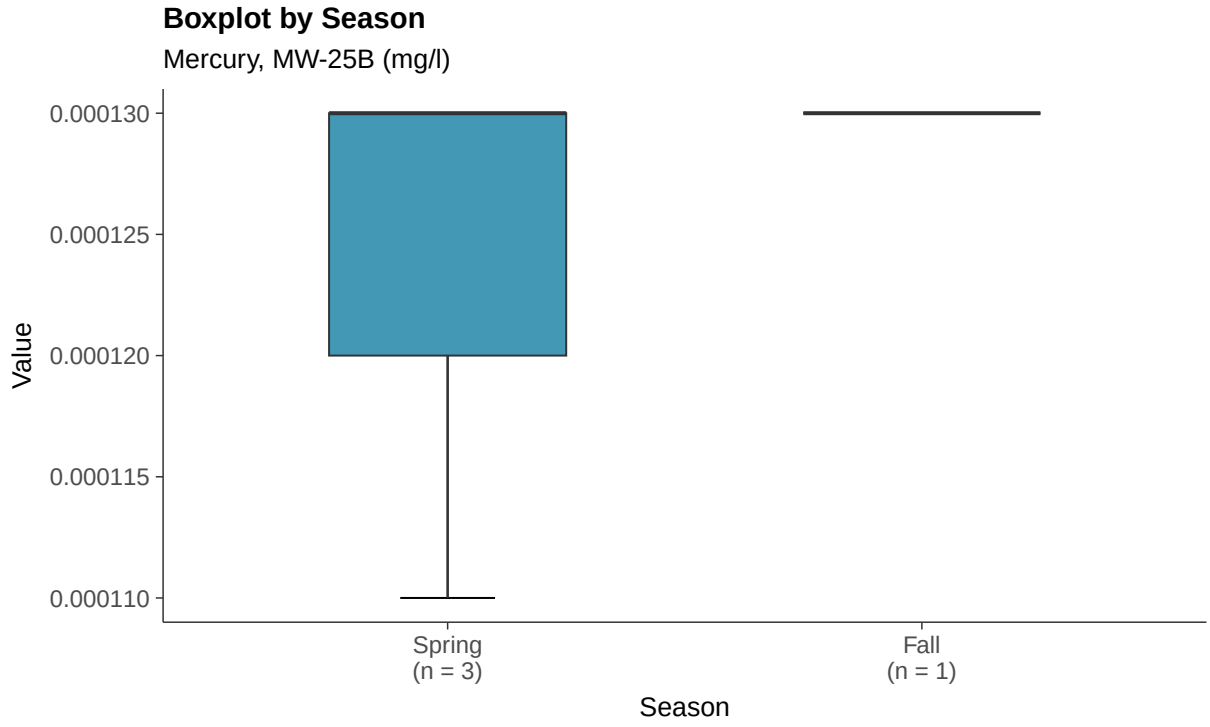
Appendix IV: Mercury, MW-25B

ID: 17_2_120



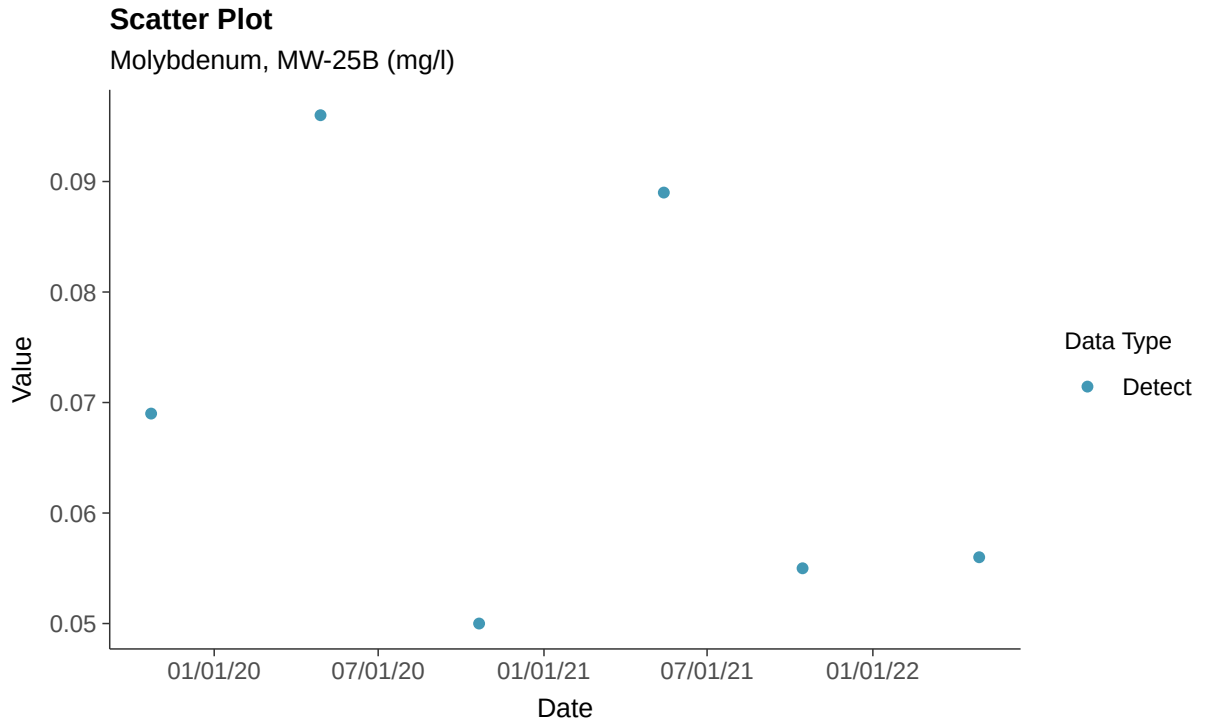


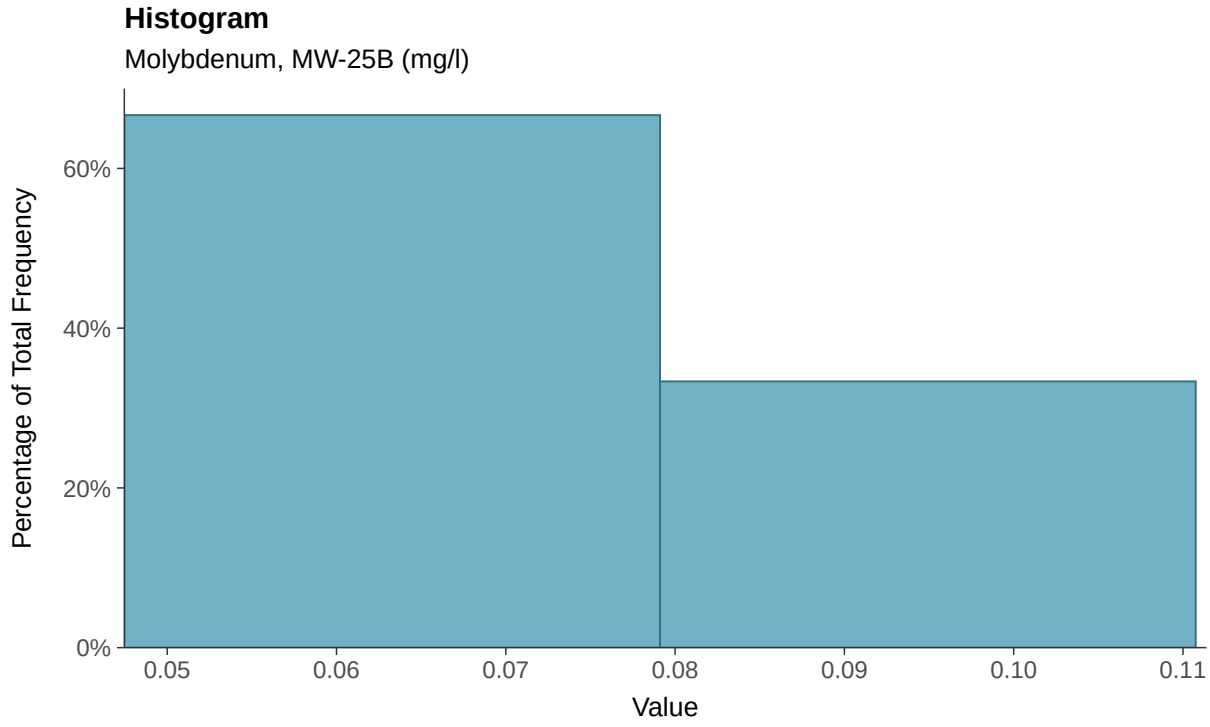

Boxplot
Mercury, MW-25B (mg/l)
0.000130
0.000125
0.000120
0.000115
0.000110
Value
Data Type
Non-detect
Outlier Type
Major


Boxplot by Season
Mercury, MW-25B (mg/l)
0.000130
0.000125
0.000120
0.000115
0.000110
Value
Spring
(n = 3)
Fall
(n = 1)
Season

Appendix IV: Molybdenum, MW-25B

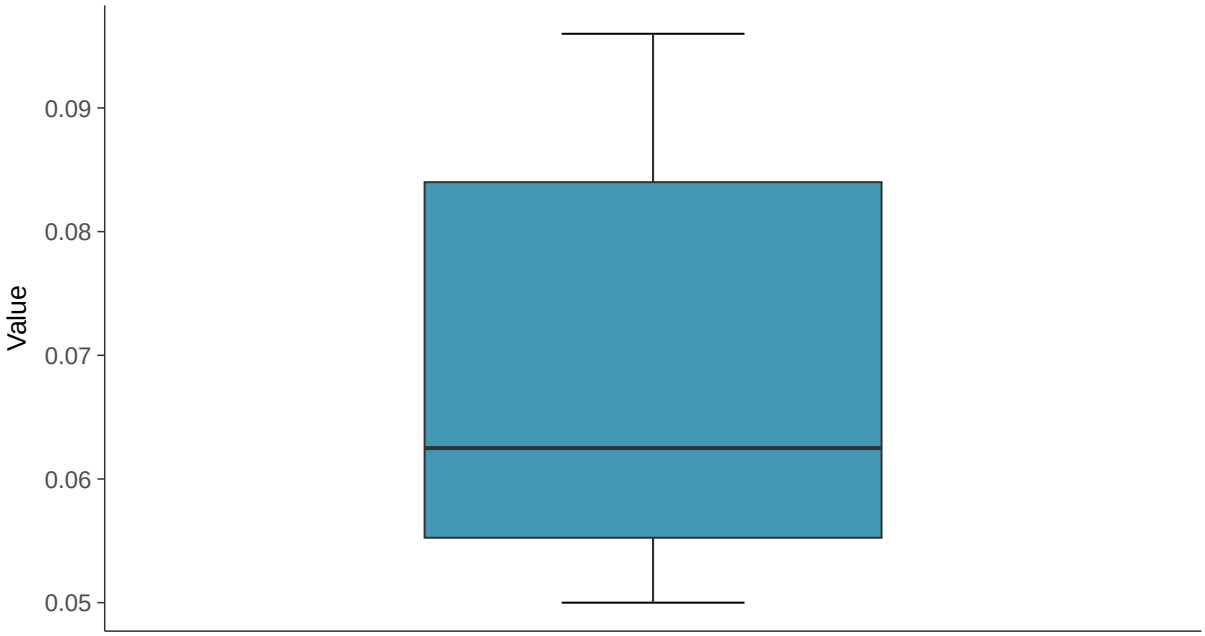
ID: 17_2_121





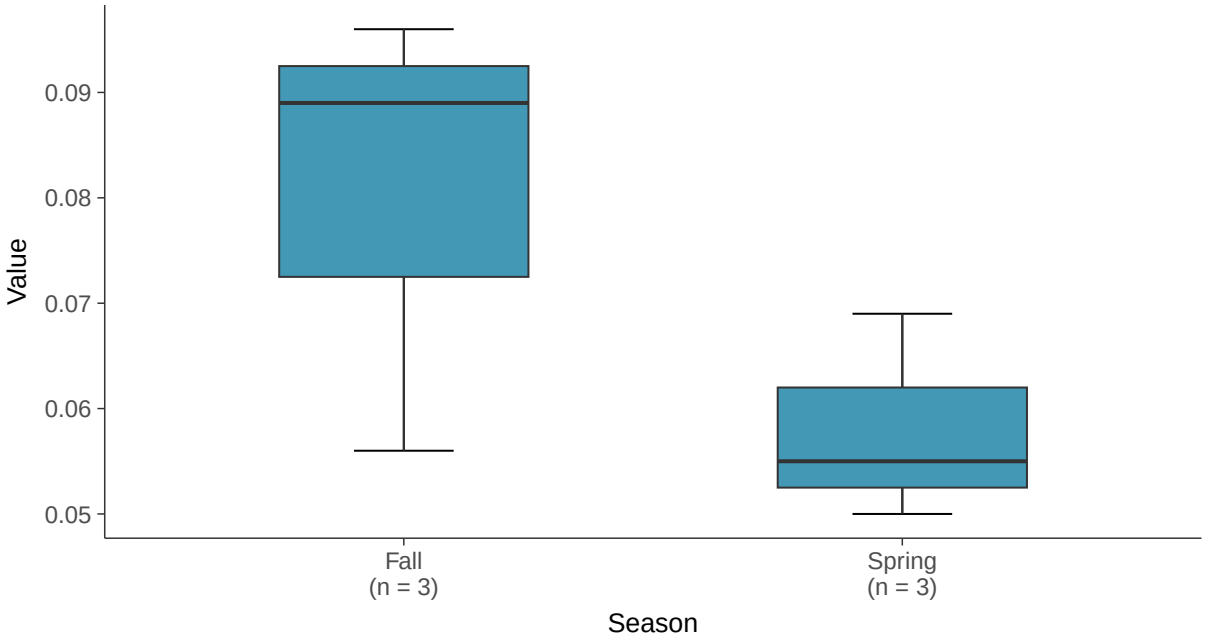
Boxplot

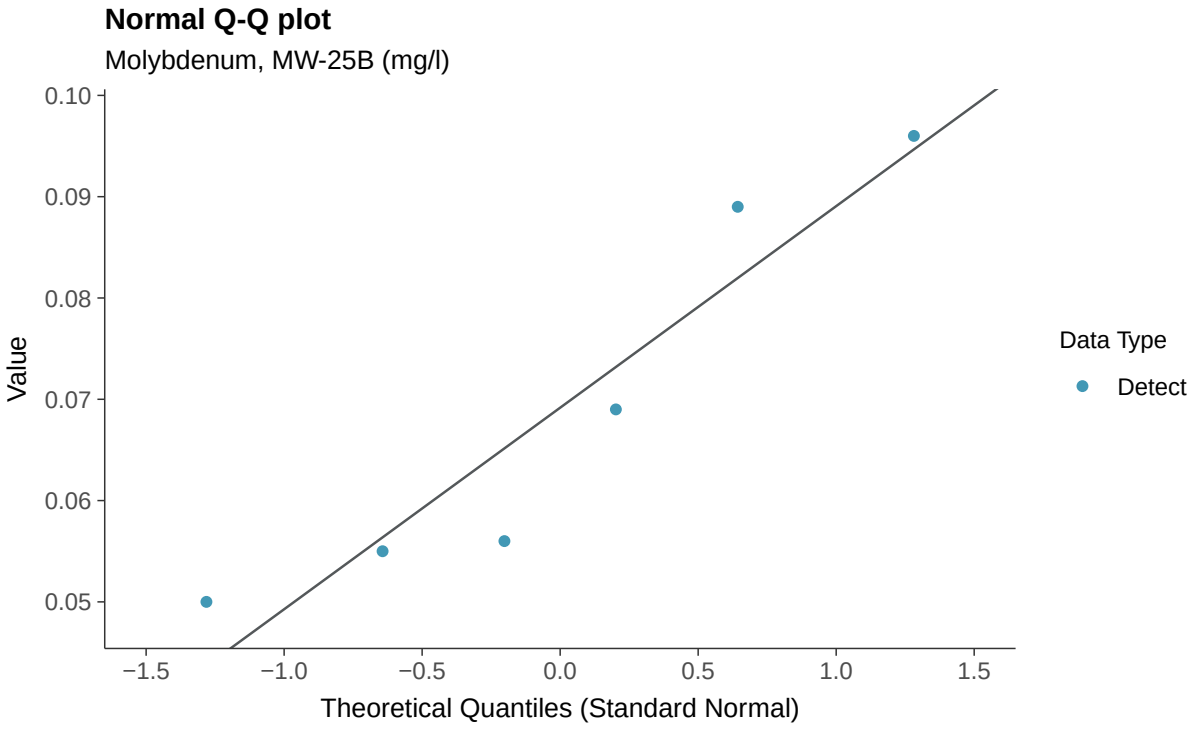
Molybdenum, MW-25B (mg/l)

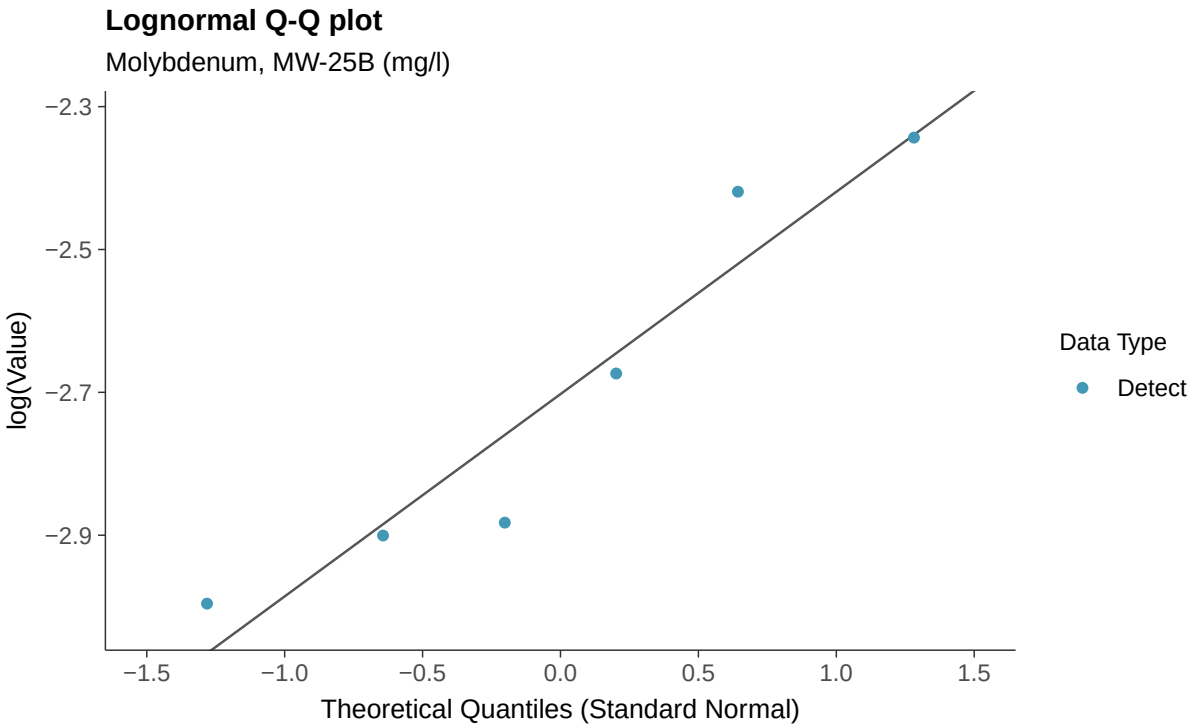


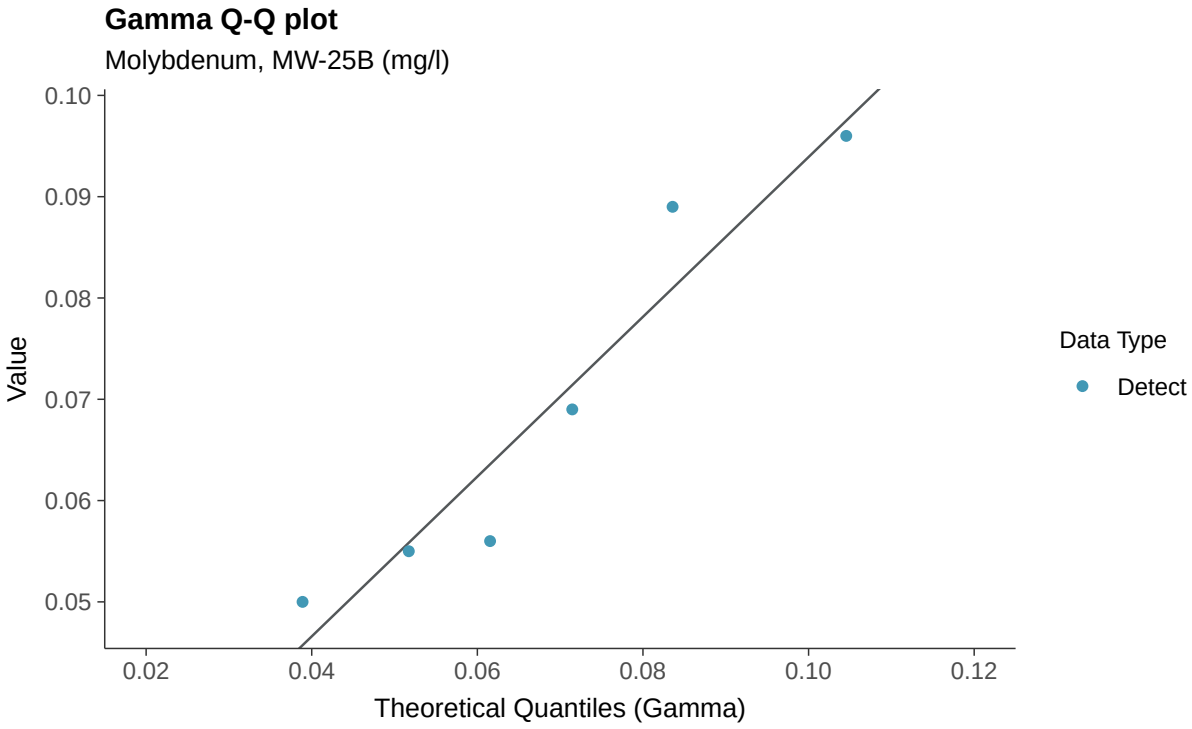
Boxplot by Season

Molybdenum, MW-25B (mg/l)




Normal Q-Q plot
Molybdenum, MW-25B (mg/l)
Value
0.10
0.09
0.08
0.07
0.06
0.05
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-25B (mg/l)
log(Value)
−2.3
−2.5
−2.7
−2.9
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

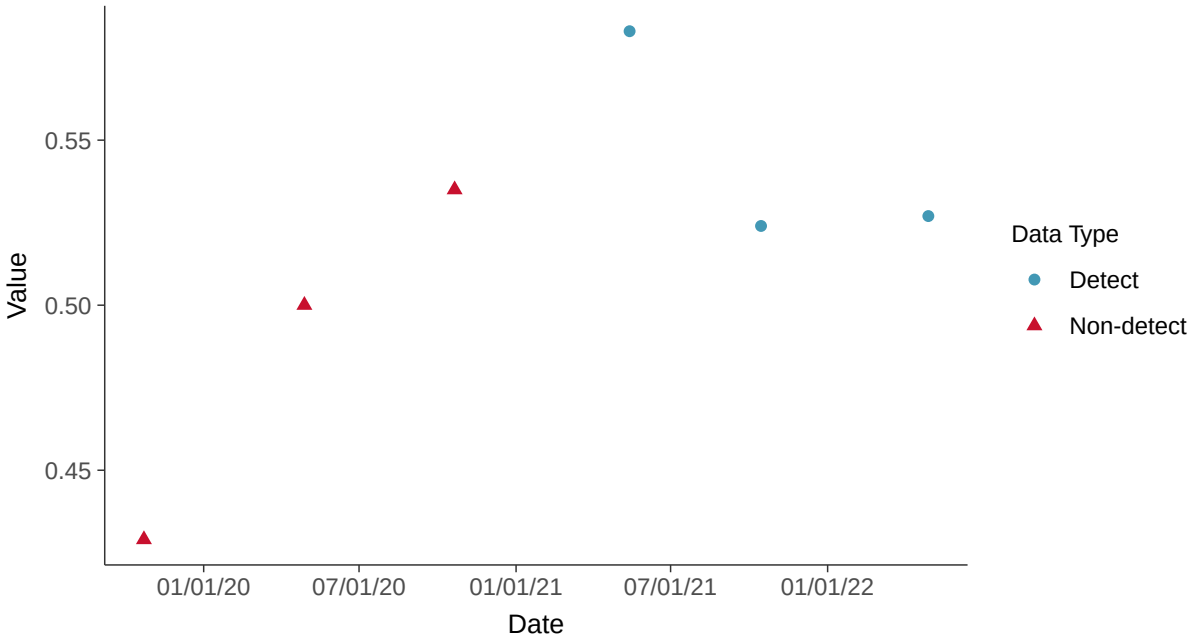

Gamma Q-Q plot
Molybdenum, MW-25B (mg/l)
Value
0.10
0.09
0.08
0.07
0.06
0.05
0.02
0.04
0.06
0.08
0.10
0.12
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Radium-226+228, MW-25B

ID: 17_2_127

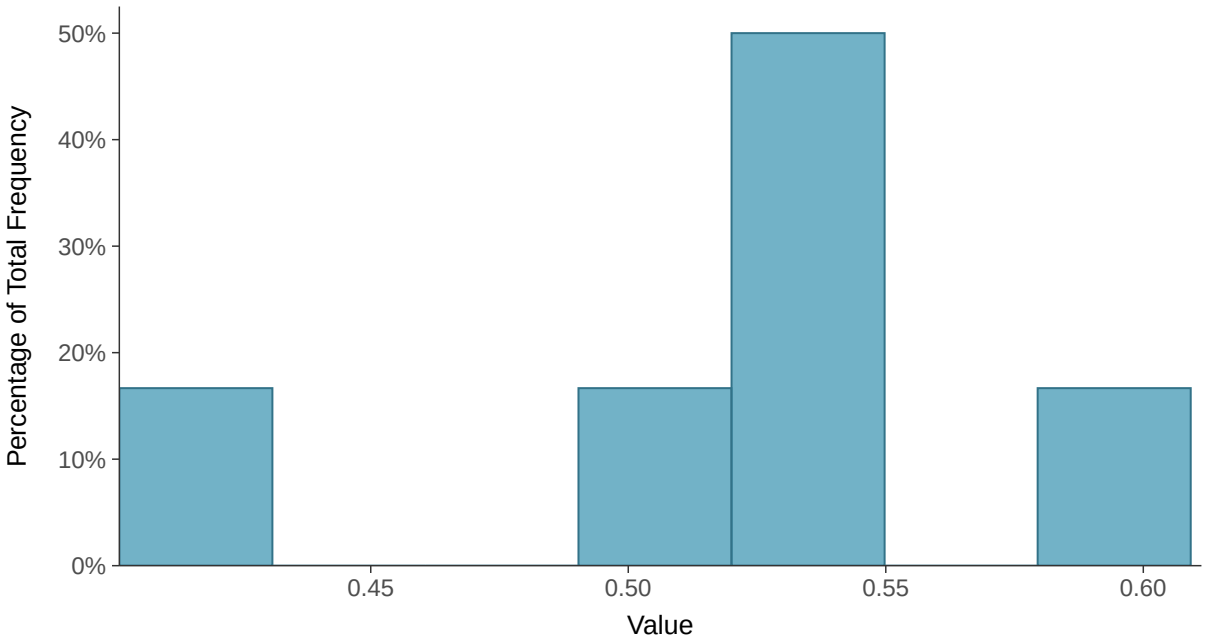
Scatter Plot

Radium-226+228, MW-25B (pci/l)



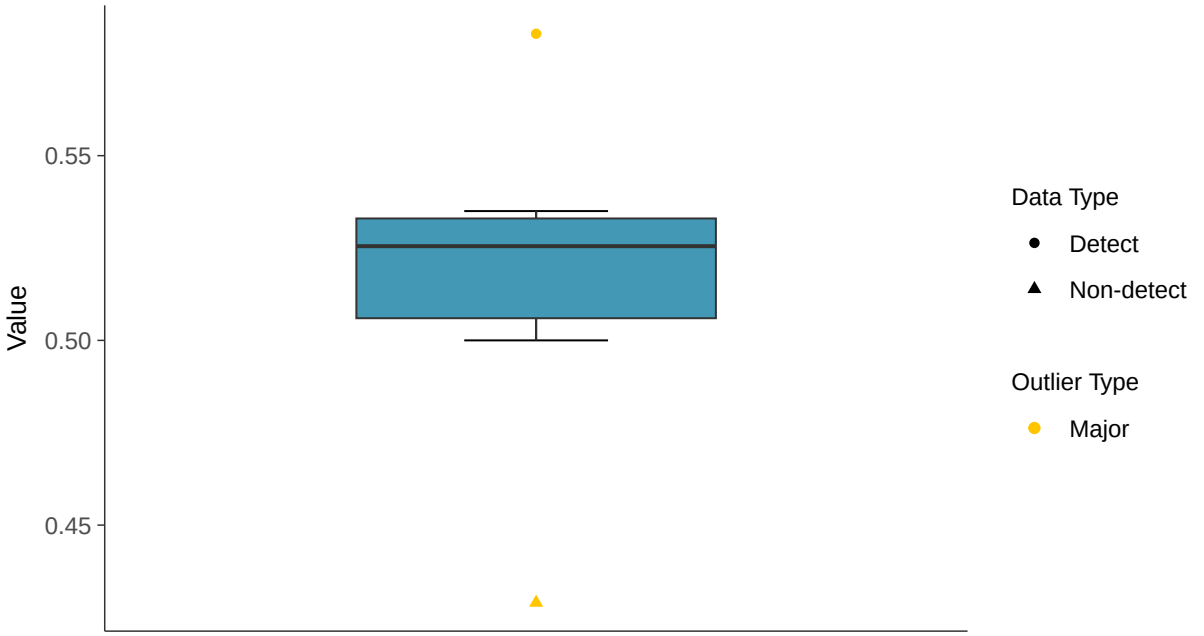
Histogram

Radium-226+228, MW-25B (pci/l)



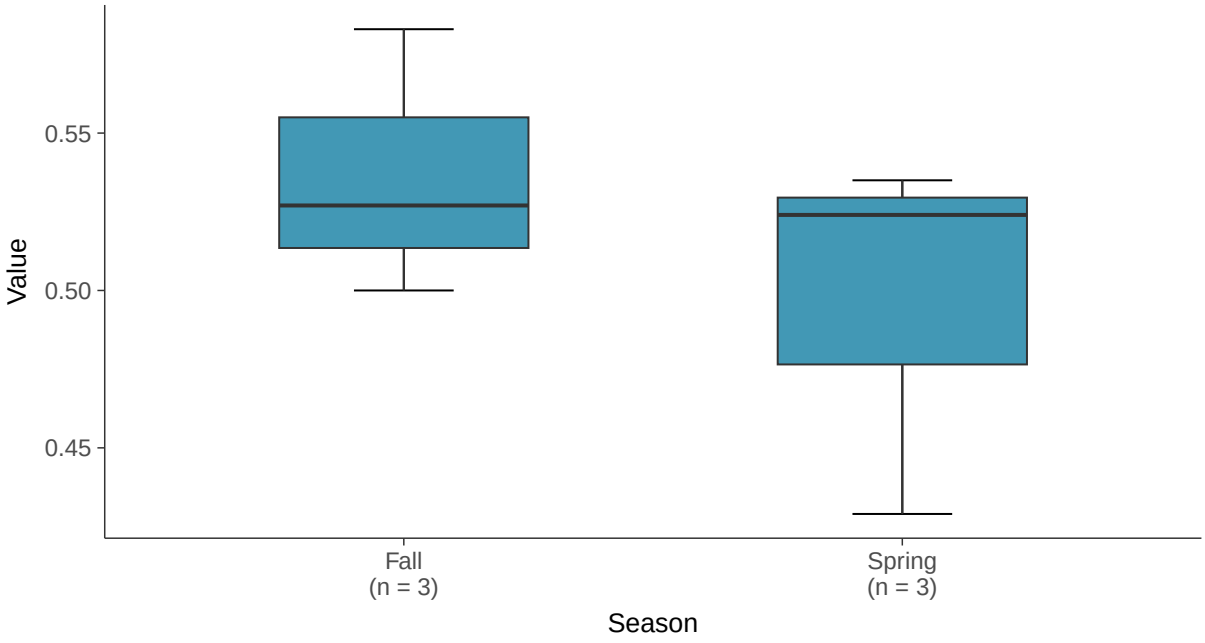
Boxplot

Radium-226+228, MW-25B (pci/l)



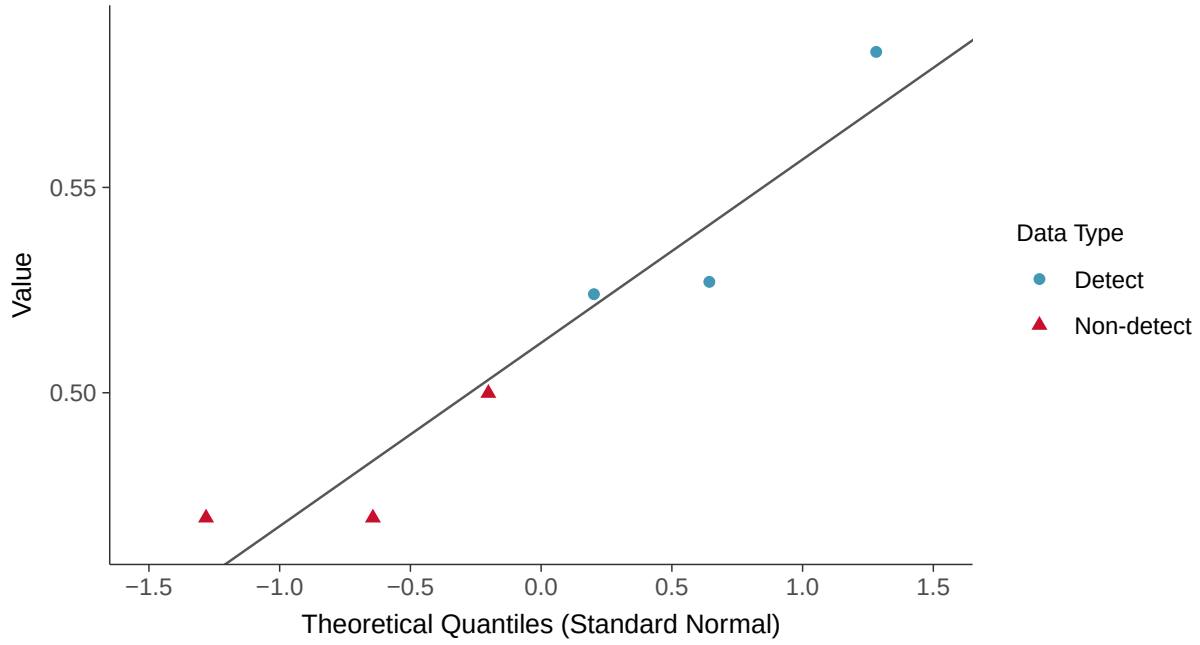
Boxplot by Season

Radium-226+228, MW-25B (pci/l)



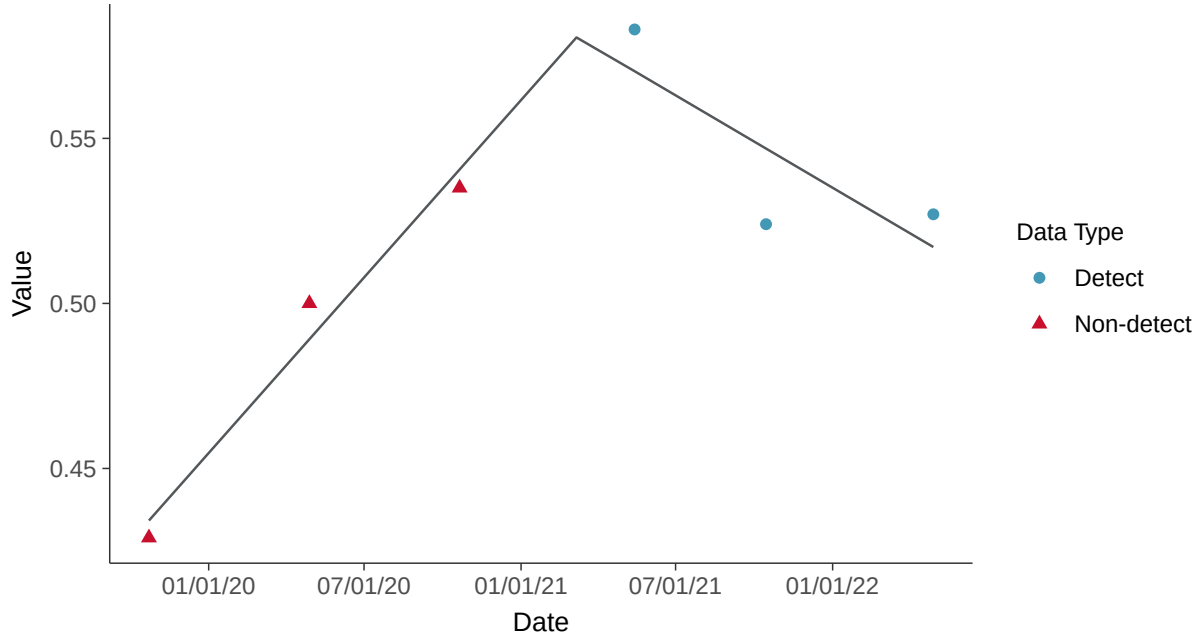
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-25B (pci/l)



Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-25B (pci/l)

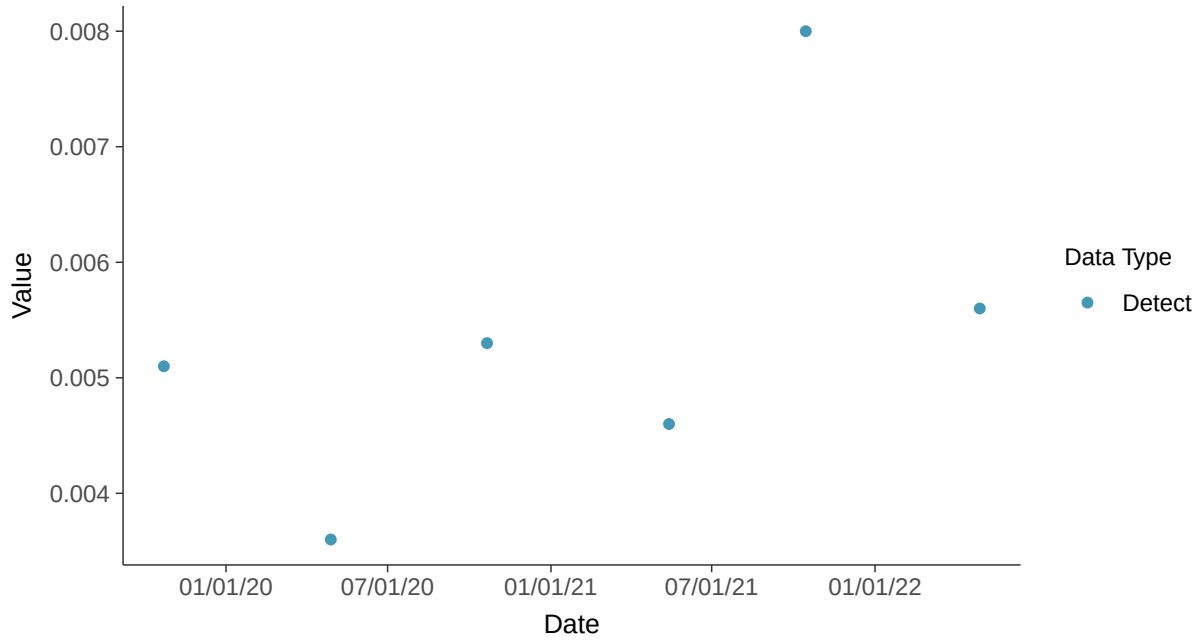


Appendix IV: Selenium, MW-25B

ID: 17_2_129

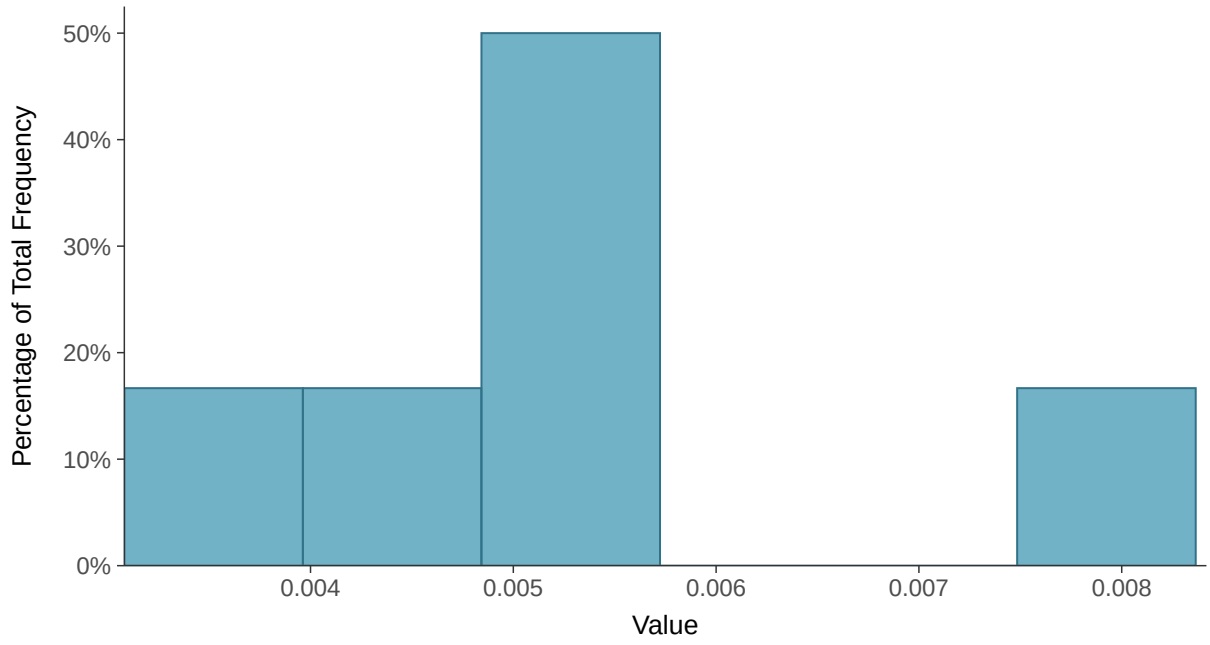
Scatter Plot

Selenium, MW-25B (mg/l)



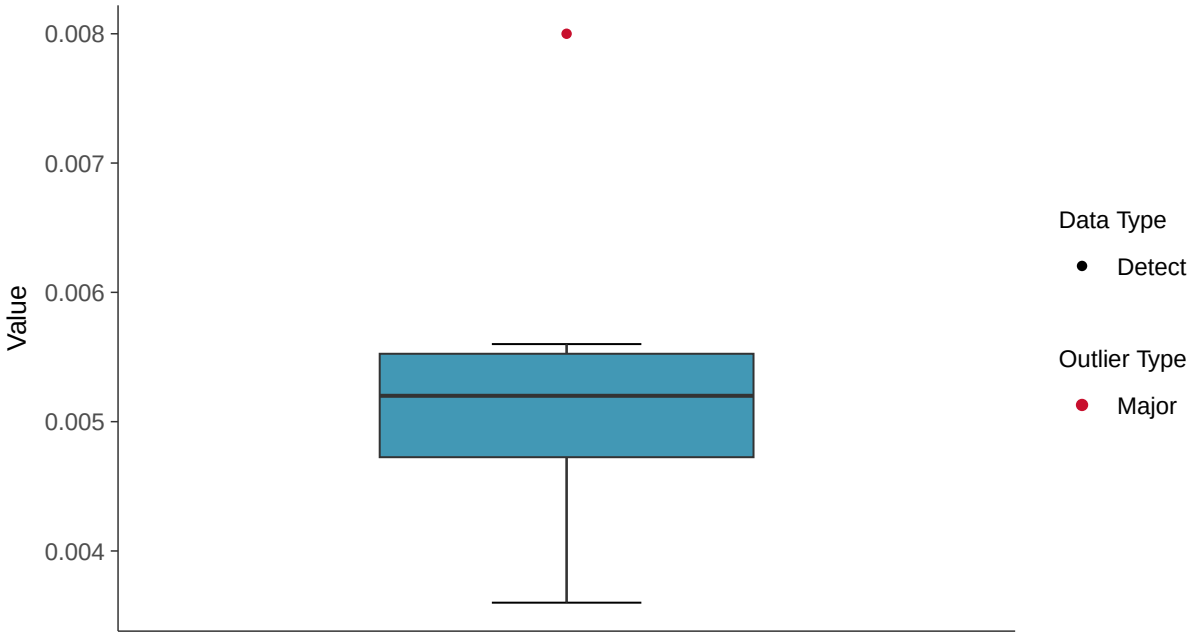
Histogram

Selenium, MW-25B (mg/l)



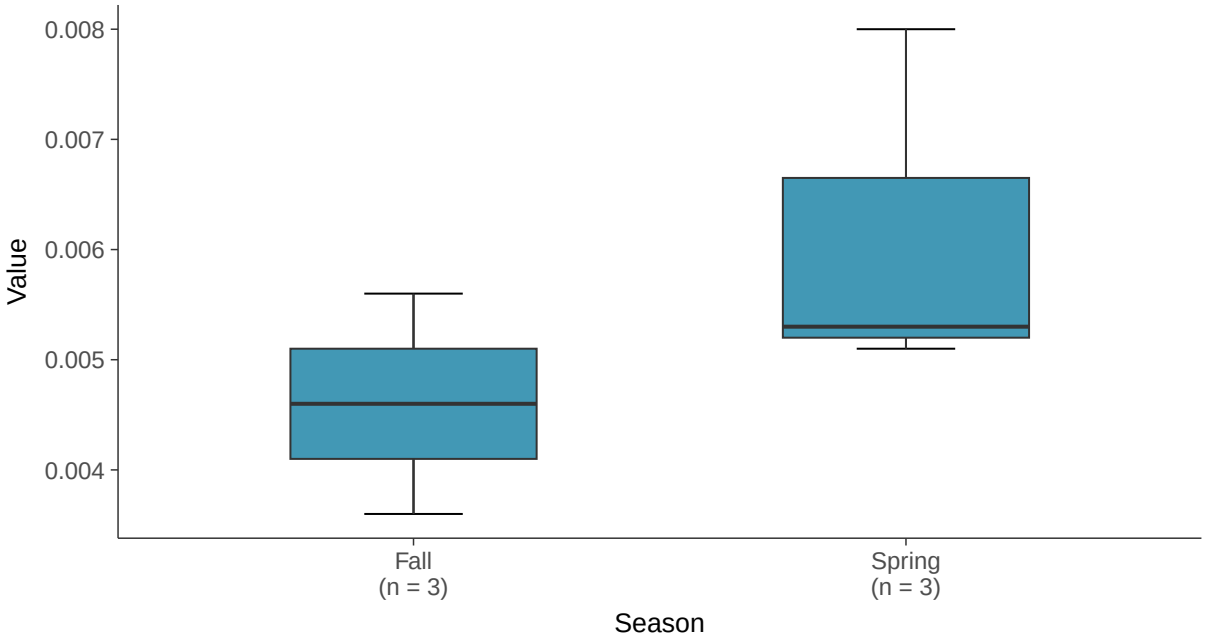
Boxplot

Selenium, MW-25B (mg/l)



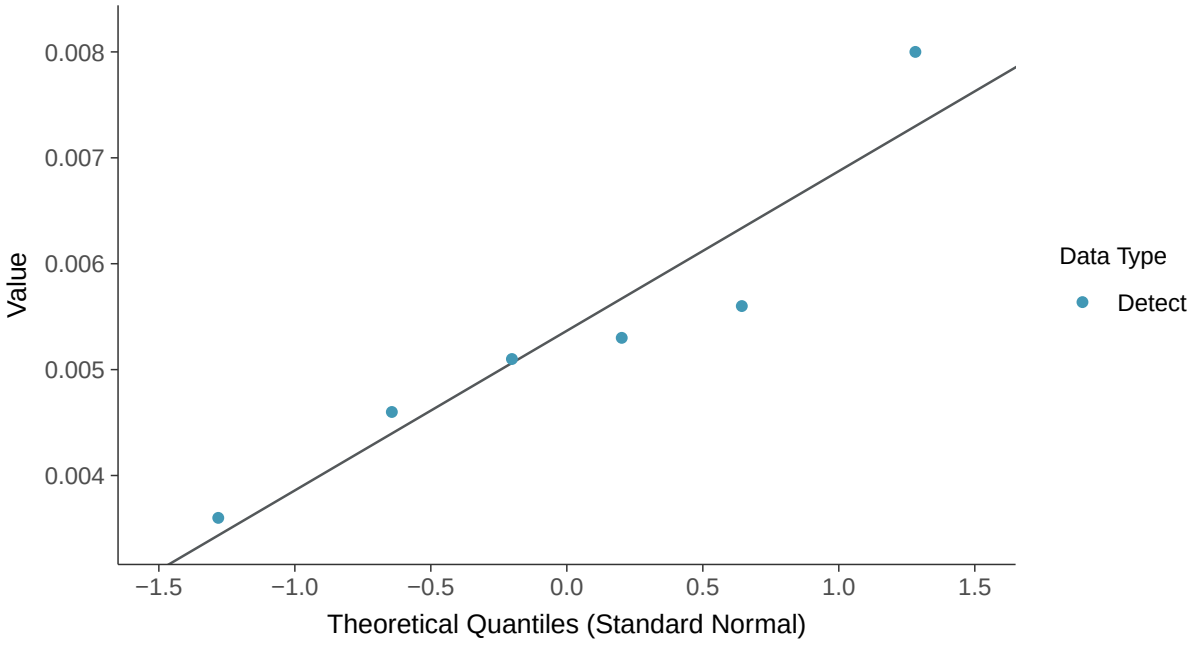
Boxplot by Season

Selenium, MW-25B (mg/l)



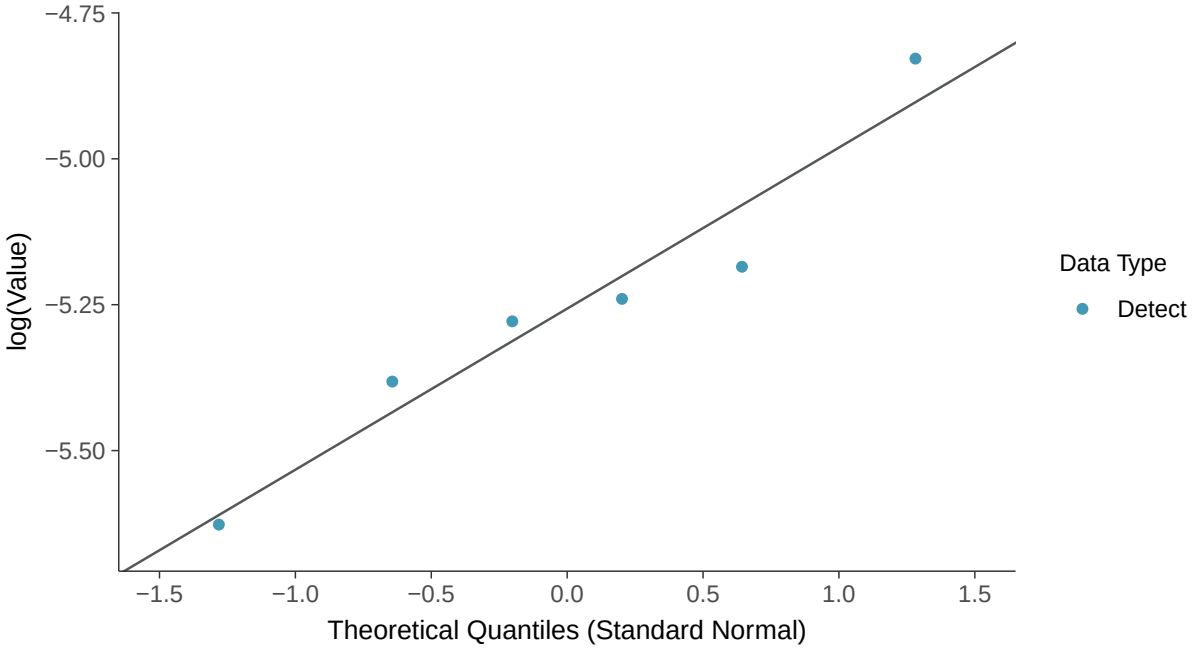
Normal Q-Q plot

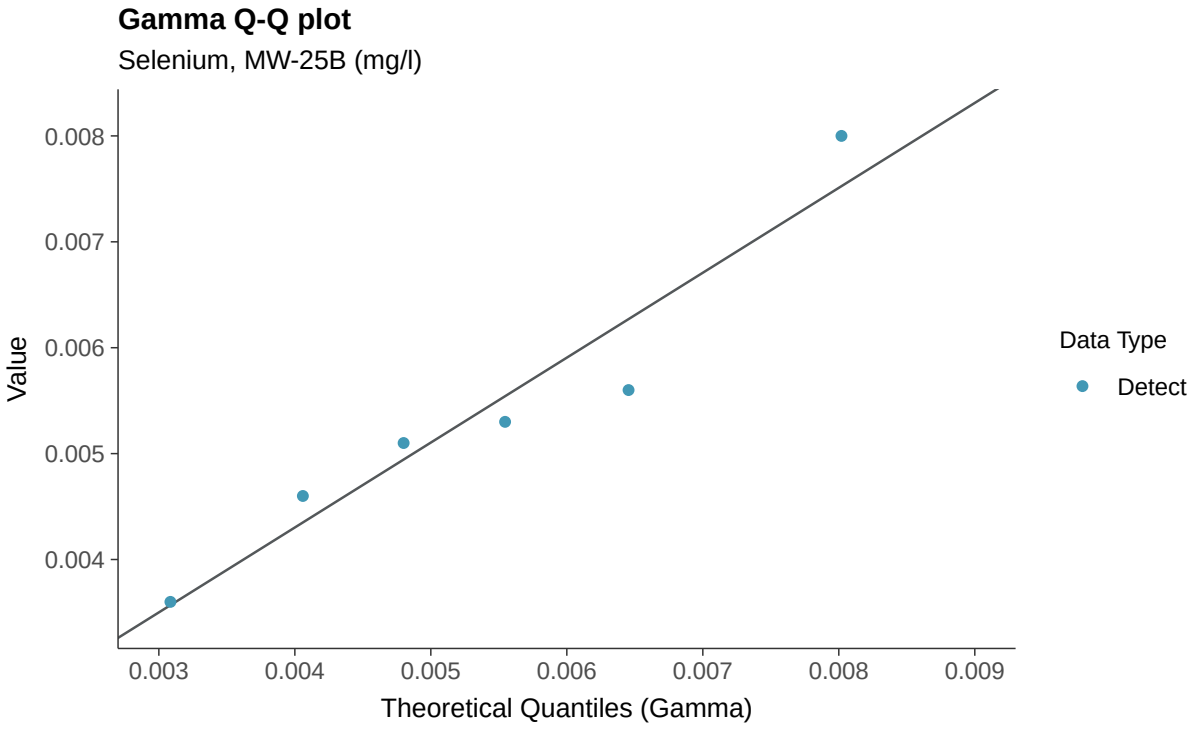
Selenium, MW-25B (mg/l)



Lognormal Q-Q plot

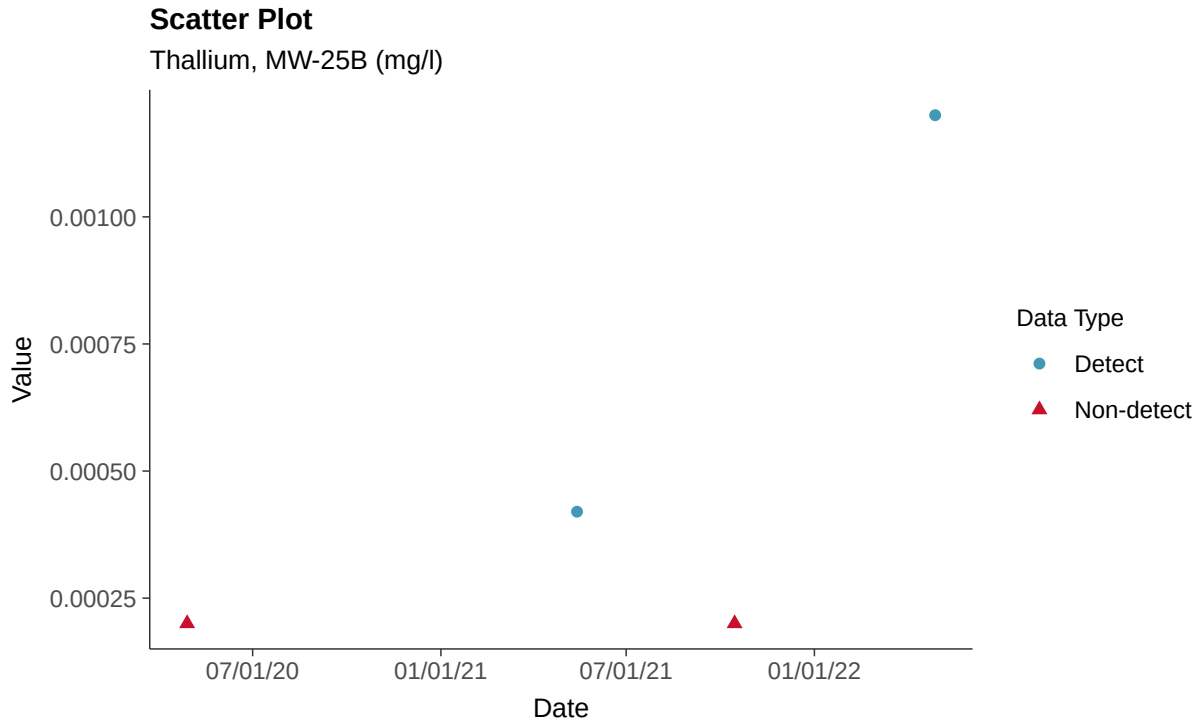
Selenium, MW-25B (mg/l)

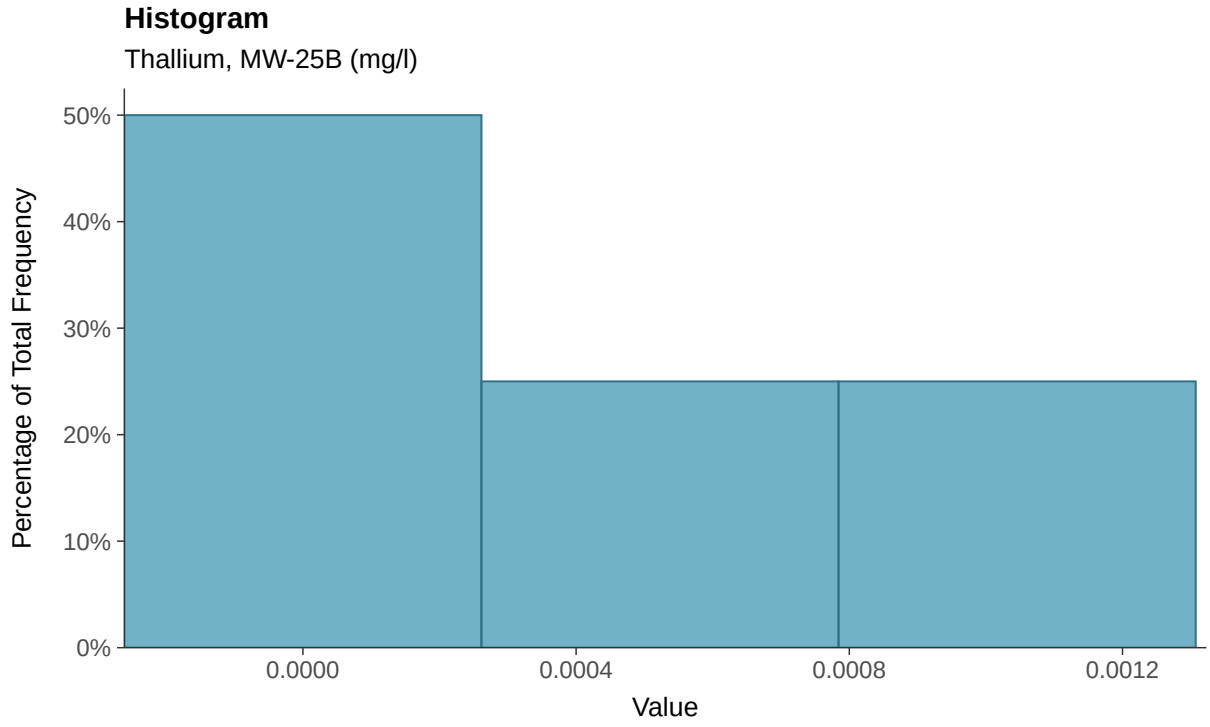



Gamma Q-Q plot
Selenium, MW-25B (mg/l)
Value
0.008
0.007
0.006
0.005
0.004
0.003
0.004
0.005
0.006
0.007
0.008
0.009
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Thallium, MW-25B

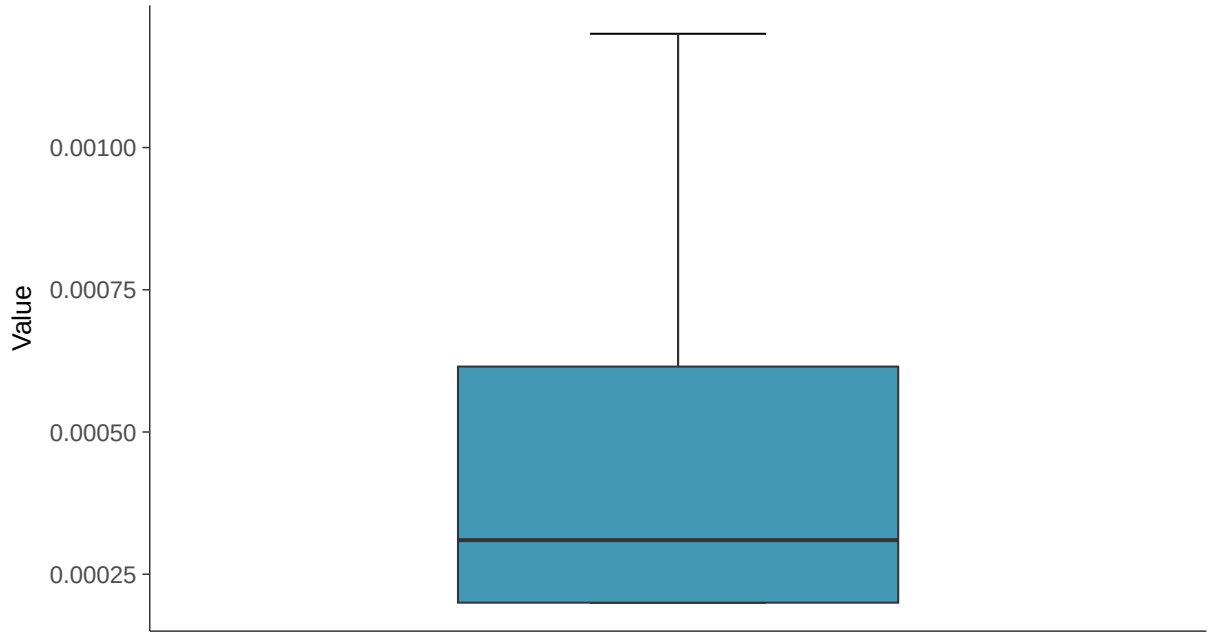
ID: 17_2_134





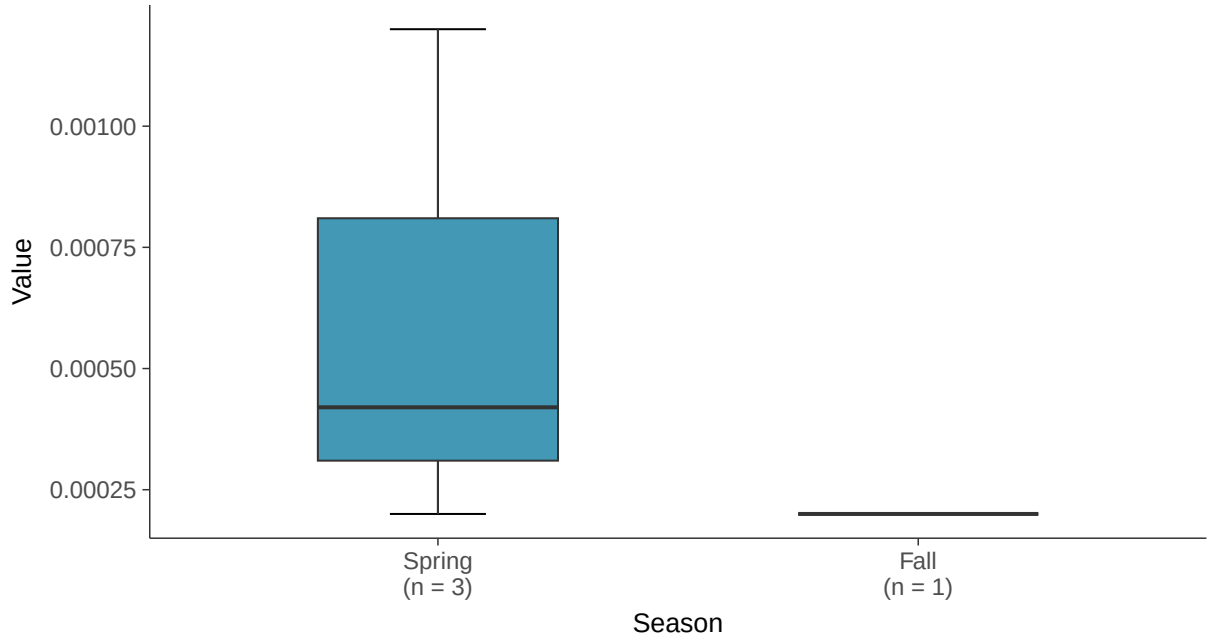
Boxplot

Thallium, MW-25B (mg/l)



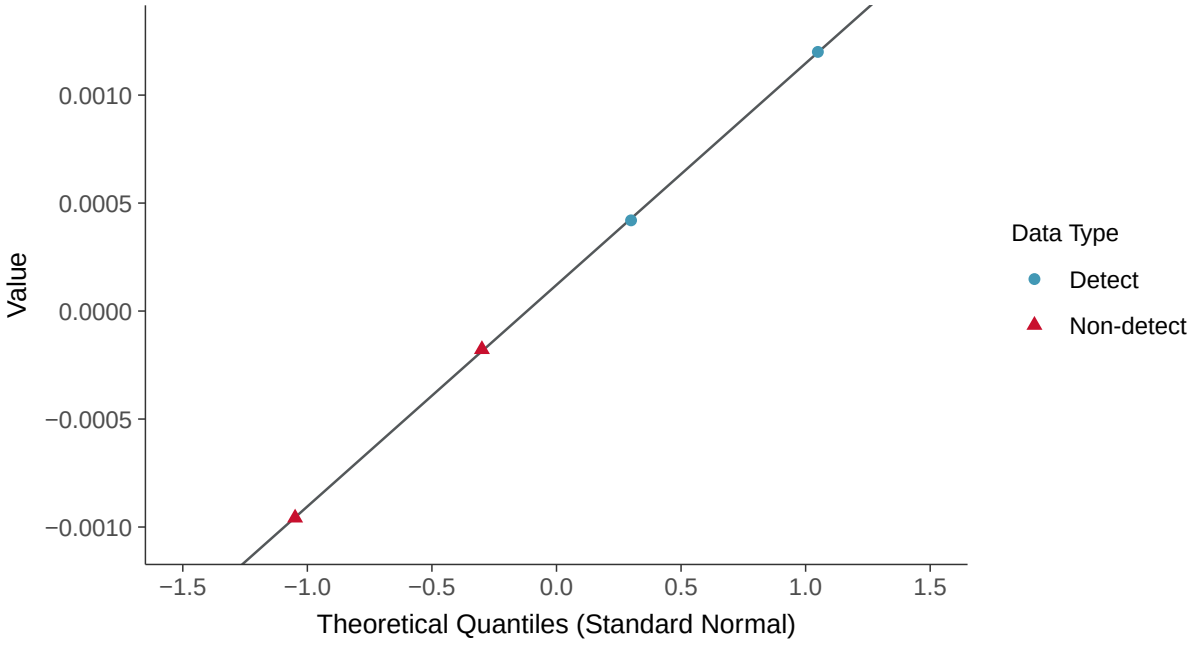
Boxplot by Season

Thallium, MW-25B (mg/l)



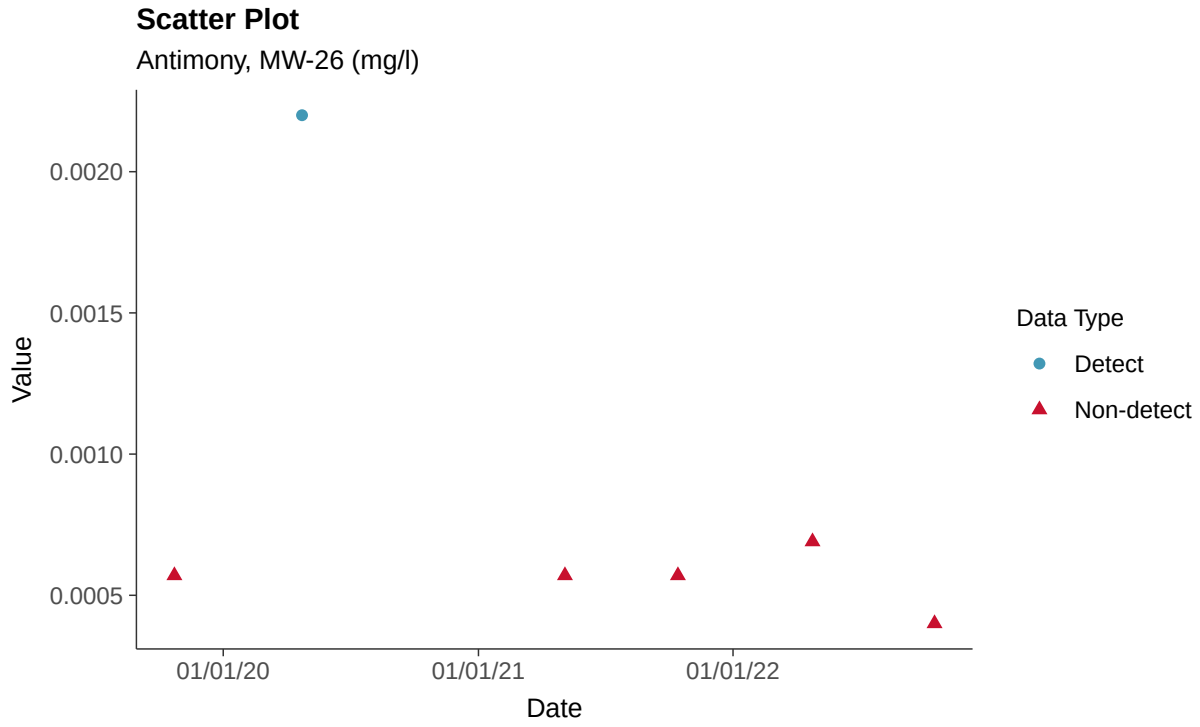
Normal Q-Q plot using ROS Imputed Estimates

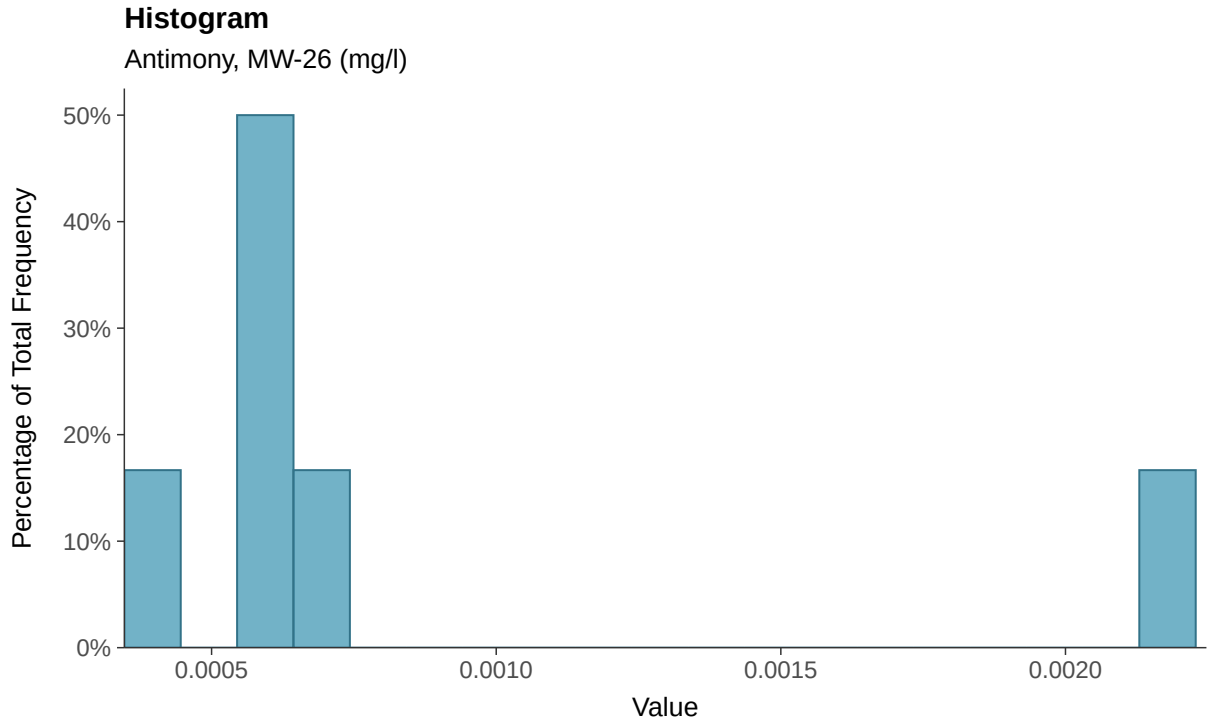
Thallium, MW-25B (mg/l)



Appendix IV: Antimony, MW-26

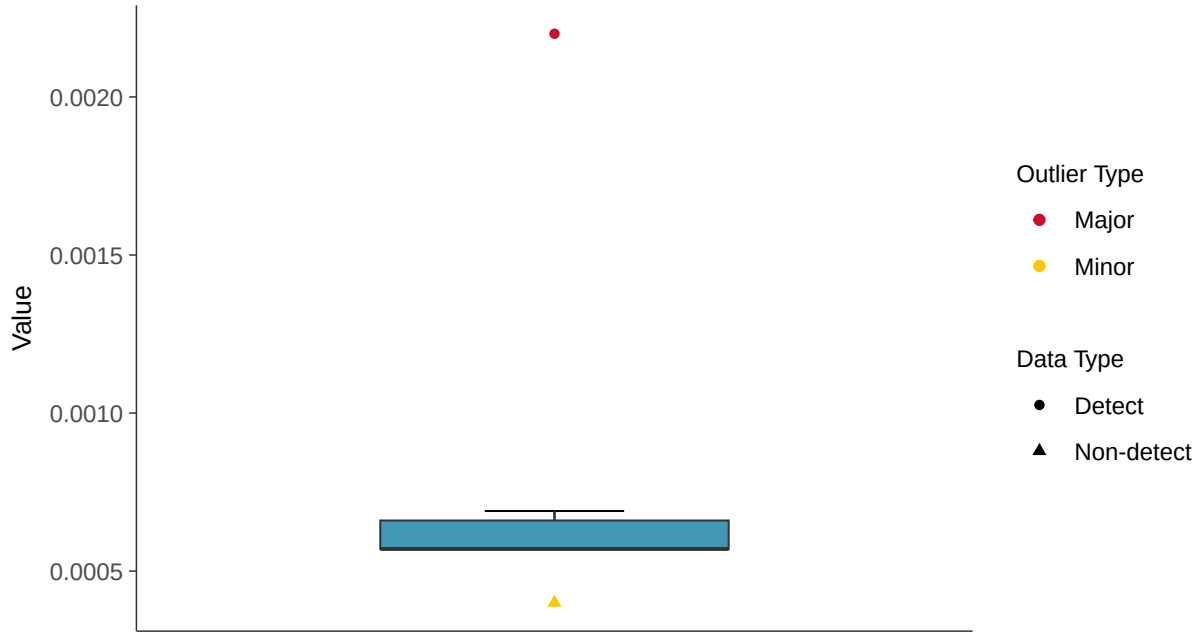
ID: 18_2_104





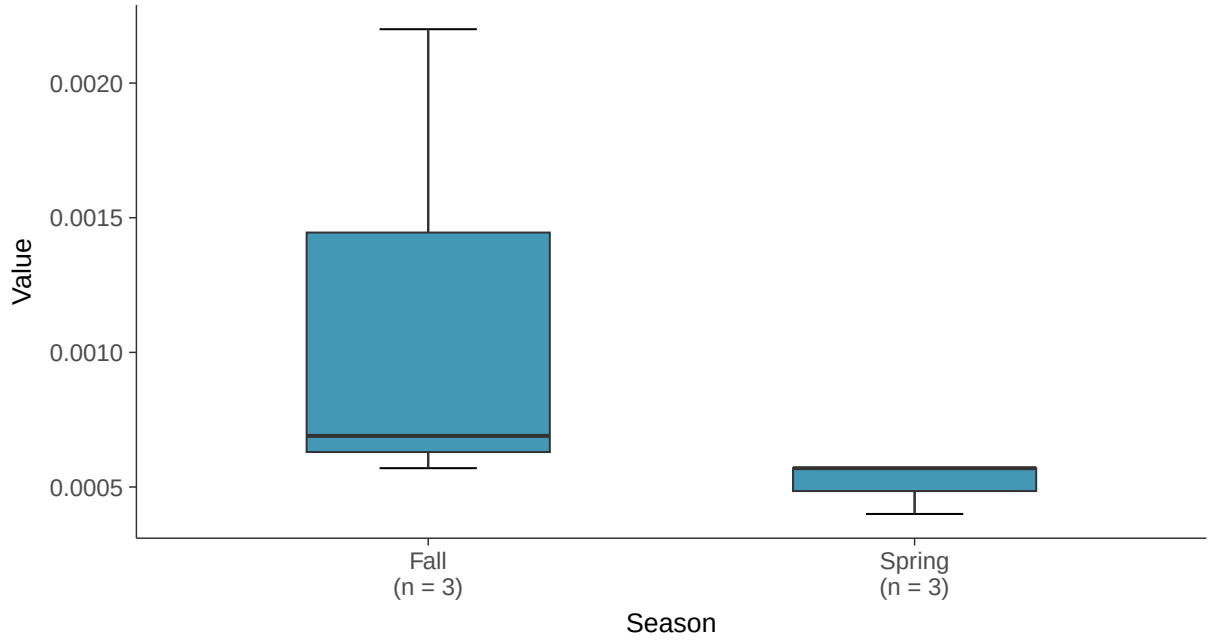
Boxplot

Antimony, MW-26 (mg/l)



Boxplot by Season

Antimony, MW-26 (mg/l)

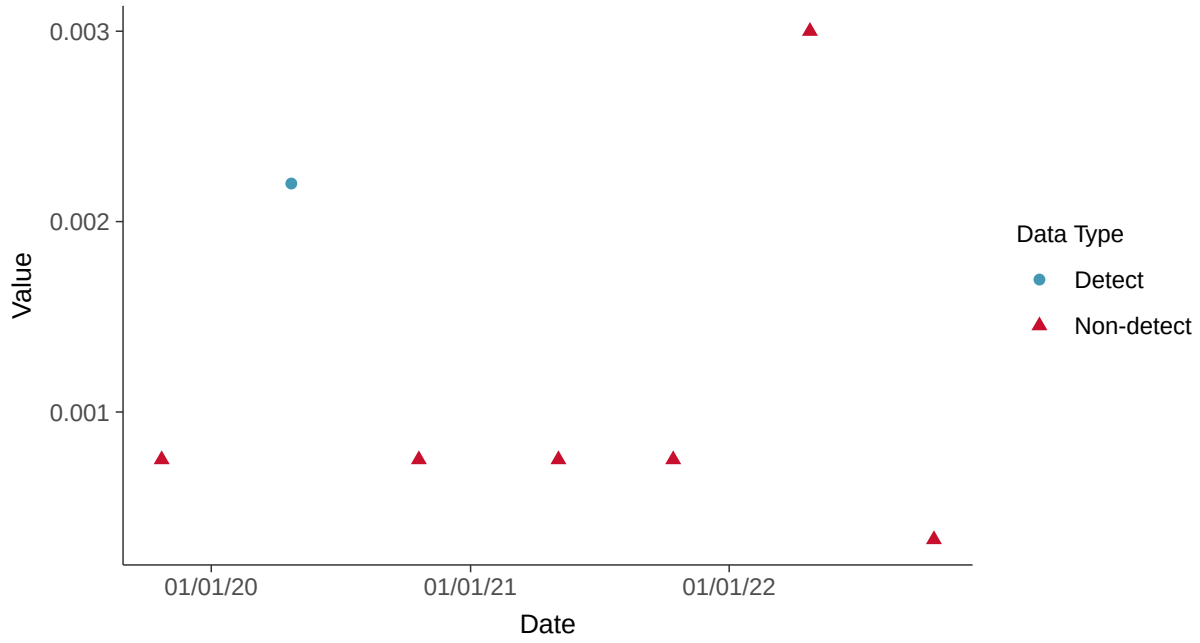


Appendix IV: Arsenic, MW-26

ID: 18_2_105

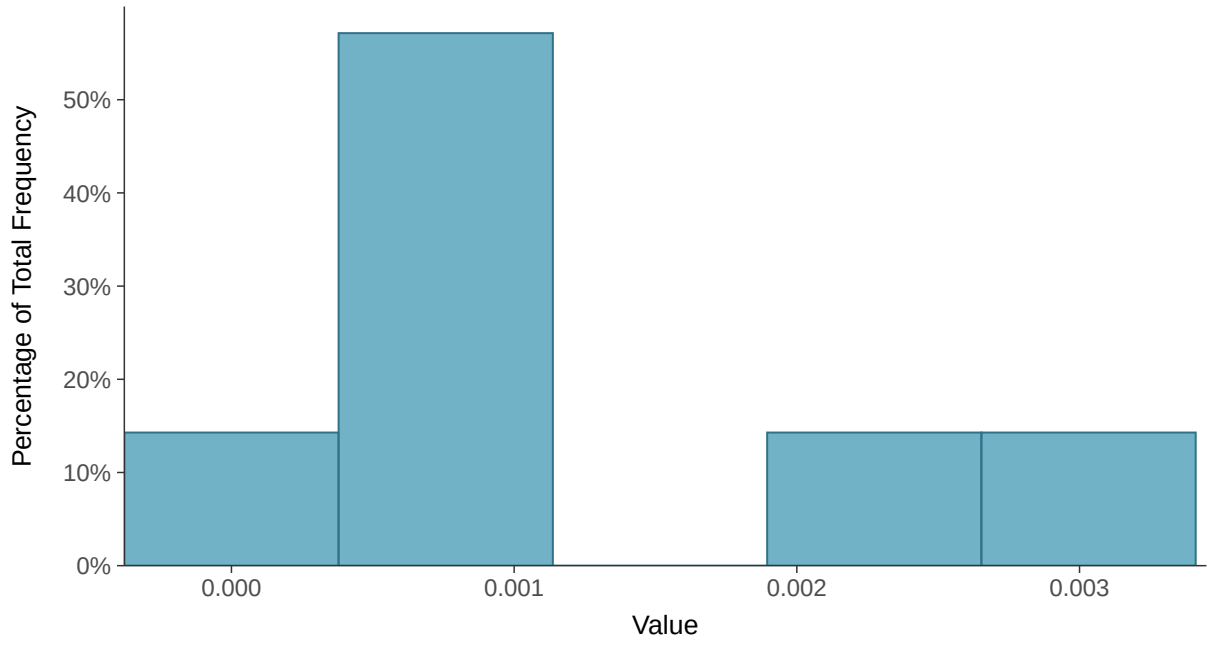
Scatter Plot

Arsenic, MW-26 (mg/l)



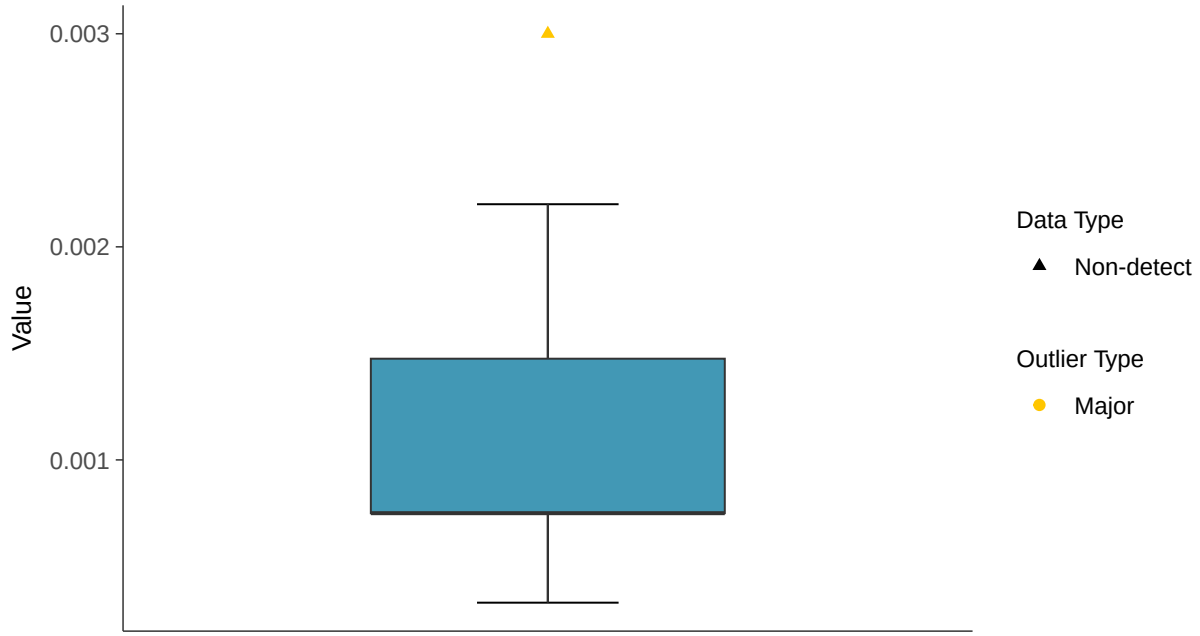
Histogram

Arsenic, MW-26 (mg/l)



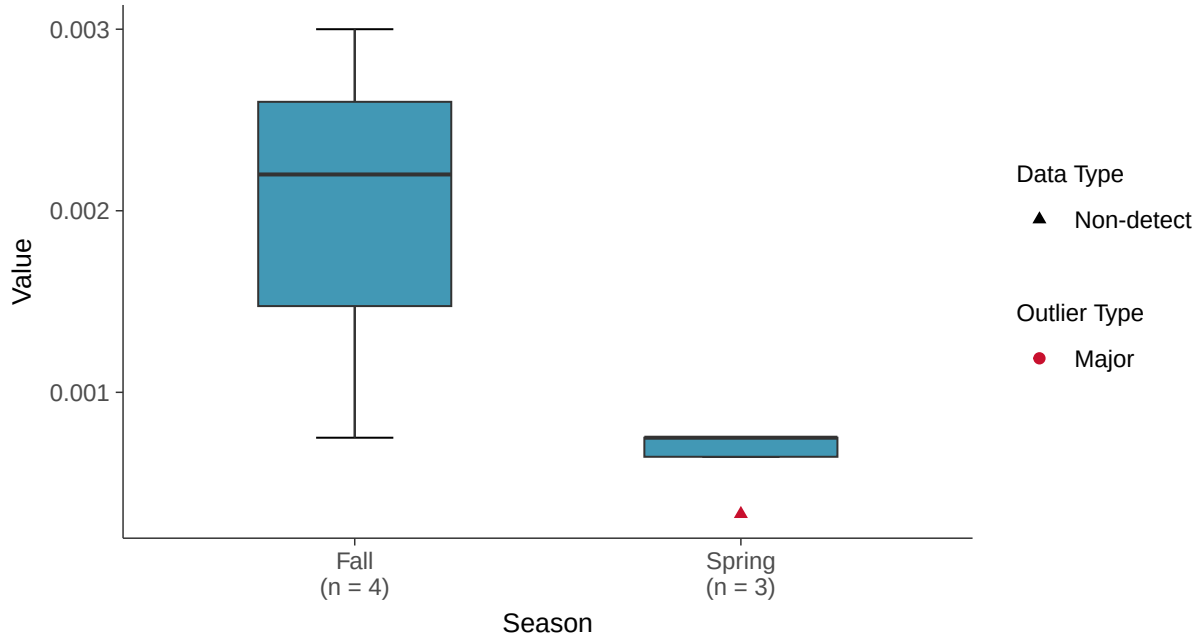
Boxplot

Arsenic, MW-26 (mg/l)



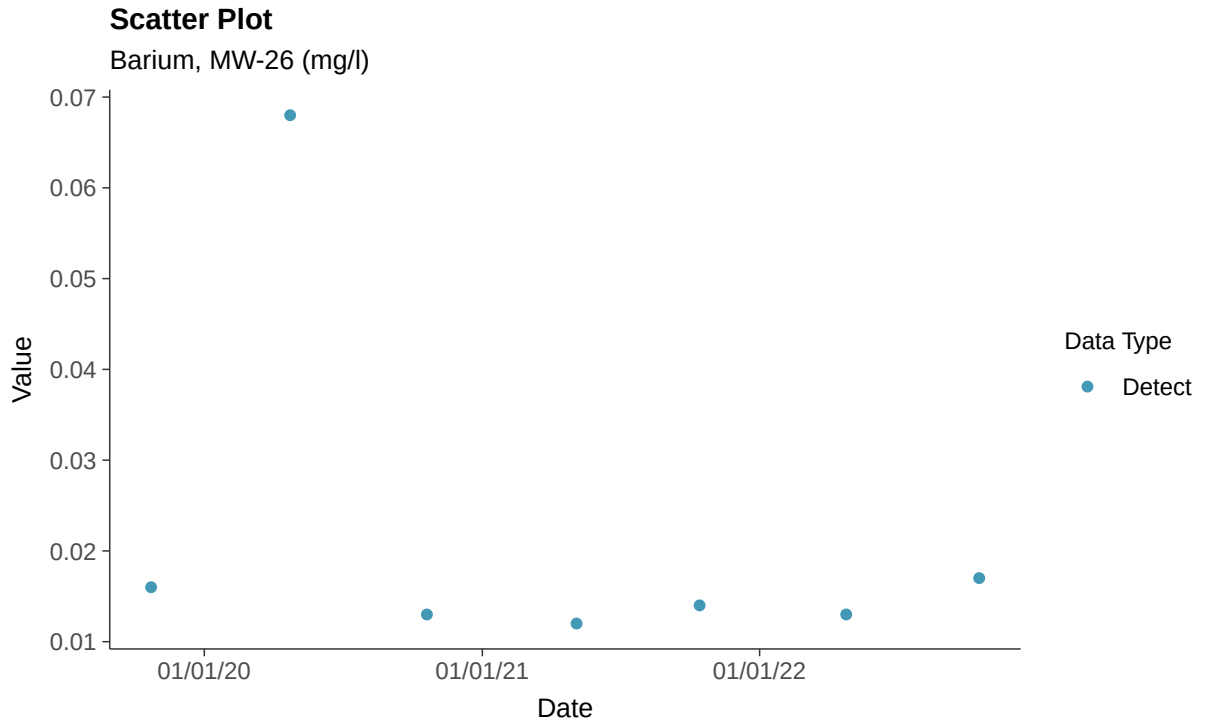
Boxplot by Season

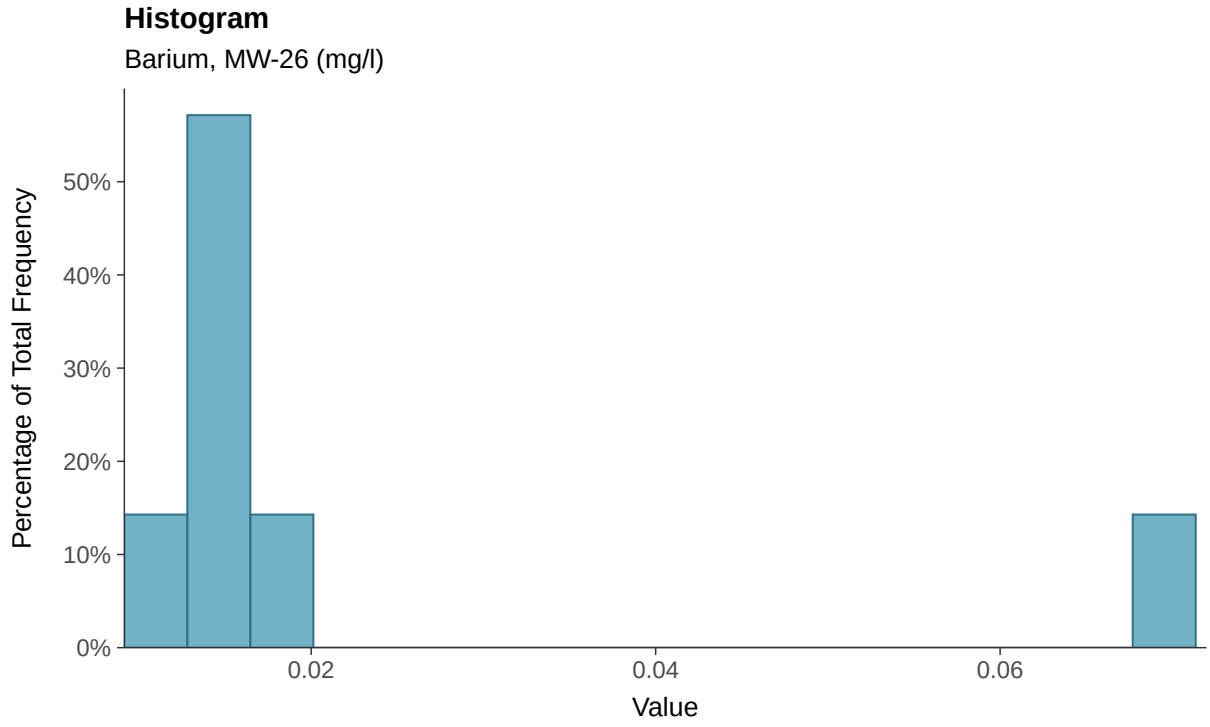
Arsenic, MW-26 (mg/l)



Appendix IV: Barium, MW-26

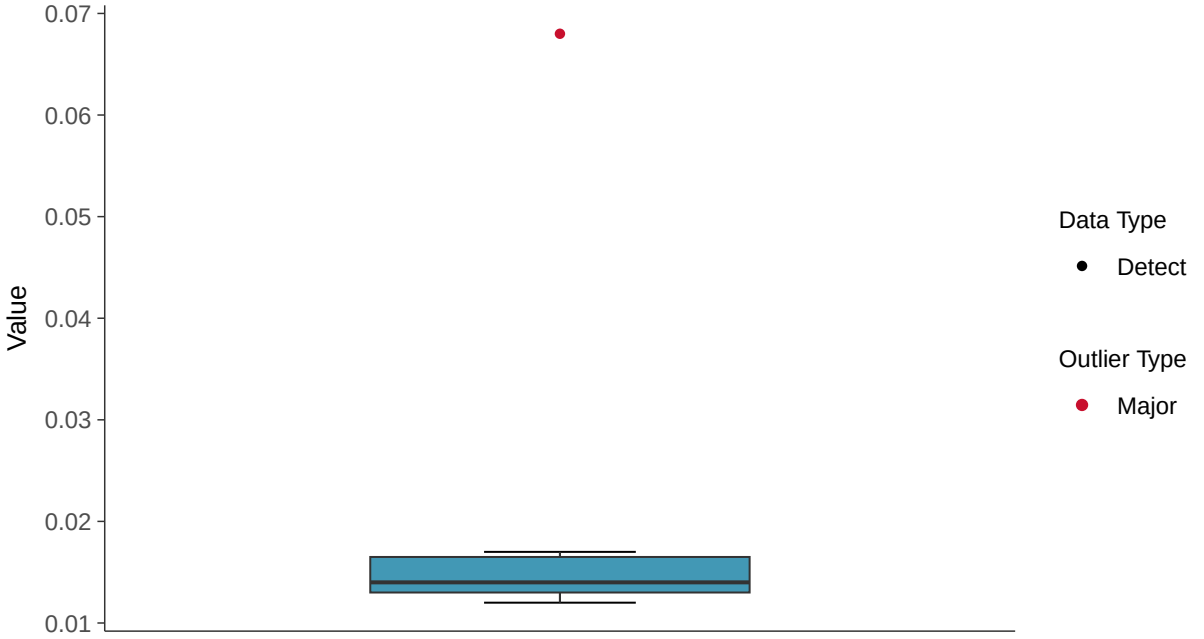
ID: 18_2_106





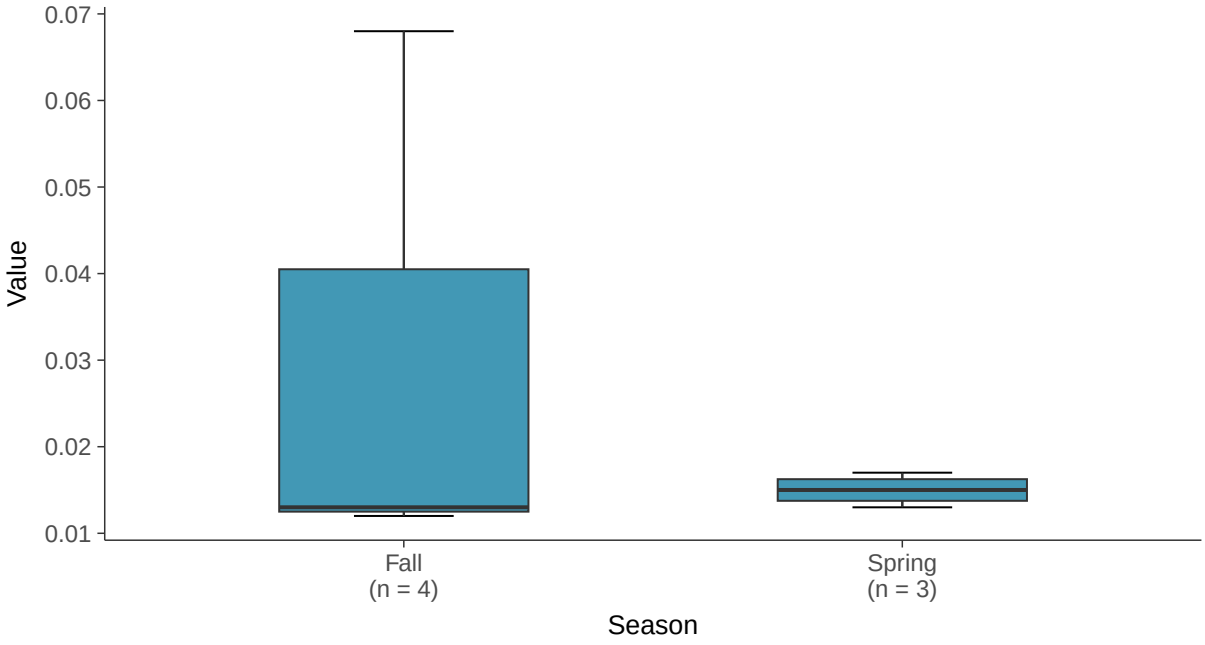
Boxplot

Barium, MW-26 (mg/l)



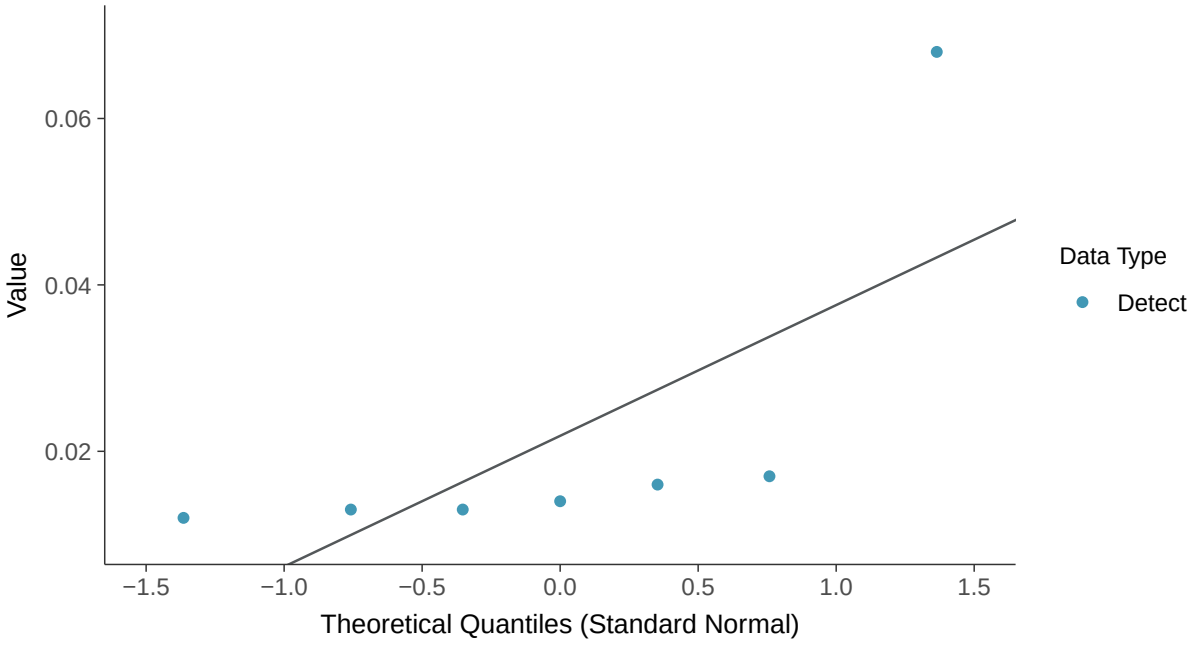
Boxplot by Season

Barium, MW-26 (mg/l)



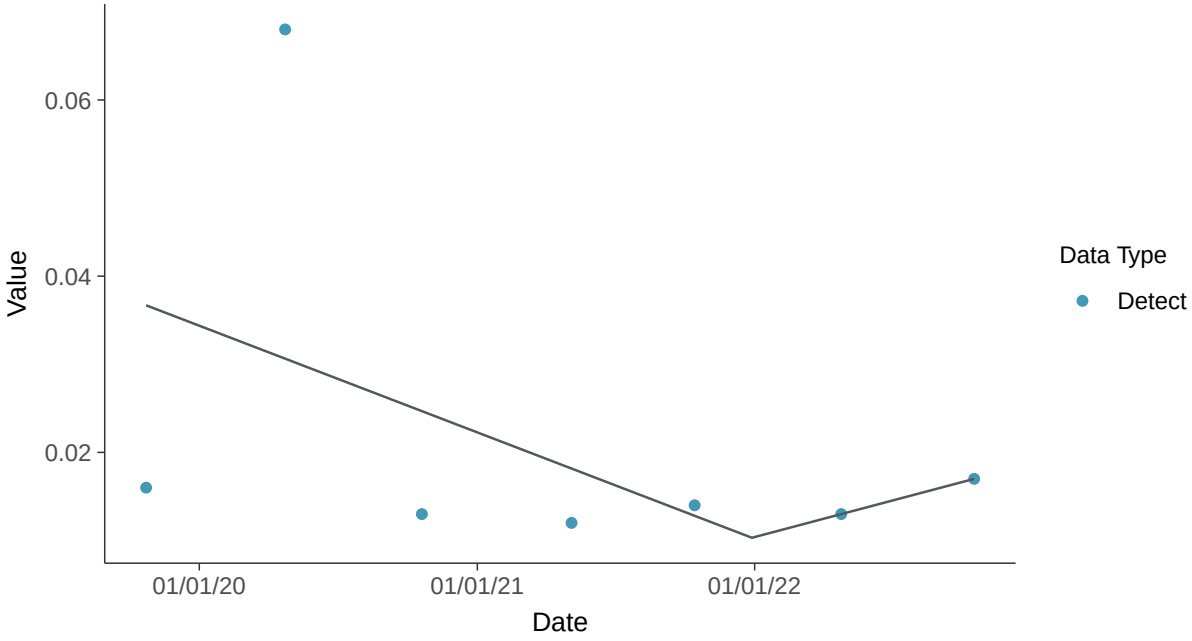
Normal Q-Q plot

Barium, MW-26 (mg/l)



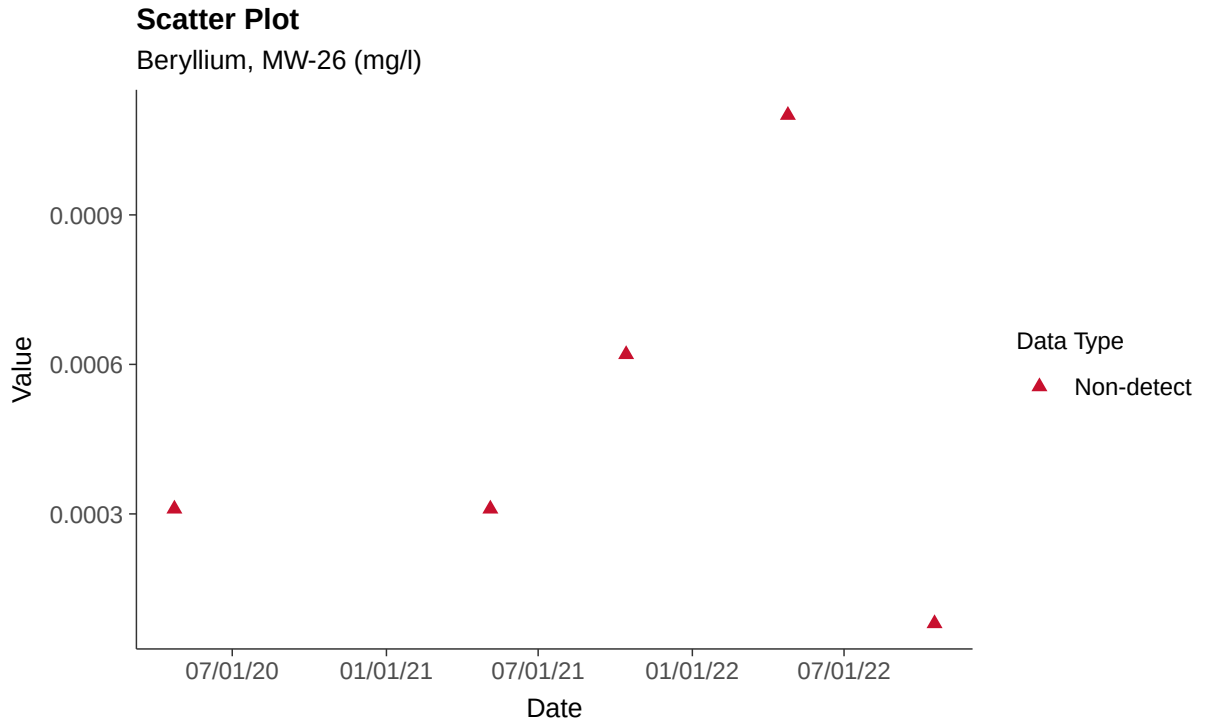
Trend Regression: Piecewise Linear-Linear

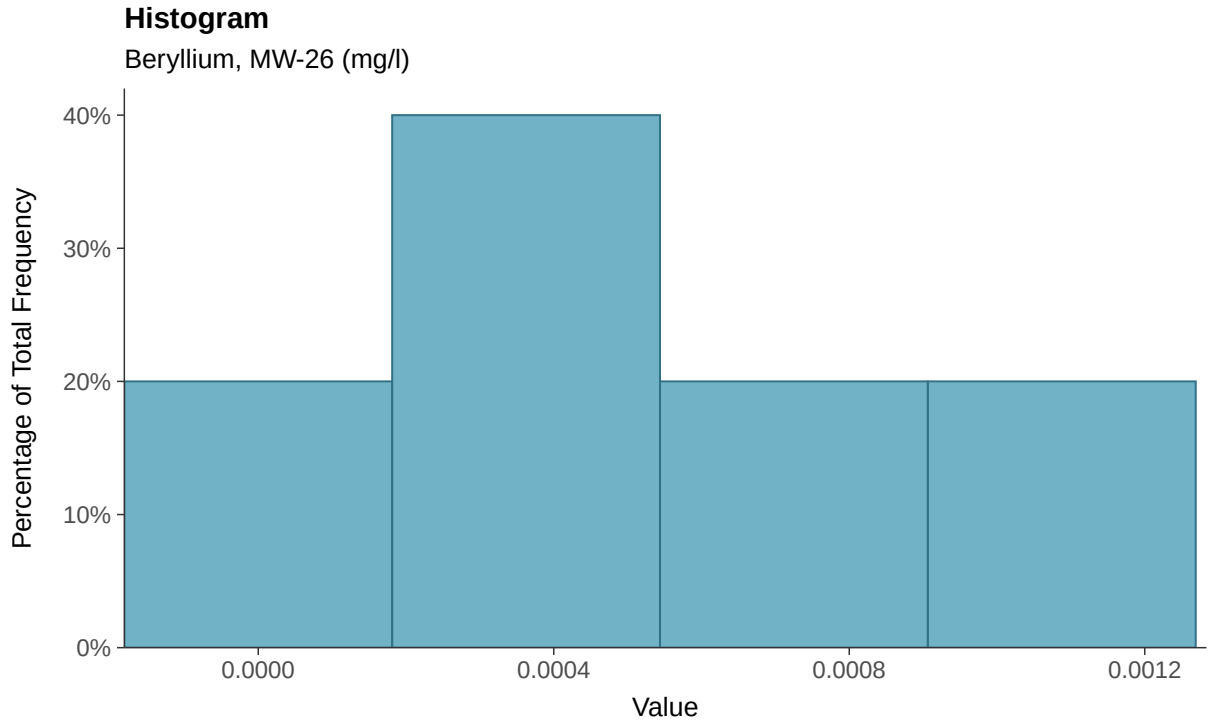
Barium, MW-26 (mg/l)



Appendix IV: Beryllium, MW-26

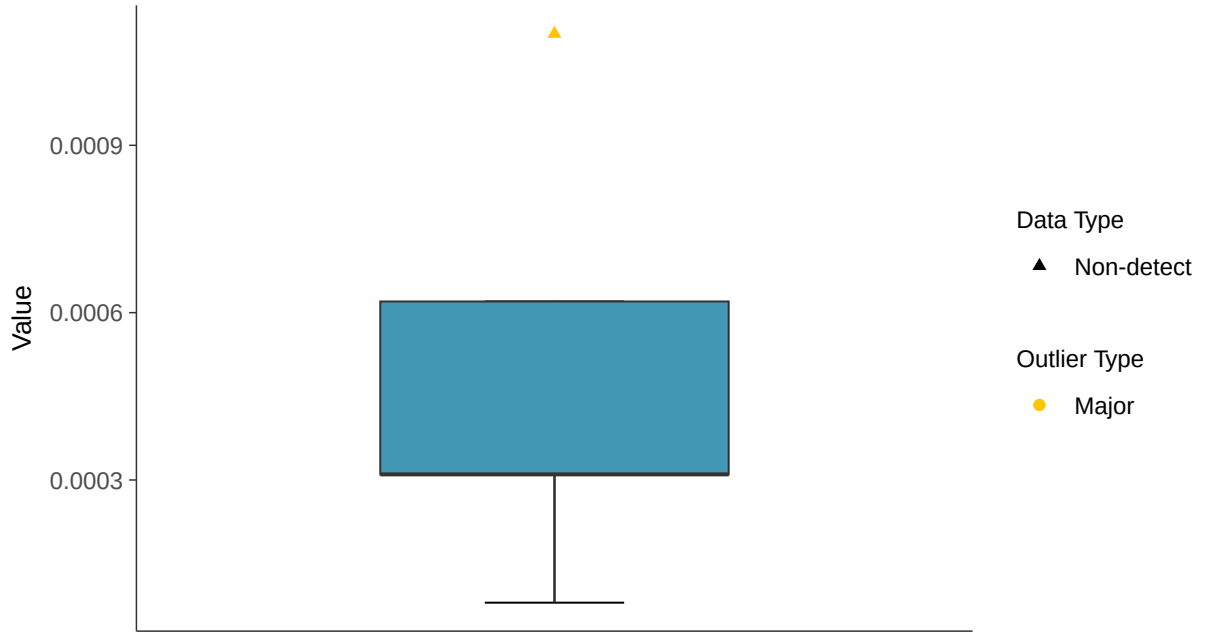
ID: 18_2_107





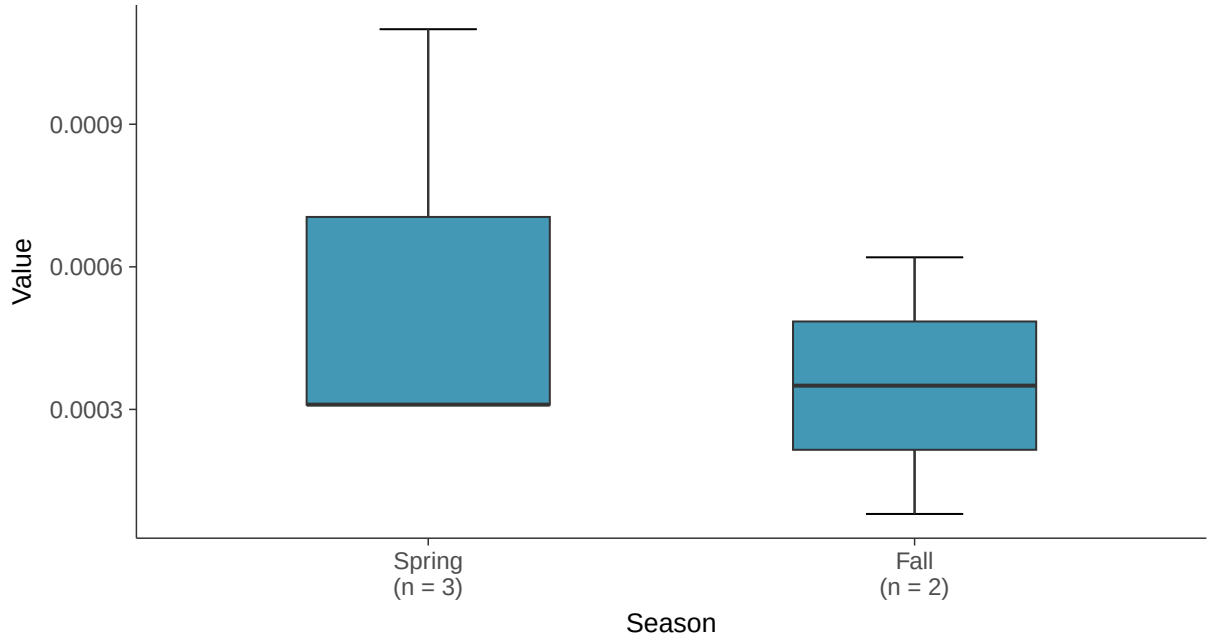
Boxplot

Beryllium, MW-26 (mg/l)



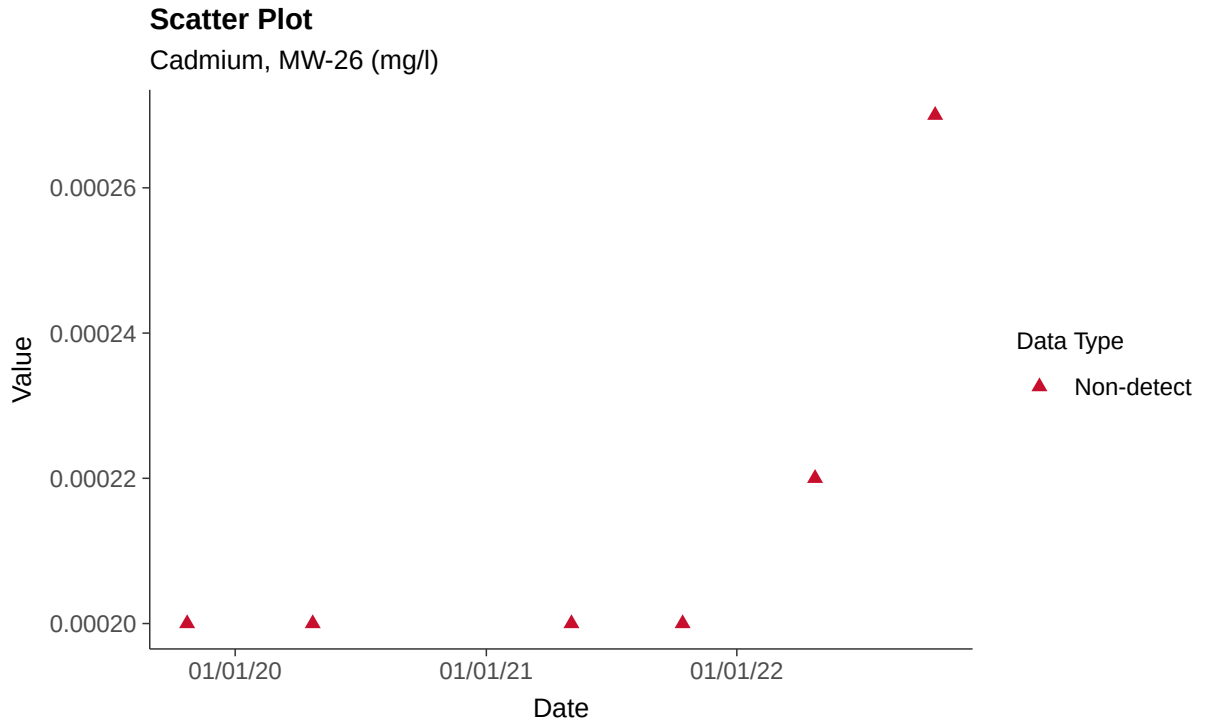
Boxplot by Season

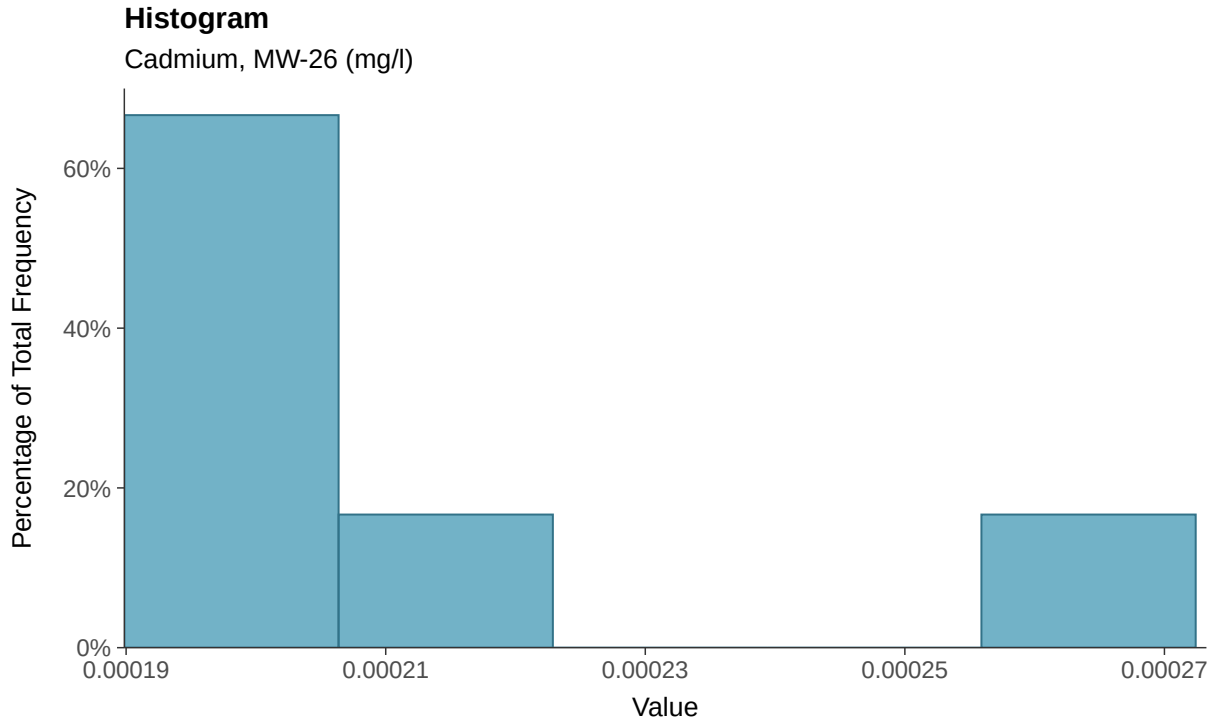
Beryllium, MW-26 (mg/l)



Appendix IV: Cadmium, MW-26

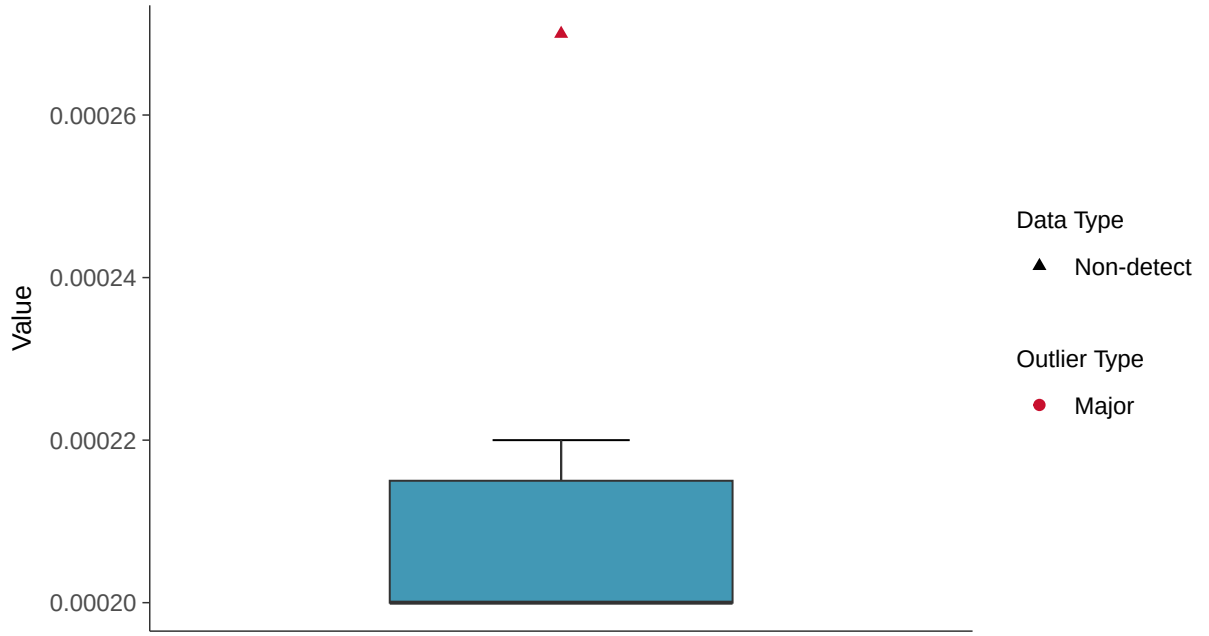
ID: 18_2_109





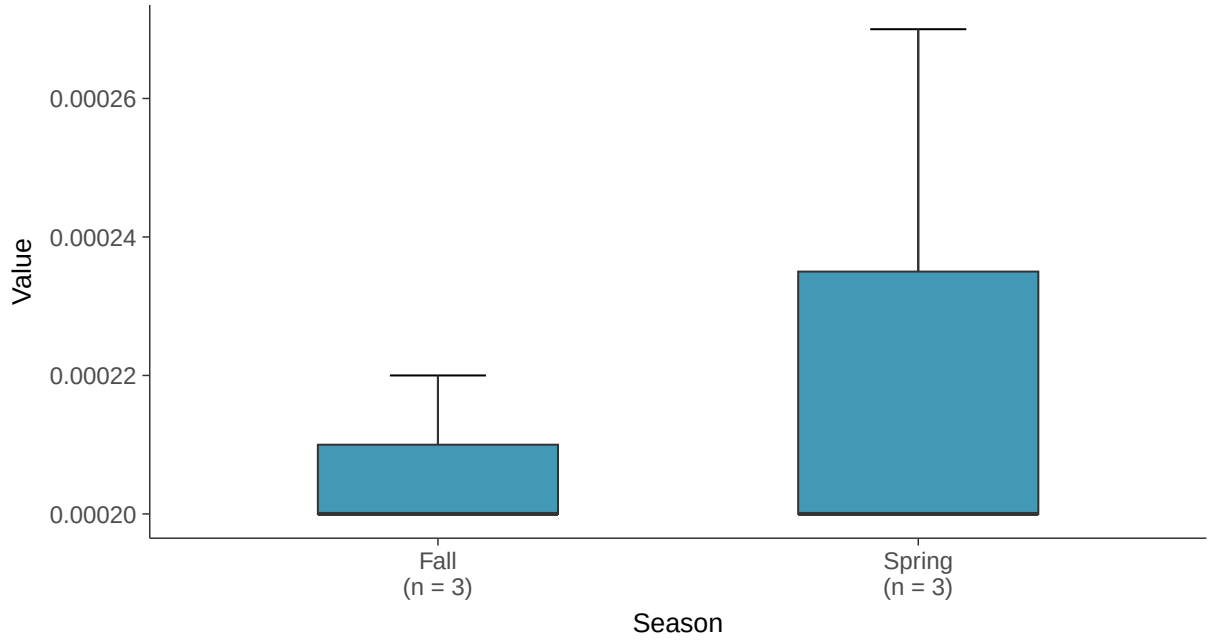
Boxplot

Cadmium, MW-26 (mg/l)



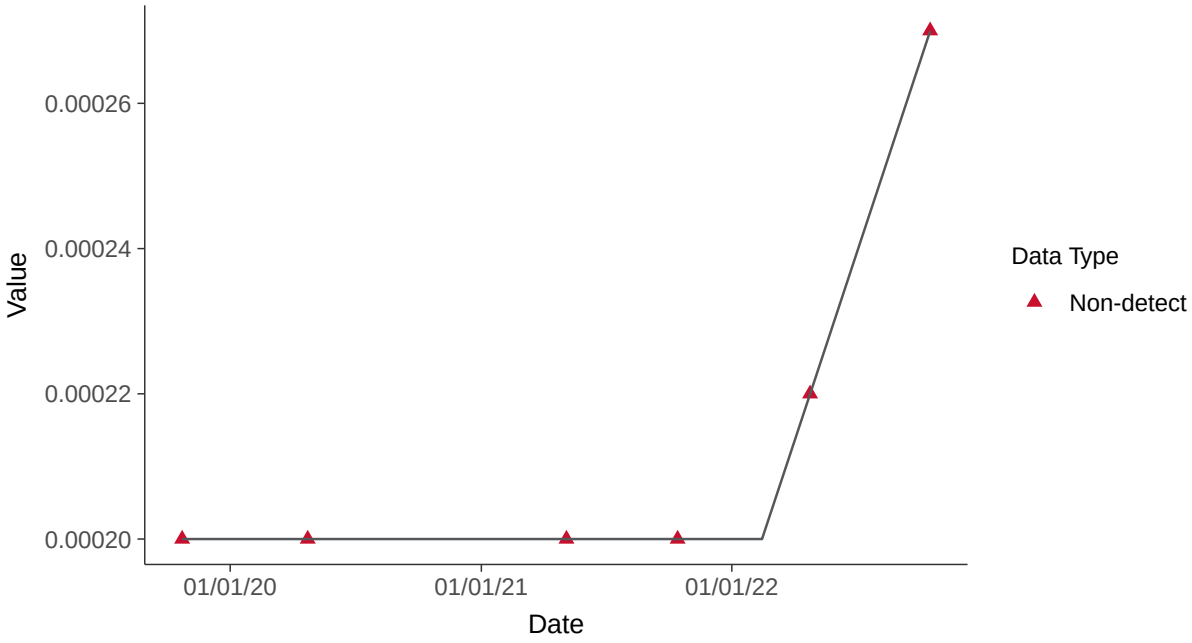
Boxplot by Season

Cadmium, MW-26 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cadmium, MW-26 (mg/l)

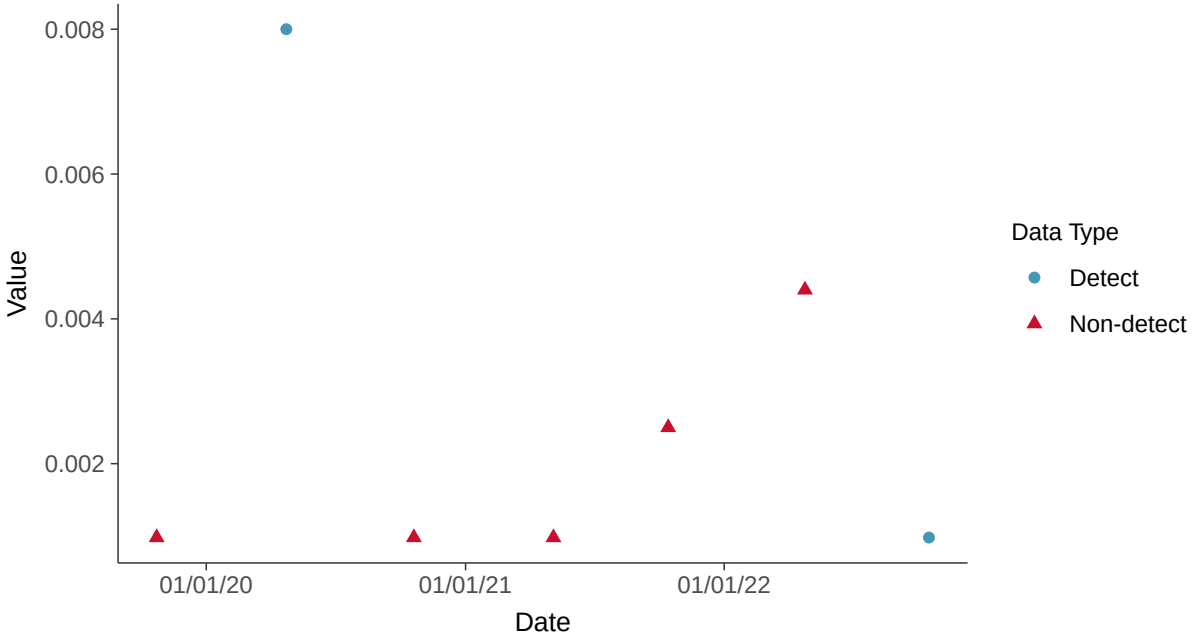


Appendix IV: Chromium, Total, MW-26

ID: 18_2_112

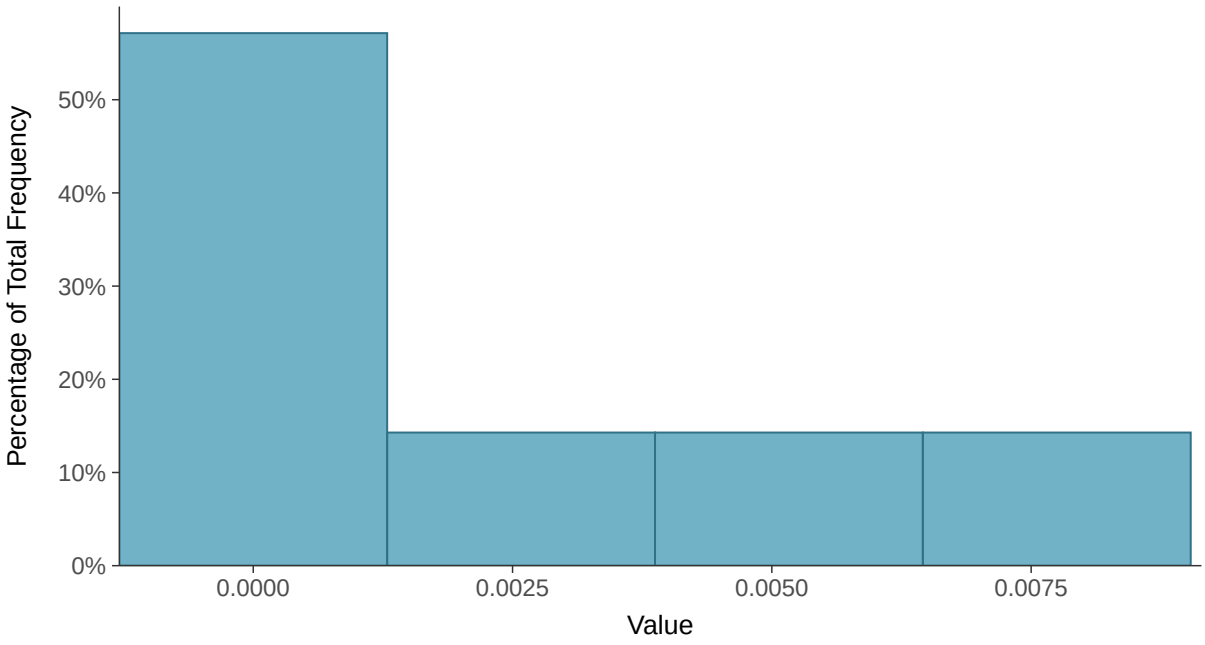
Scatter Plot

Chromium, Total, MW-26 (mg/l)



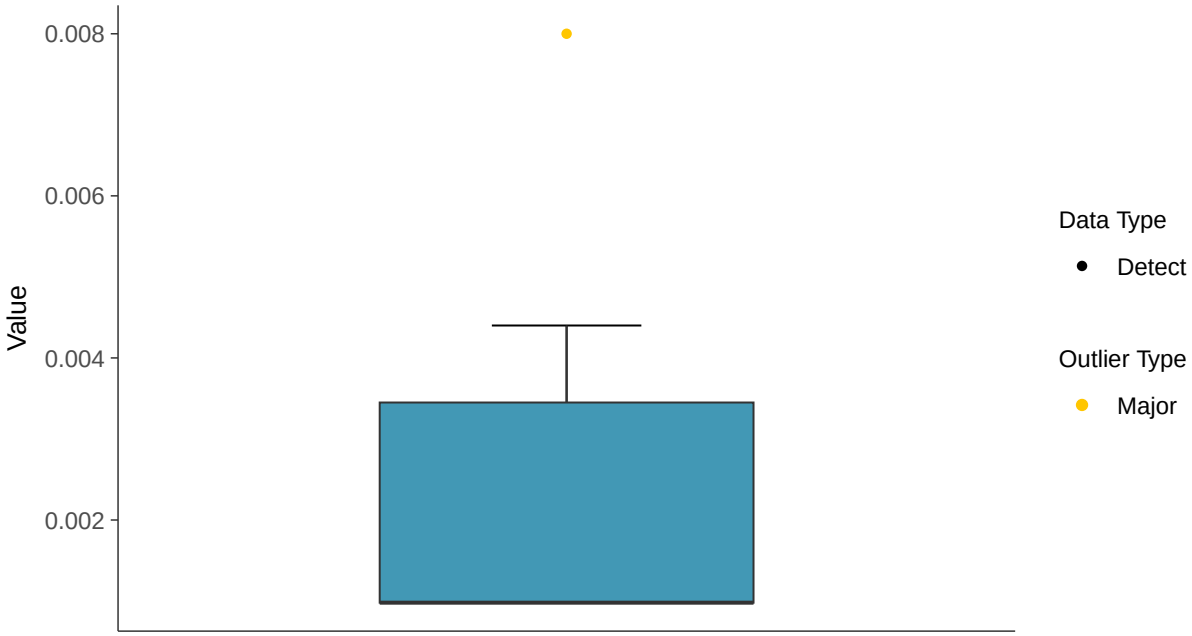
Histogram

Chromium, Total, MW-26 (mg/l)



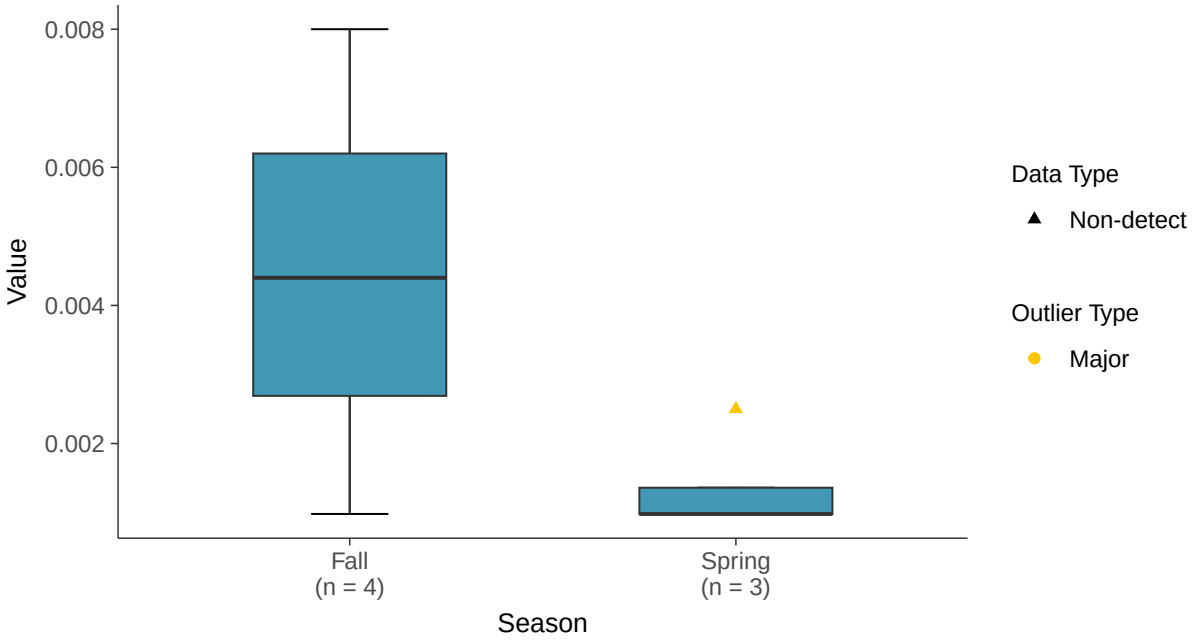
Boxplot

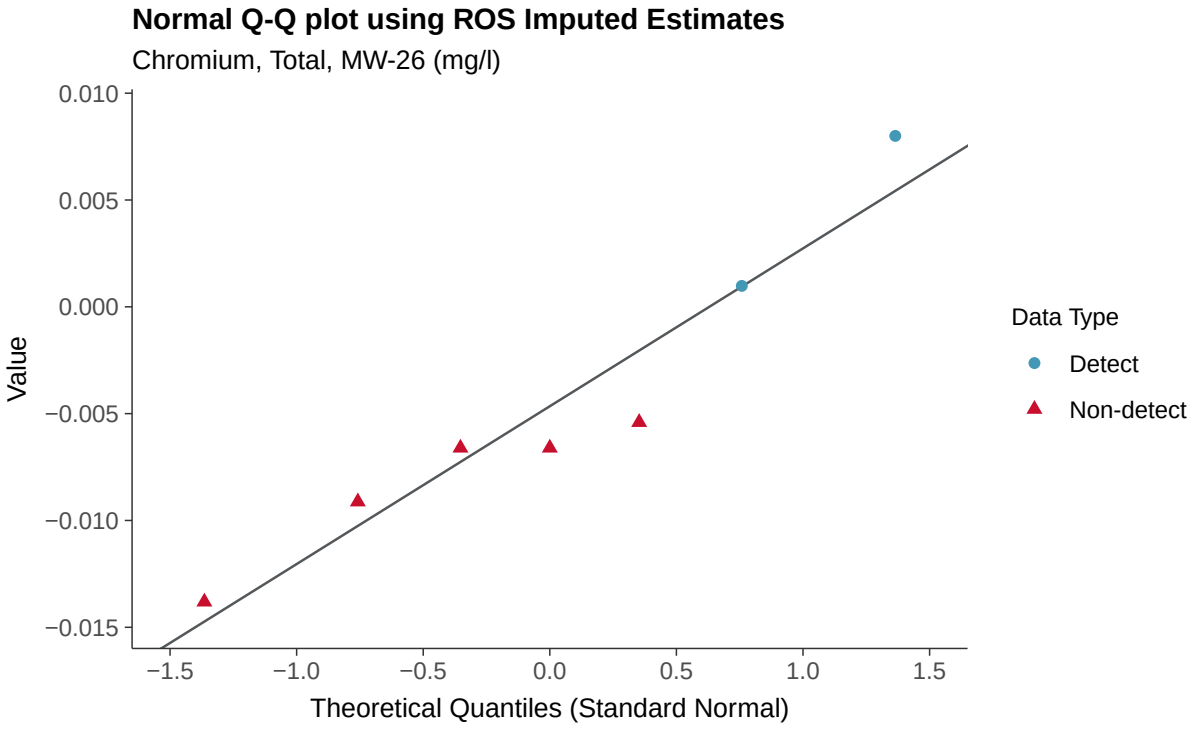
Chromium, Total, MW-26 (mg/l)



Boxplot by Season

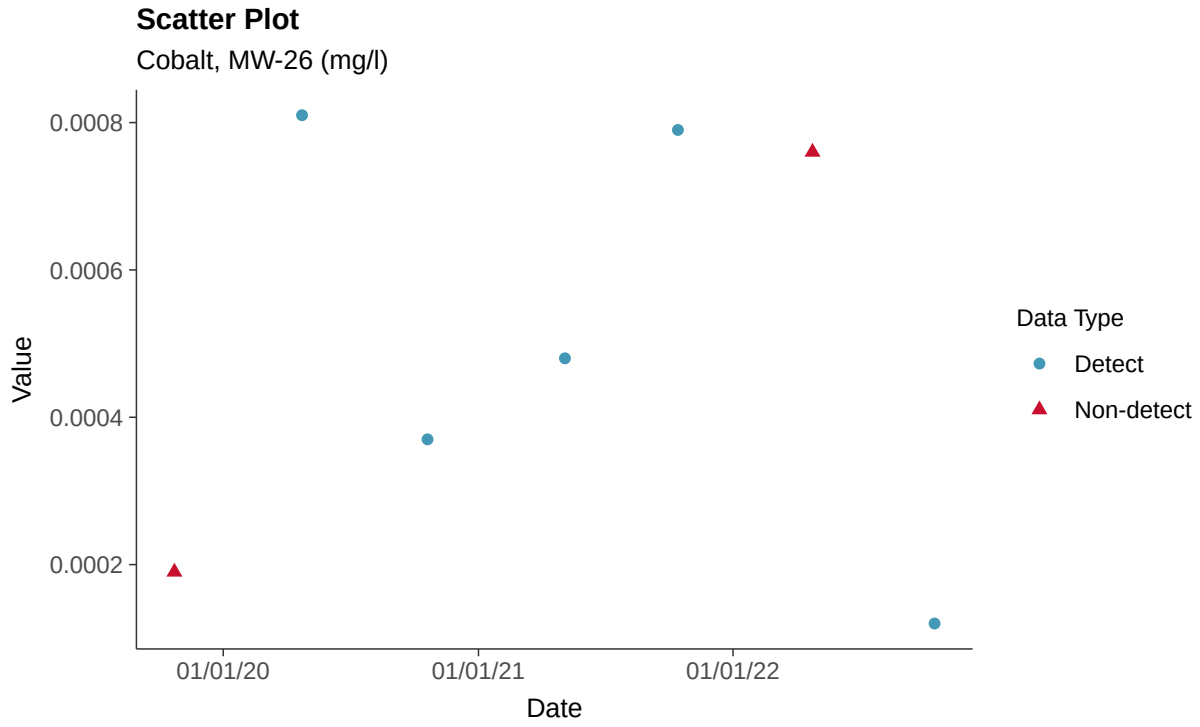
Chromium, Total, MW-26 (mg/l)

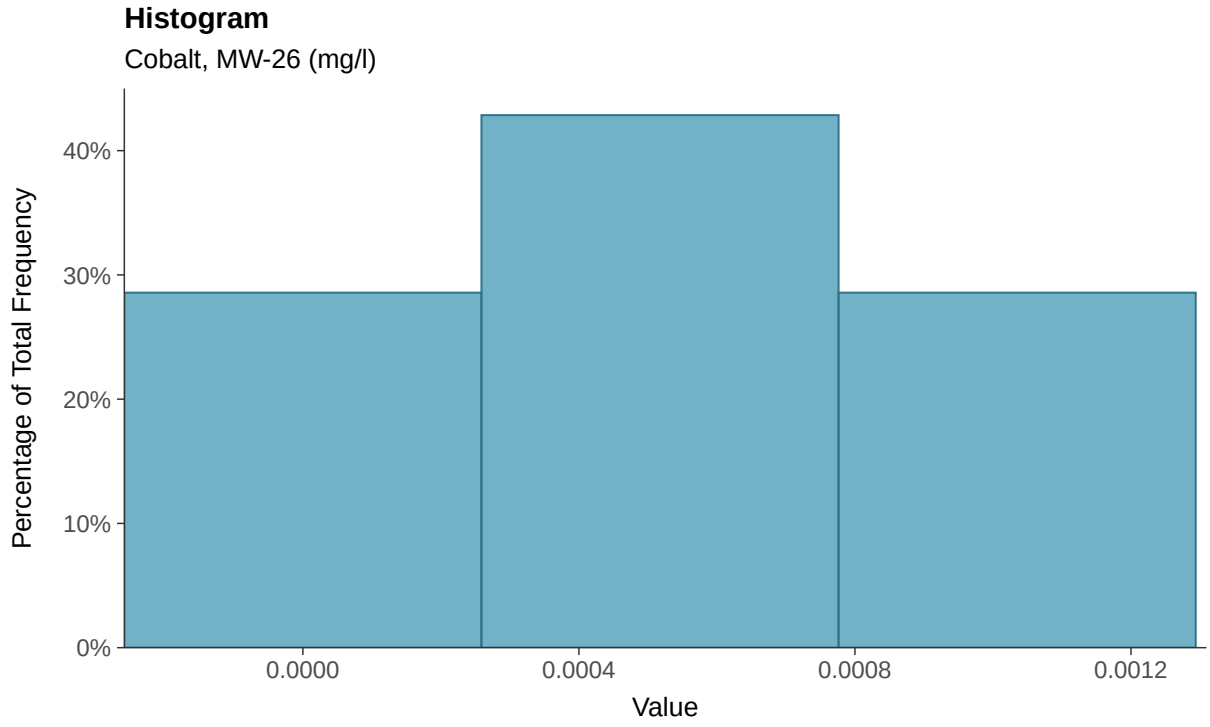



Normal Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-26 (mg/l)
Value
0.010
0.005
0.000
−0.005
−0.010
−0.015
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-26

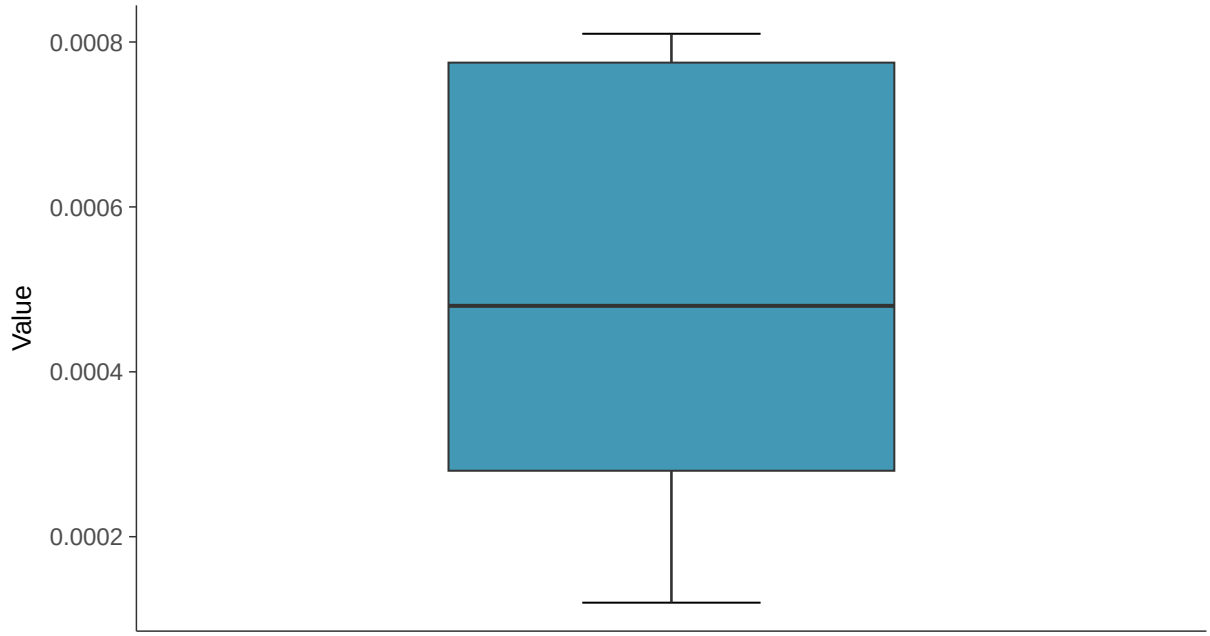
ID: 18_2_113





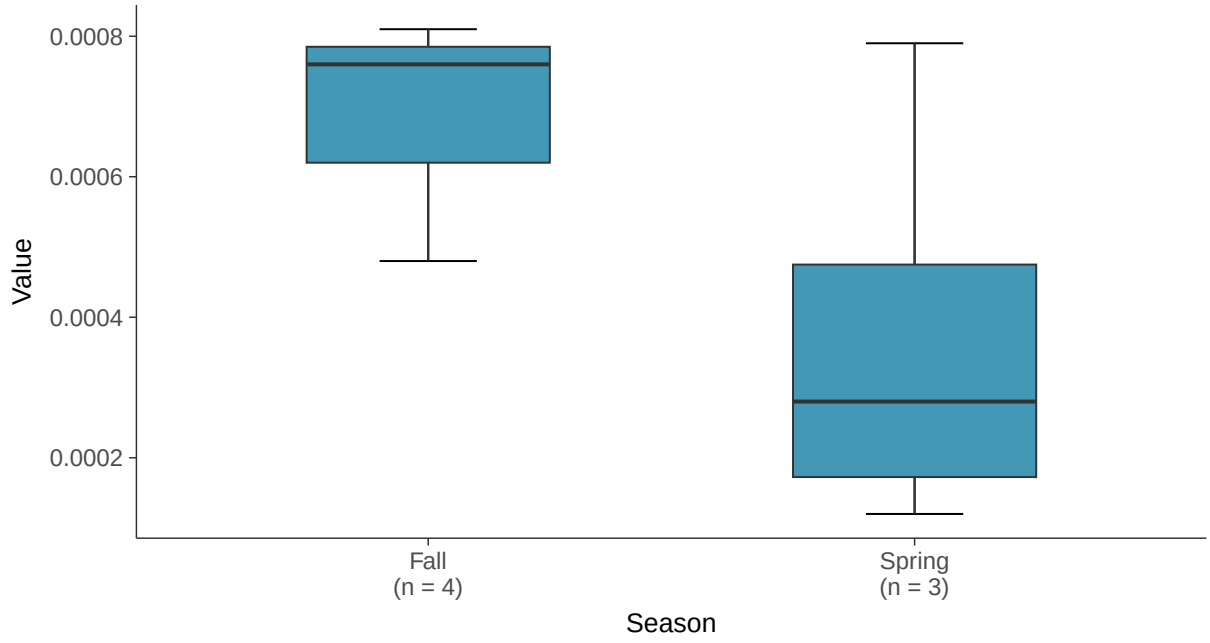
Boxplot

Cobalt, MW-26 (mg/l)



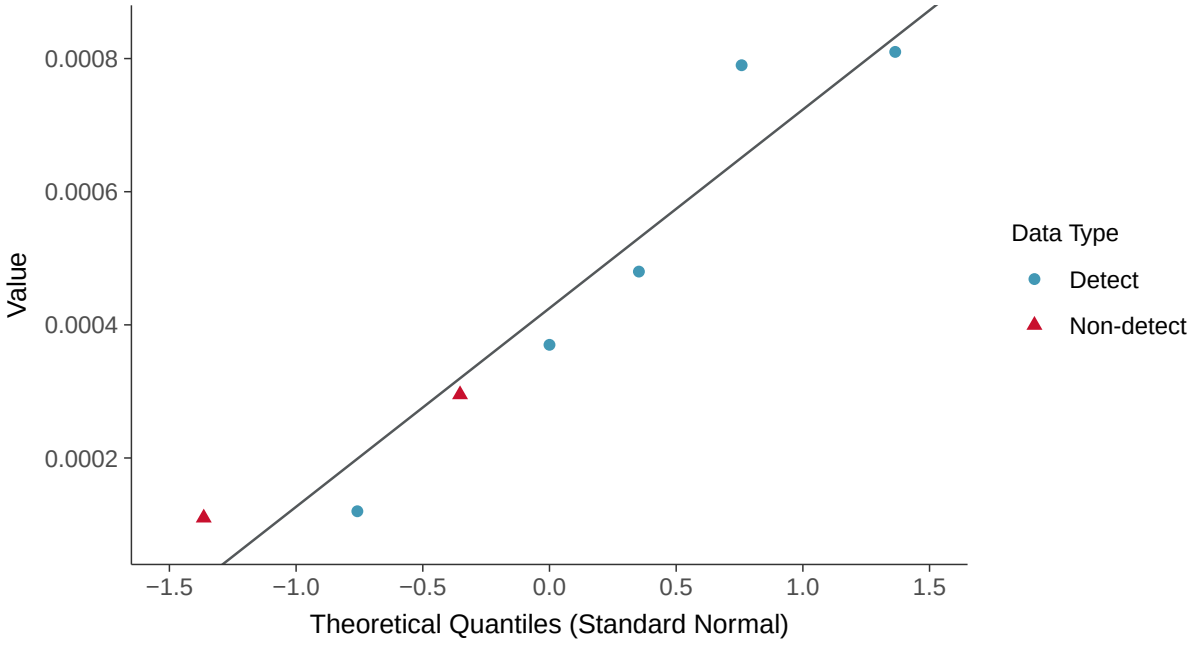
Boxplot by Season

Cobalt, MW-26 (mg/l)



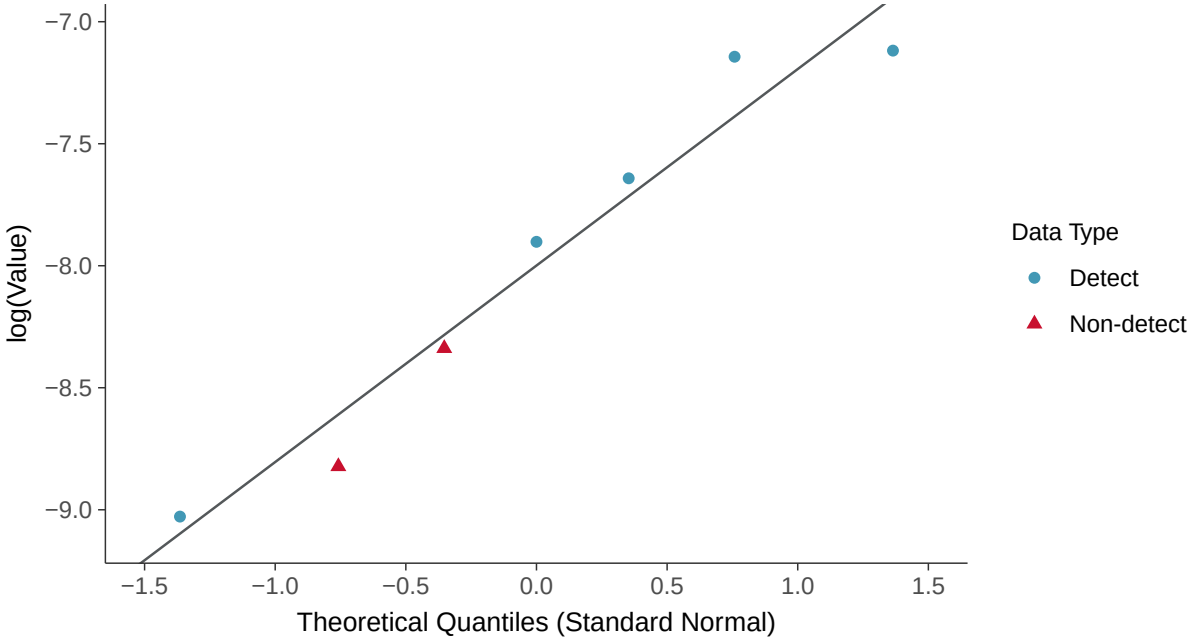
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-26 (mg/l)



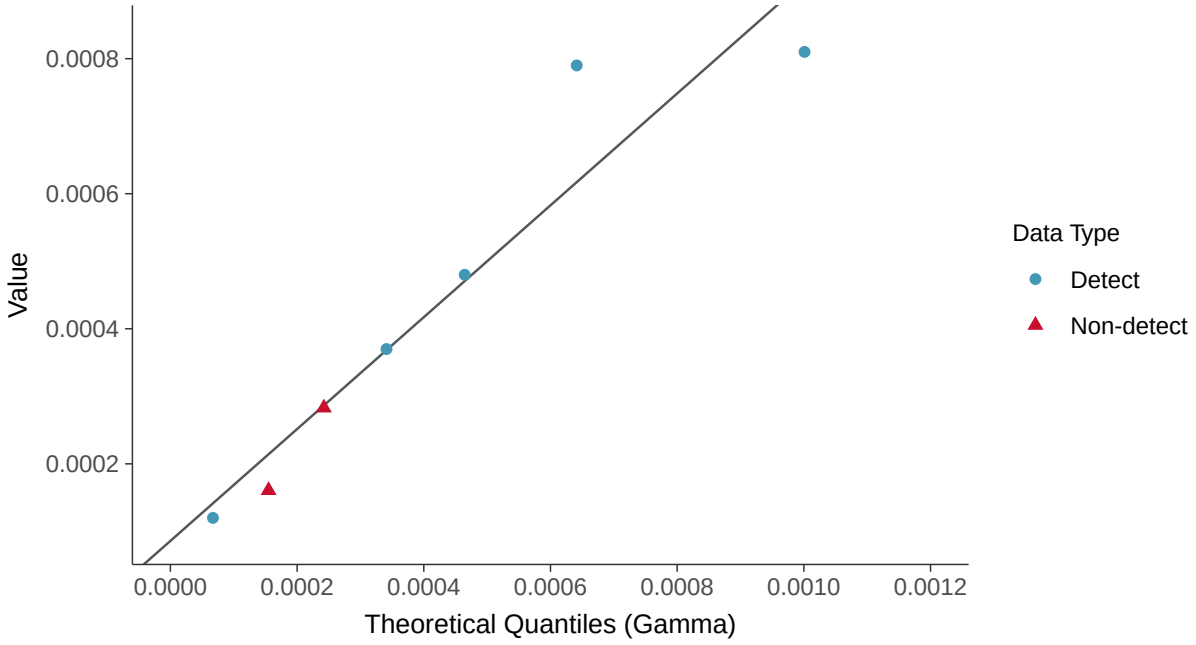
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-26 (mg/l)



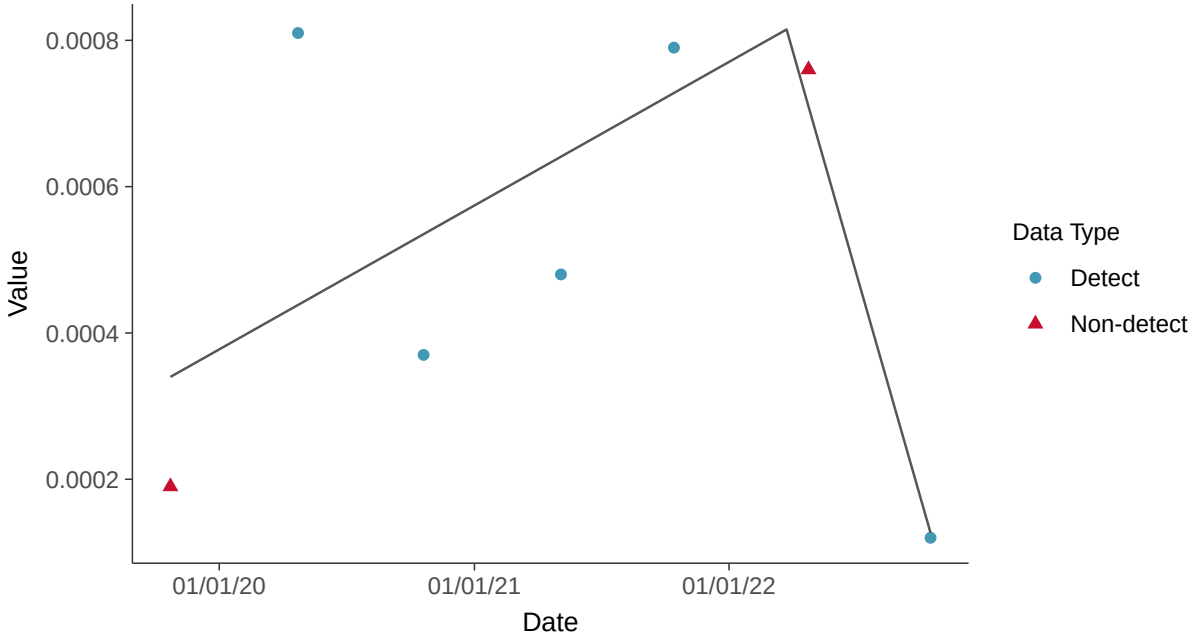
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-26 (mg/l)



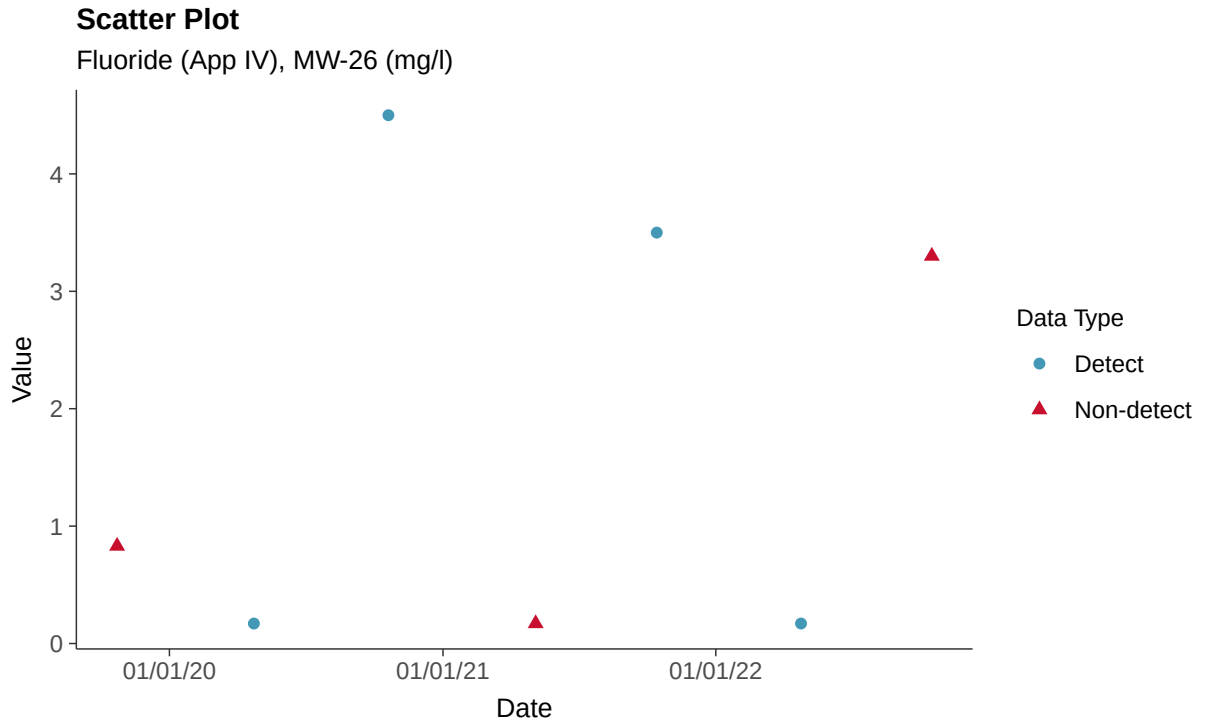
Trend Regression: Piecewise Linear-Linear

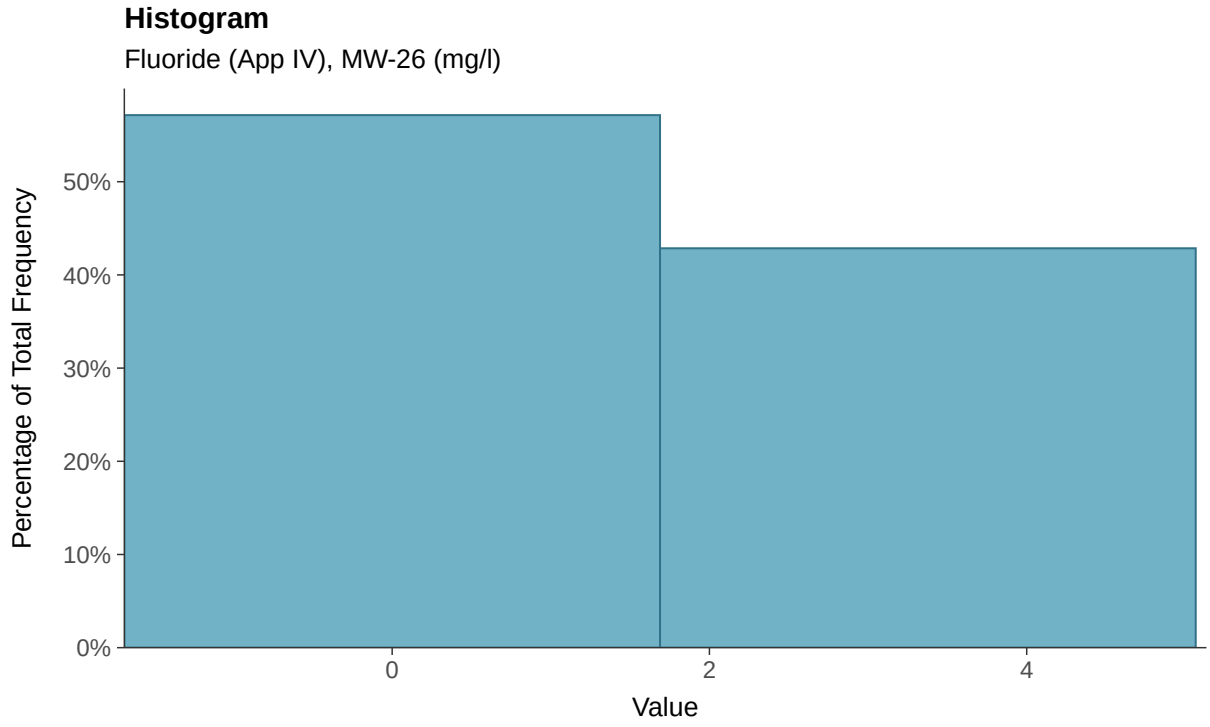
Cobalt, MW-26 (mg/l)



Appendix IV: Fluoride (App IV), MW-26

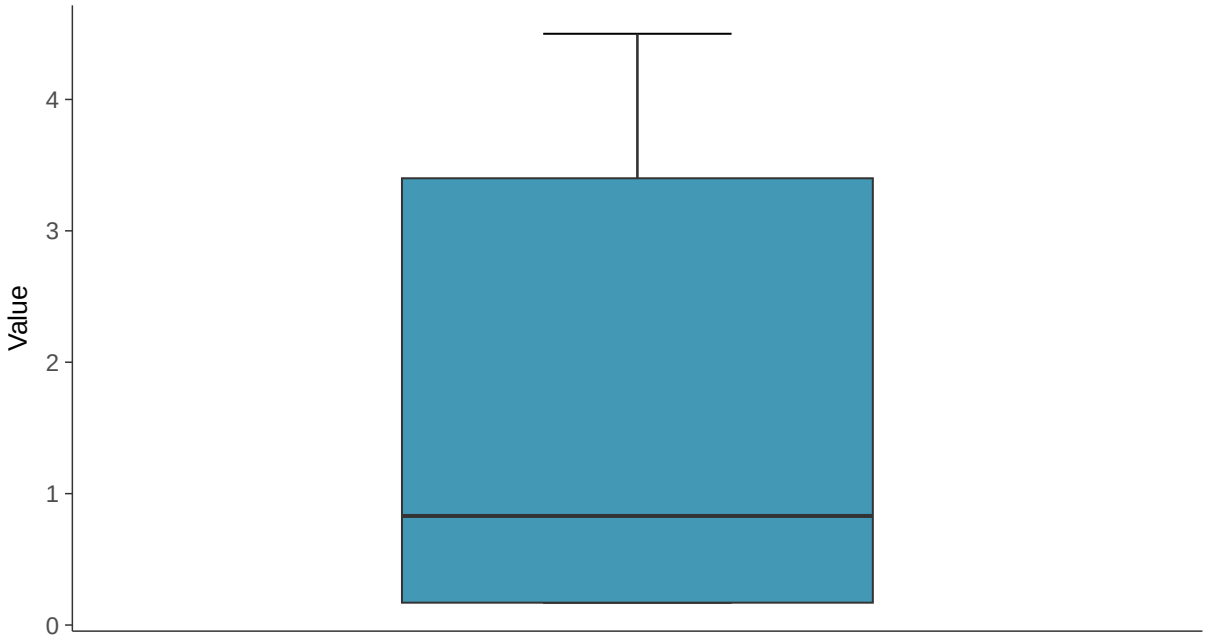
ID: 18_2_116





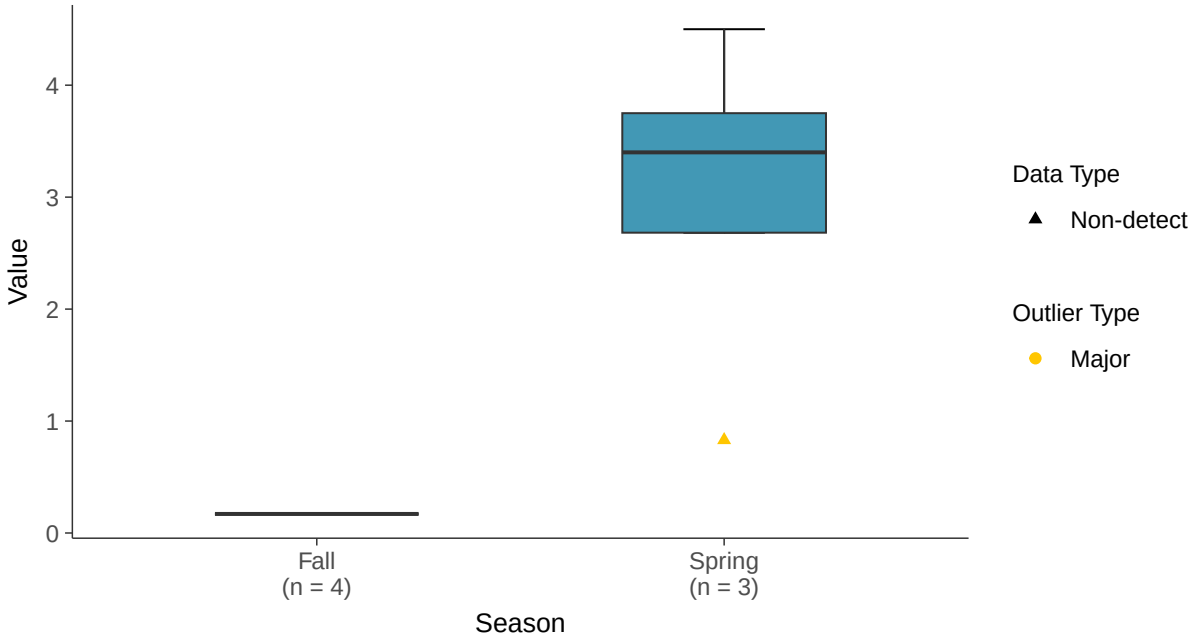
Boxplot

Fluoride (App IV), MW-26 (mg/l)



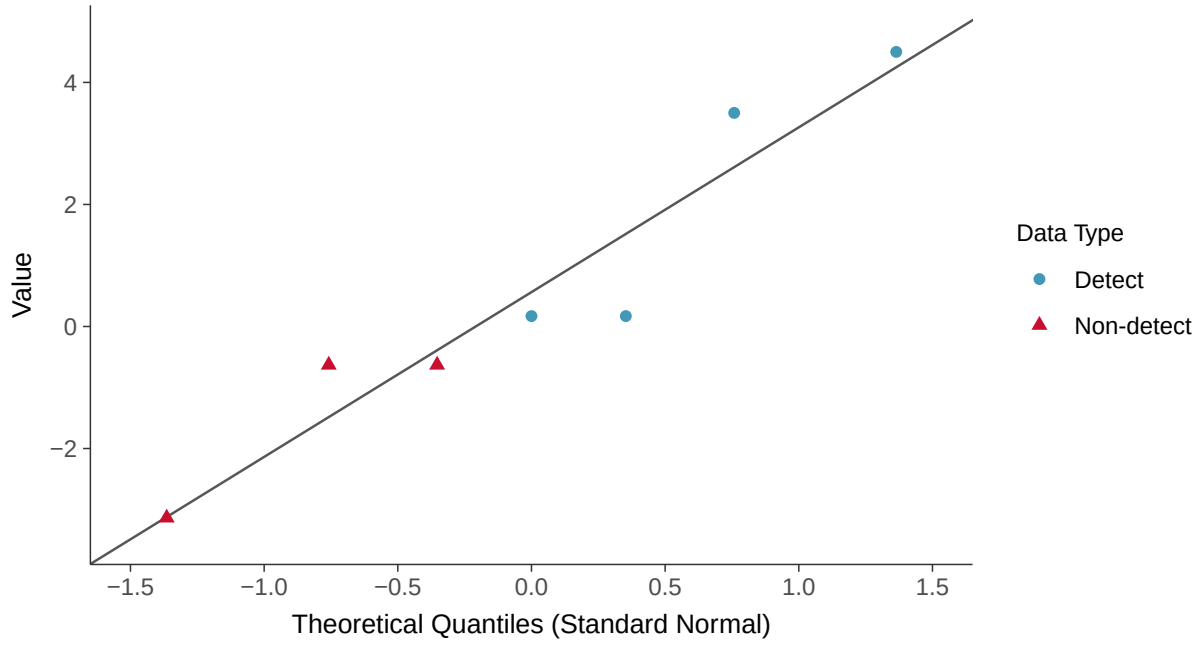
Boxplot by Season

Fluoride (App IV), MW-26 (mg/l)



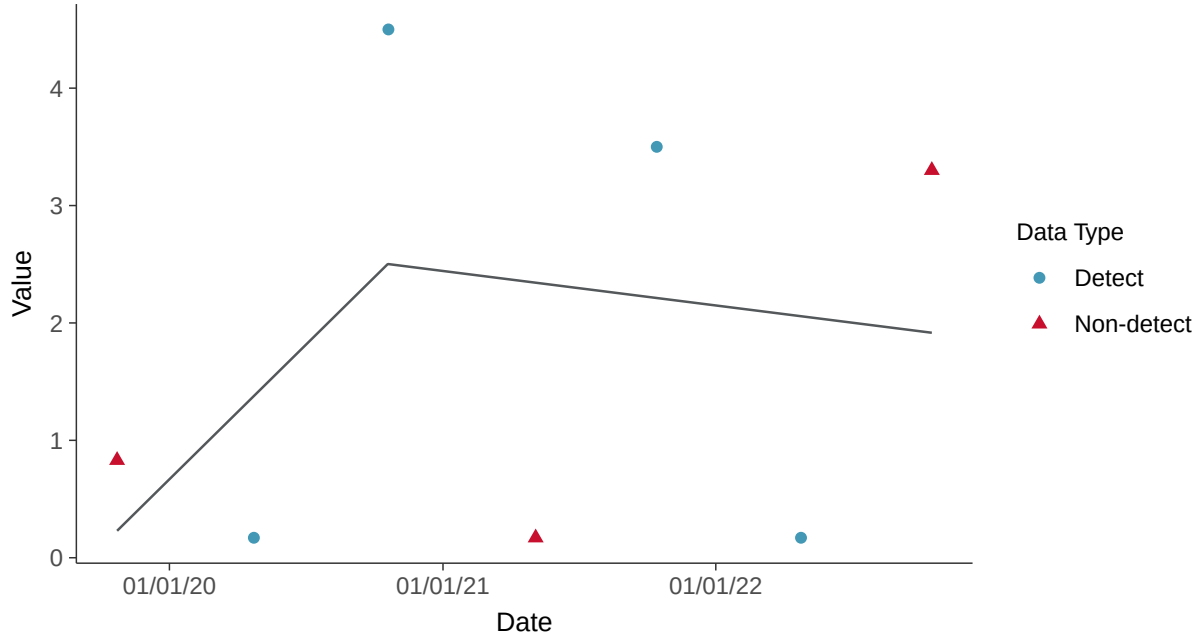
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-26 (mg/l)



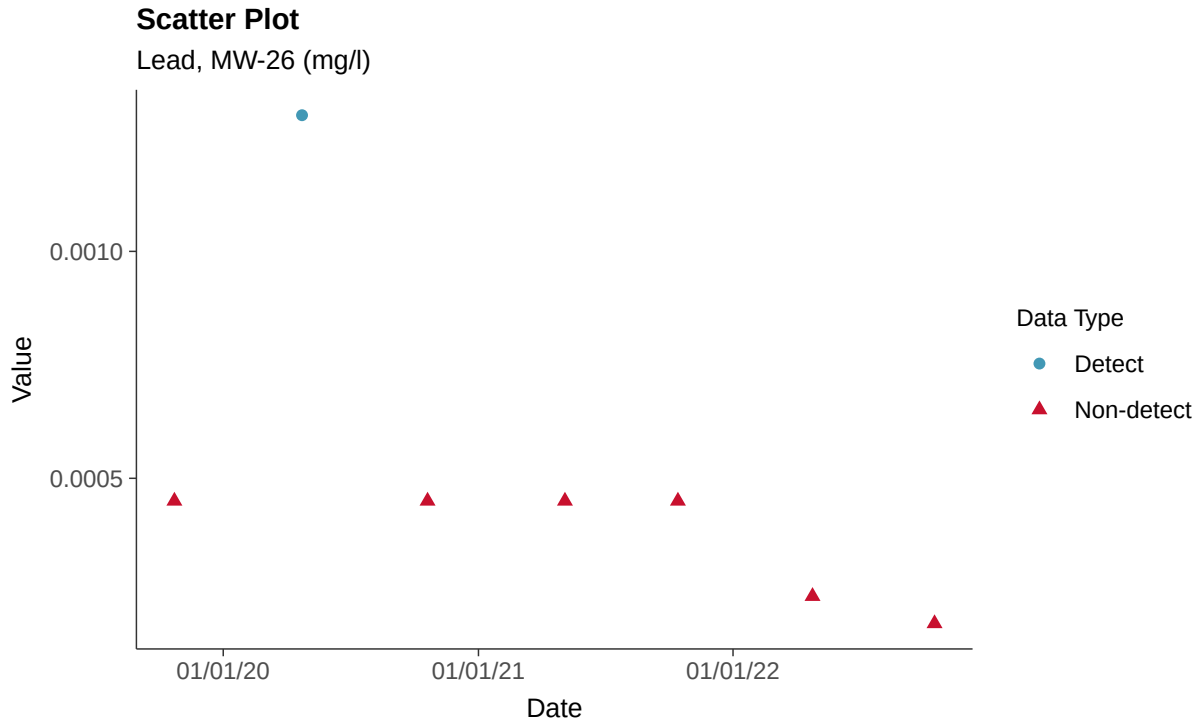
Trend Regression: Piecewise Linear-Linear

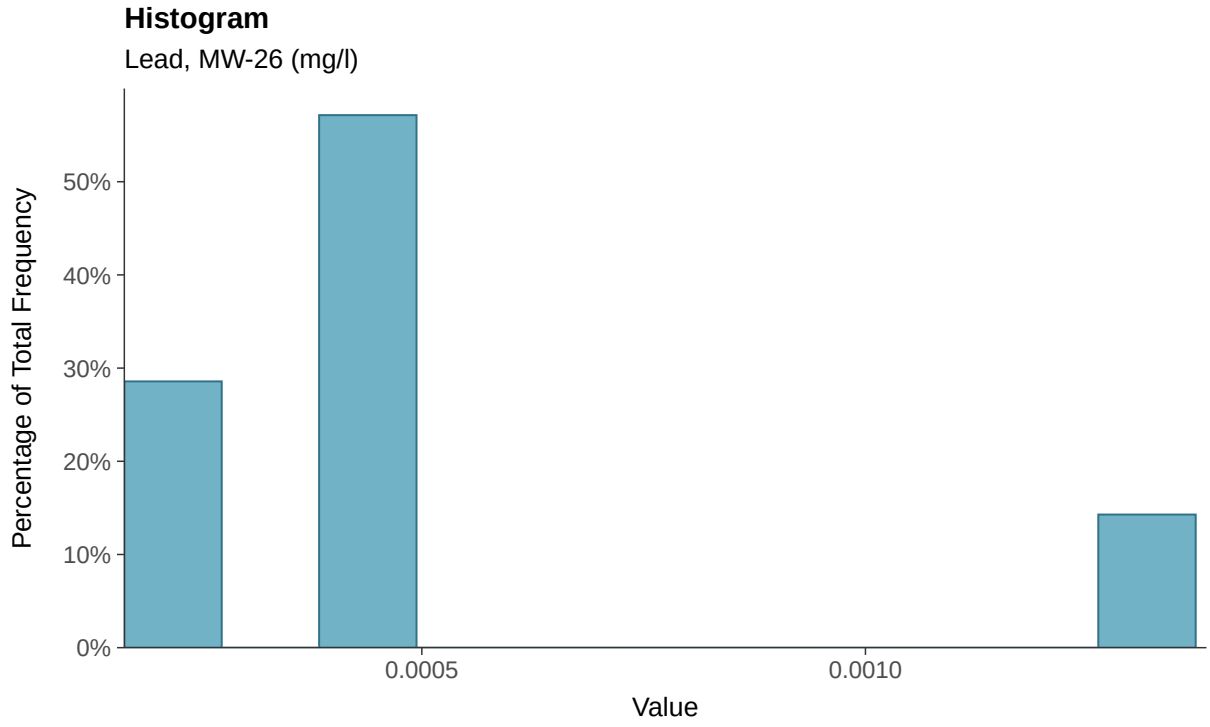
Fluoride (App IV), MW-26 (mg/l)



Appendix IV: Lead, MW-26

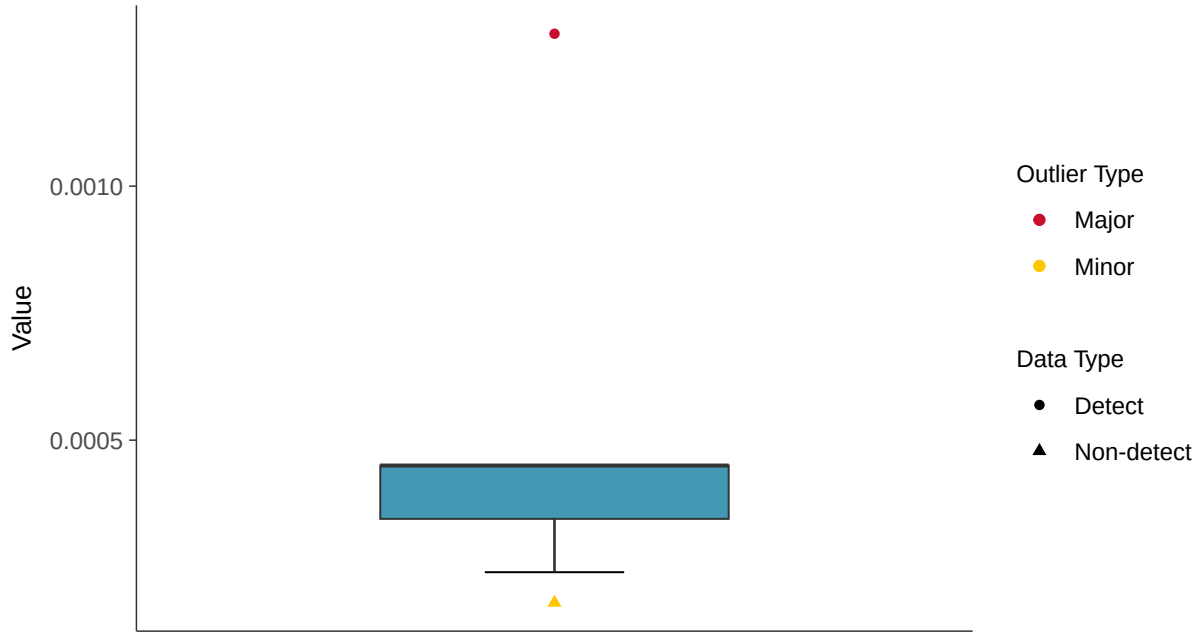
ID: 18_2_117





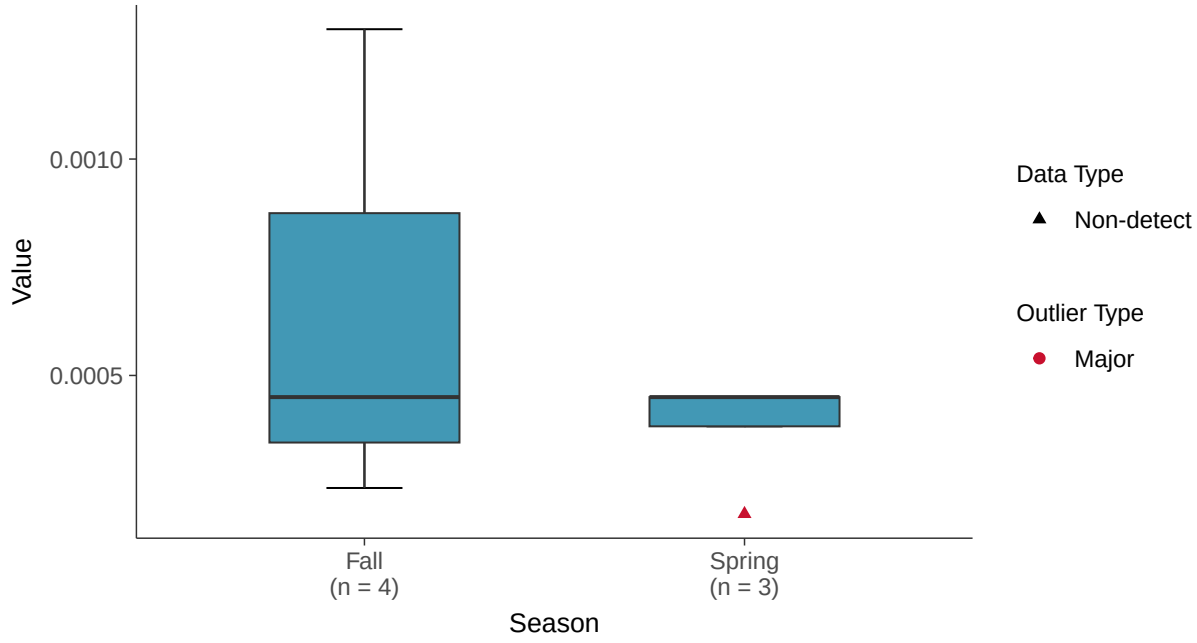
Boxplot

Lead, MW-26 (mg/l)



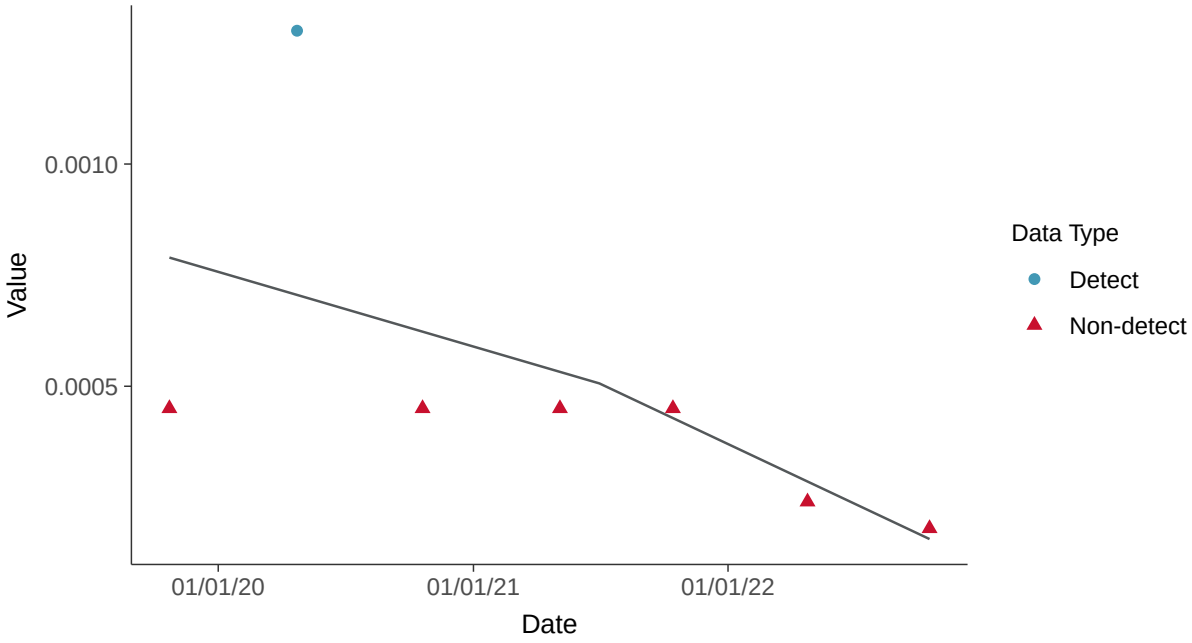
Boxplot by Season

Lead, MW-26 (mg/l)



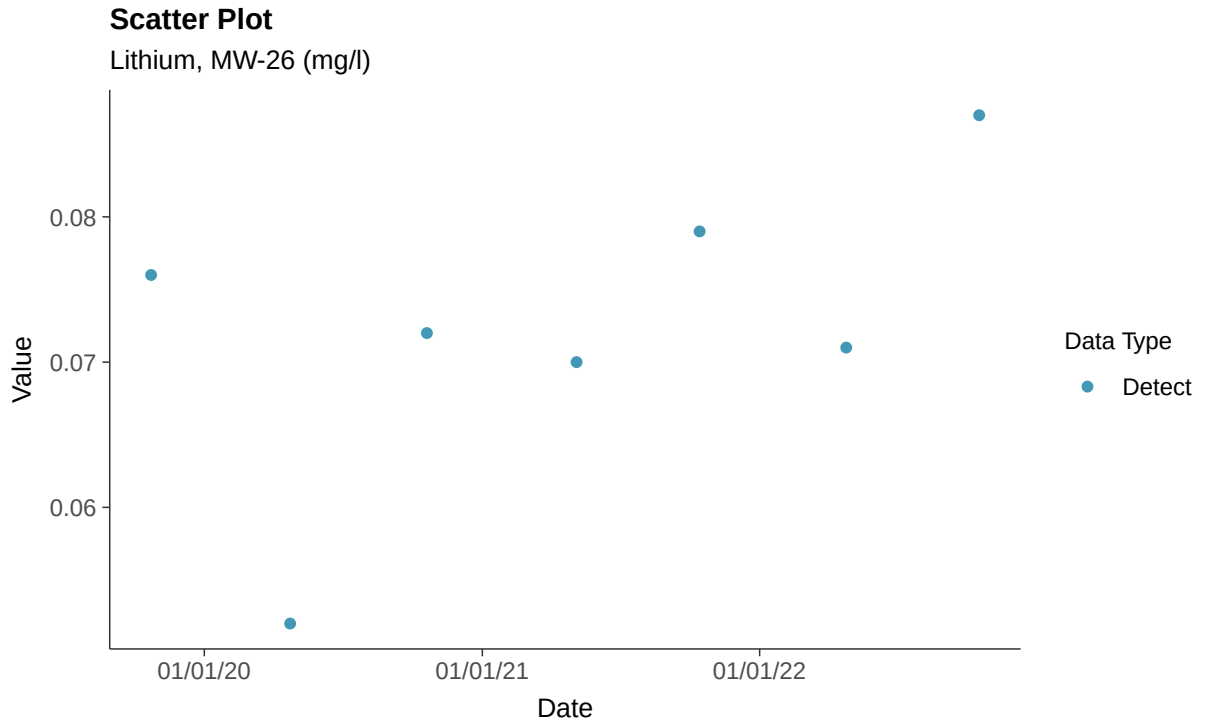
Trend Regression: Piecewise Linear-Linear

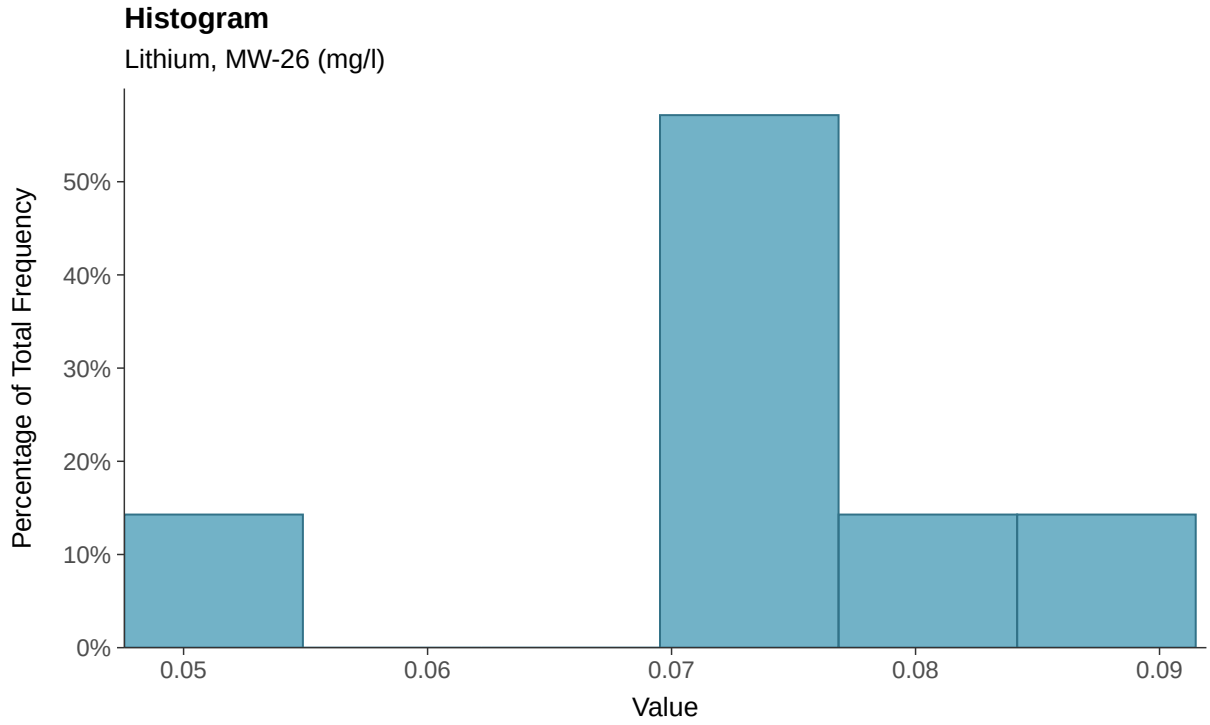
Lead, MW-26 (mg/l)



Appendix IV: Lithium, MW-26

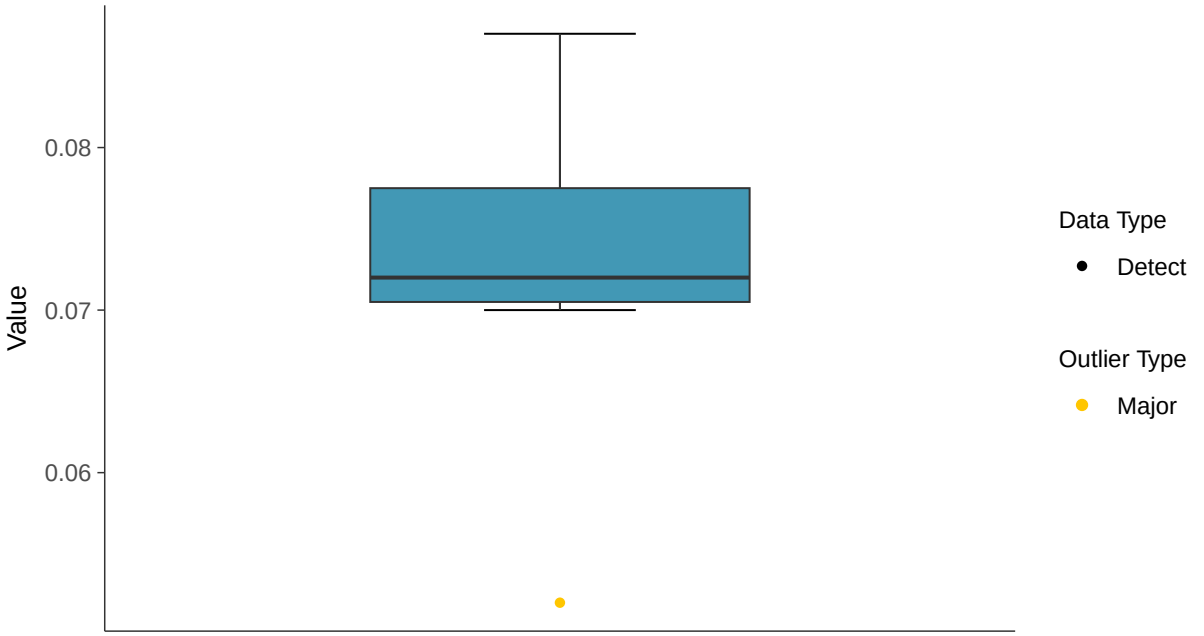
ID: 18_2_118





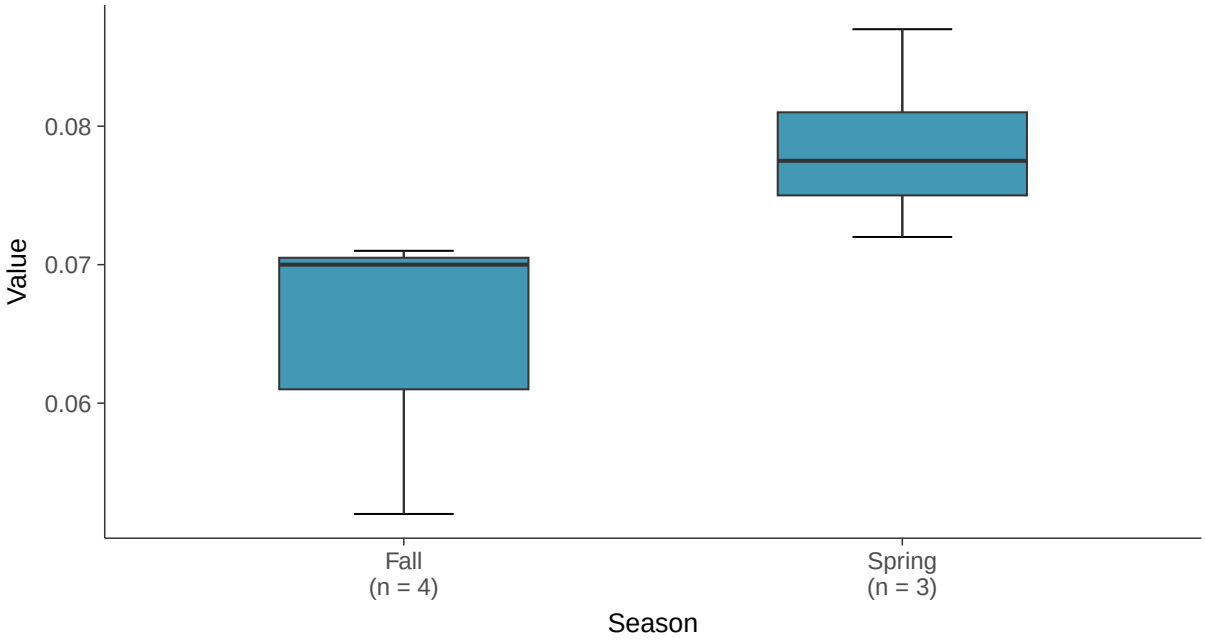
Boxplot

Lithium, MW-26 (mg/l)



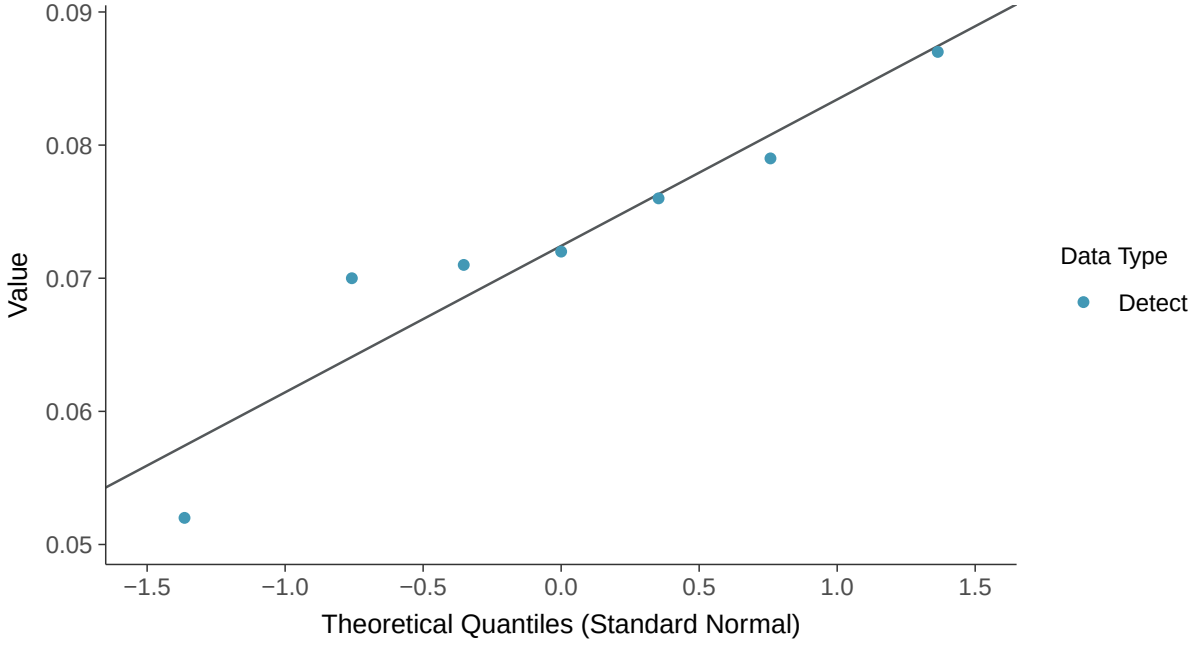
Boxplot by Season

Lithium, MW-26 (mg/l)



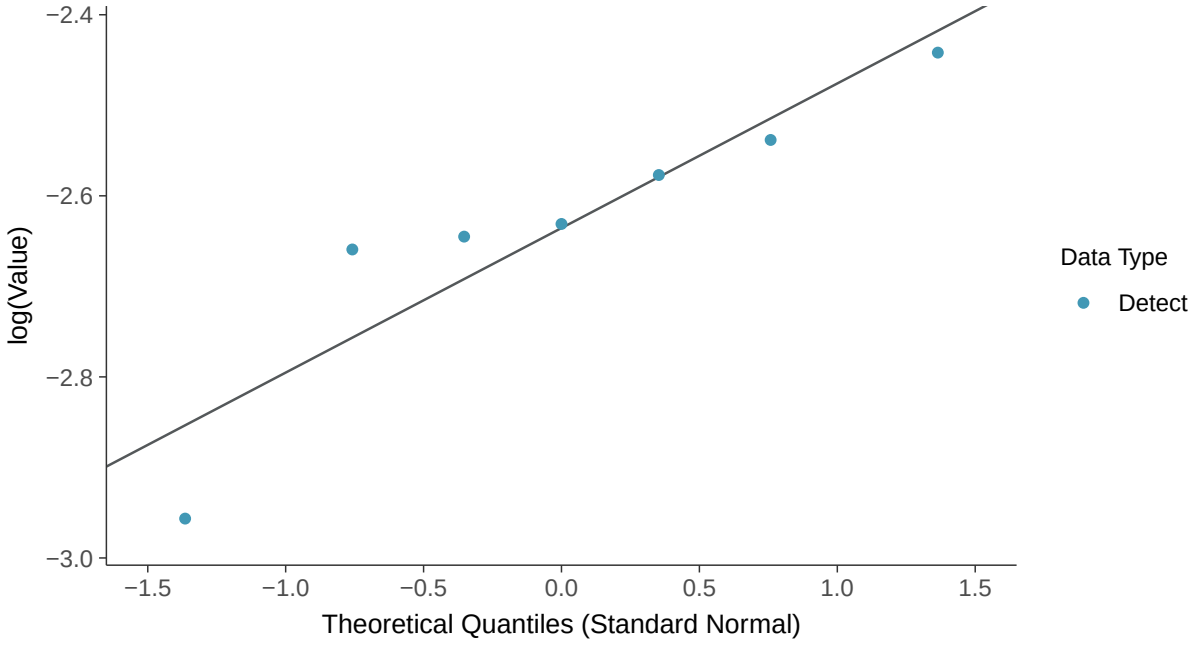
Normal Q-Q plot

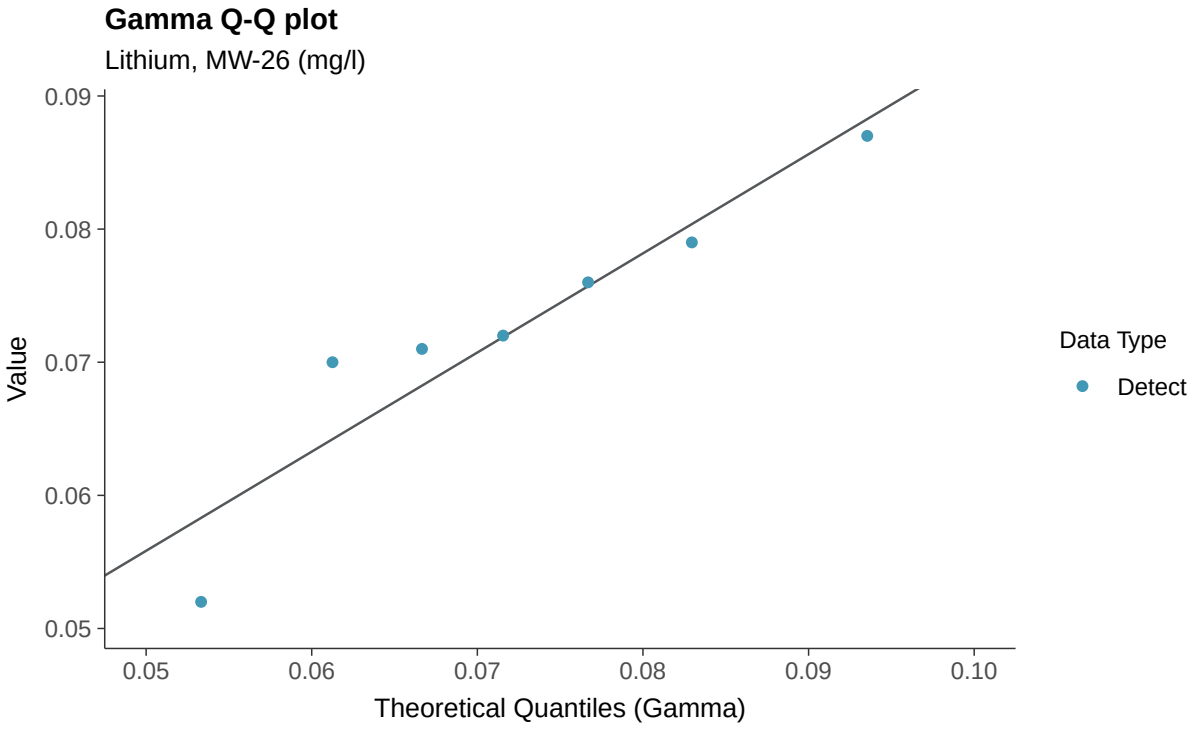
Lithium, MW-26 (mg/l)



Lognormal Q-Q plot

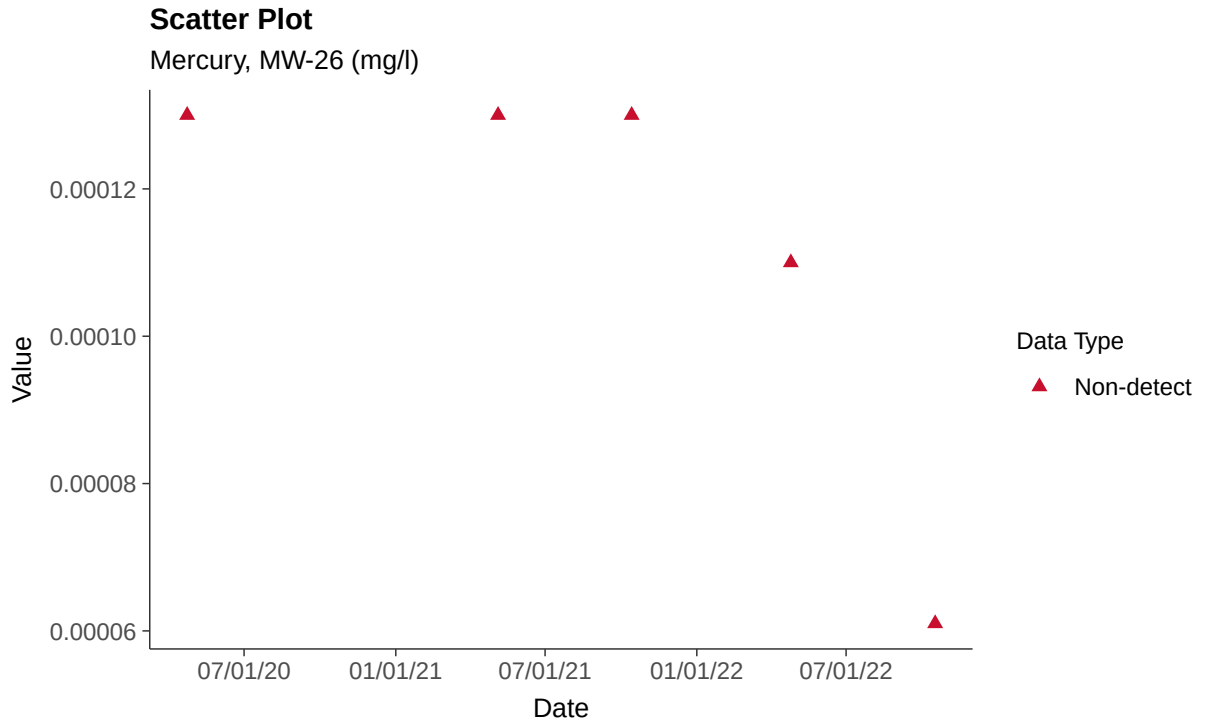
Lithium, MW-26 (mg/l)

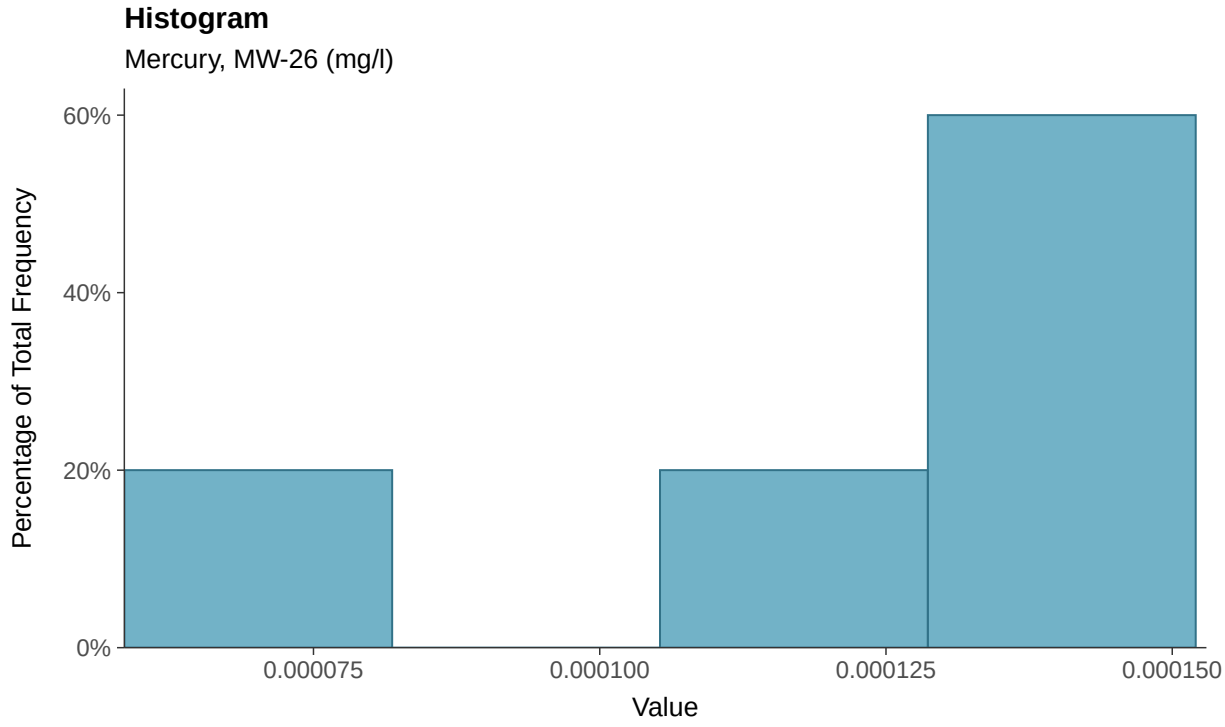



Gamma Q-Q plot
Lithium, MW-26 (mg/l)
Value
0.09
0.08
0.07
0.06
0.05
0.05
0.06
0.07
0.08
0.09
0.10
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Mercury, MW-26

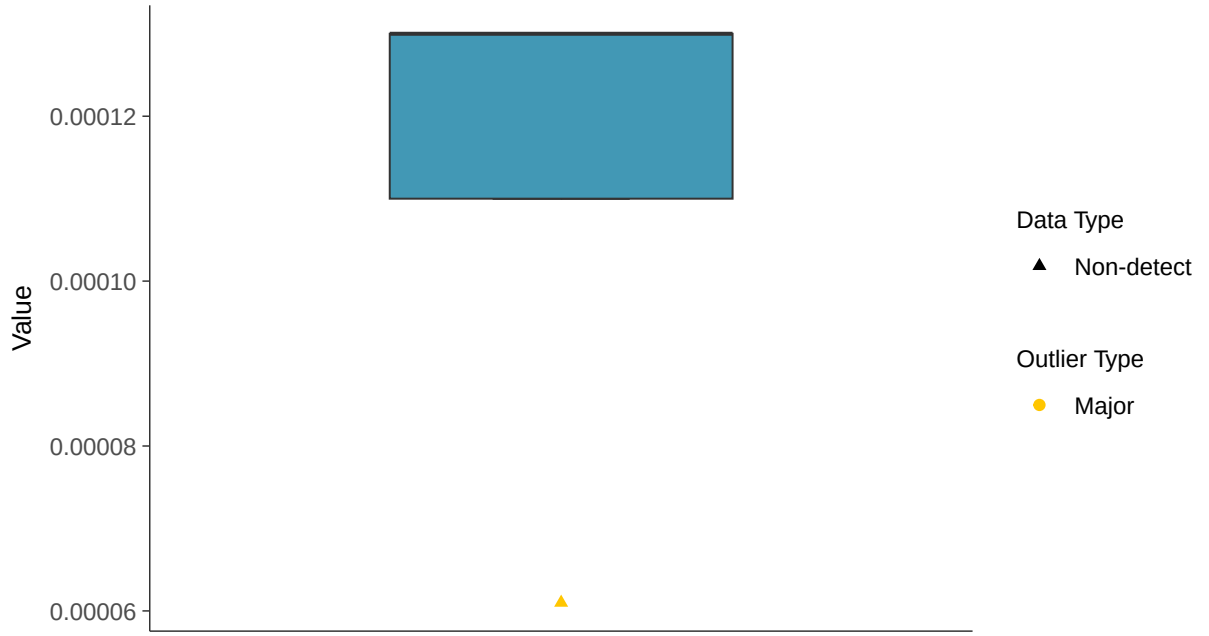
ID: 18_2_120





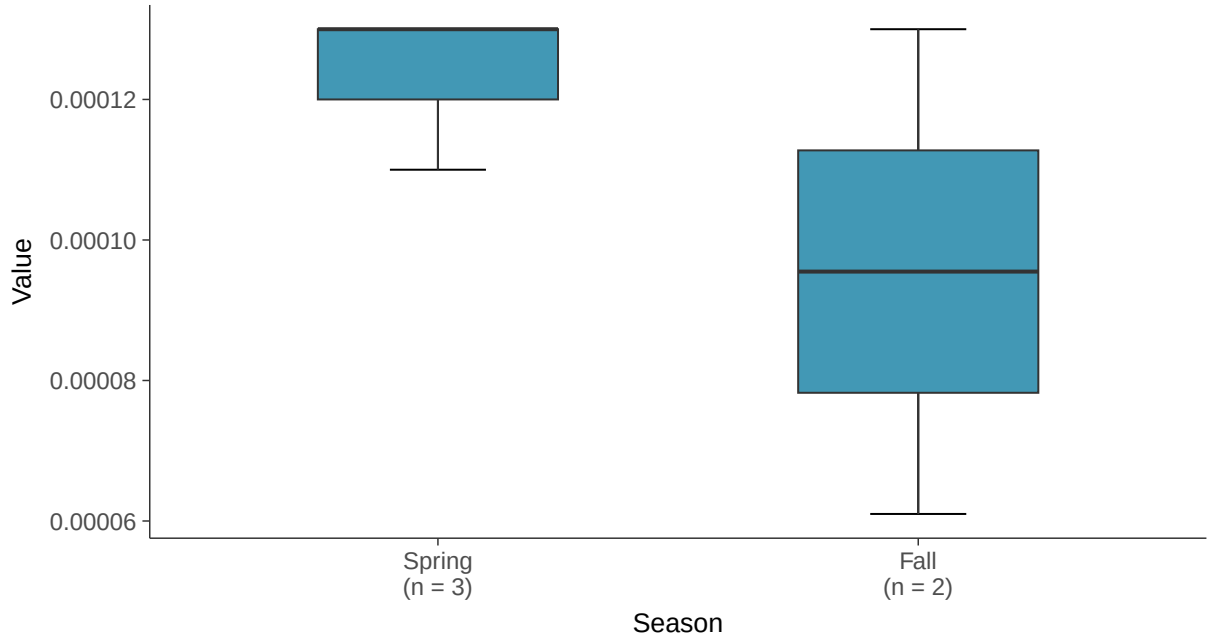
Boxplot

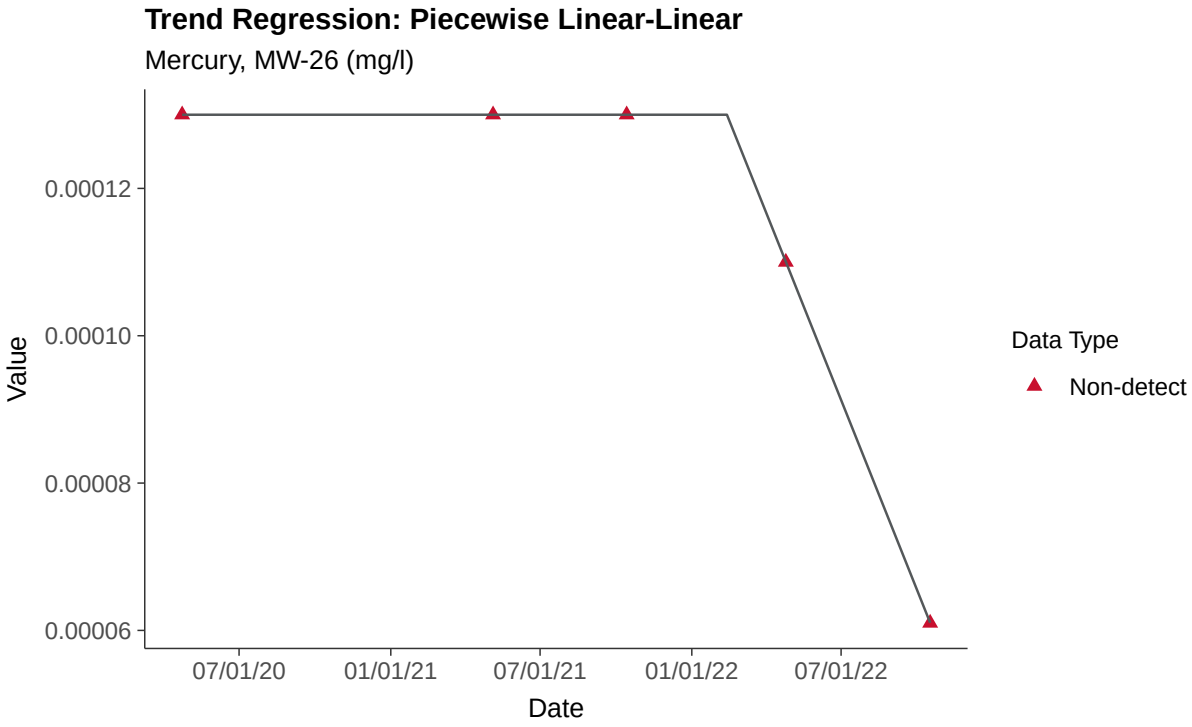
Mercury, MW-26 (mg/l)



Boxplot by Season

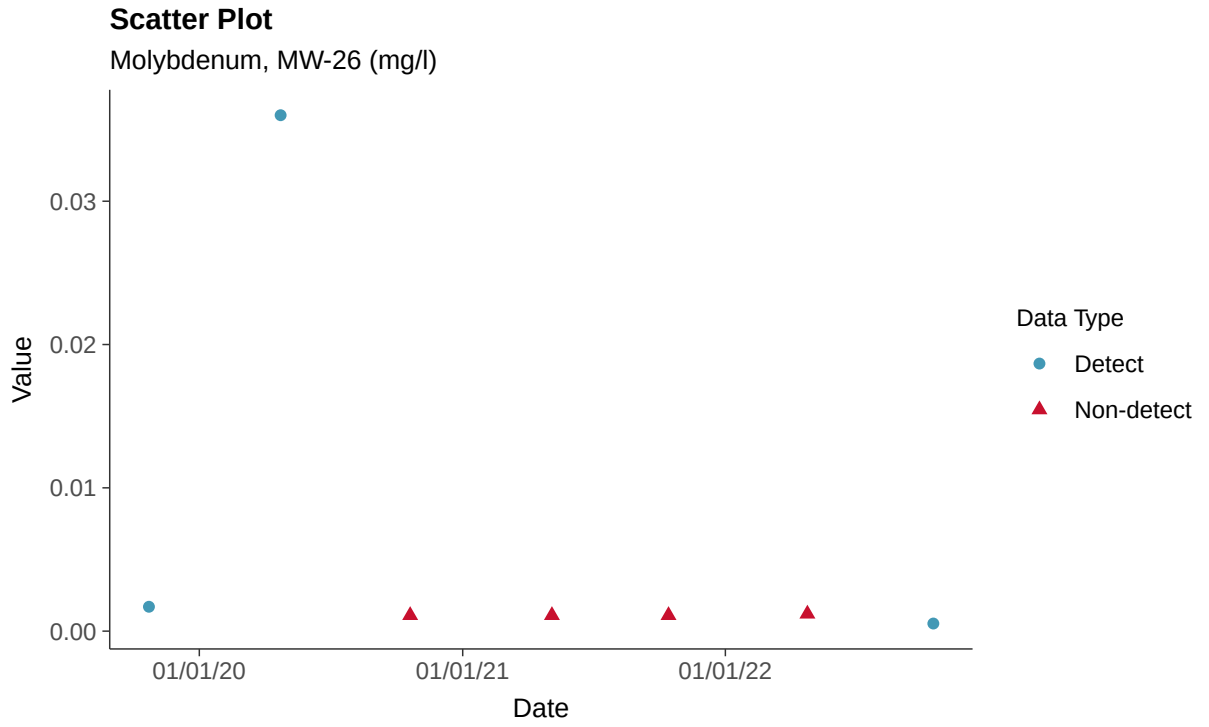
Mercury, MW-26 (mg/l)

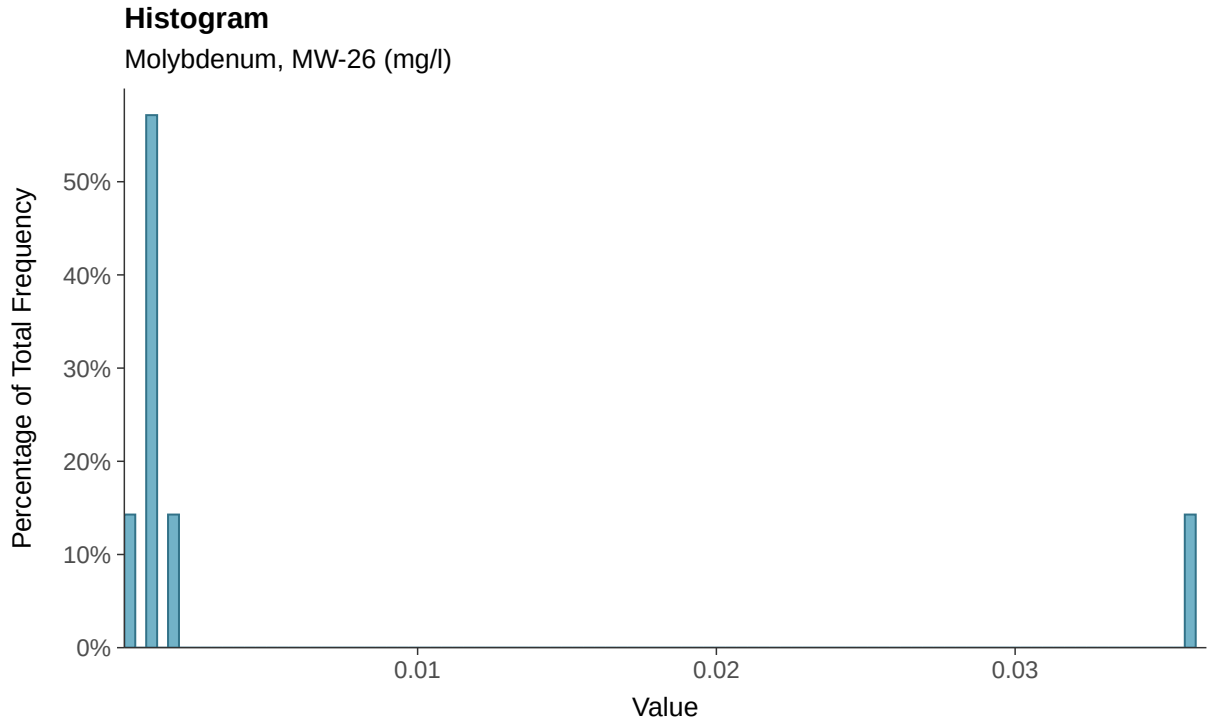



Trend Regression: Piecewise Linear-Linear
Mercury, MW-26 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
07/01/20
01/01/21
07/01/21
01/01/22
07/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-26

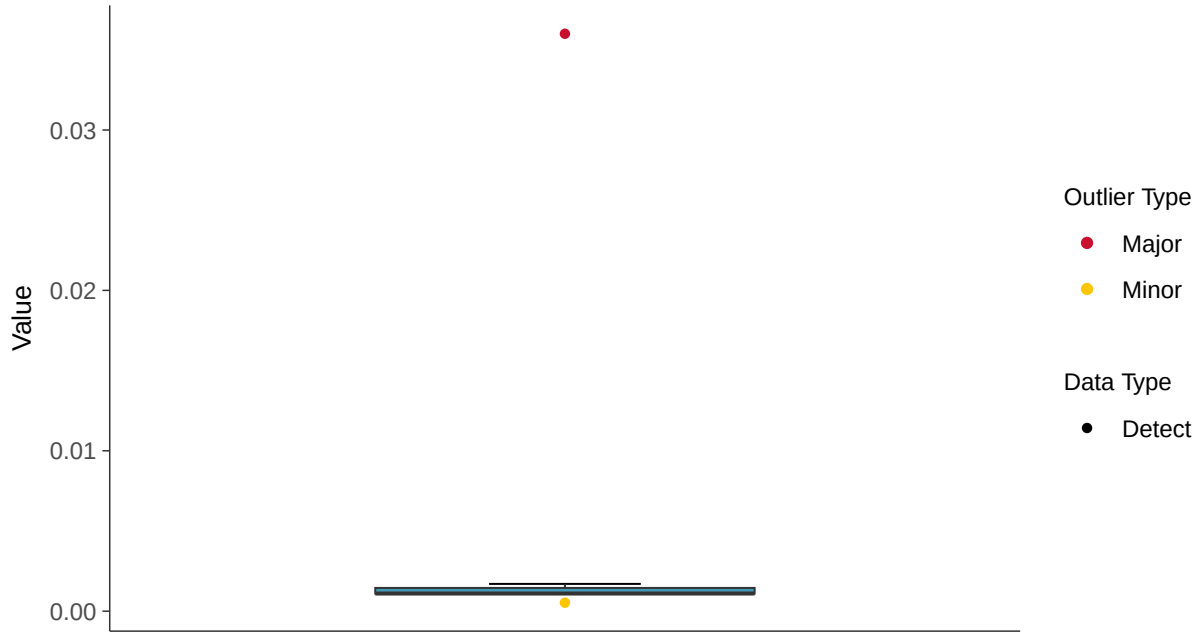
ID: 18_2_121





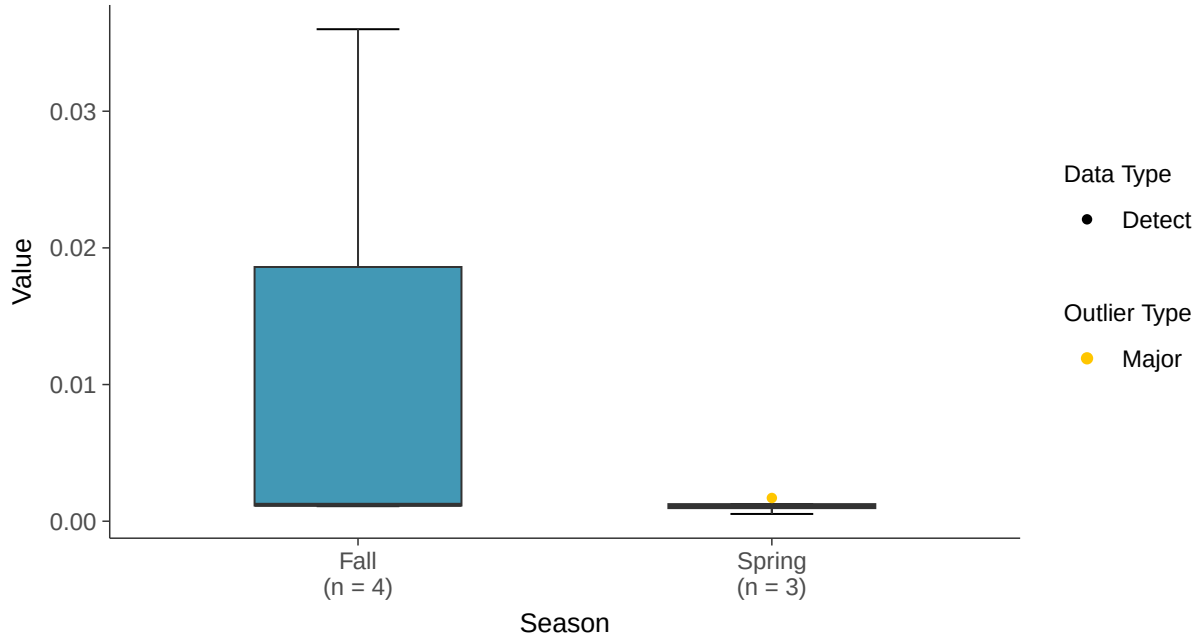
Boxplot

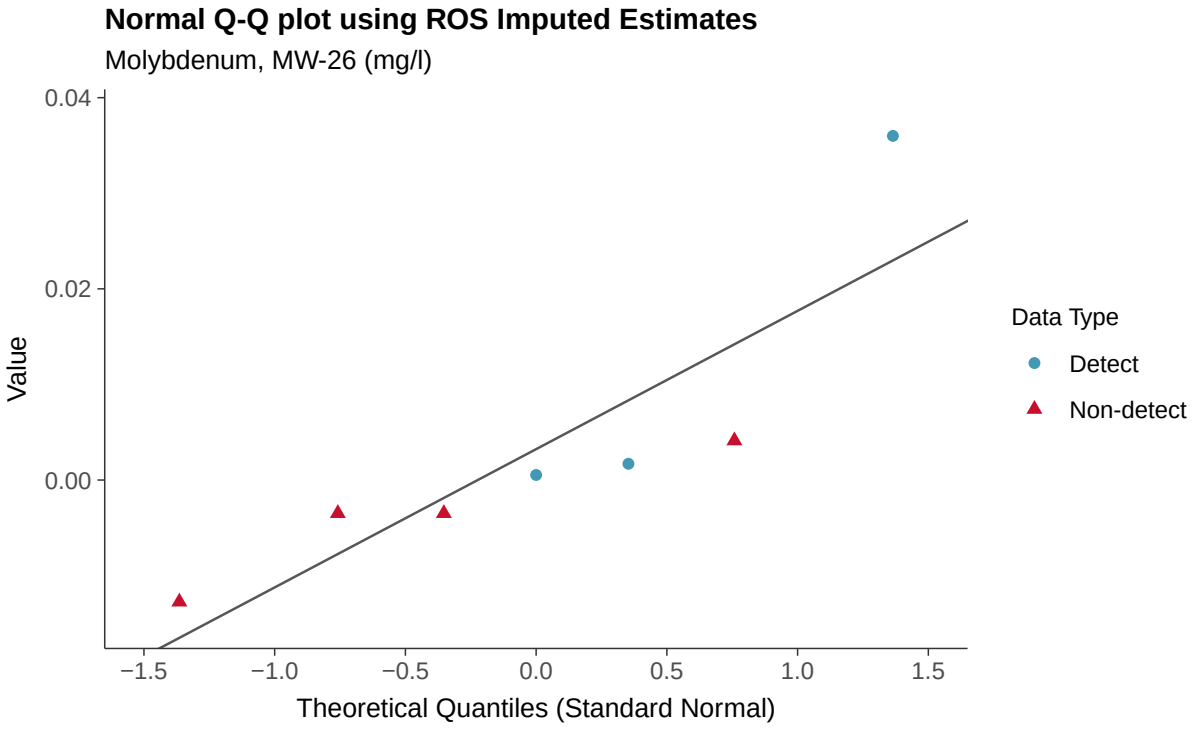
Molybdenum, MW-26 (mg/l)



Boxplot by Season

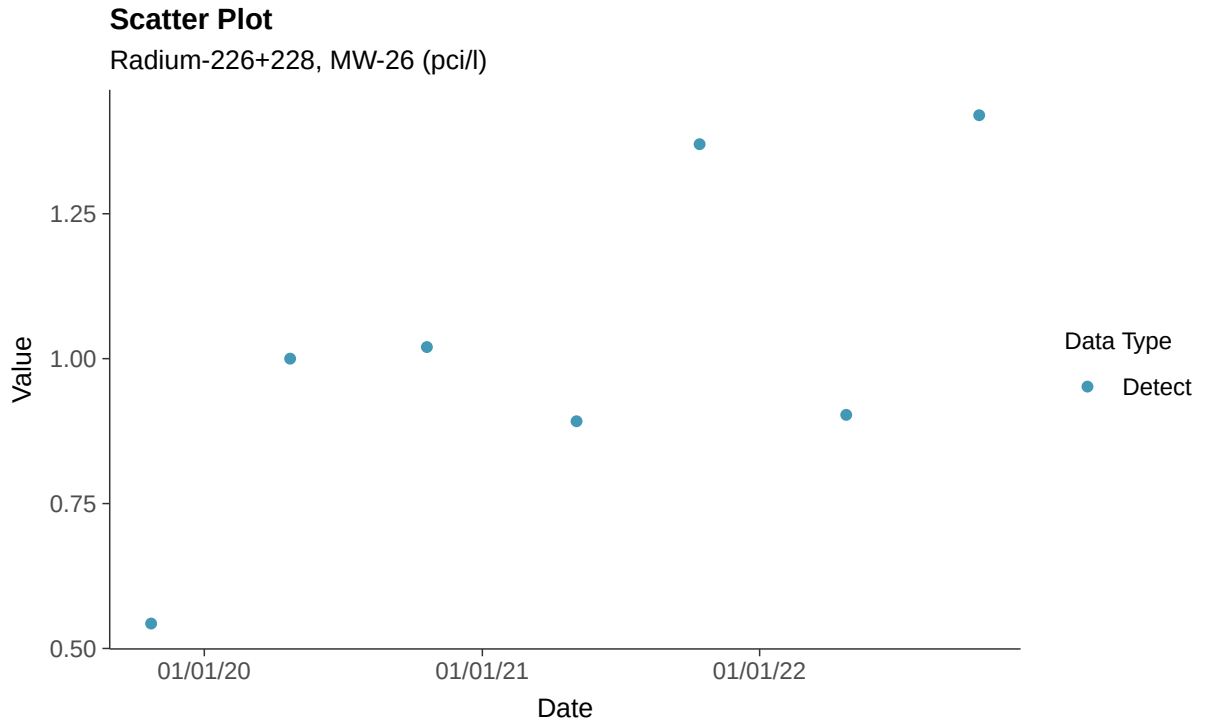
Molybdenum, MW-26 (mg/l)

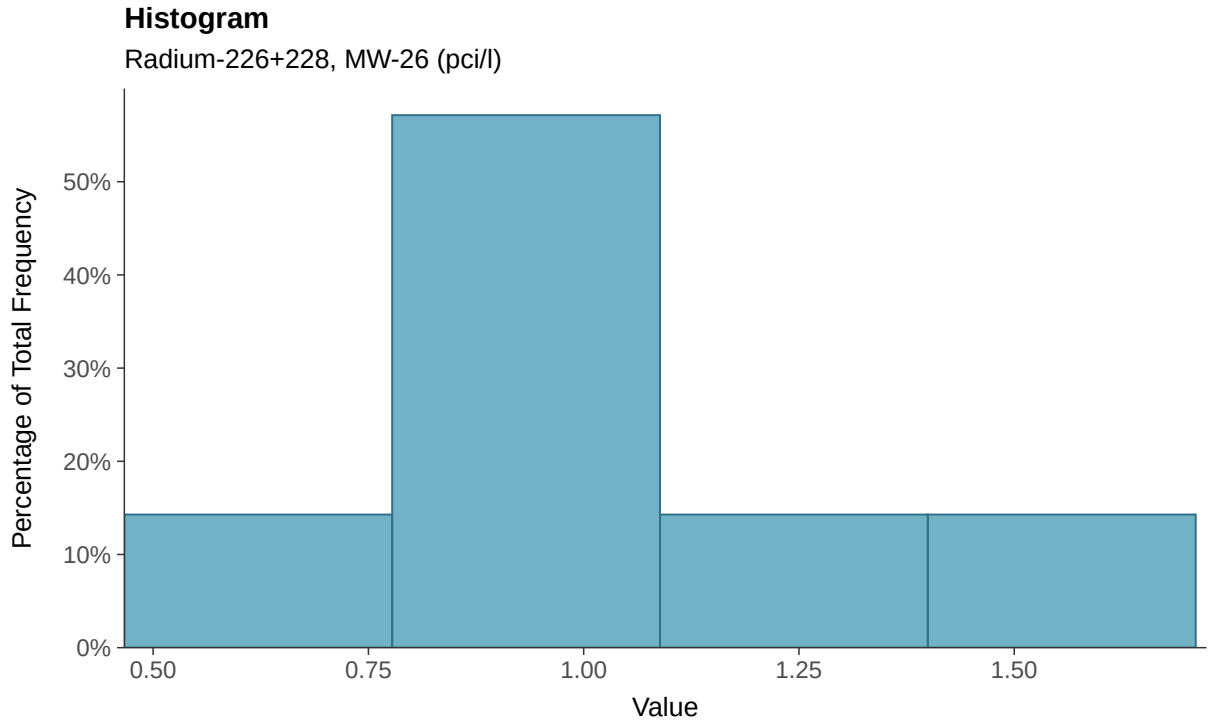



Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-26 (mg/l)
Value
0.04
0.02
0.00
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Radium-226+228, MW-26

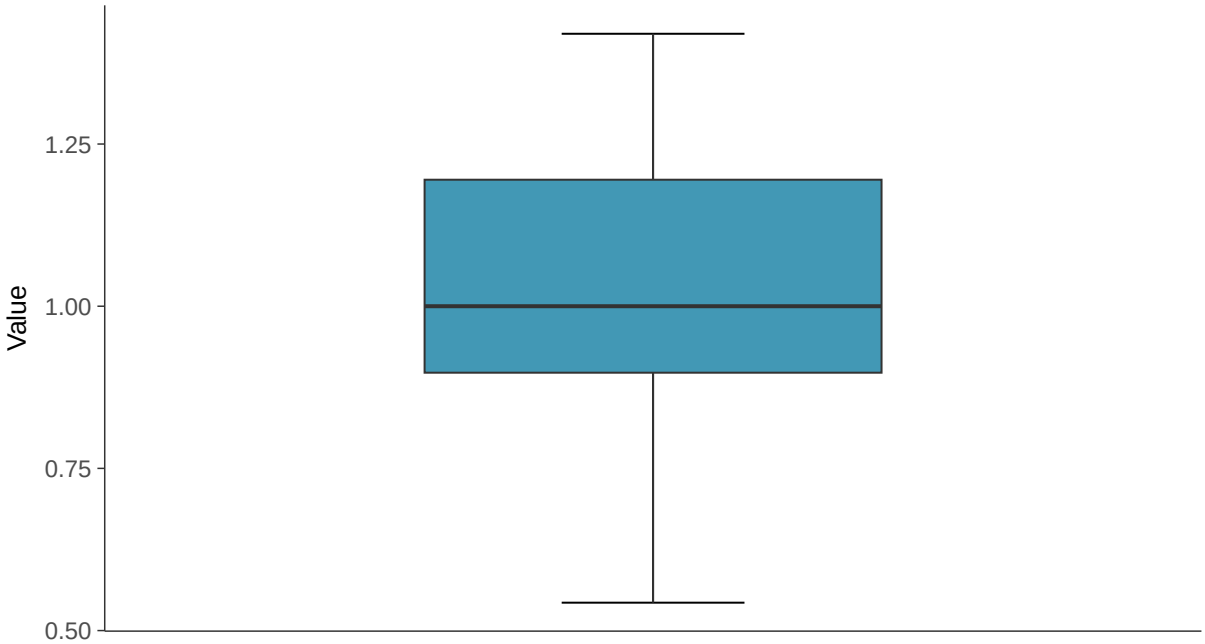
ID: 18_2_127





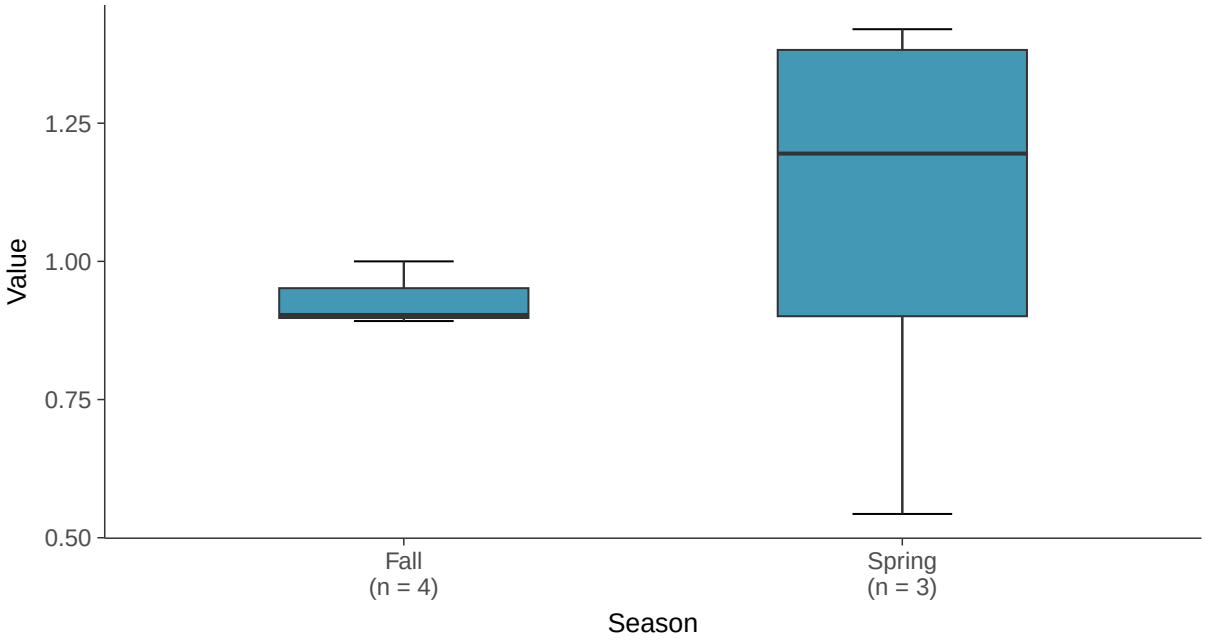
Boxplot

Radium-226+228, MW-26 (pci/l)



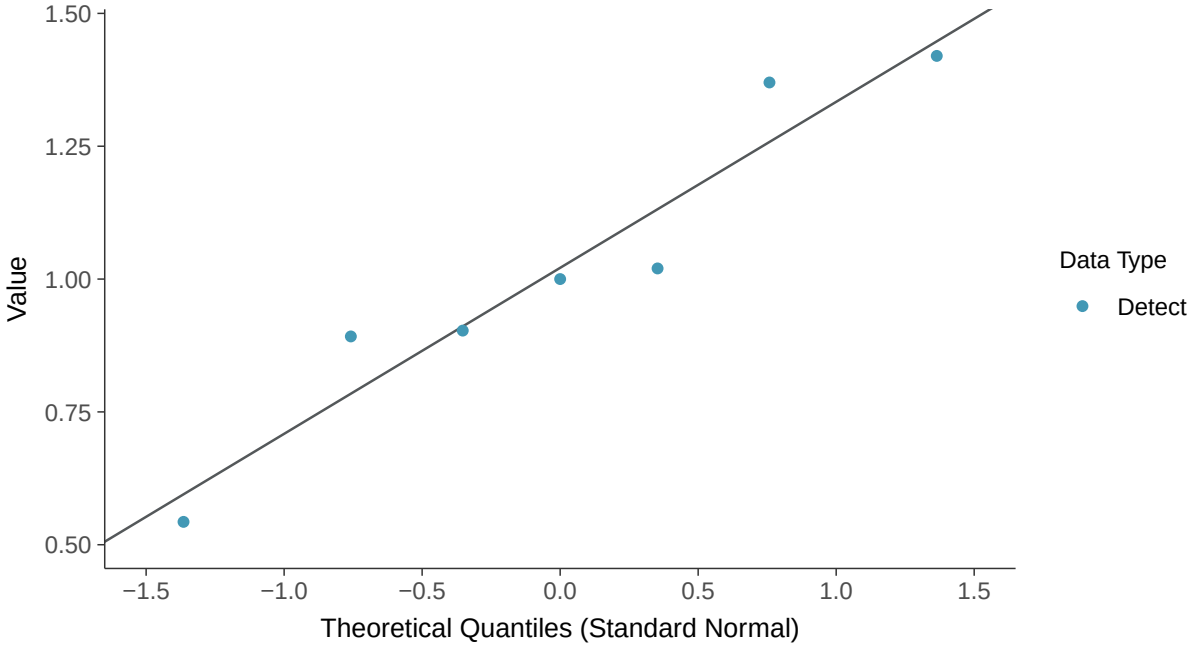
Boxplot by Season

Radium-226+228, MW-26 (pci/l)



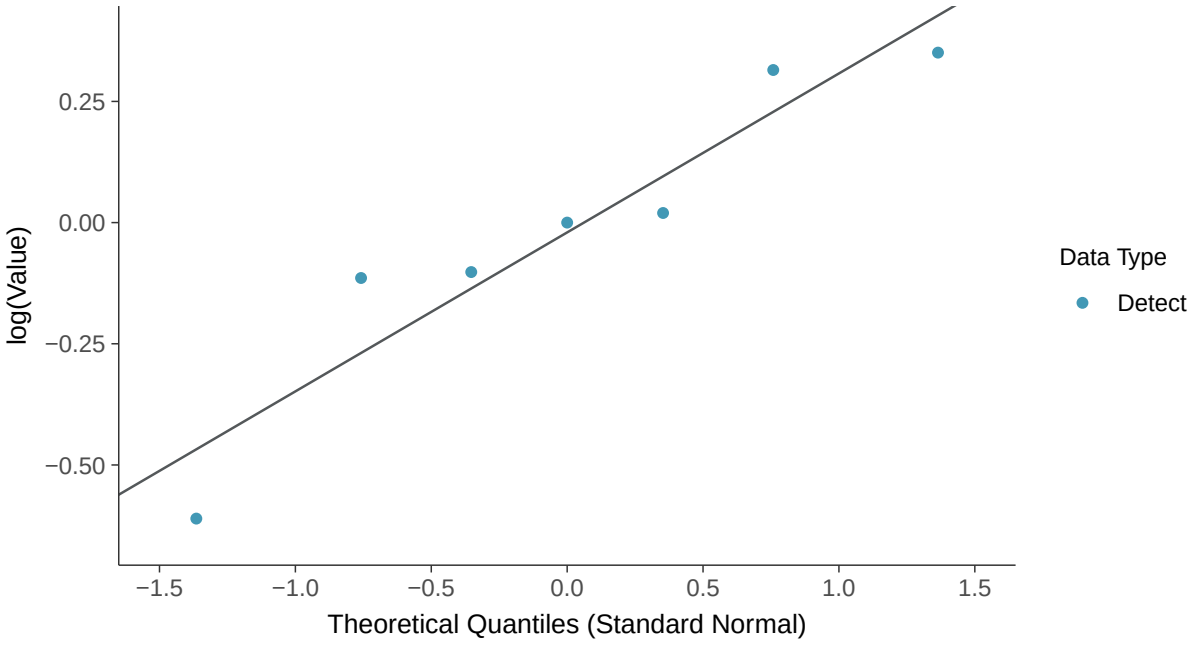
Normal Q-Q plot

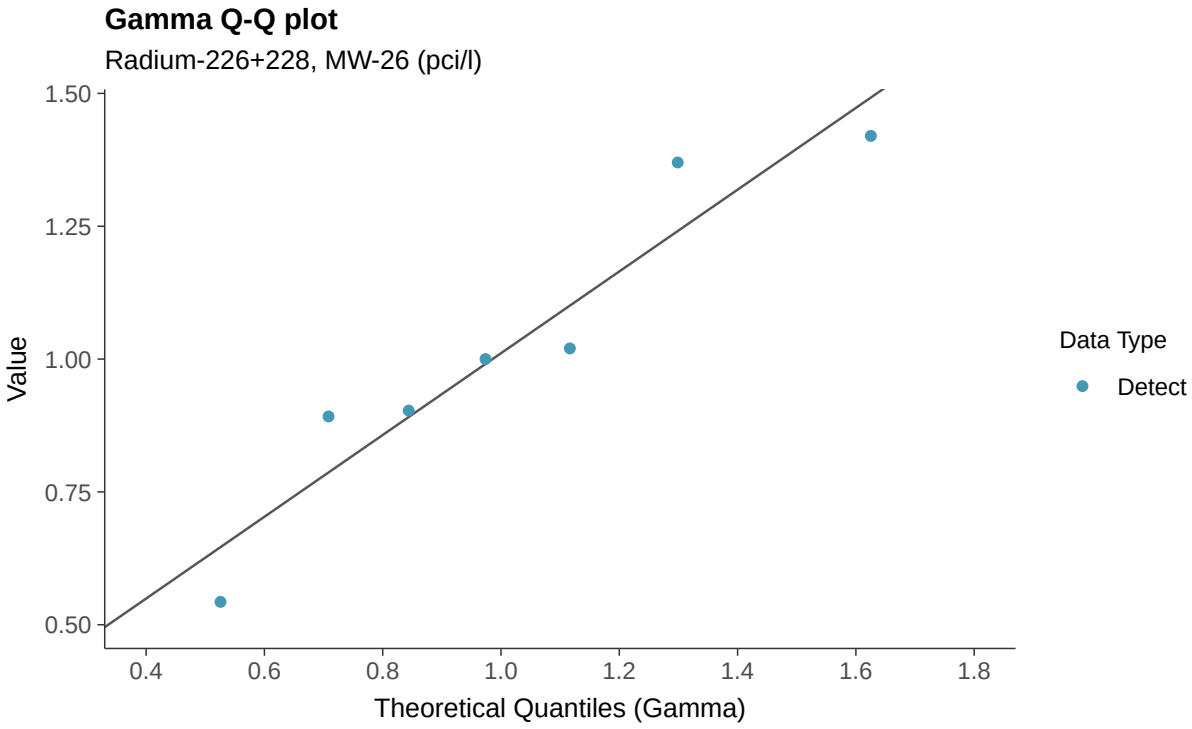
Radium-226+228, MW-26 (pci/l)



Lognormal Q-Q plot

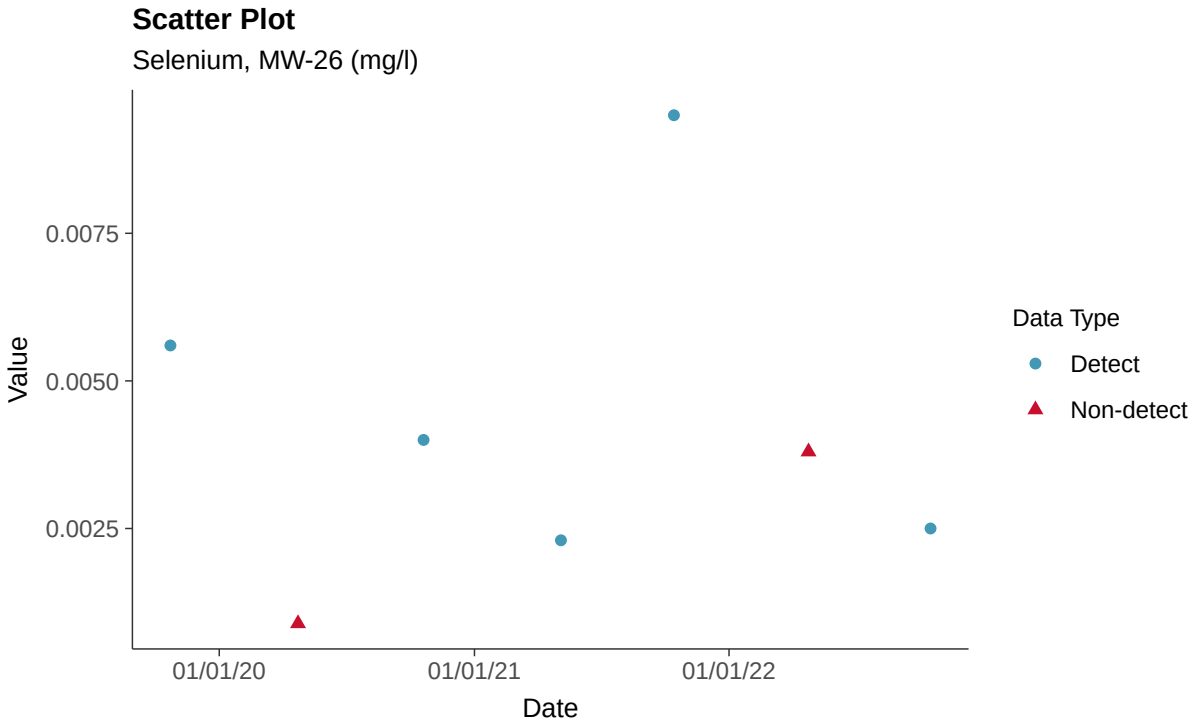
Radium-226+228, MW-26 (pci/l)

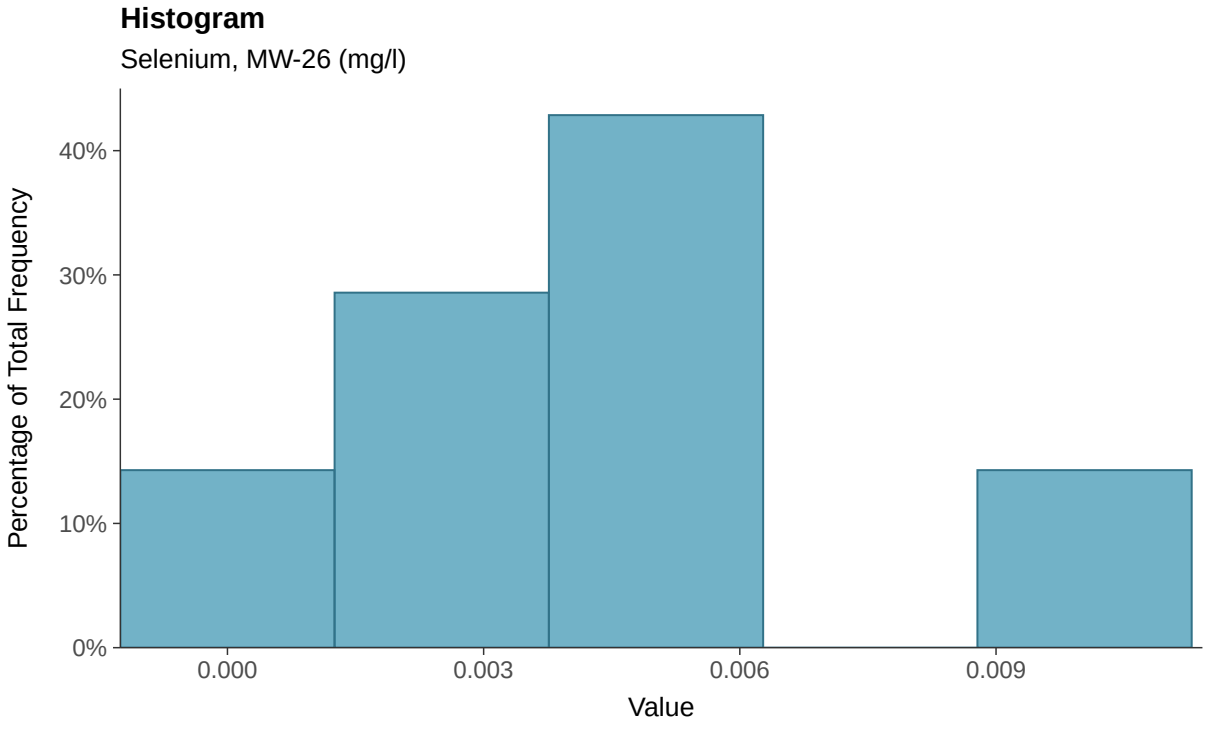



Gamma Q-Q plot
Radium-226+228, MW-26 (pci/l)
Value
1.50
1.25
1.00
0.75
0.50
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Selenium, MW-26

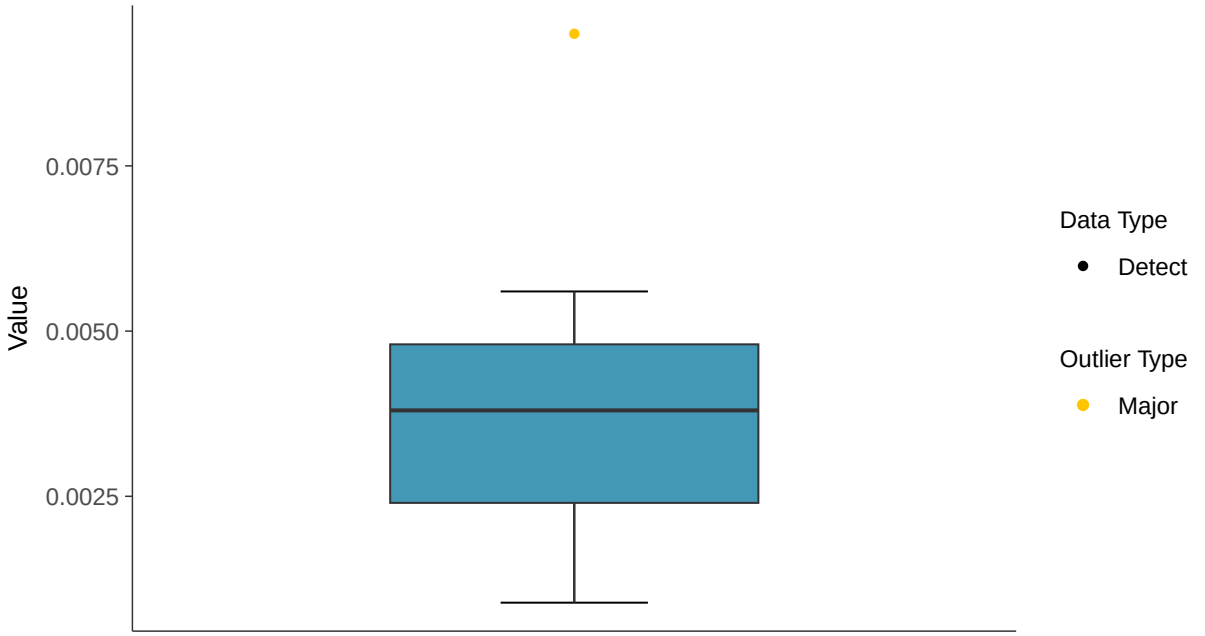
ID: 18_2_129





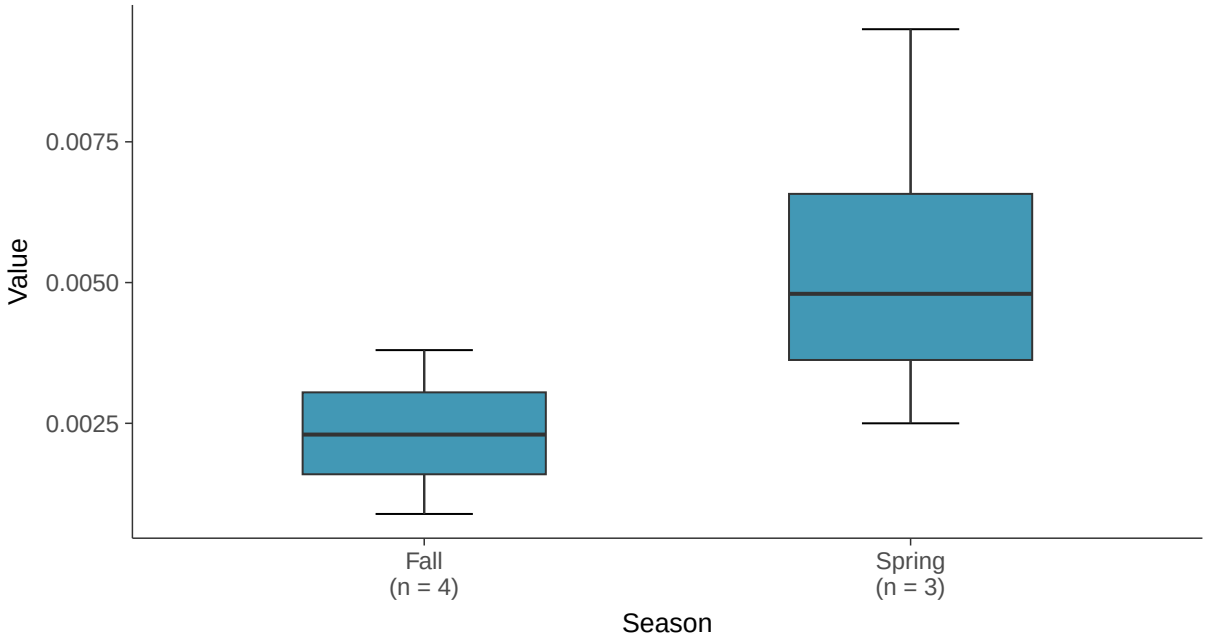
Boxplot

Selenium, MW-26 (mg/l)



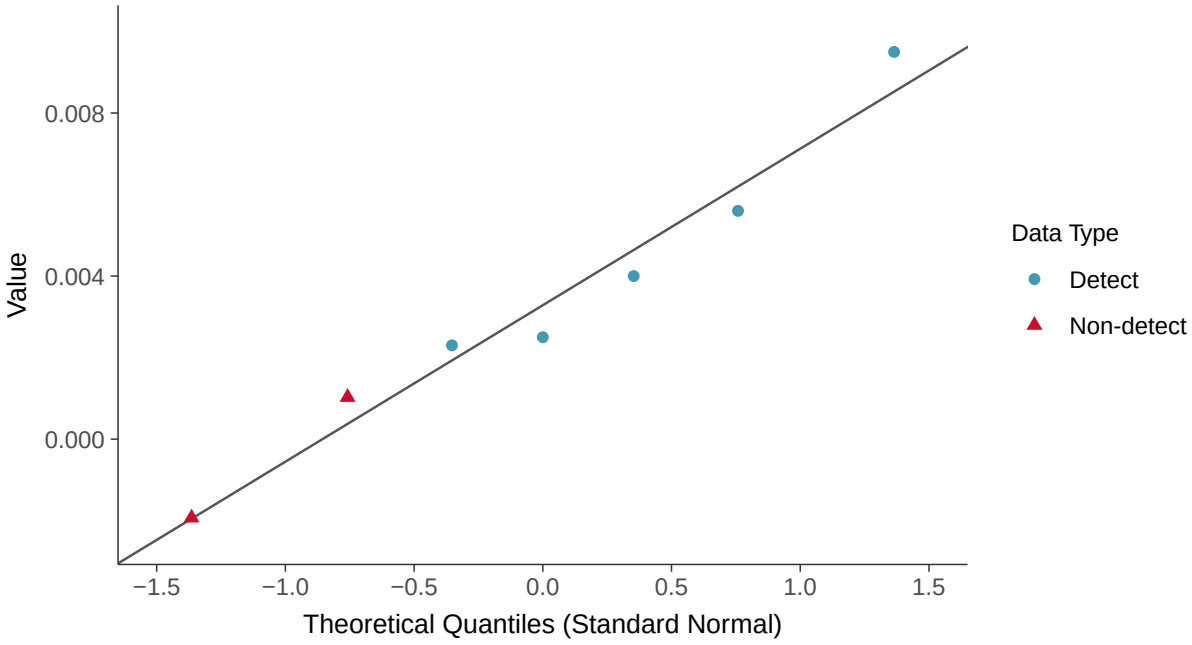
Boxplot by Season

Selenium, MW-26 (mg/l)



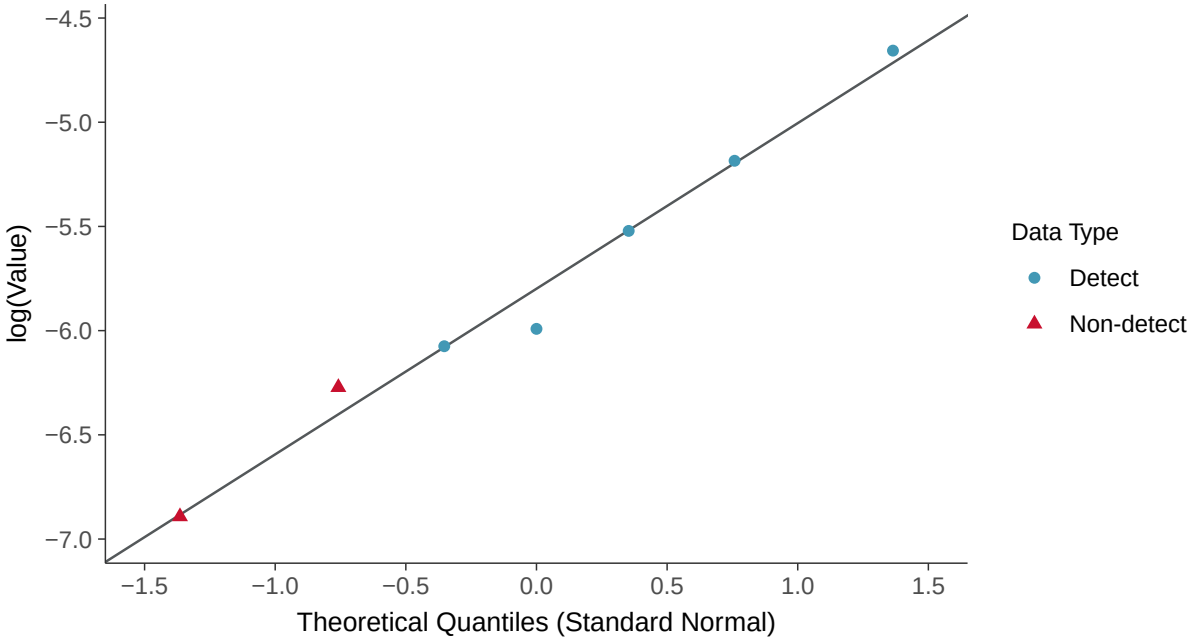
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-26 (mg/l)



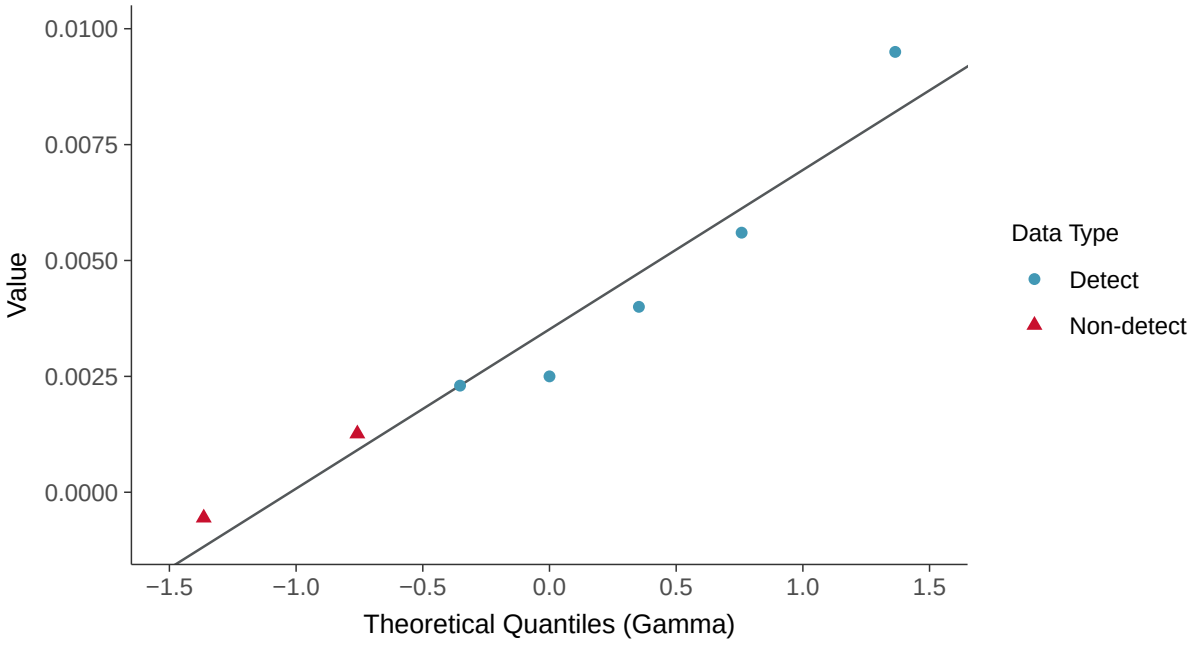
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-26 (mg/l)



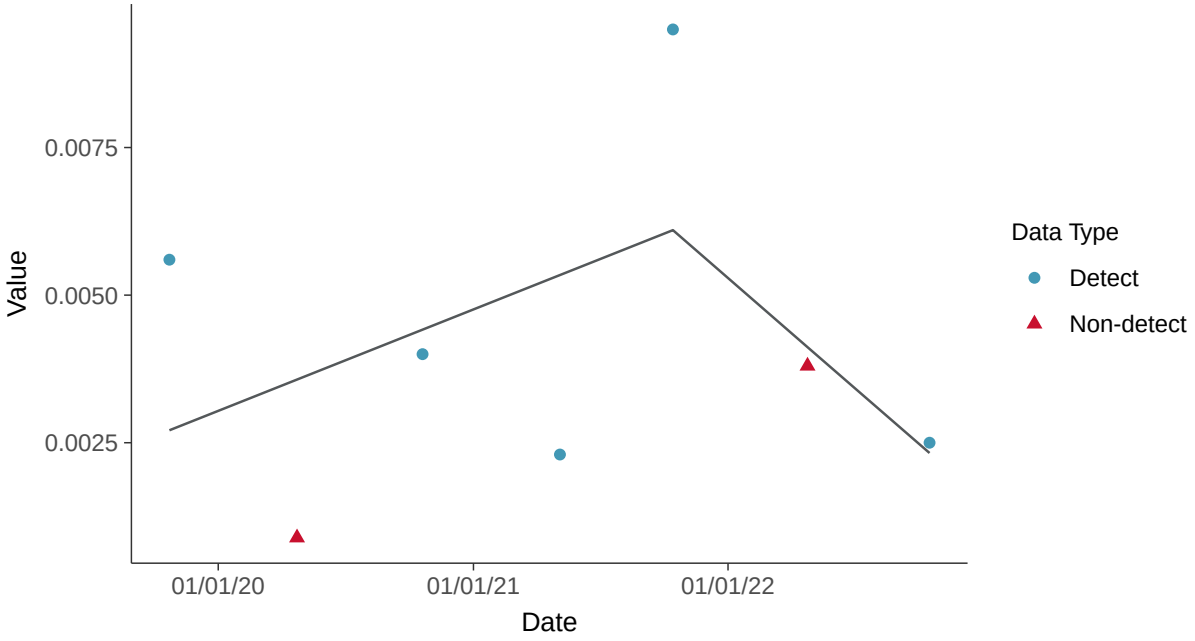
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-26 (mg/l)



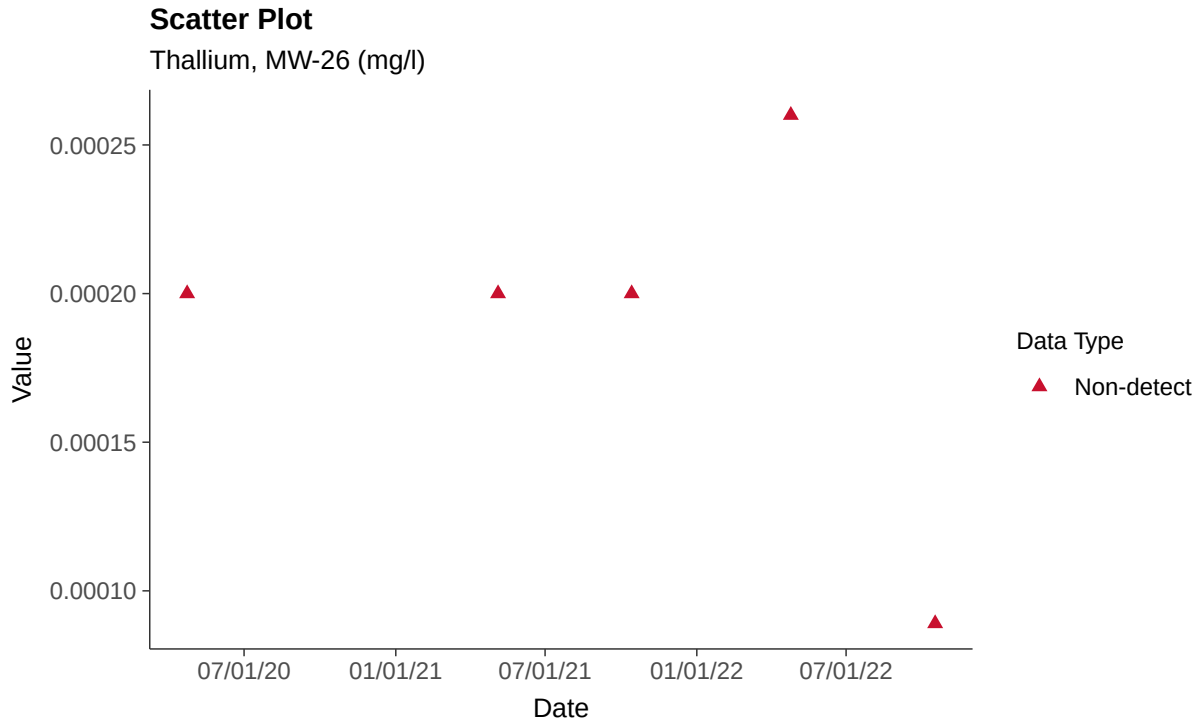
Trend Regression: Piecewise Linear-Linear

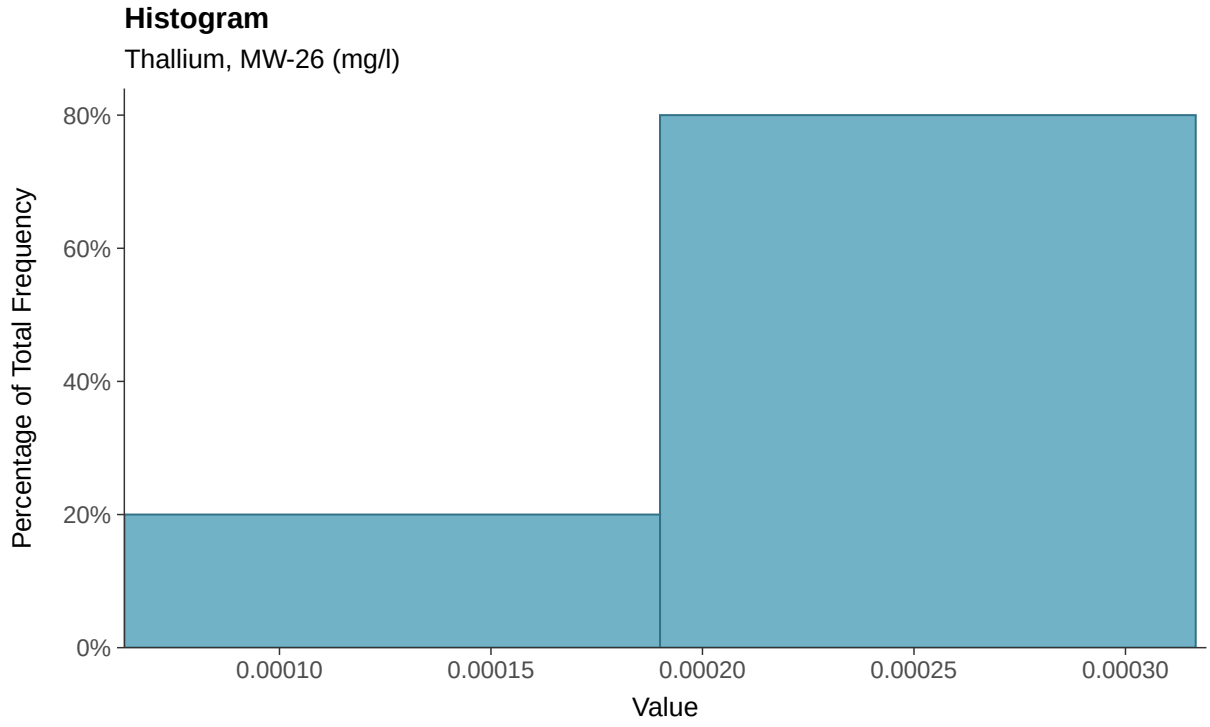
Selenium, MW-26 (mg/l)



Appendix IV: Thallium, MW-26

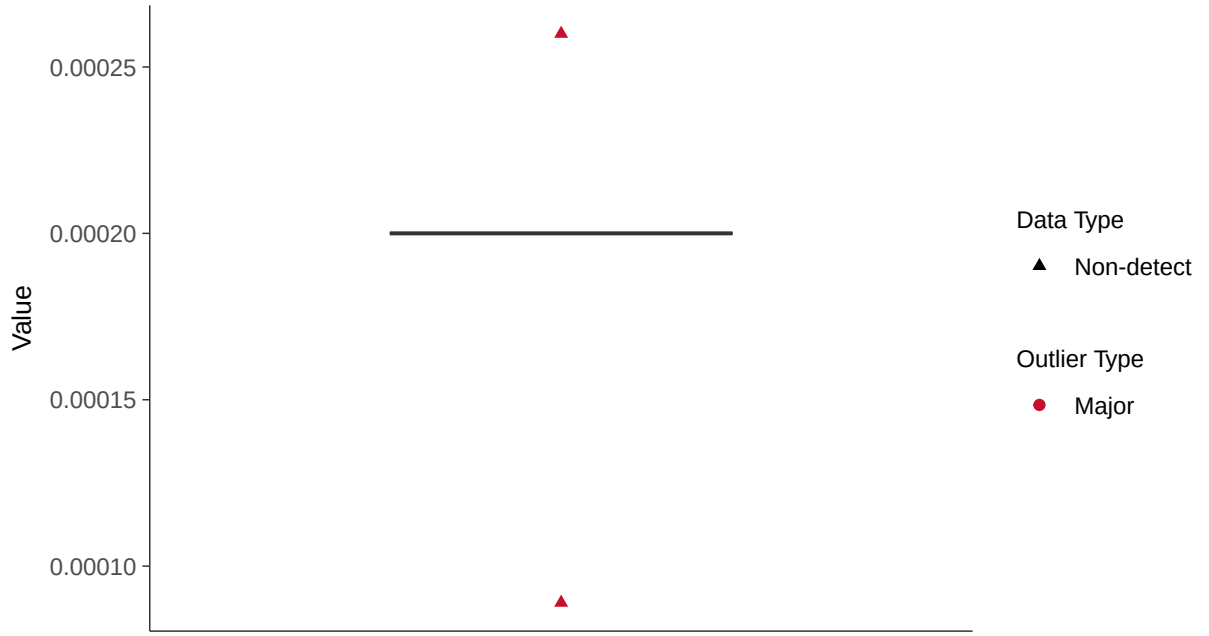
ID: 18_2_134





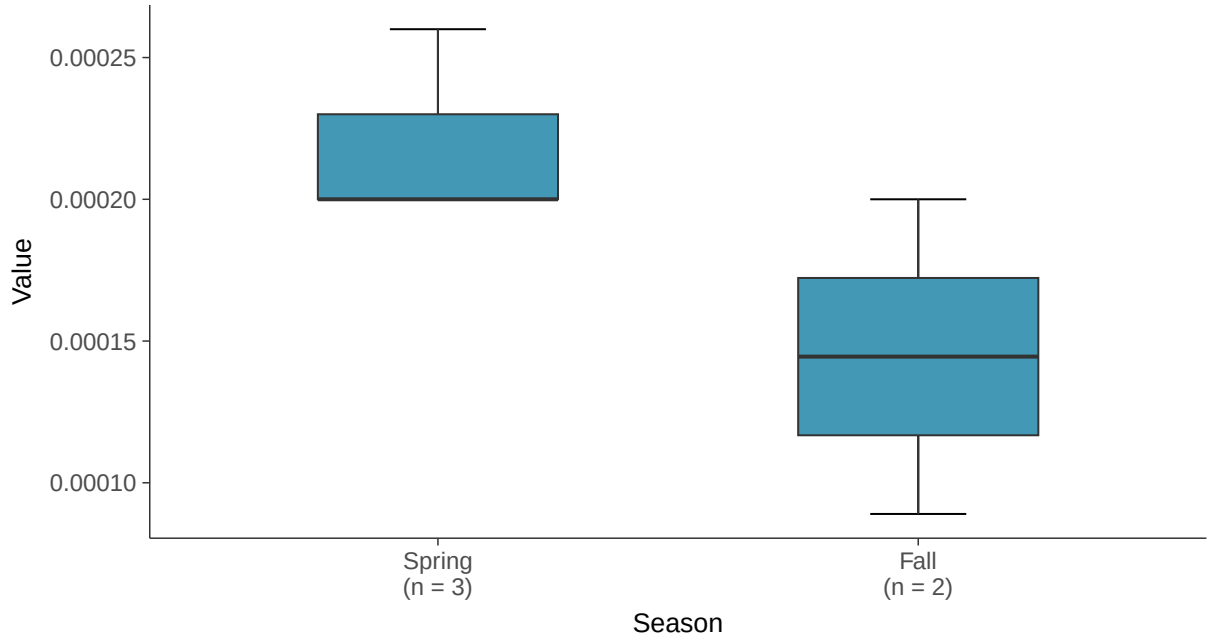
Boxplot

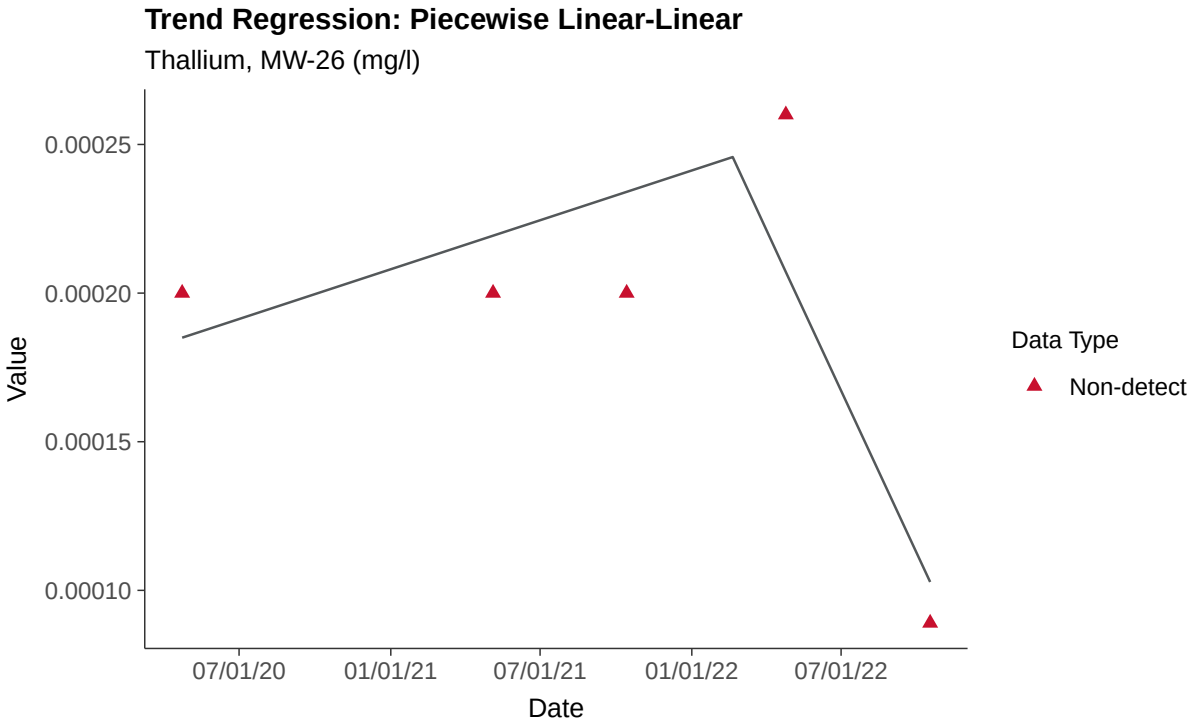
Thallium, MW-26 (mg/l)



Boxplot by Season

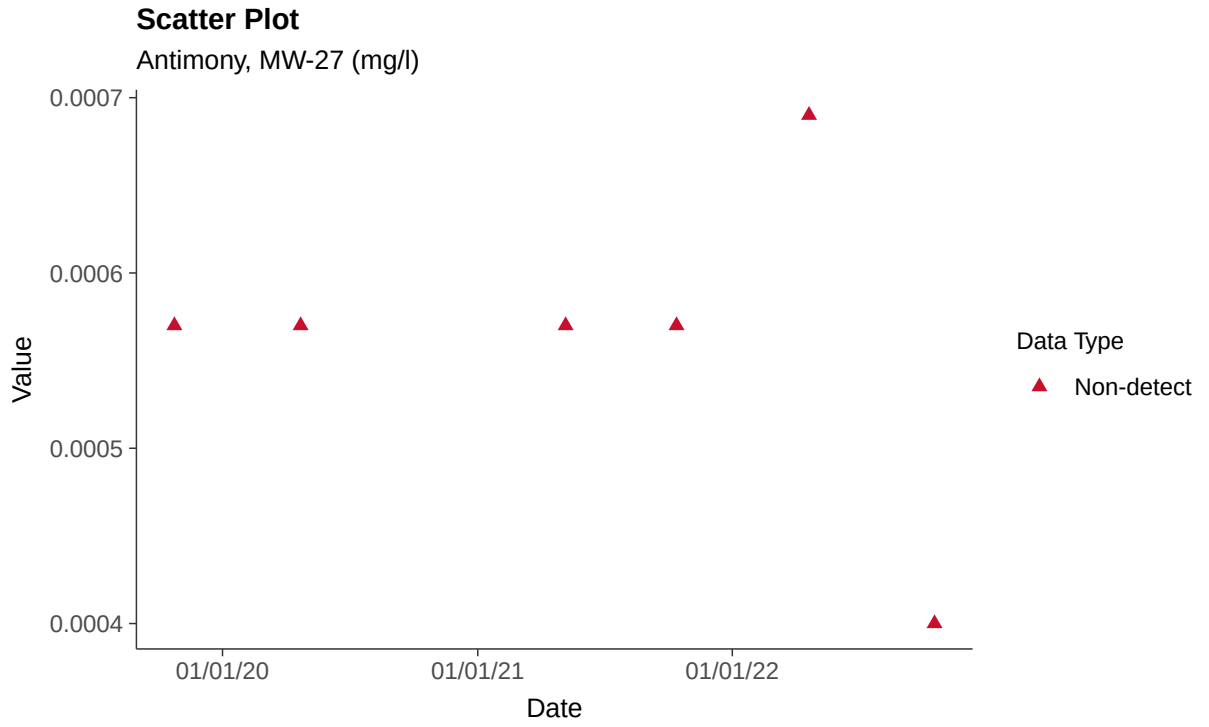
Thallium, MW-26 (mg/l)

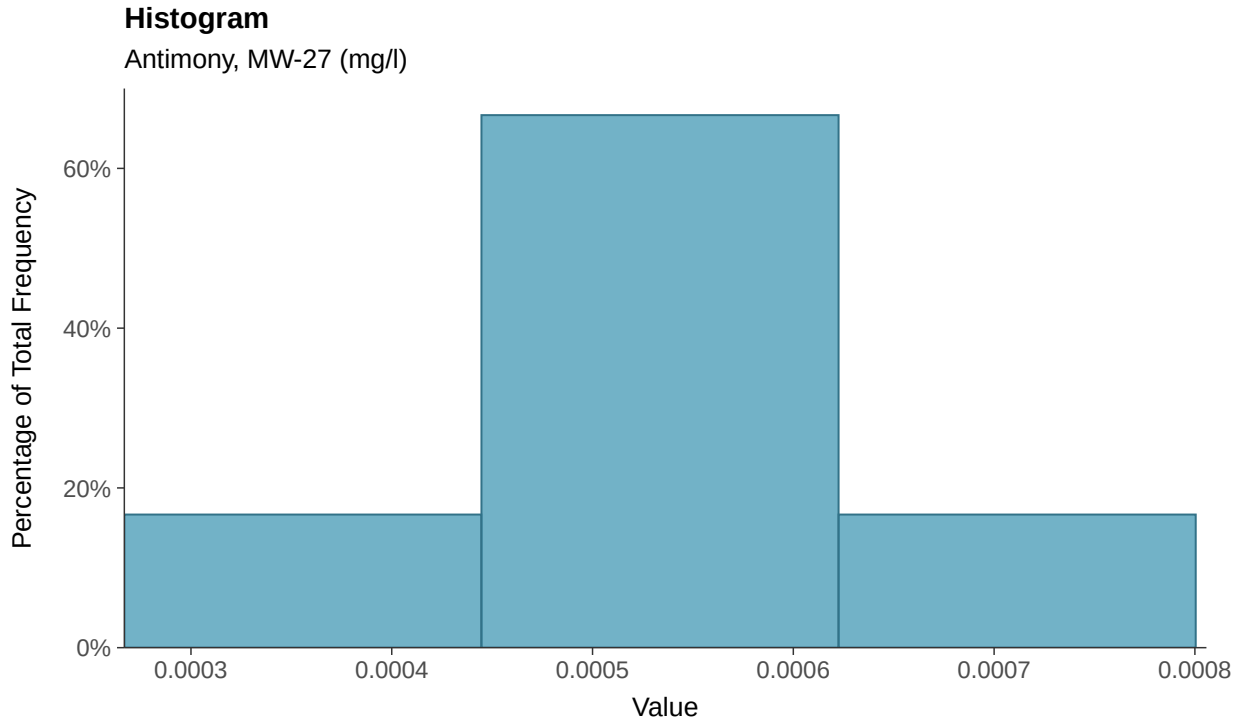



Trend Regression: Piecewise Linear-Linear
Thallium, MW-26 (mg/l)
0.00025
0.00020
0.00015
0.00010
Value
07/01/20
01/01/21
07/01/21
01/01/22
07/01/22
Date
Data Type
Non-detect

Appendix IV: Antimony, MW-27

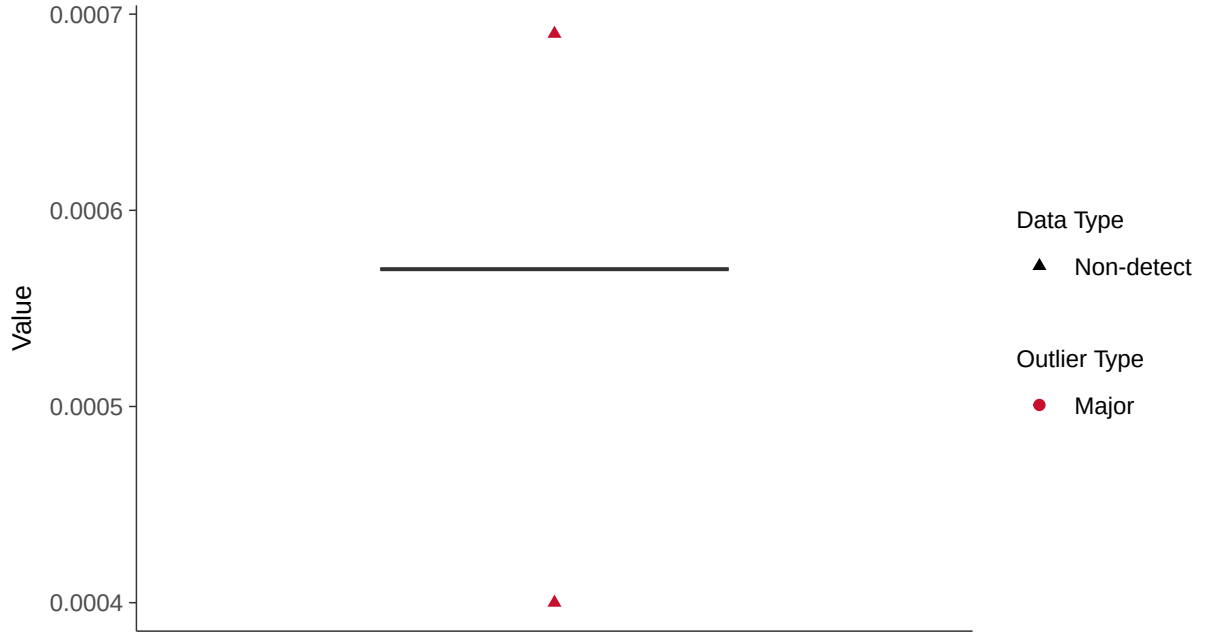
ID: 19_2_104





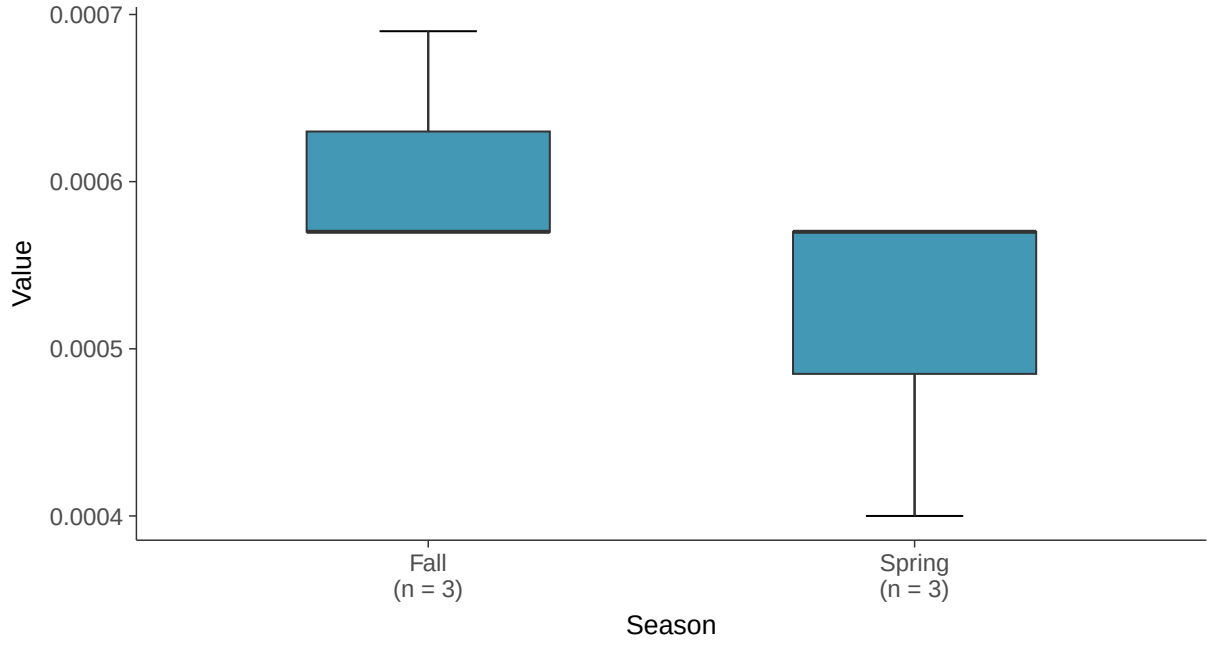
Boxplot

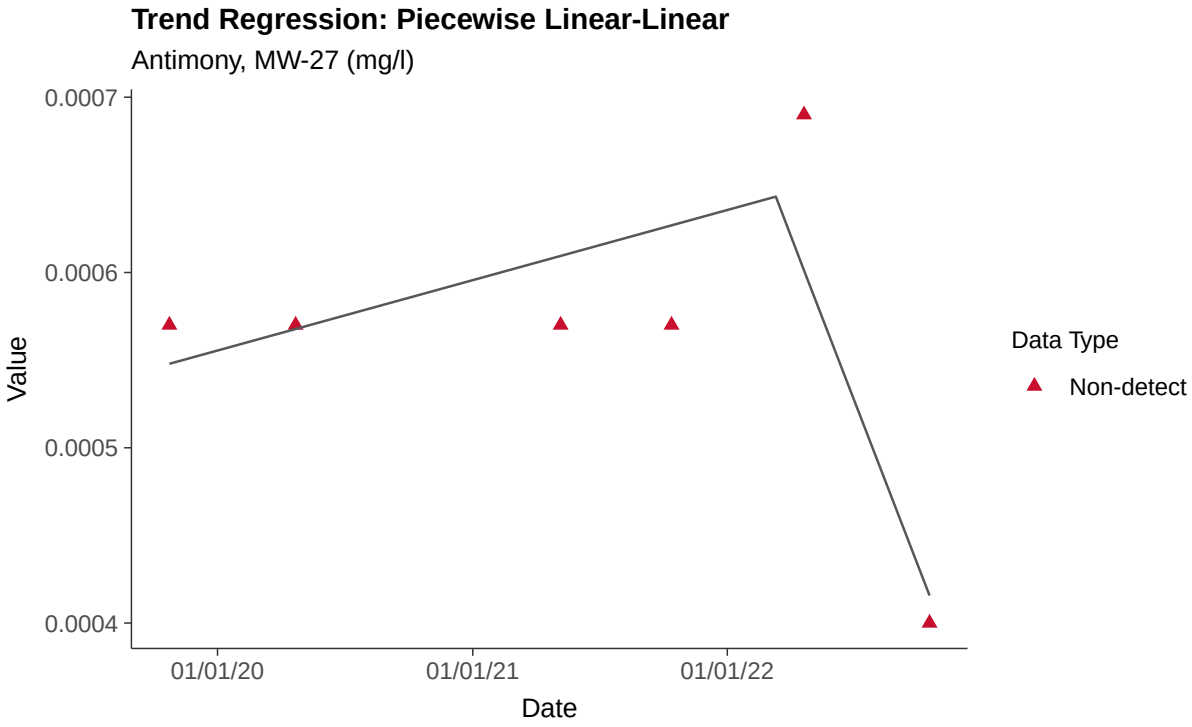
Antimony, MW-27 (mg/l)



Boxplot by Season

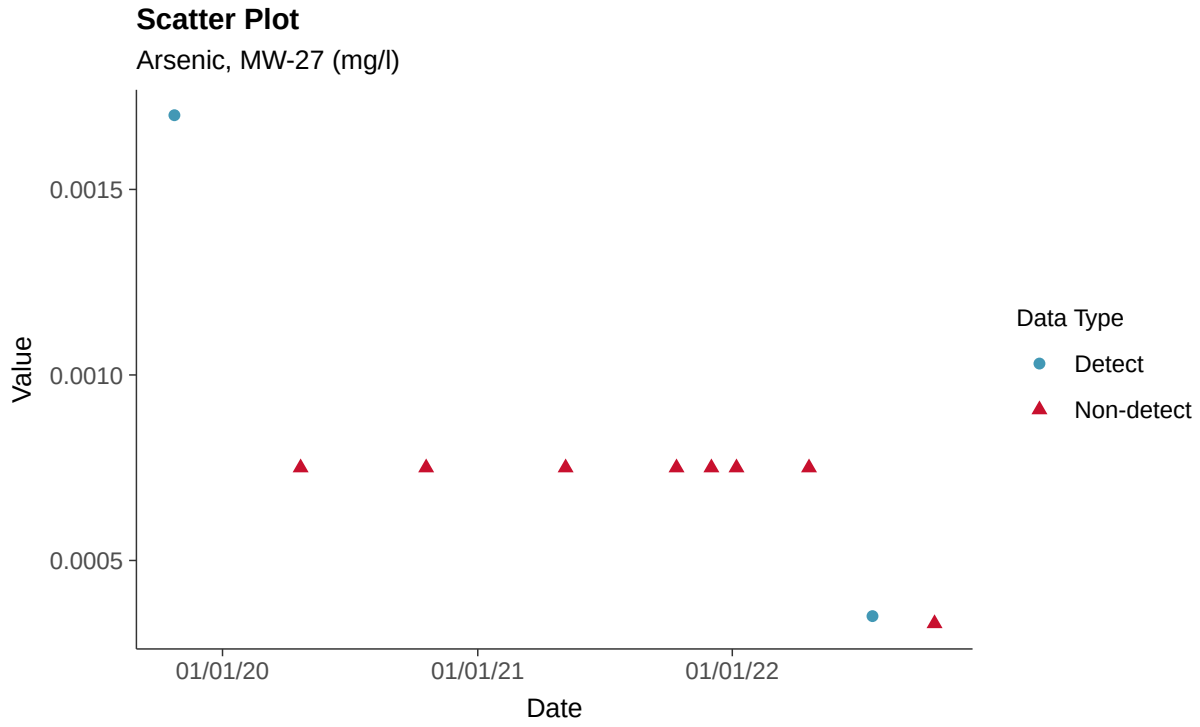
Antimony, MW-27 (mg/l)

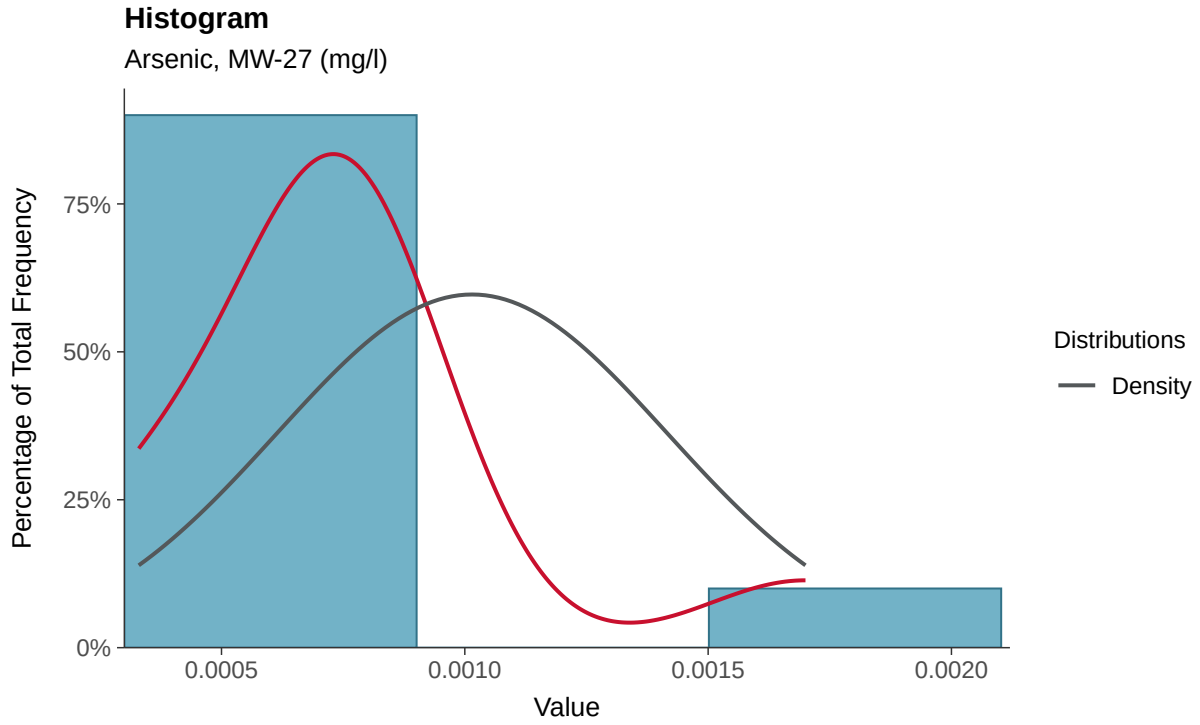



Trend Regression: Piecewise Linear-Linear
Antimony, MW-27 (mg/l)
0.0007
0.0006
0.0005
0.0004
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Arsenic, MW-27

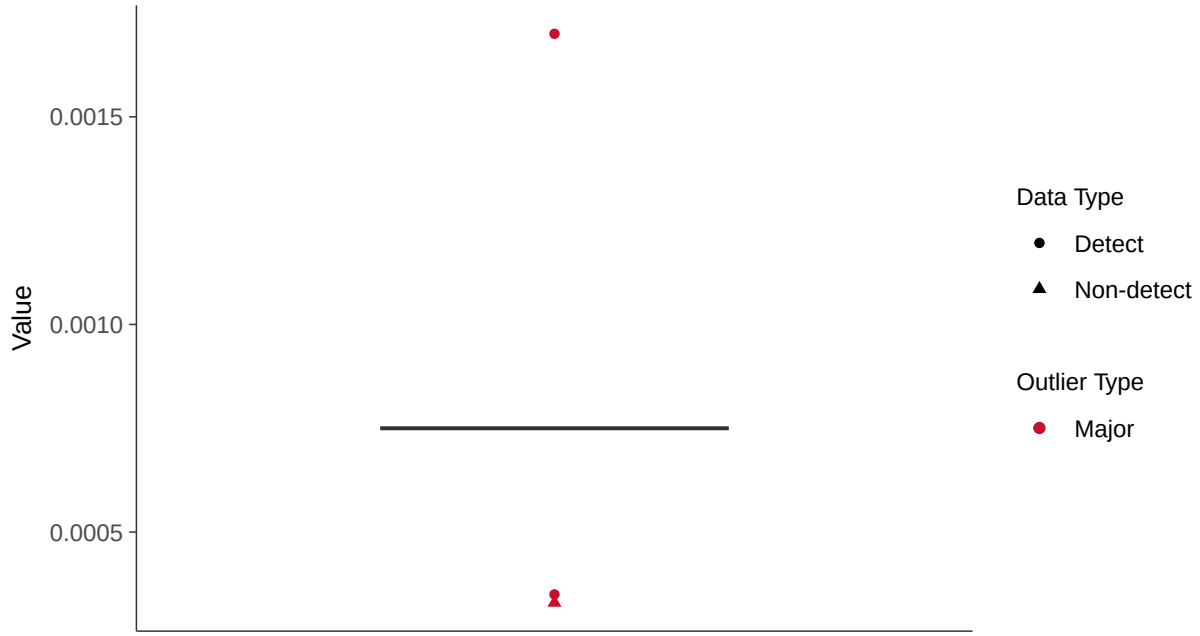
ID: 19_2_105





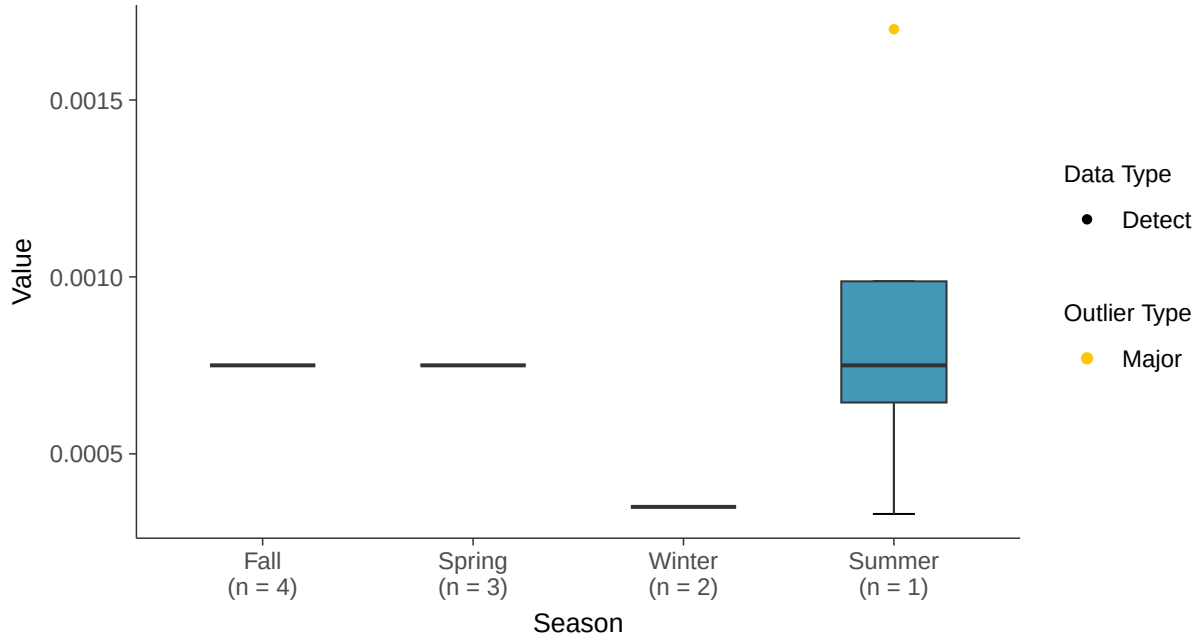
Boxplot

Arsenic, MW-27 (mg/l)



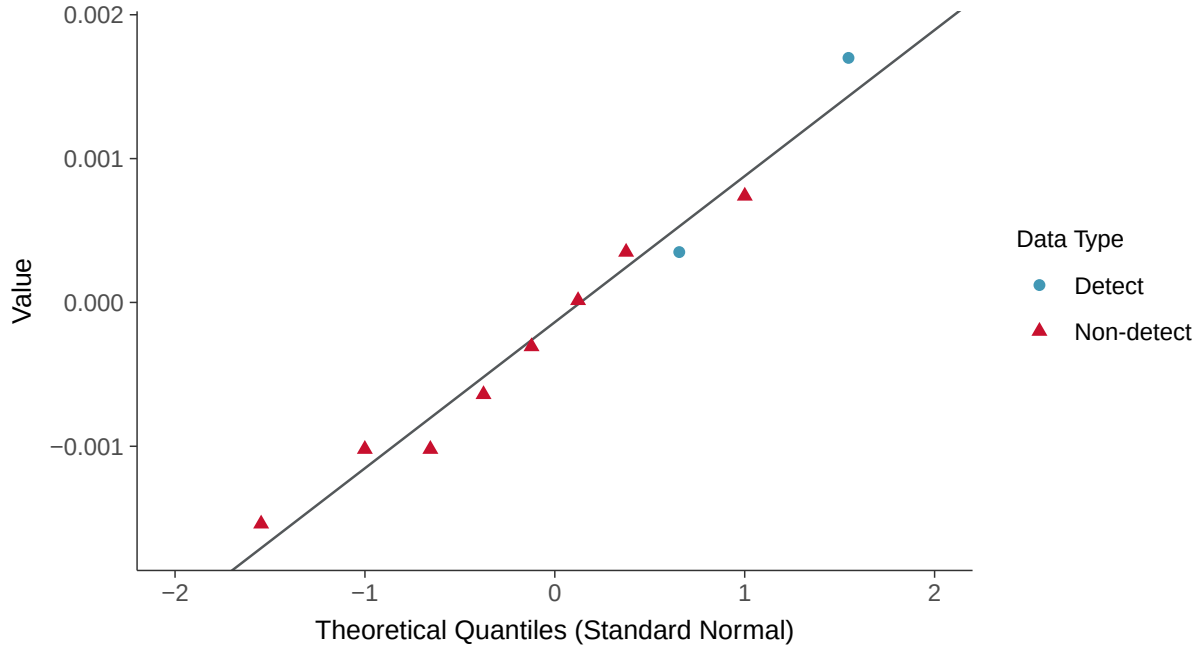
Boxplot by Season

Arsenic, MW-27 (mg/l)



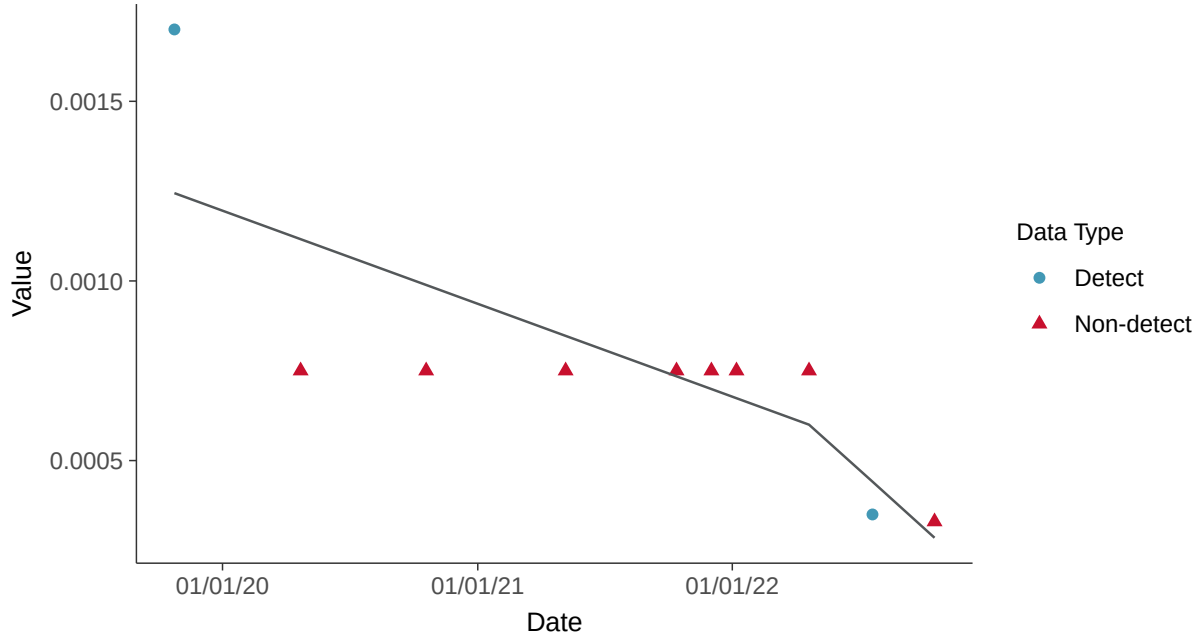
Normal Q-Q plot using ROS Imputed Estimates

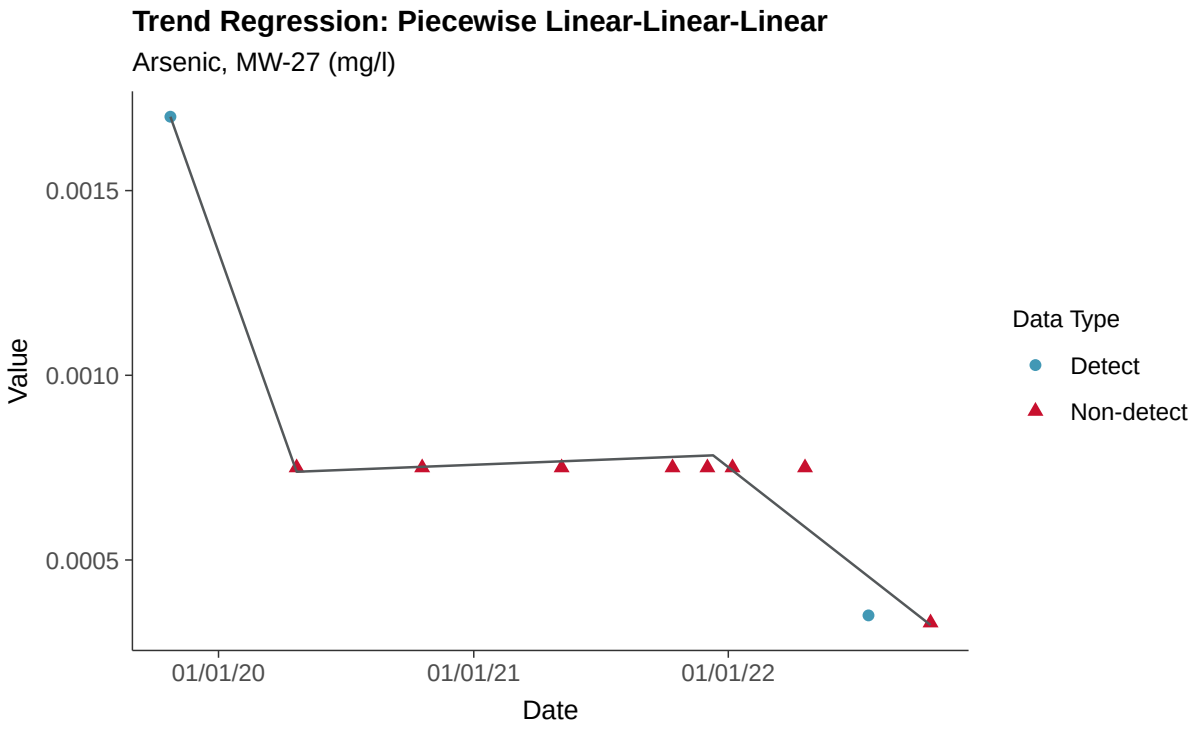
Arsenic, MW-27 (mg/l)



Trend Regression: Piecewise Linear-Linear

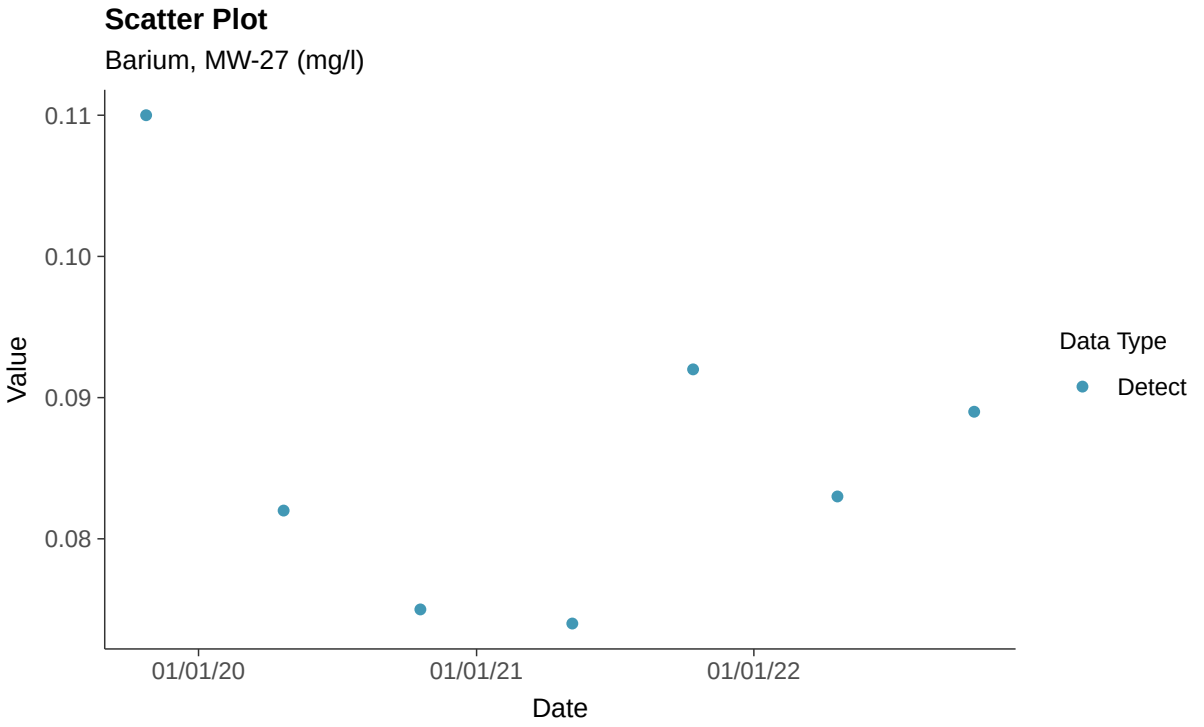
Arsenic, MW-27 (mg/l)

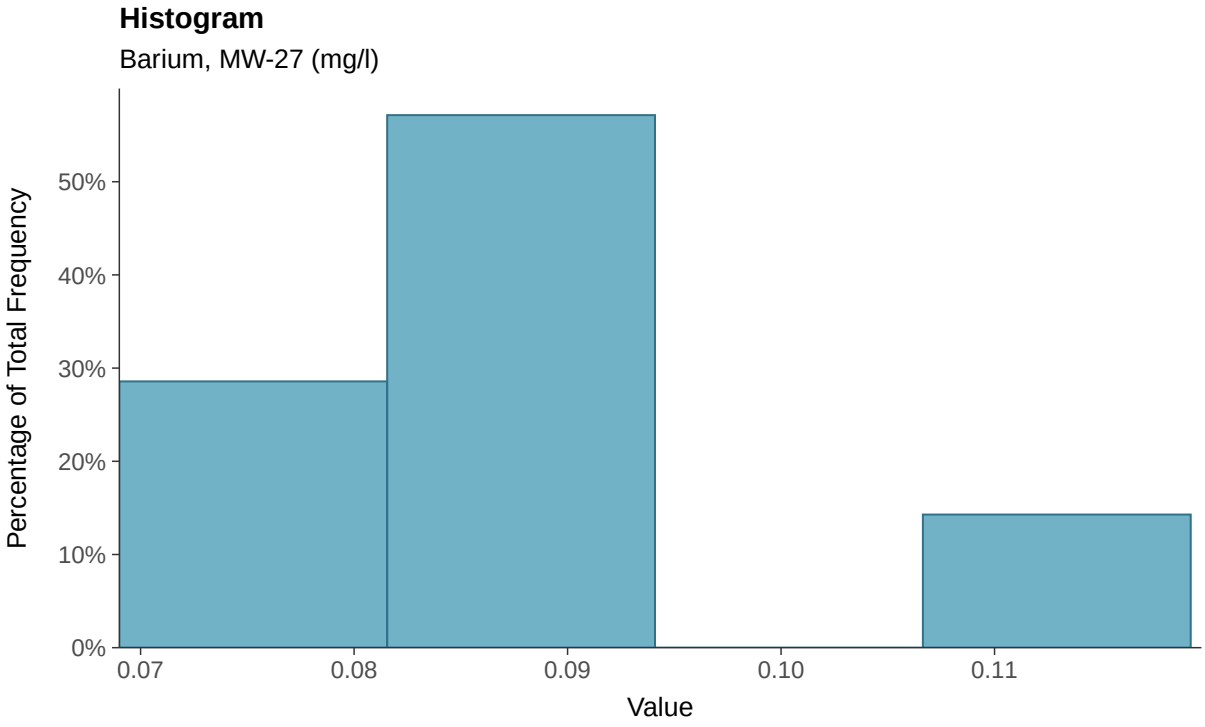



Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-27 (mg/l)
Value
0.0015
0.0010
0.0005
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-27

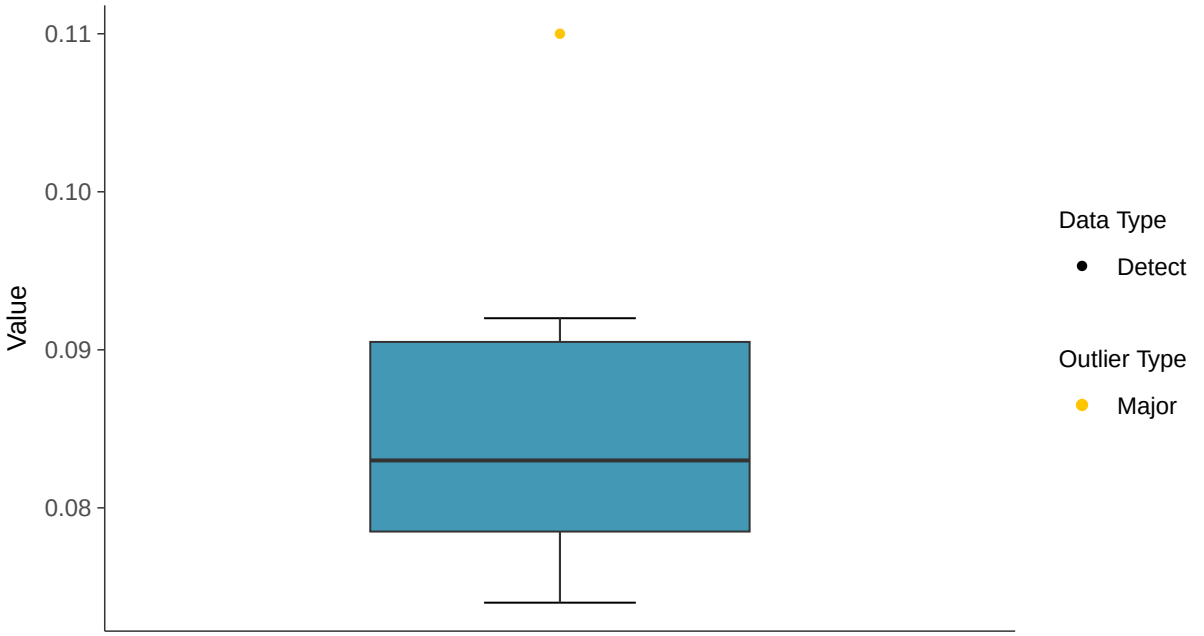
ID: 19_2_106





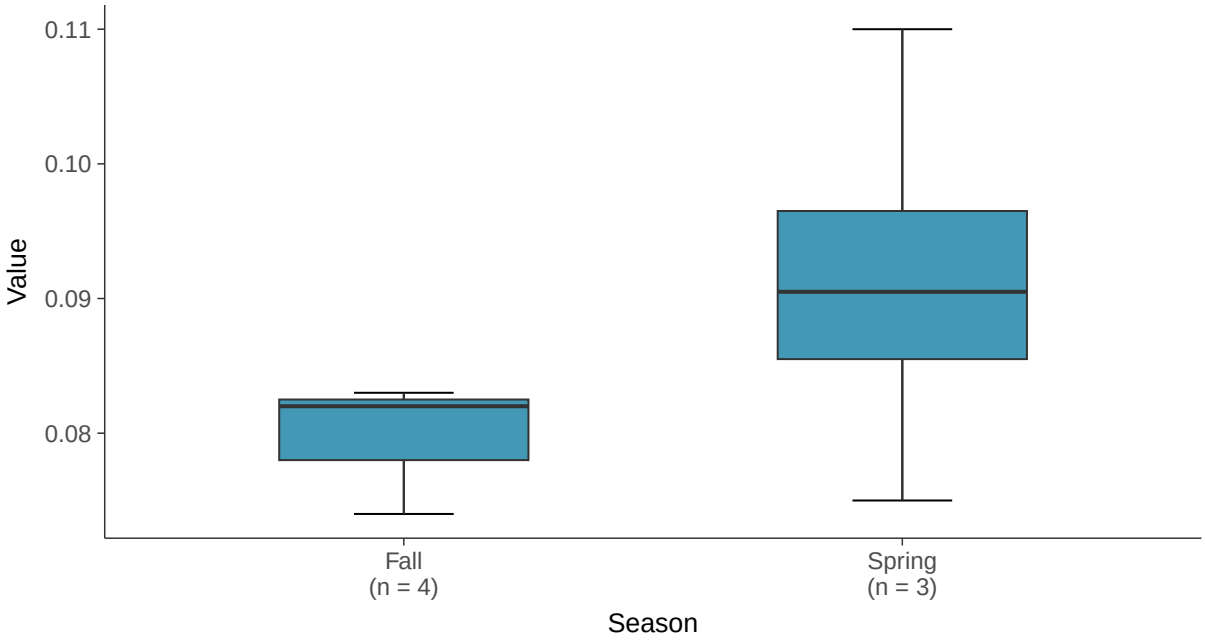
Boxplot

Barium, MW-27 (mg/l)



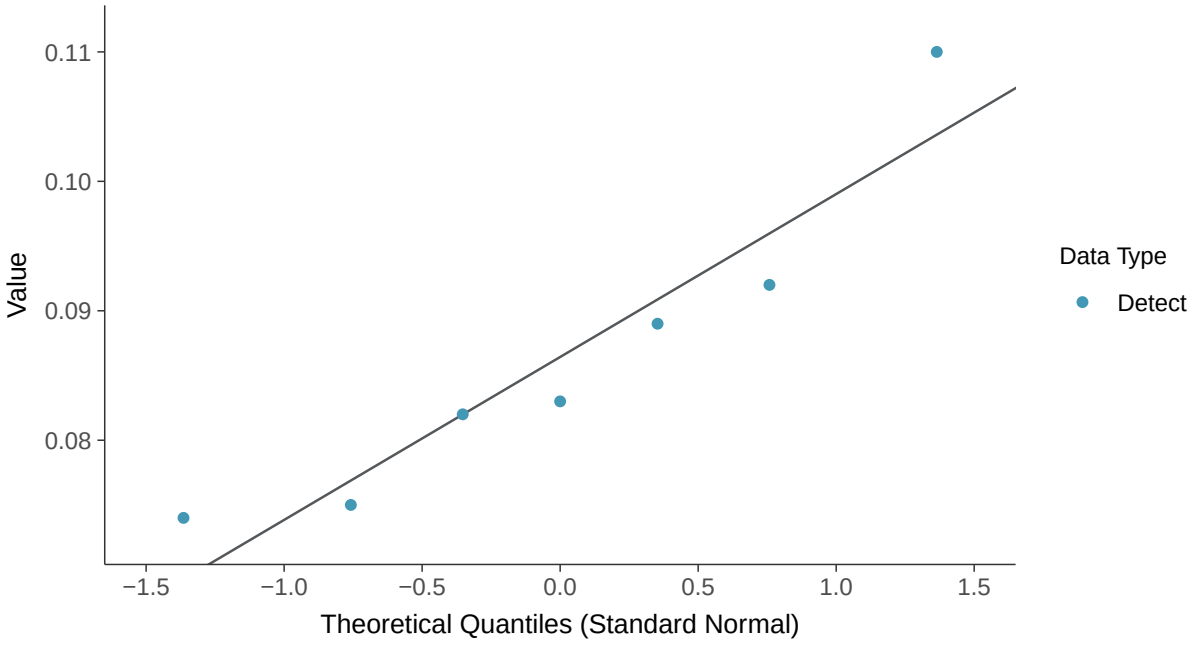
Boxplot by Season

Barium, MW-27 (mg/l)



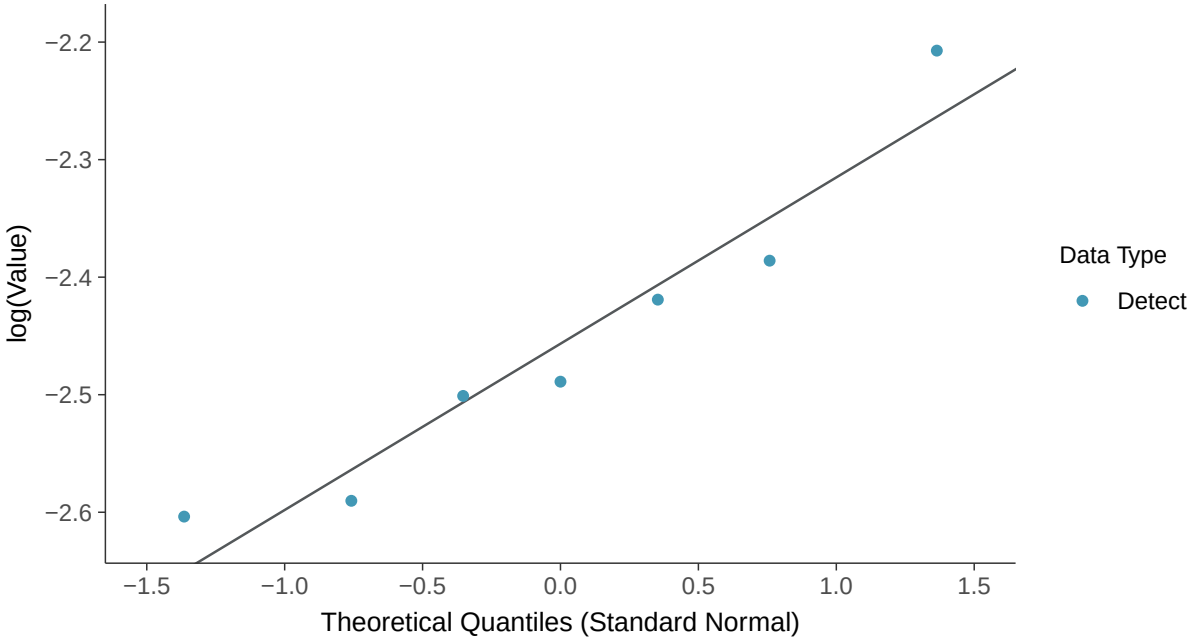
Normal Q-Q plot

Barium, MW-27 (mg/l)



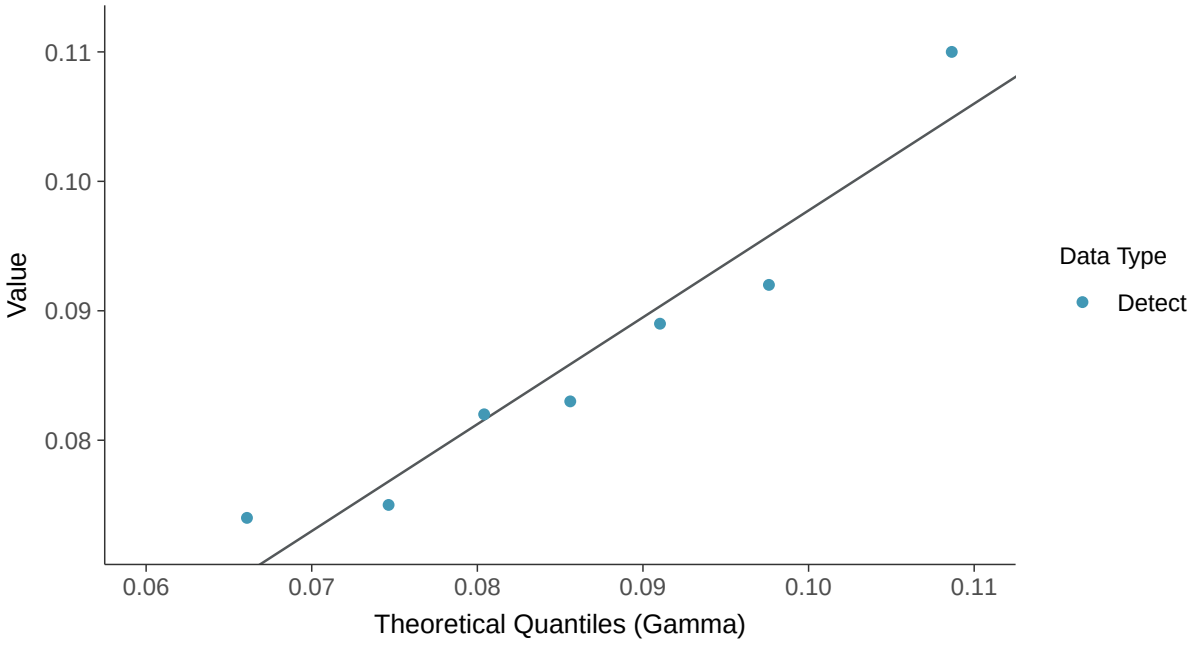
Lognormal Q-Q plot

Barium, MW-27 (mg/l)



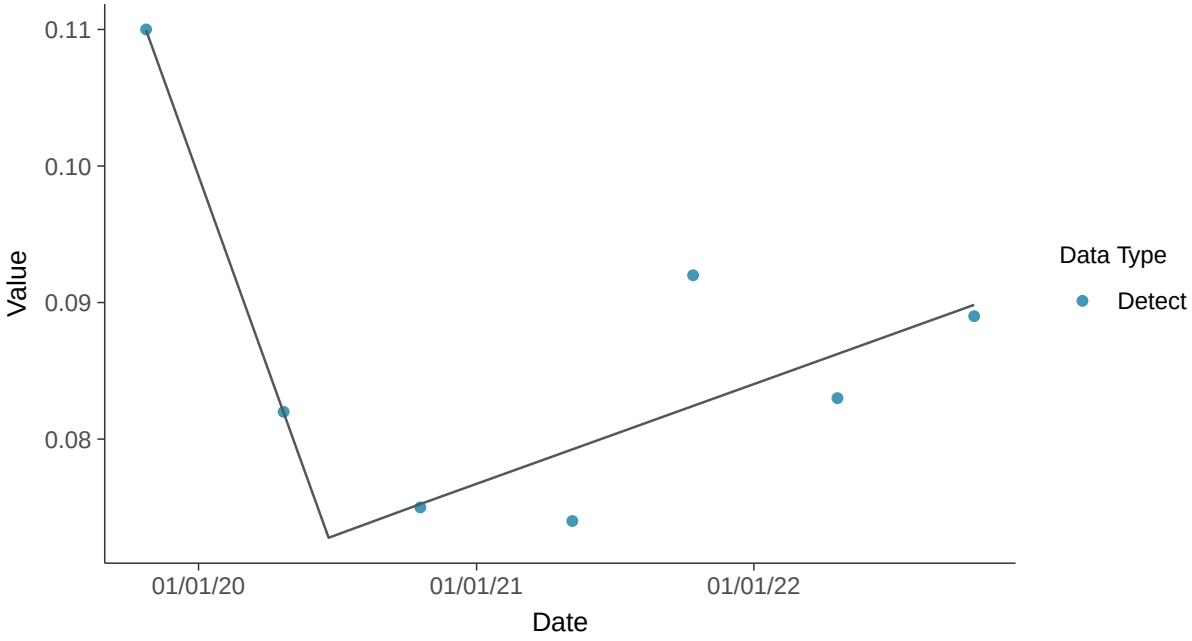
Gamma Q-Q plot

Barium, MW-27 (mg/l)



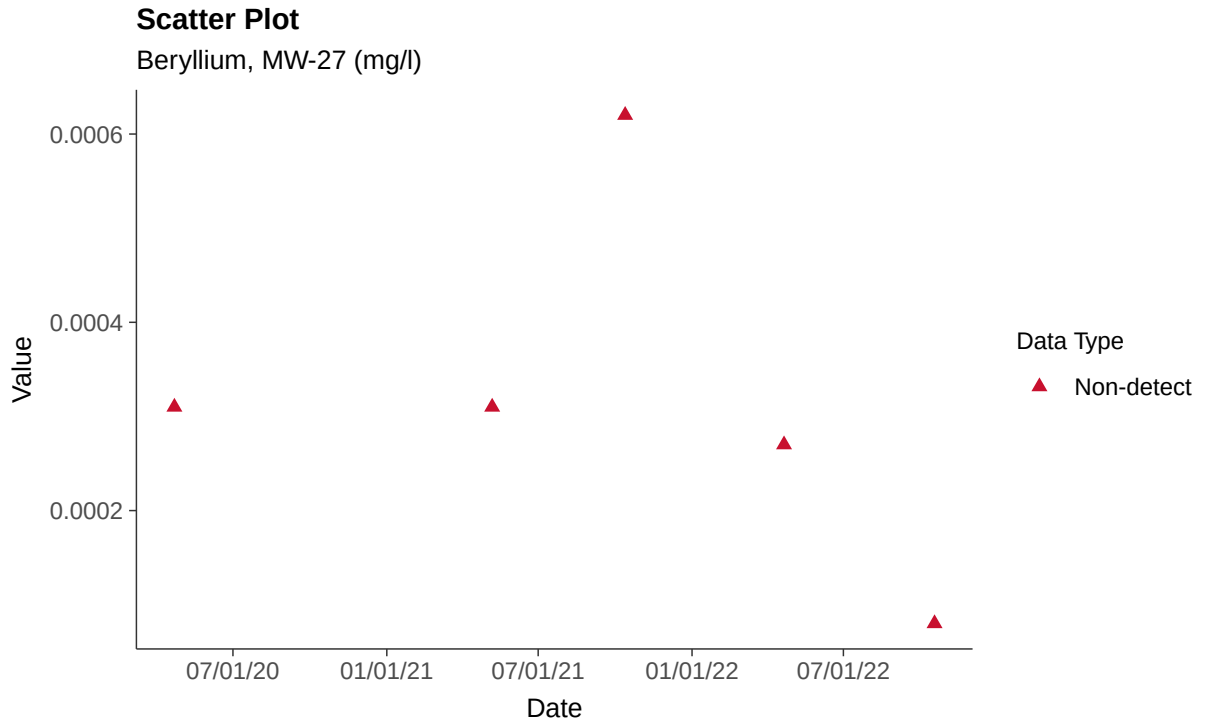
Trend Regression: Piecewise Linear-Linear

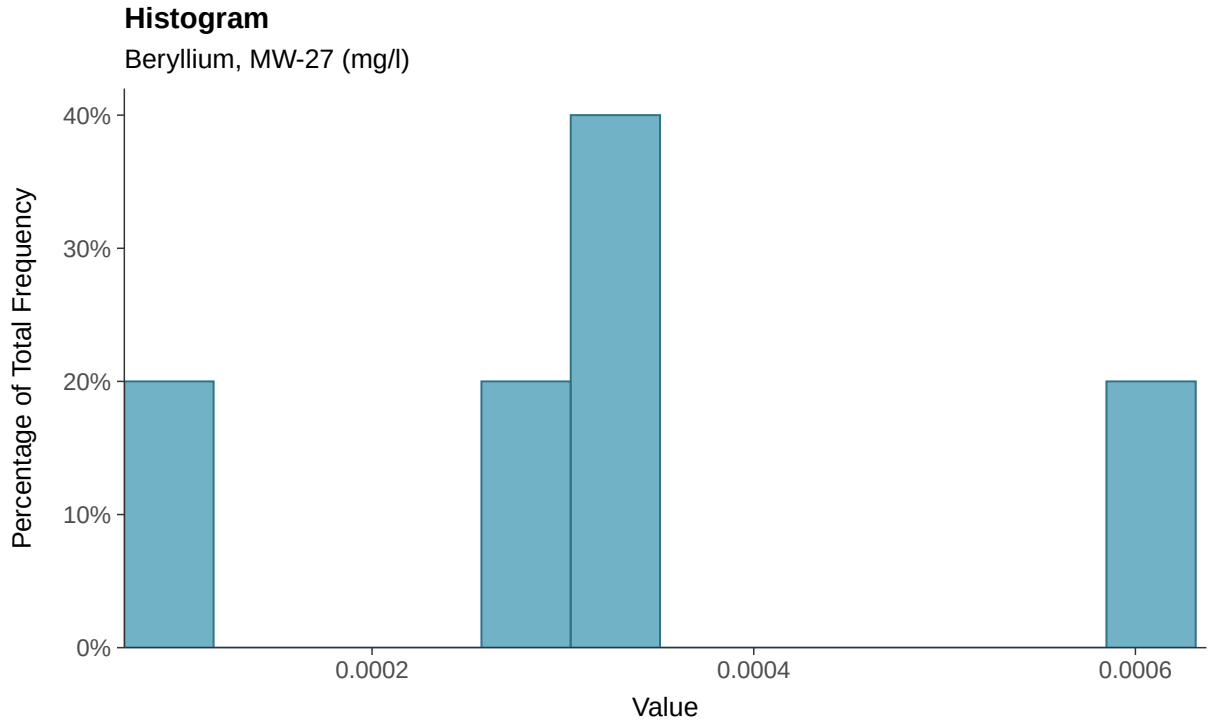
Barium, MW-27 (mg/l)



Appendix IV: Beryllium, MW-27

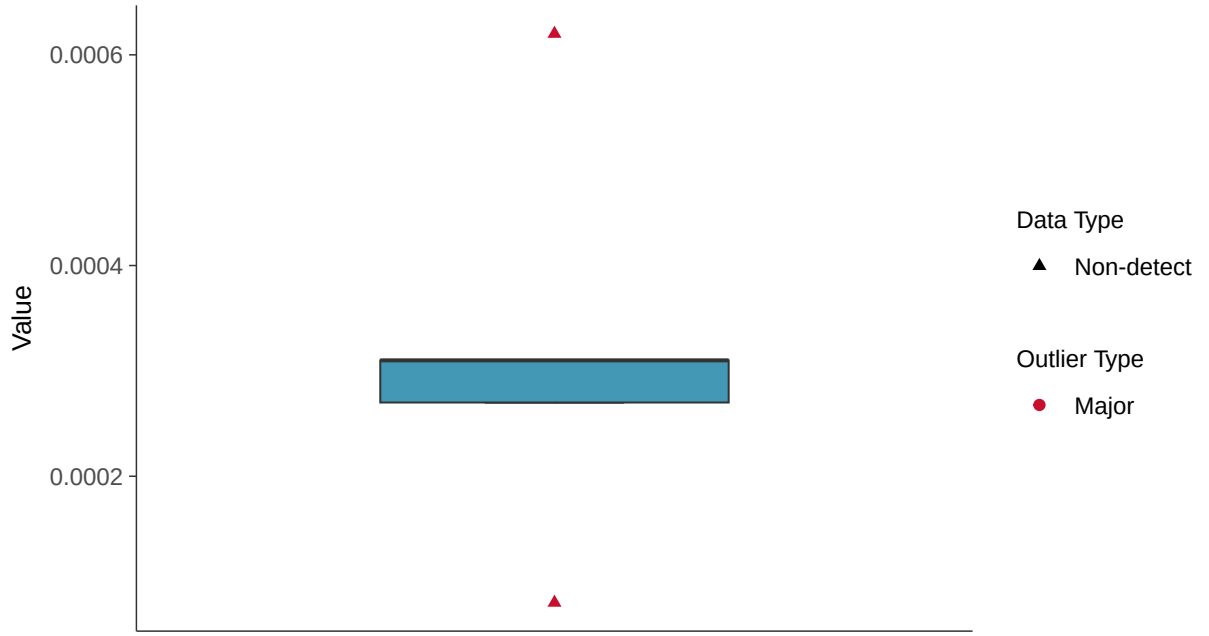
ID: 19_2_107





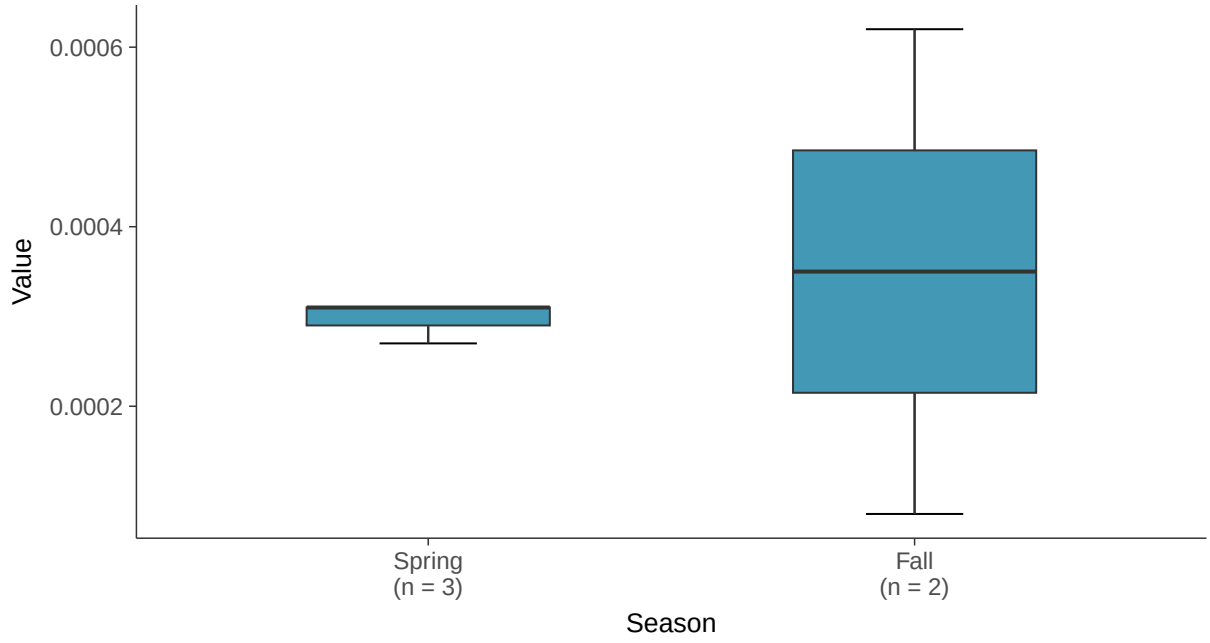
Boxplot

Beryllium, MW-27 (mg/l)



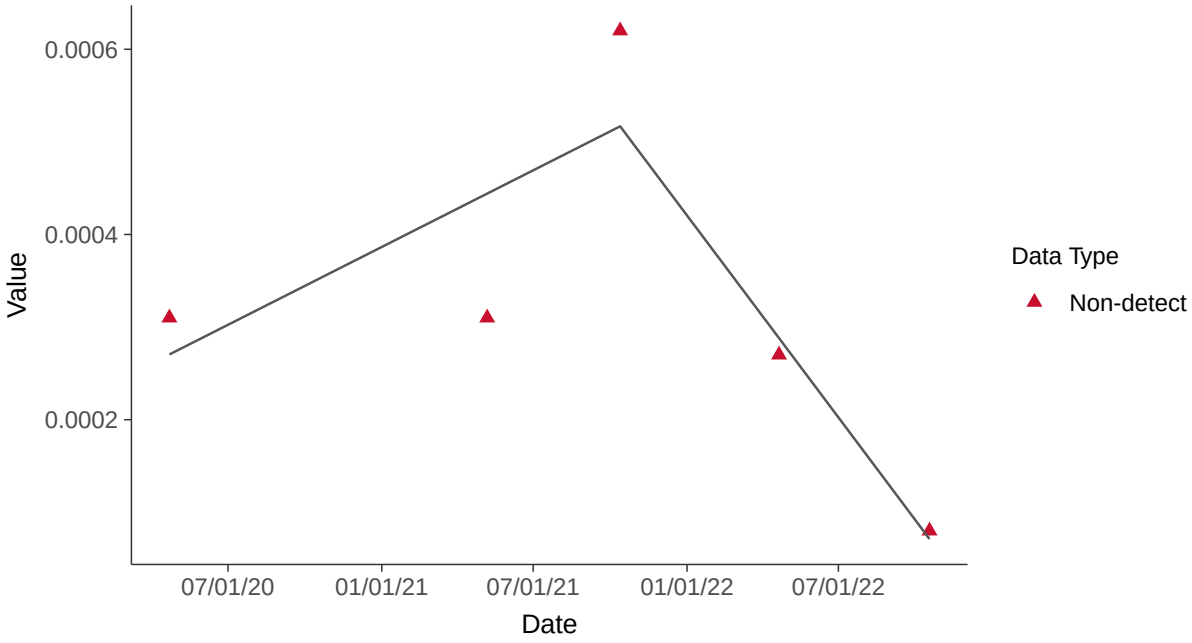
Boxplot by Season

Beryllium, MW-27 (mg/l)



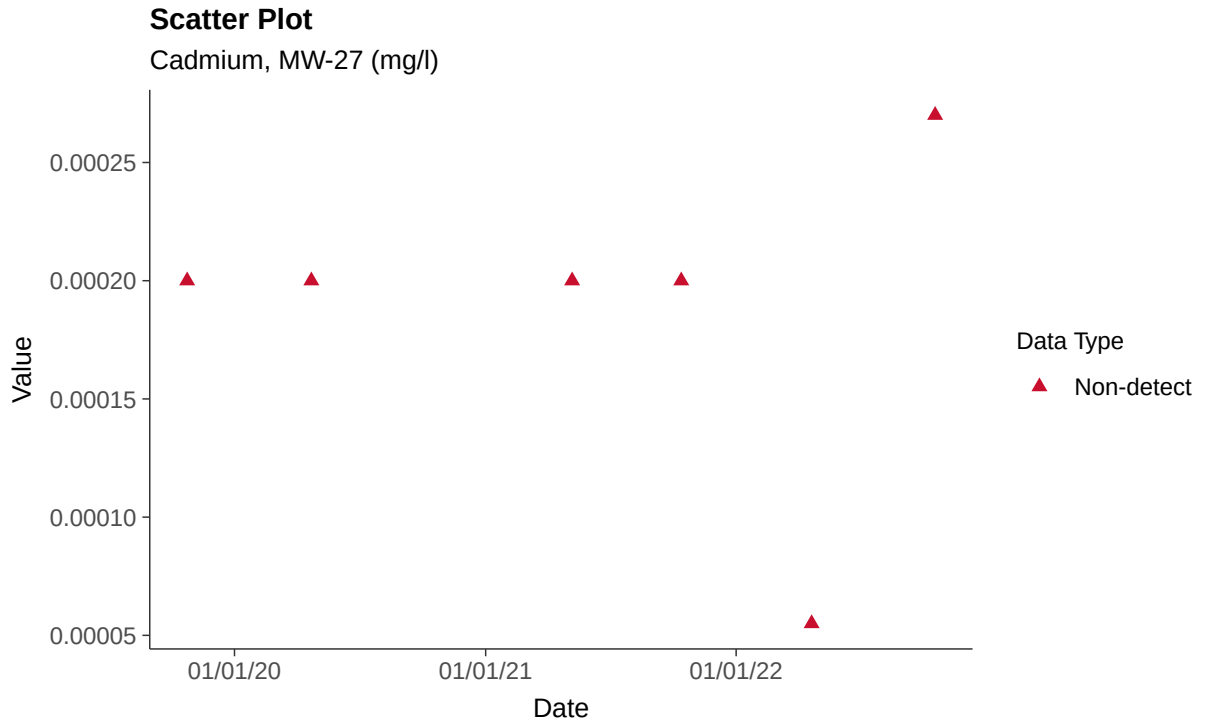
Trend Regression: Piecewise Linear-Linear

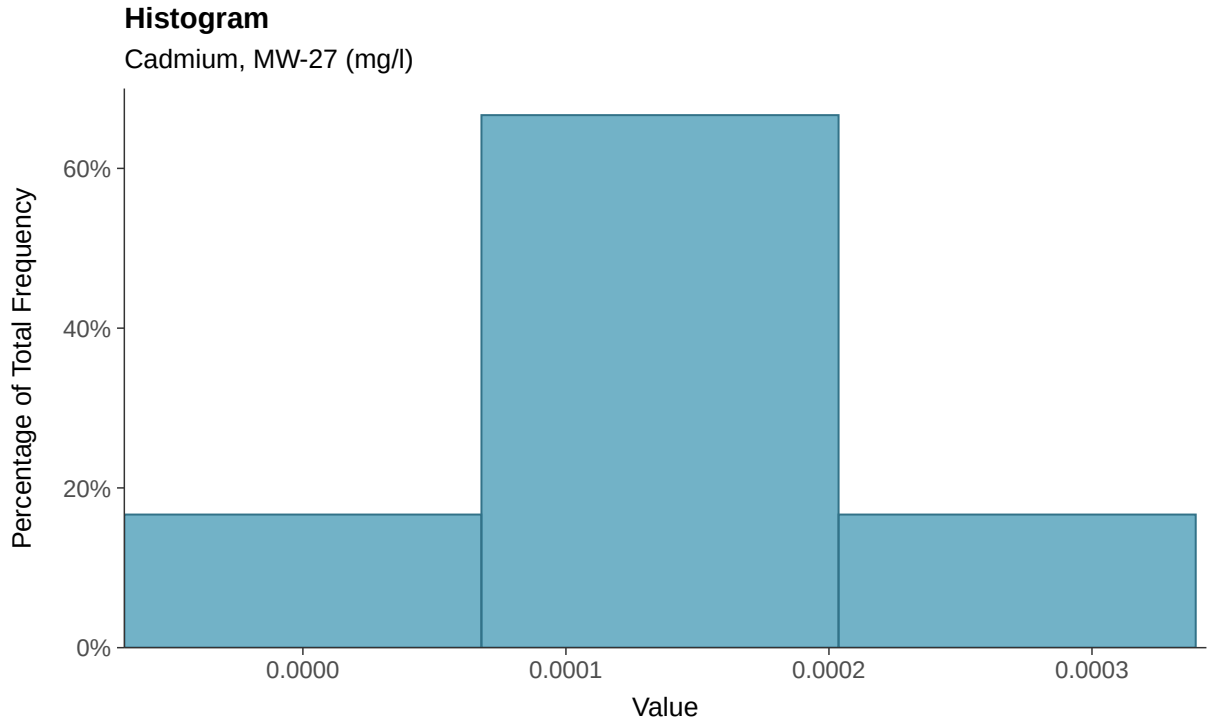
Beryllium, MW-27 (mg/l)



Appendix IV: Cadmium, MW-27

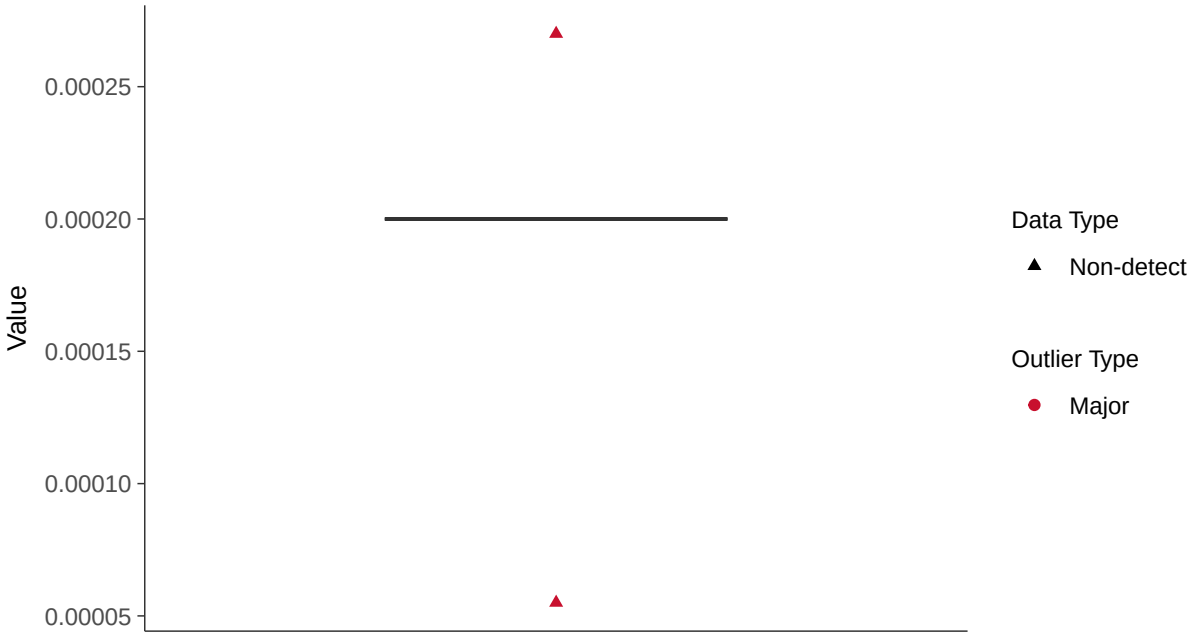
ID: 19_2_109





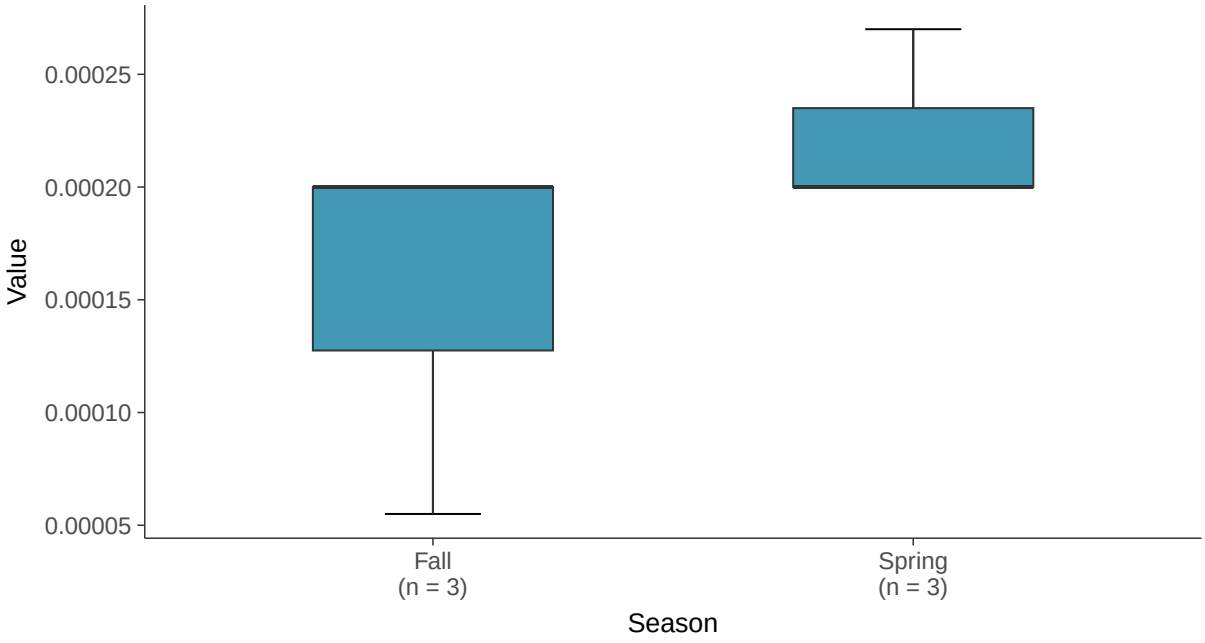
Boxplot

Cadmium, MW-27 (mg/l)



Boxplot by Season

Cadmium, MW-27 (mg/l)

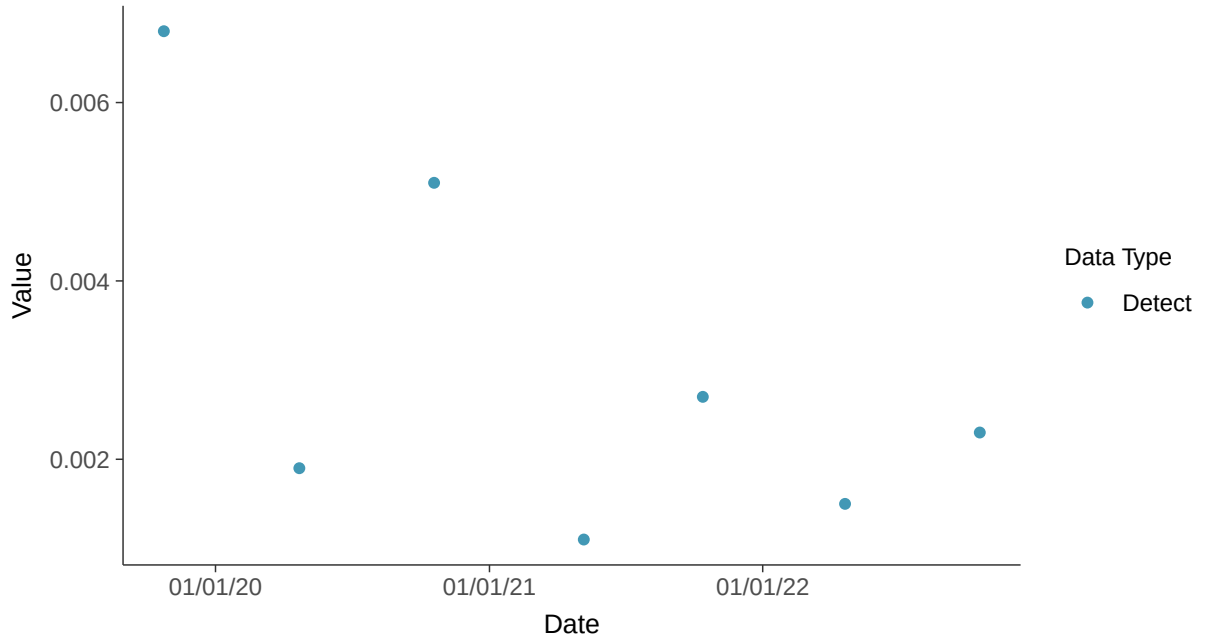


Appendix IV: Chromium, Total, MW-27

ID: 19_2_112

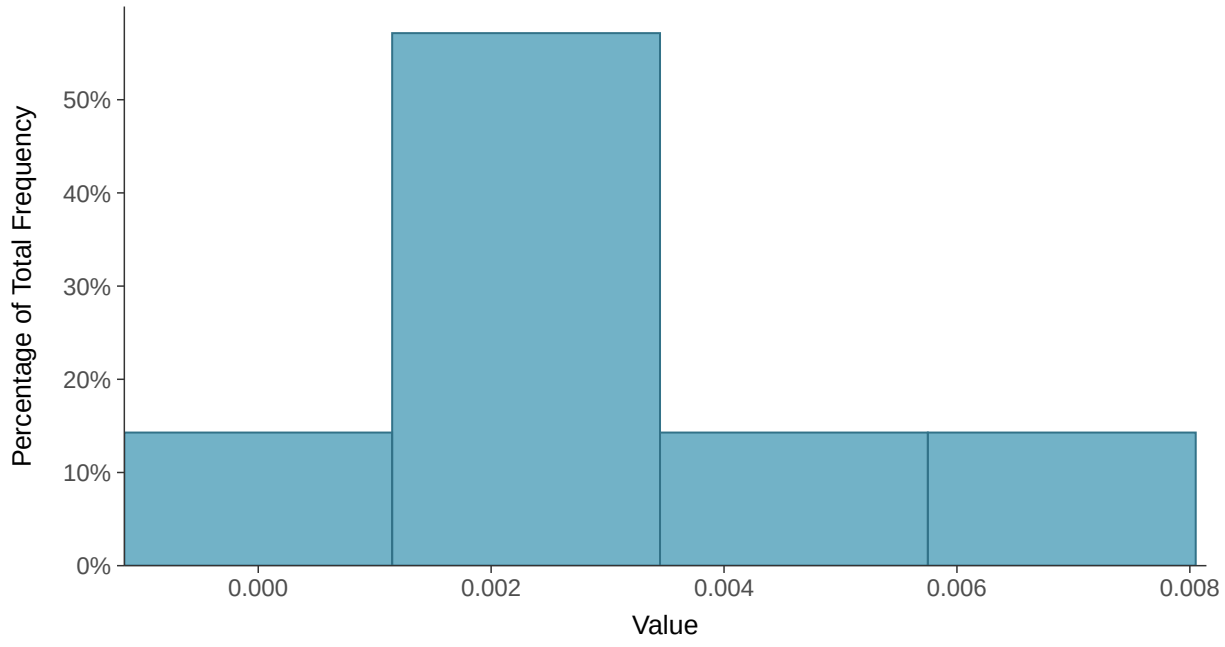
Scatter Plot

Chromium, Total, MW-27 (mg/l)



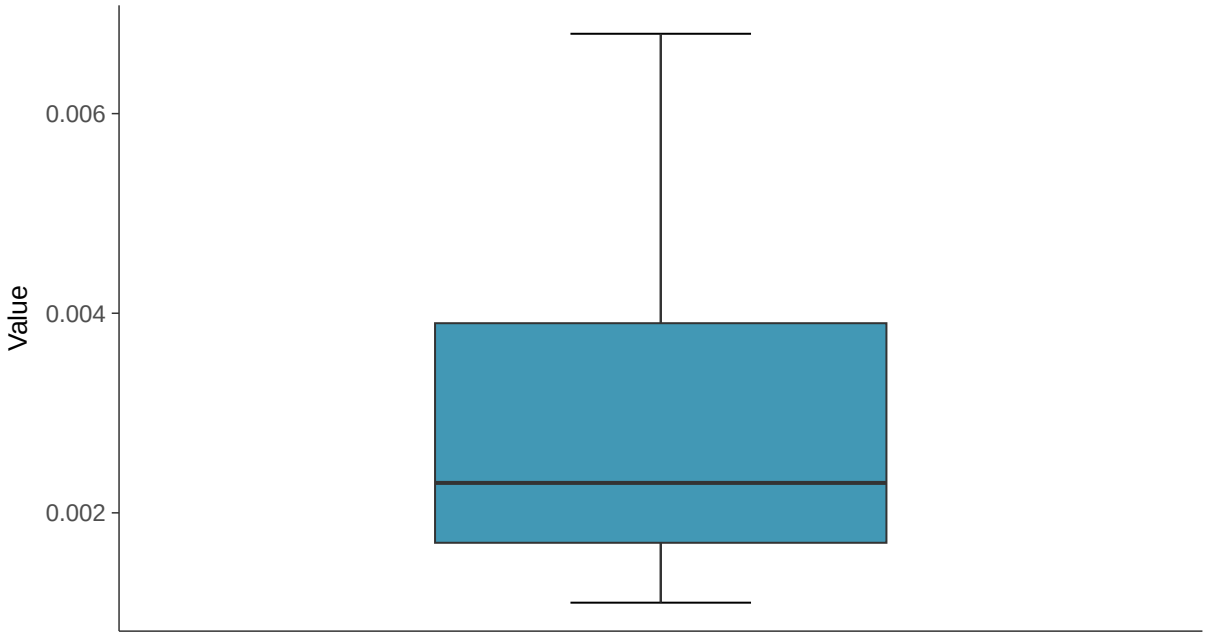
Histogram

Chromium, Total, MW-27 (mg/l)



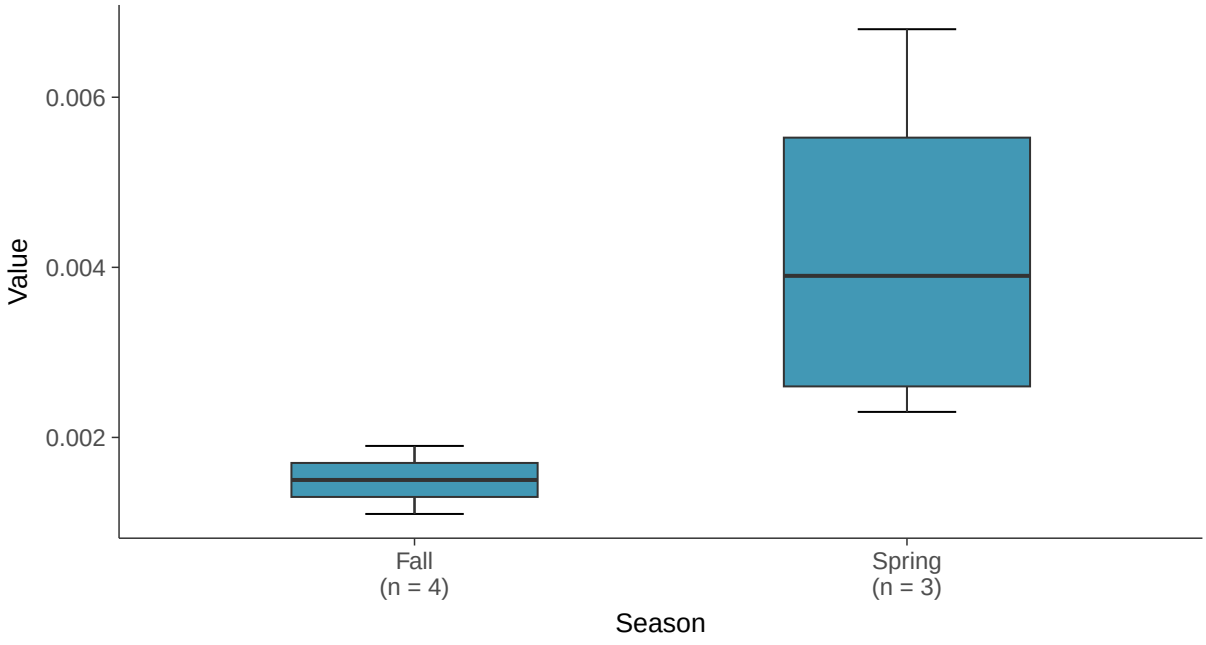
Boxplot

Chromium, Total, MW-27 (mg/l)



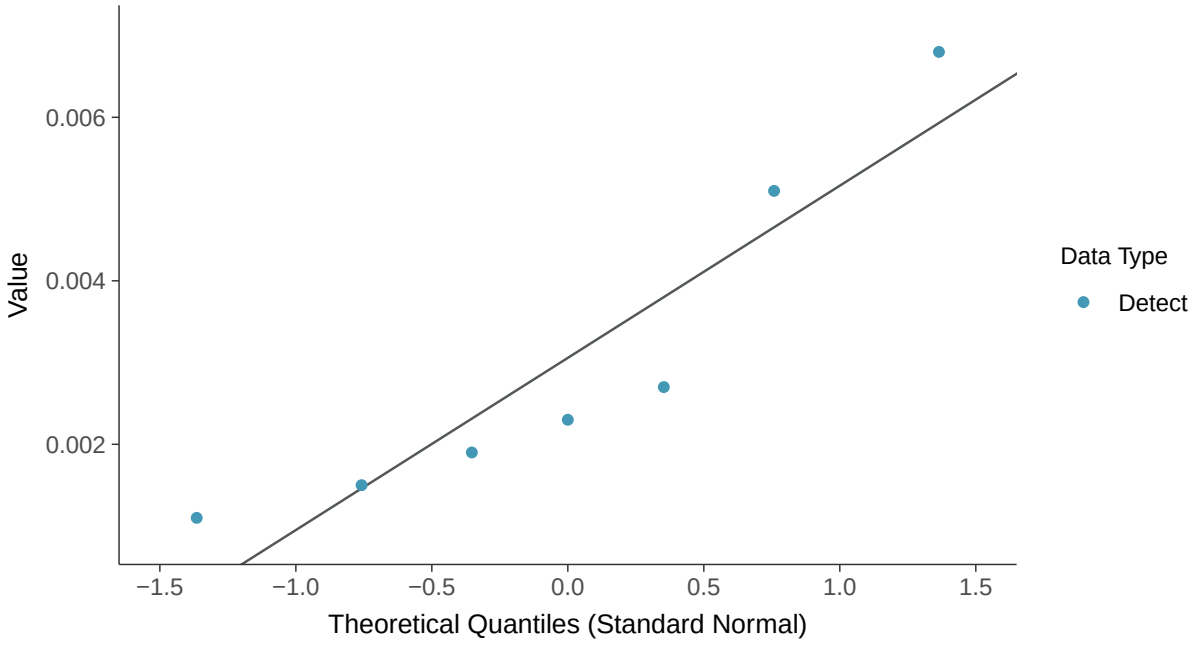
Boxplot by Season

Chromium, Total, MW-27 (mg/l)



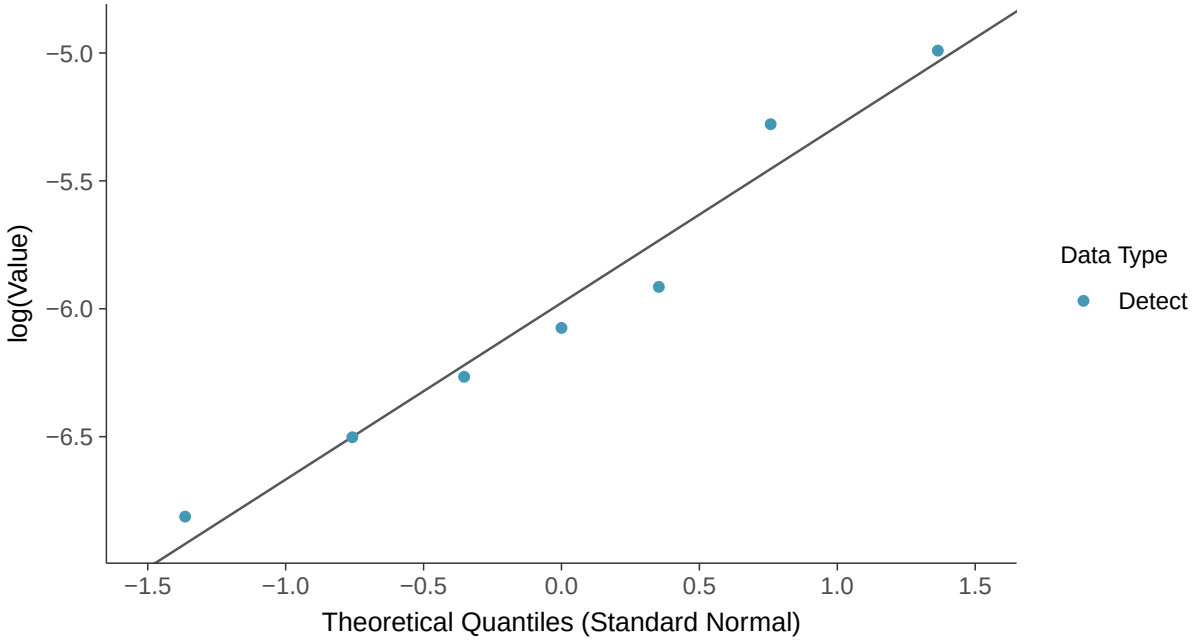
Normal Q-Q plot

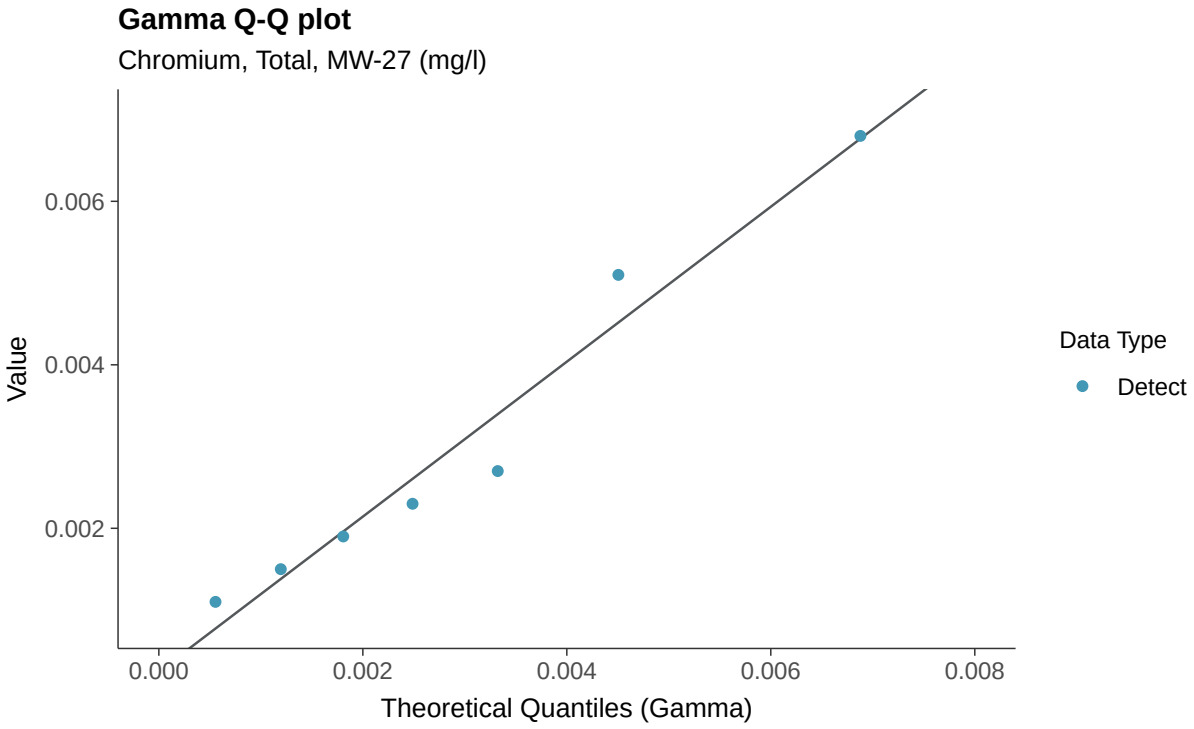
Chromium, Total, MW-27 (mg/l)



Lognormal Q-Q plot

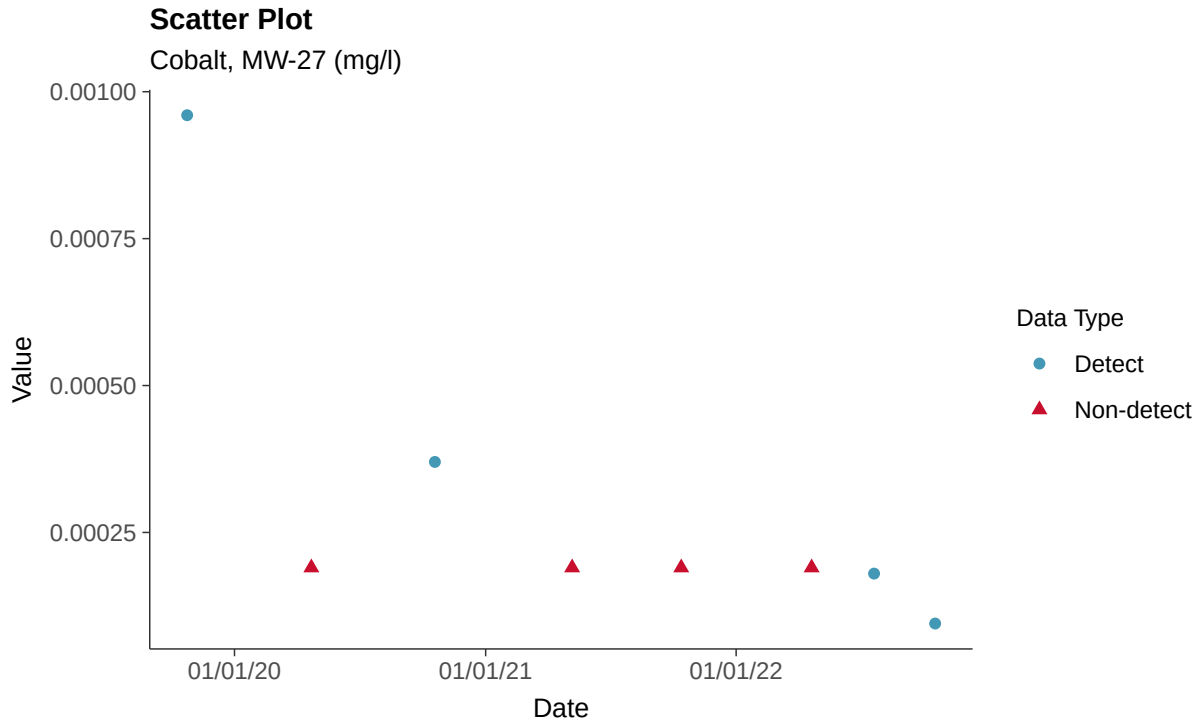
Chromium, Total, MW-27 (mg/l)

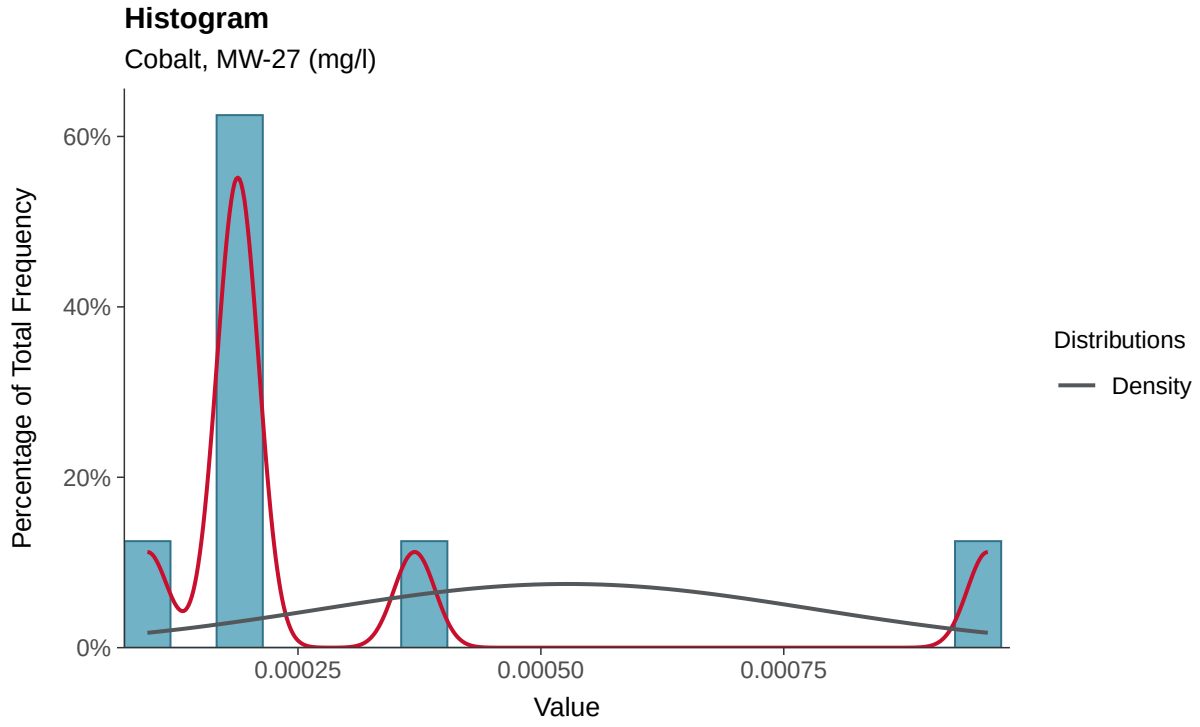



Gamma Q-Q plot
Chromium, Total, MW-27 (mg/l)
Value
0.006
0.004
0.002
0.000
0.002
0.004
0.006
0.008
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Cobalt, MW-27

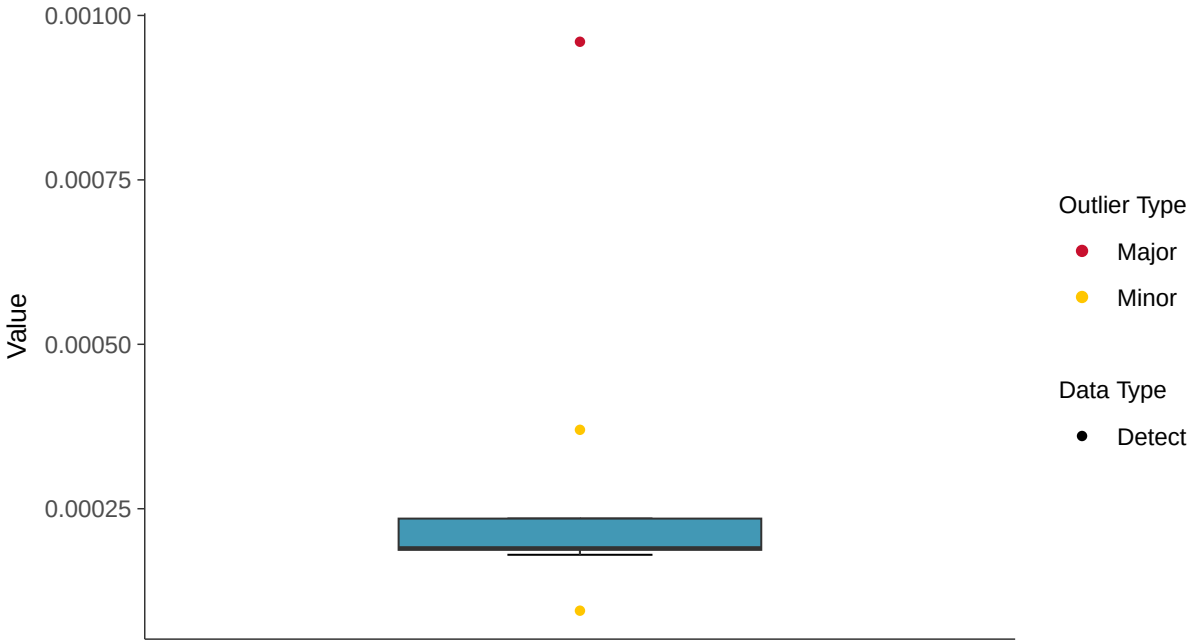
ID: 19_2_113





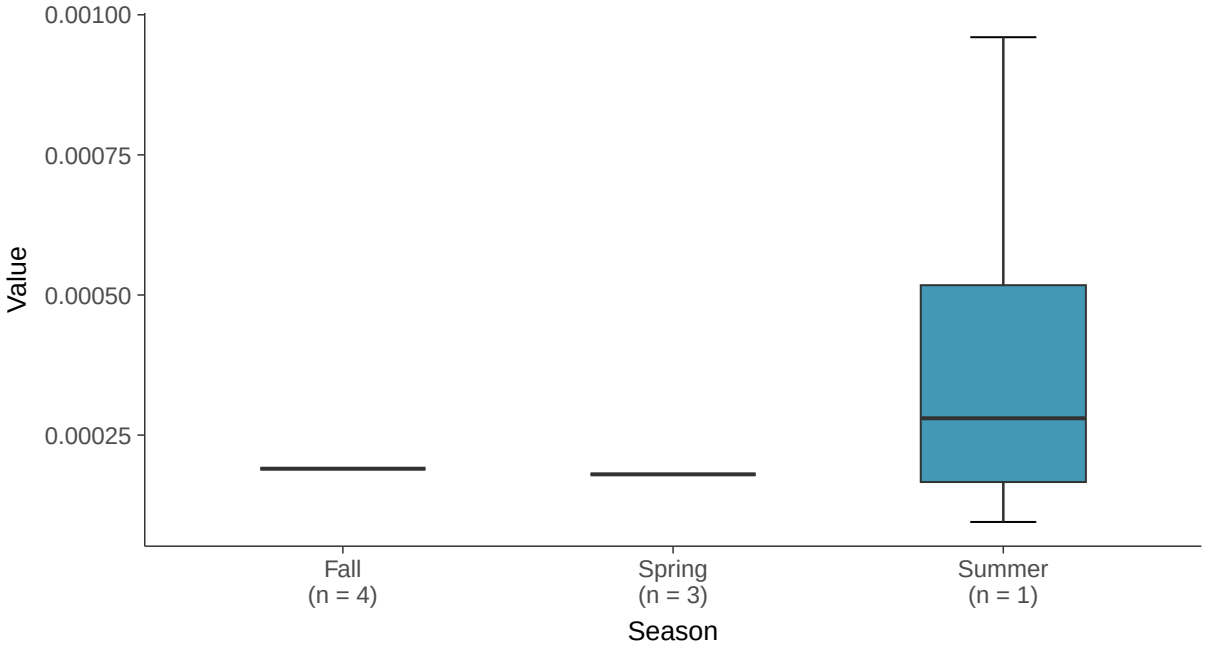
Boxplot

Cobalt, MW-27 (mg/l)



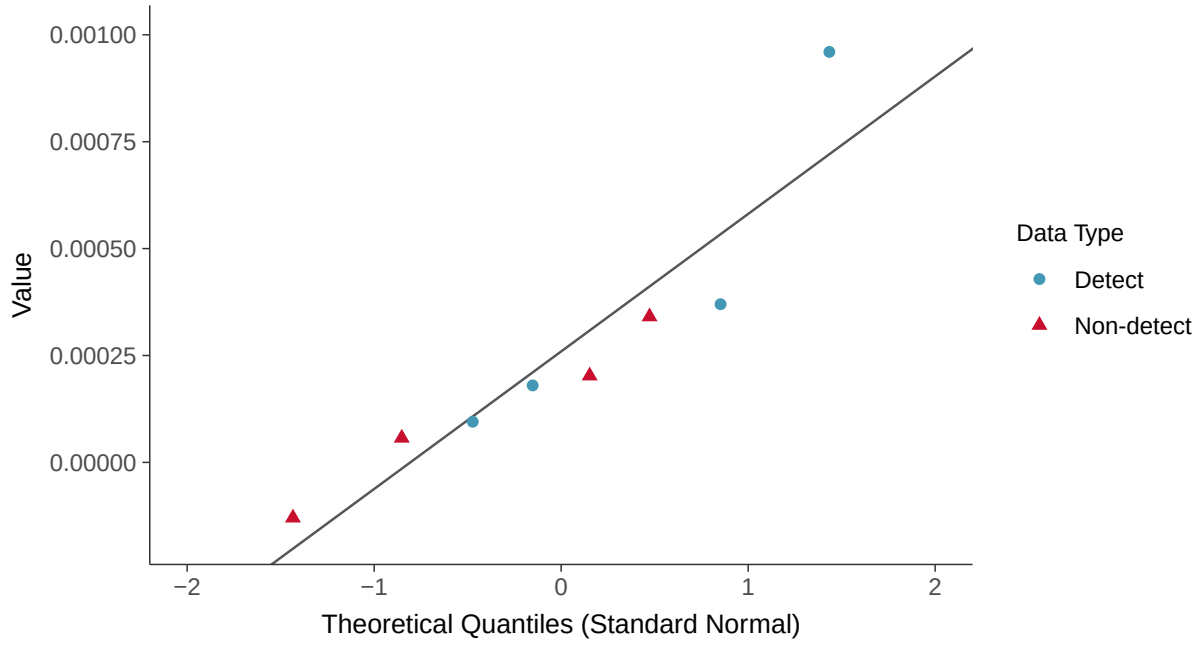
Boxplot by Season

Cobalt, MW-27 (mg/l)



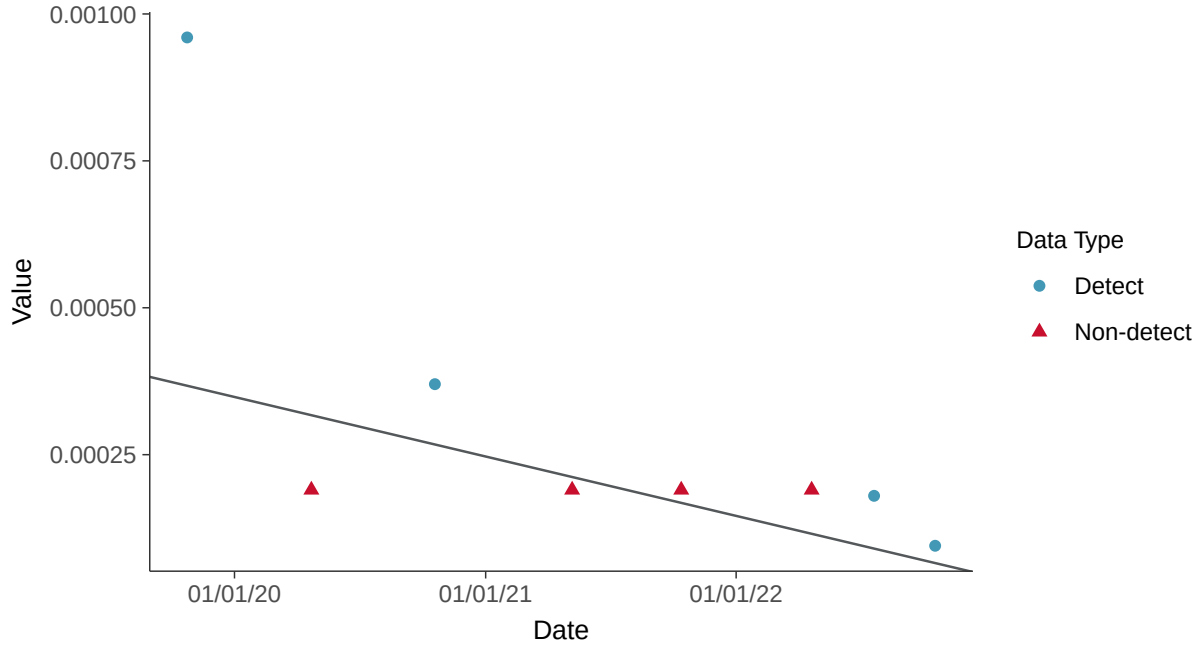
Normal Q-Q plot using ROS Imputed Estimates

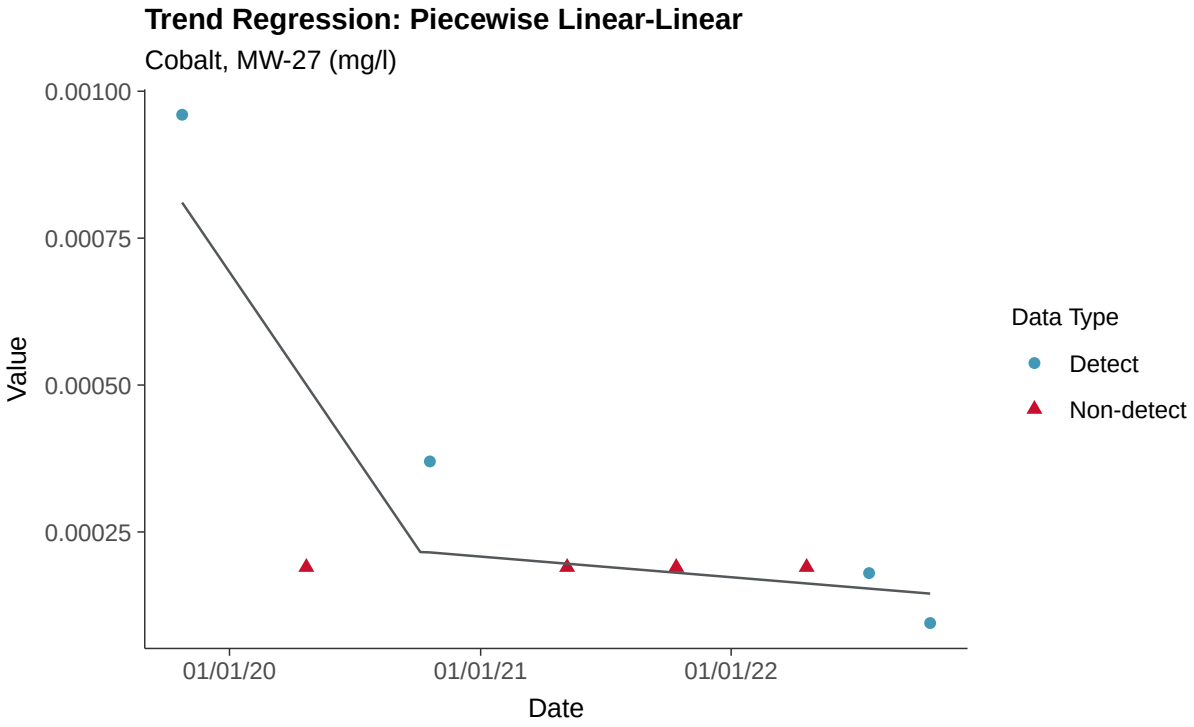
Cobalt, MW-27 (mg/l)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Cobalt, MW-27 (mg/l)



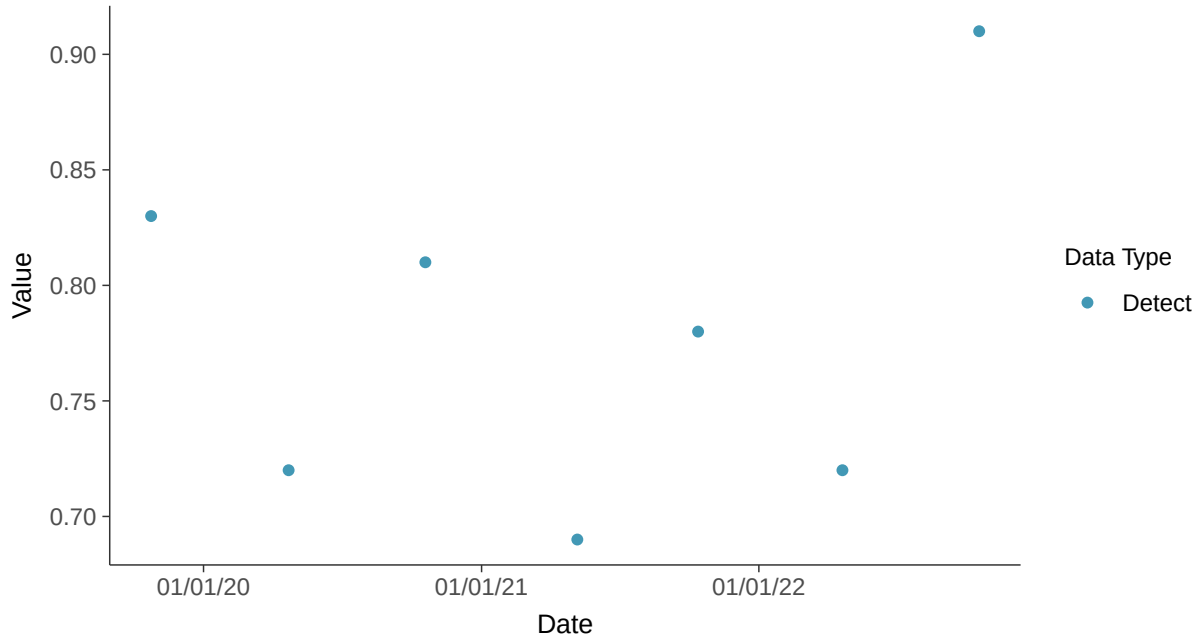

Trend Regression: Piecewise Linear-Linear
Cobalt, MW-27 (mg/l)
0.00100
0.00075
0.00050
0.00025
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Fluoride (App IV), MW-27

ID: 19_2_116

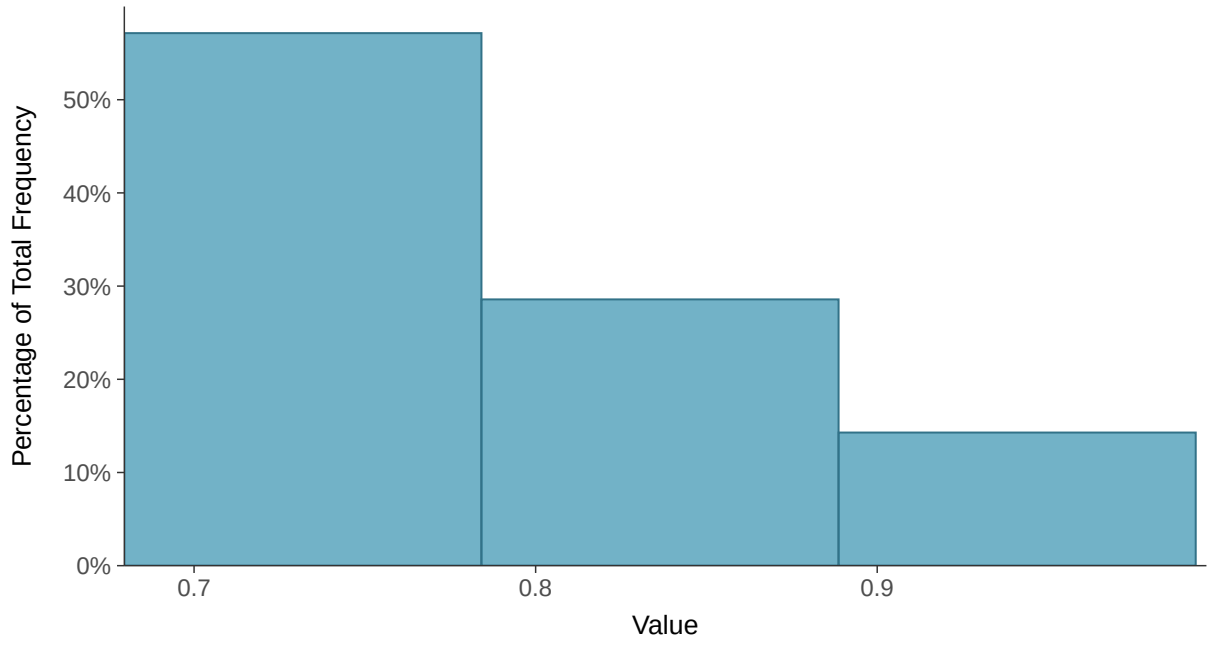
Scatter Plot

Fluoride (App IV), MW-27 (mg/l)



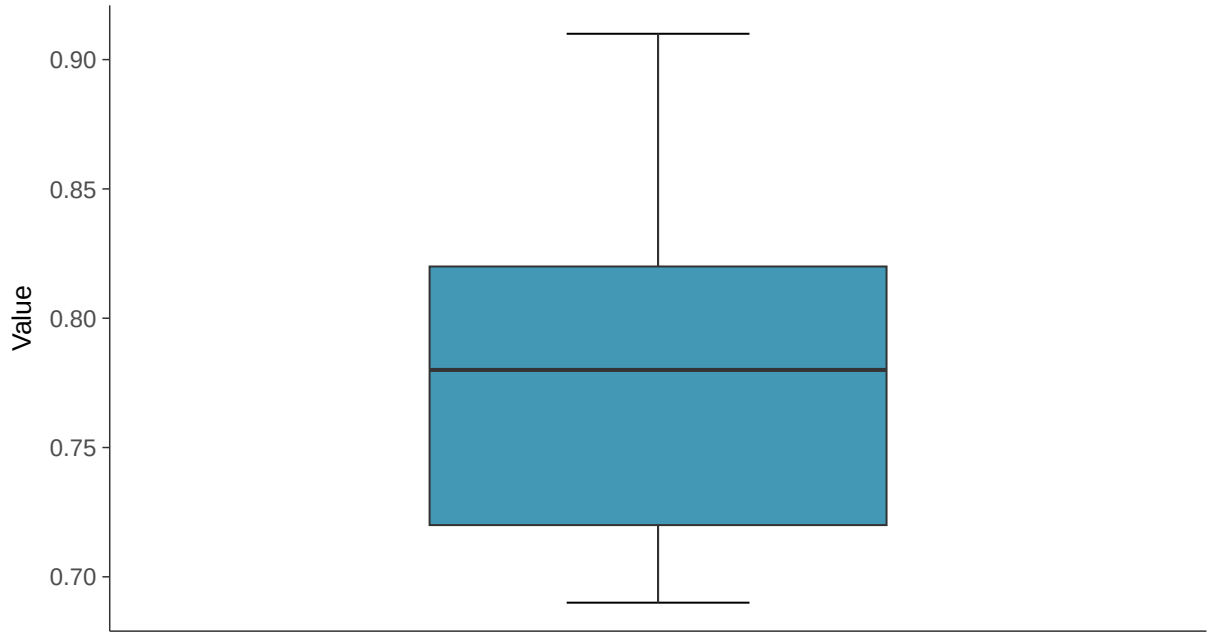
Histogram

Fluoride (App IV), MW-27 (mg/l)



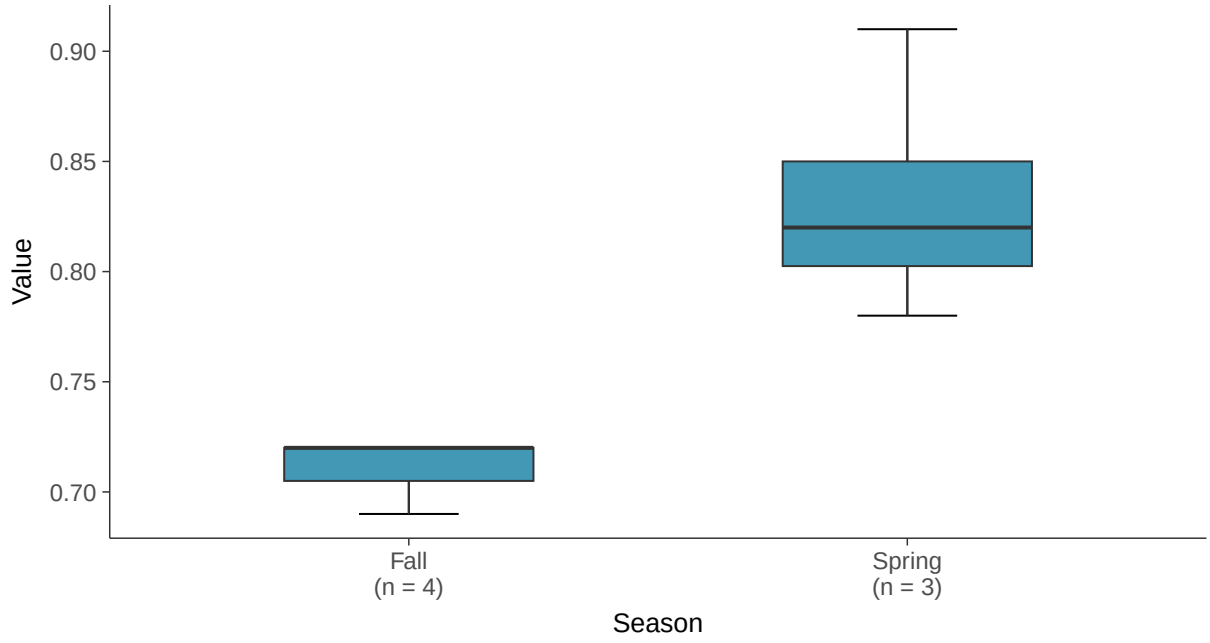
Boxplot

Fluoride (App IV), MW-27 (mg/l)



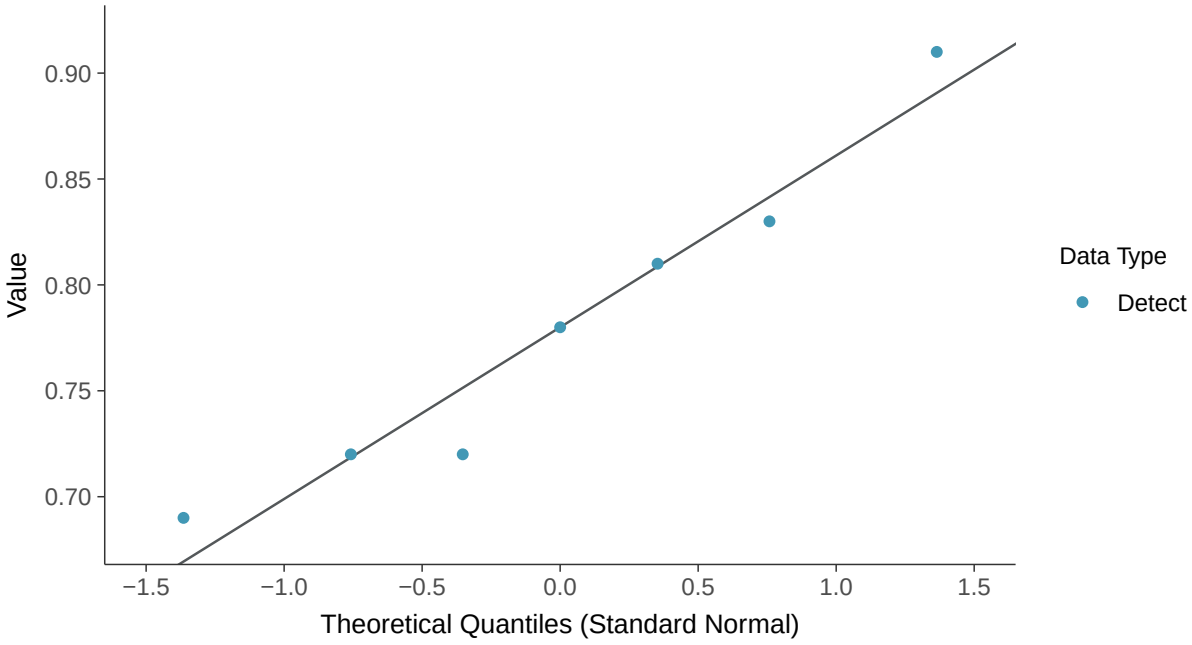
Boxplot by Season

Fluoride (App IV), MW-27 (mg/l)



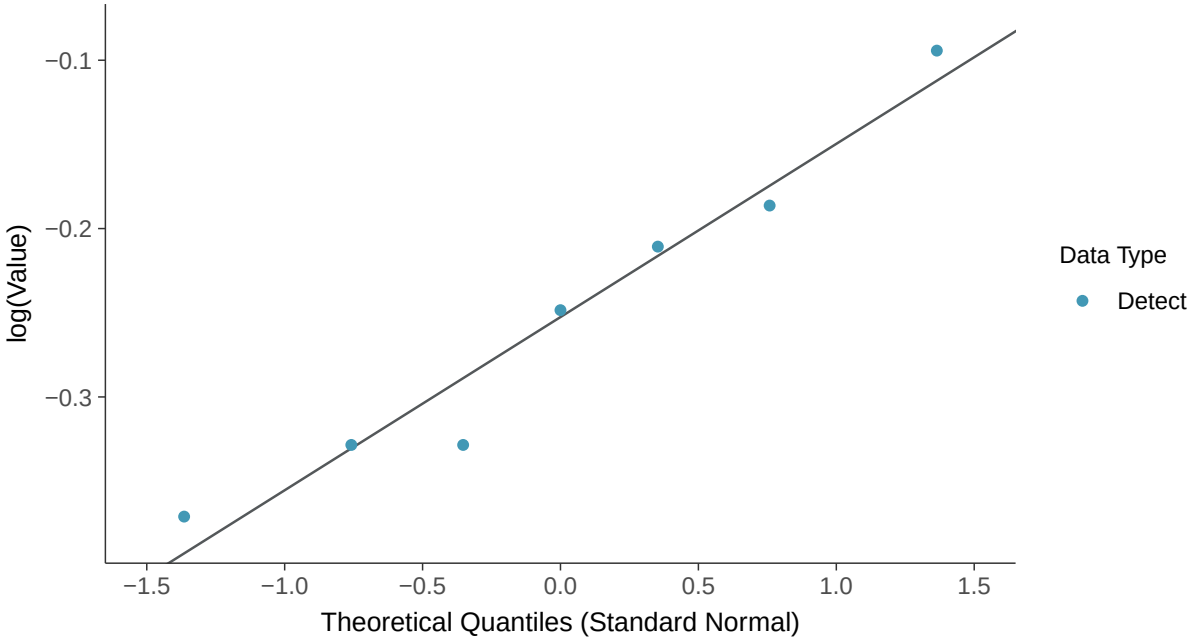
Normal Q-Q plot

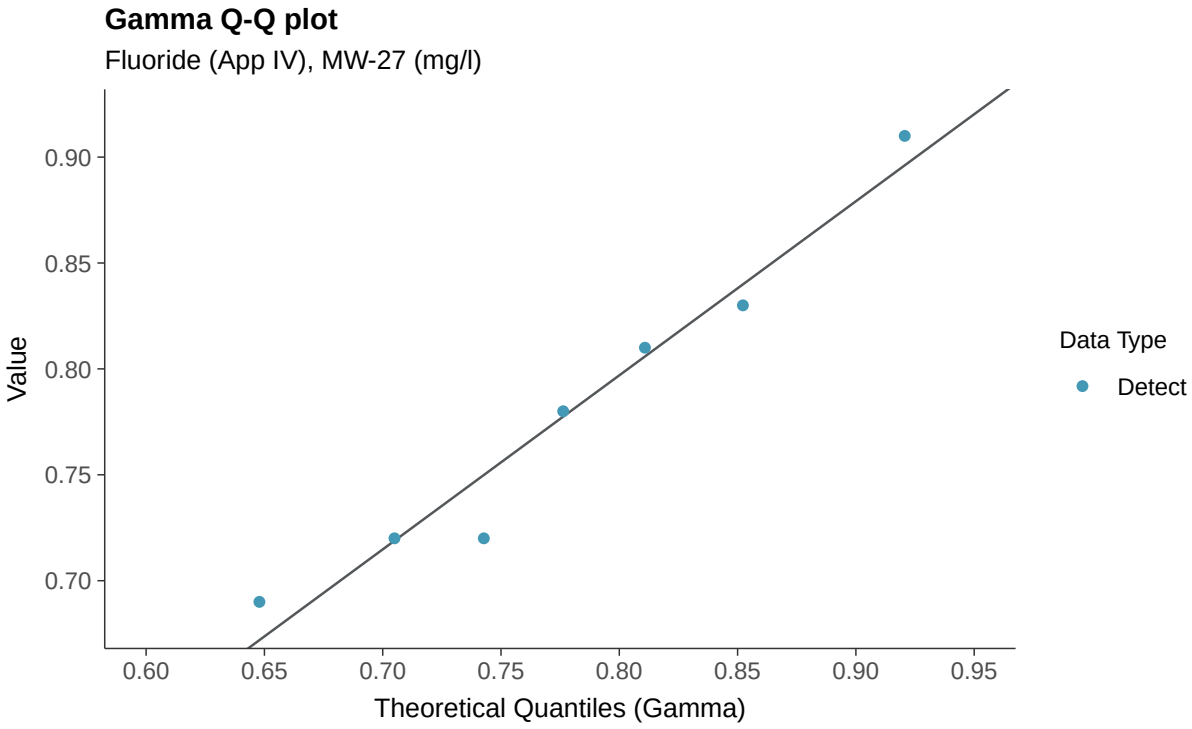
Fluoride (App IV), MW-27 (mg/l)



Lognormal Q-Q plot

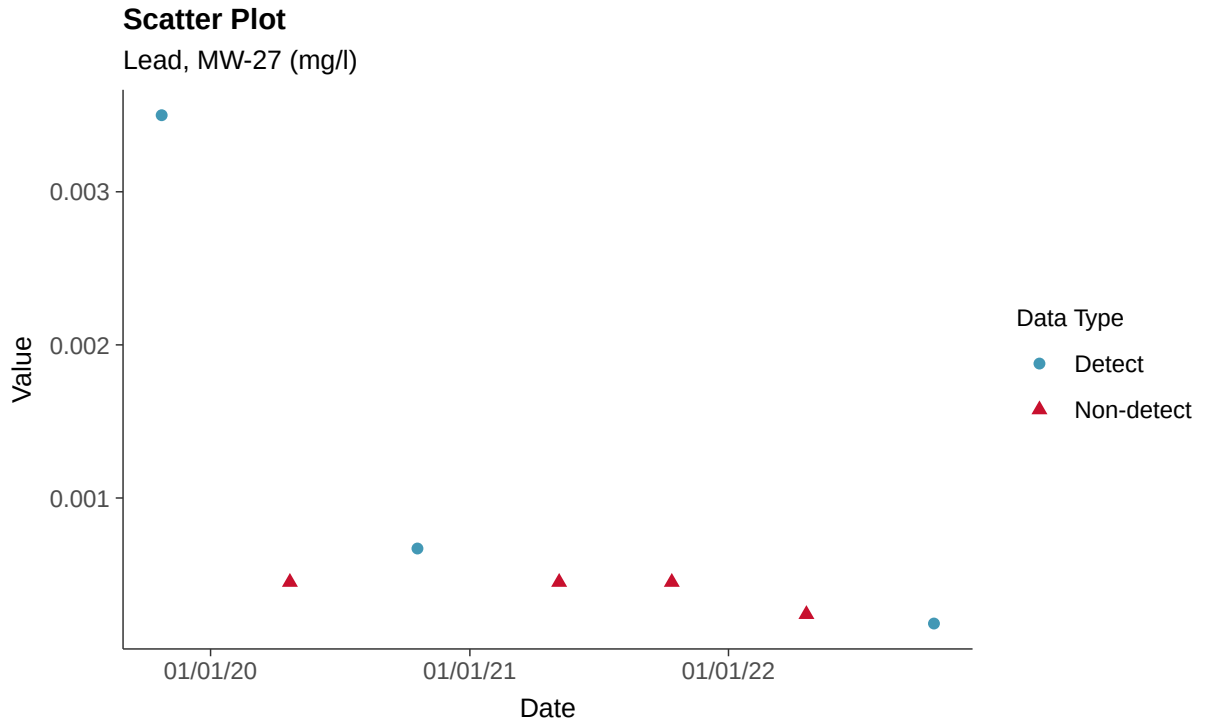
Fluoride (App IV), MW-27 (mg/l)

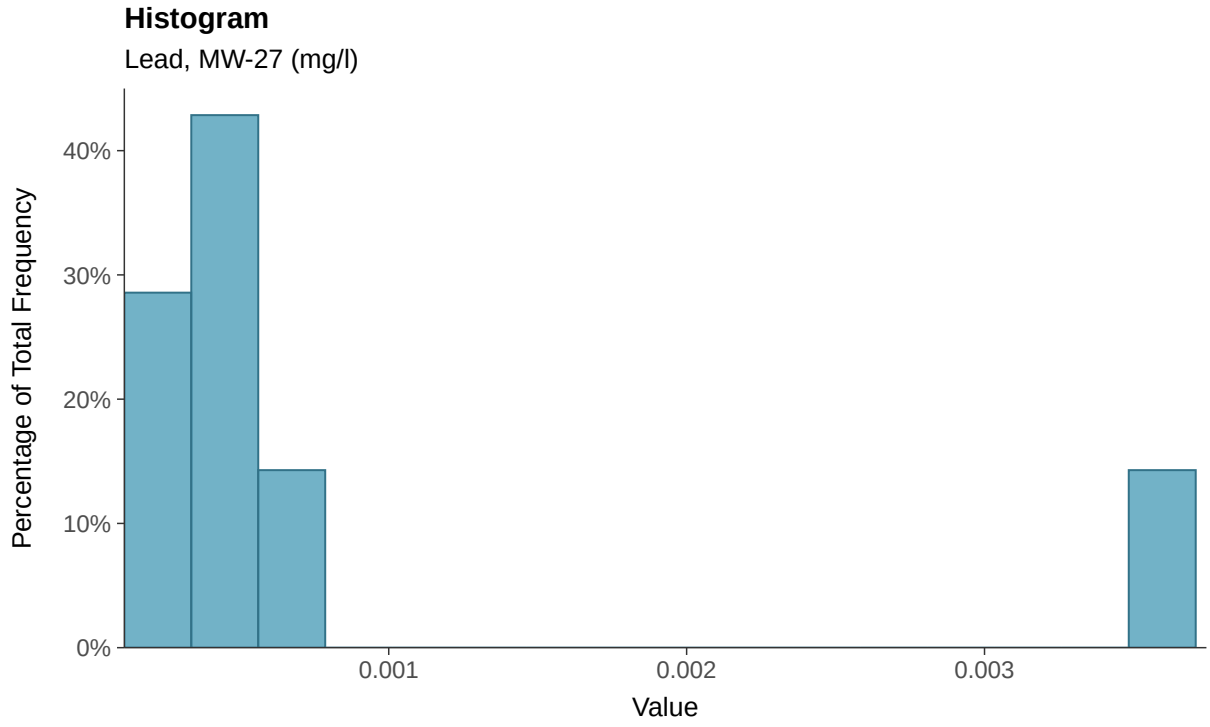



Gamma Q-Q plot
Fluoride (App IV), MW-27 (mg/l)
Value
0.90
0.85
0.80
0.75
0.70
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Lead, MW-27

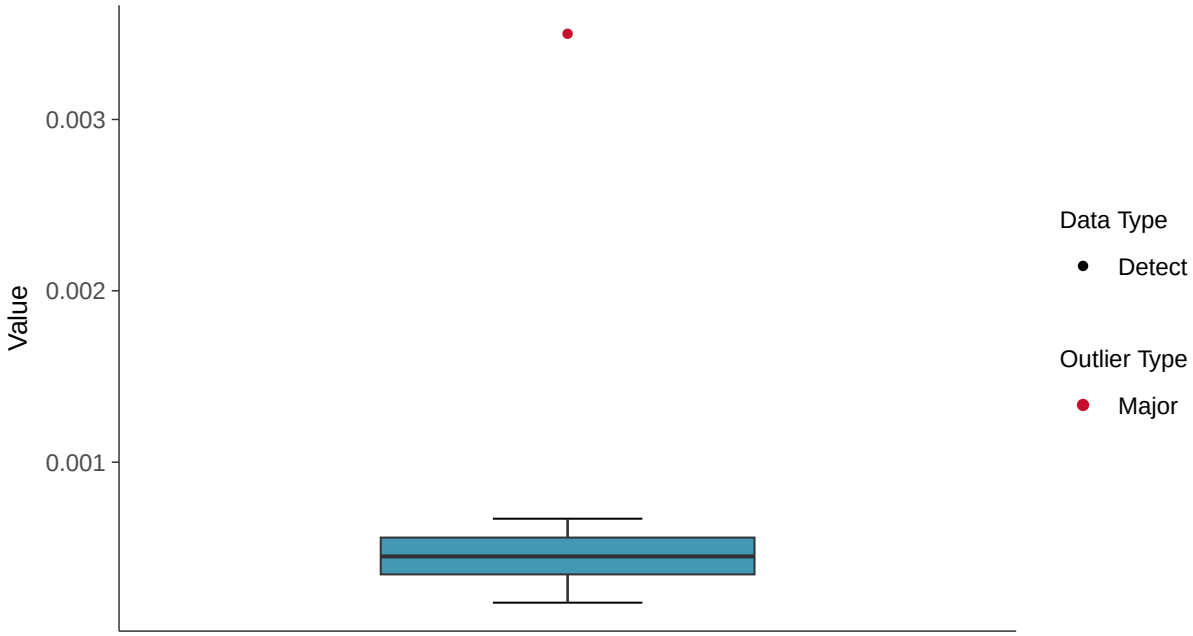
ID: 19_2_117





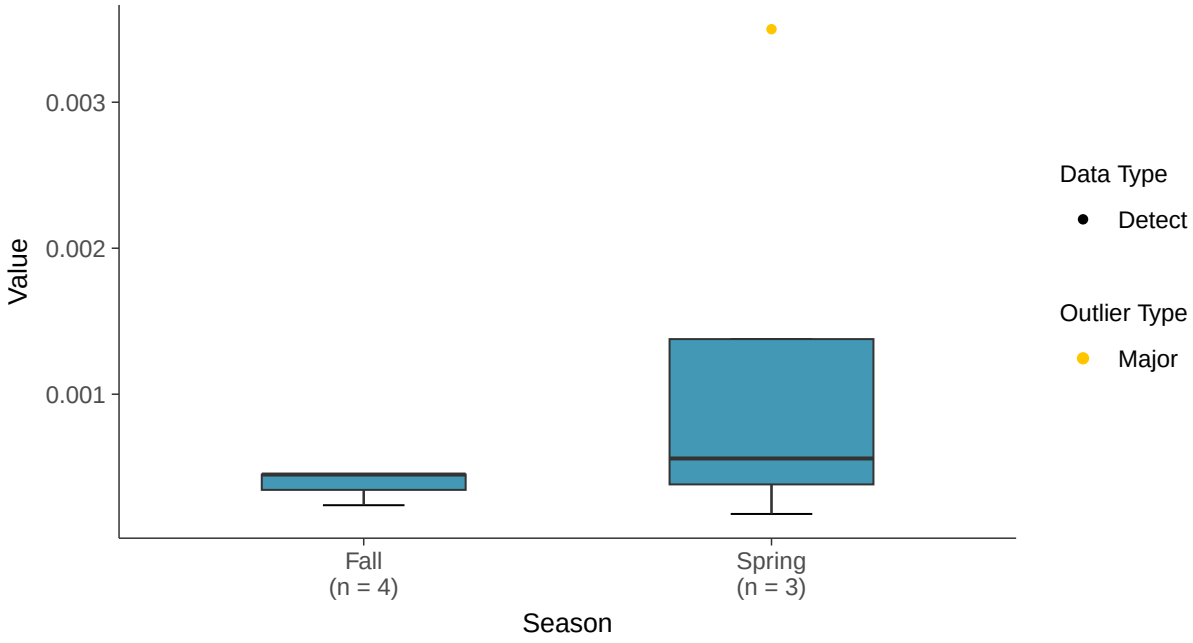
Boxplot

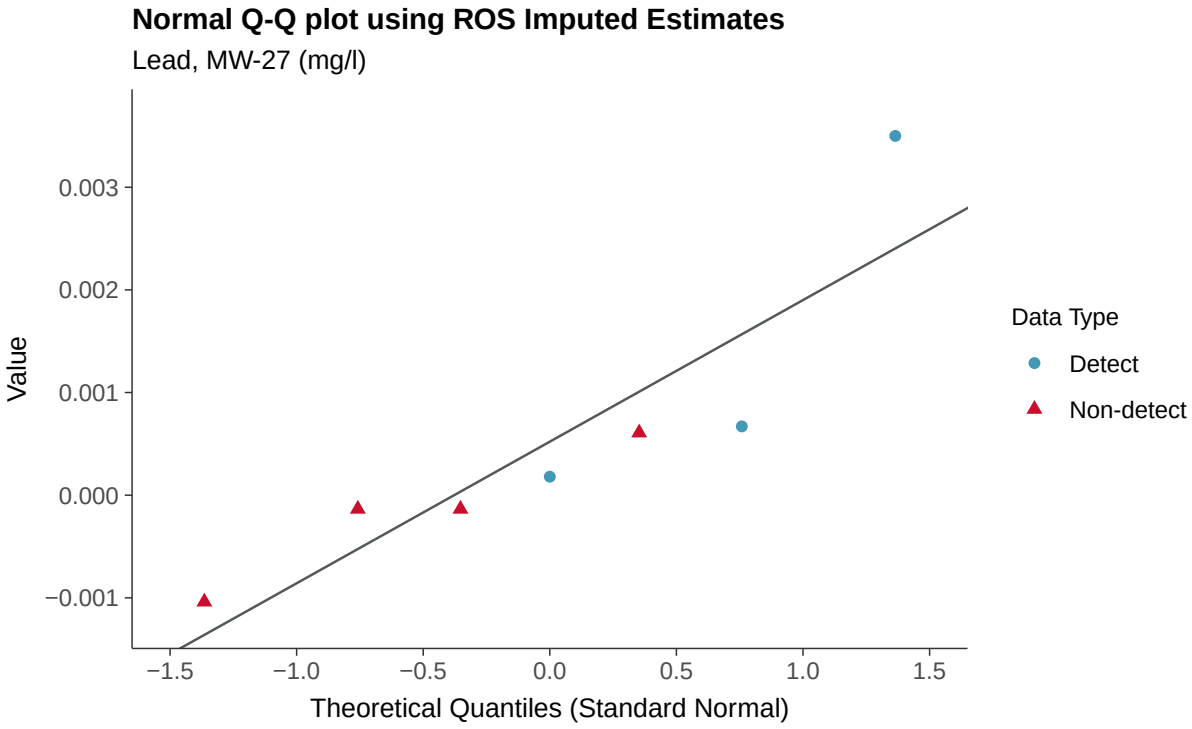
Lead, MW-27 (mg/l)



Boxplot by Season

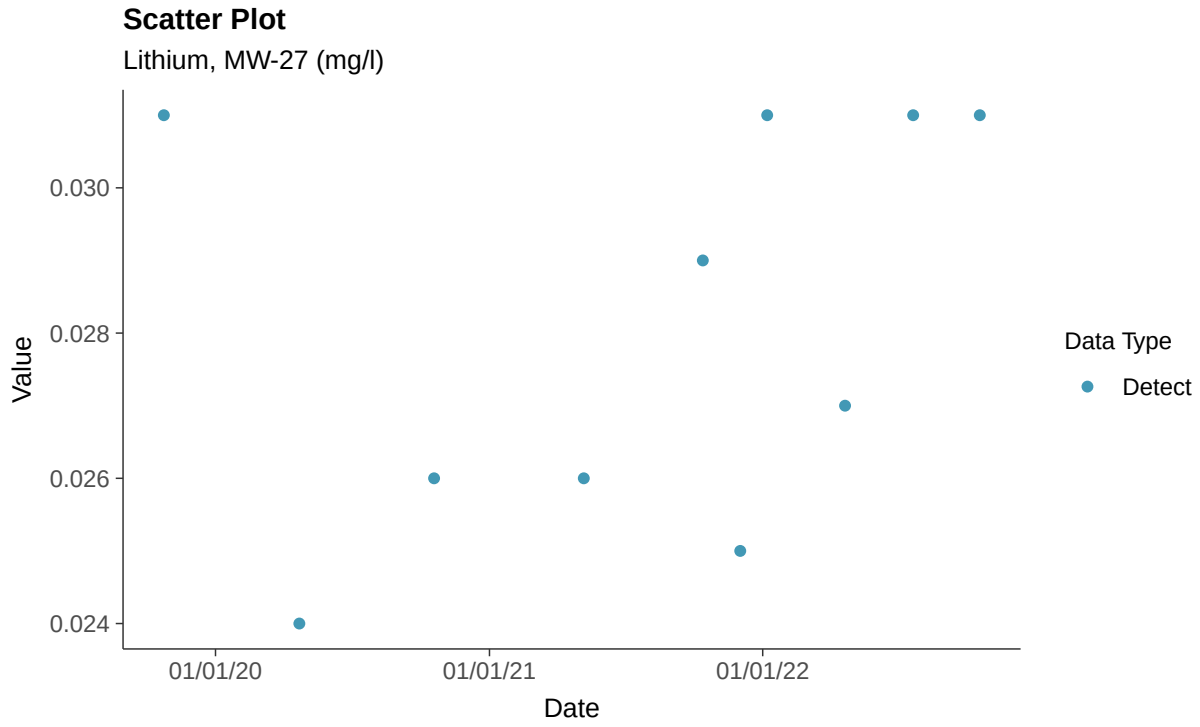
Lead, MW-27 (mg/l)

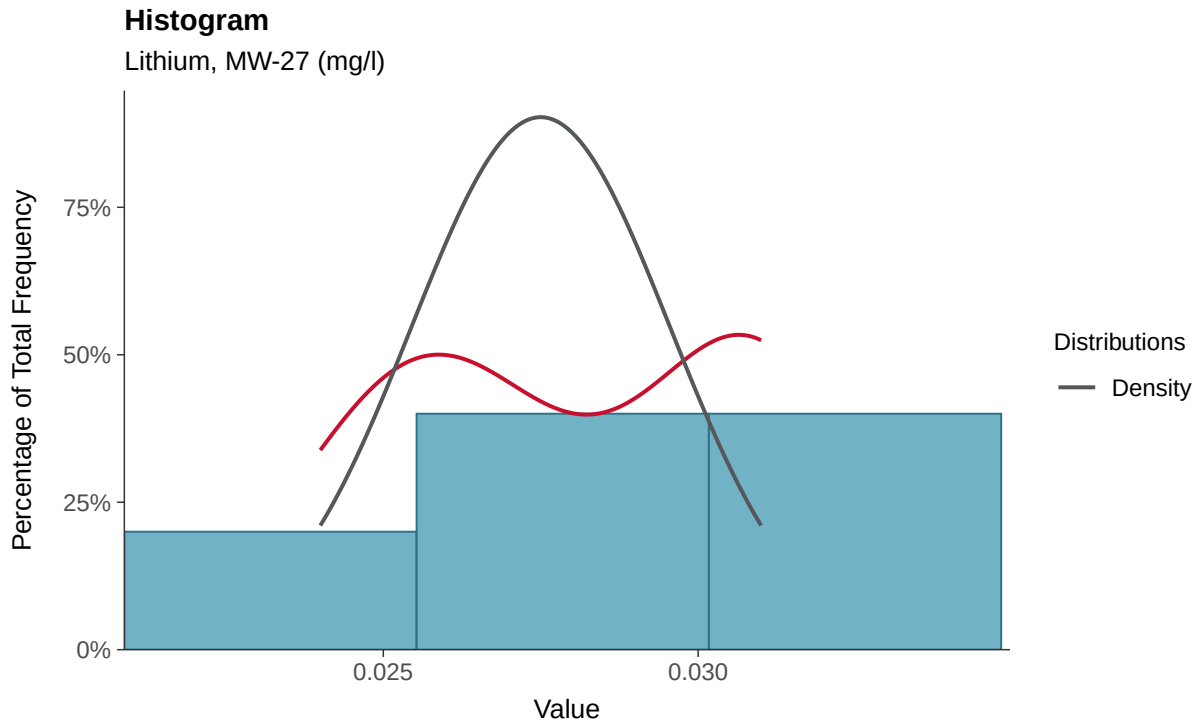



Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-27 (mg/l)
Value
0.003
0.002
0.001
0.000
−0.001
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-27

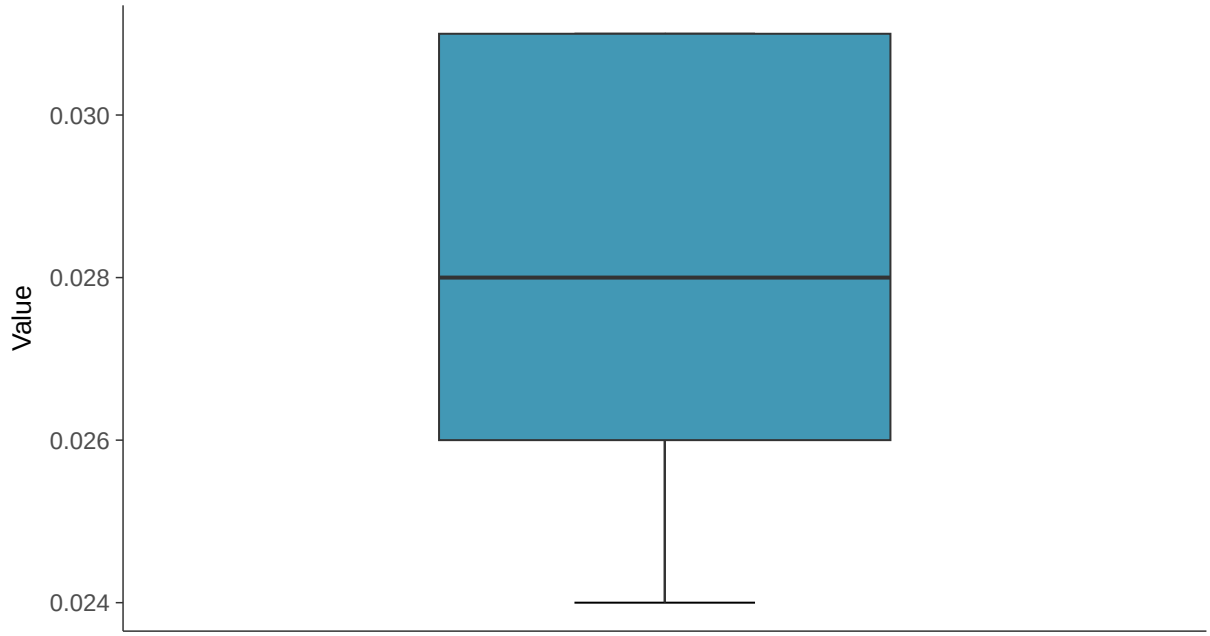
ID: 19_2_118





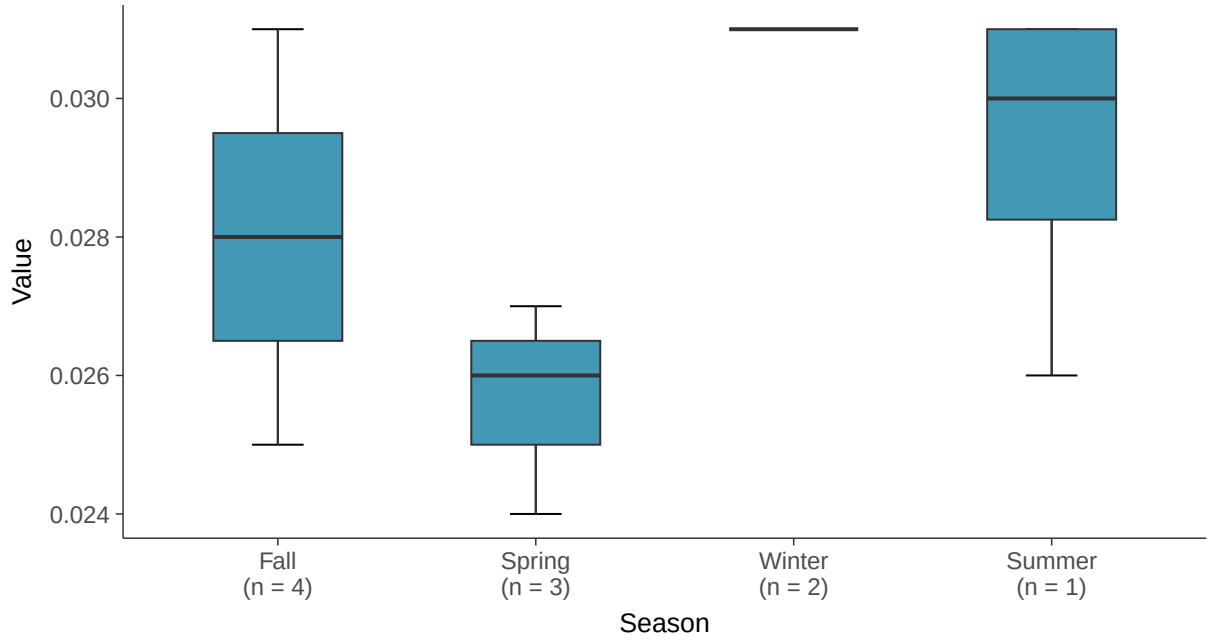
Boxplot

Lithium, MW-27 (mg/l)



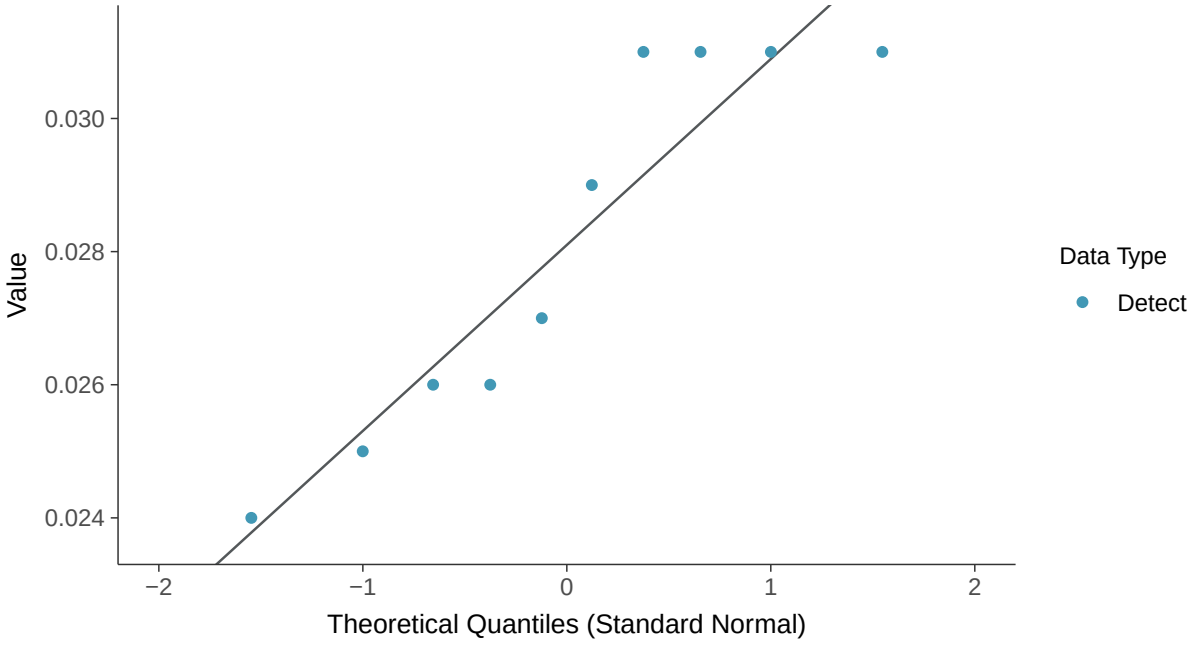
Boxplot by Season

Lithium, MW-27 (mg/l)



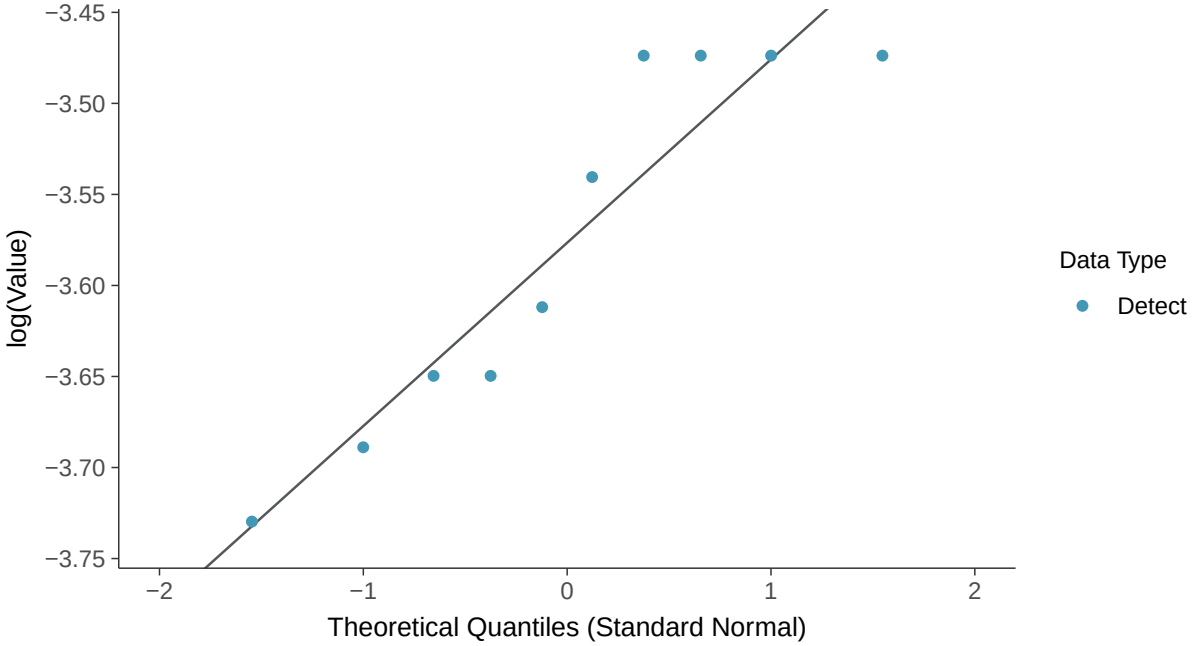
Normal Q-Q plot

Lithium, MW-27 (mg/l)



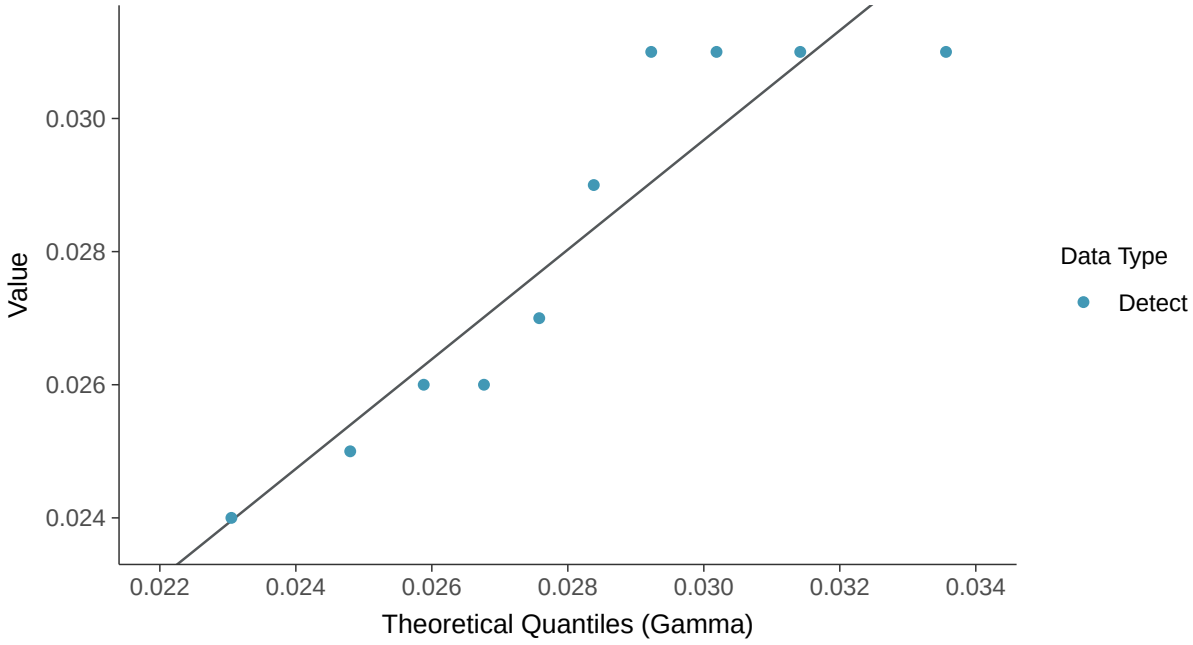
Lognormal Q-Q plot

Lithium, MW-27 (mg/l)



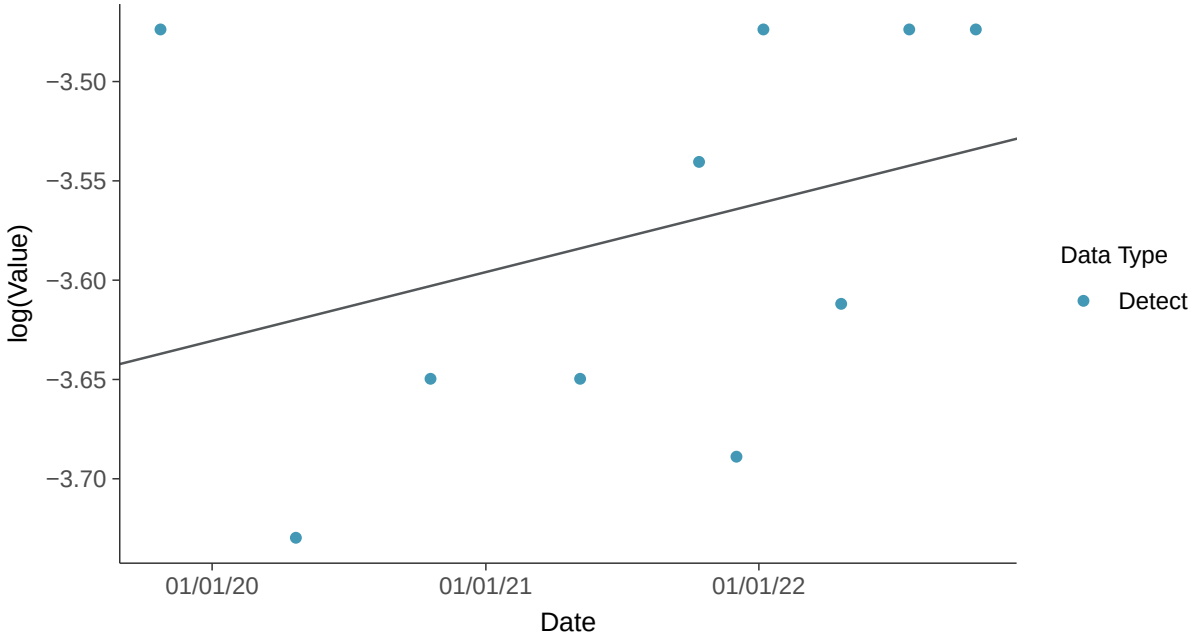
Gamma Q-Q plot

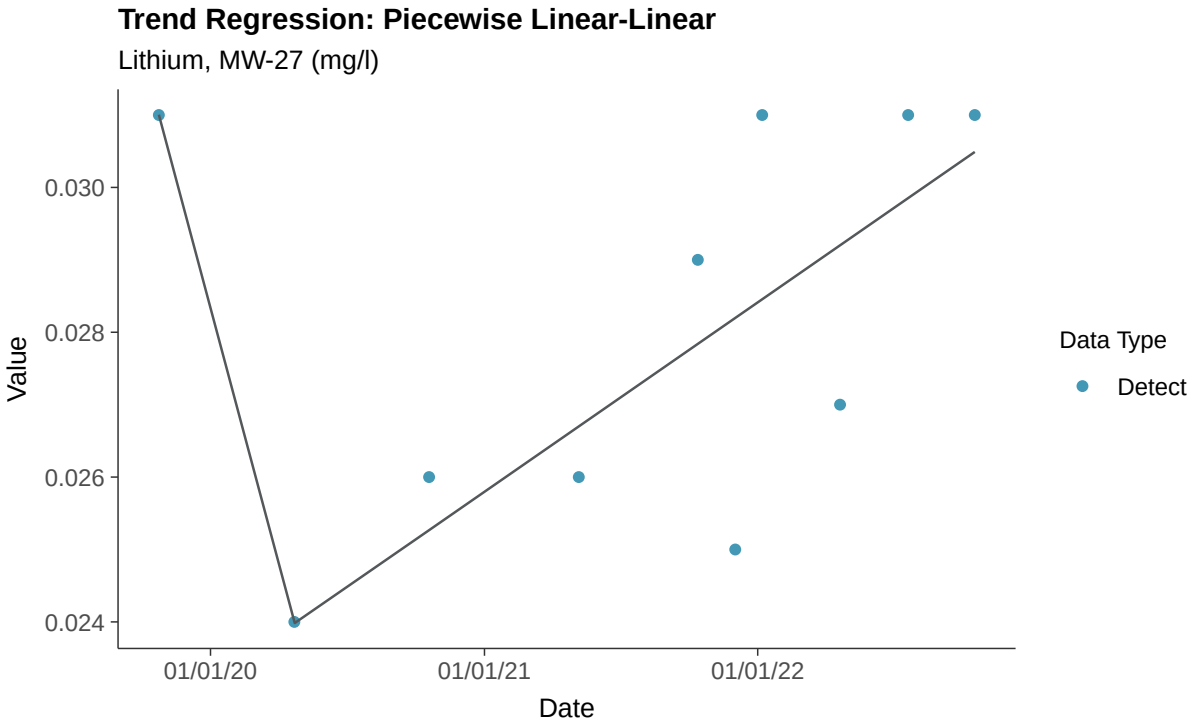
Lithium, MW-27 (mg/l)



Trend Regression: Lognormal MLE

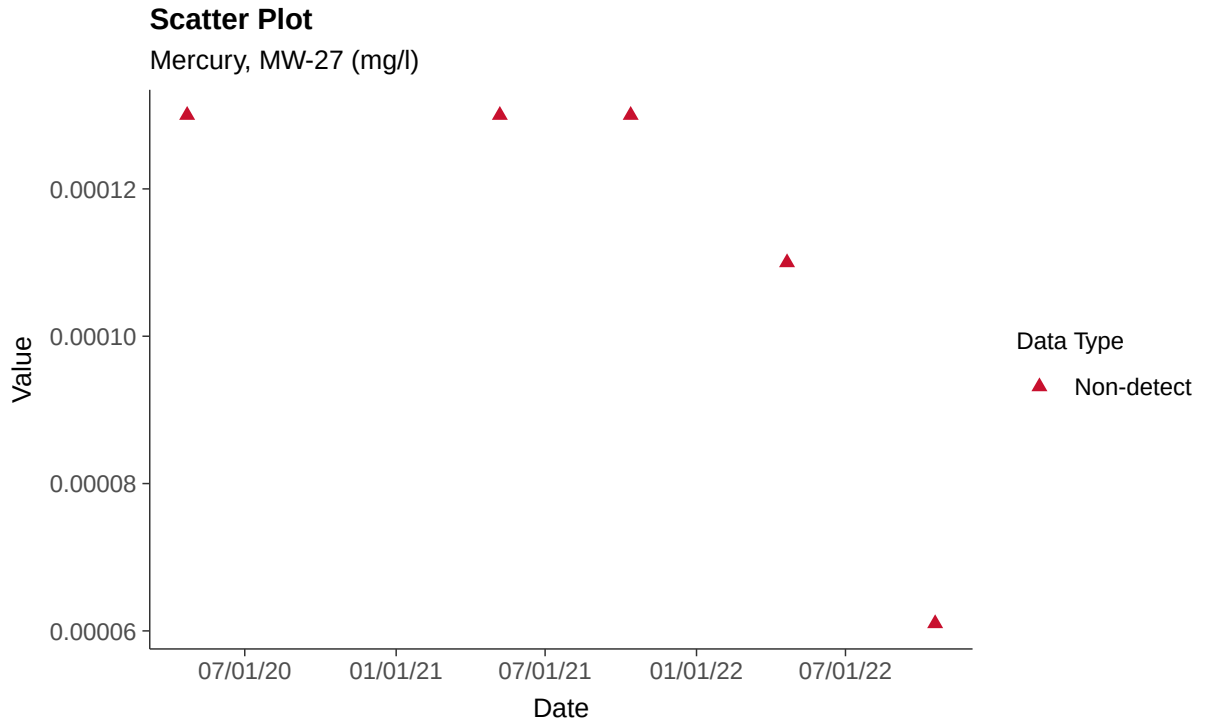
Lithium, MW-27 (mg/l)

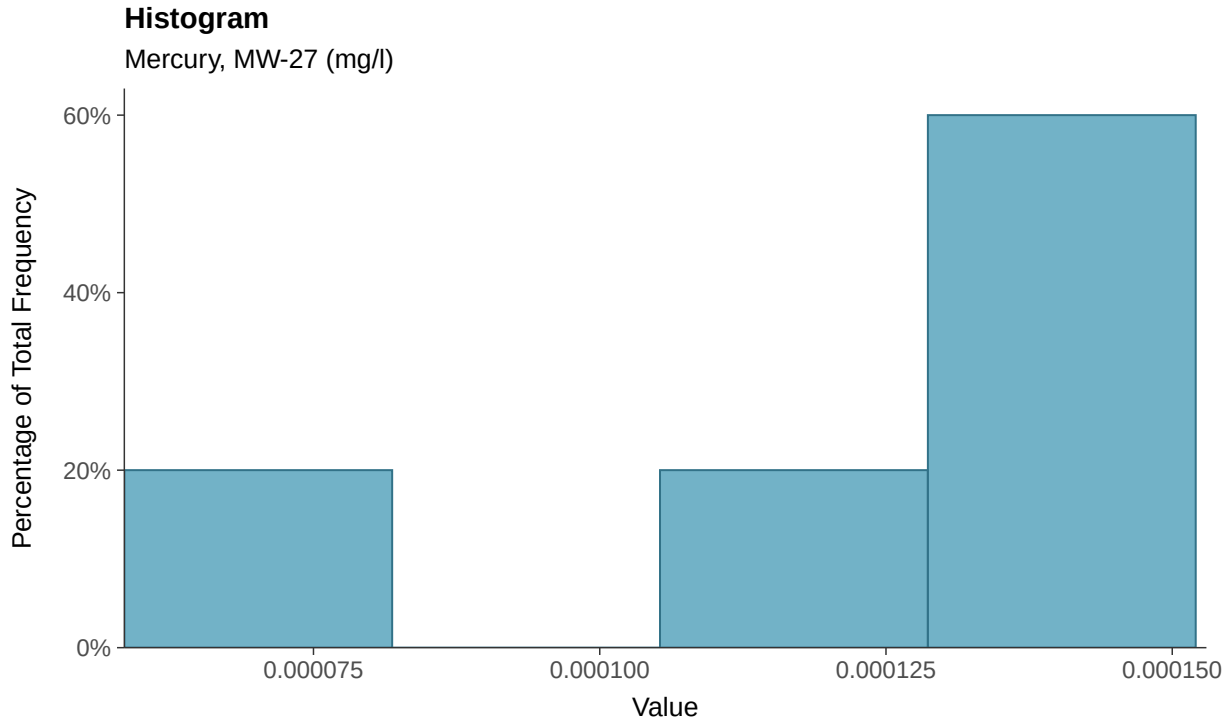



Trend Regression: Piecewise Linear-Linear
Lithium, MW-27 (mg/l)
Value
0.030
0.028
0.026
0.024
01/01/20
01/01/21
01/01/22
Date
Data Type
Detect

Appendix IV: Mercury, MW-27

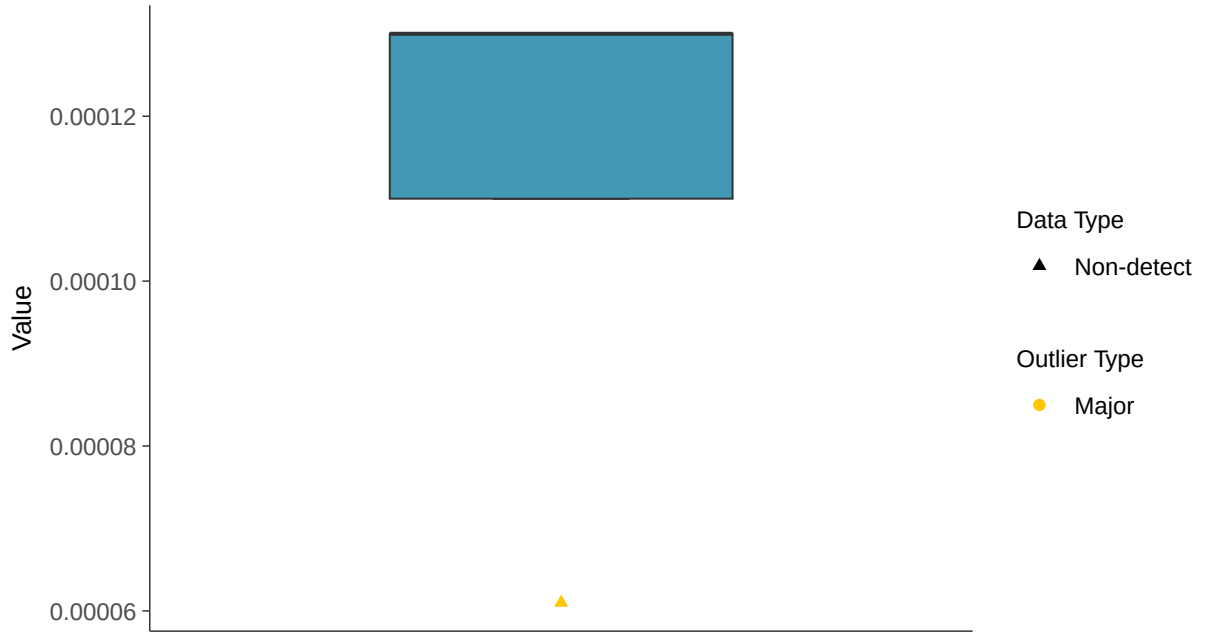
ID: 19_2_120





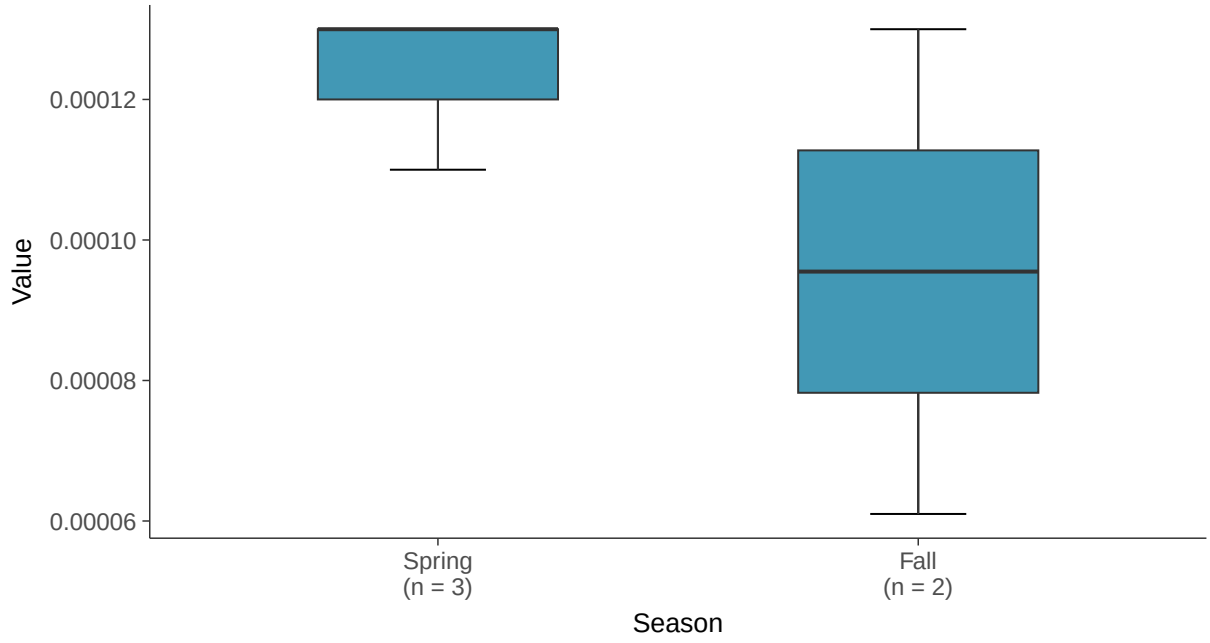
Boxplot

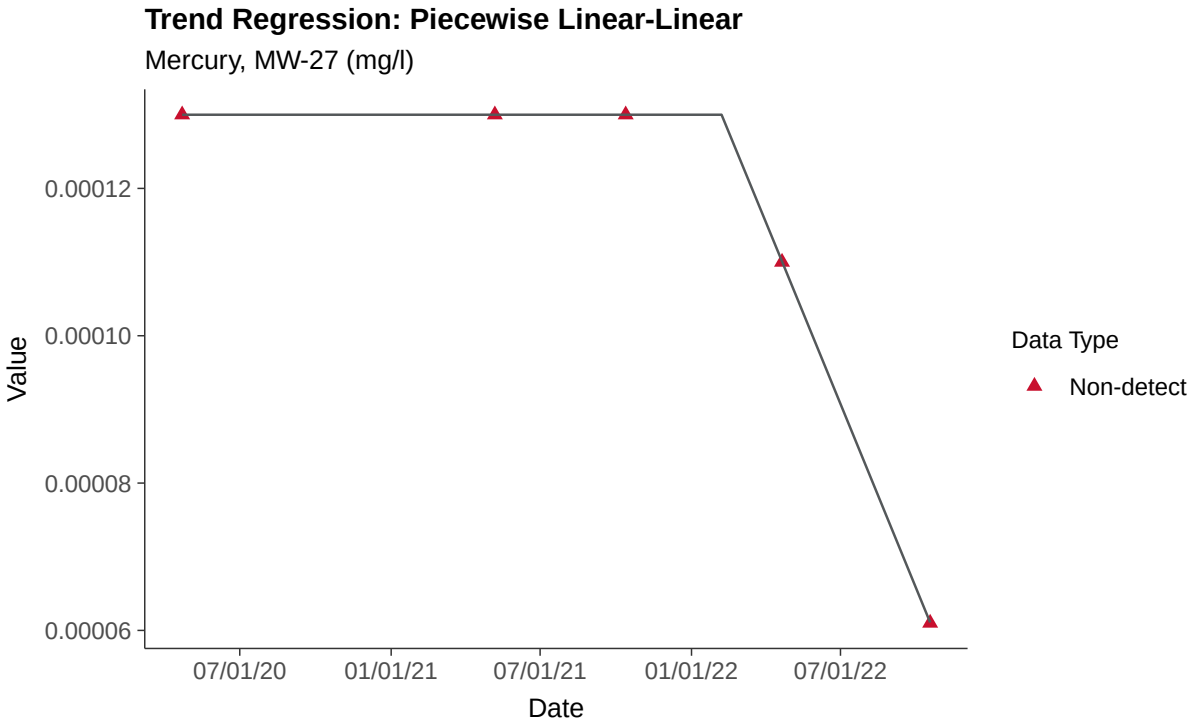
Mercury, MW-27 (mg/l)



Boxplot by Season

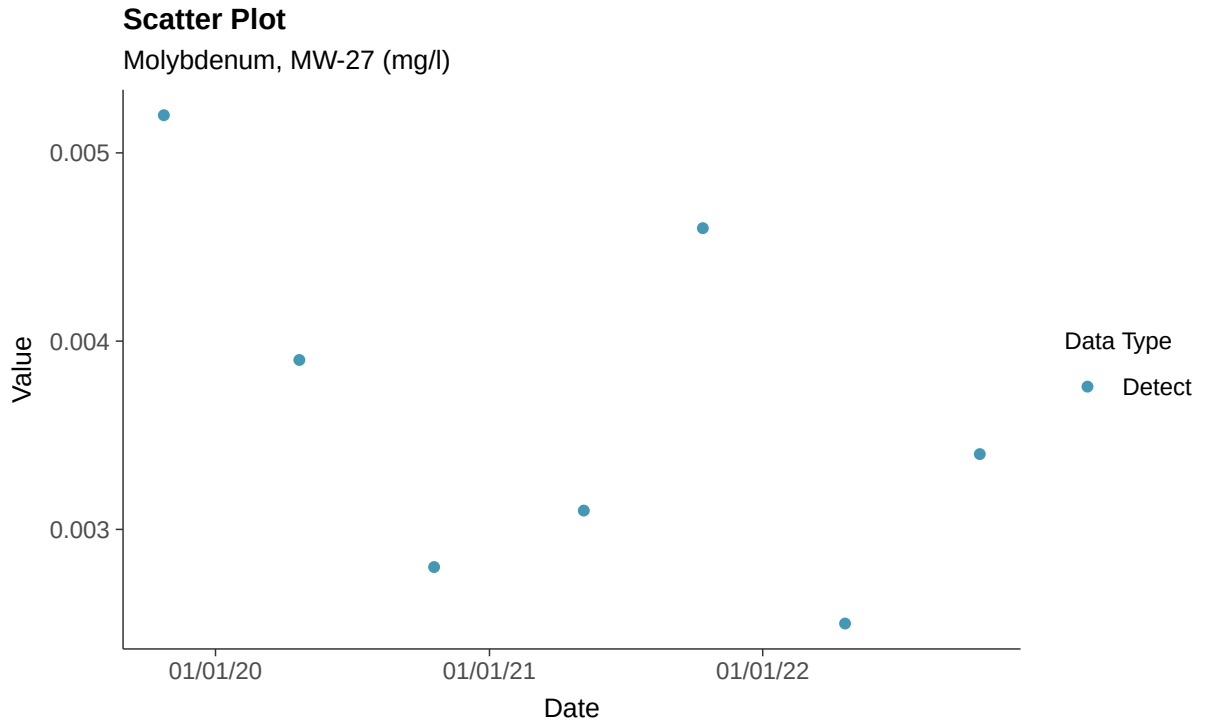
Mercury, MW-27 (mg/l)

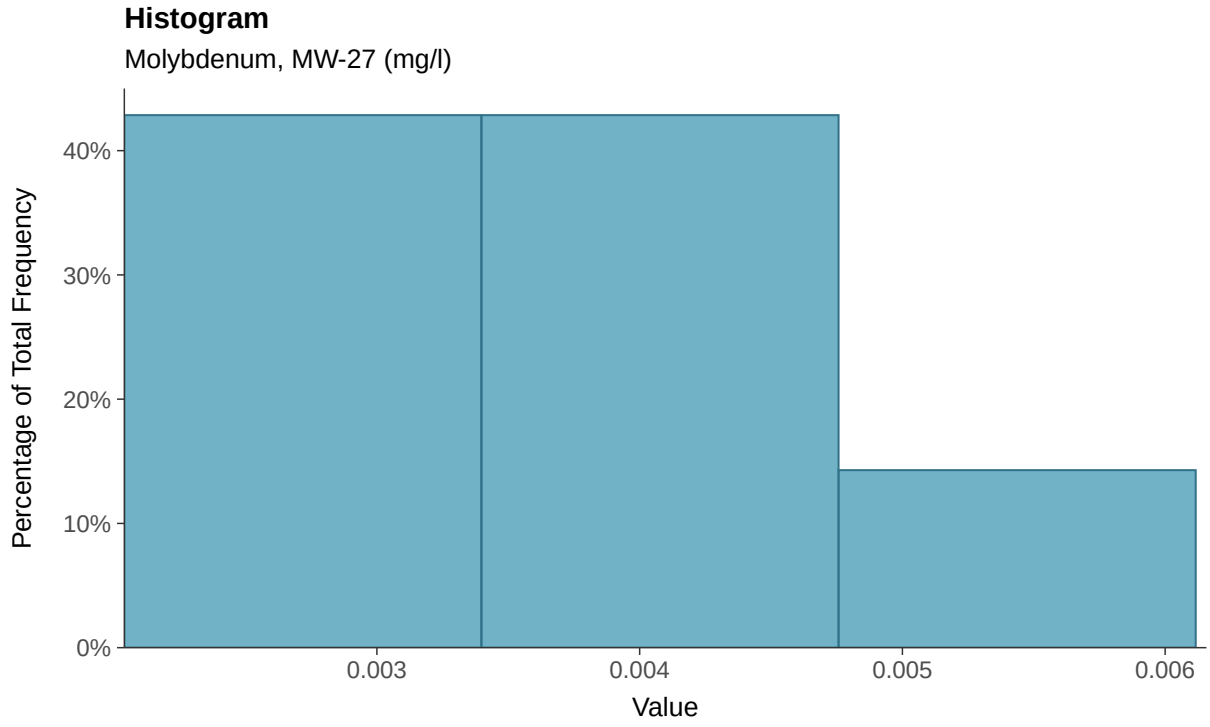



Trend Regression: Piecewise Linear-Linear
Mercury, MW-27 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
07/01/20
01/01/21
07/01/21
01/01/22
07/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-27

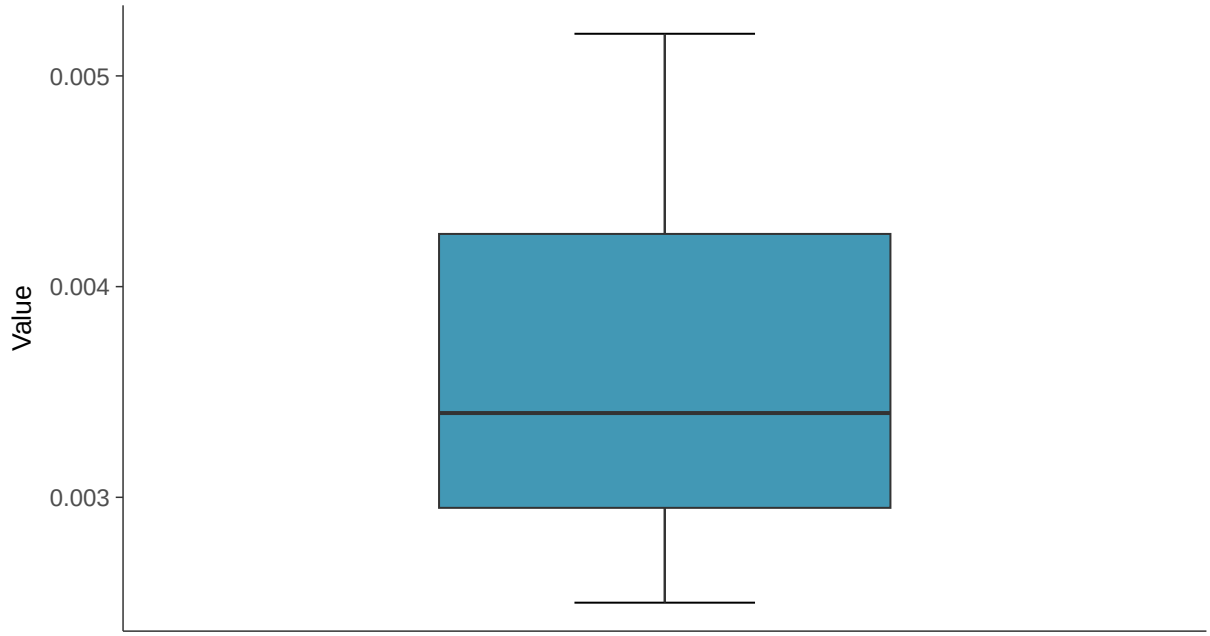
ID: 19_2_121





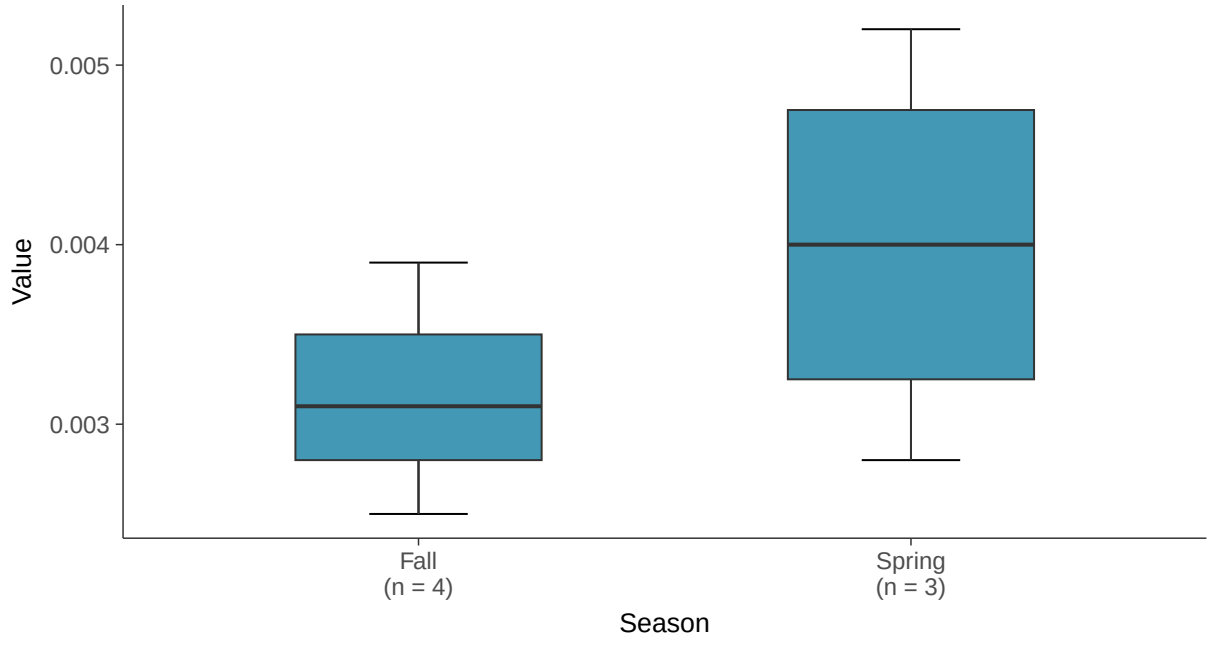
Boxplot

Molybdenum, MW-27 (mg/l)



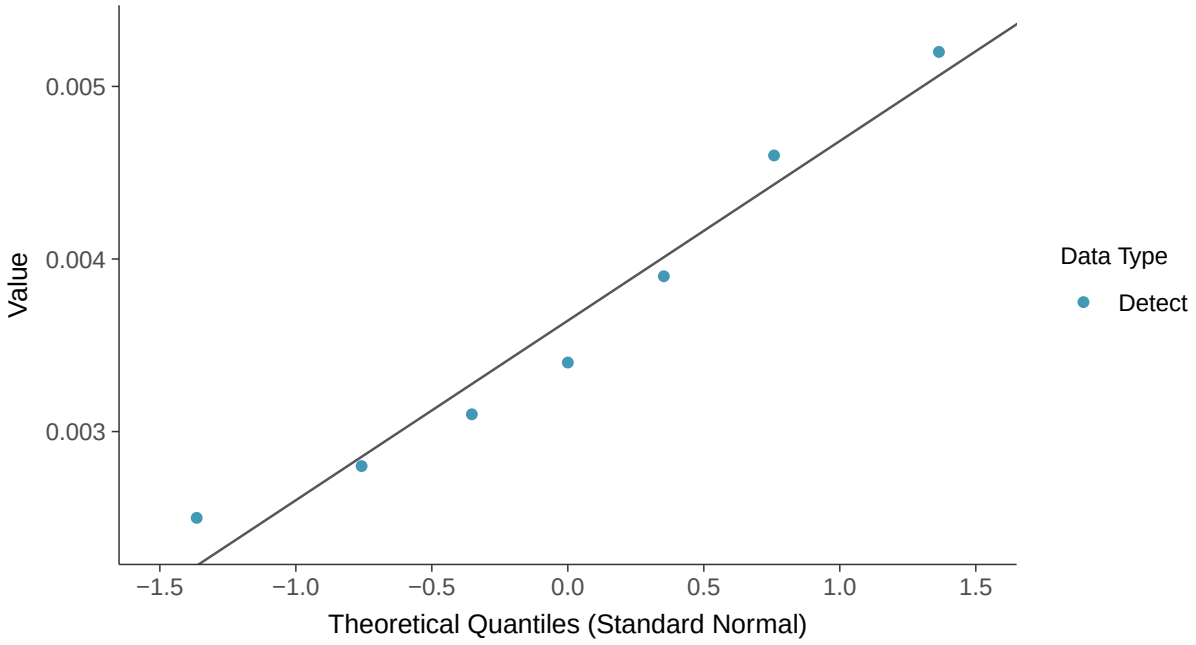
Boxplot by Season

Molybdenum, MW-27 (mg/l)



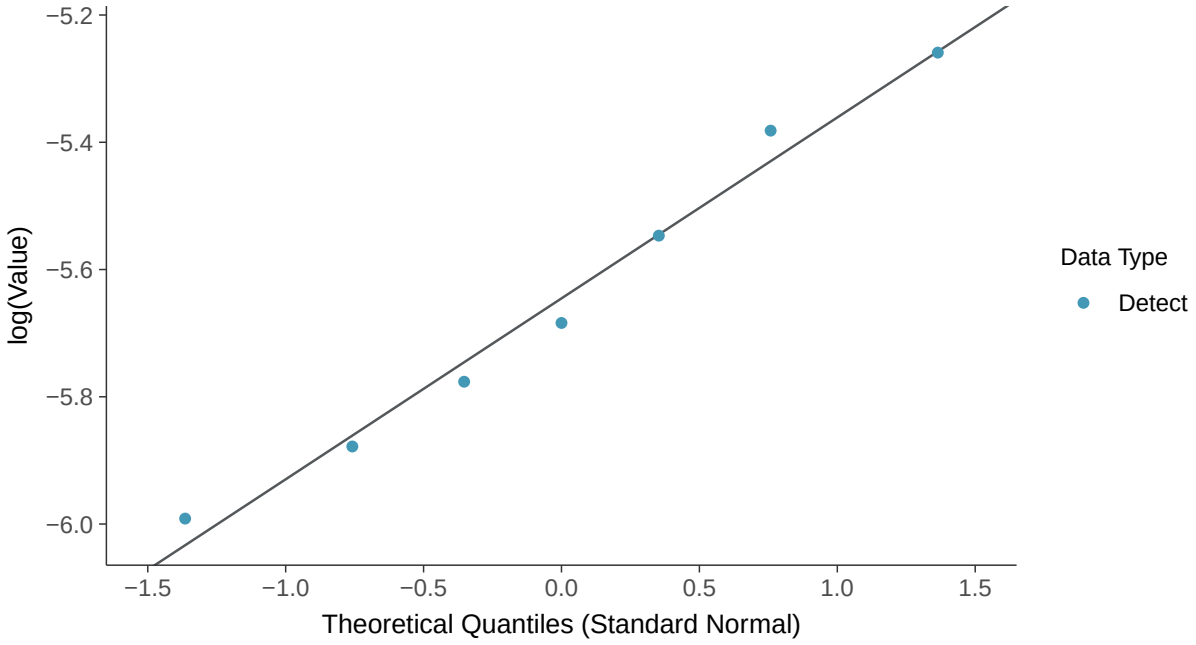
Normal Q-Q plot

Molybdenum, MW-27 (mg/l)



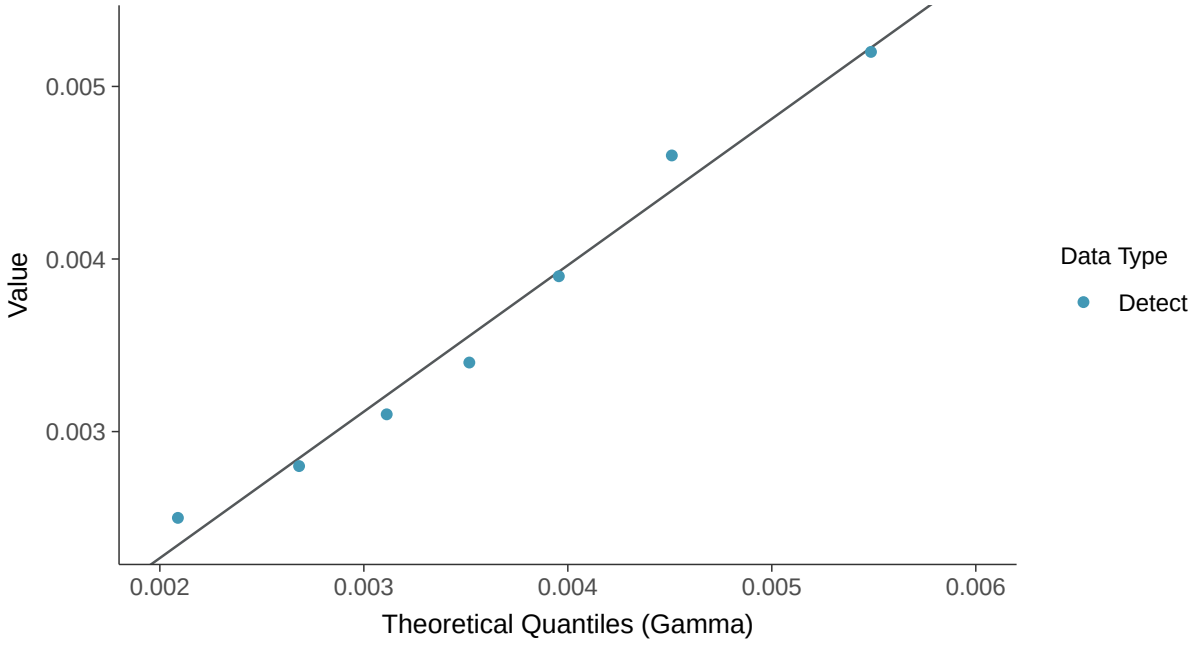
Lognormal Q-Q plot

Molybdenum, MW-27 (mg/l)



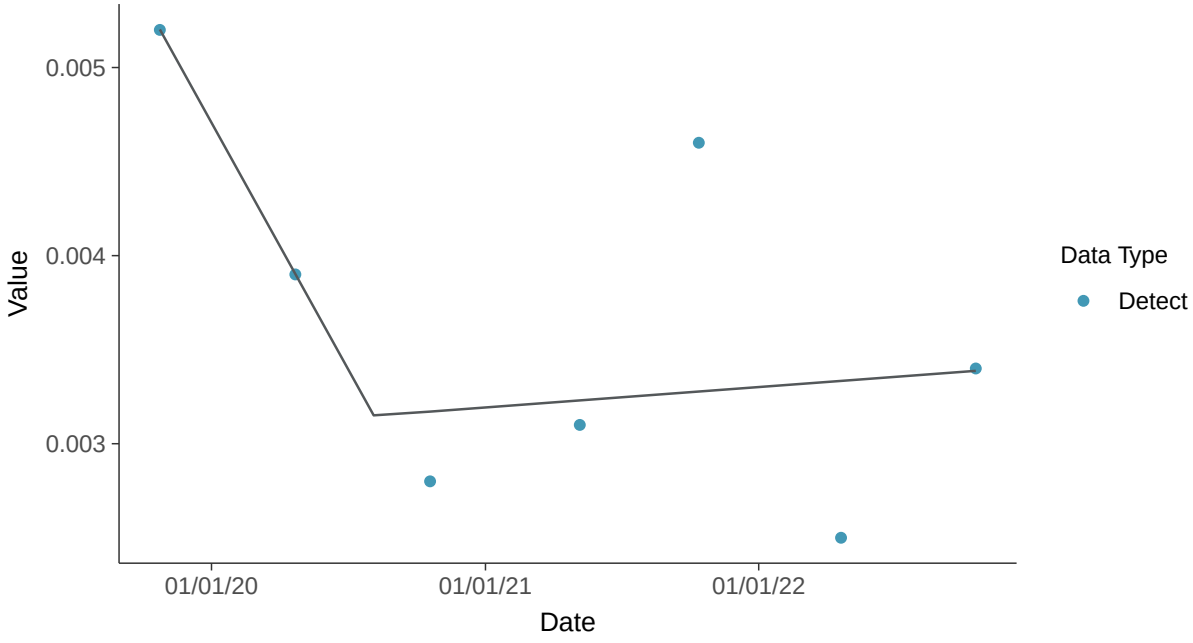
Gamma Q-Q plot

Molybdenum, MW-27 (mg/l)



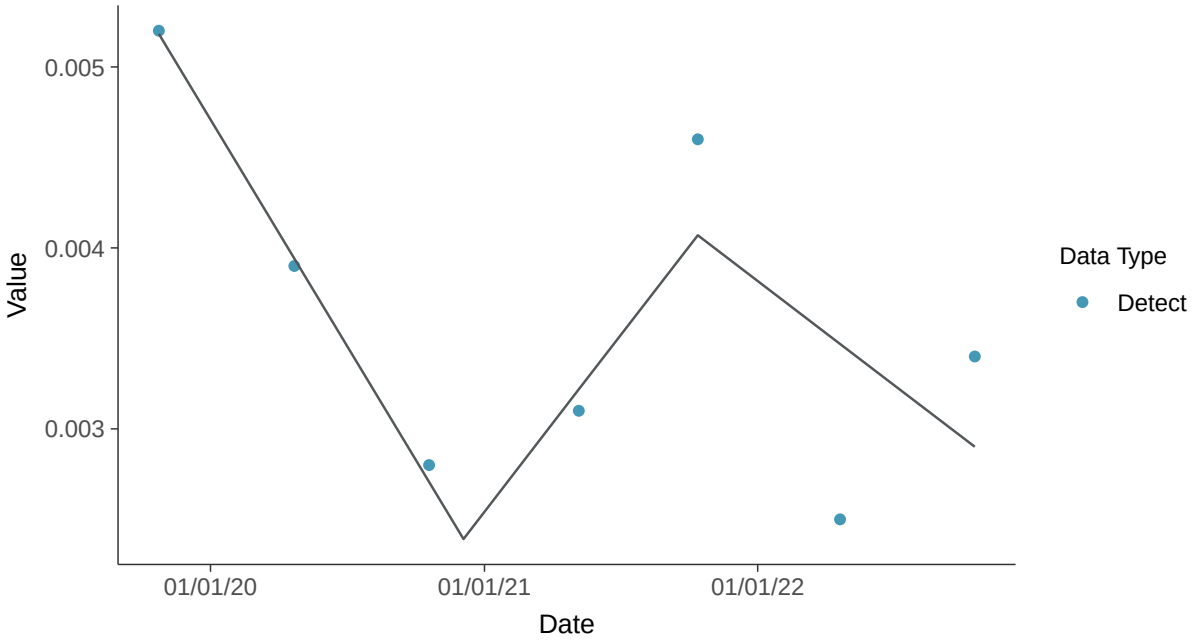
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-27 (mg/l)



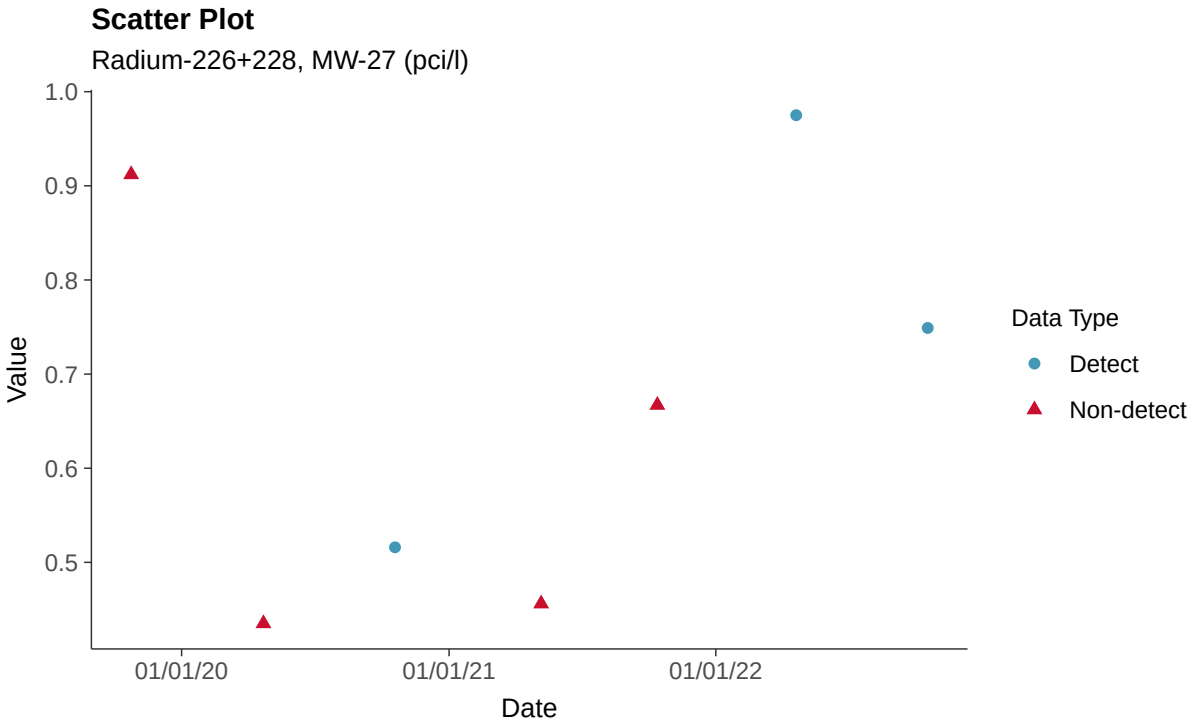
Trend Regression: Piecewise Linear-Linear-Linear

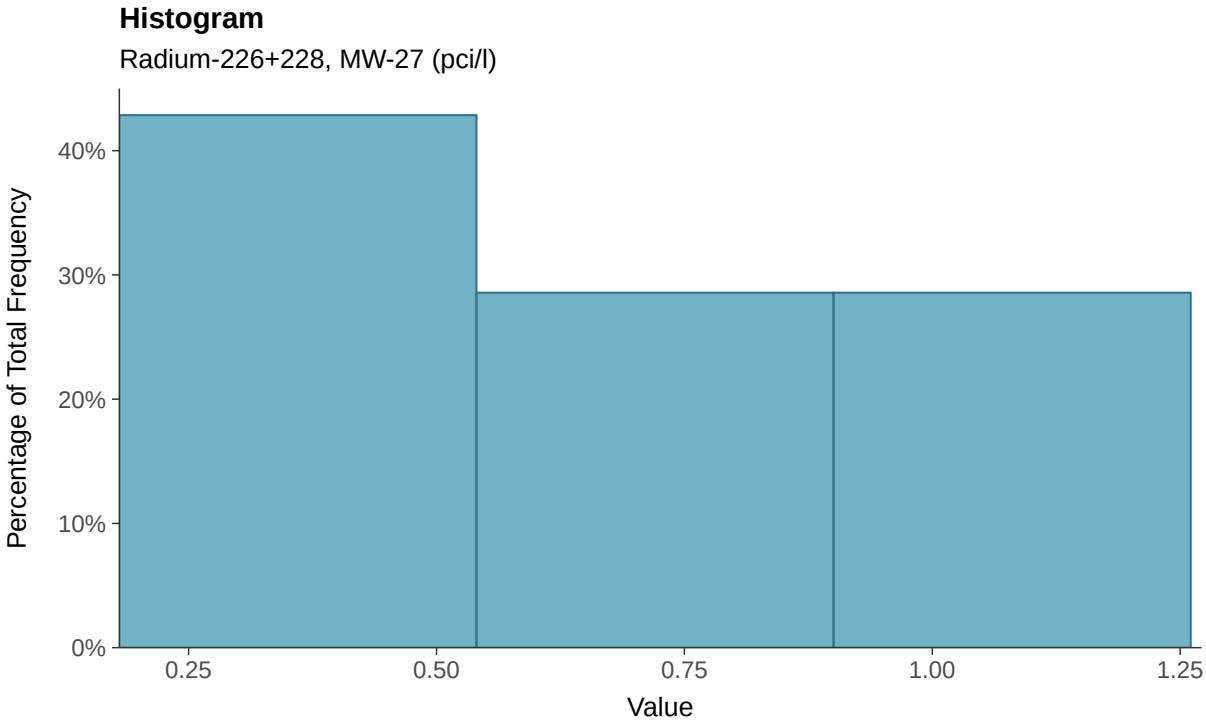
Molybdenum, MW-27 (mg/l)



Appendix IV: Radium-226+228, MW-27

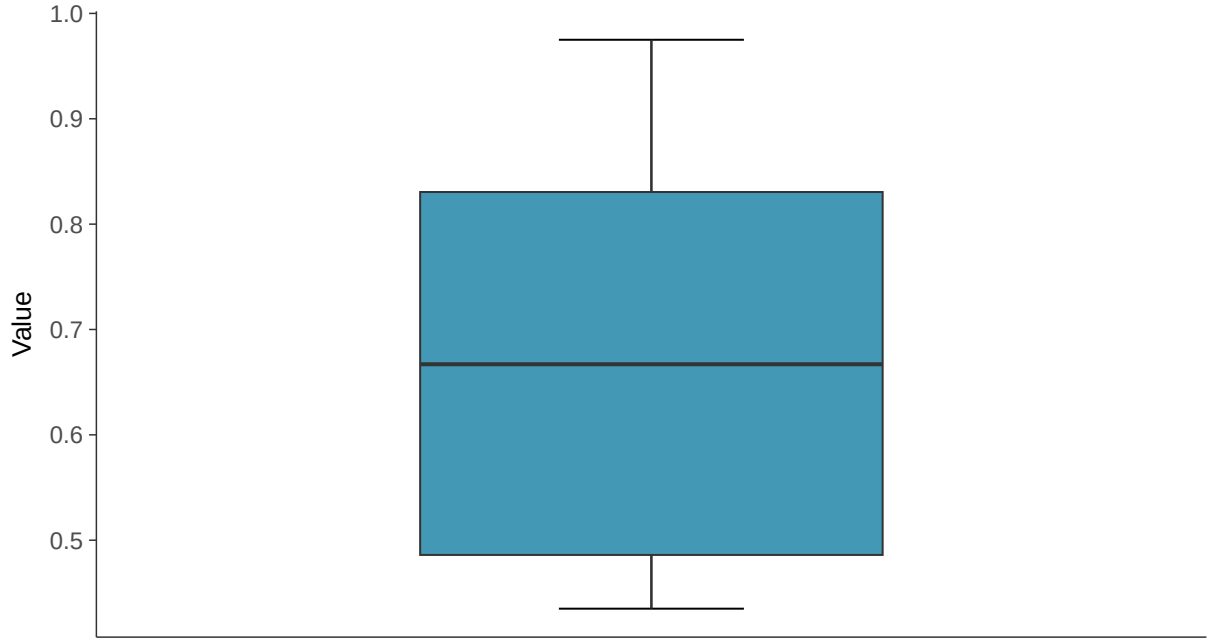
ID: 19_2_127





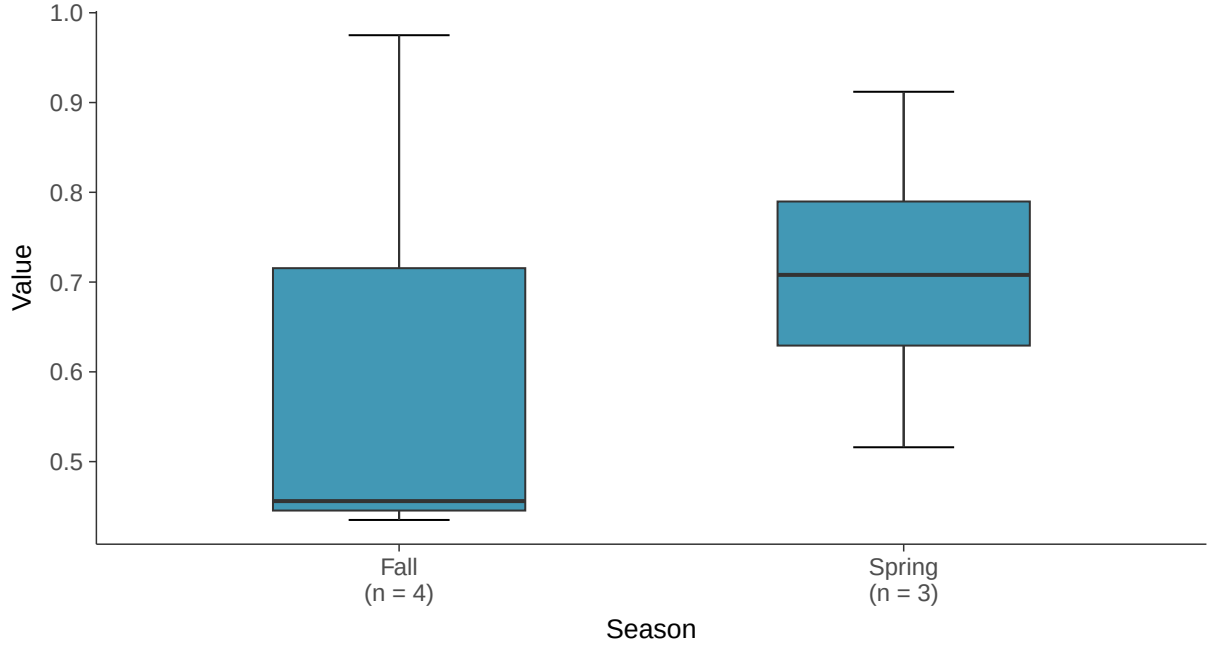
Boxplot

Radium-226+228, MW-27 (pci/l)



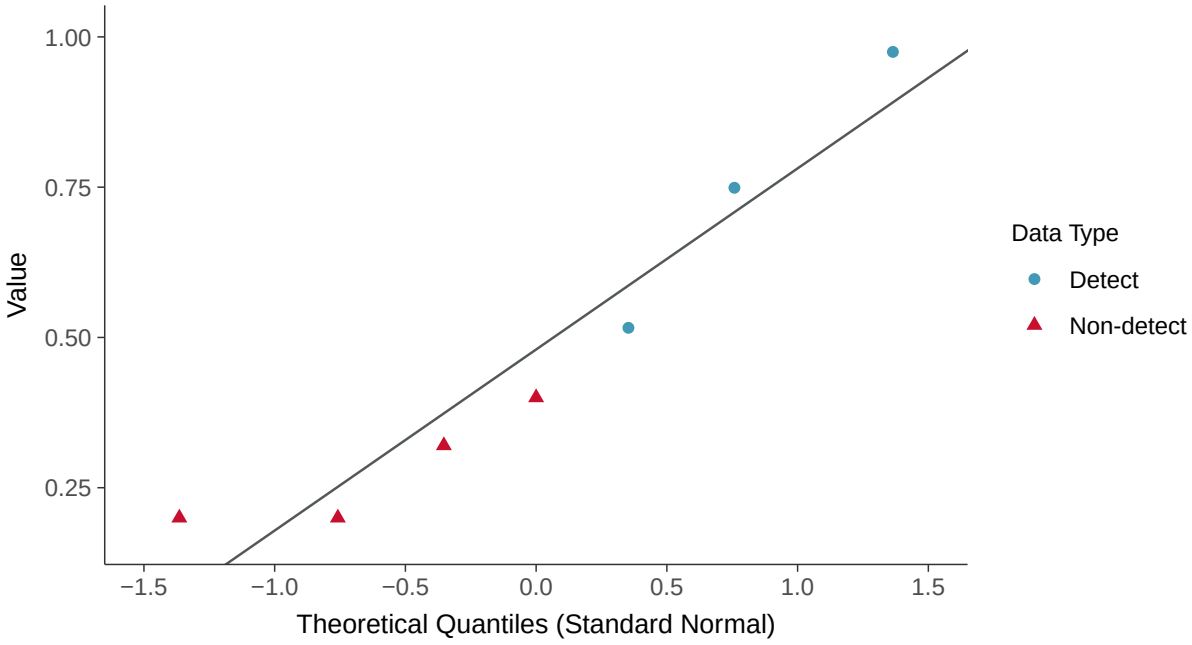
Boxplot by Season

Radium-226+228, MW-27 (pci/l)



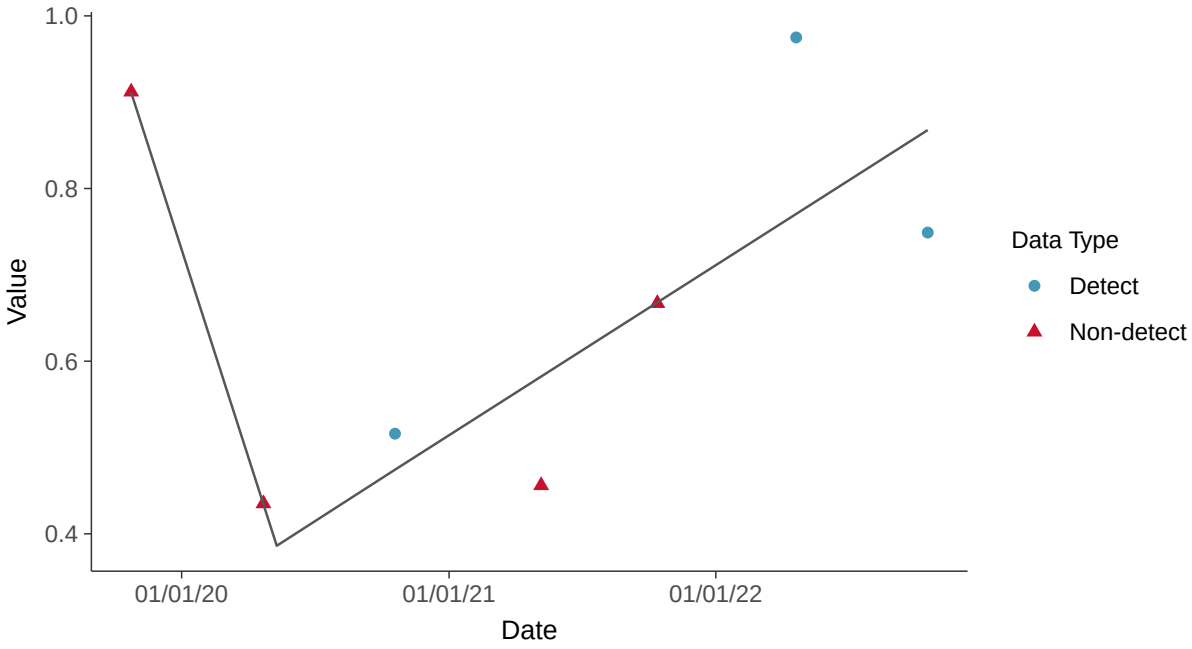
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-27 (pci/l)



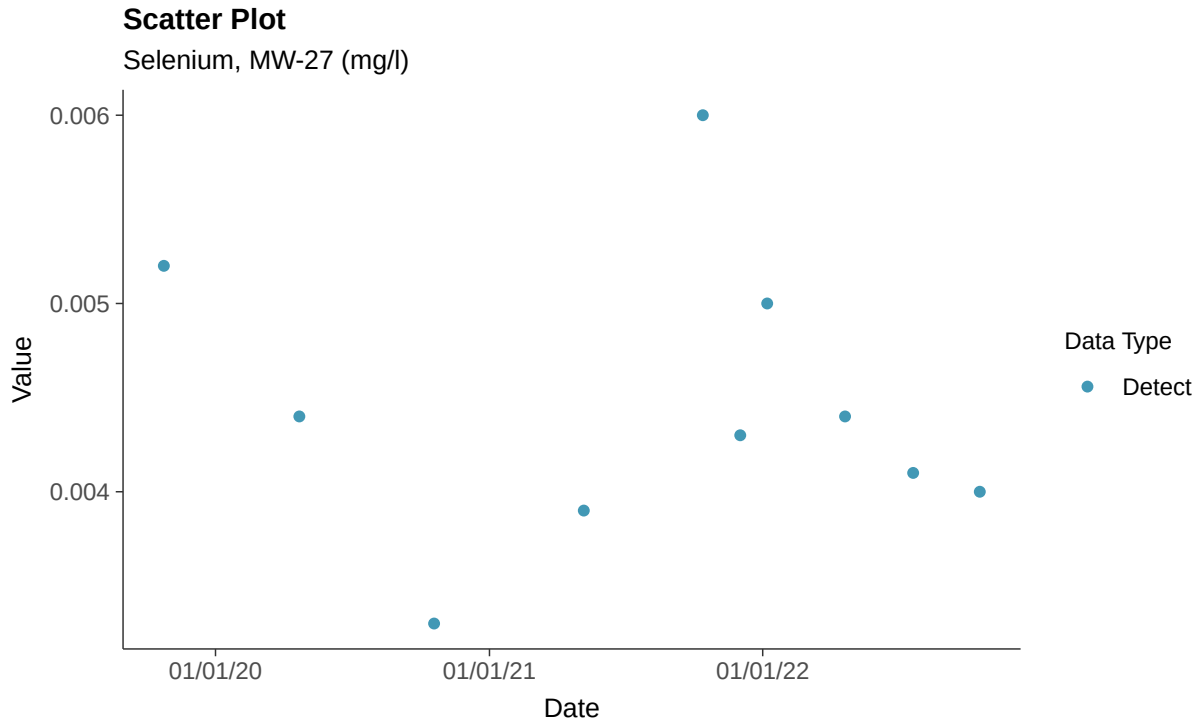
Trend Regression: Piecewise Linear-Linear

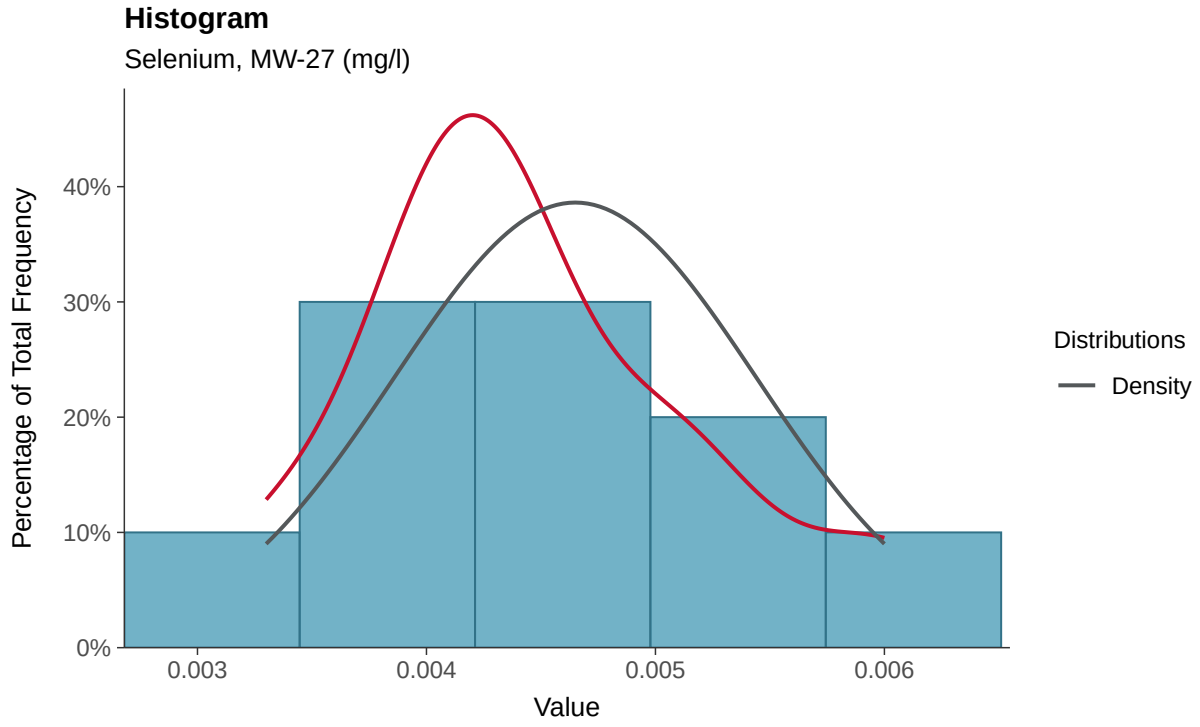
Radium-226+228, MW-27 (pci/l)



Appendix IV: Selenium, MW-27

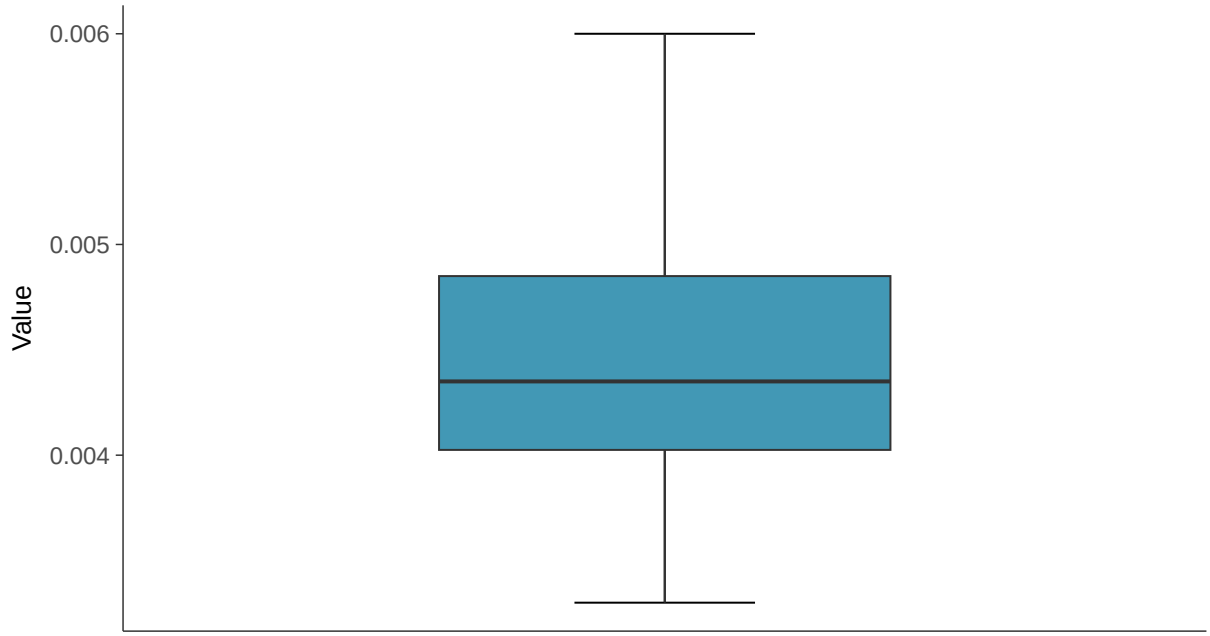
ID: 19_2_129





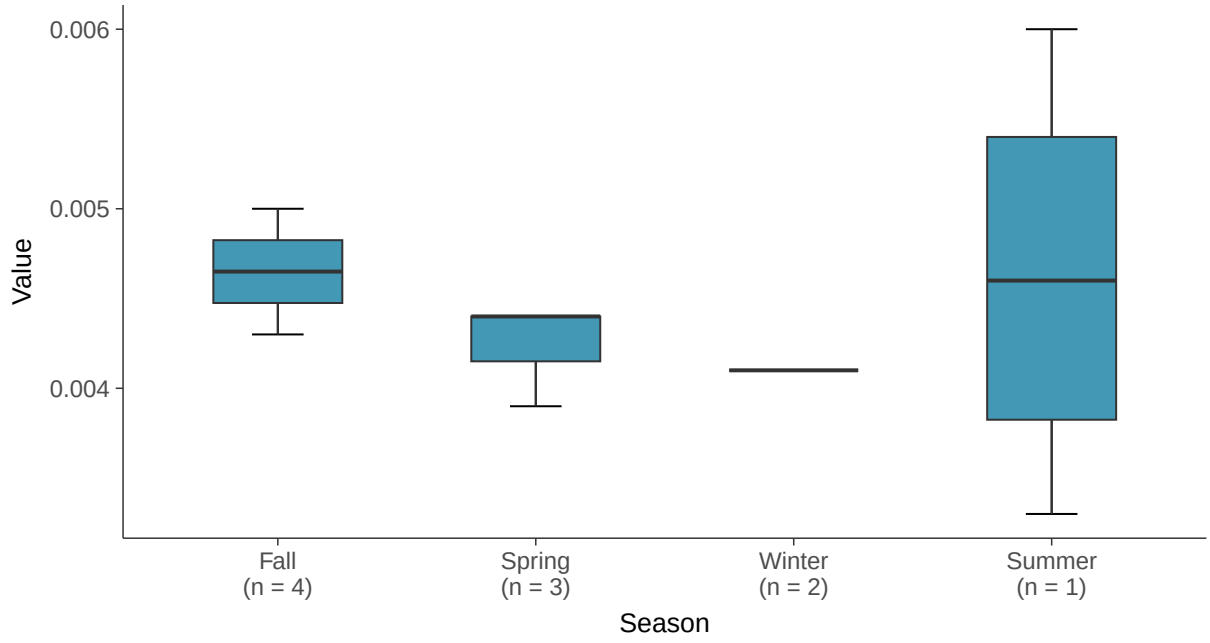
Boxplot

Selenium, MW-27 (mg/l)



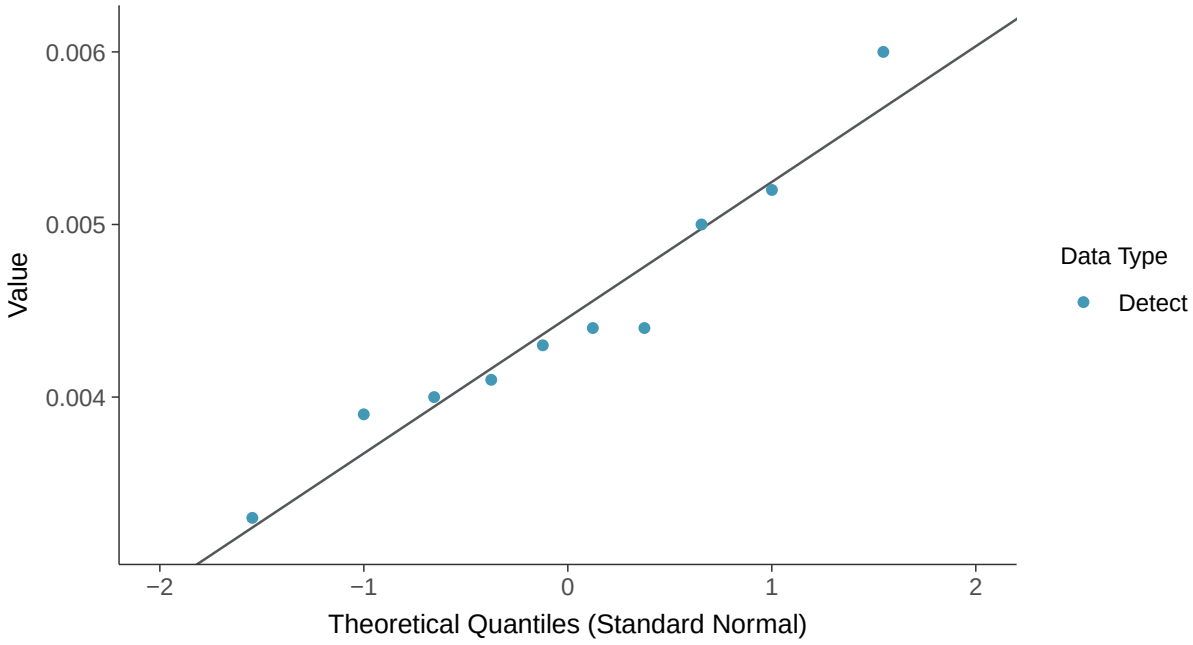
Boxplot by Season

Selenium, MW-27 (mg/l)



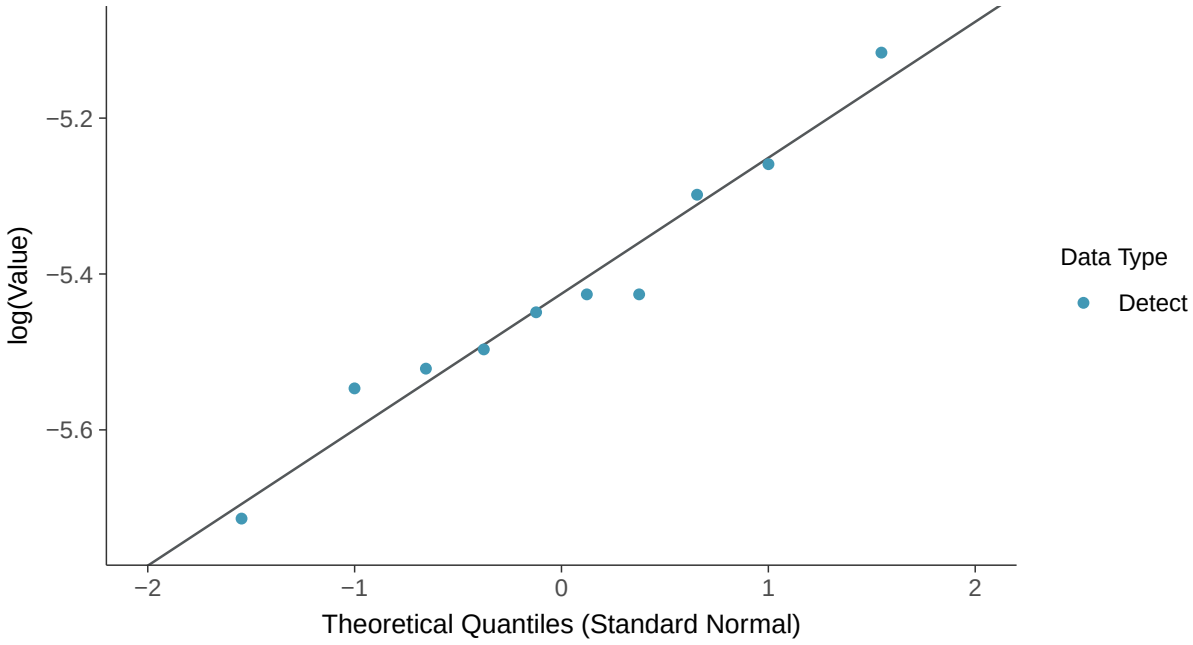
Normal Q-Q plot

Selenium, MW-27 (mg/l)



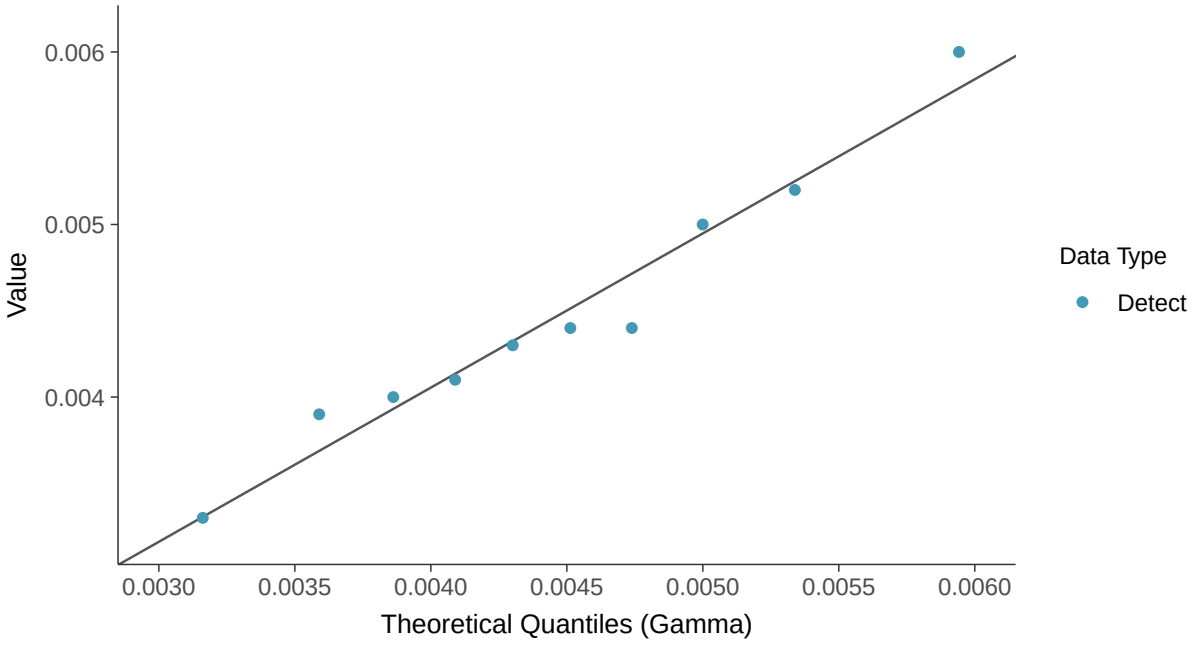
Lognormal Q-Q plot

Selenium, MW-27 (mg/l)



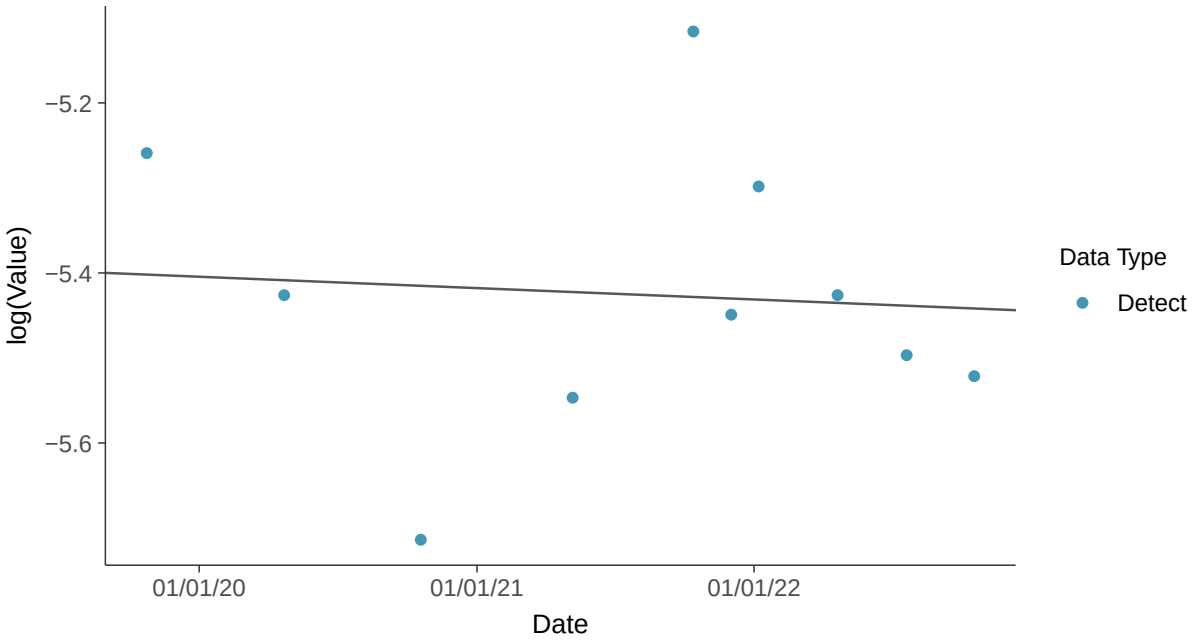
Gamma Q-Q plot

Selenium, MW-27 (mg/l)



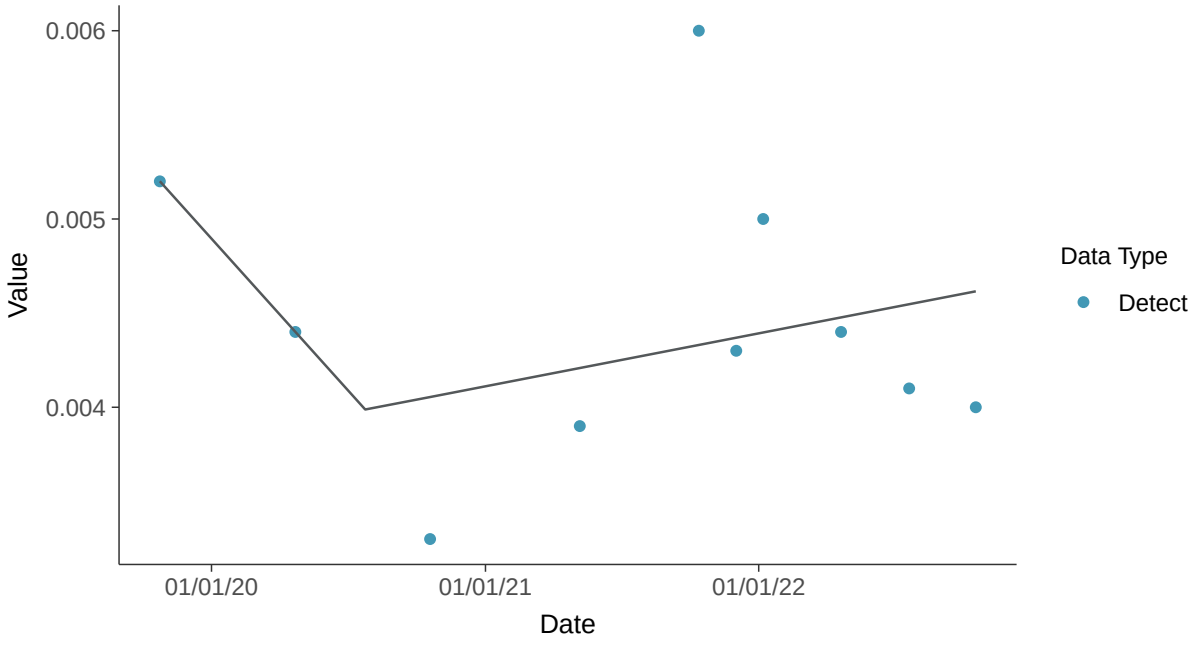
Trend Regression: Lognormal MLE

Selenium, MW-27 (mg/l)



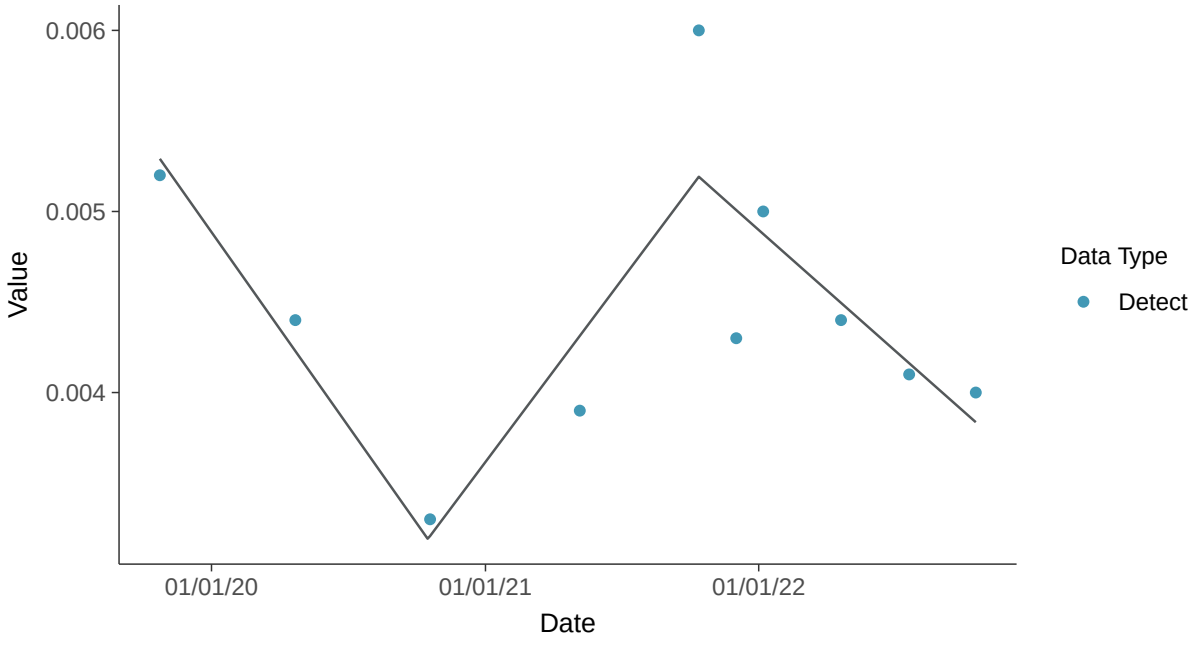
Trend Regression: Piecewise Linear-Linear

Selenium, MW-27 (mg/l)



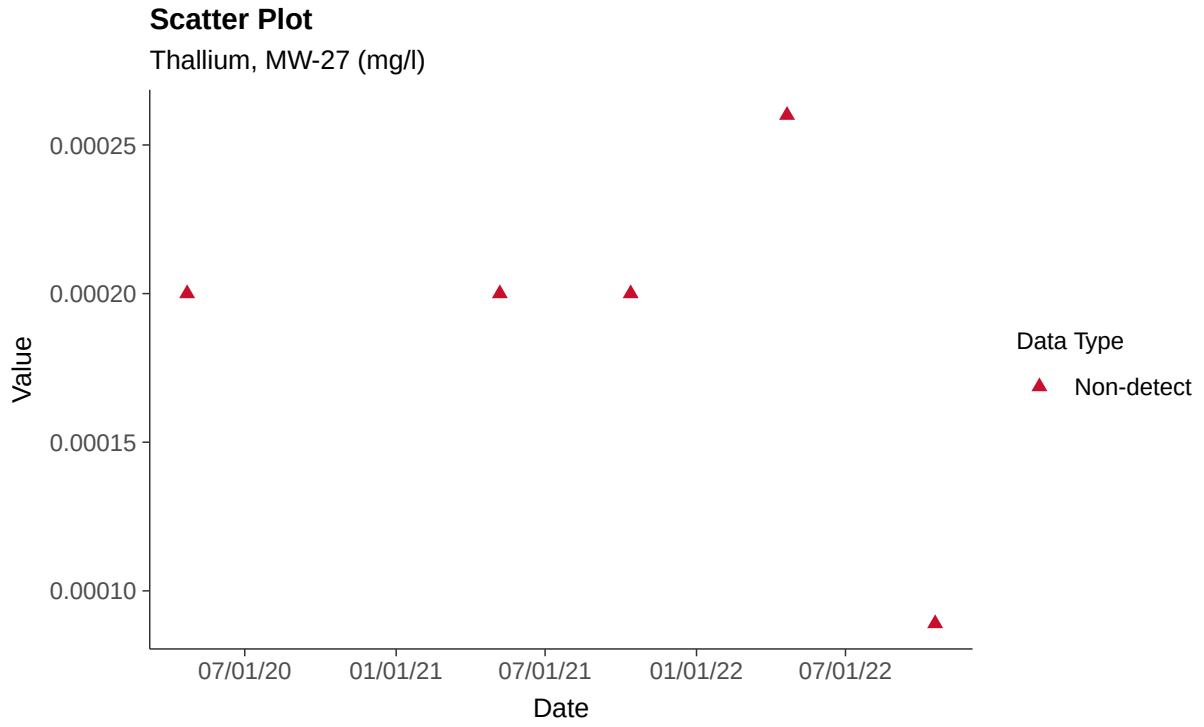
Trend Regression: Piecewise Linear-Linear-Linear

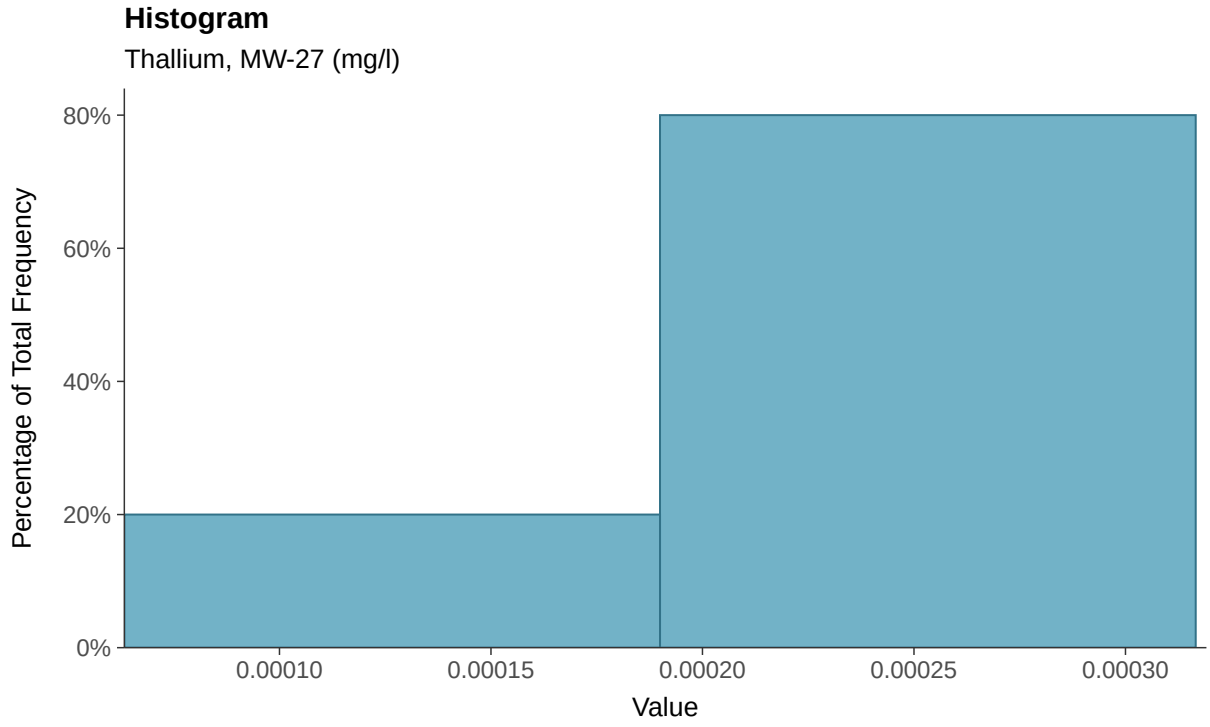
Selenium, MW-27 (mg/l)



Appendix IV: Thallium, MW-27

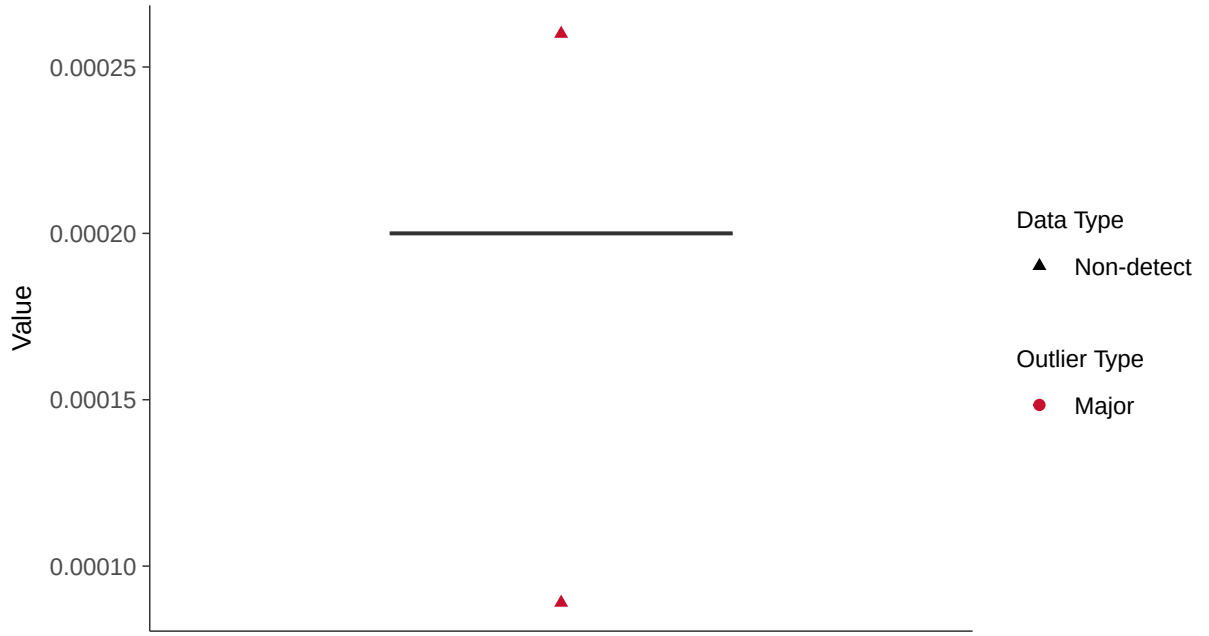
ID: 19_2_134





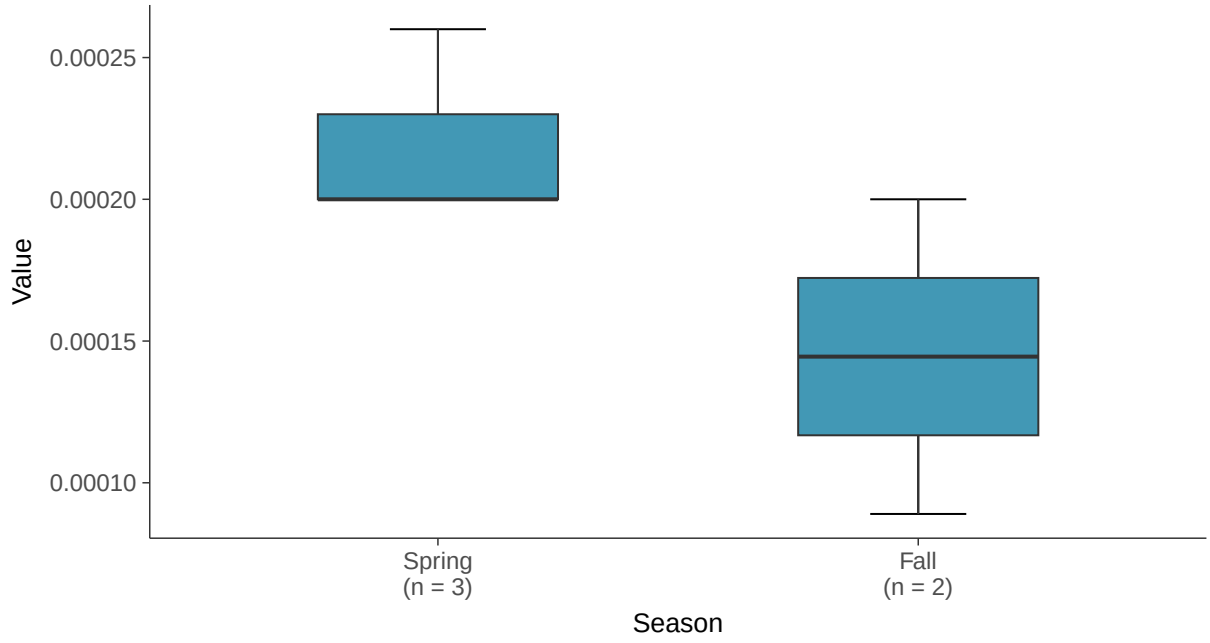
Boxplot

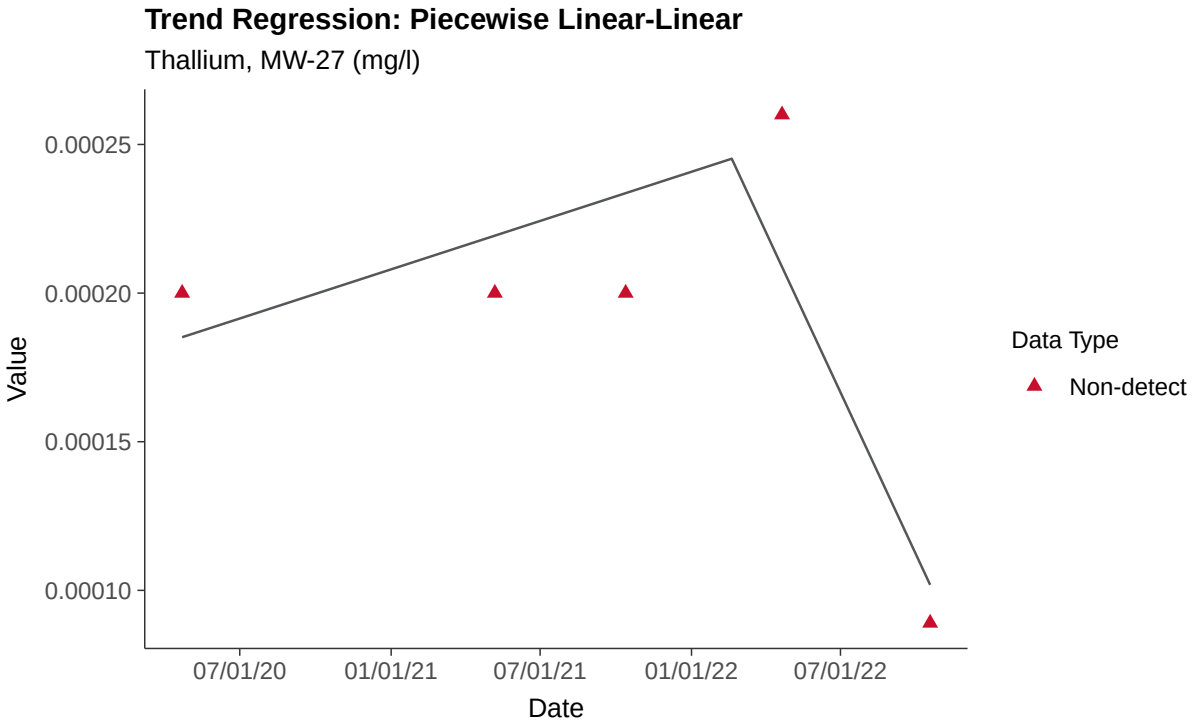
Thallium, MW-27 (mg/l)



Boxplot by Season

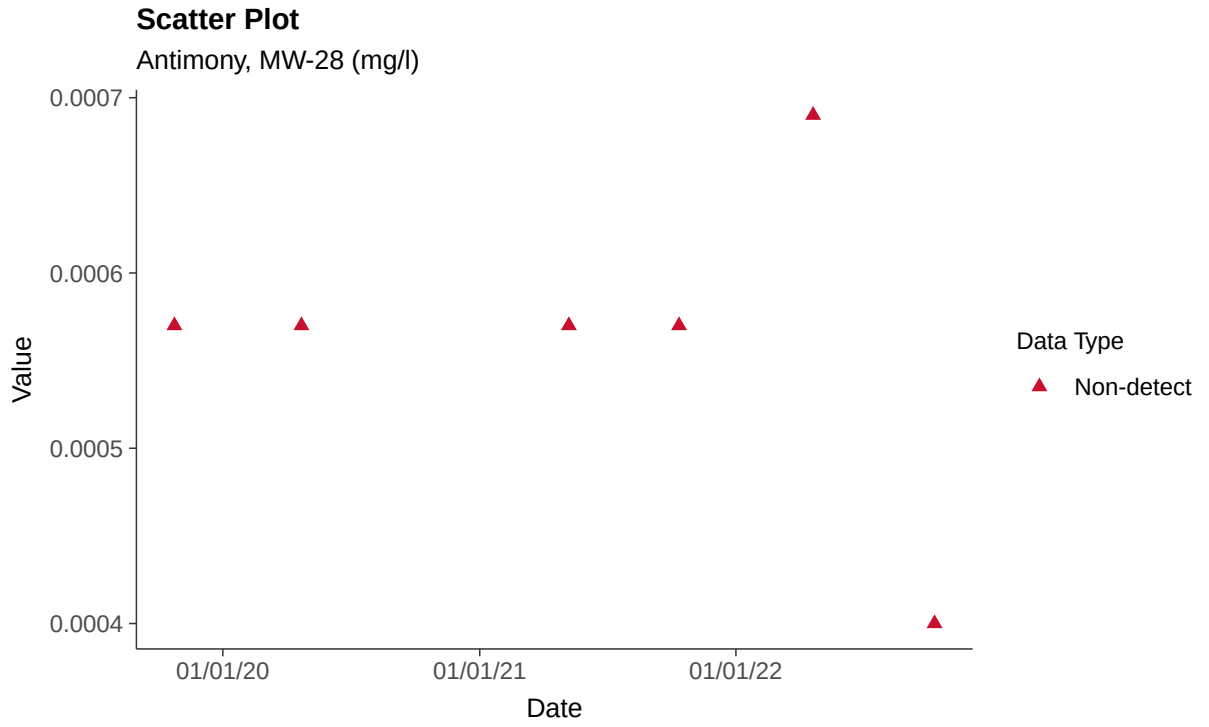
Thallium, MW-27 (mg/l)

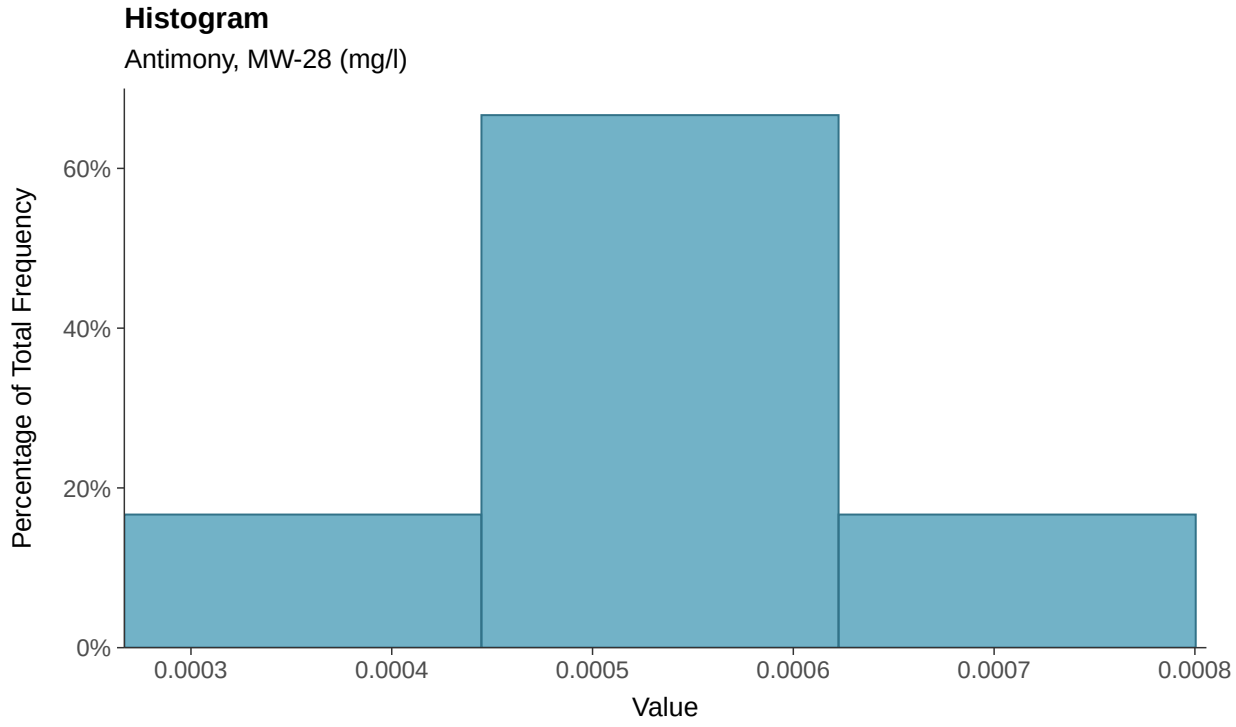



Trend Regression: Piecewise Linear-Linear
Thallium, MW-27 (mg/l)
0.00025
0.00020
0.00015
0.00010
Value
07/01/20
01/01/21
07/01/21
01/01/22
07/01/22
Date
Data Type
Non-detect

Appendix IV: Antimony, MW-28

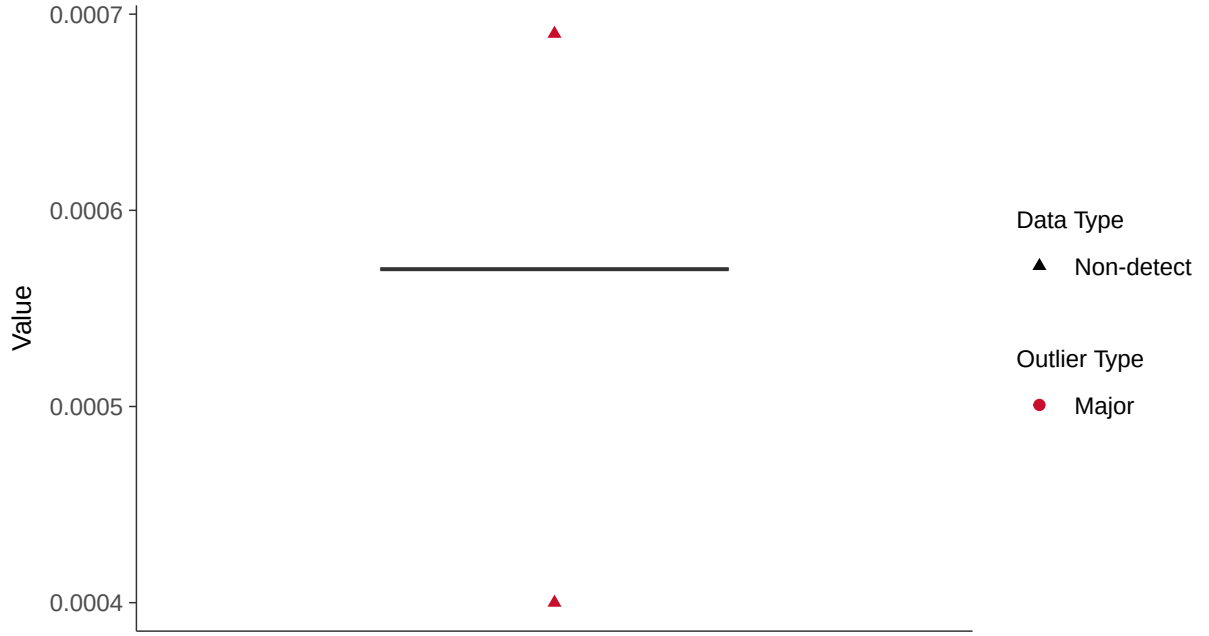
ID: 20_2_104





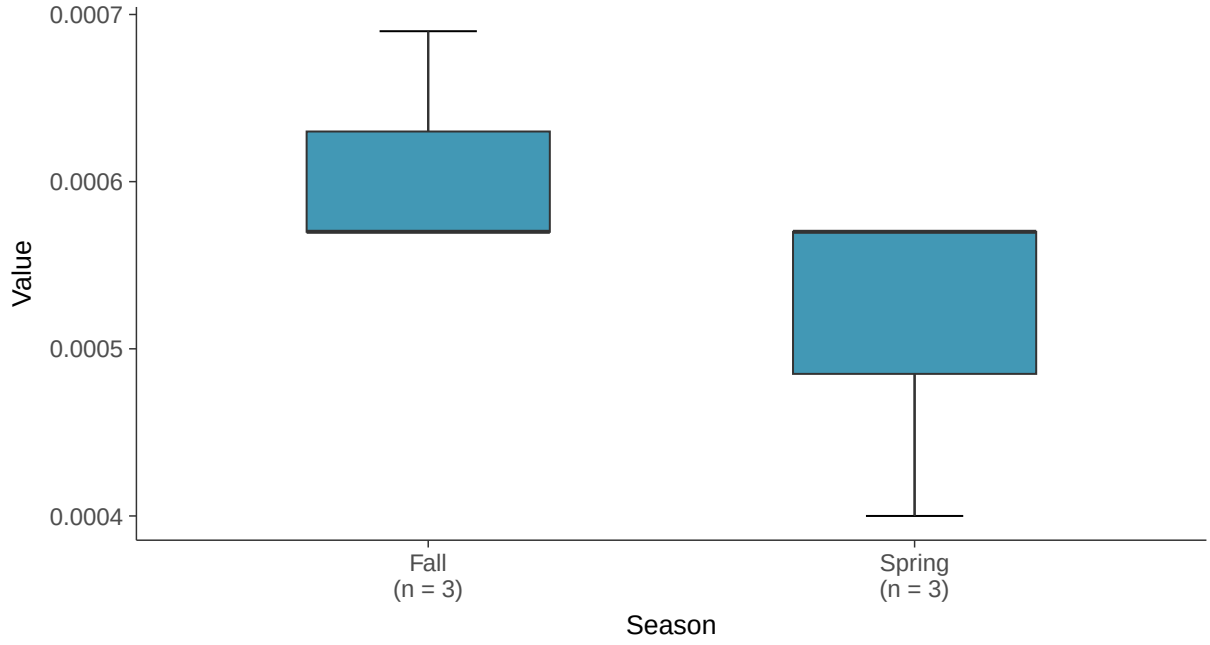
Boxplot

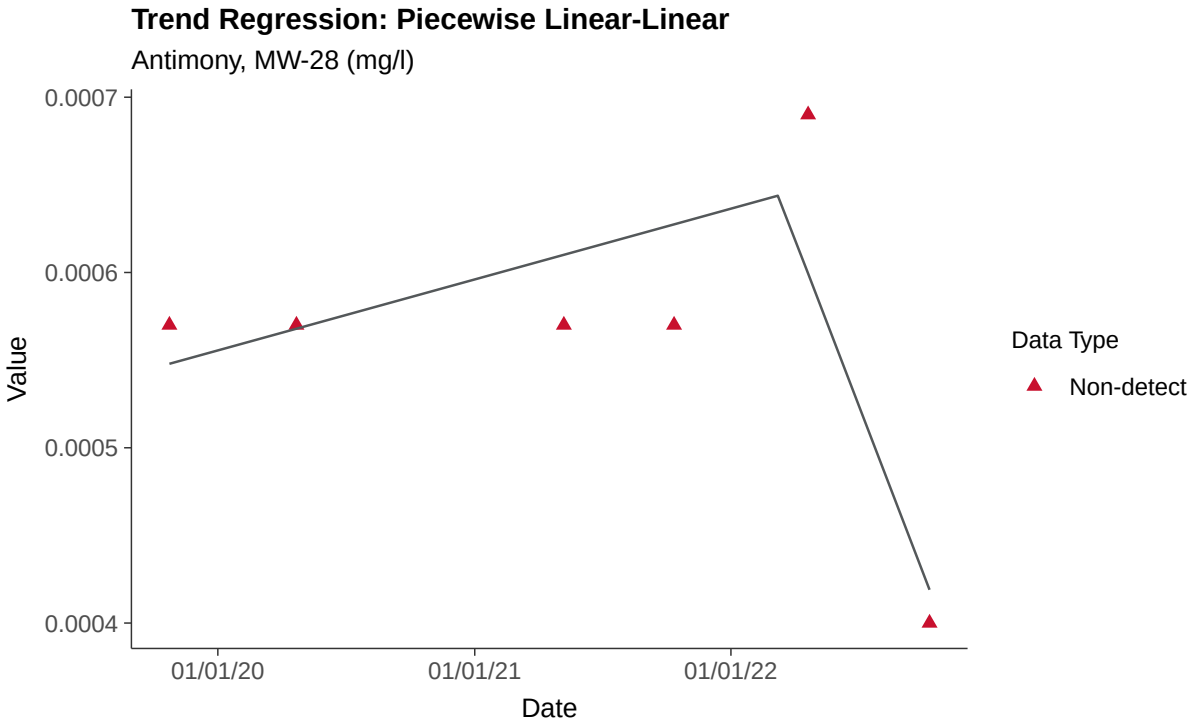
Antimony, MW-28 (mg/l)



Boxplot by Season

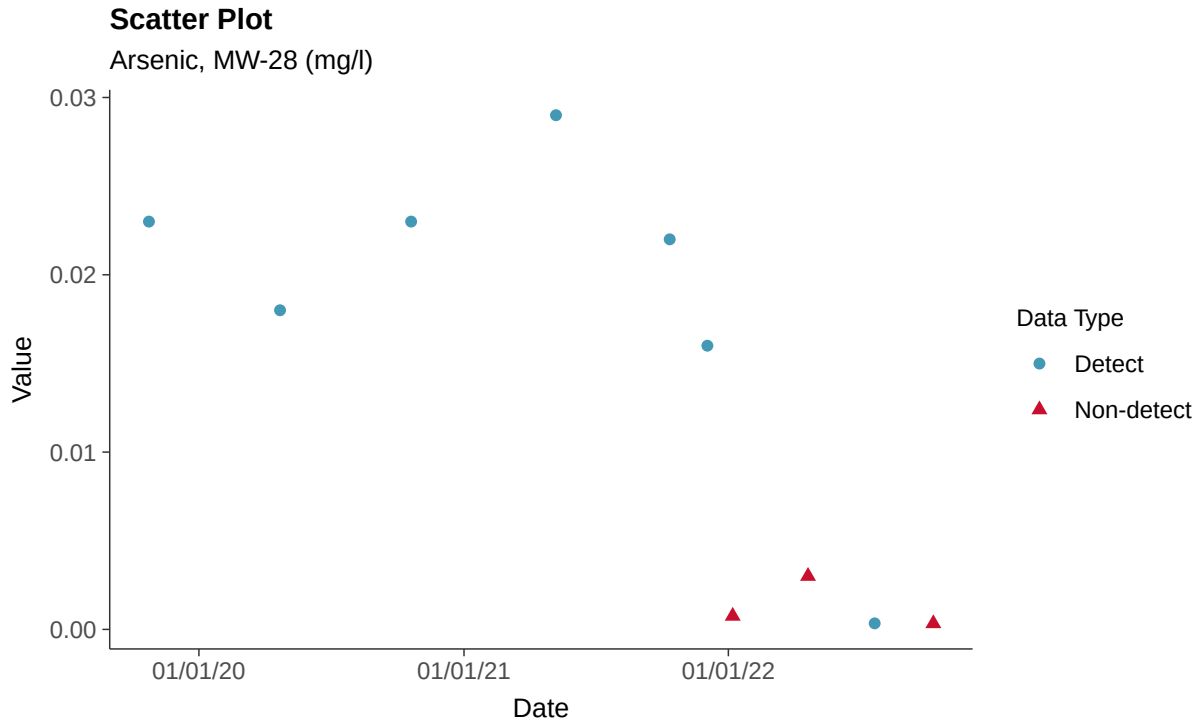
Antimony, MW-28 (mg/l)

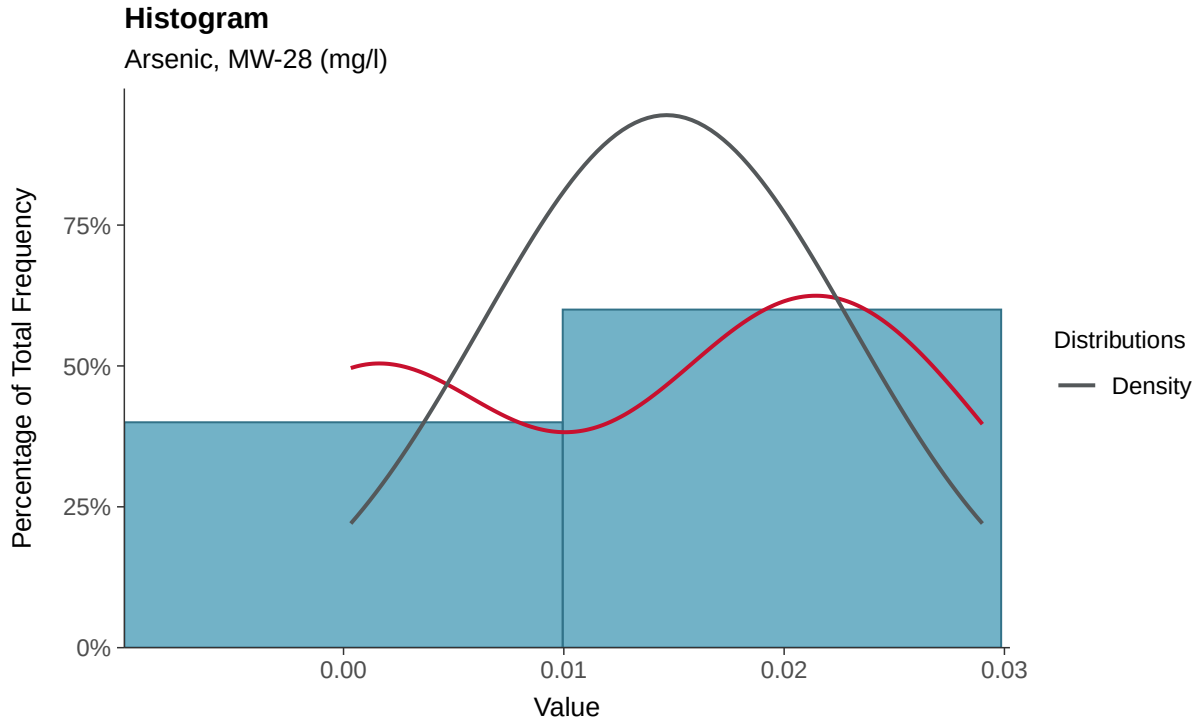



Trend Regression: Piecewise Linear-Linear
Antimony, MW-28 (mg/l)
0.0007
0.0006
0.0005
0.0004
Value
01/01/20
01/01/21
01/01/22
Date
Data Type
Non-detect

Appendix IV: Arsenic, MW-28

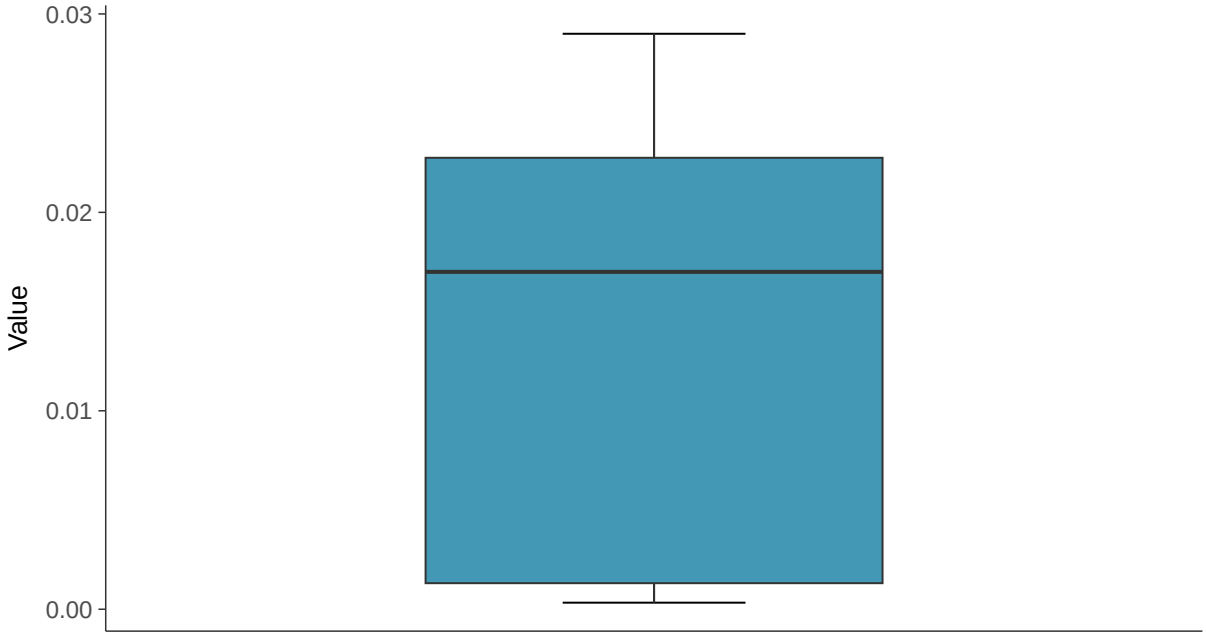
ID: 20_2_105





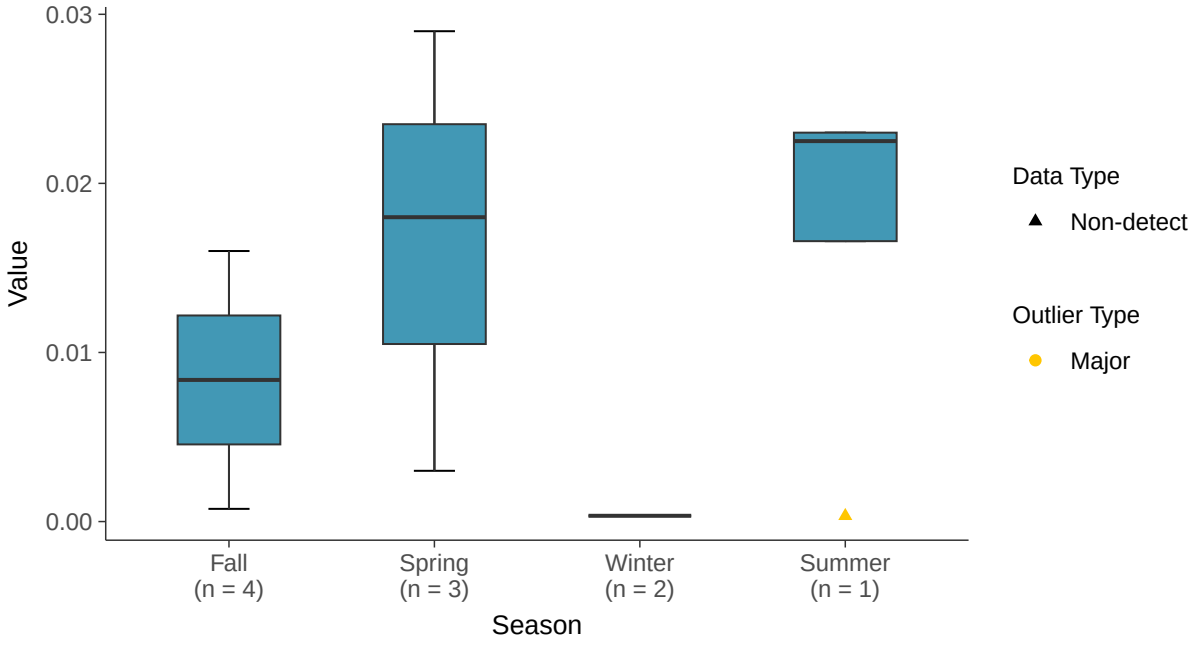
Boxplot

Arsenic, MW-28 (mg/l)



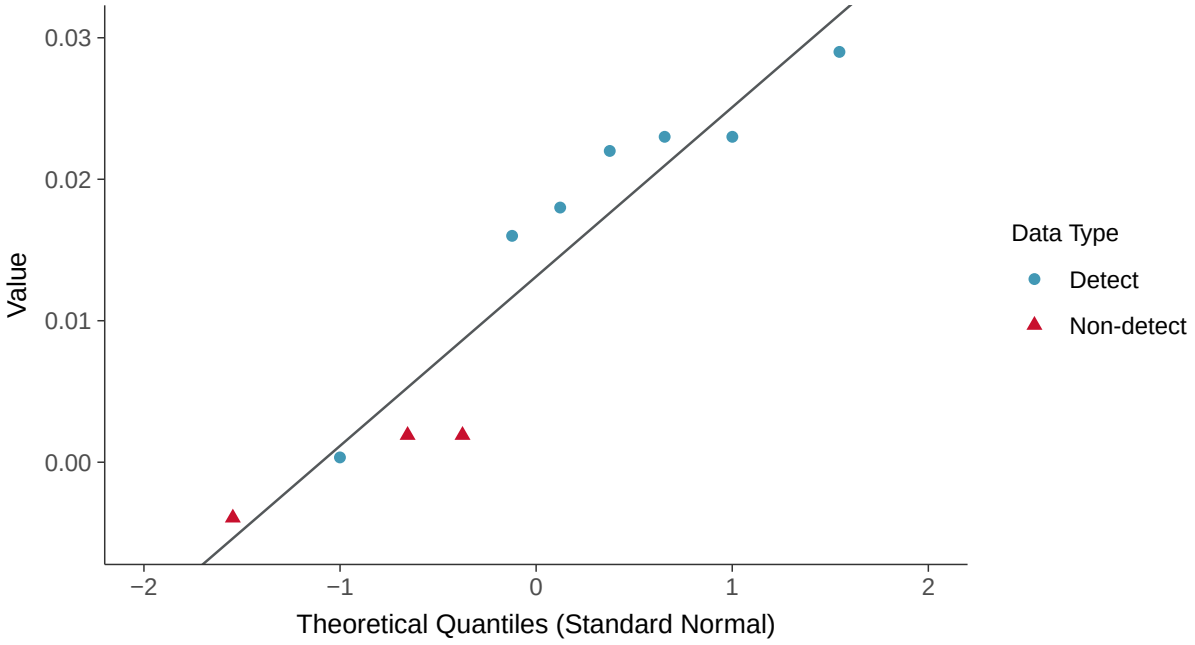
Boxplot by Season

Arsenic, MW-28 (mg/l)



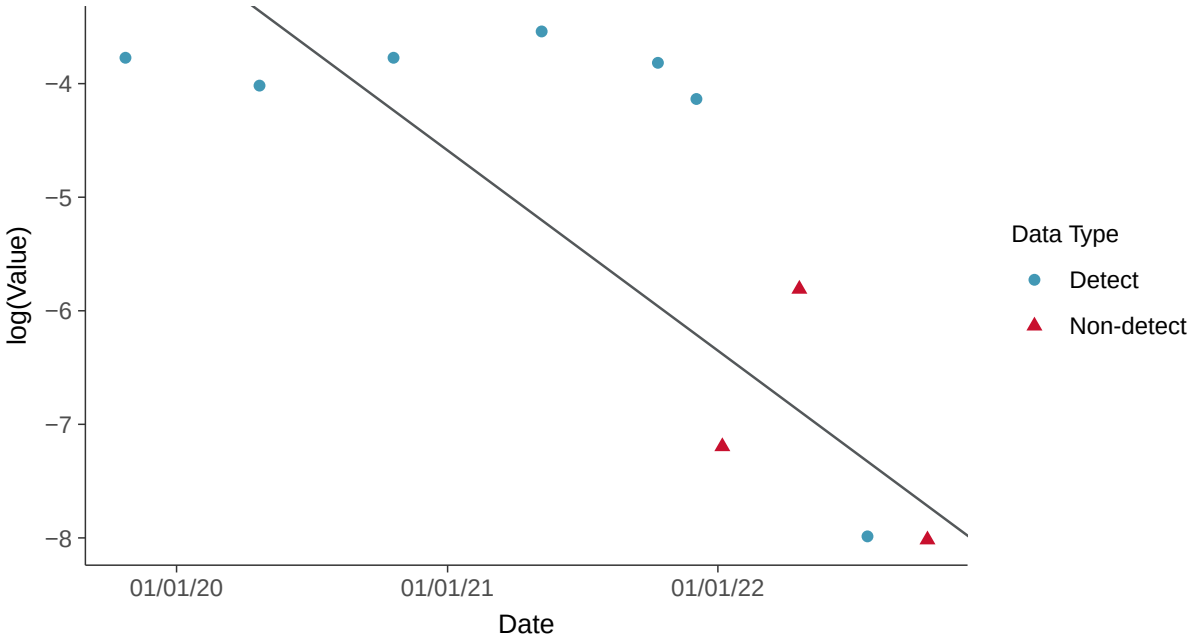
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-28 (mg/l)



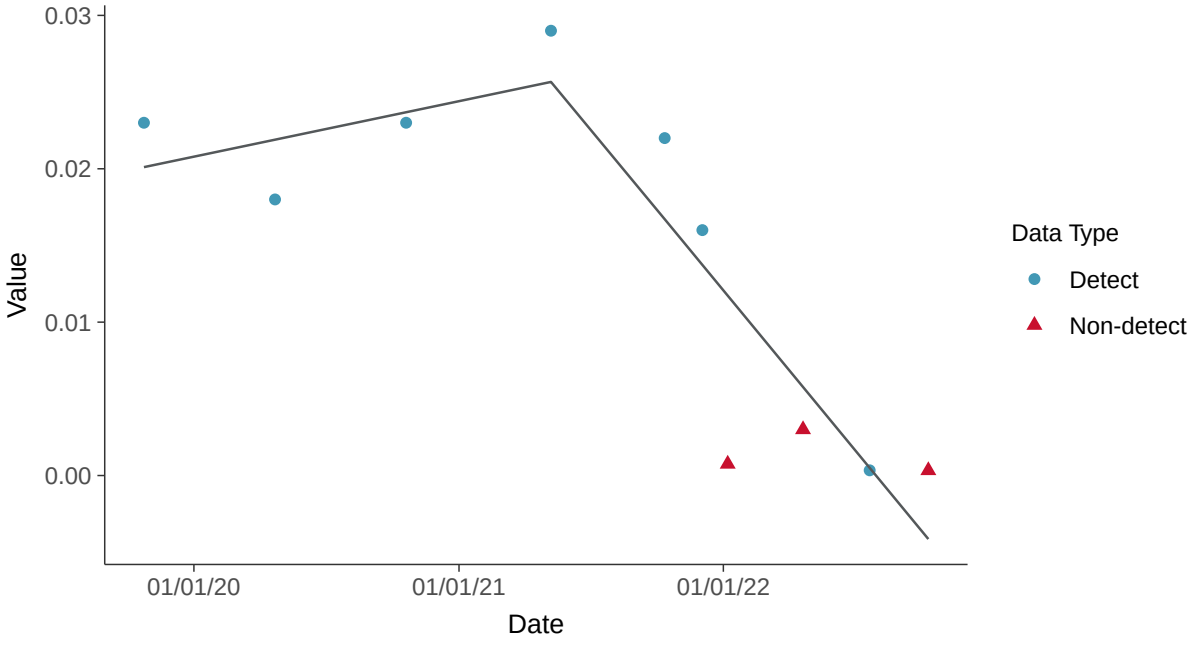
Trend Regression: Lognormal MLE

Arsenic, MW-28 (mg/l)



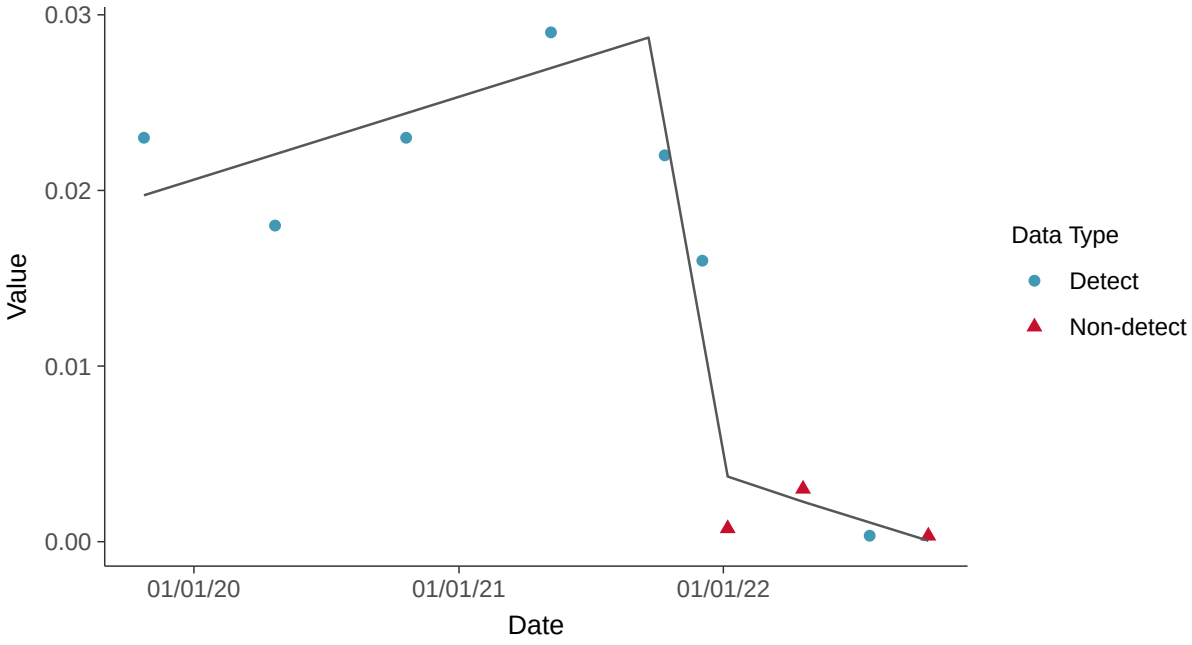
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-28 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-28 (mg/l)

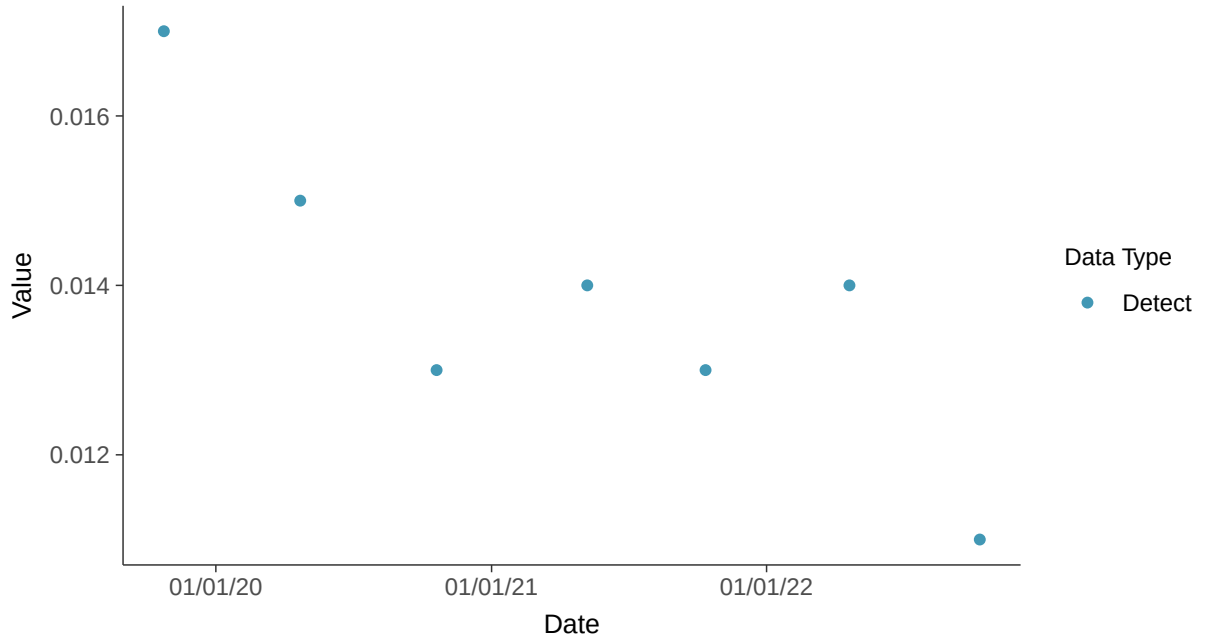


Appendix IV: Barium, MW-28

ID: 20_2_106

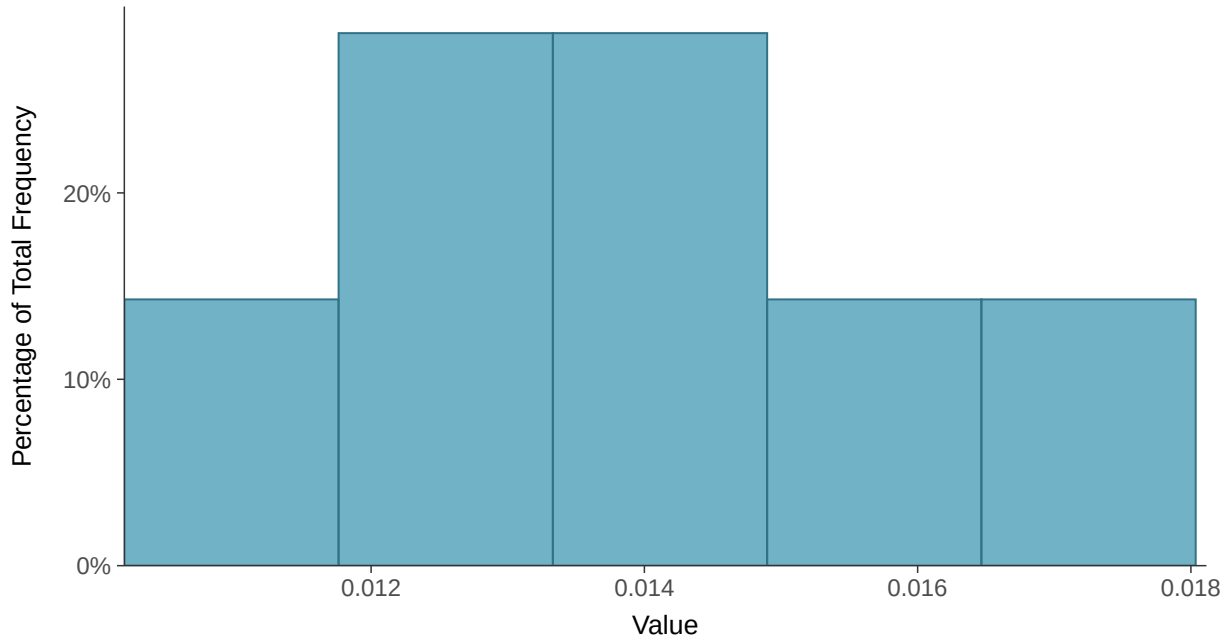
Scatter Plot

Barium, MW-28 (mg/l)



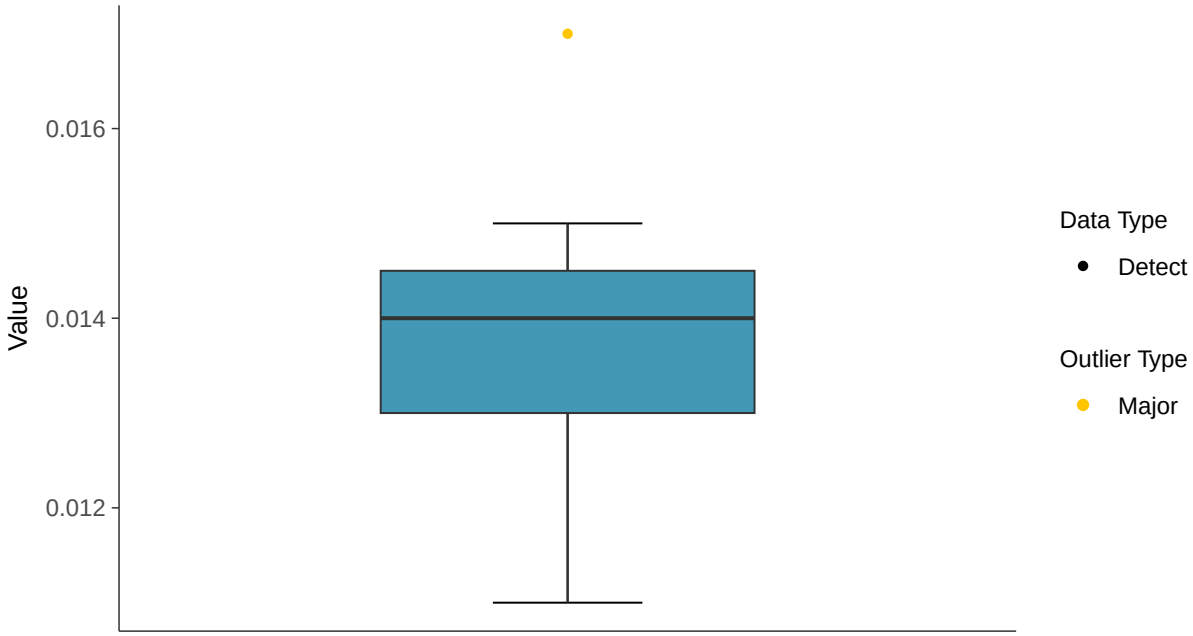
Histogram

Barium, MW-28 (mg/l)



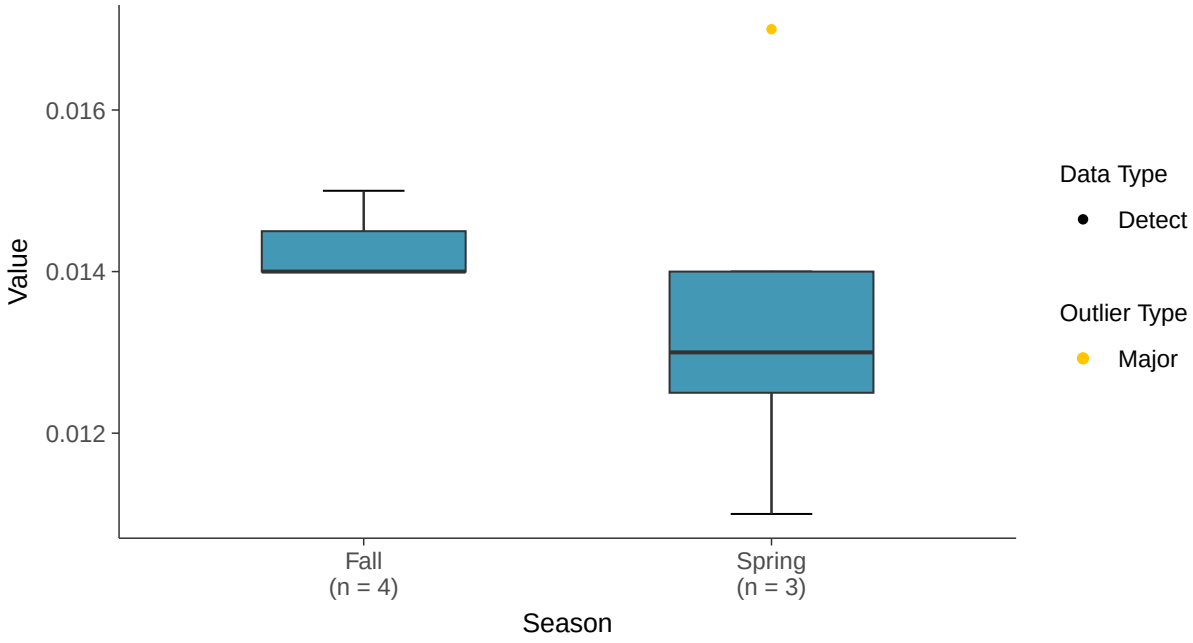
Boxplot

Barium, MW-28 (mg/l)



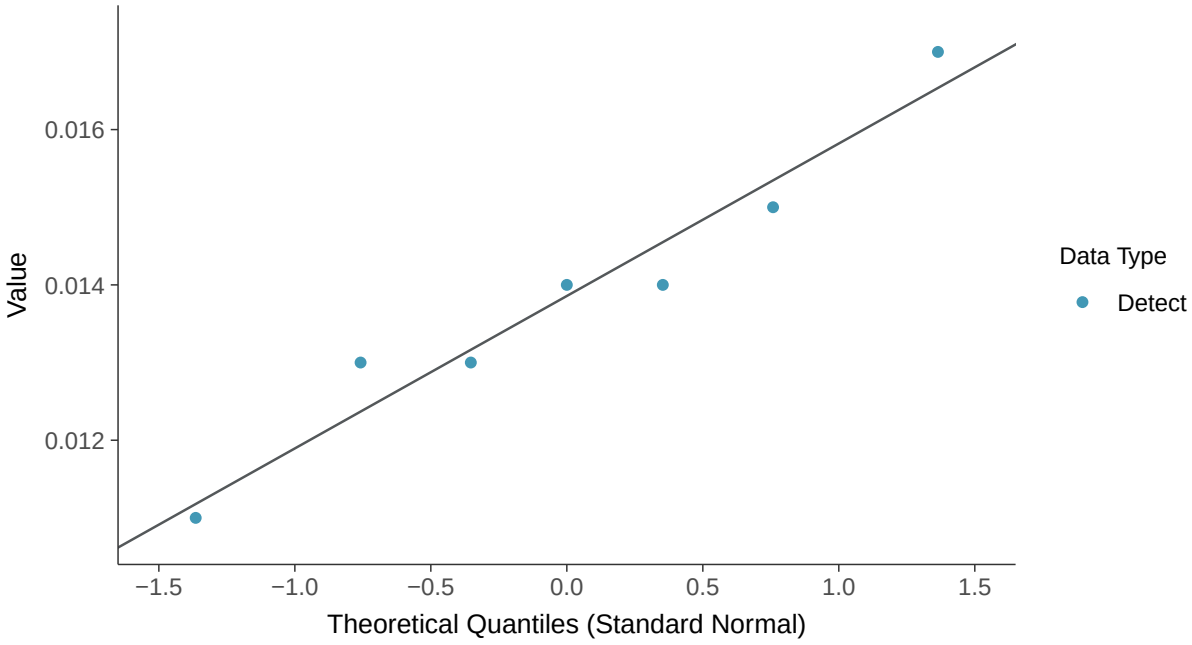
Boxplot by Season

Barium, MW-28 (mg/l)



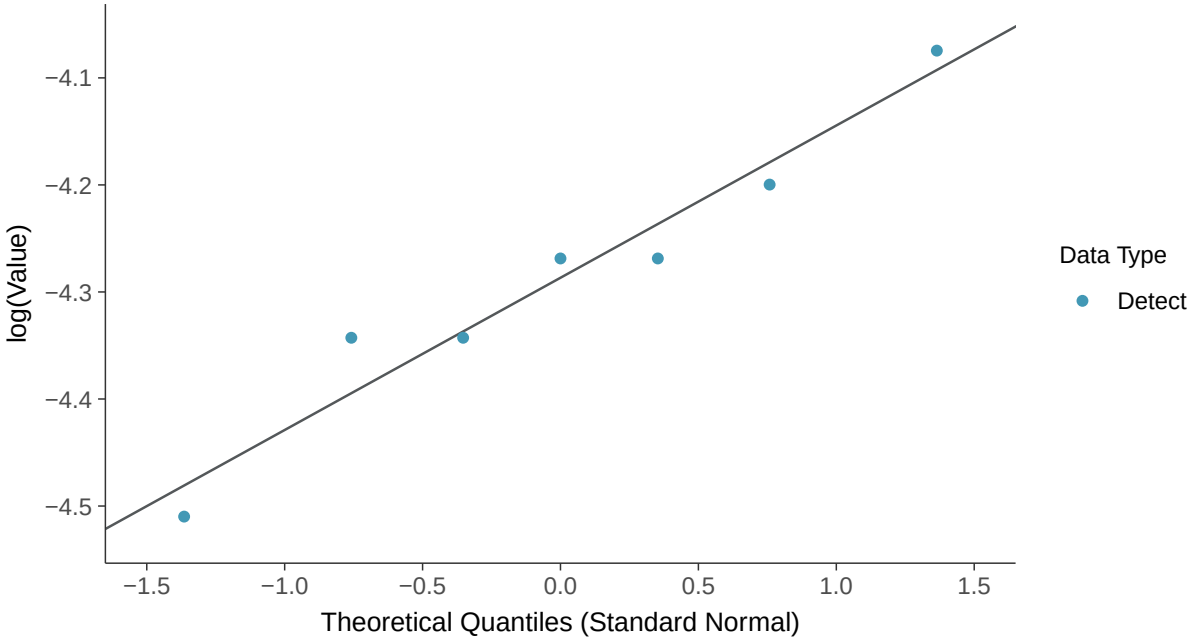
Normal Q-Q plot

Barium, MW-28 (mg/l)



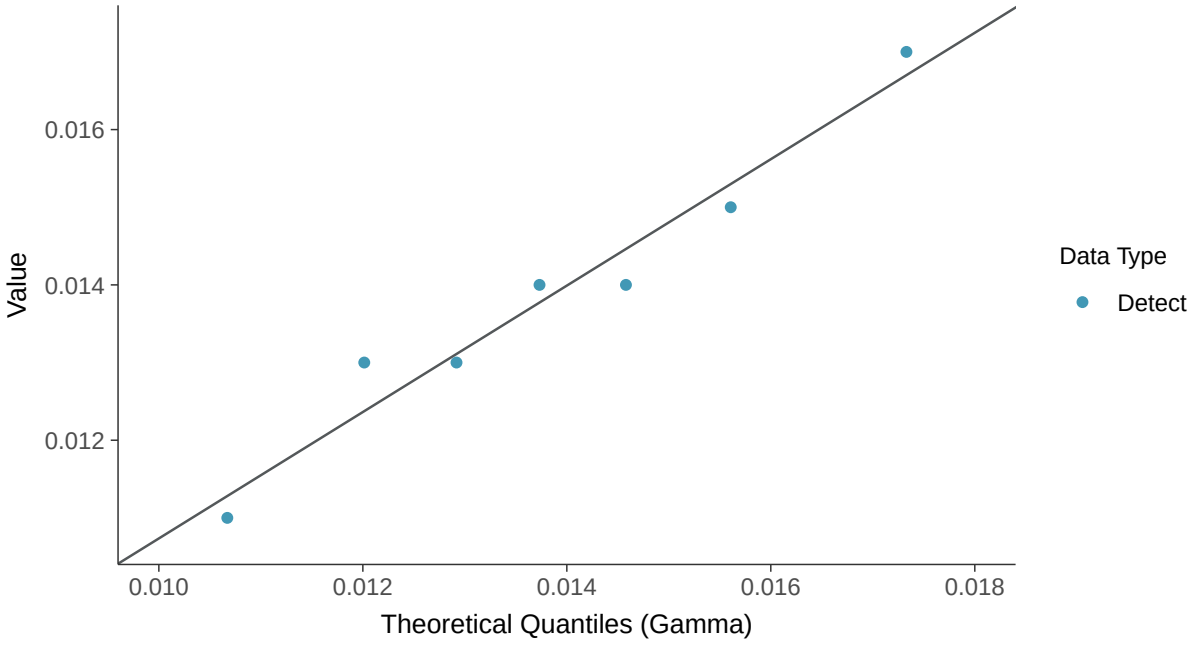
Lognormal Q-Q plot

Barium, MW-28 (mg/l)



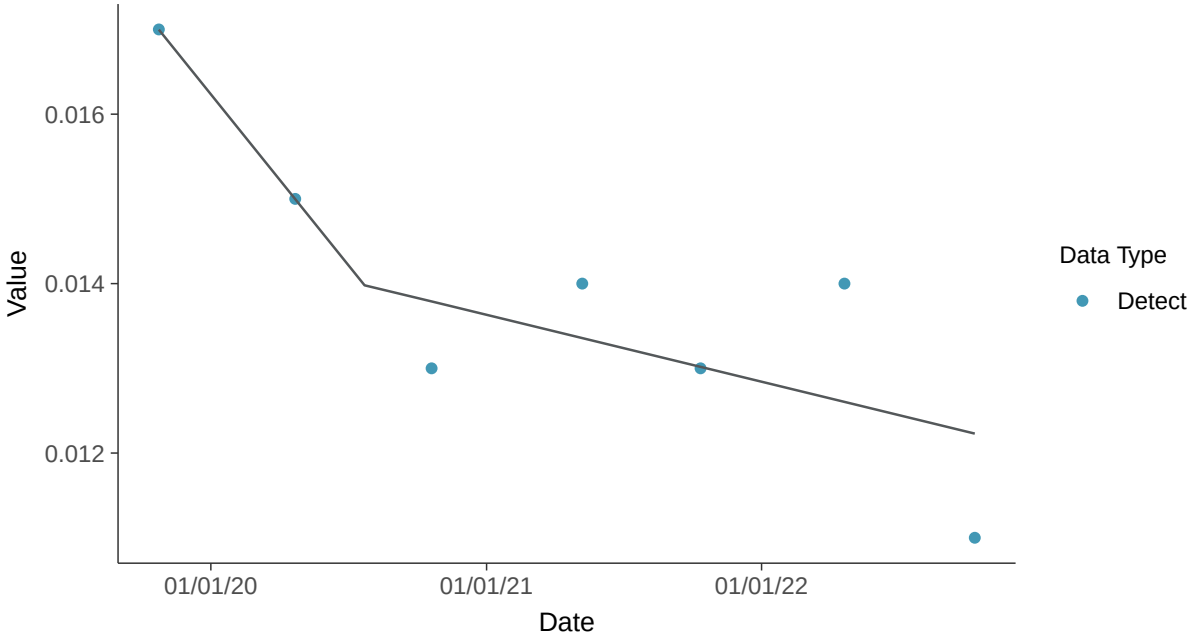
Gamma Q-Q plot

Barium, MW-28 (mg/l)



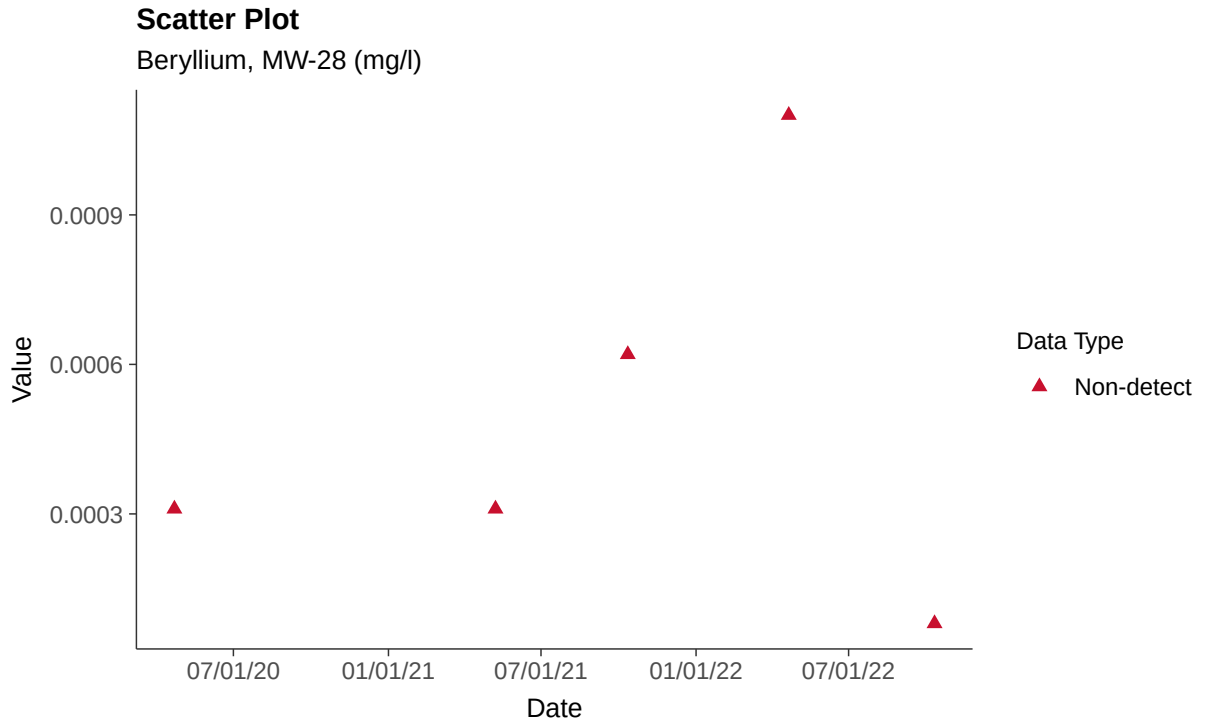
Trend Regression: Piecewise Linear-Linear

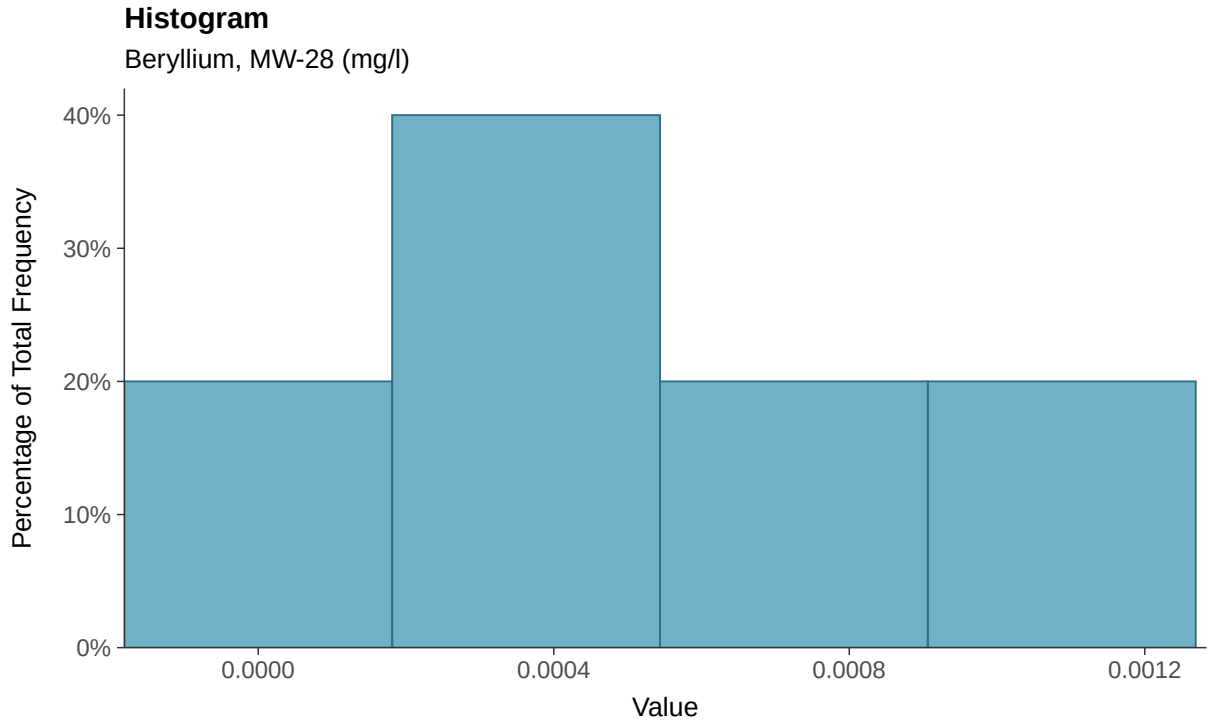
Barium, MW-28 (mg/l)



Appendix IV: Beryllium, MW-28

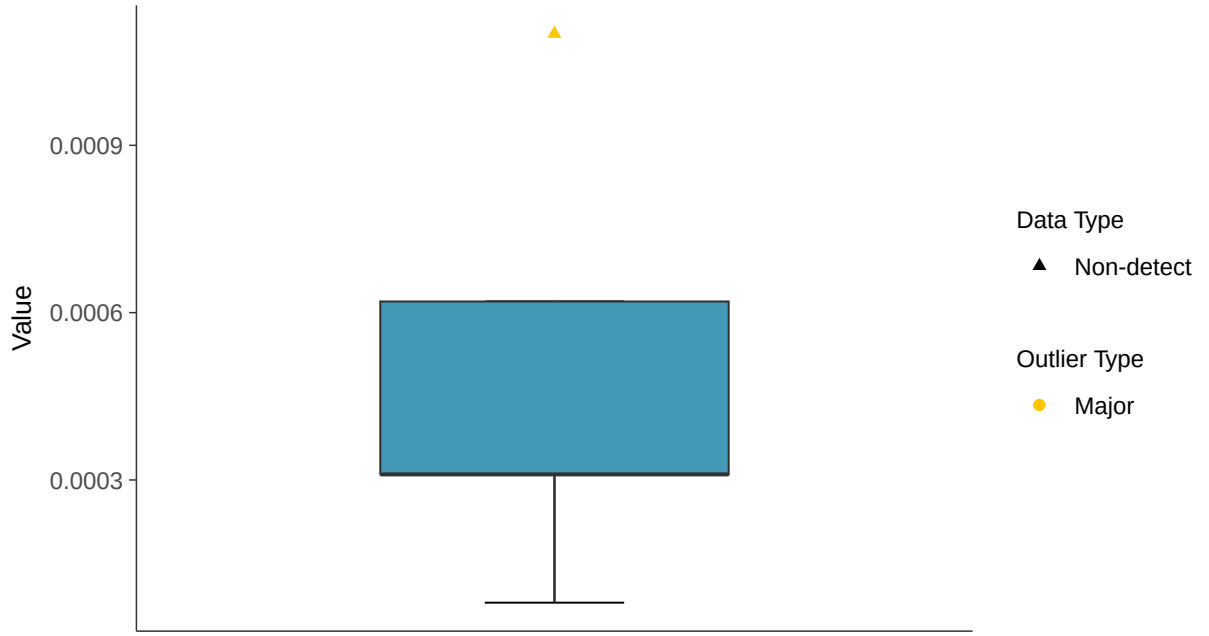
ID: 20_2_107





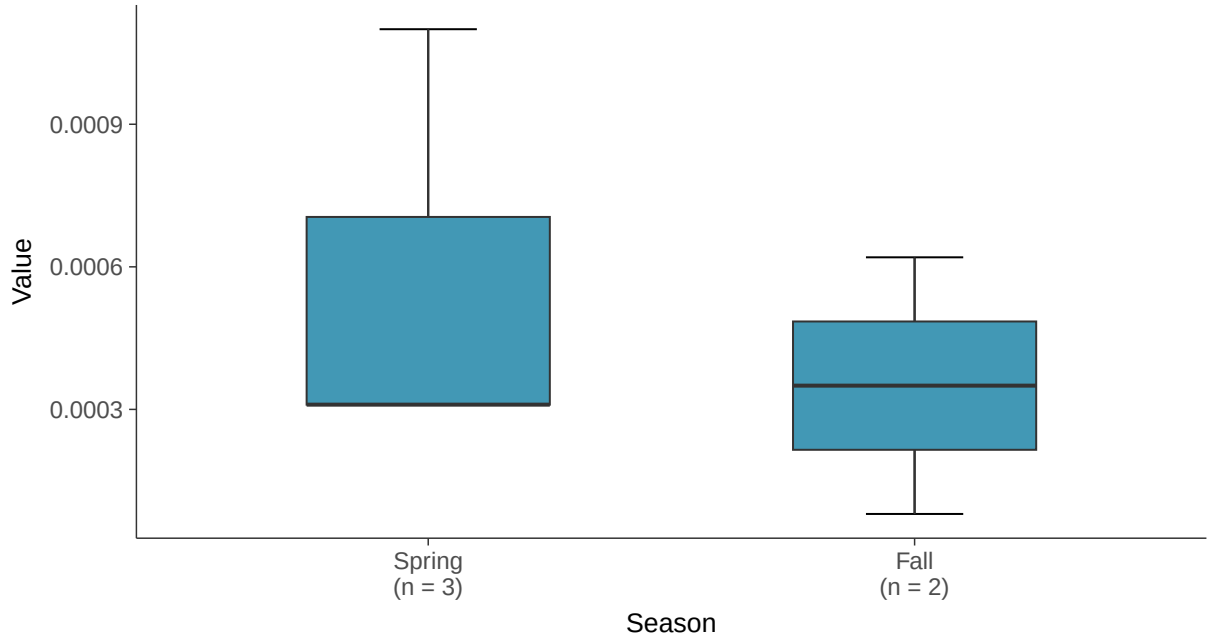
Boxplot

Beryllium, MW-28 (mg/l)



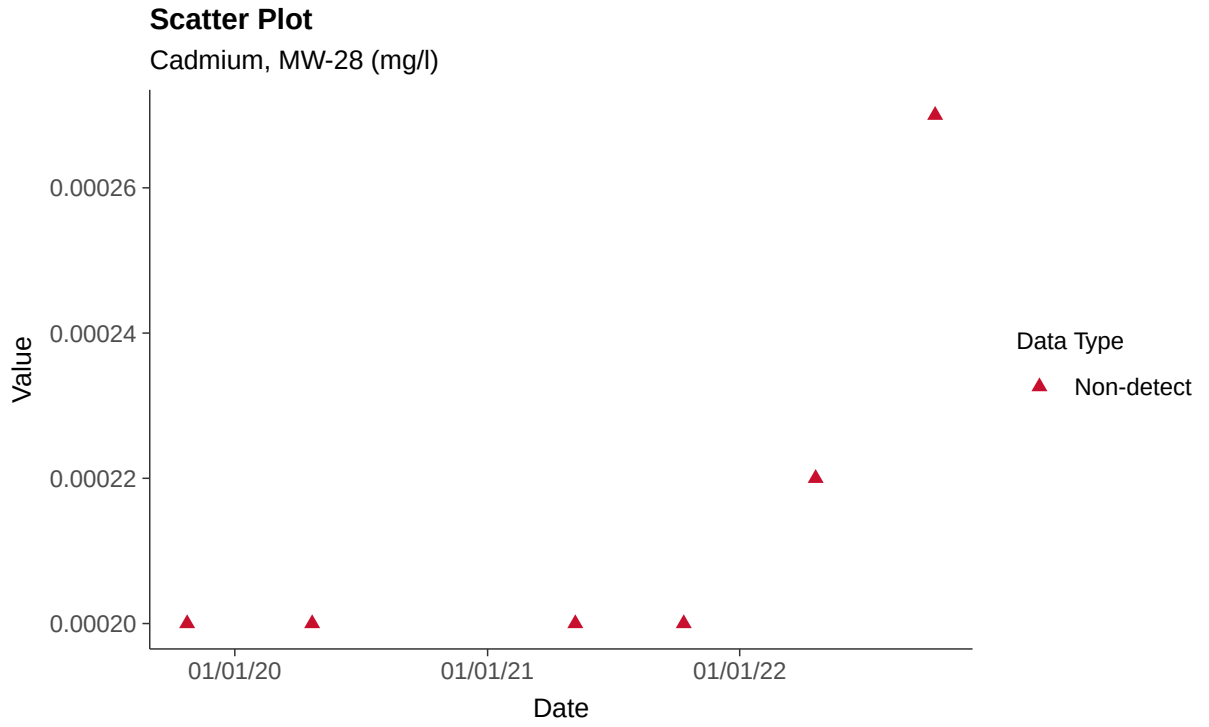
Boxplot by Season

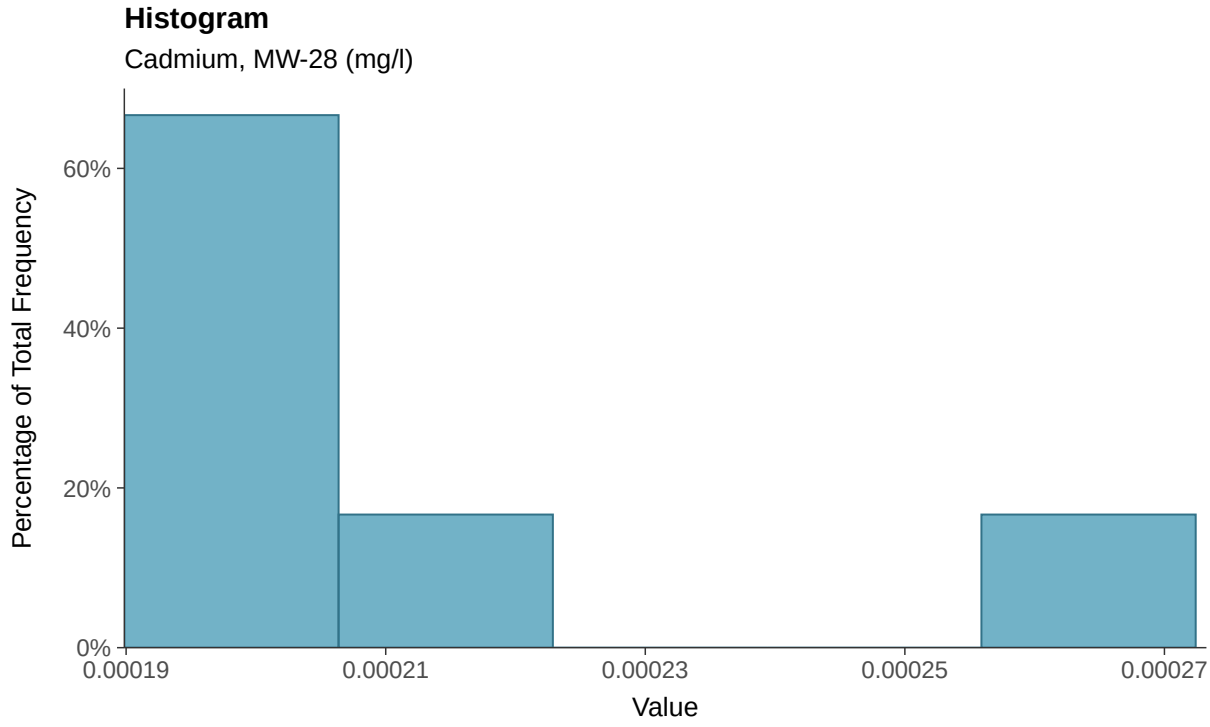
Beryllium, MW-28 (mg/l)



Appendix IV: Cadmium, MW-28

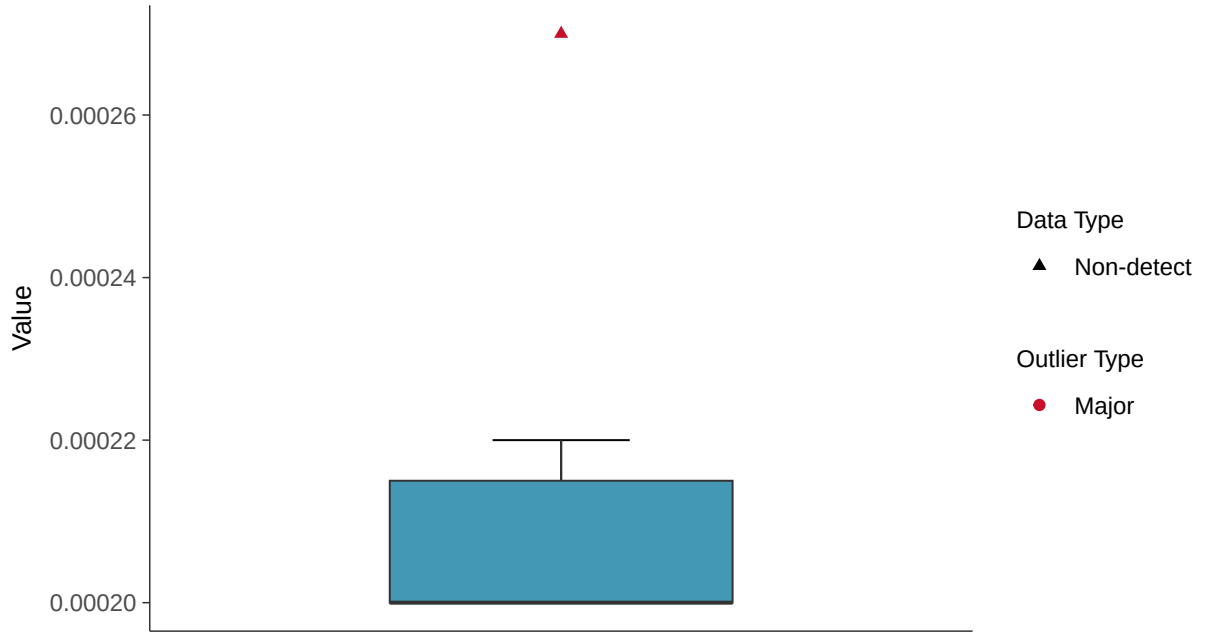
ID: 20_2_109





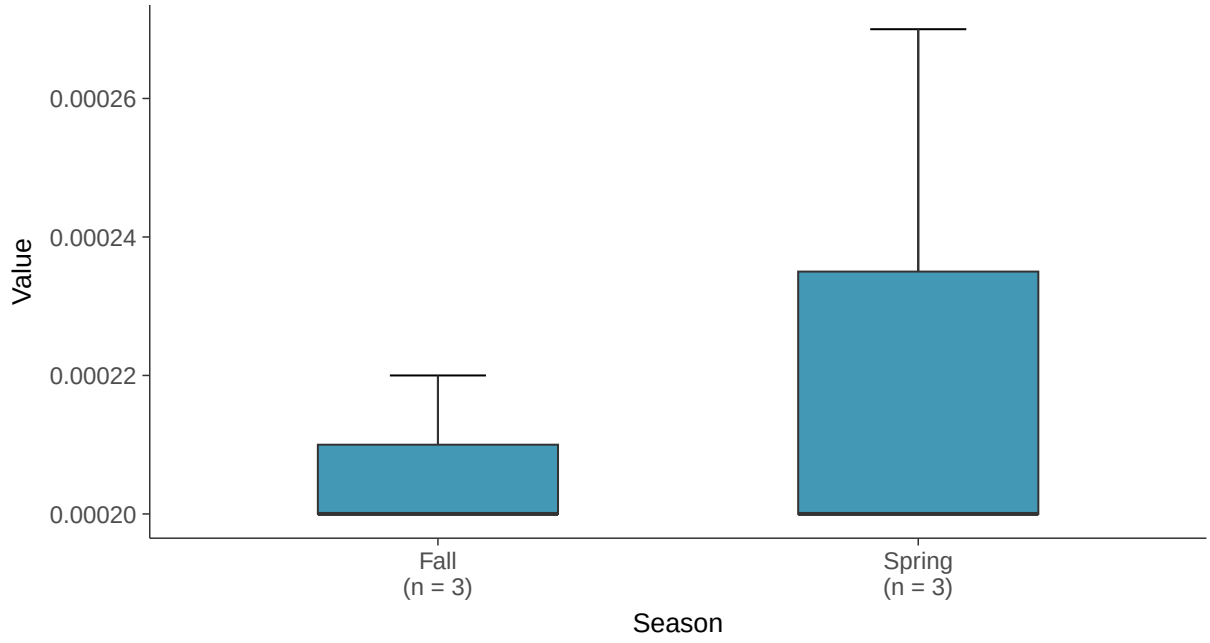
Boxplot

Cadmium, MW-28 (mg/l)



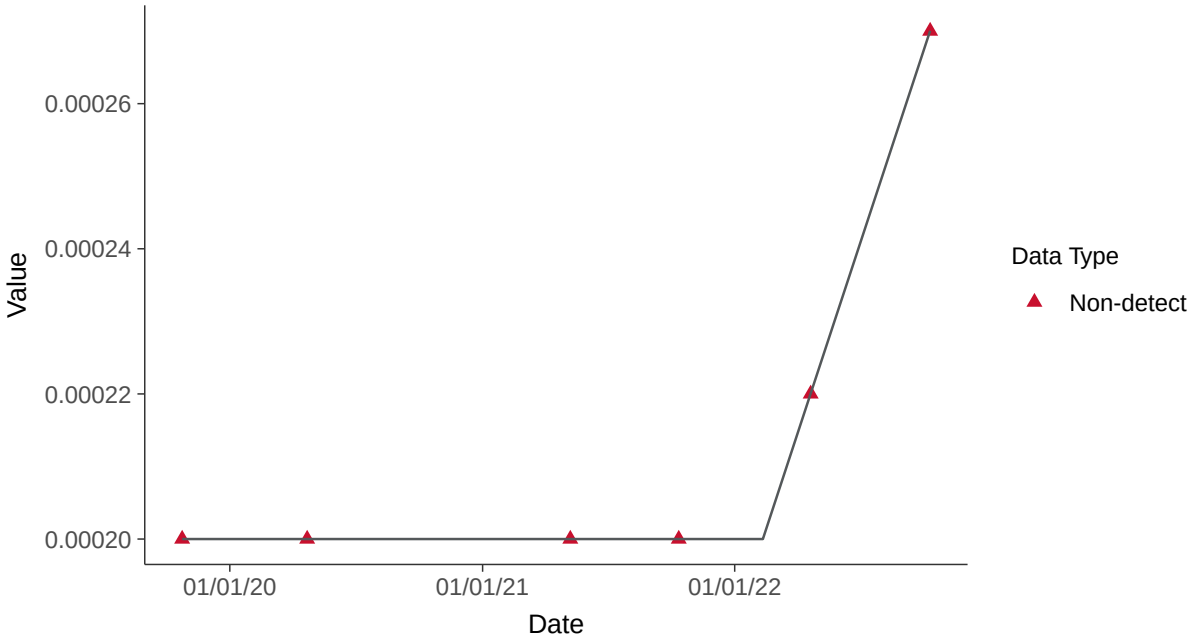
Boxplot by Season

Cadmium, MW-28 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cadmium, MW-28 (mg/l)

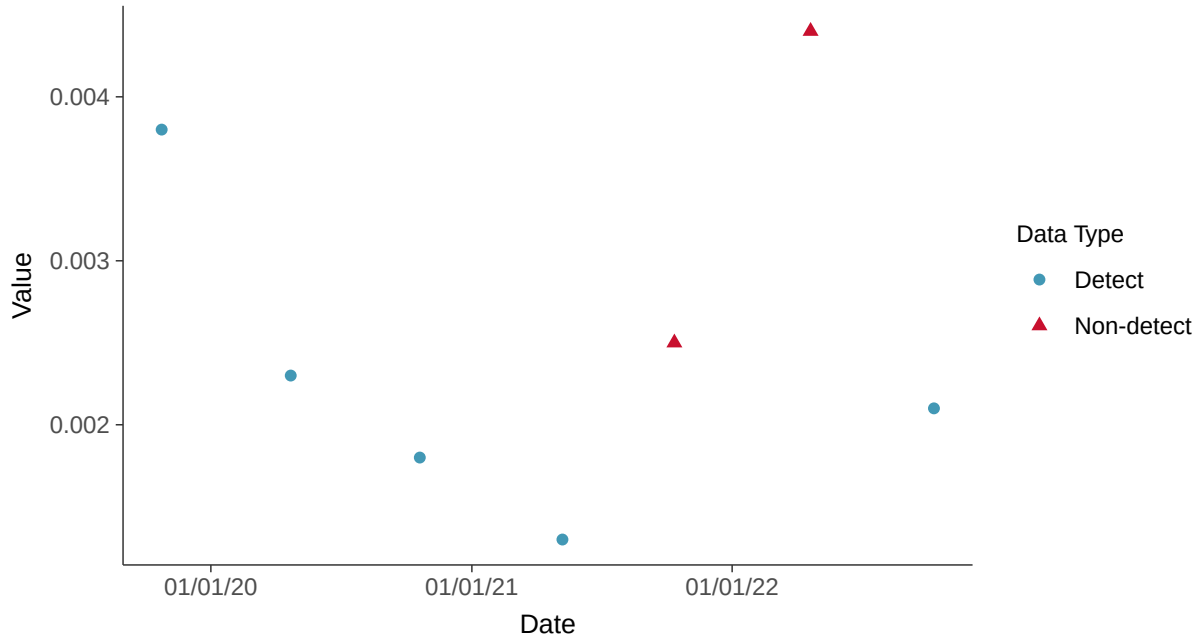


Appendix IV: Chromium, Total, MW-28

ID: 20_2_112

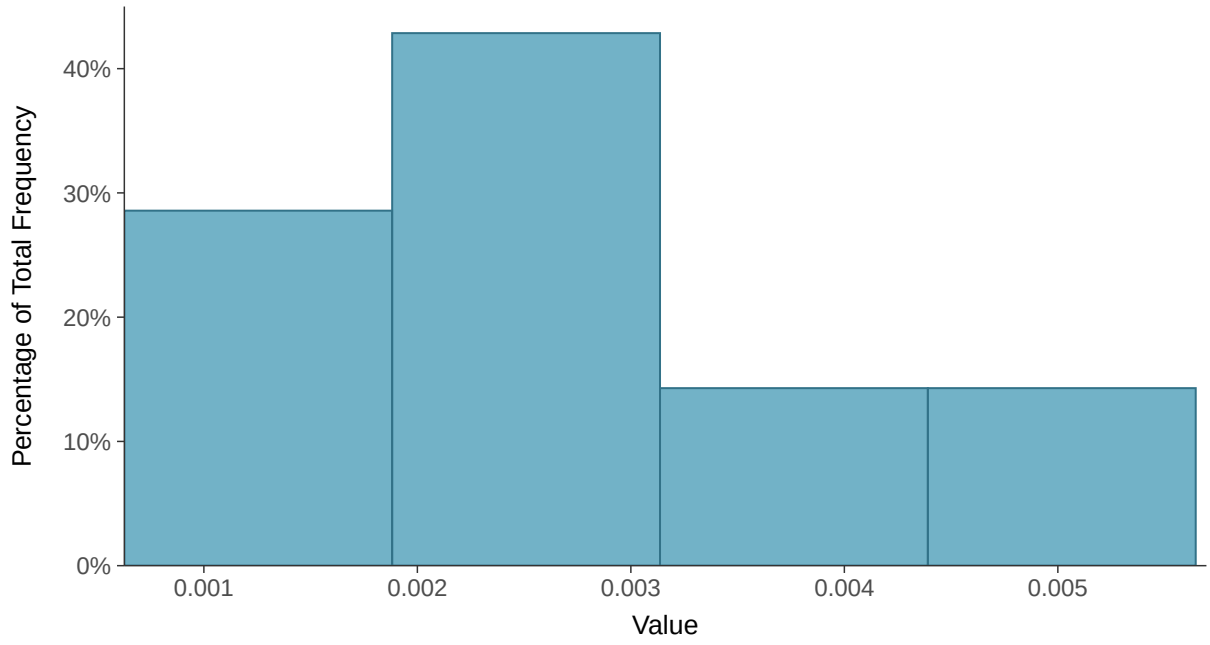
Scatter Plot

Chromium, Total, MW-28 (mg/l)



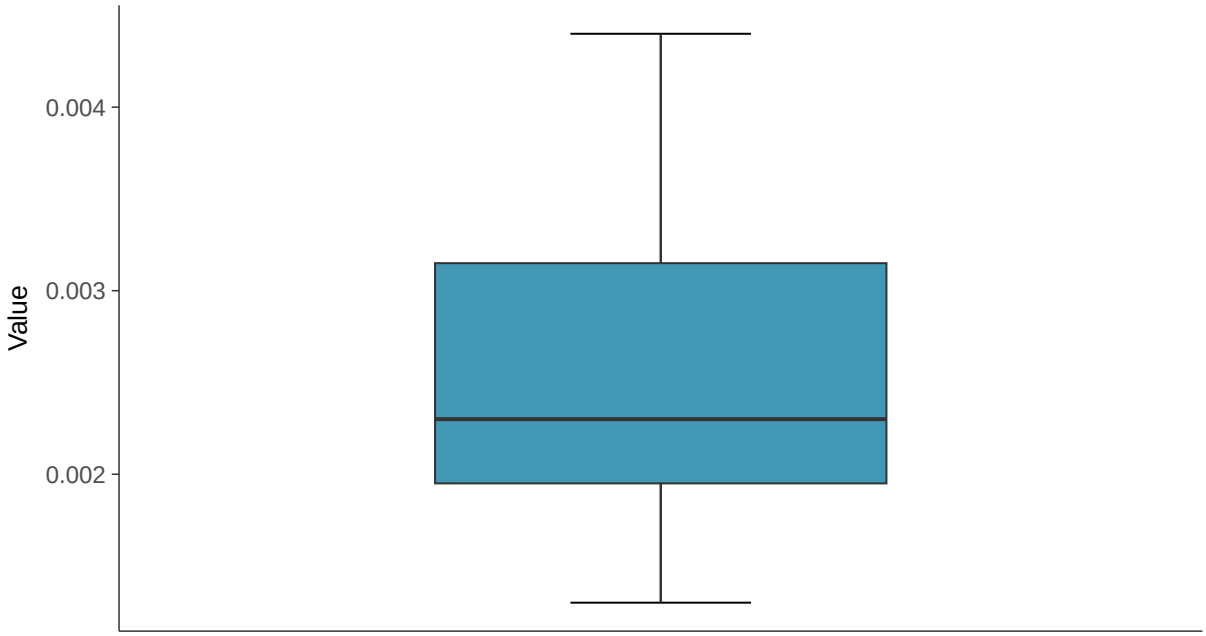
Histogram

Chromium, Total, MW-28 (mg/l)



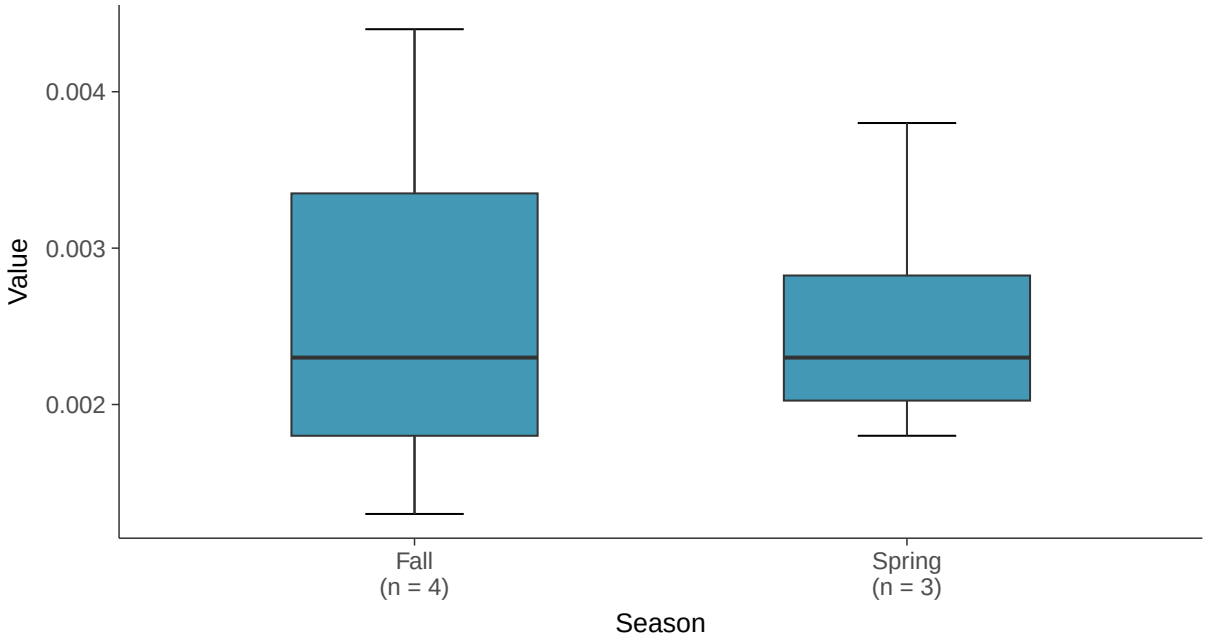
Boxplot

Chromium, Total, MW-28 (mg/l)



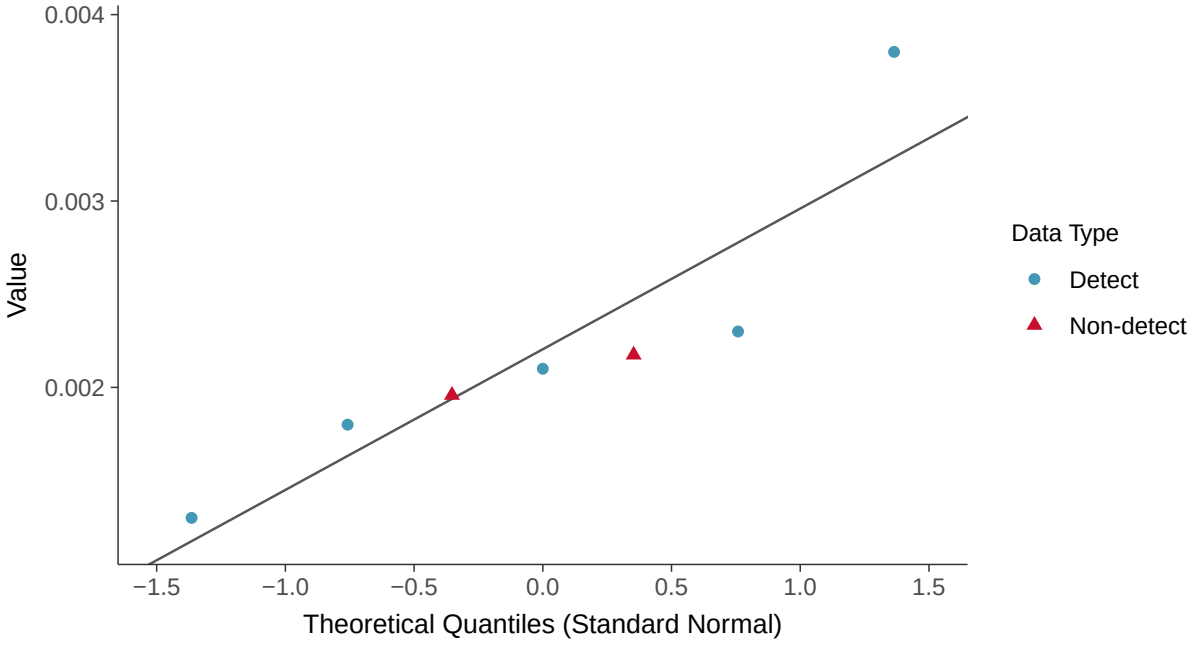
Boxplot by Season

Chromium, Total, MW-28 (mg/l)



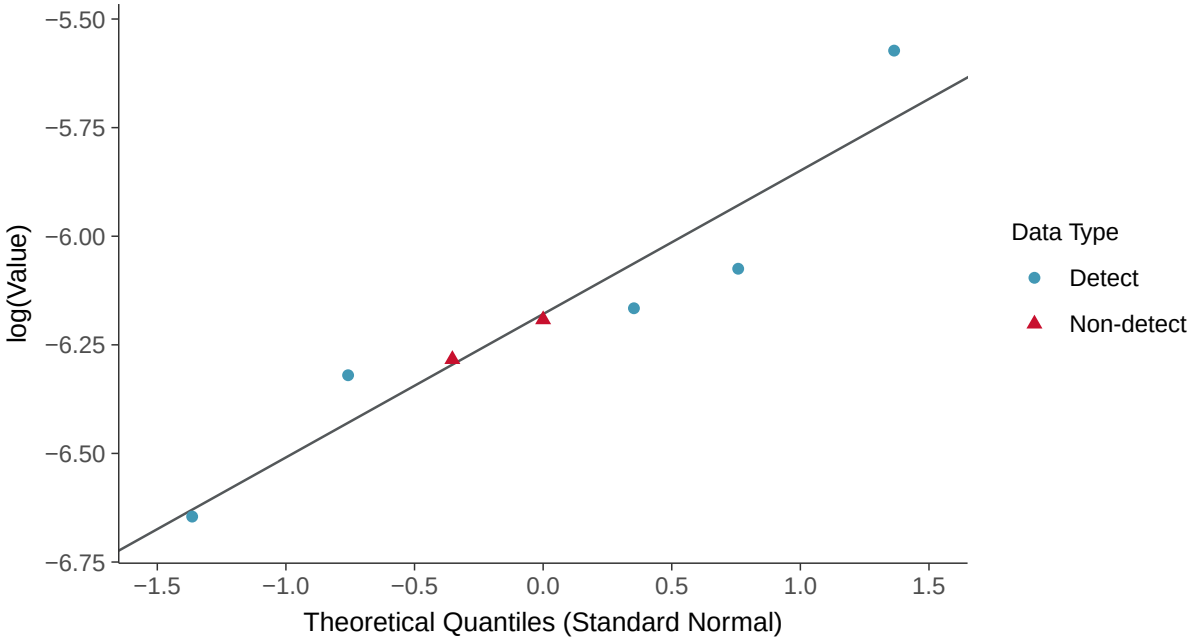
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-28 (mg/l)



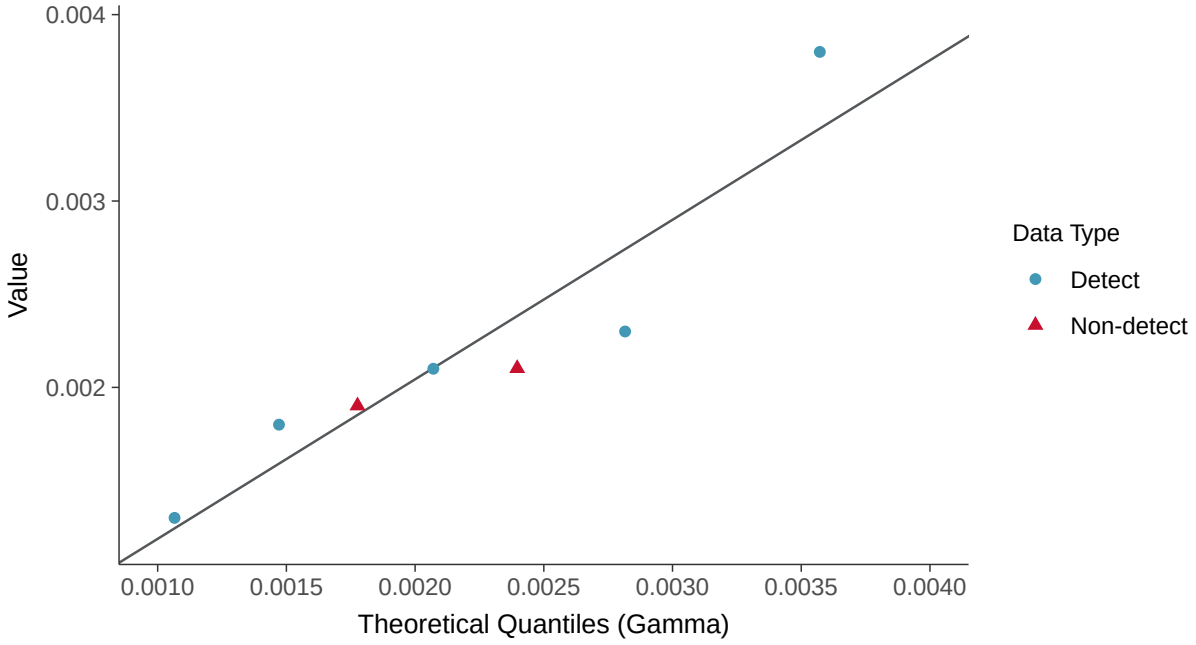
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-28 (mg/l)



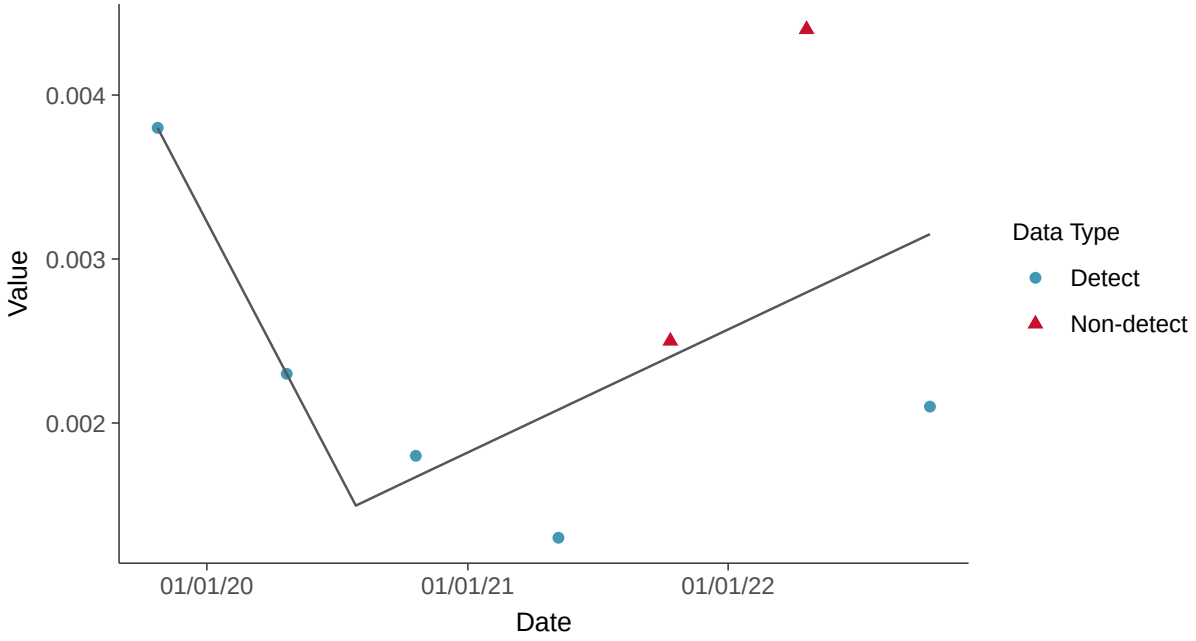
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-28 (mg/l)



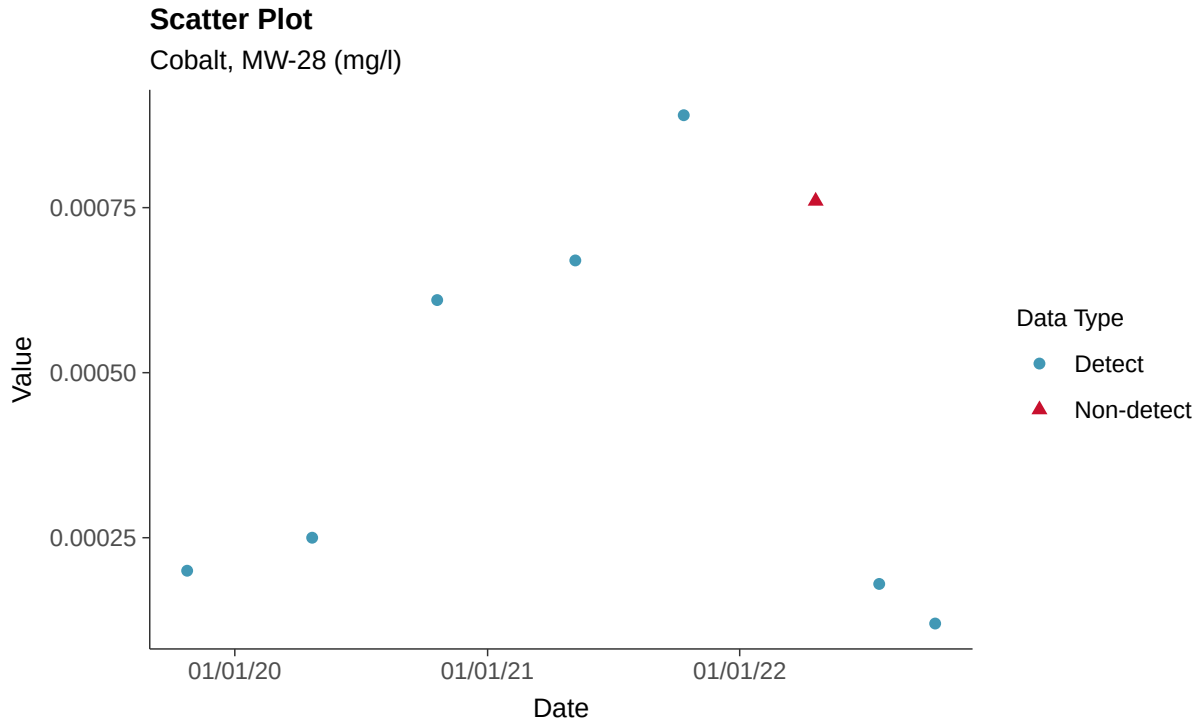
Trend Regression: Piecewise Linear-Linear

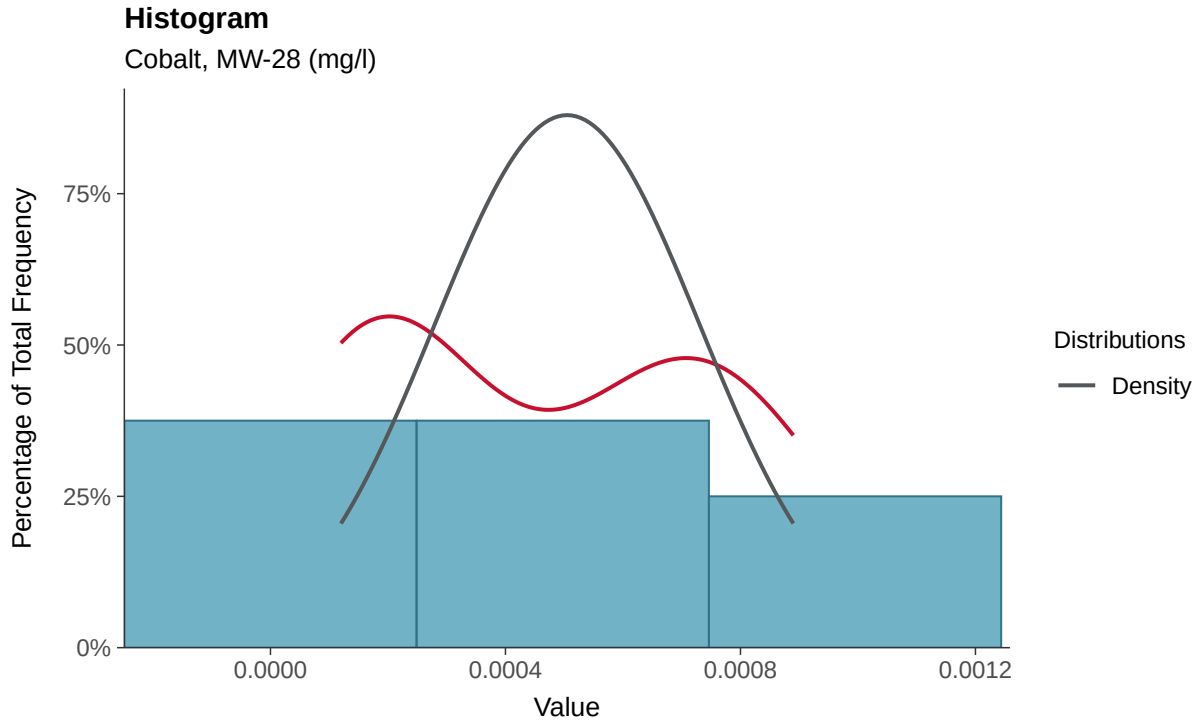
Chromium, Total, MW-28 (mg/l)



Appendix IV: Cobalt, MW-28

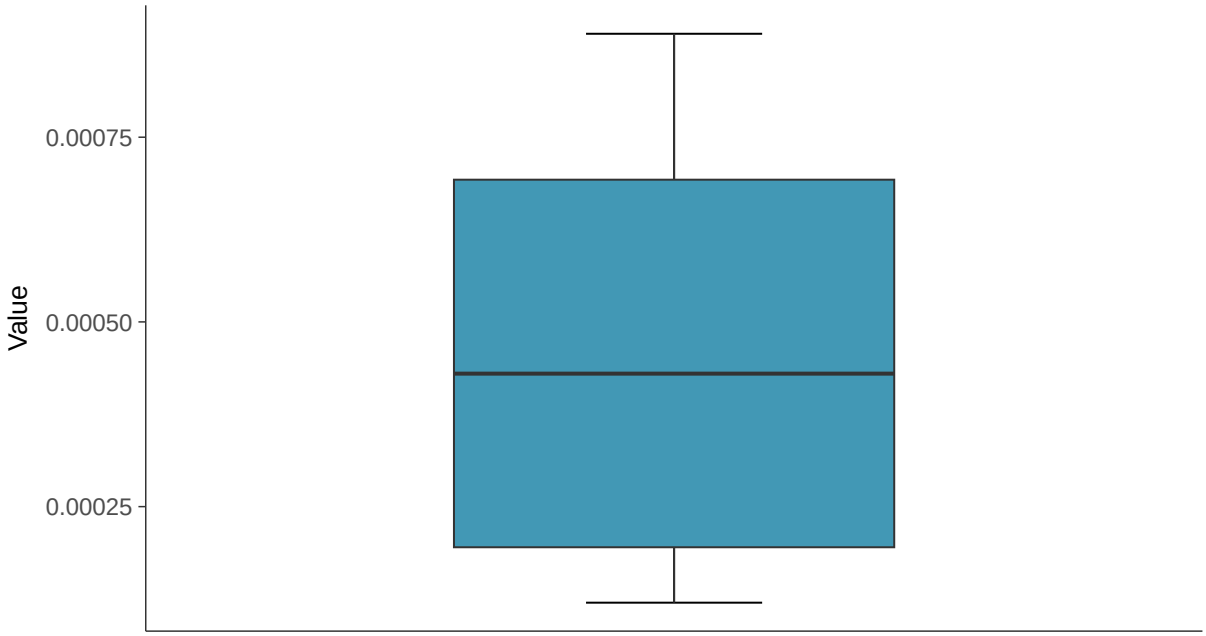
ID: 20_2_113





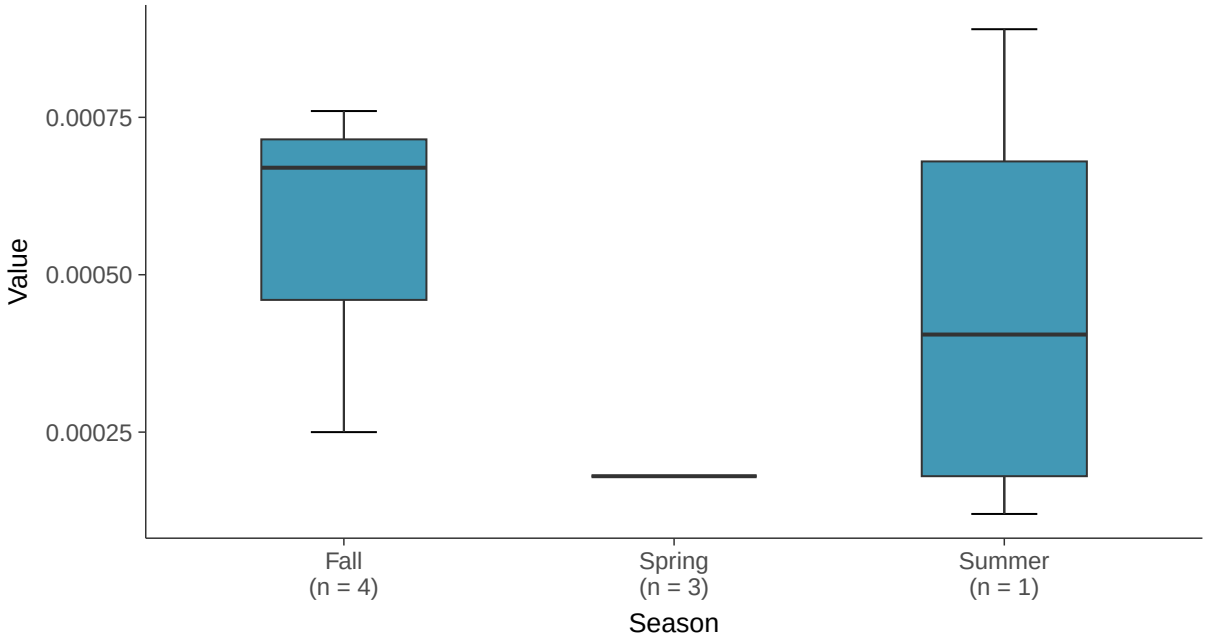
Boxplot

Cobalt, MW-28 (mg/l)



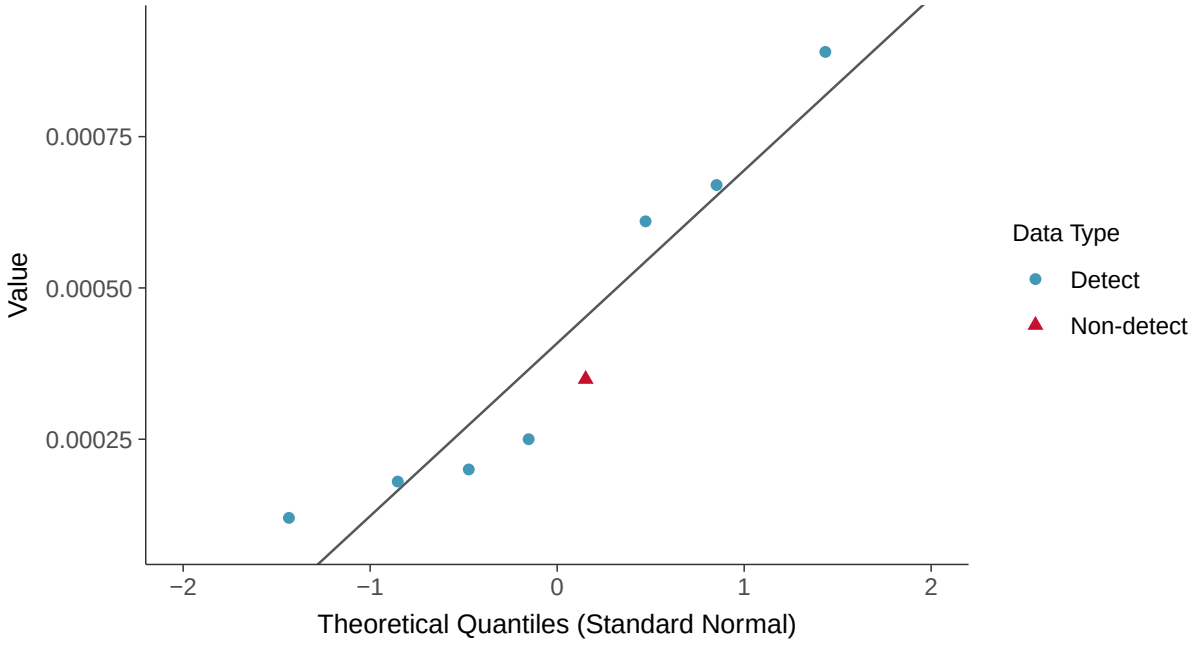
Boxplot by Season

Cobalt, MW-28 (mg/l)



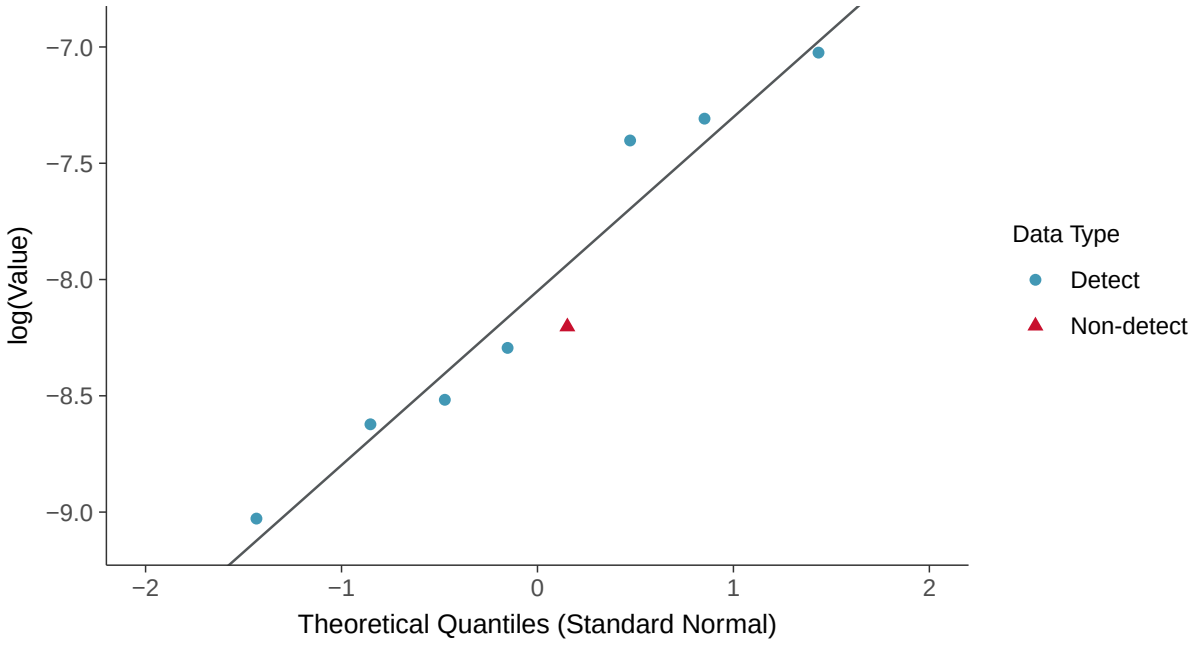
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-28 (mg/l)



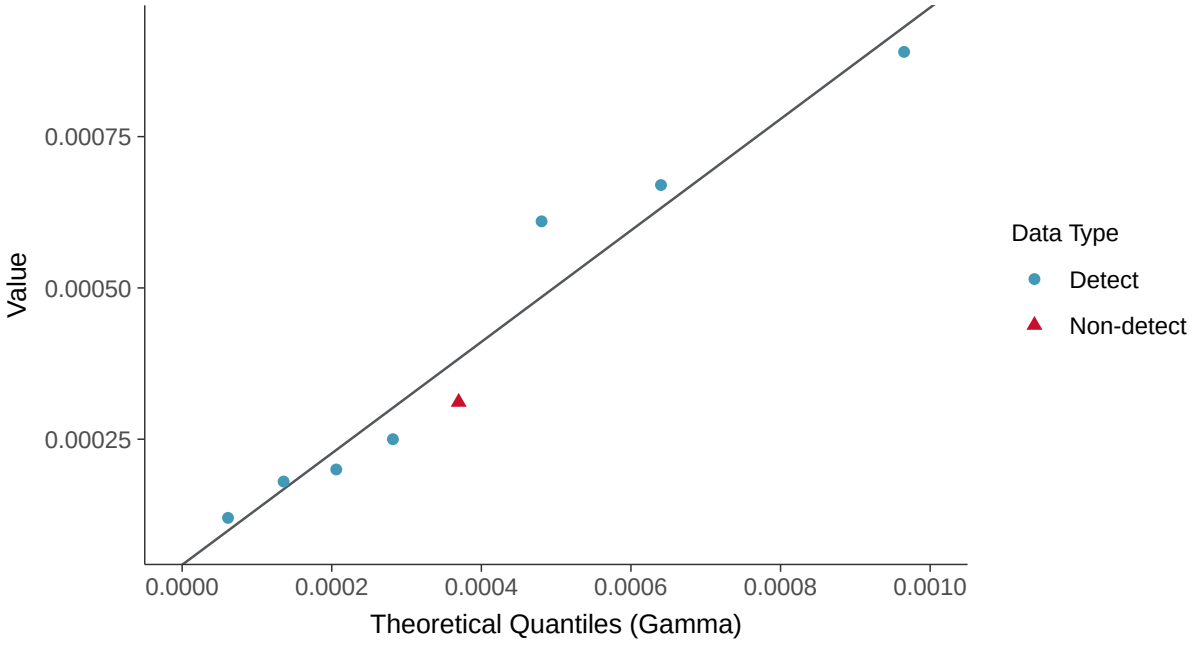
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-28 (mg/l)



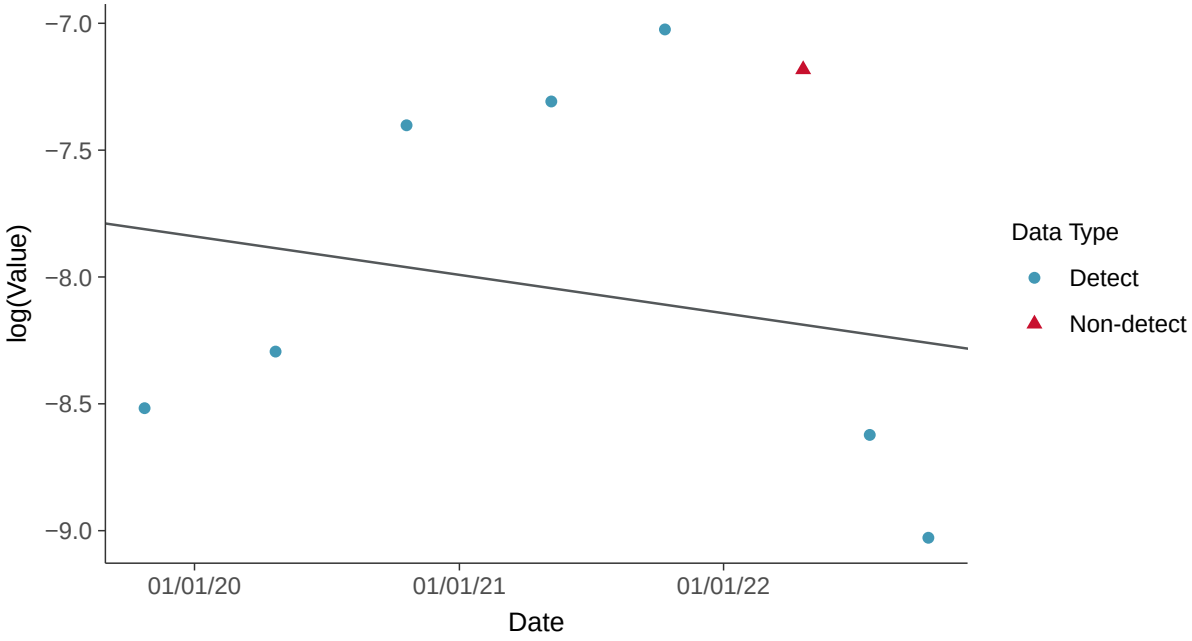
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-28 (mg/l)



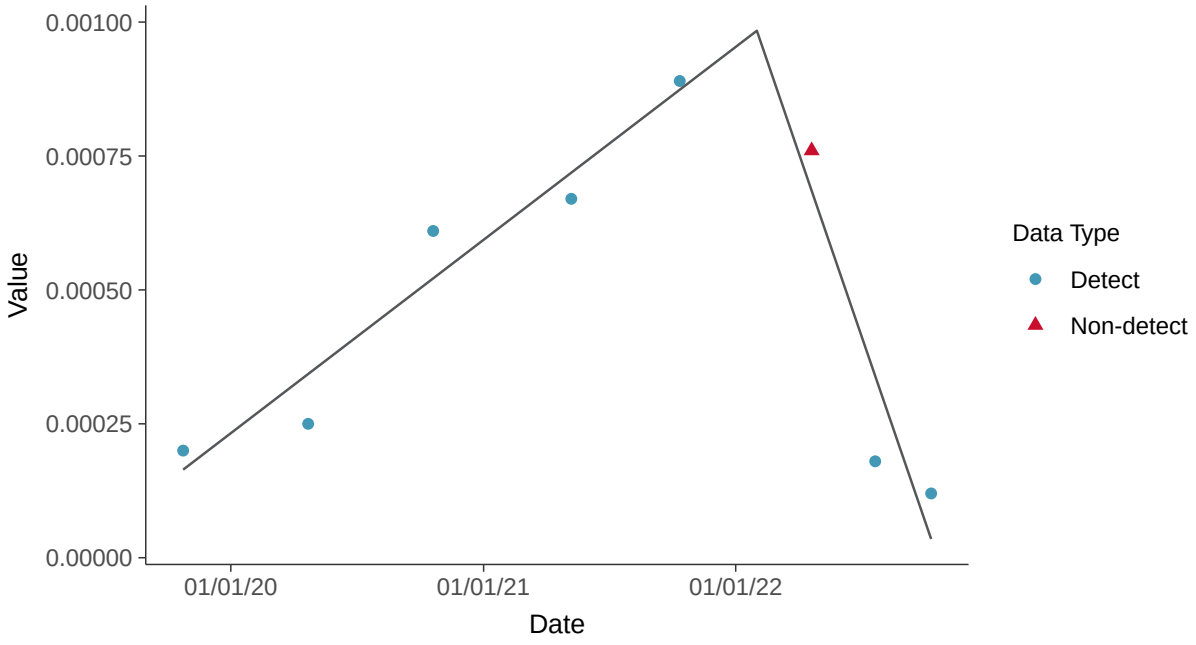
Trend Regression: Lognormal MLE

Cobalt, MW-28 (mg/l)



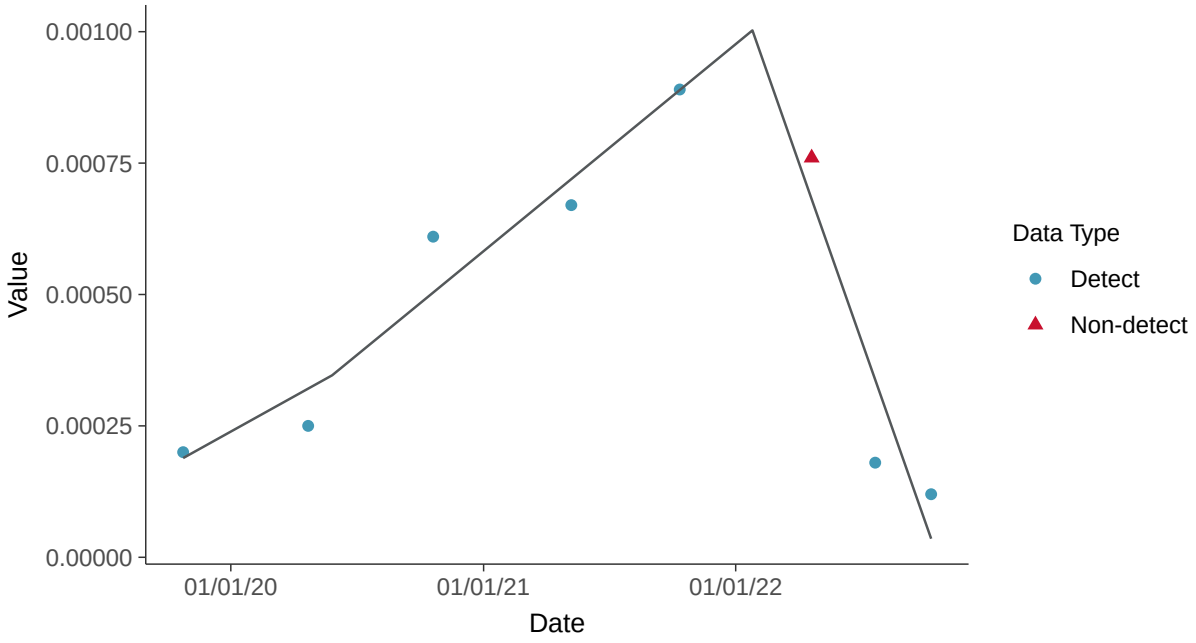
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-28 (mg/l)



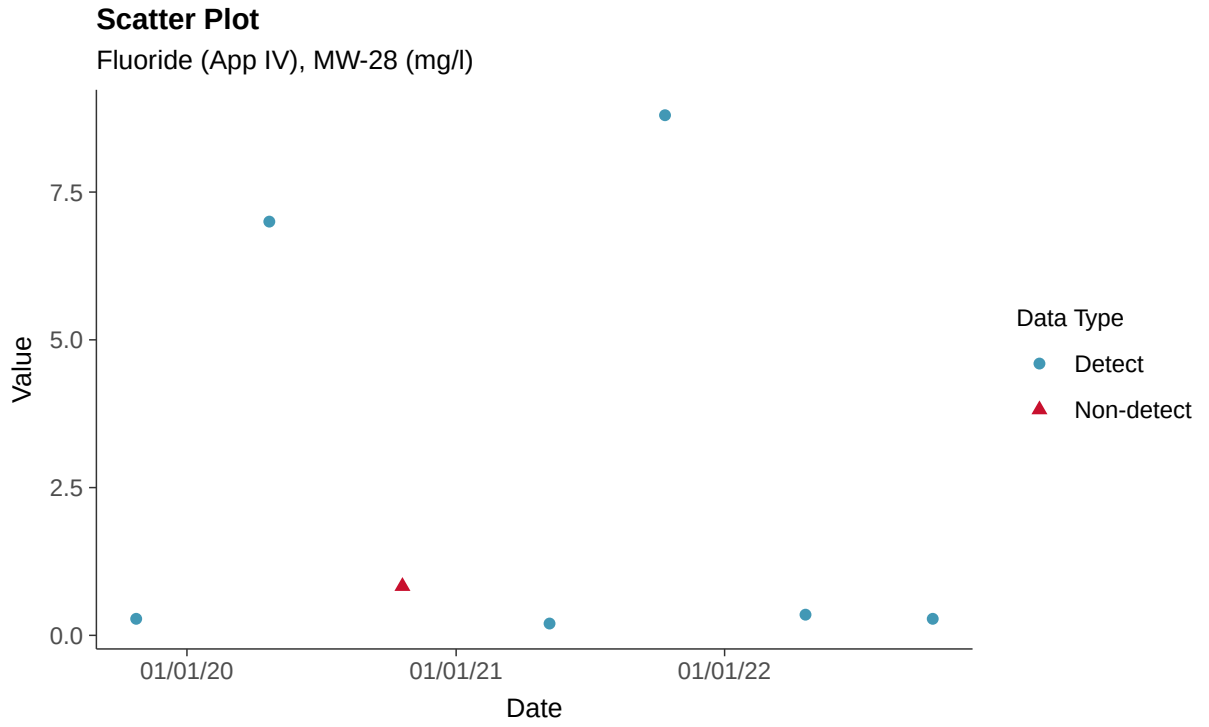
Trend Regression: Piecewise Linear-Linear-Linear

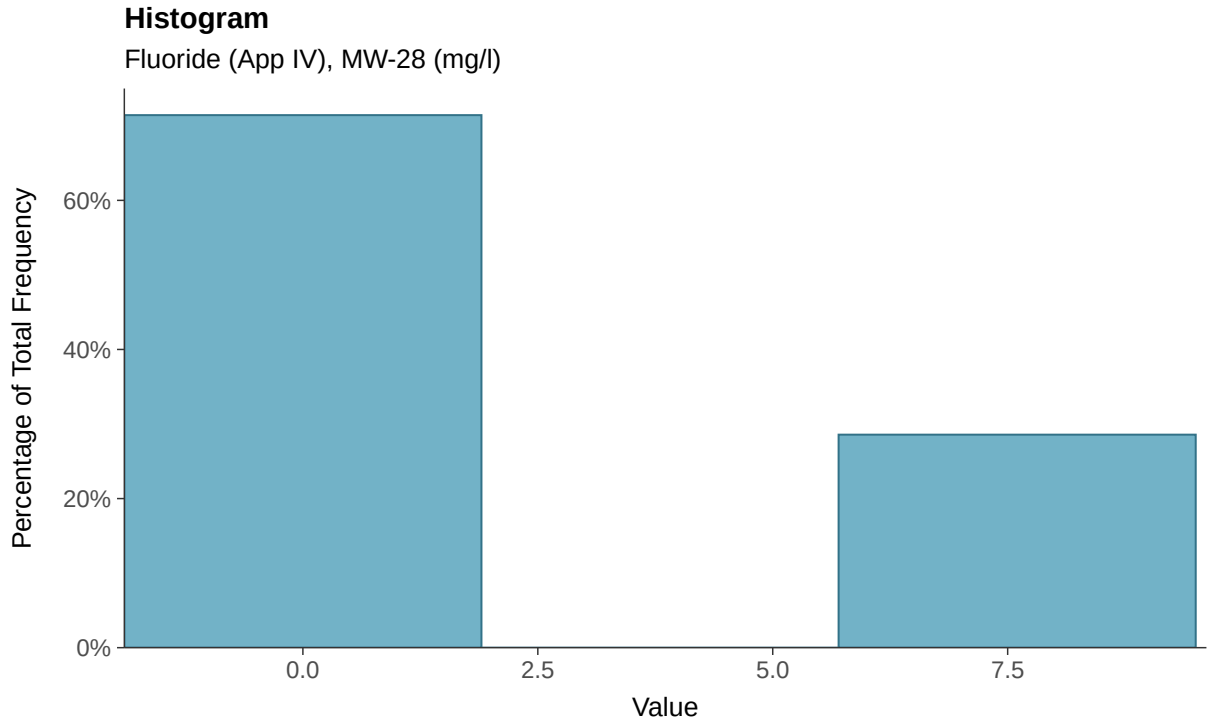
Cobalt, MW-28 (mg/l)



Appendix IV: Fluoride (App IV), MW-28

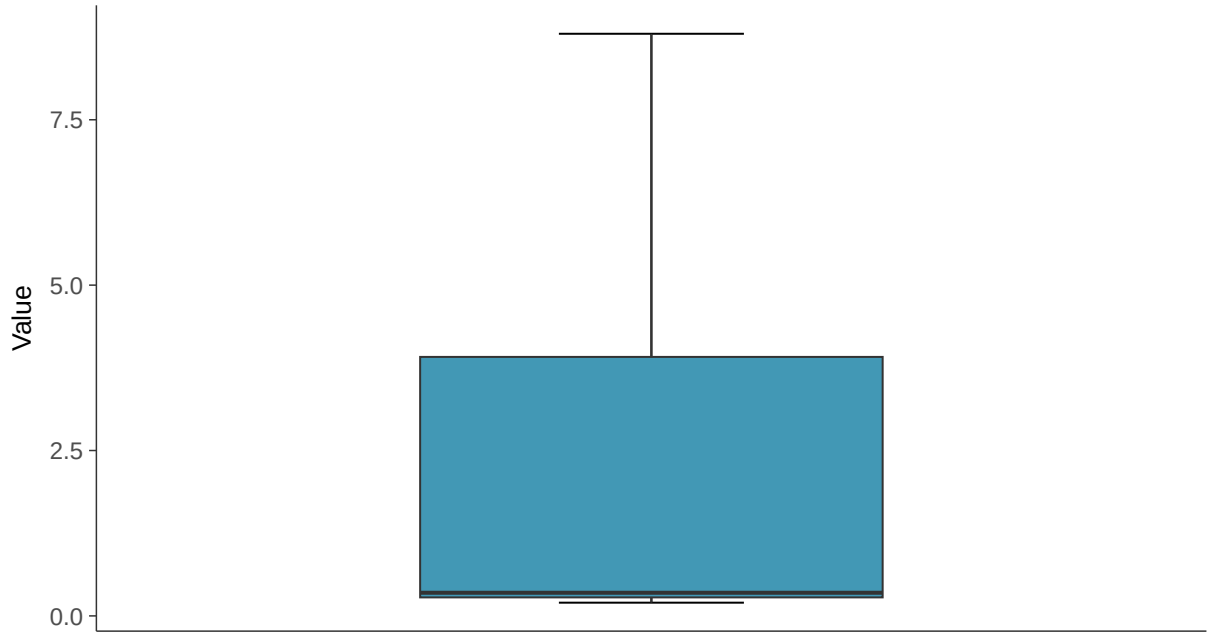
ID: 20_2_116





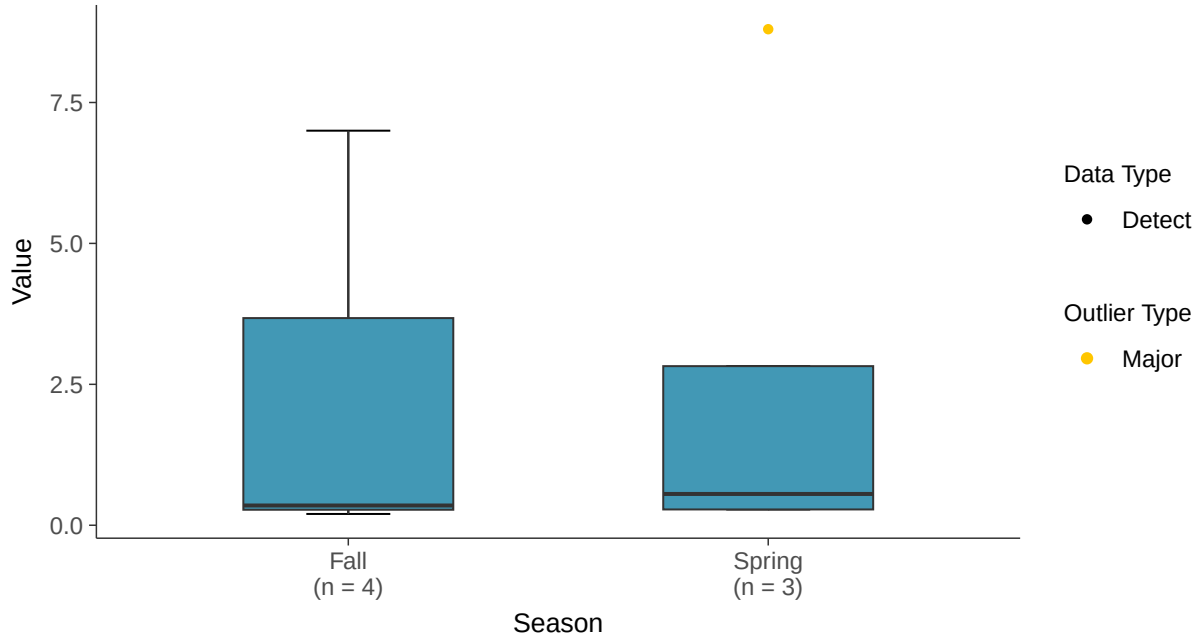
Boxplot

Fluoride (App IV), MW-28 (mg/l)



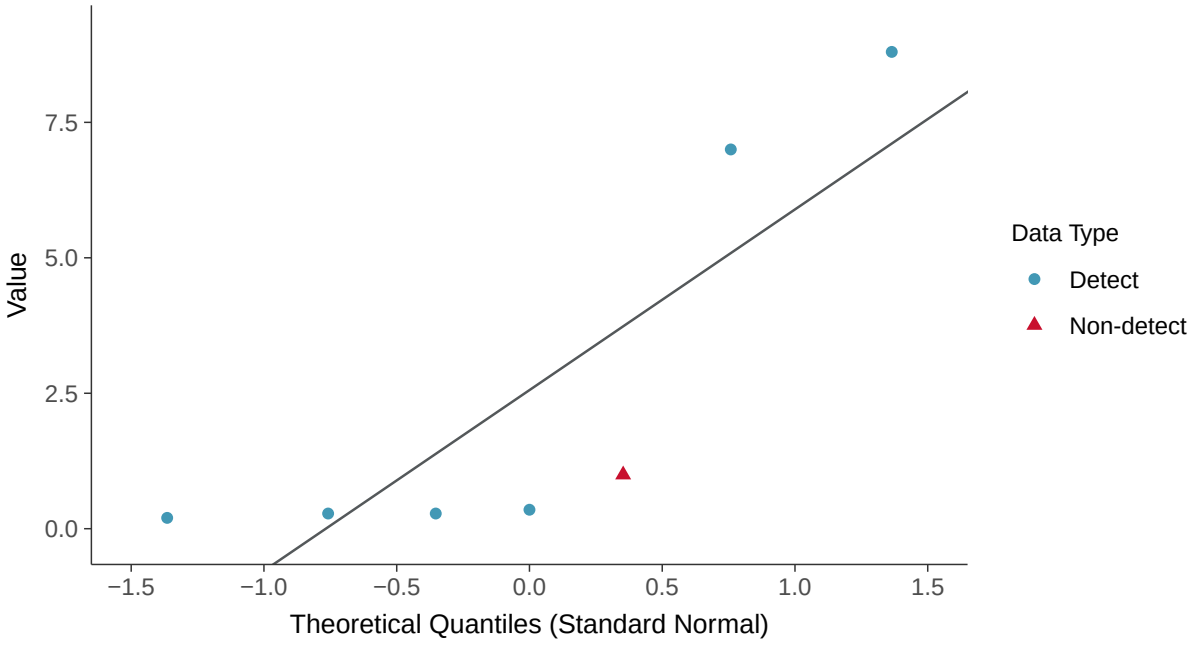
Boxplot by Season

Fluoride (App IV), MW-28 (mg/l)



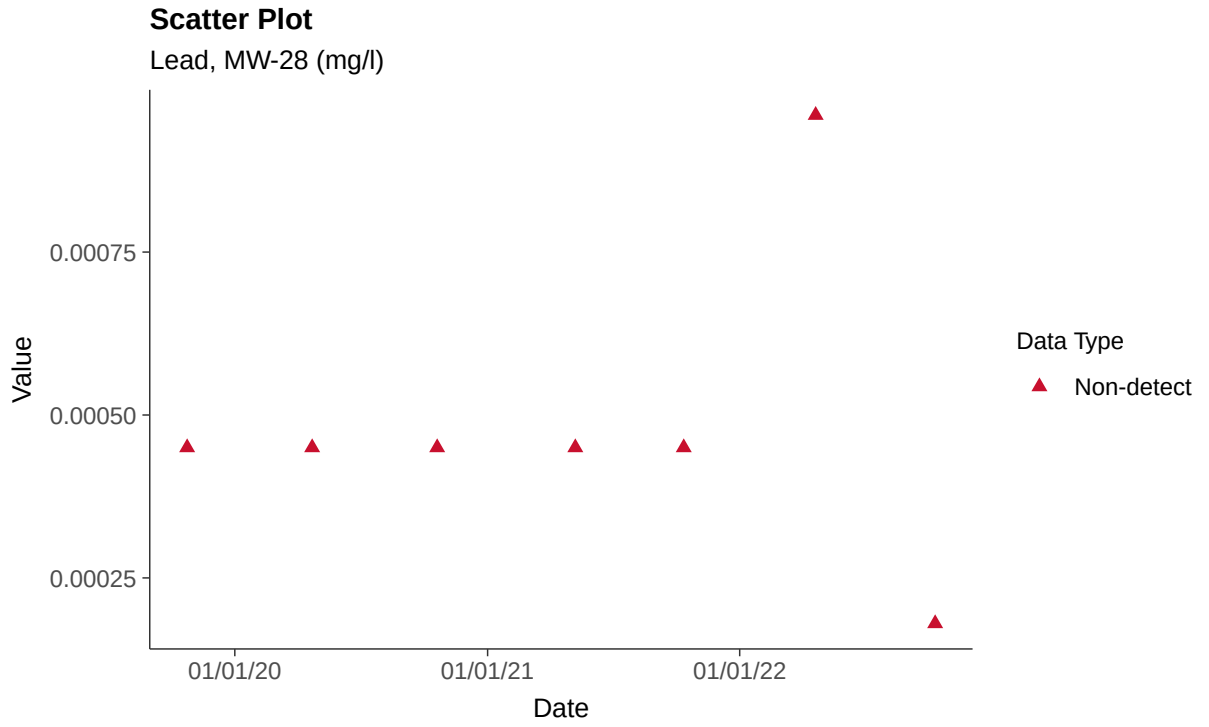
Normal Q-Q plot using ROS Imputed Estimates

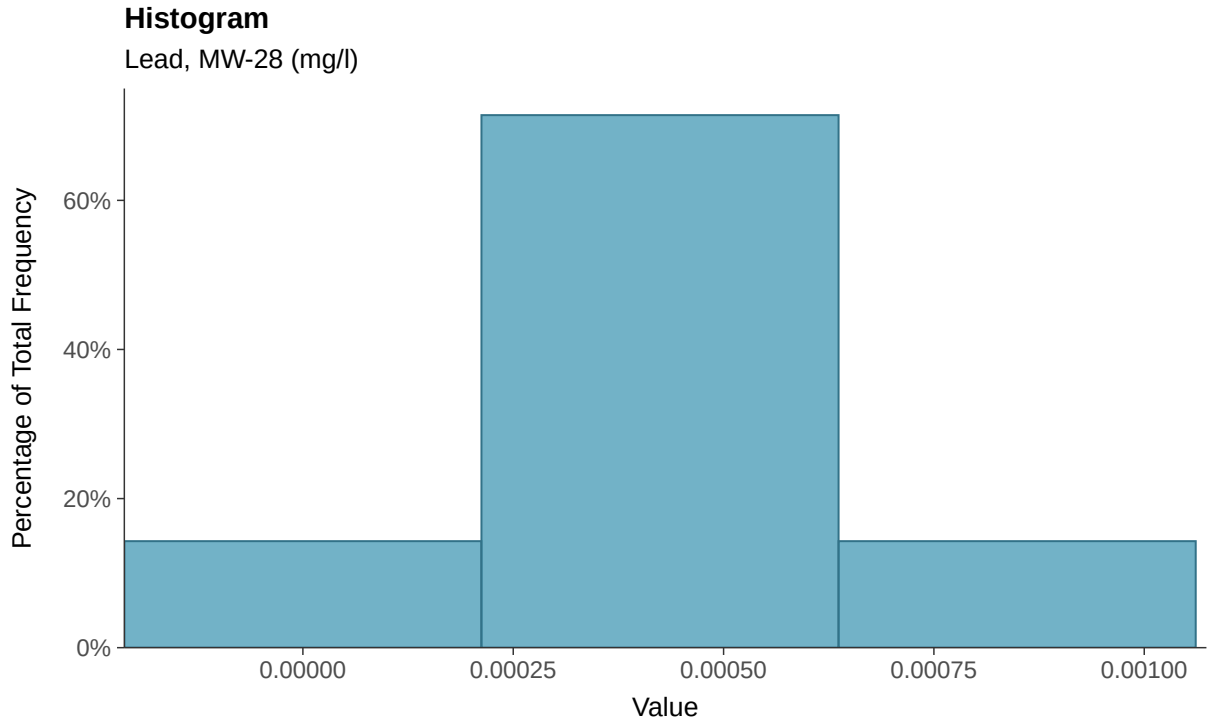
Fluoride (App IV), MW-28 (mg/l)



Appendix IV: Lead, MW-28

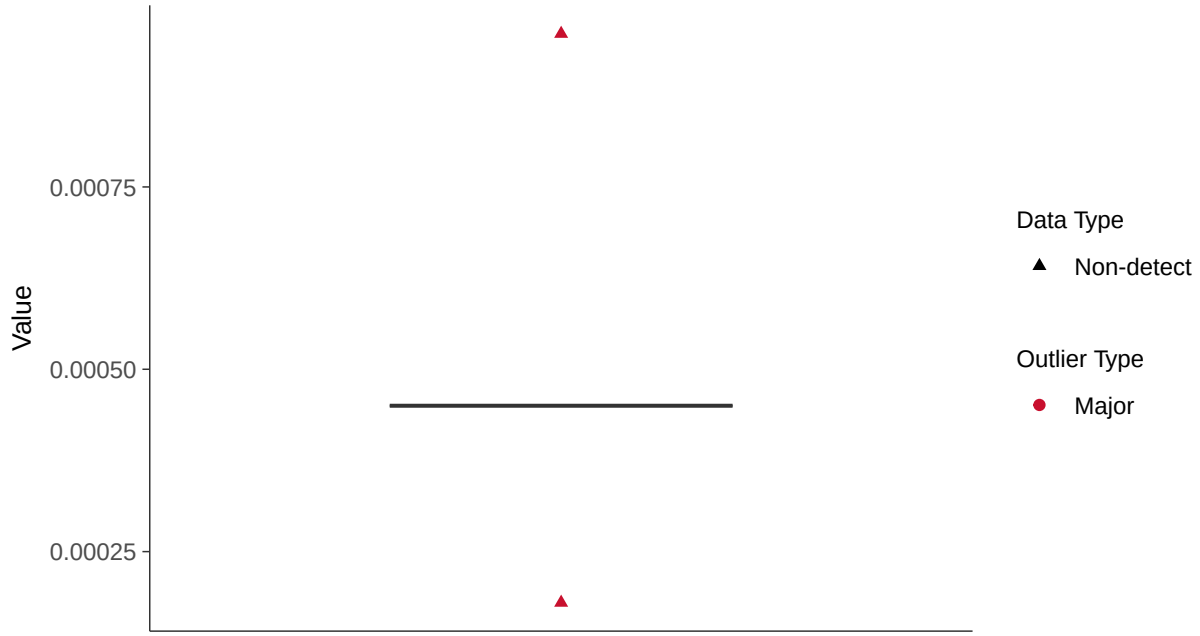
ID: 20_2_117





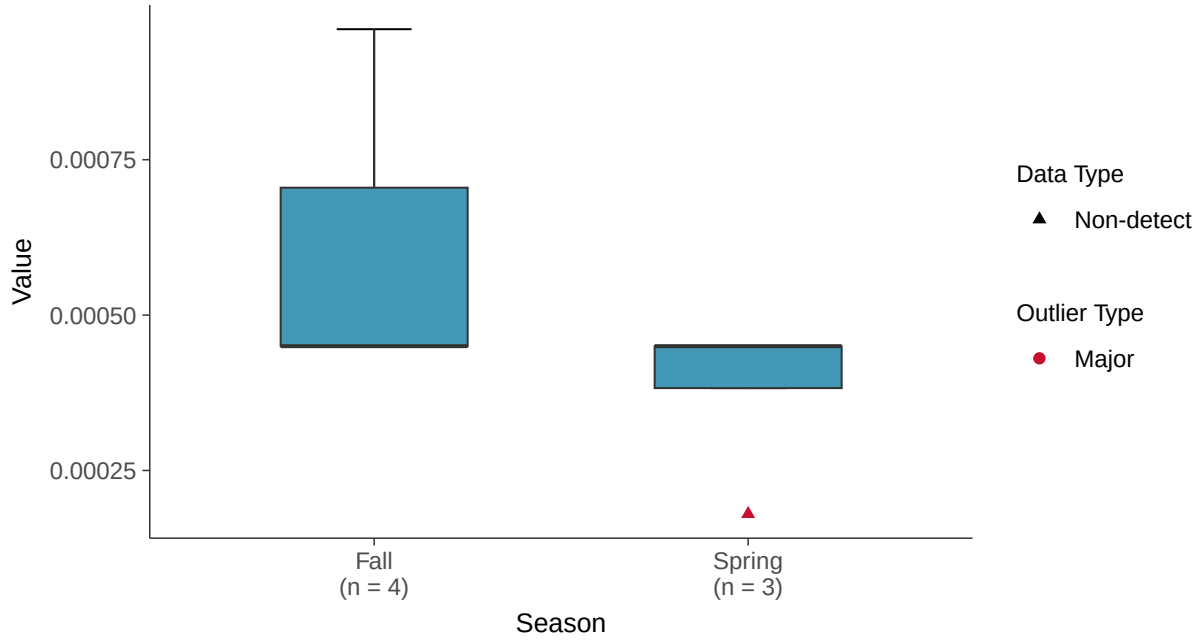
Boxplot

Lead, MW-28 (mg/l)



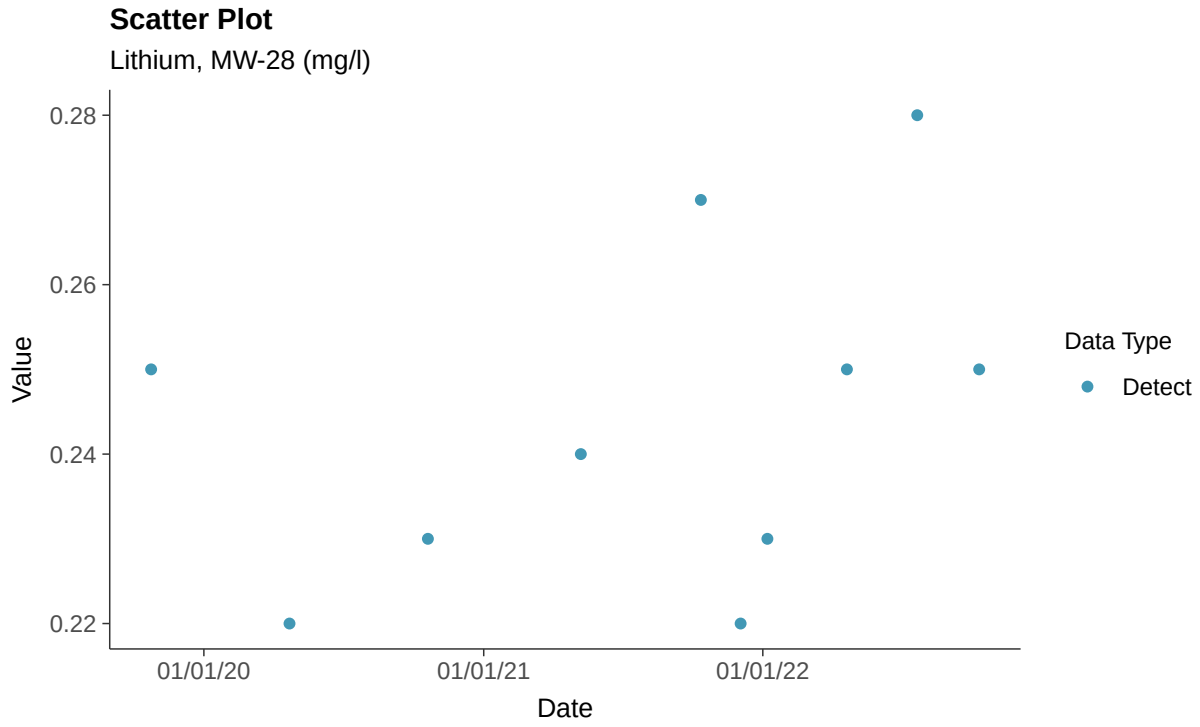
Boxplot by Season

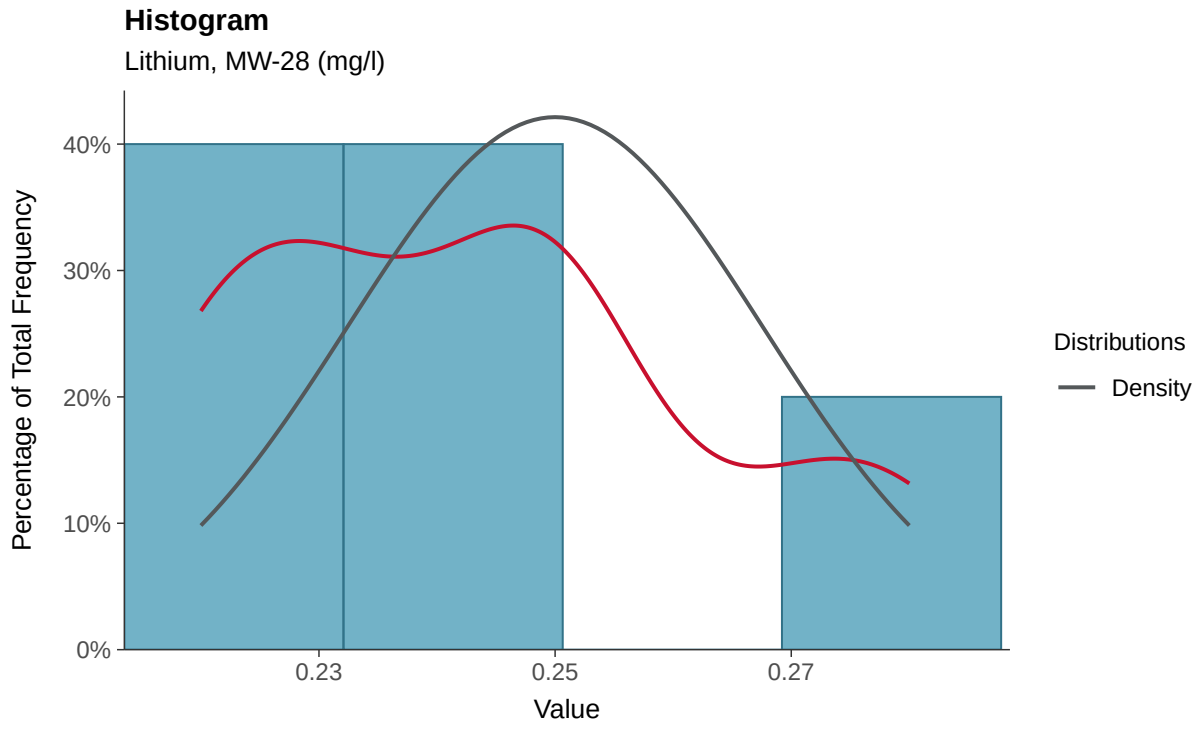
Lead, MW-28 (mg/l)



Appendix IV: Lithium, MW-28

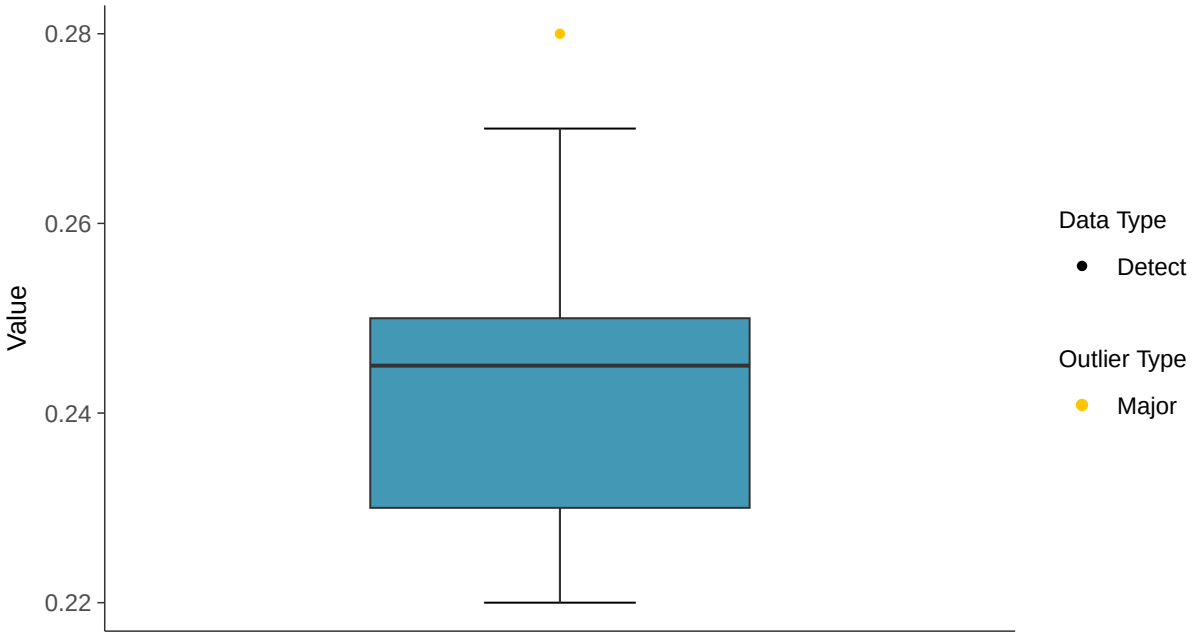
ID: 20_2_118





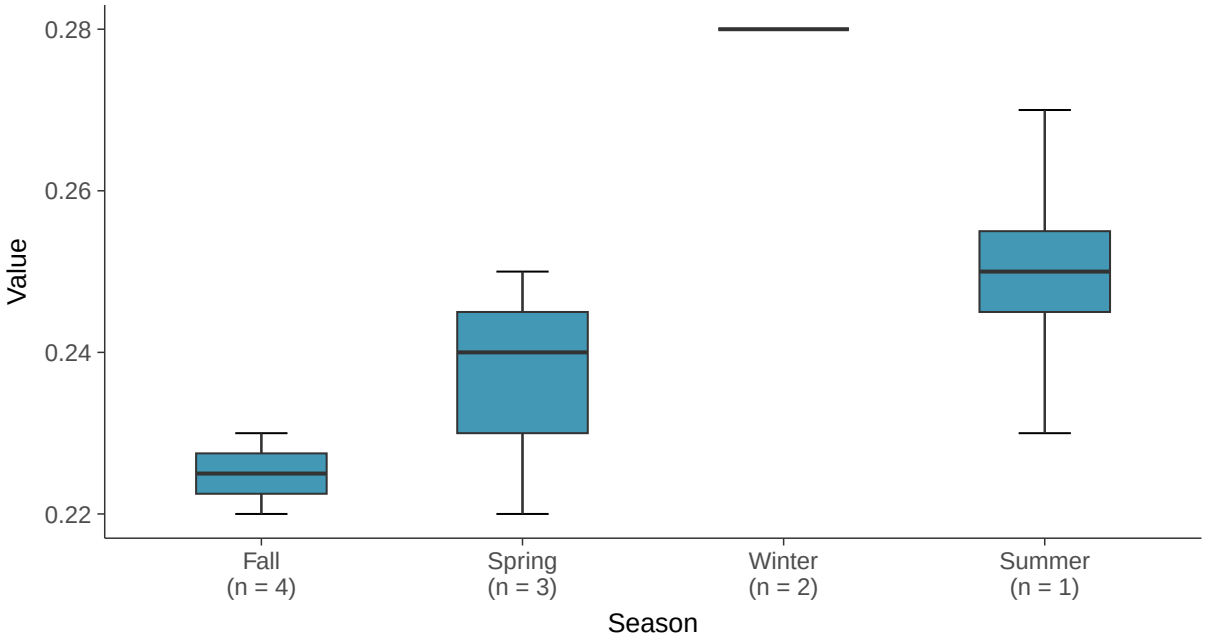
Boxplot

Lithium, MW-28 (mg/l)



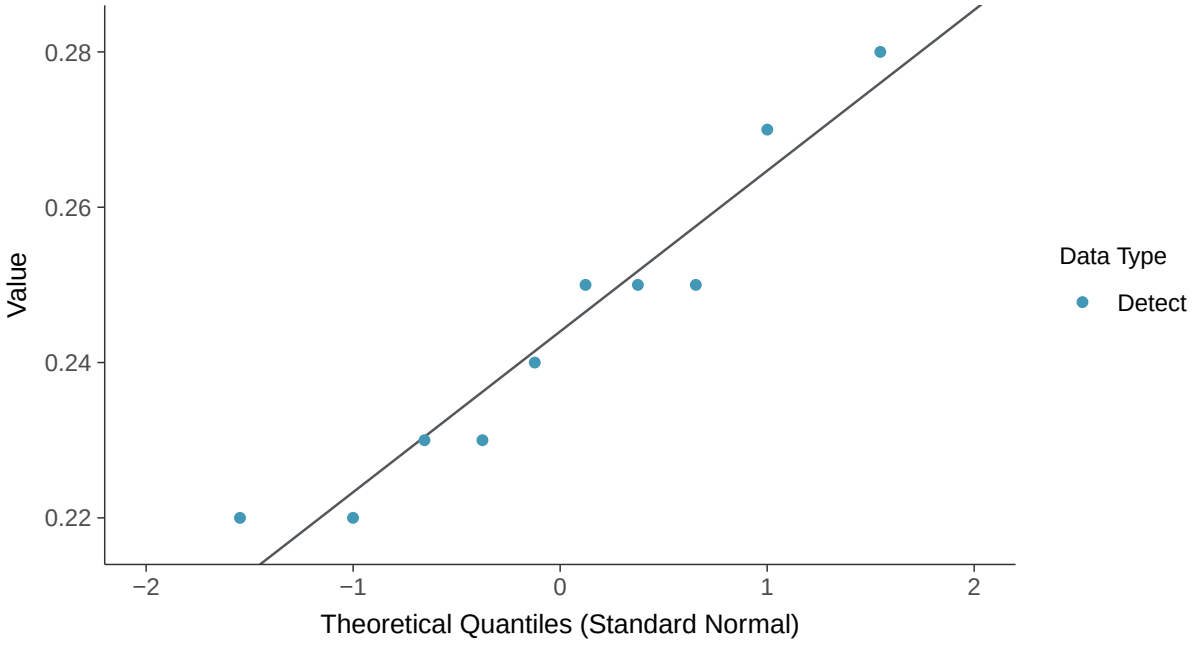
Boxplot by Season

Lithium, MW-28 (mg/l)



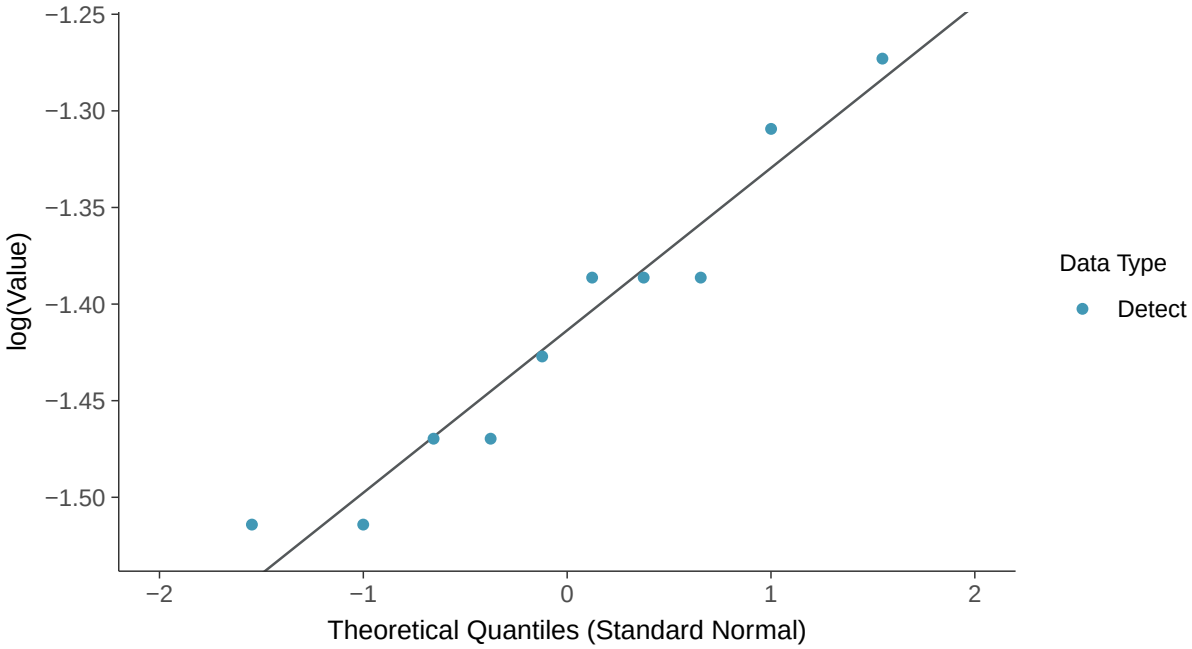
Normal Q-Q plot

Lithium, MW-28 (mg/l)



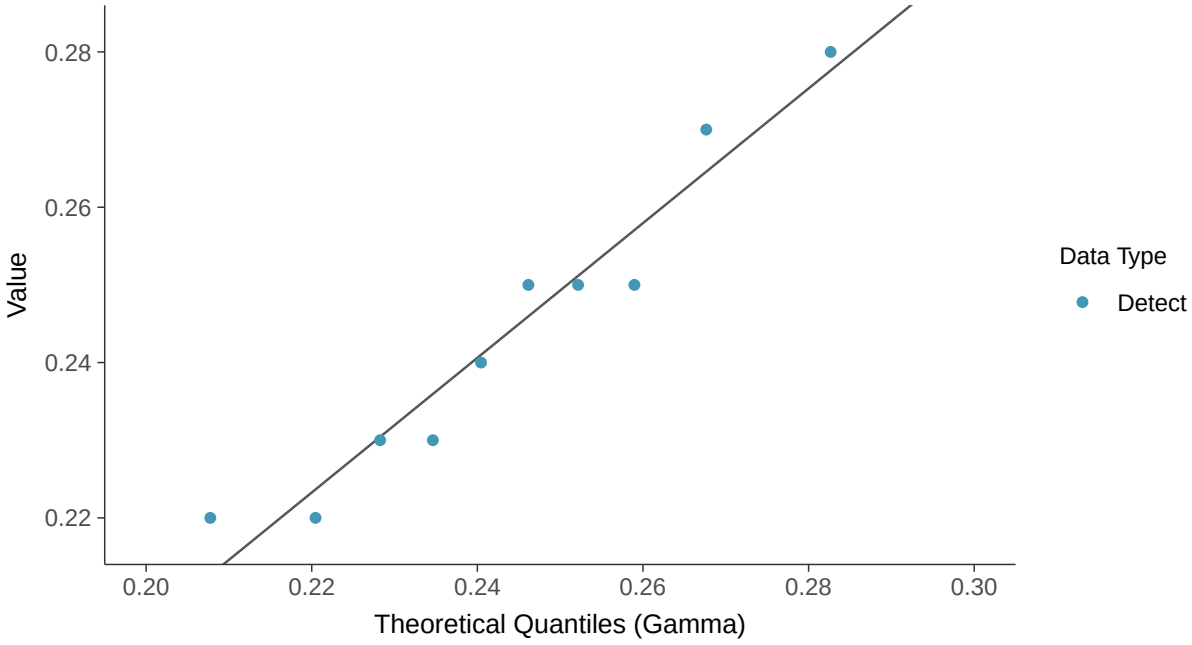
Lognormal Q-Q plot

Lithium, MW-28 (mg/l)



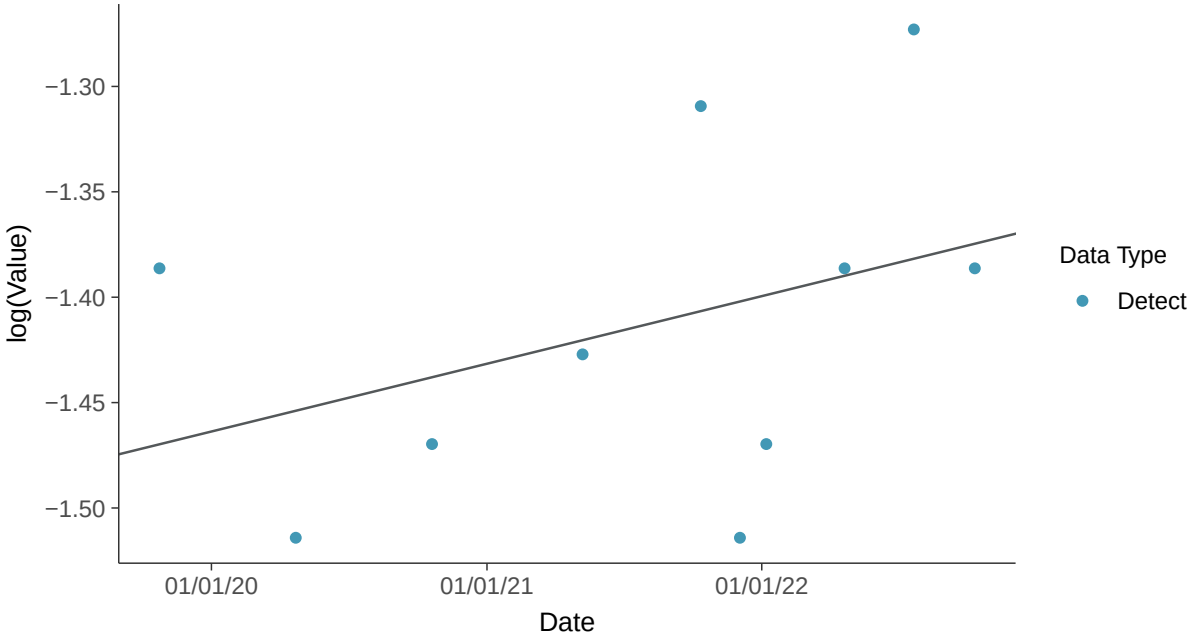
Gamma Q-Q plot

Lithium, MW-28 (mg/l)



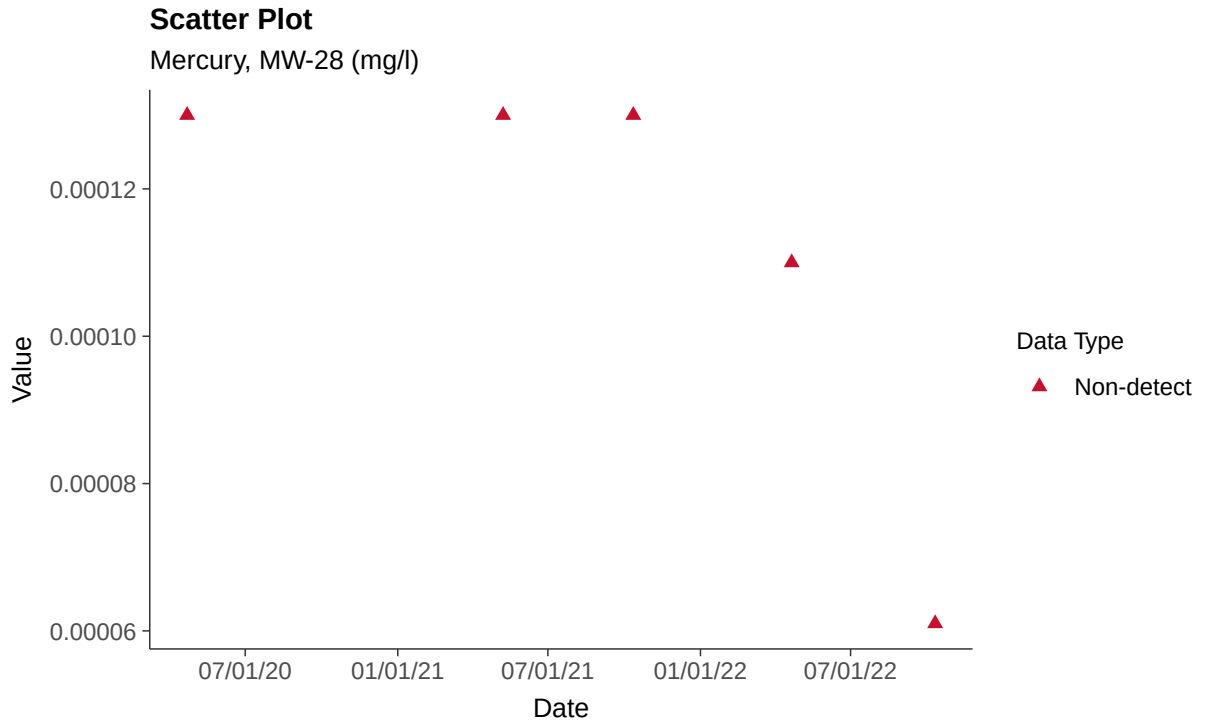
Trend Regression: Lognormal MLE

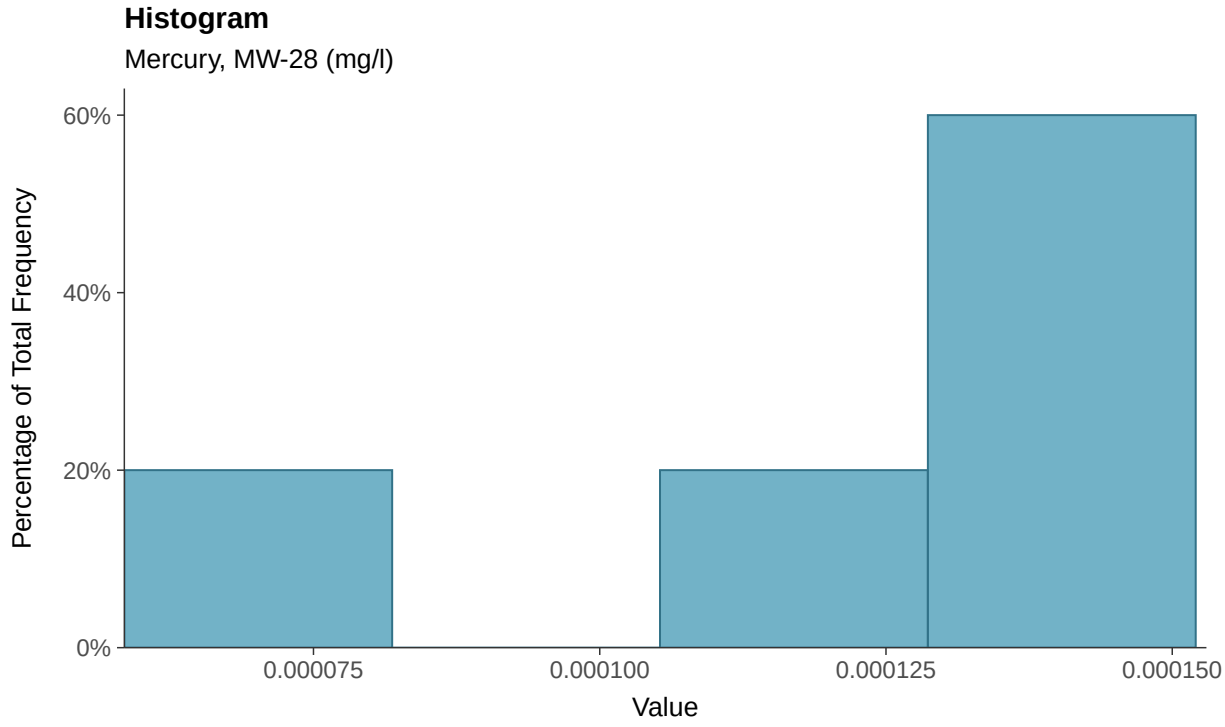
Lithium, MW-28 (mg/l)



Appendix IV: Mercury, MW-28

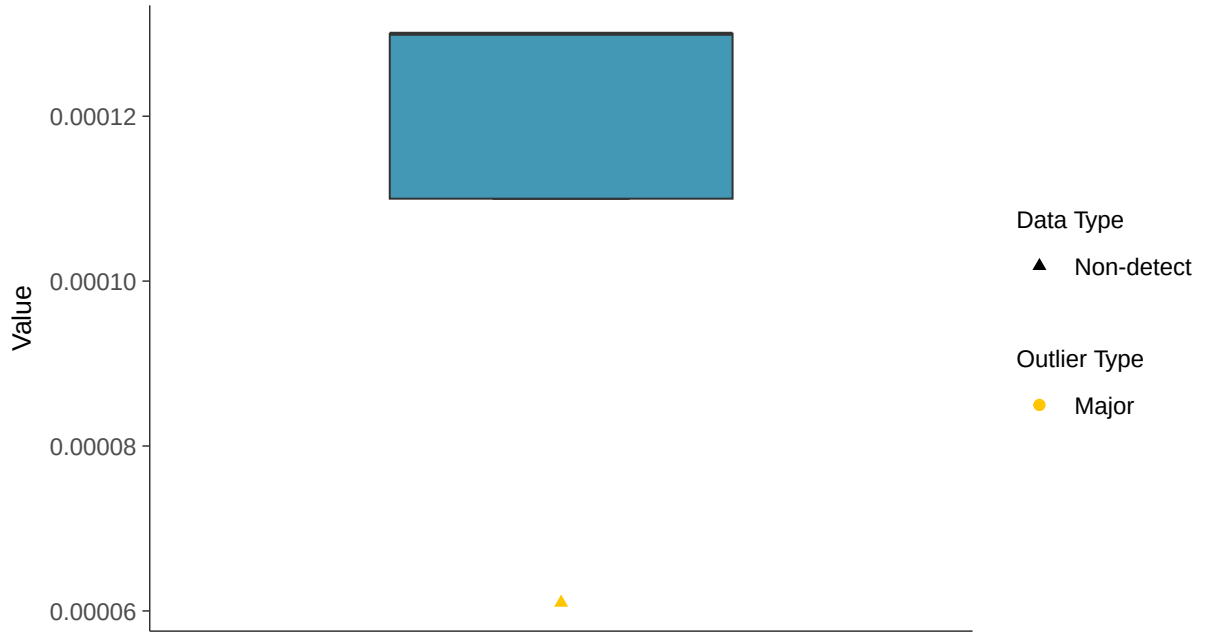
ID: 20_2_120





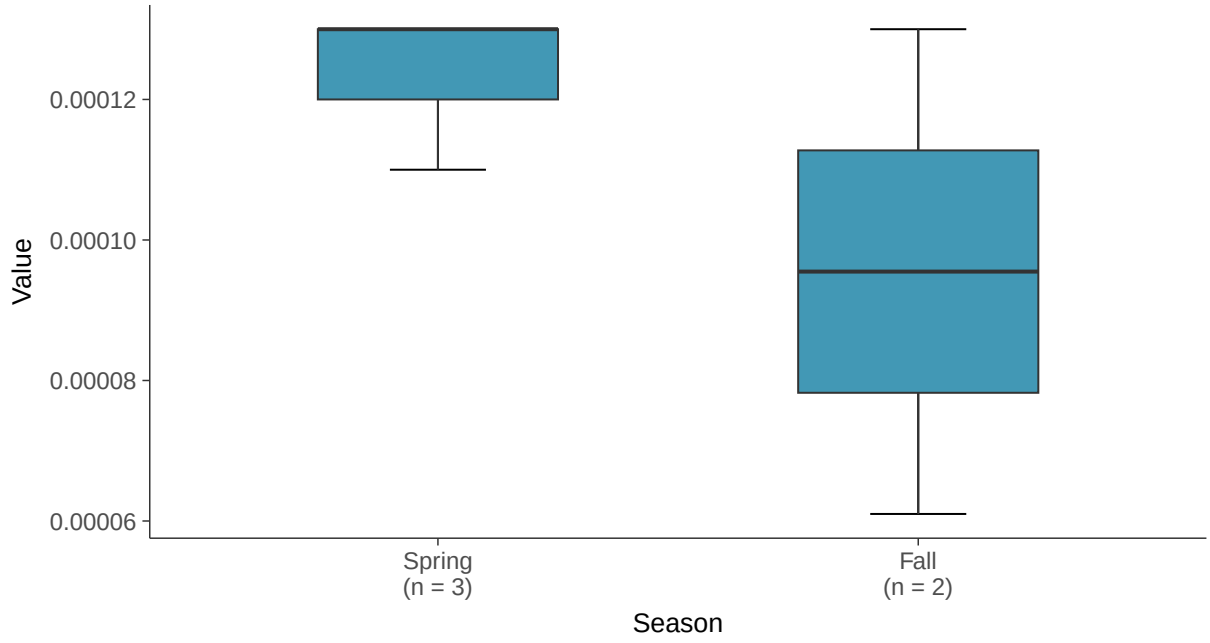
Boxplot

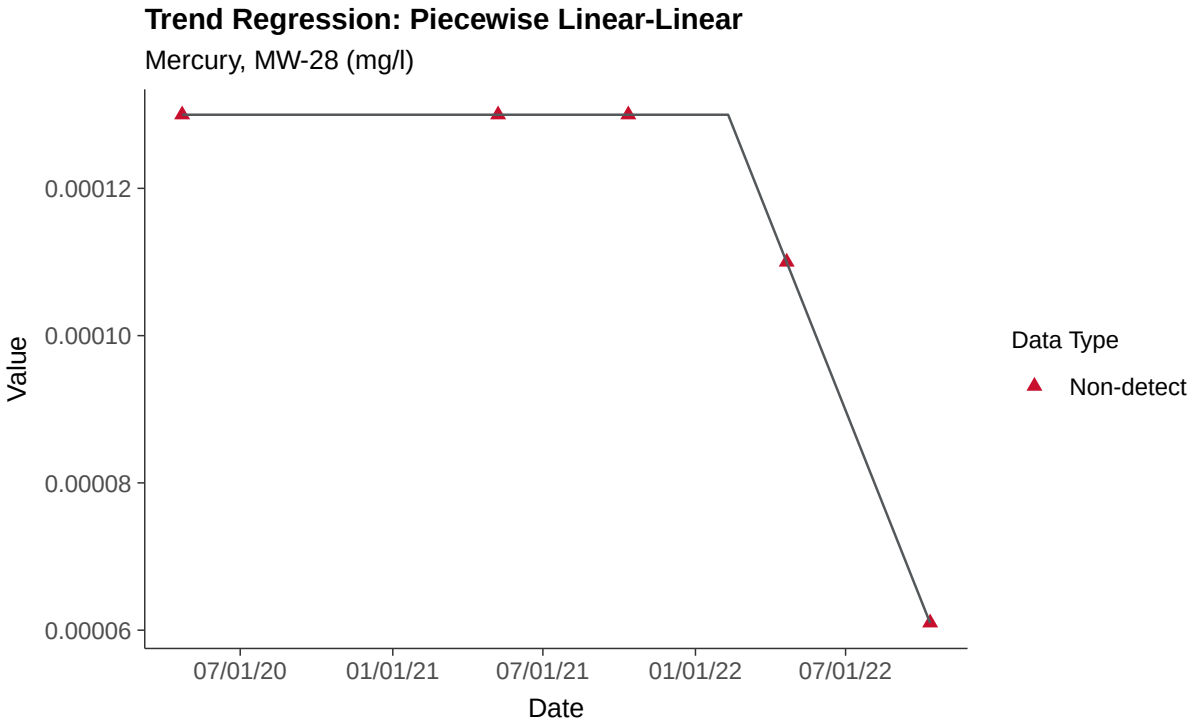
Mercury, MW-28 (mg/l)



Boxplot by Season

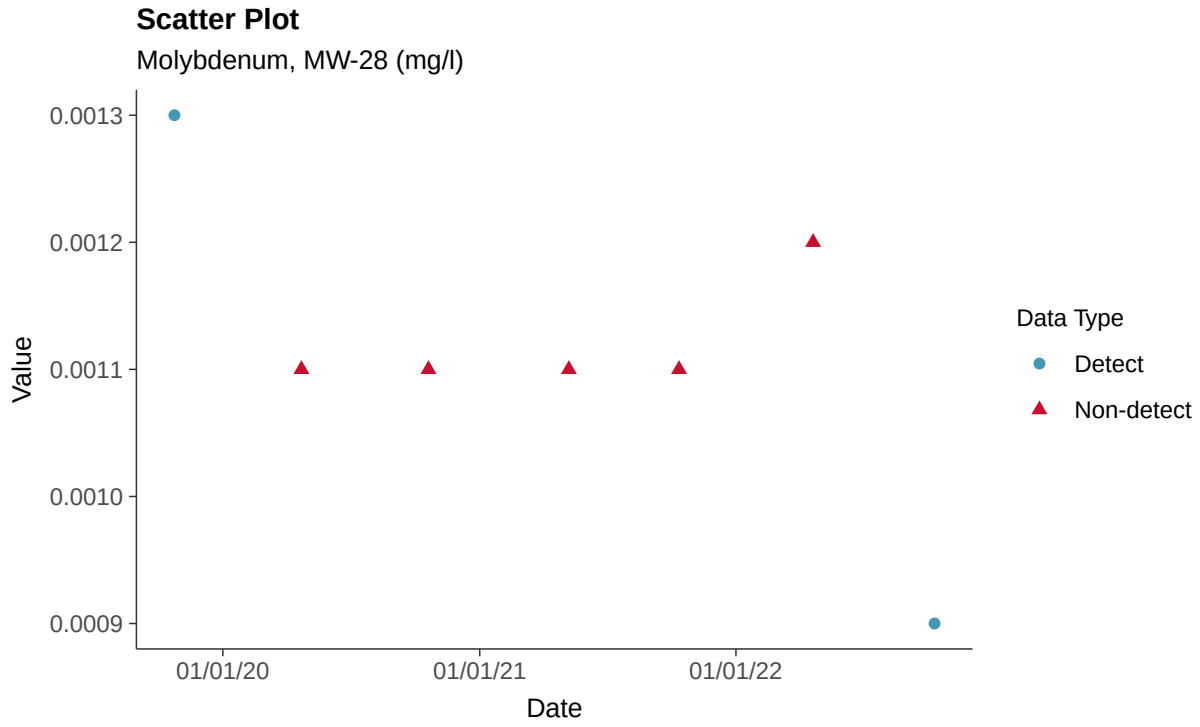
Mercury, MW-28 (mg/l)

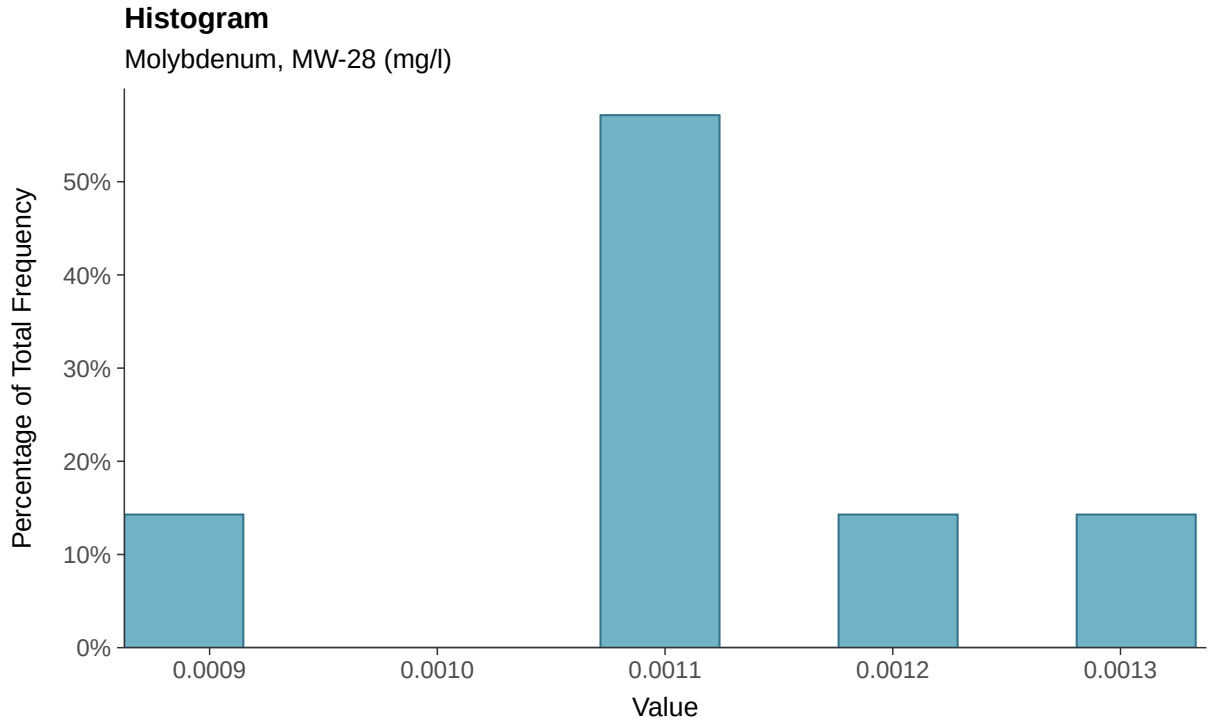



Trend Regression: Piecewise Linear-Linear
Mercury, MW-28 (mg/l)
Value
0.00012
0.00010
0.00008
0.00006
07/01/20
01/01/21
07/01/21
01/01/22
07/01/22
Date
Data Type
Non-detect

Appendix IV: Molybdenum, MW-28

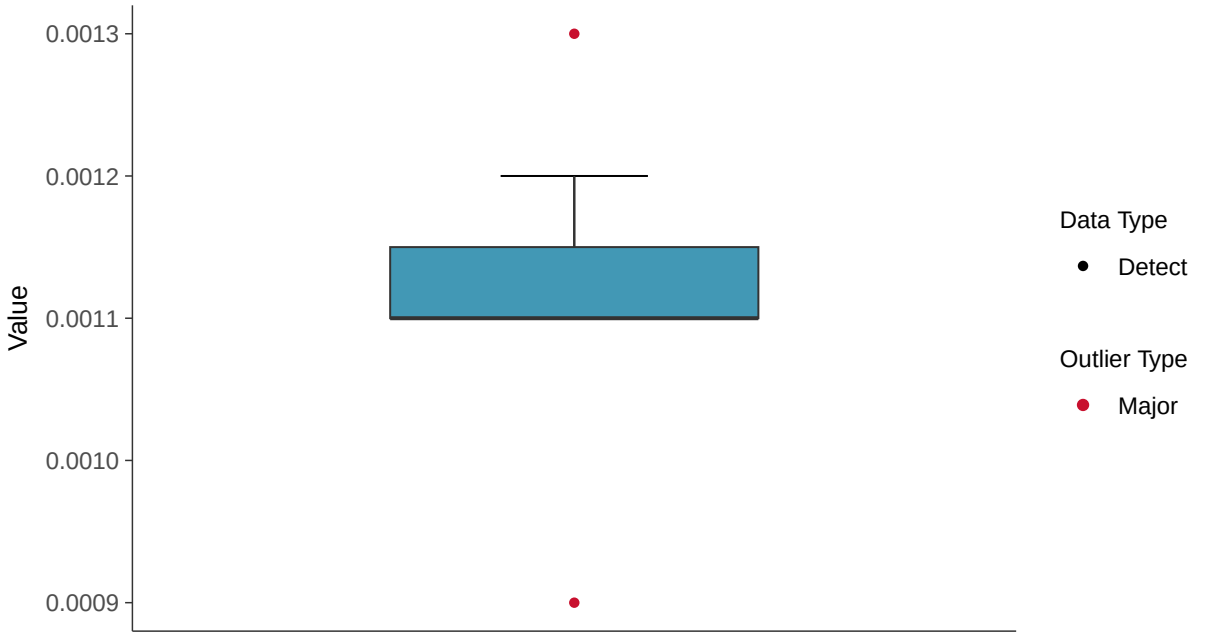
ID: 20_2_121





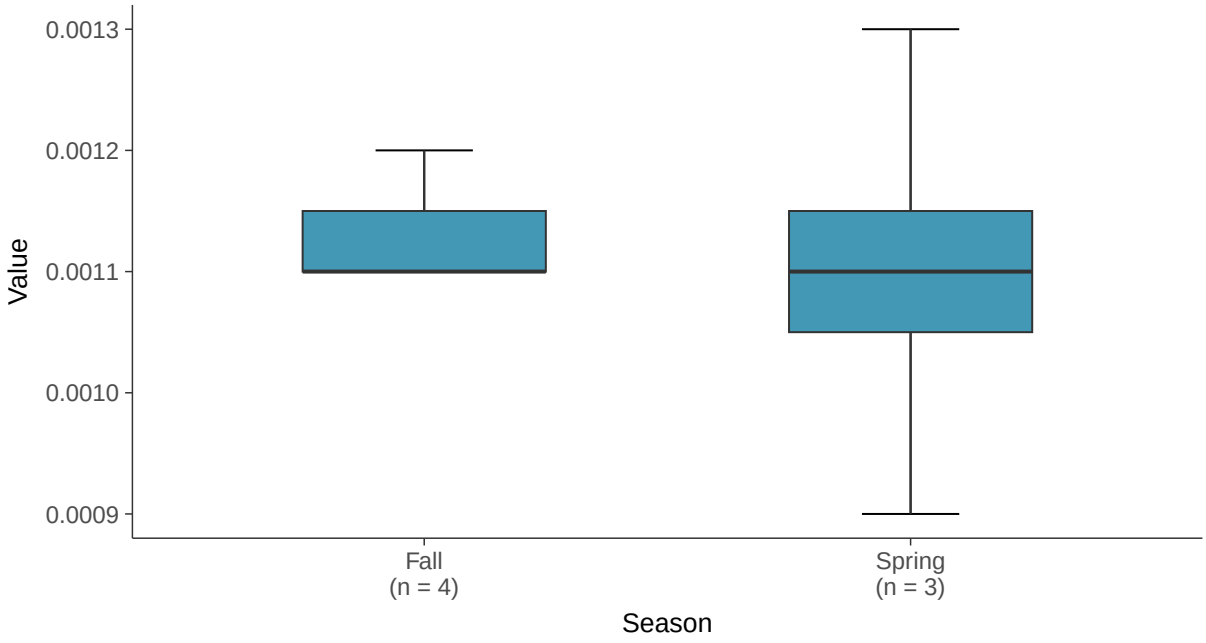
Boxplot

Molybdenum, MW-28 (mg/l)



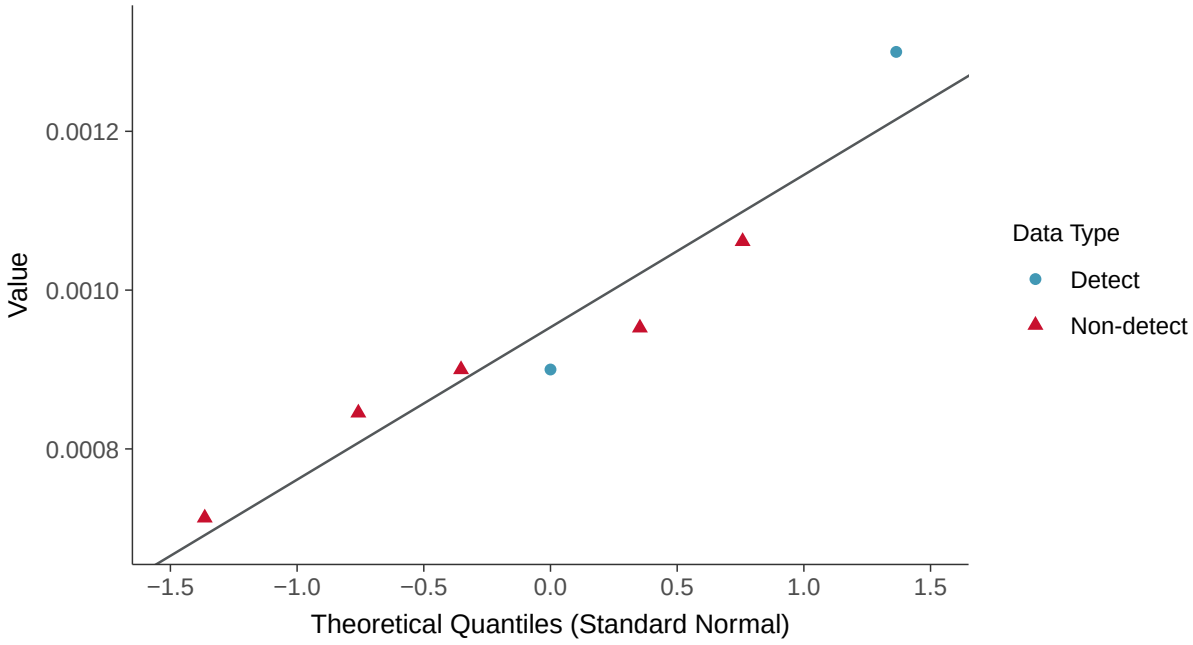
Boxplot by Season

Molybdenum, MW-28 (mg/l)



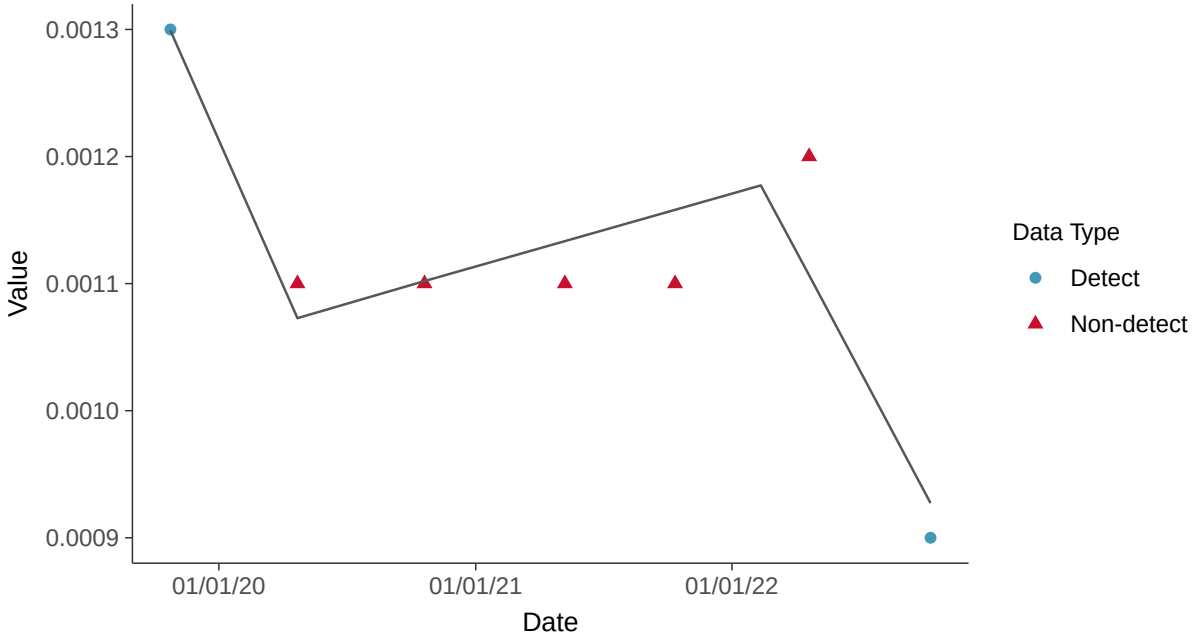
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-28 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-28 (mg/l)

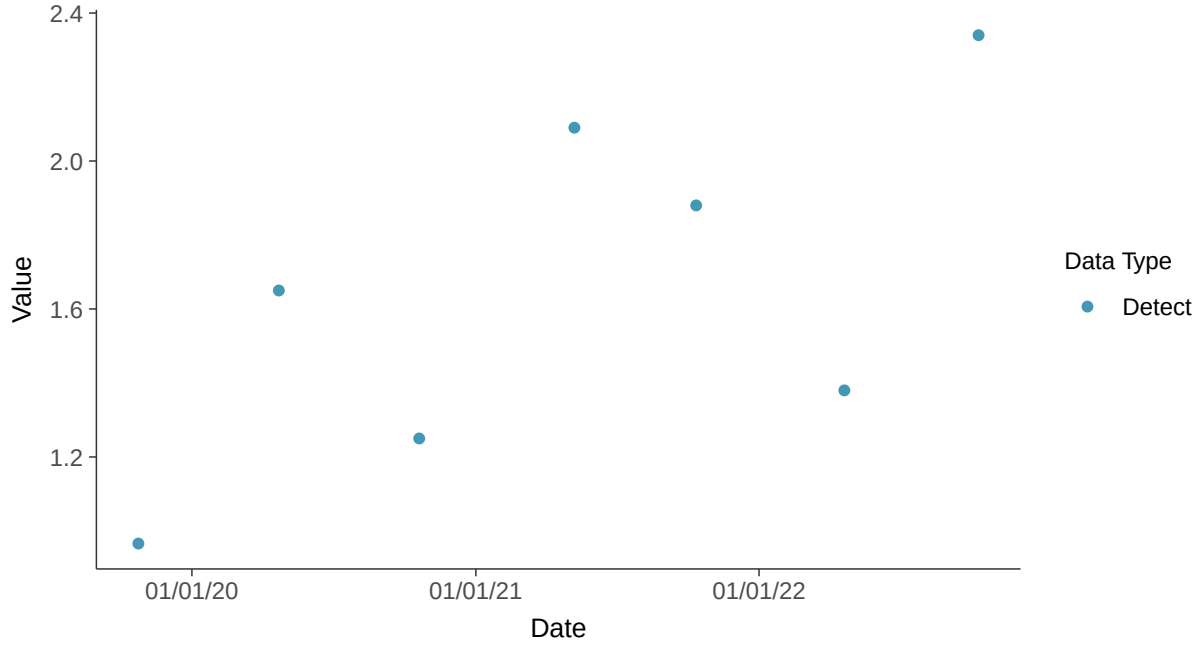


Appendix IV: Radium-226+228, MW-28

ID: 20_2_127

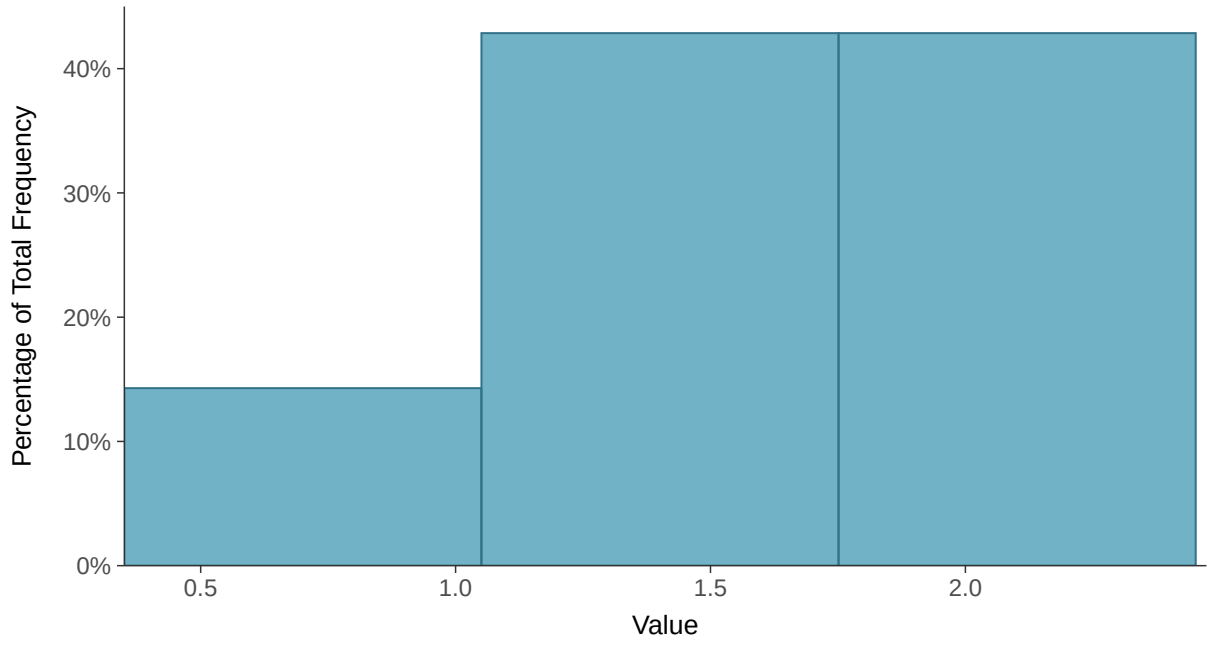
Scatter Plot

Radium-226+228, MW-28 (pci/l)



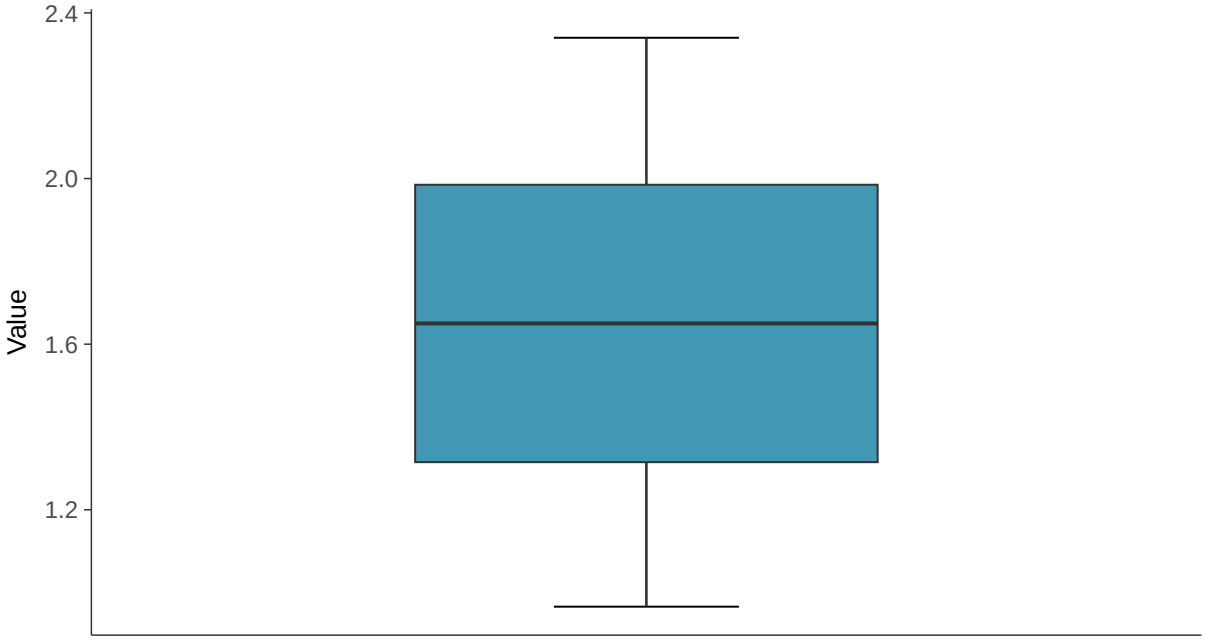
Histogram

Radium-226+228, MW-28 (pci/l)



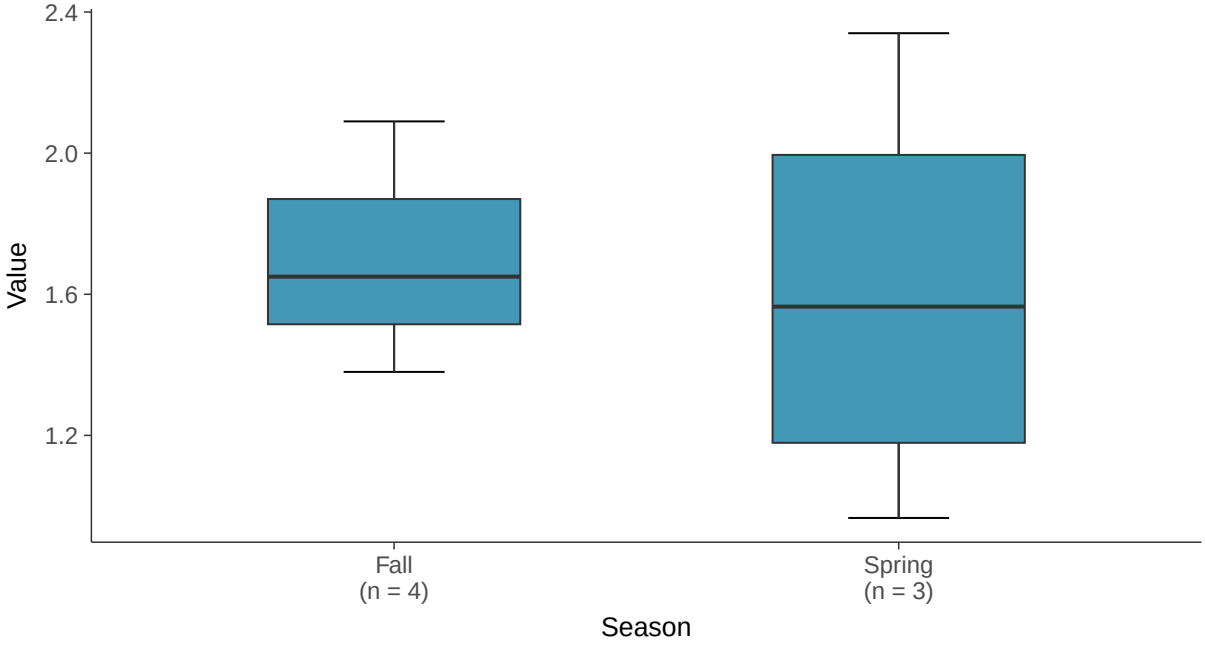
Boxplot

Radium-226+228, MW-28 (pci/l)



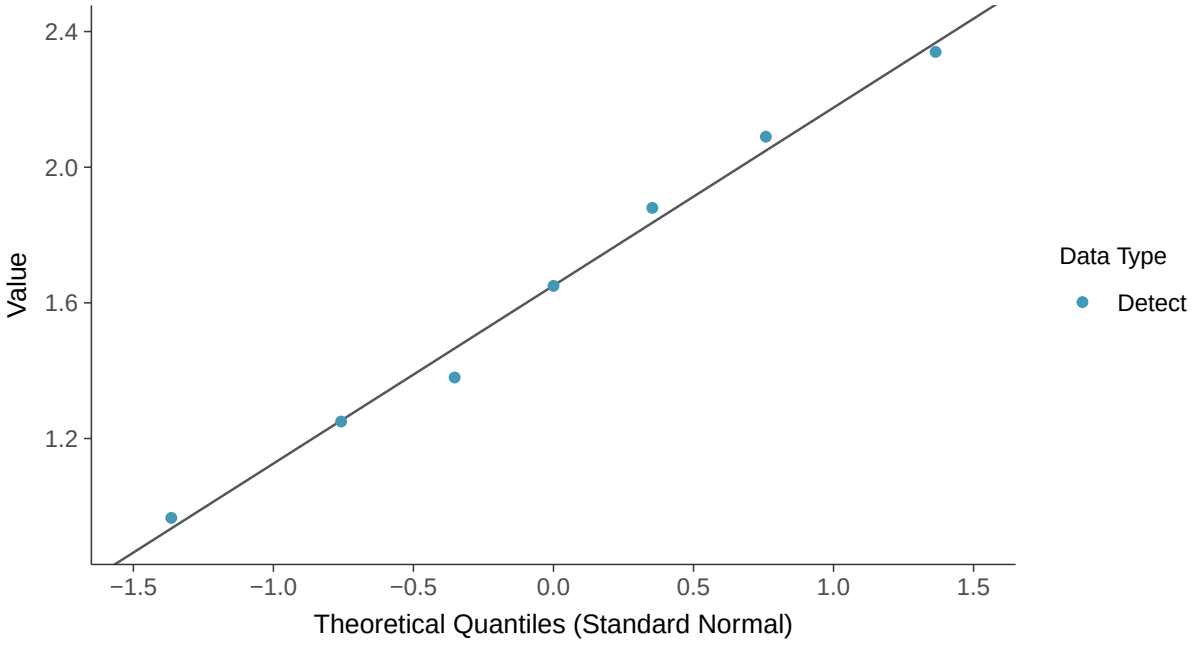
Boxplot by Season

Radium-226+228, MW-28 (pci/l)



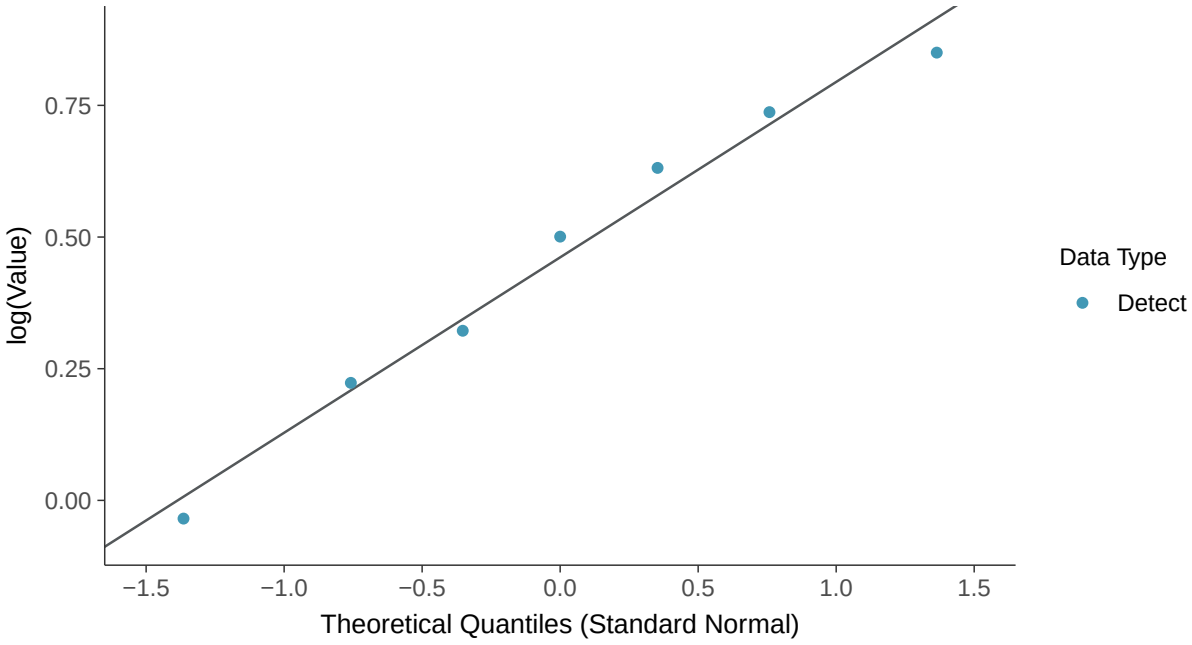
Normal Q-Q plot

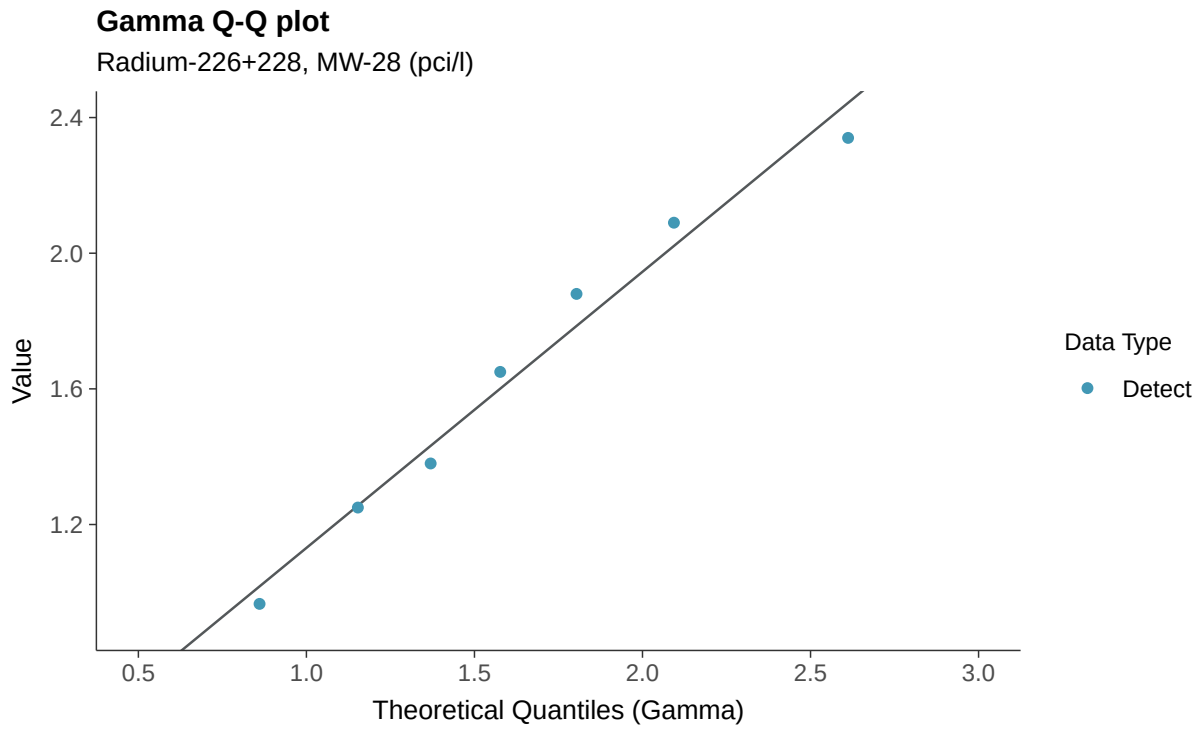
Radium-226+228, MW-28 (pci/l)



Lognormal Q-Q plot

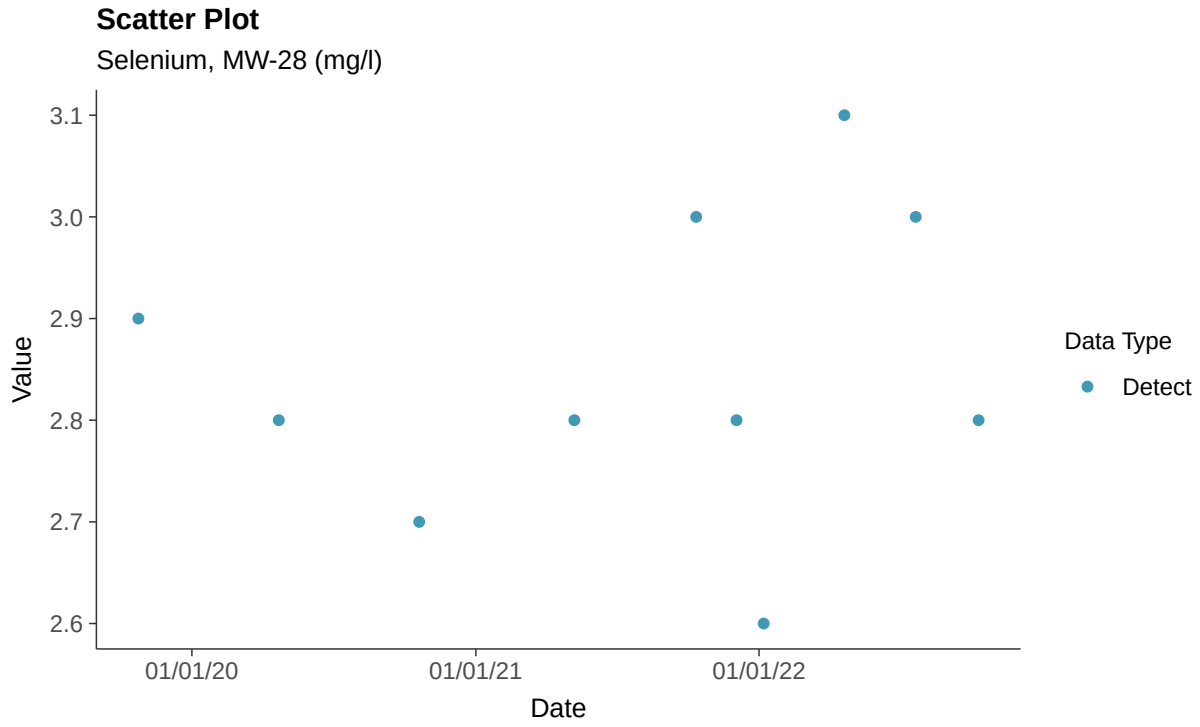
Radium-226+228, MW-28 (pci/l)

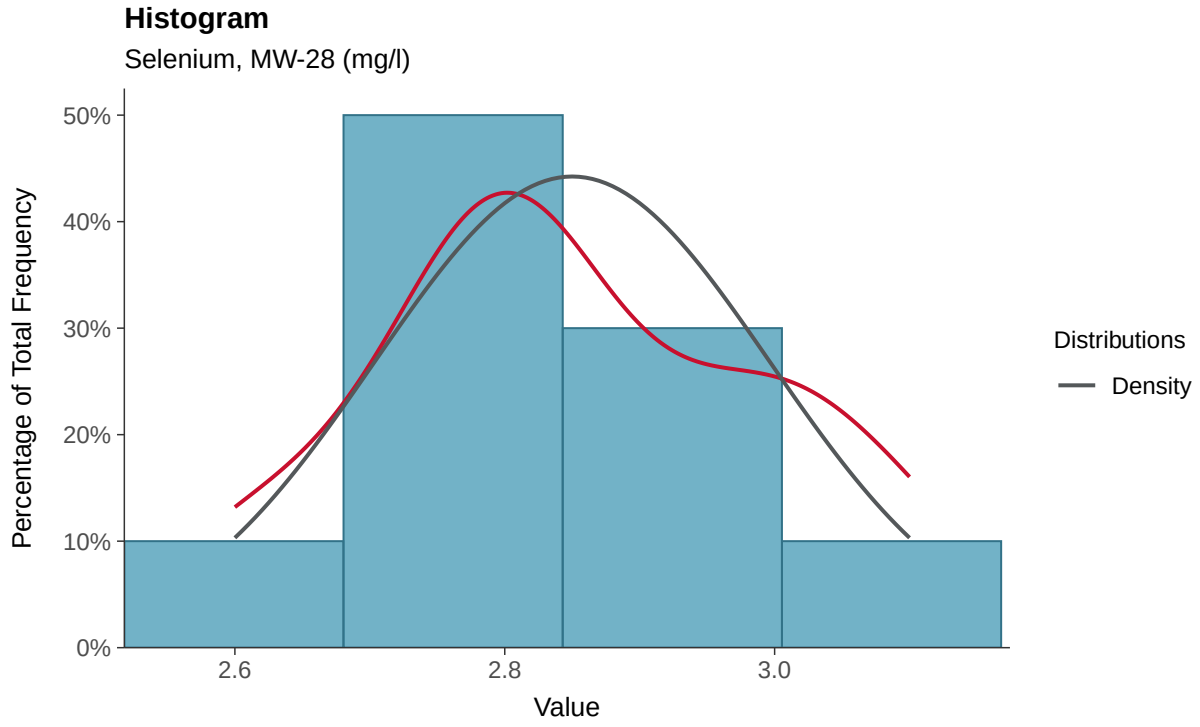



Gamma Q-Q plot
Radium-226+228, MW-28 (pci/l)
Value
2.4
2.0
1.6
1.2
0.5
1.0
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Selenium, MW-28

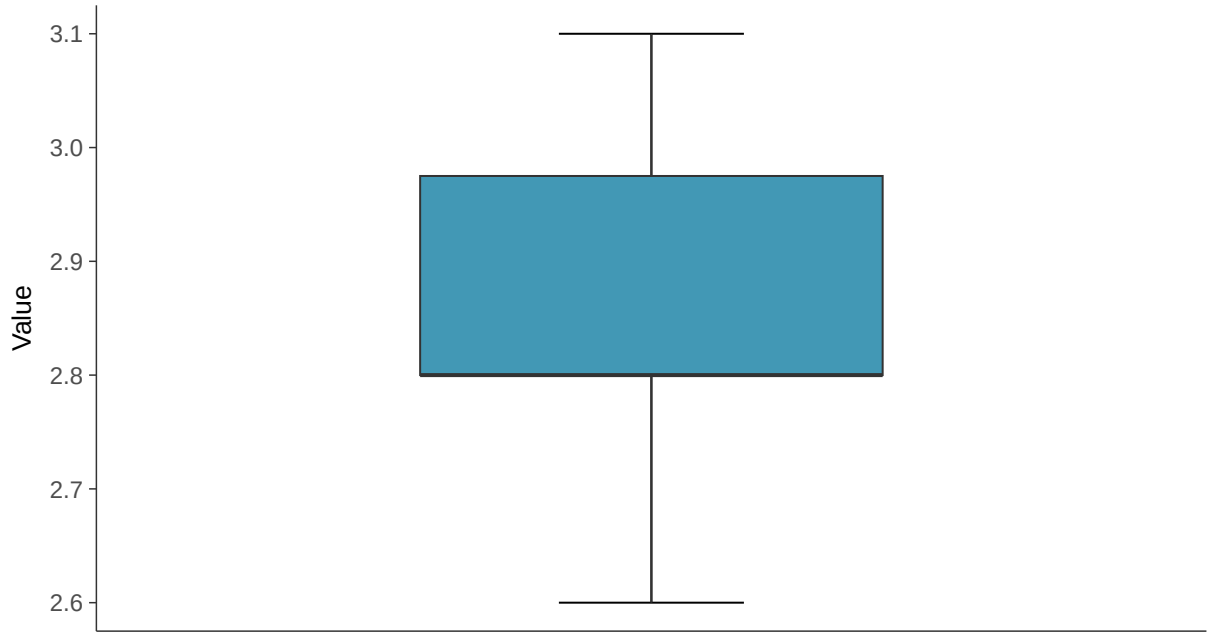
ID: 20_2_129





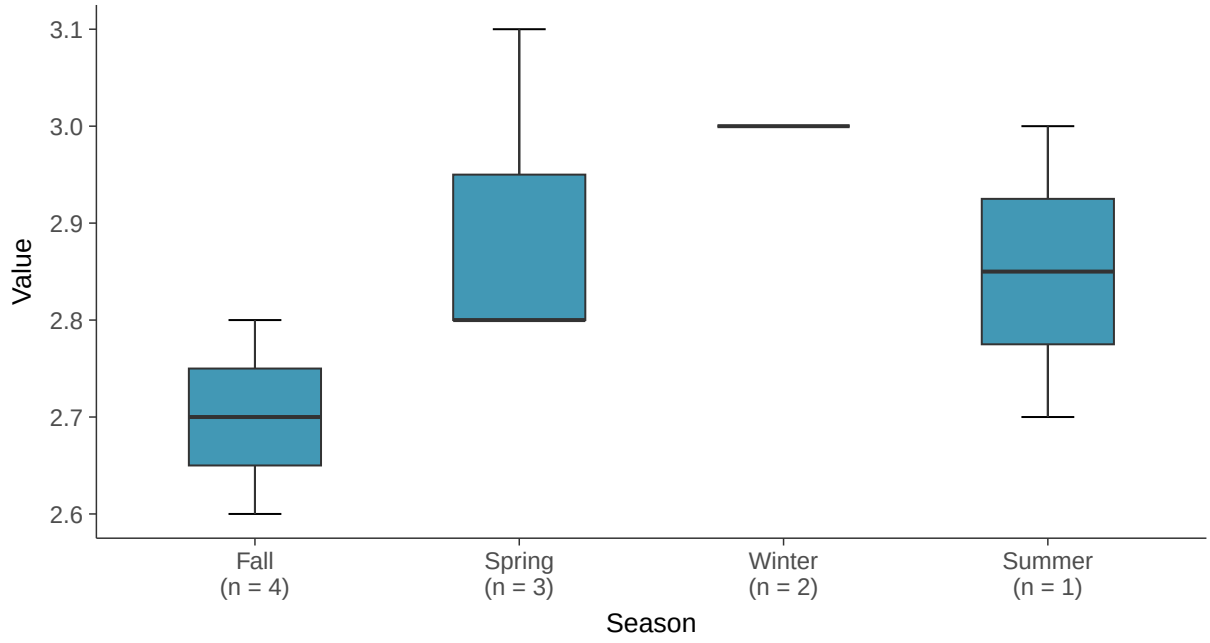
Boxplot

Selenium, MW-28 (mg/l)



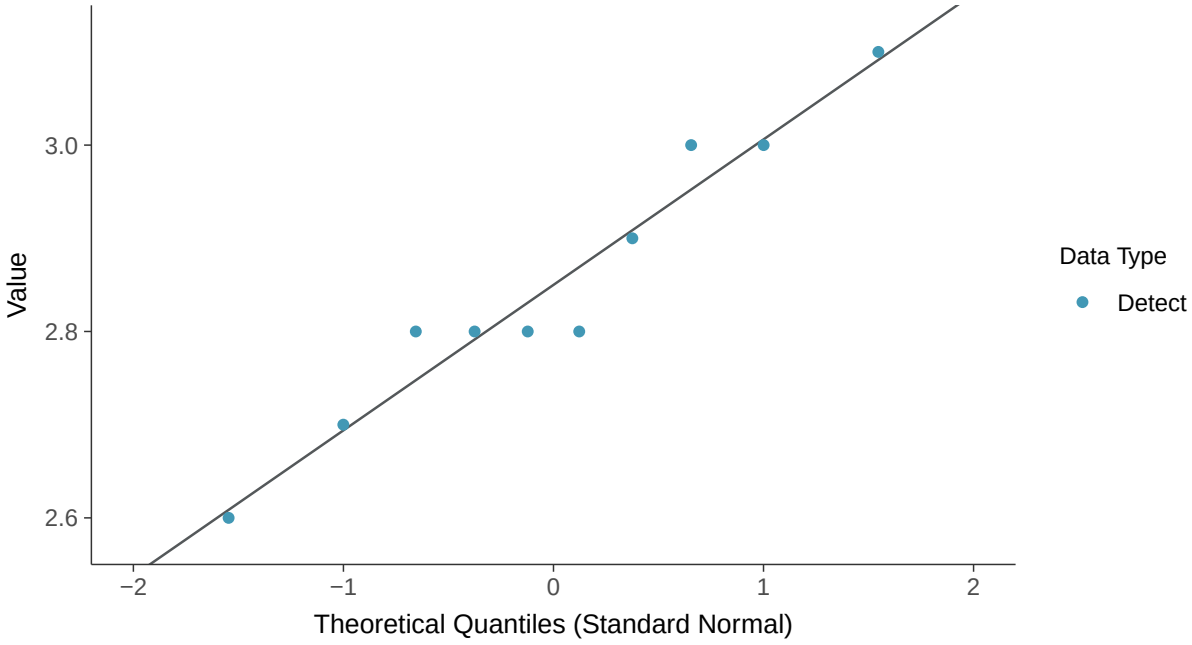
Boxplot by Season

Selenium, MW-28 (mg/l)



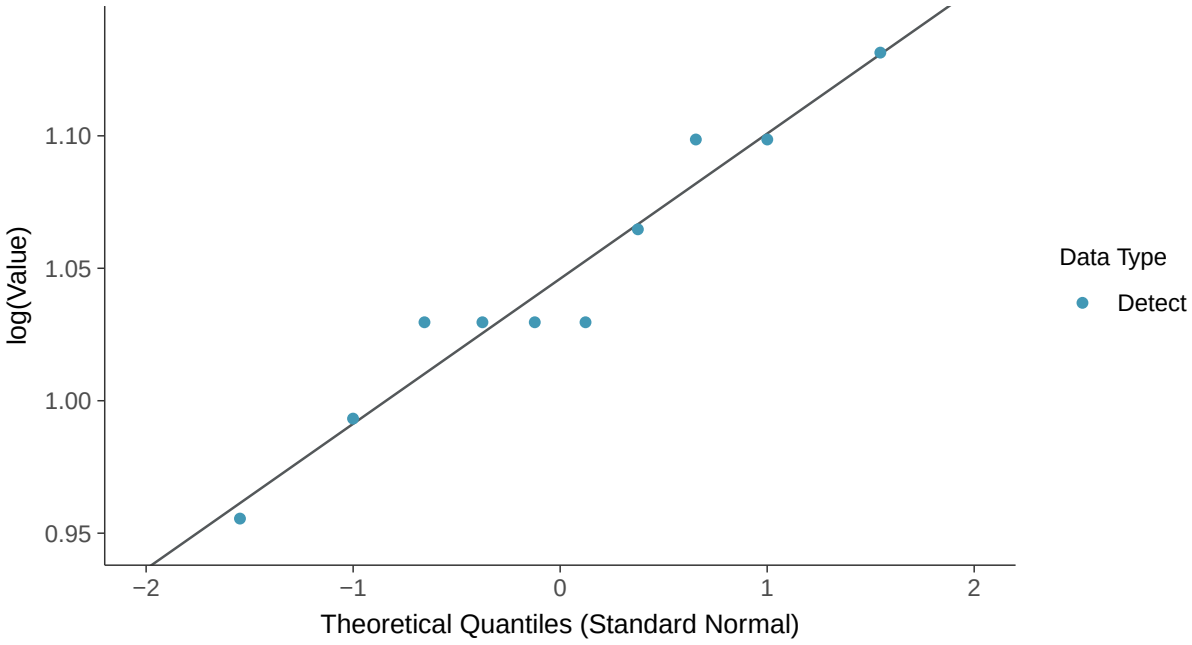
Normal Q-Q plot

Selenium, MW-28 (mg/l)



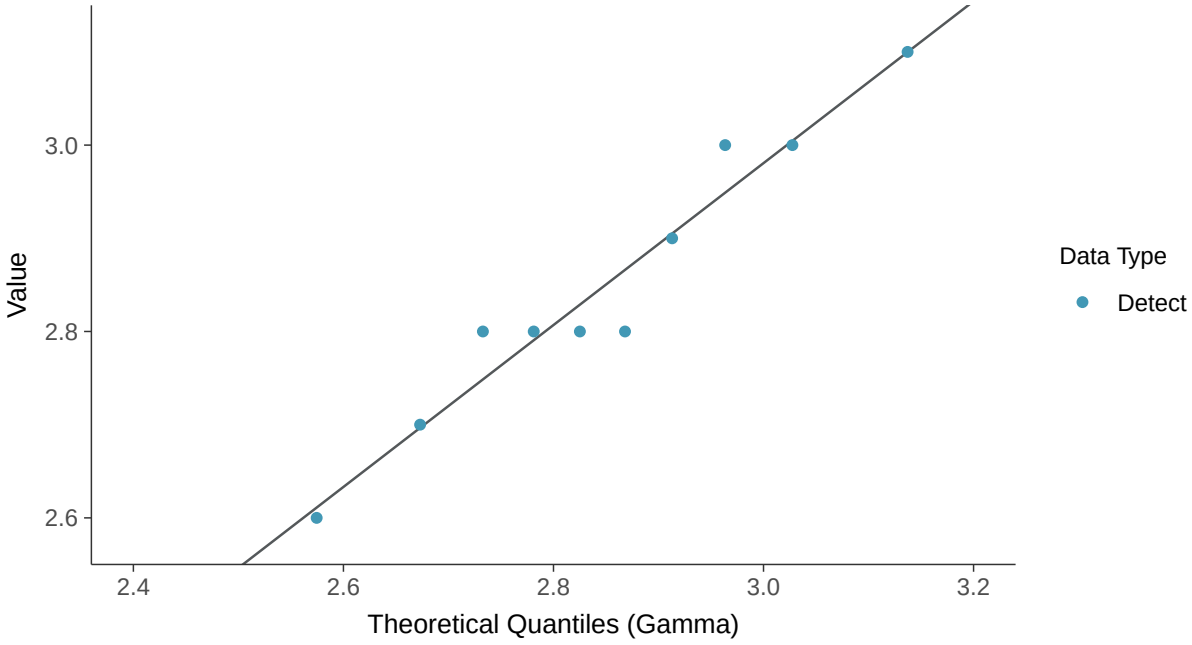
Lognormal Q-Q plot

Selenium, MW-28 (mg/l)



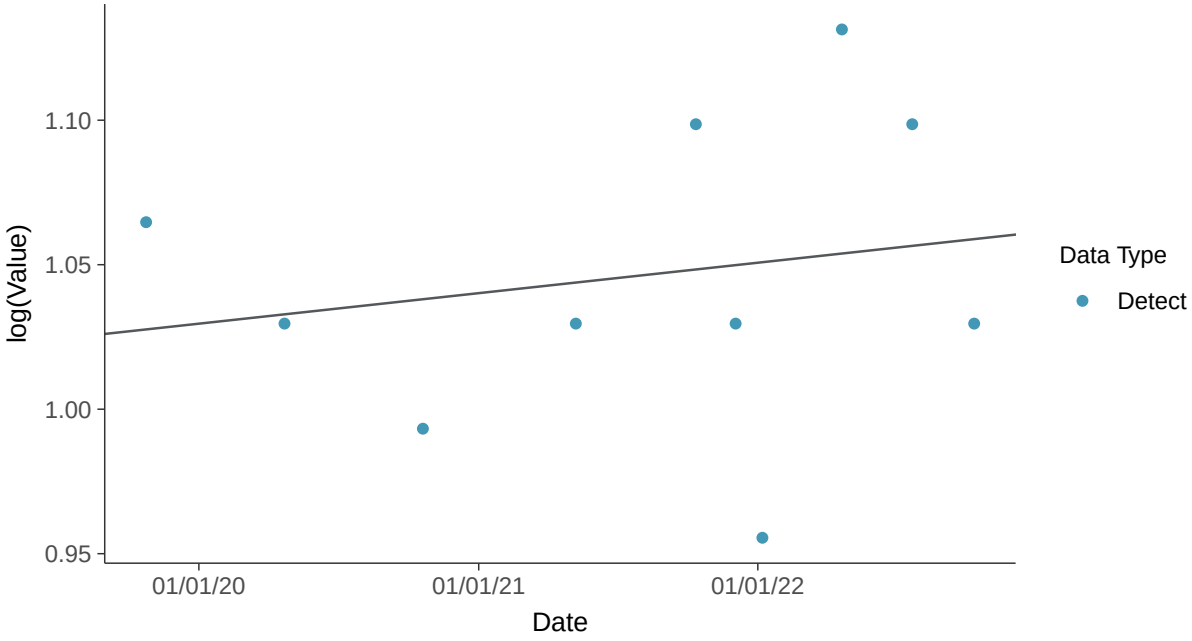
Gamma Q-Q plot

Selenium, MW-28 (mg/l)



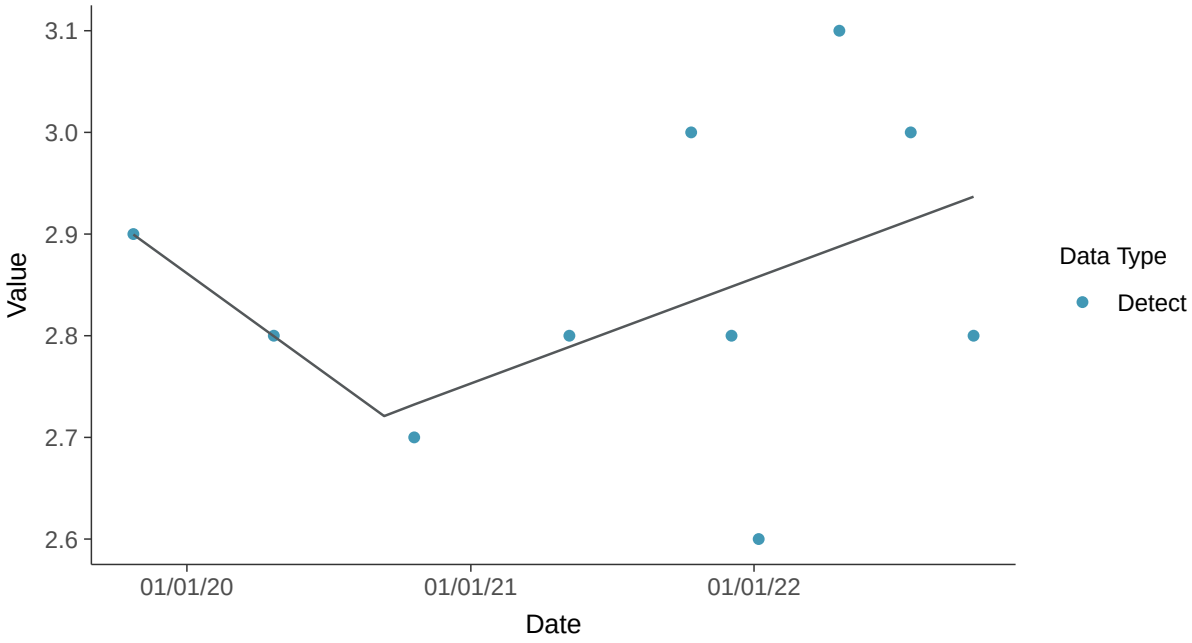
Trend Regression: Lognormal MLE

Selenium, MW-28 (mg/l)



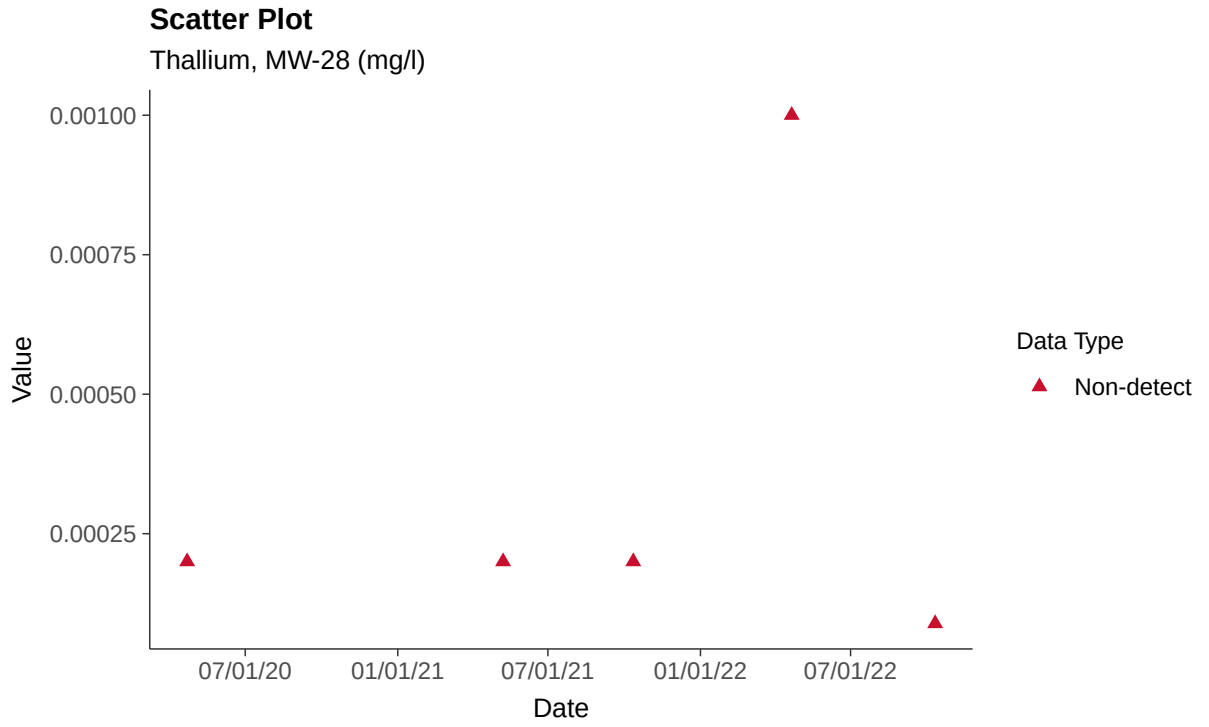
Trend Regression: Piecewise Linear-Linear

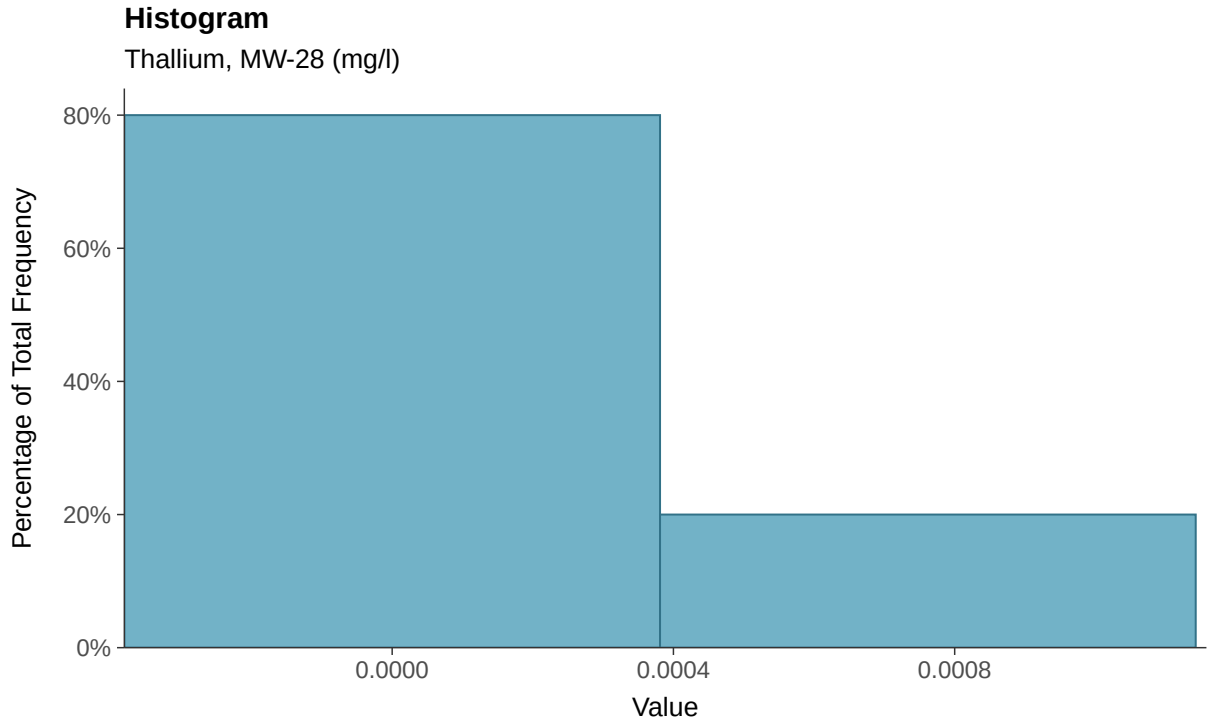
Selenium, MW-28 (mg/l)



Appendix IV: Thallium, MW-28

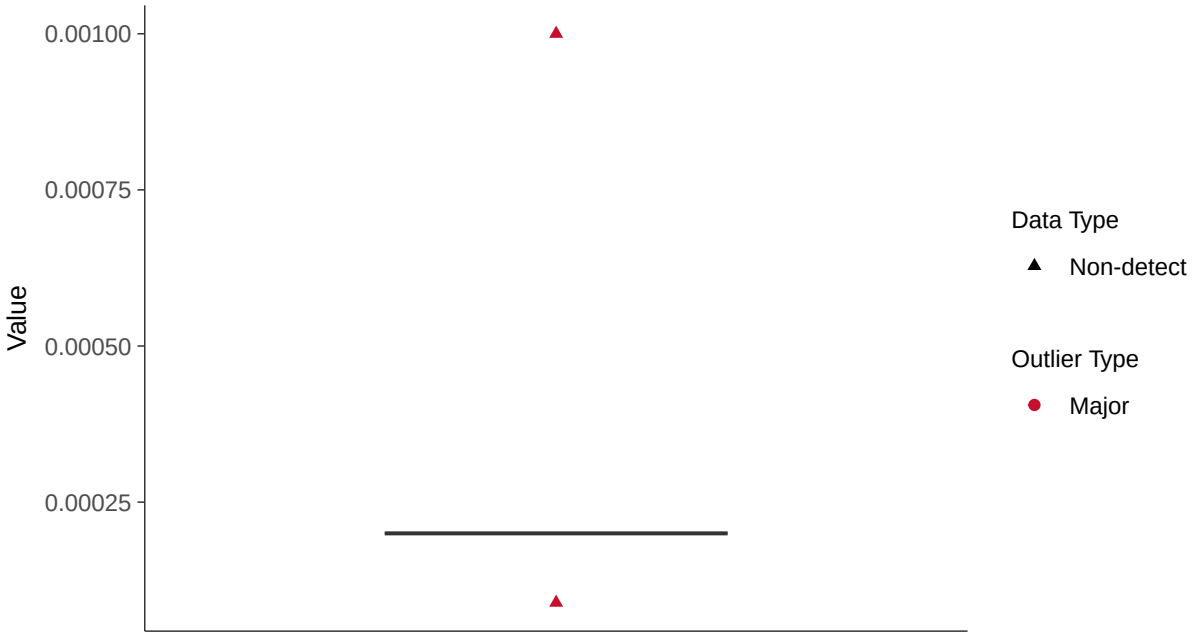
ID: 20_2_134





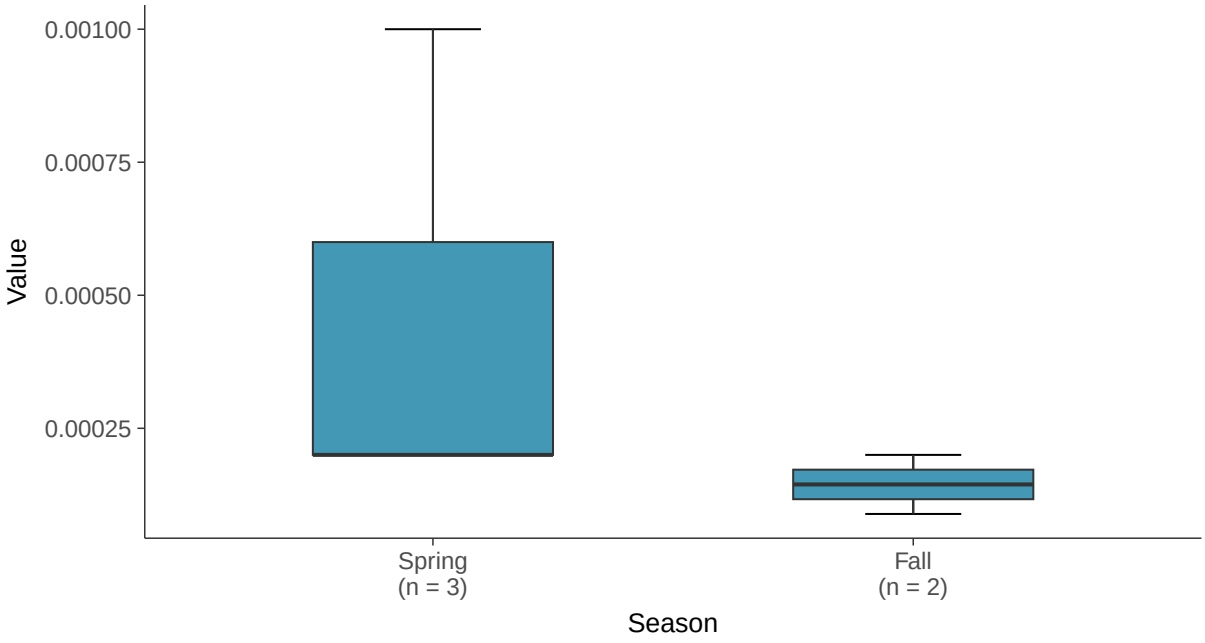
Boxplot

Thallium, MW-28 (mg/l)



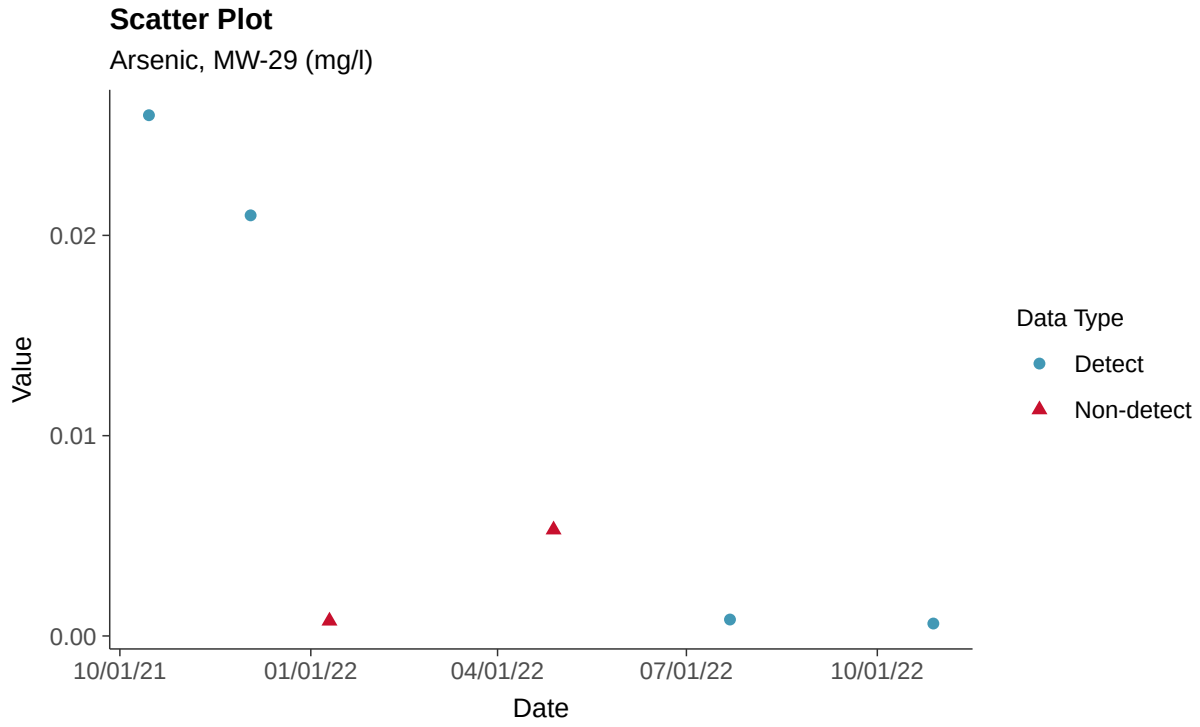
Boxplot by Season

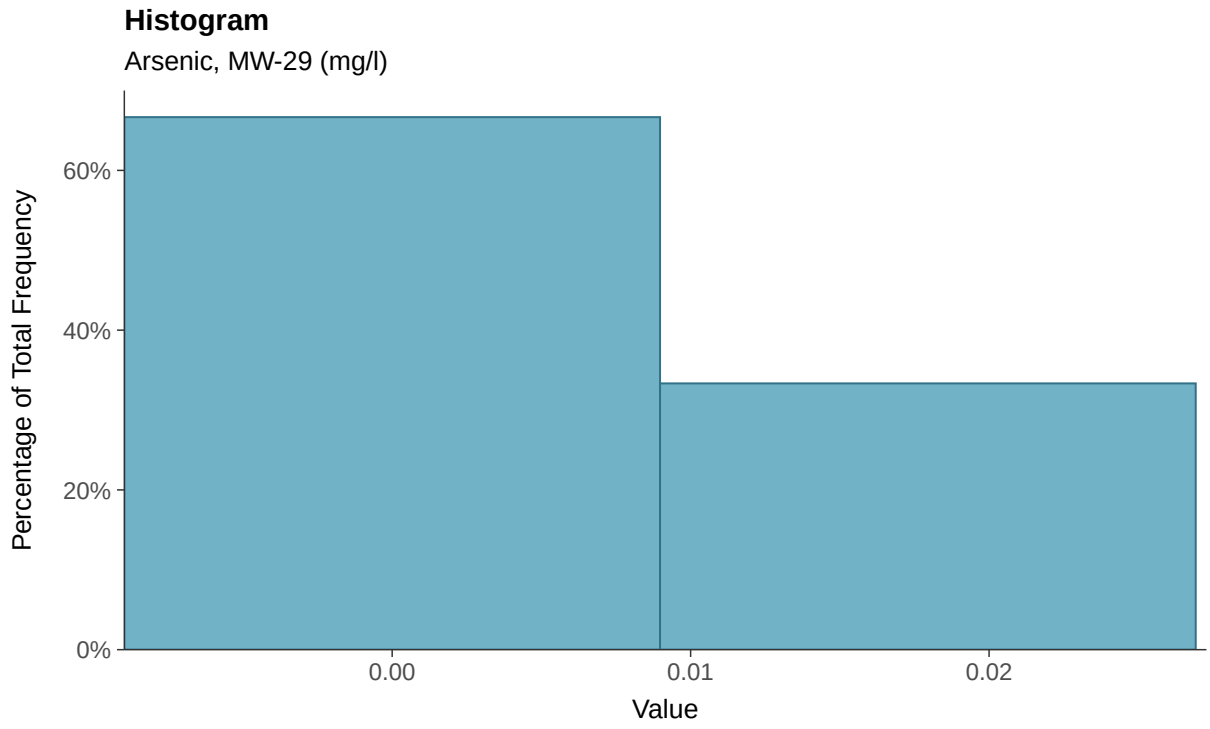
Thallium, MW-28 (mg/l)



Appendix IV: Arsenic, MW-29

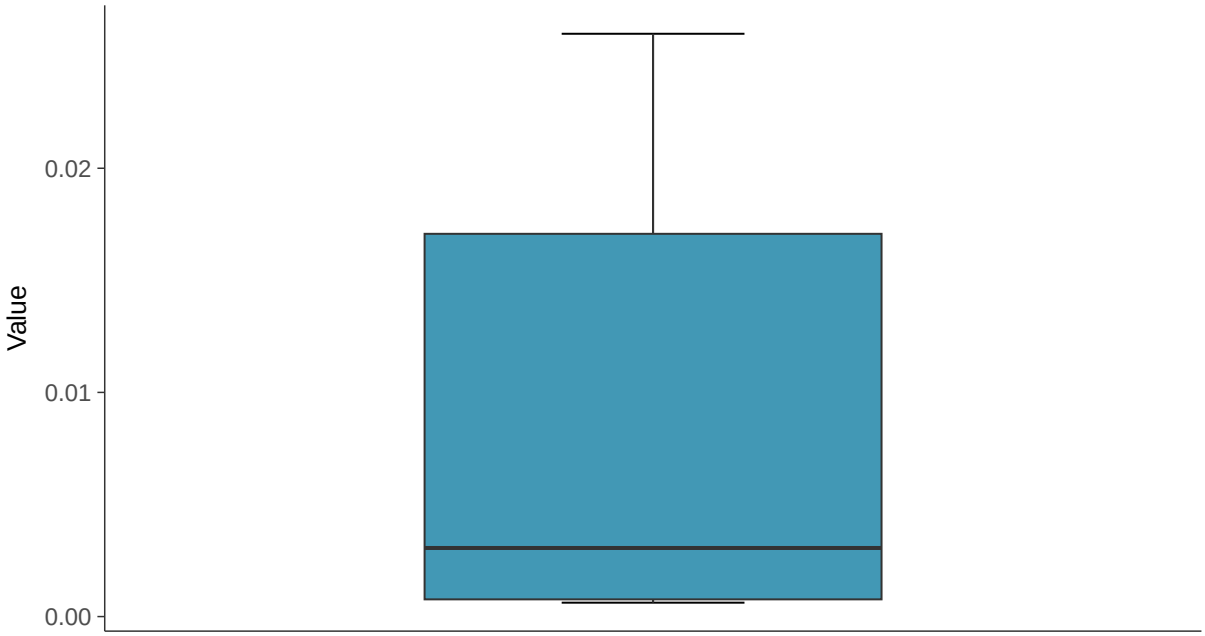
ID: 21_2_105





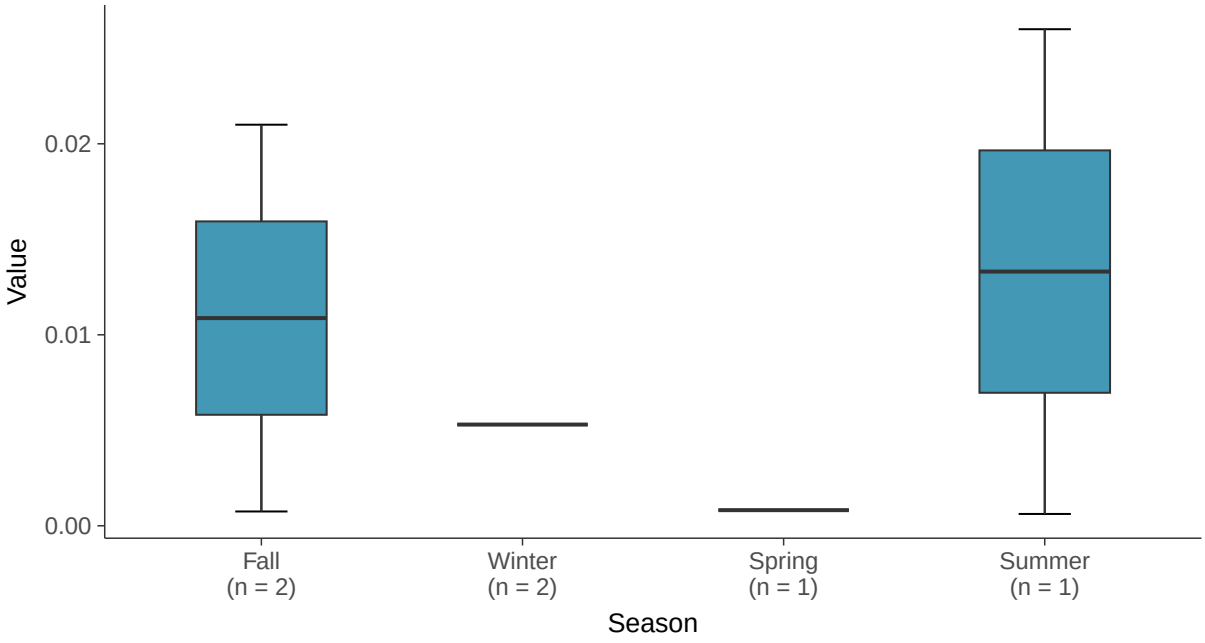
Boxplot

Arsenic, MW-29 (mg/l)



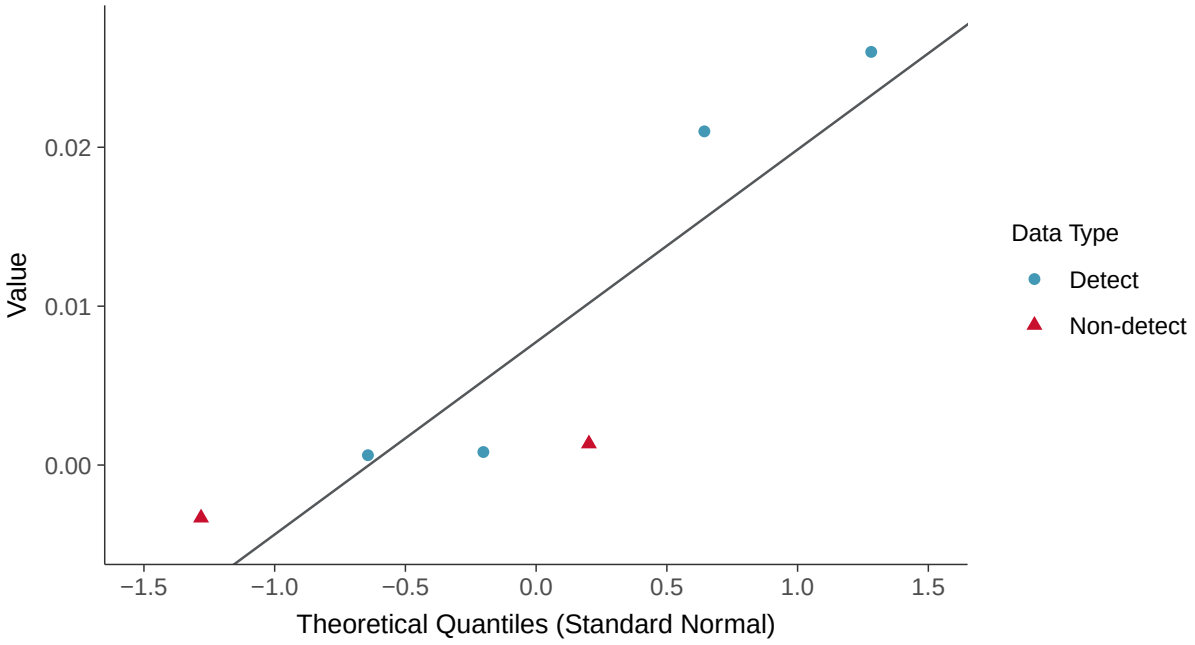
Boxplot by Season

Arsenic, MW-29 (mg/l)



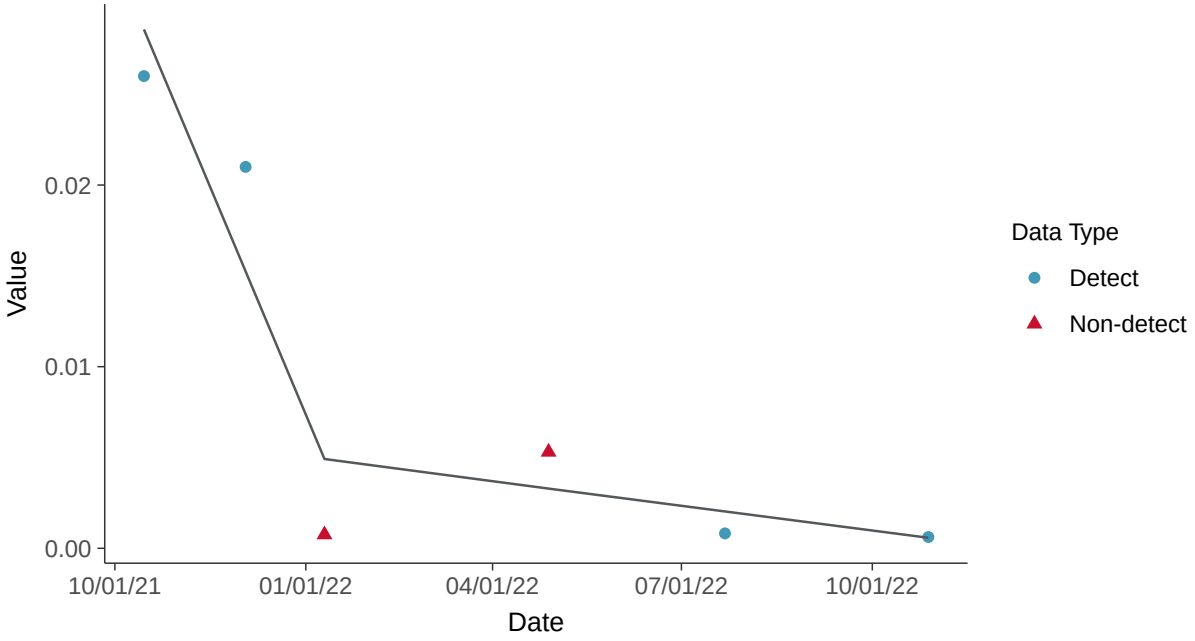
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-29 (mg/l)



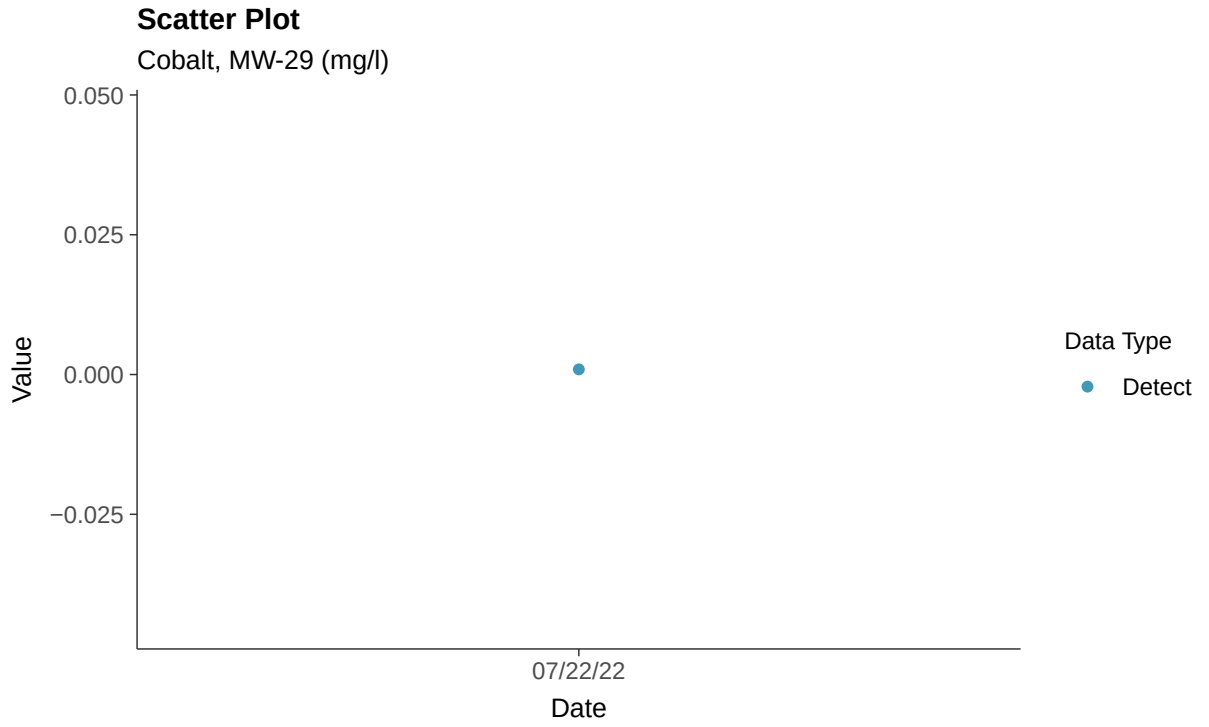
Trend Regression: Piecewise Linear-Linear

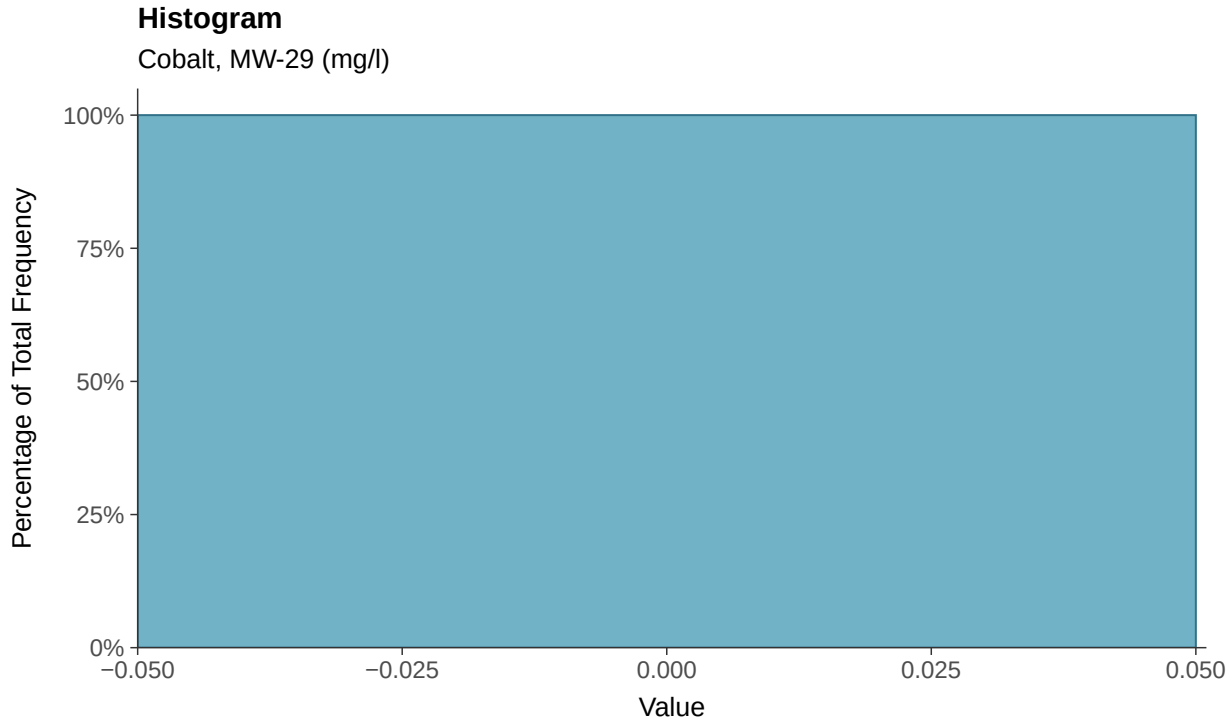
Arsenic, MW-29 (mg/l)



Appendix IV: Cobalt, MW-29

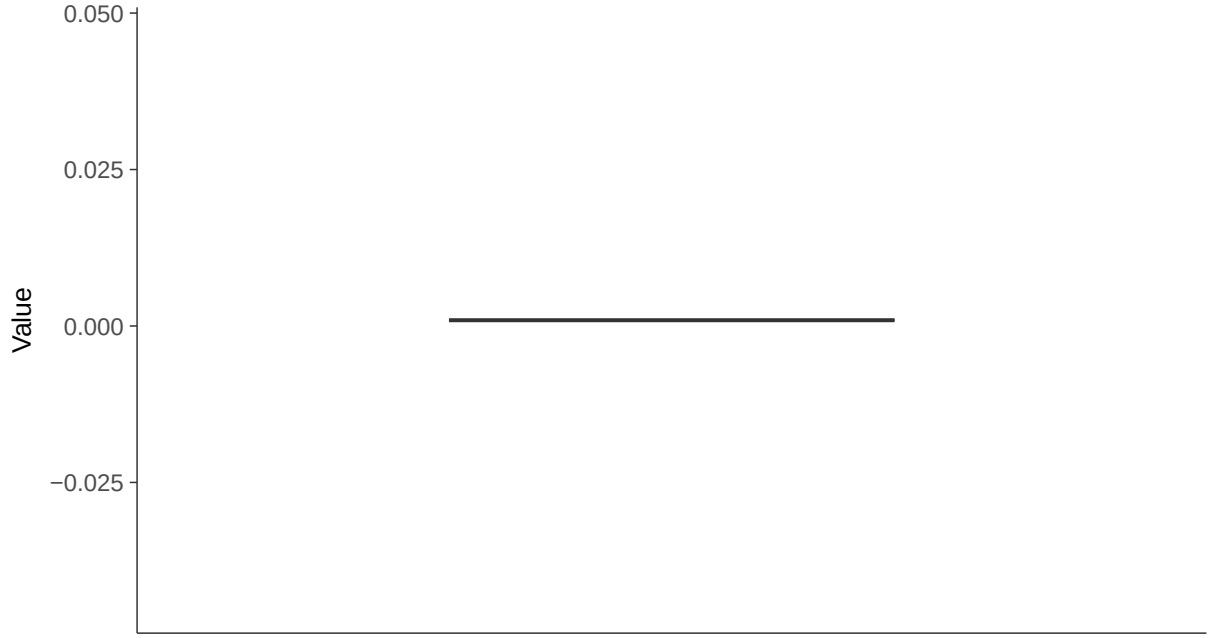
ID: 21_2_113





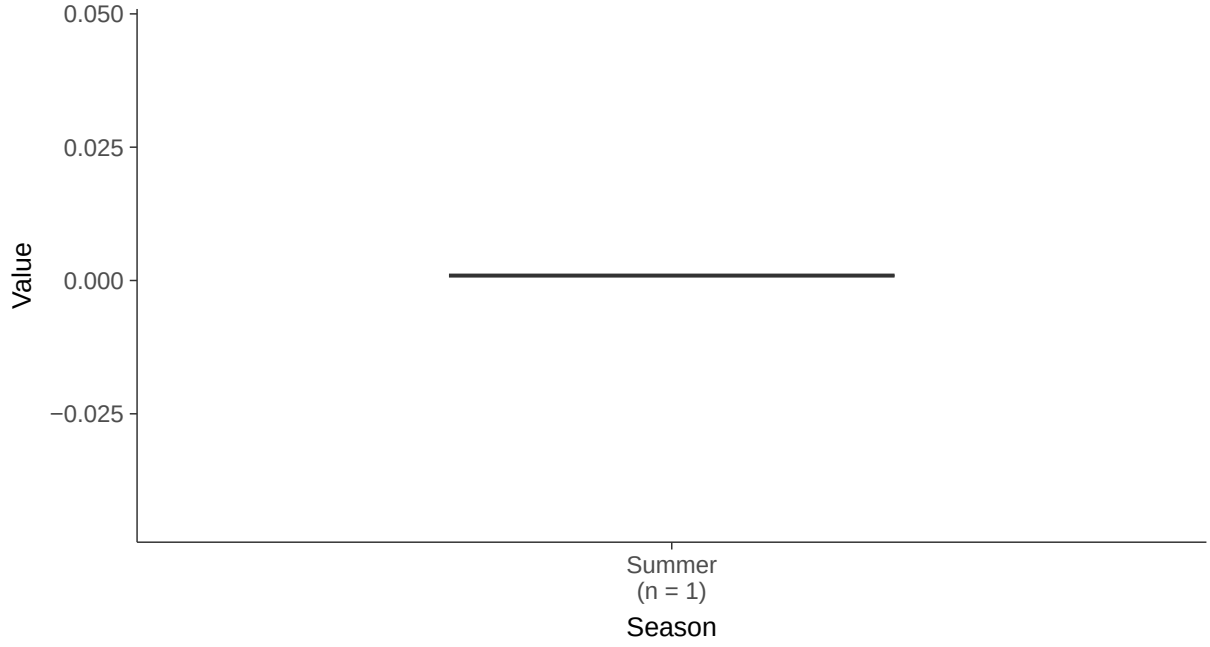
Boxplot

Cobalt, MW-29 (mg/l)



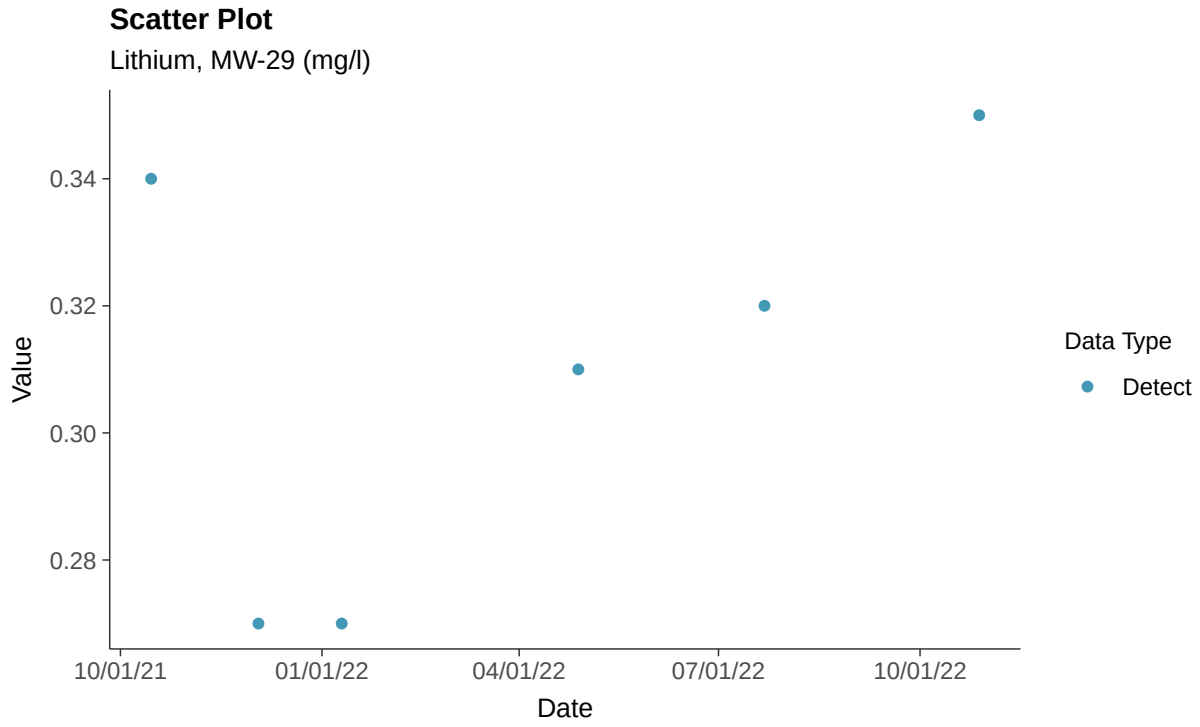
Boxplot by Season

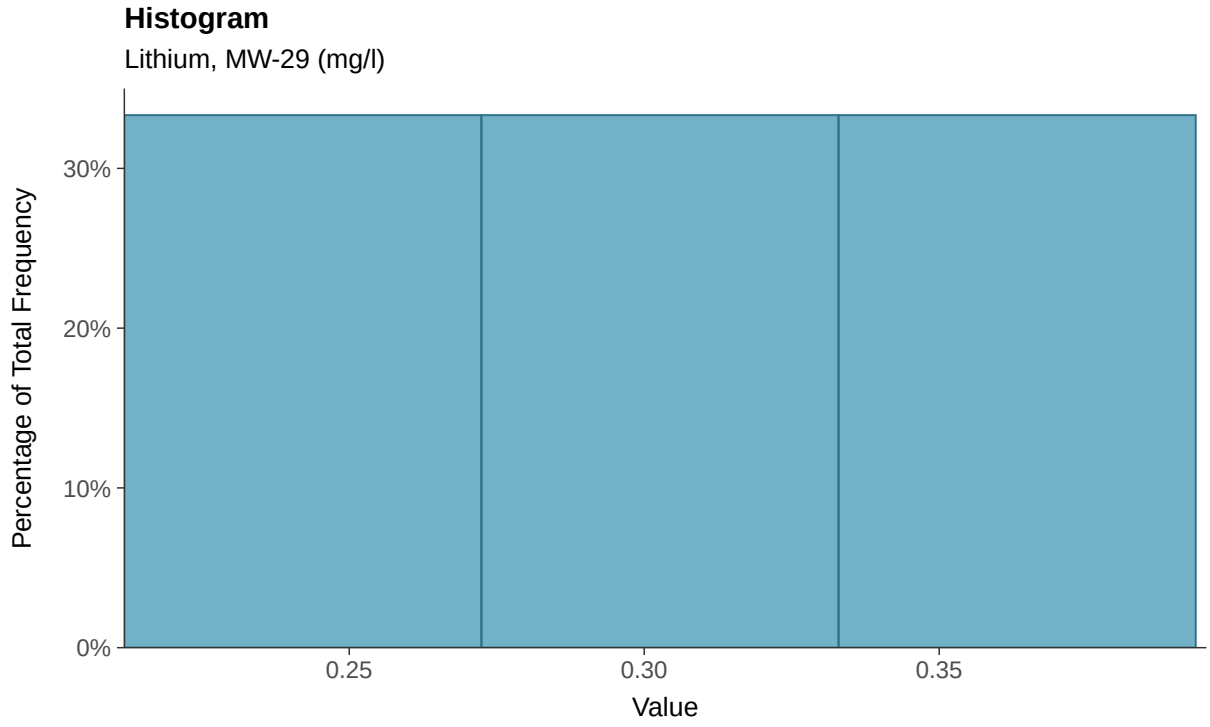
Cobalt, MW-29 (mg/l)



Appendix IV: Lithium, MW-29

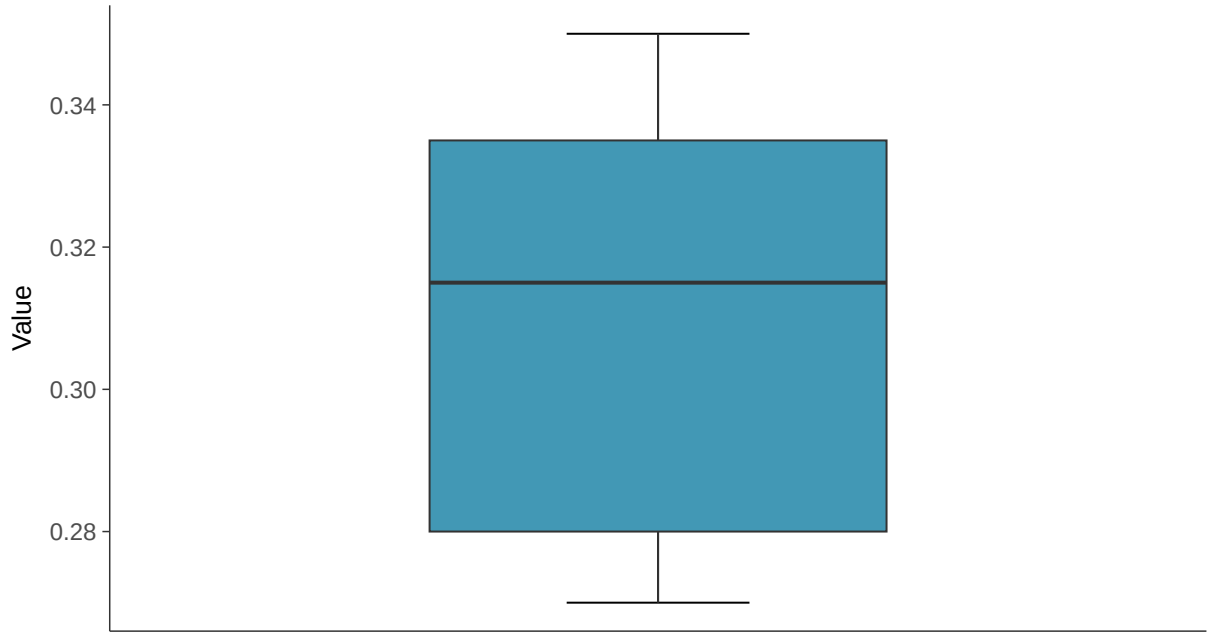
ID: 21_2_118





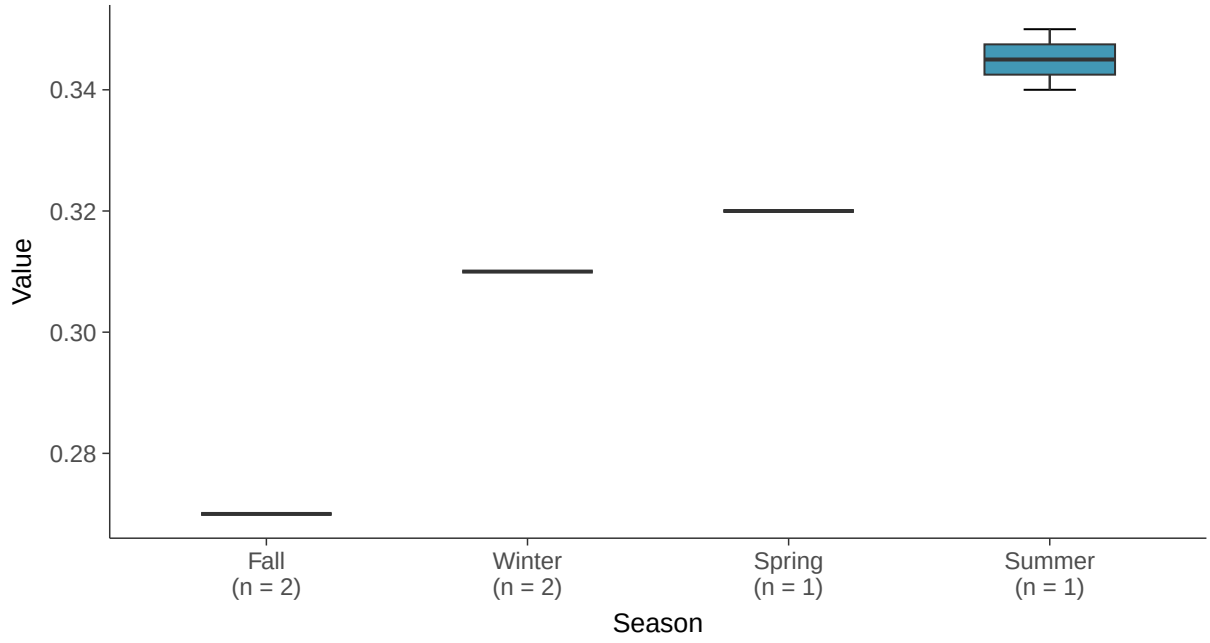
Boxplot

Lithium, MW-29 (mg/l)



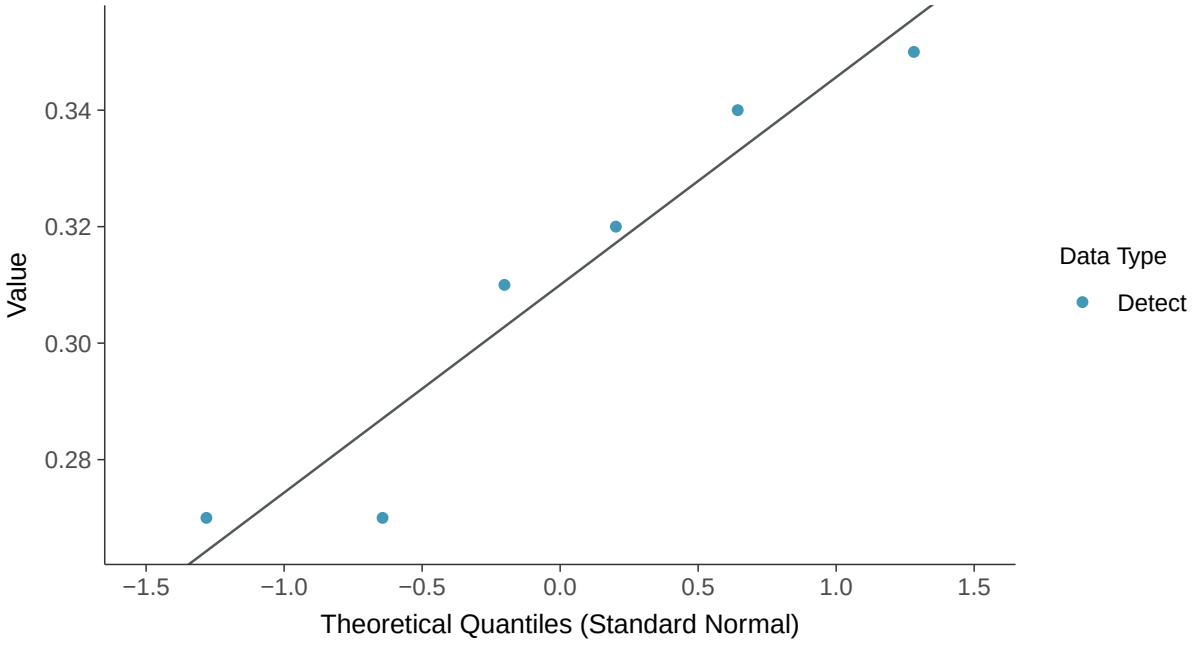
Boxplot by Season

Lithium, MW-29 (mg/l)



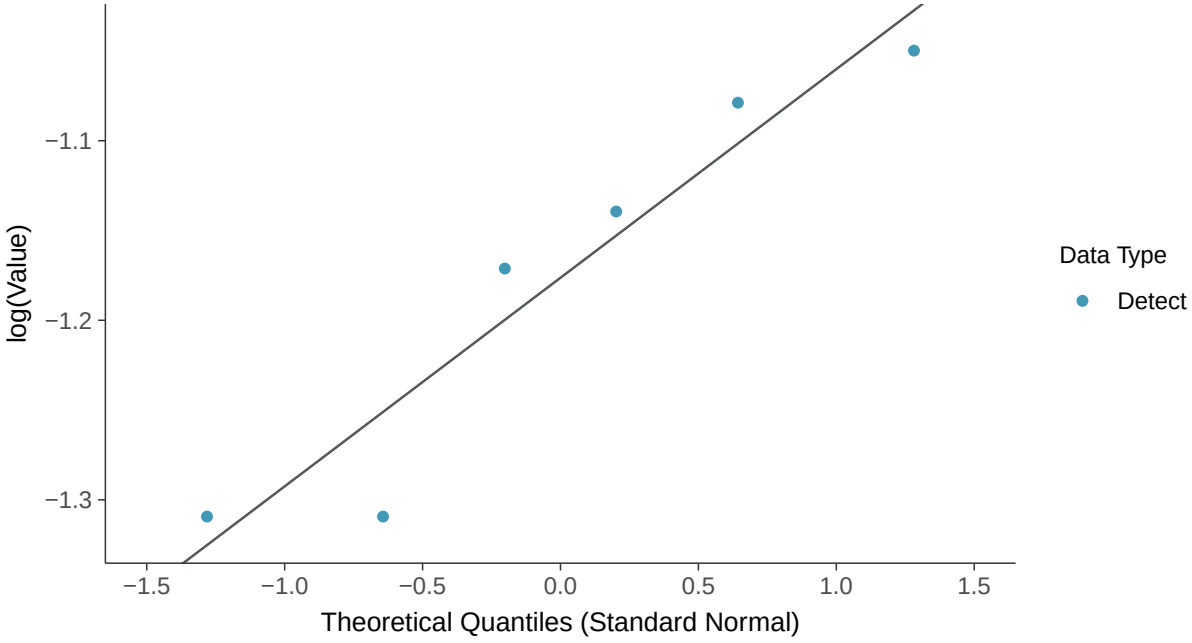
Normal Q-Q plot

Lithium, MW-29 (mg/l)



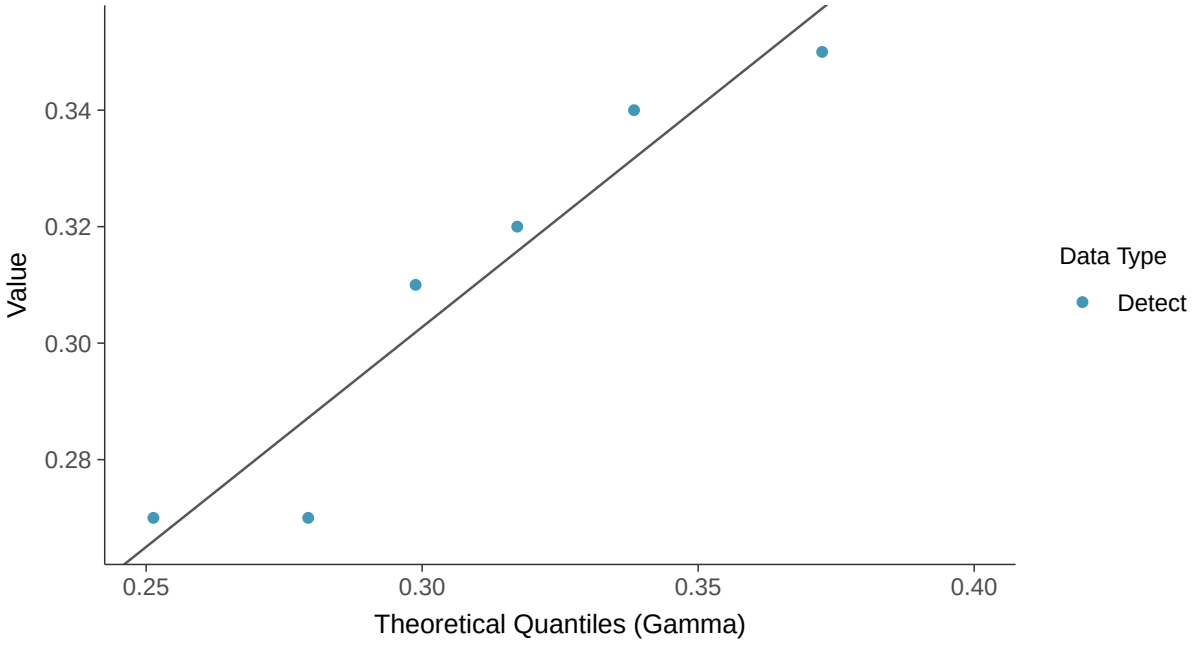
Lognormal Q-Q plot

Lithium, MW-29 (mg/l)



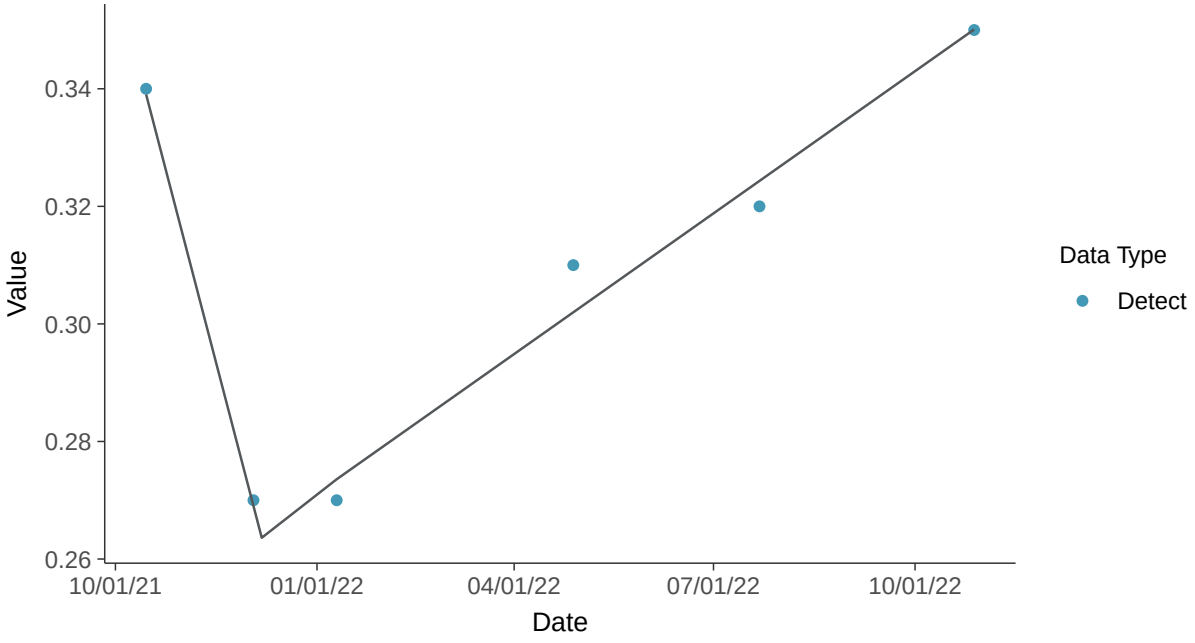
Gamma Q-Q plot

Lithium, MW-29 (mg/l)



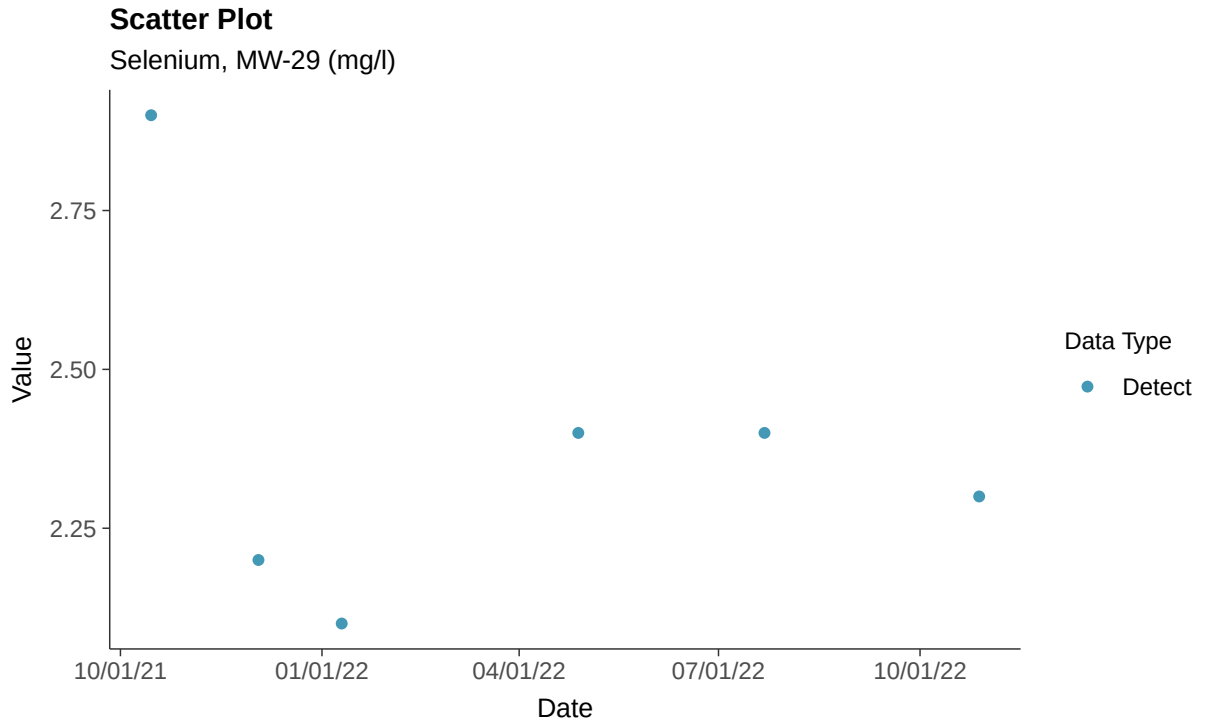
Trend Regression: Piecewise Linear-Linear

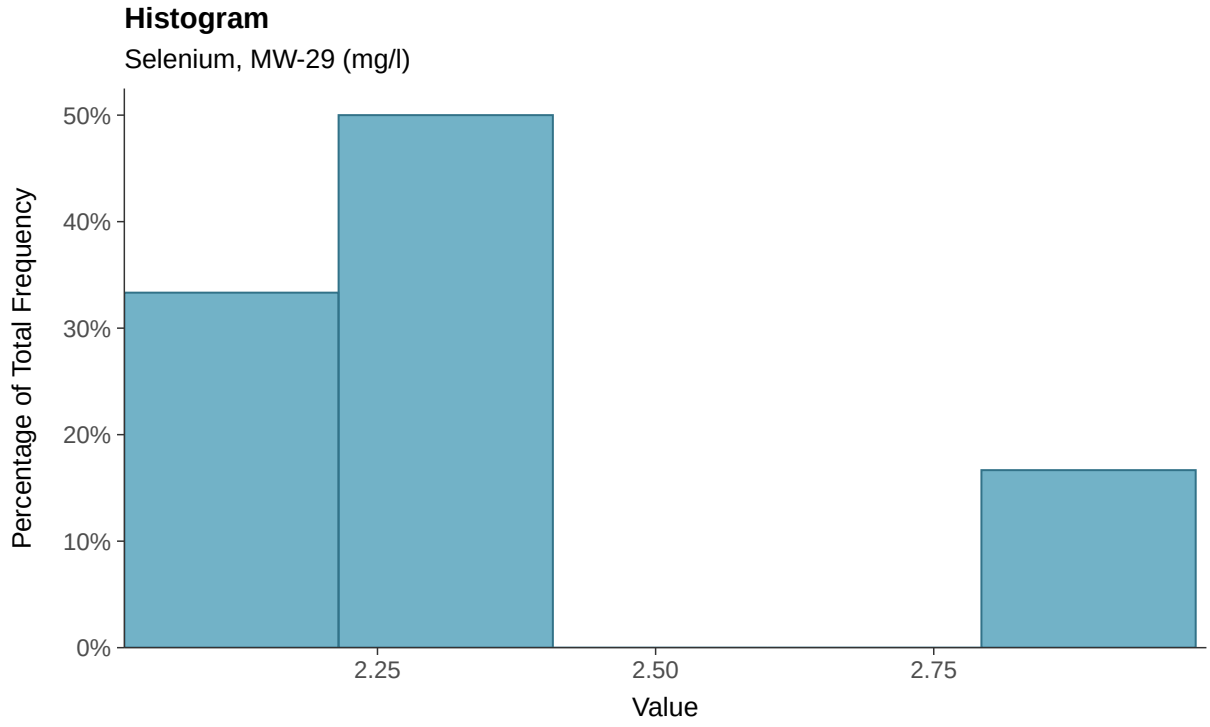
Lithium, MW-29 (mg/l)



Appendix IV: Selenium, MW-29

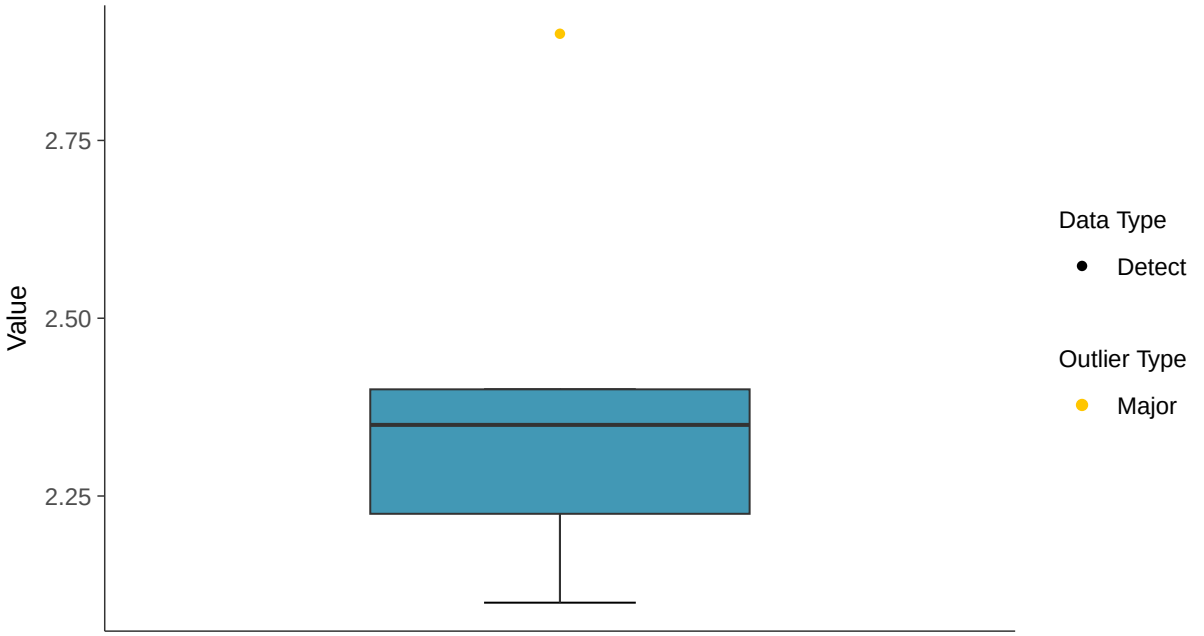
ID: 21_2_129





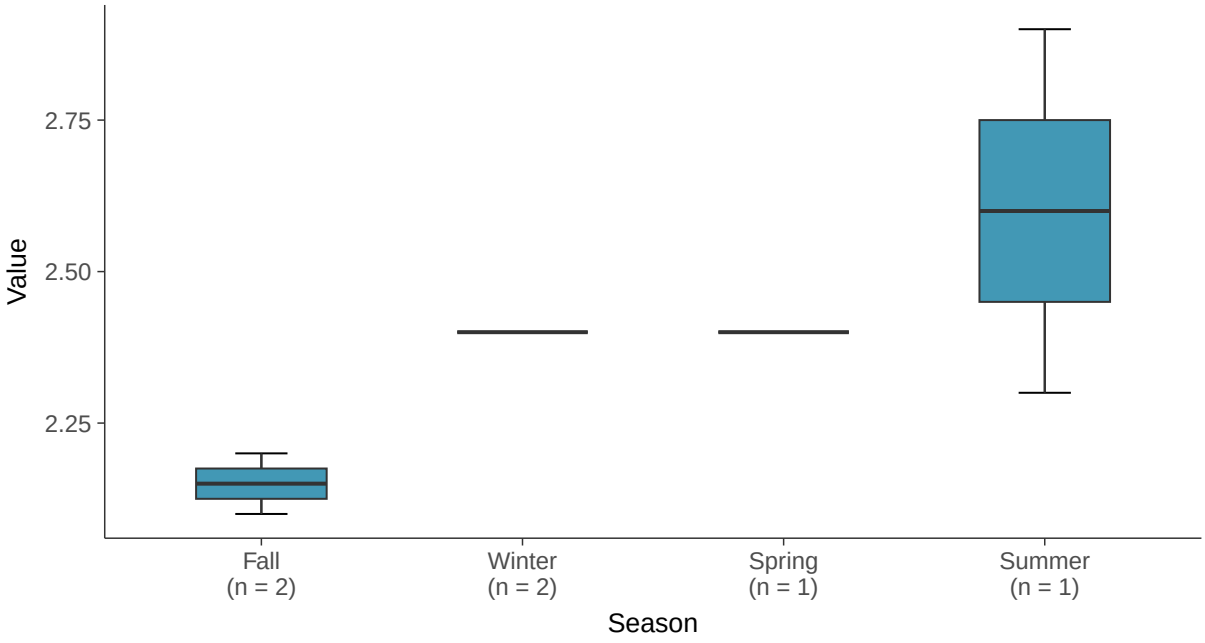
Boxplot

Selenium, MW-29 (mg/l)



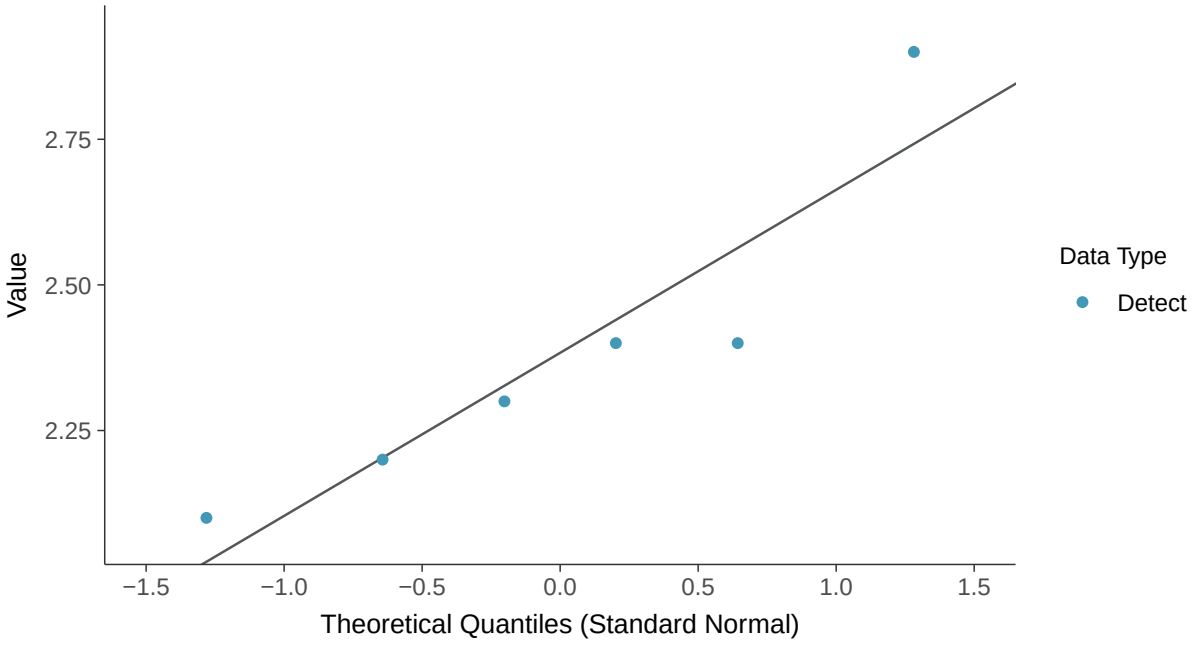
Boxplot by Season

Selenium, MW-29 (mg/l)



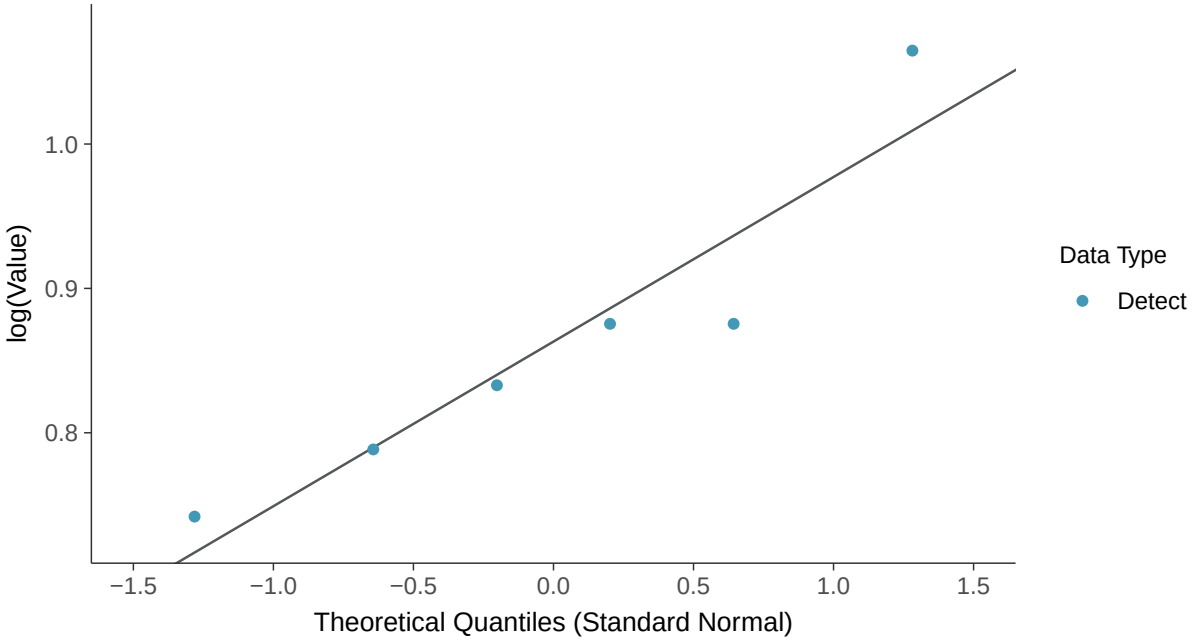
Normal Q-Q plot

Selenium, MW-29 (mg/l)



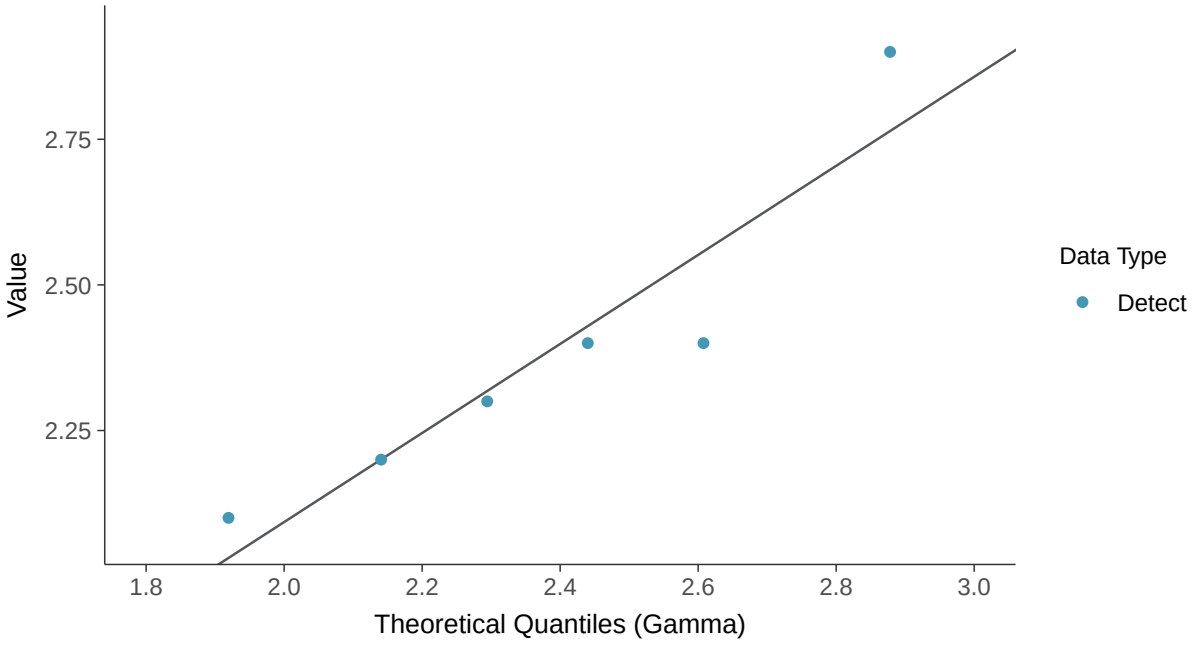
Lognormal Q-Q plot

Selenium, MW-29 (mg/l)



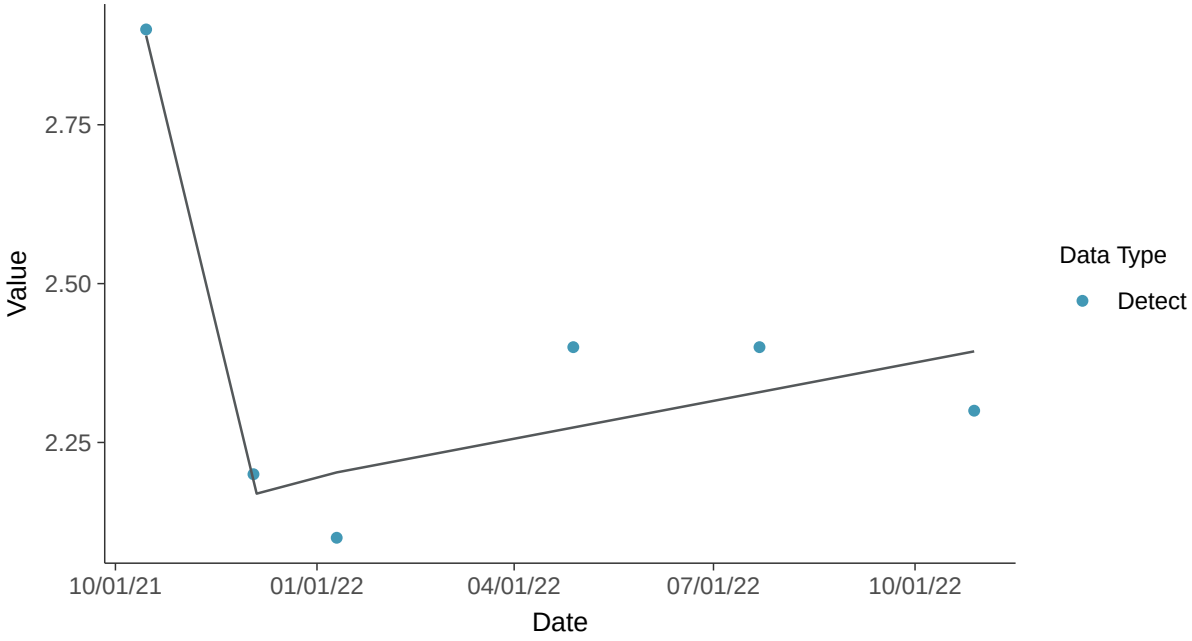
Gamma Q-Q plot

Selenium, MW-29 (mg/l)



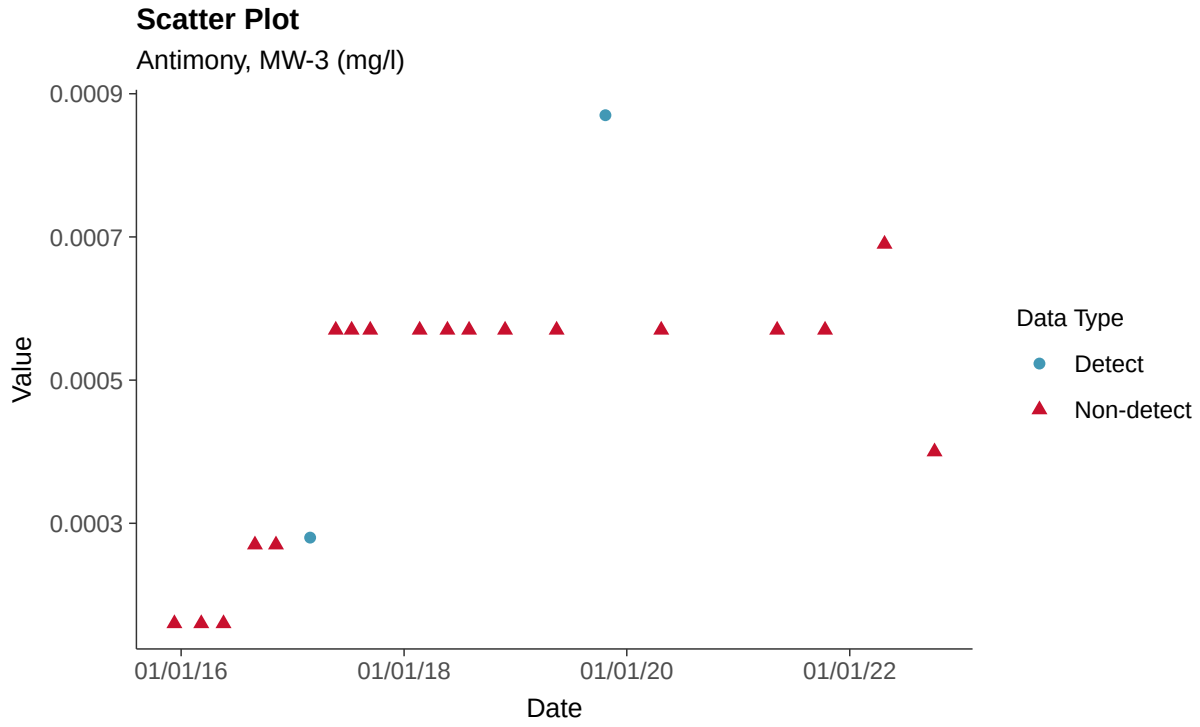
Trend Regression: Piecewise Linear-Linear

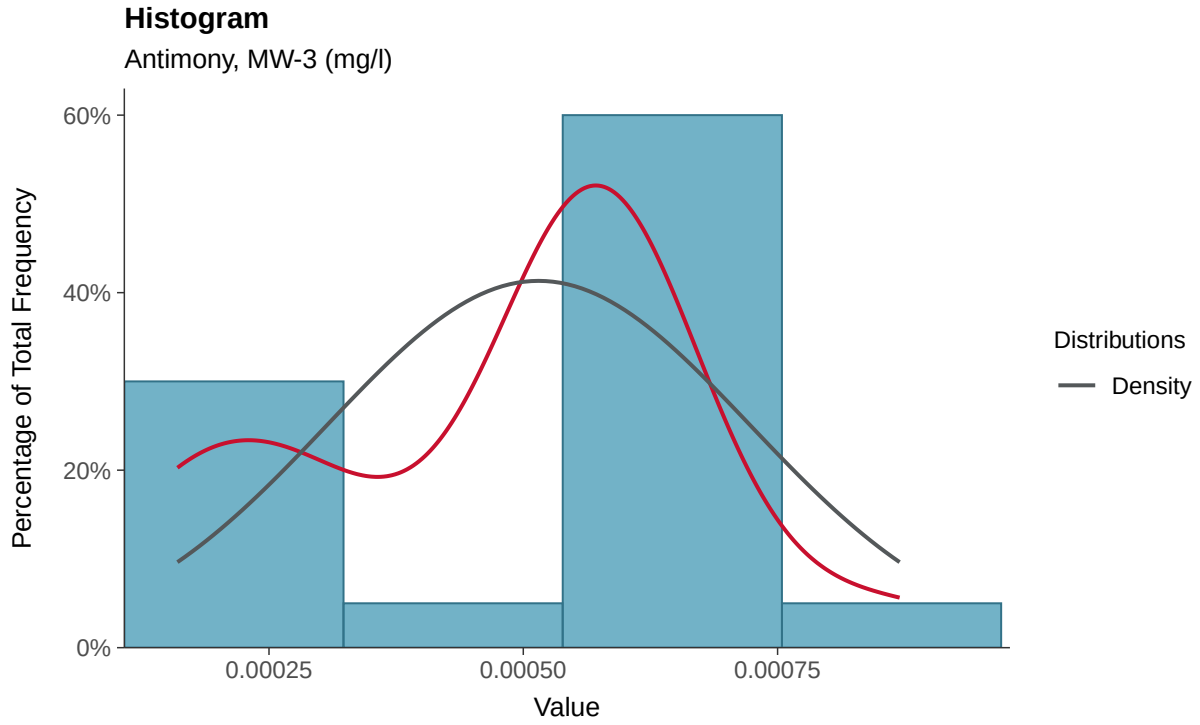
Selenium, MW-29 (mg/l)



Appendix IV: Antimony, MW-3

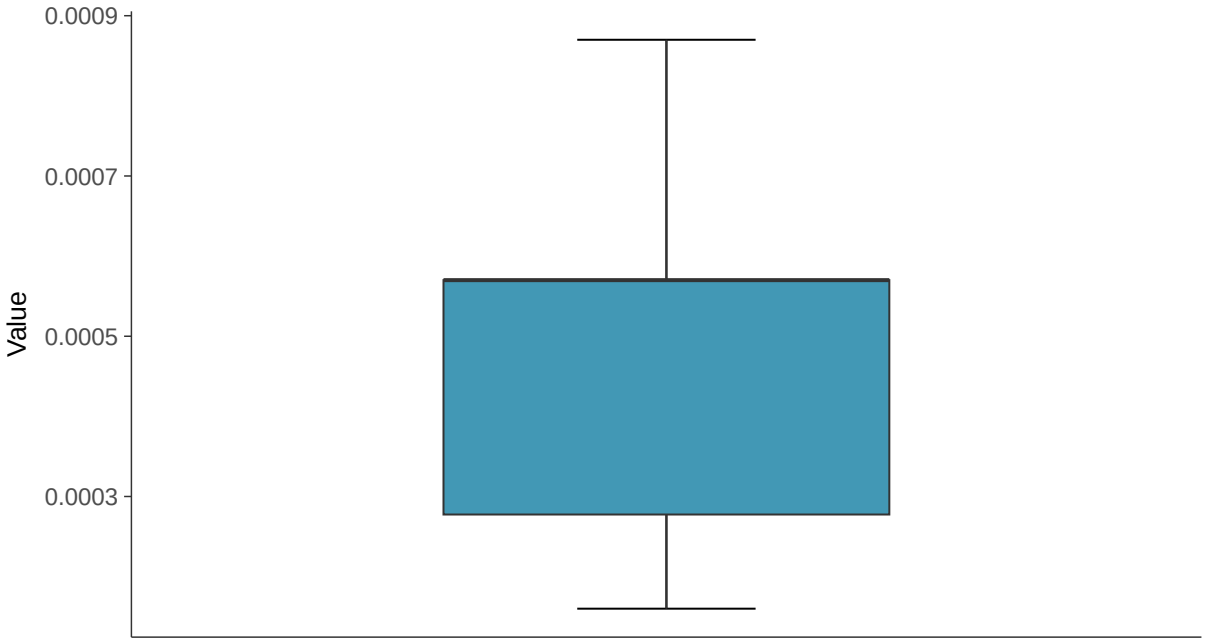
ID: 22_2_104





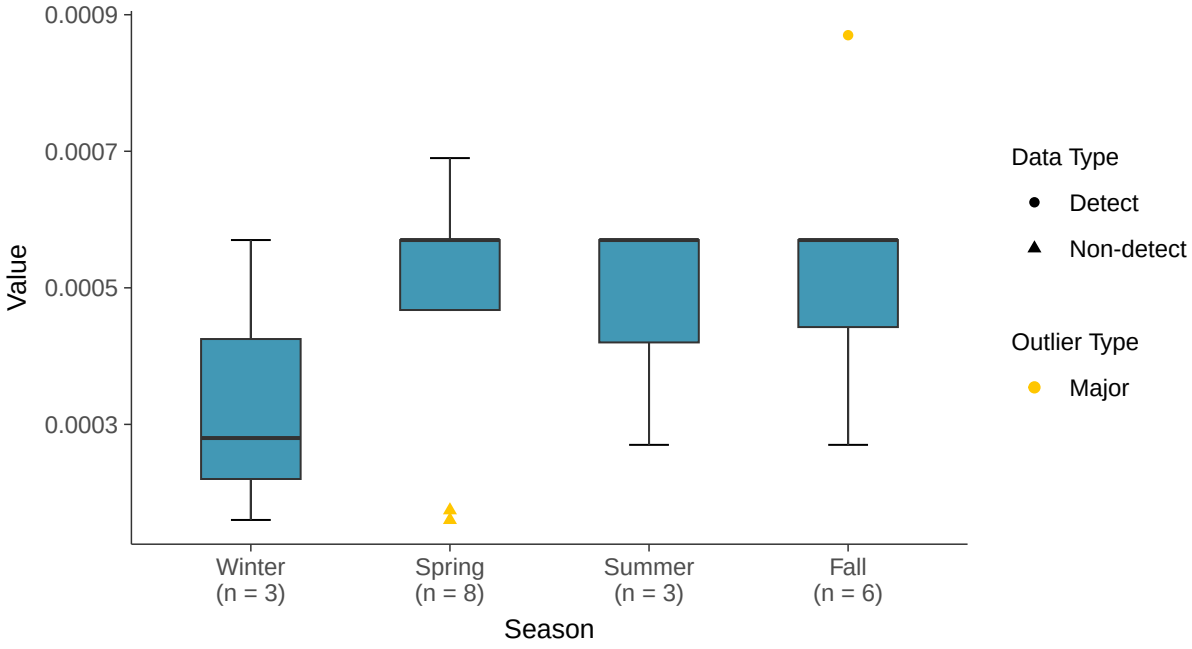
Boxplot

Antimony, MW-3 (mg/l)



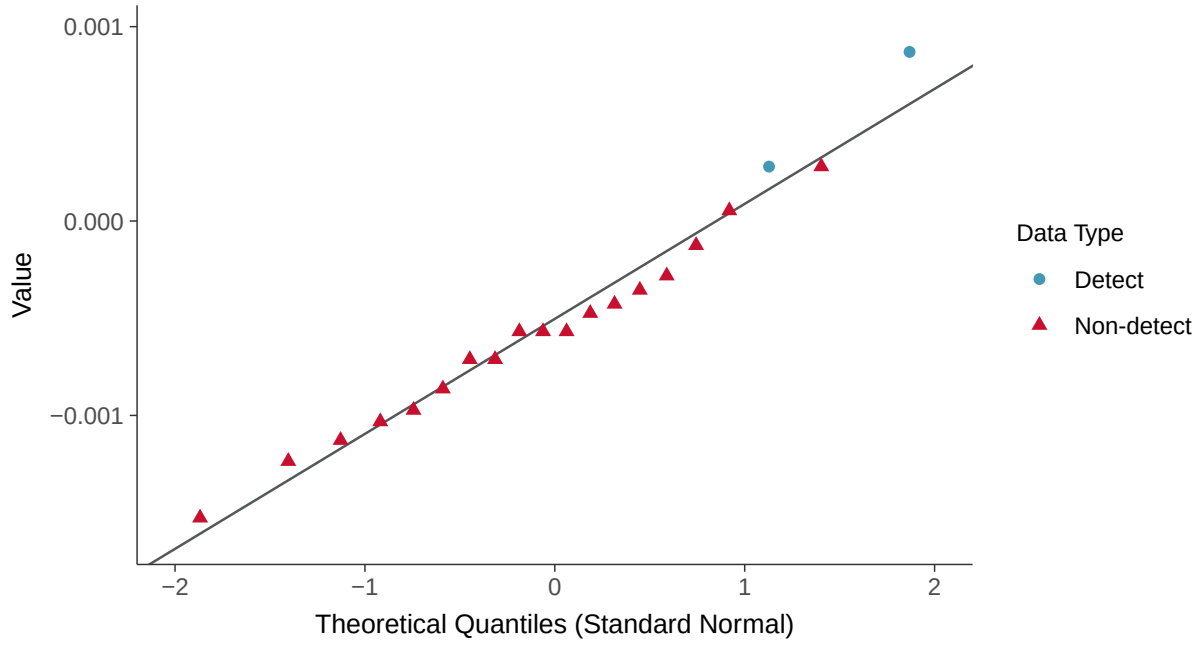
Boxplot by Season

Antimony, MW-3 (mg/l)



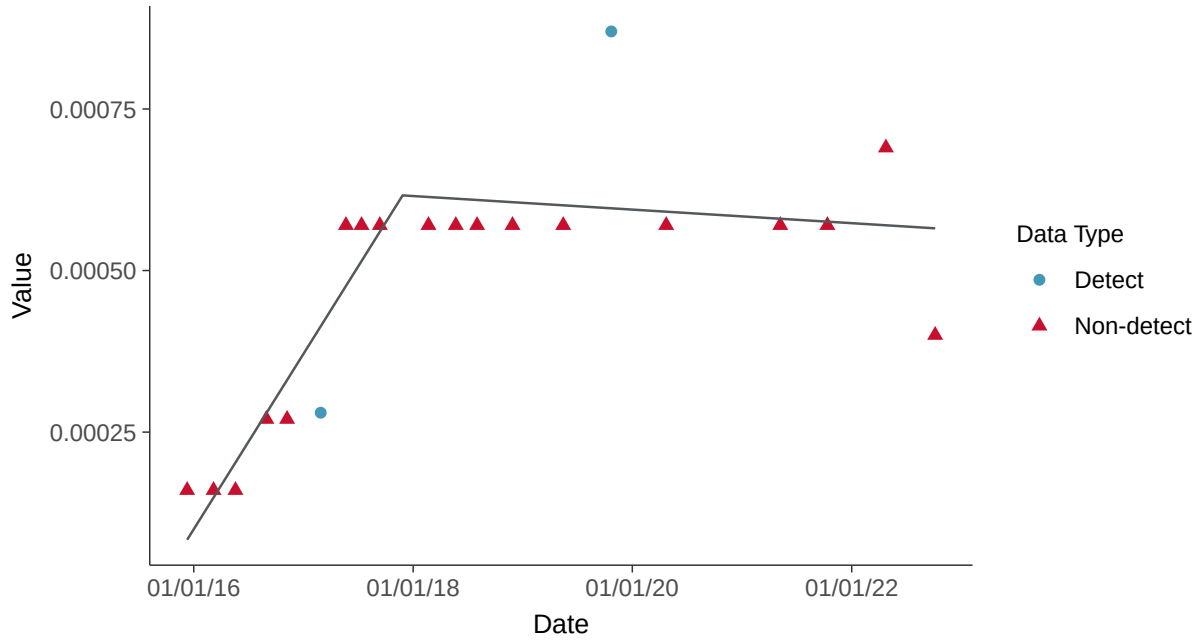
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-3 (mg/l)



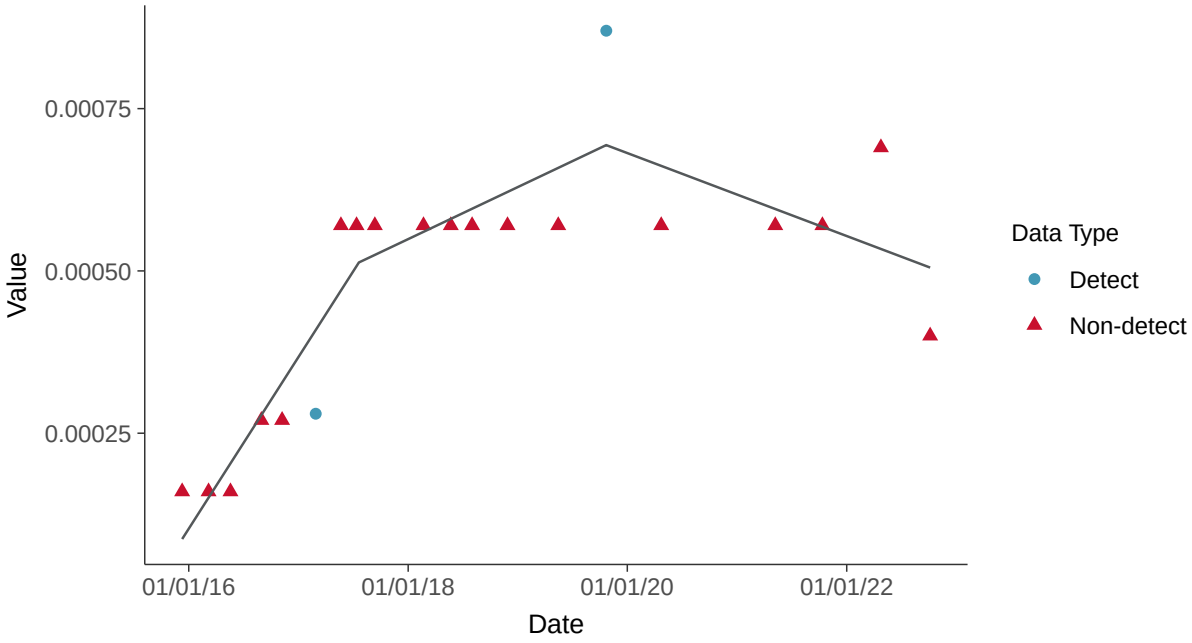
Trend Regression: Piecewise Linear-Linear

Antimony, MW-3 (mg/l)



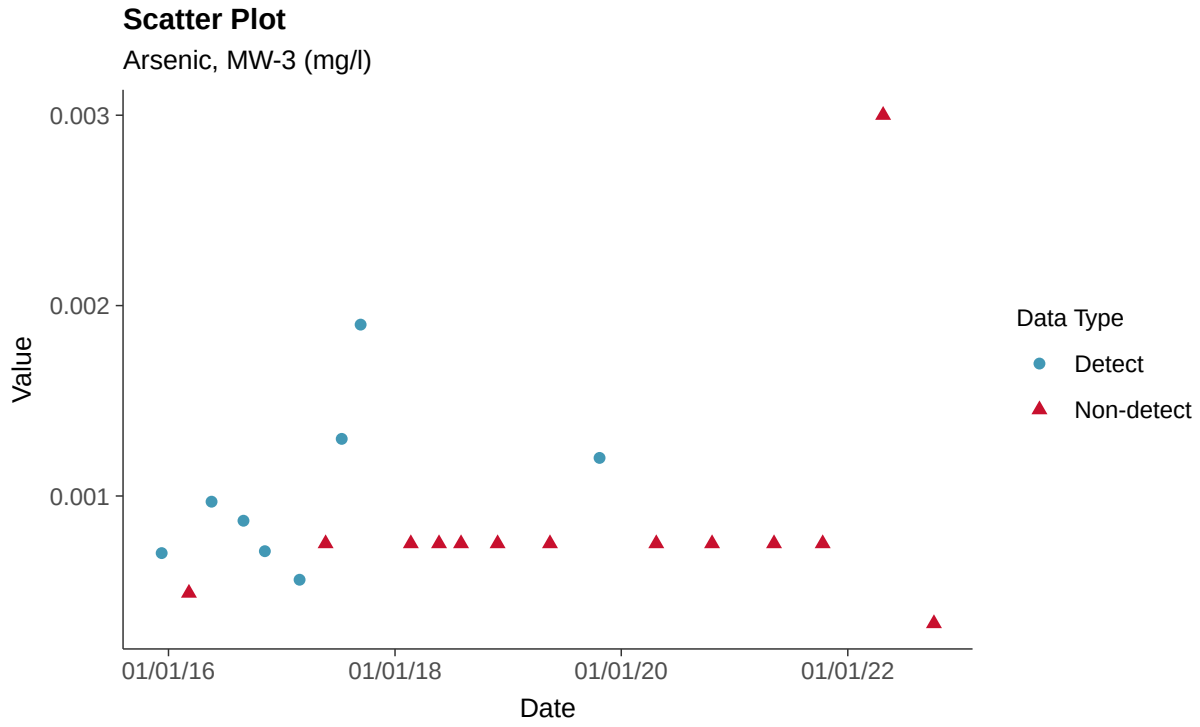
Trend Regression: Piecewise Linear-Linear-Linear

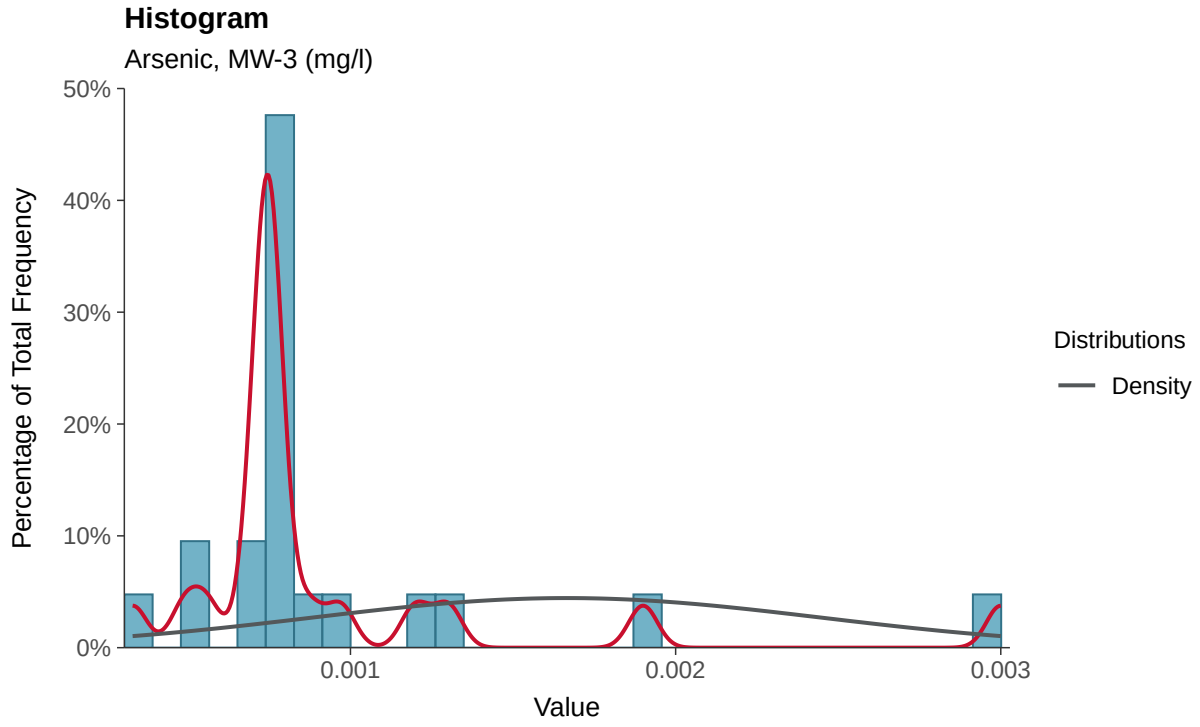
Antimony, MW-3 (mg/l)



Appendix IV: Arsenic, MW-3

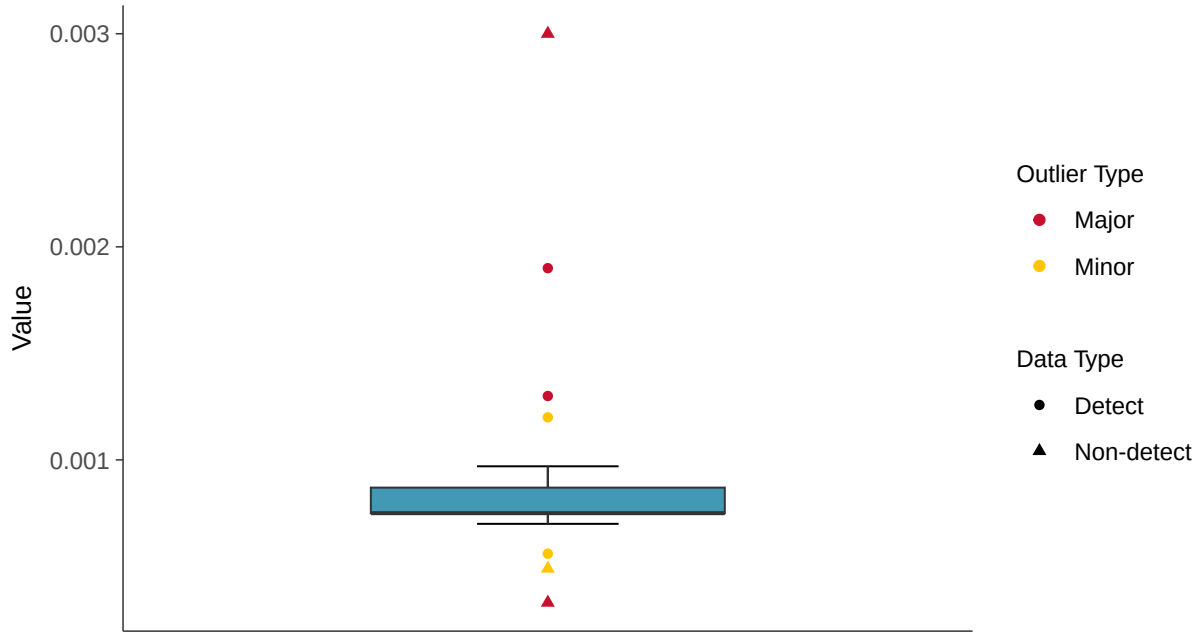
ID: 22_2_105





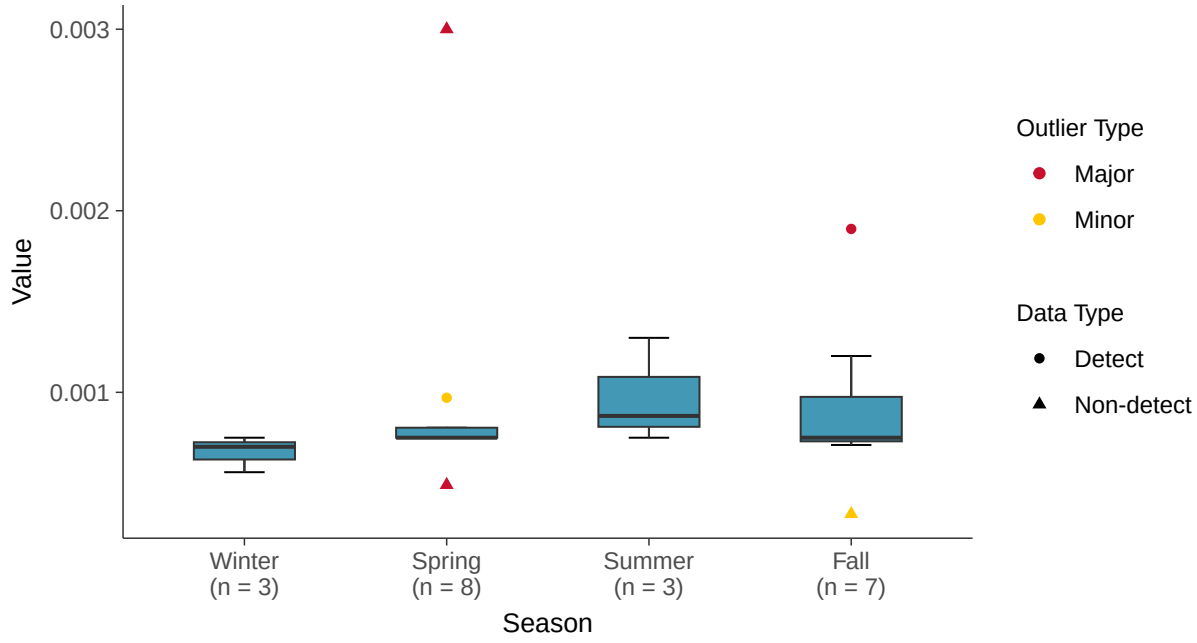
Boxplot

Arsenic, MW-3 (mg/l)



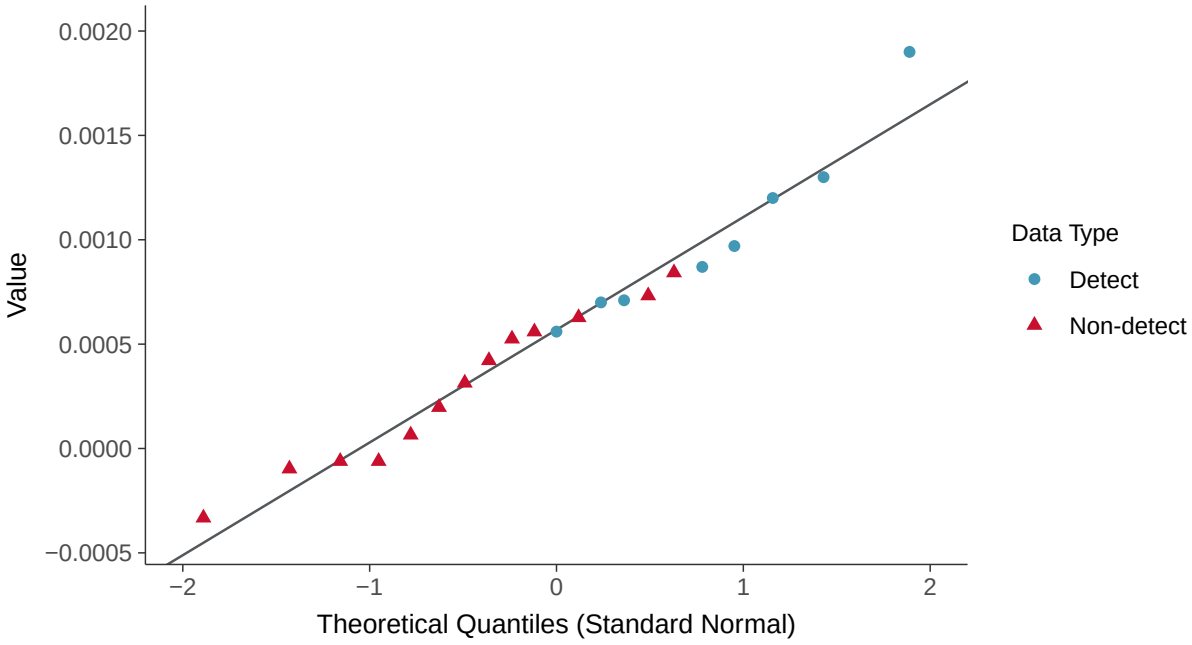
Boxplot by Season

Arsenic, MW-3 (mg/l)



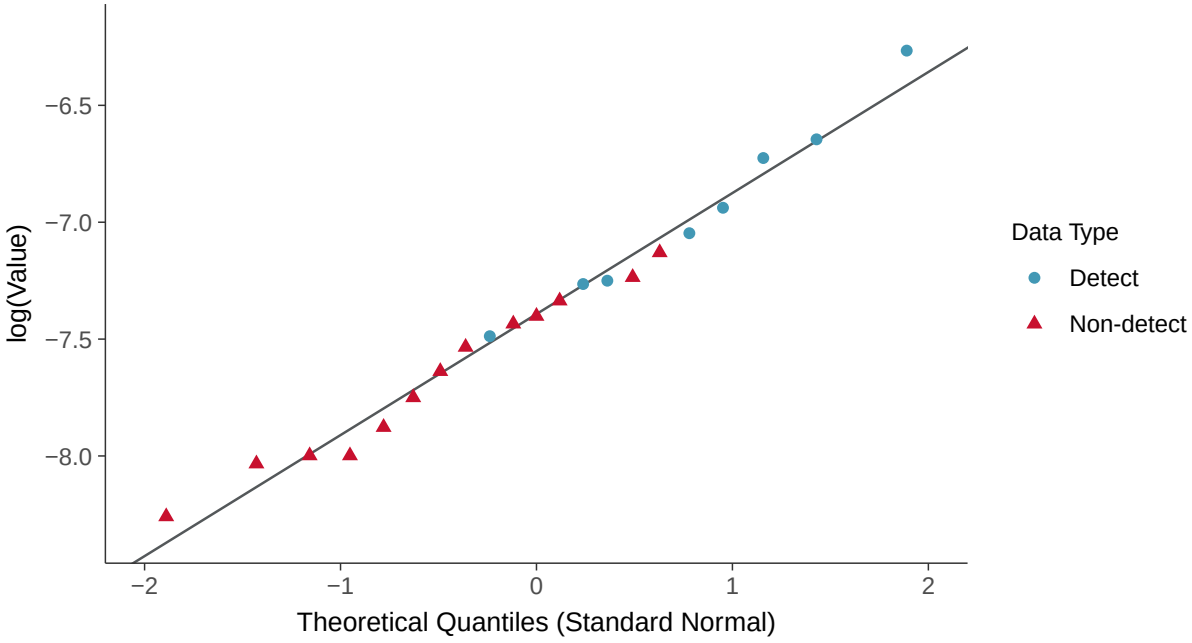
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-3 (mg/l)



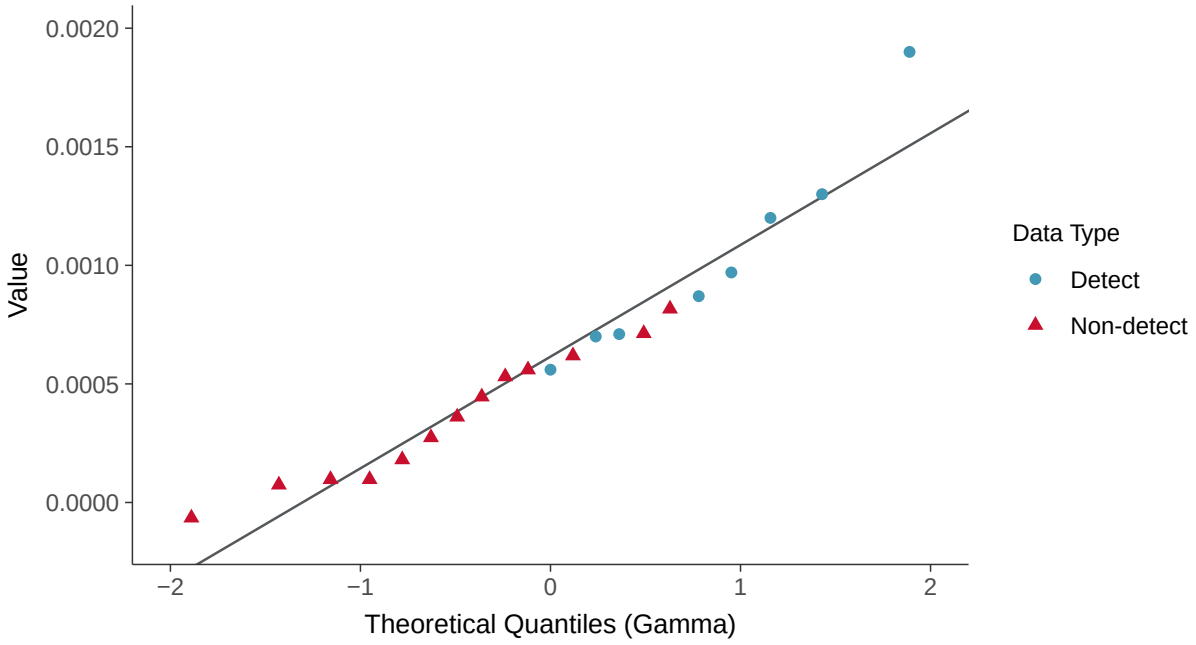
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-3 (mg/l)



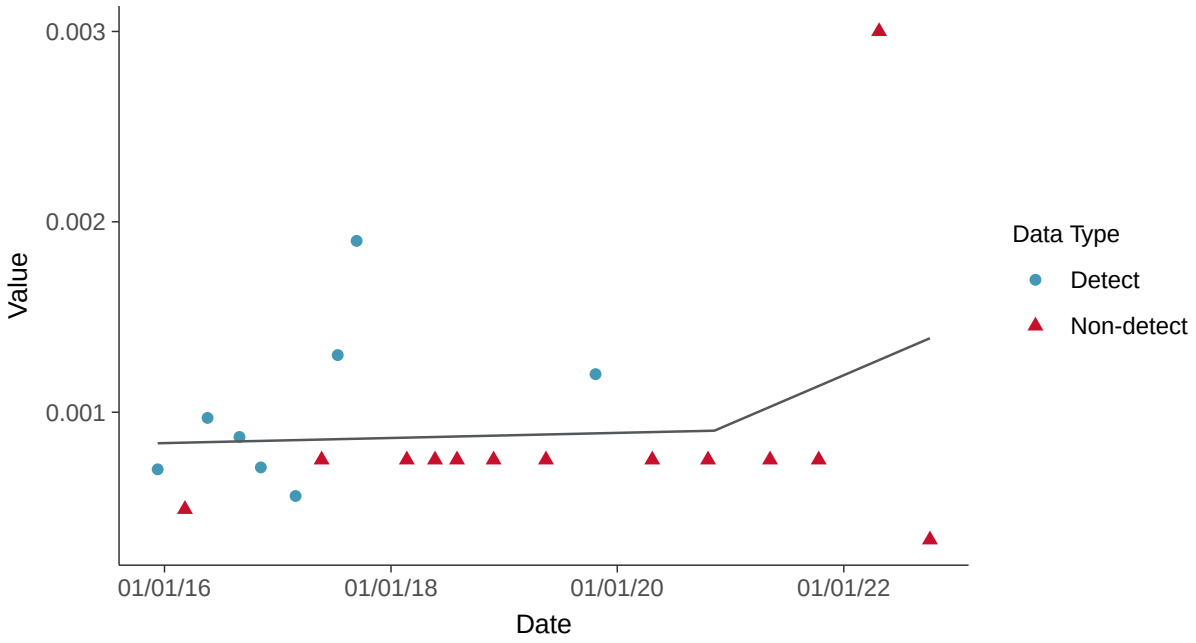
Gamma Q-Q plot using ROS Imputed Estimates

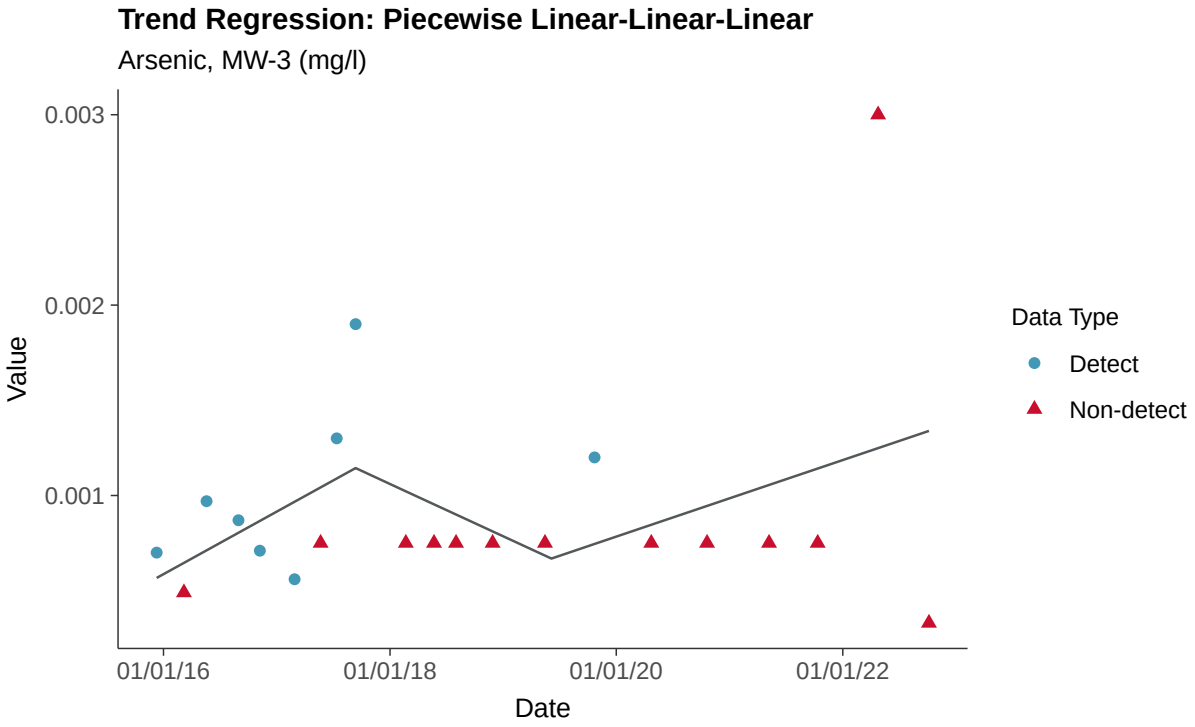
Arsenic, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear

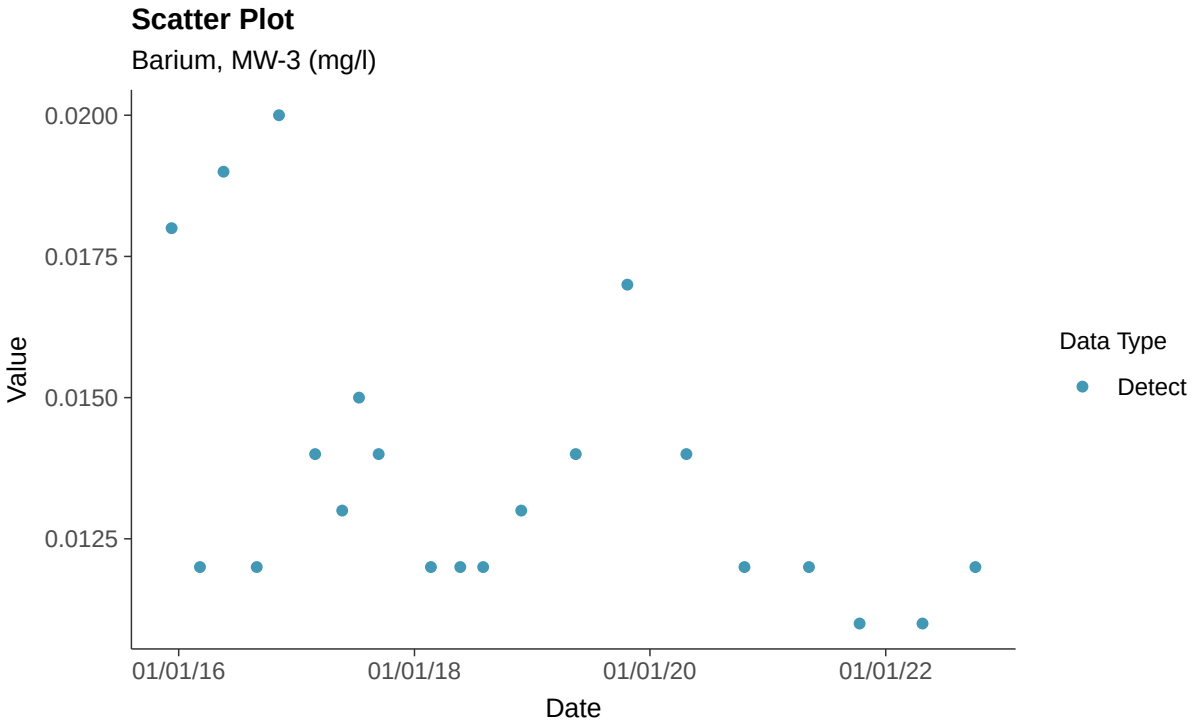
Arsenic, MW-3 (mg/l)

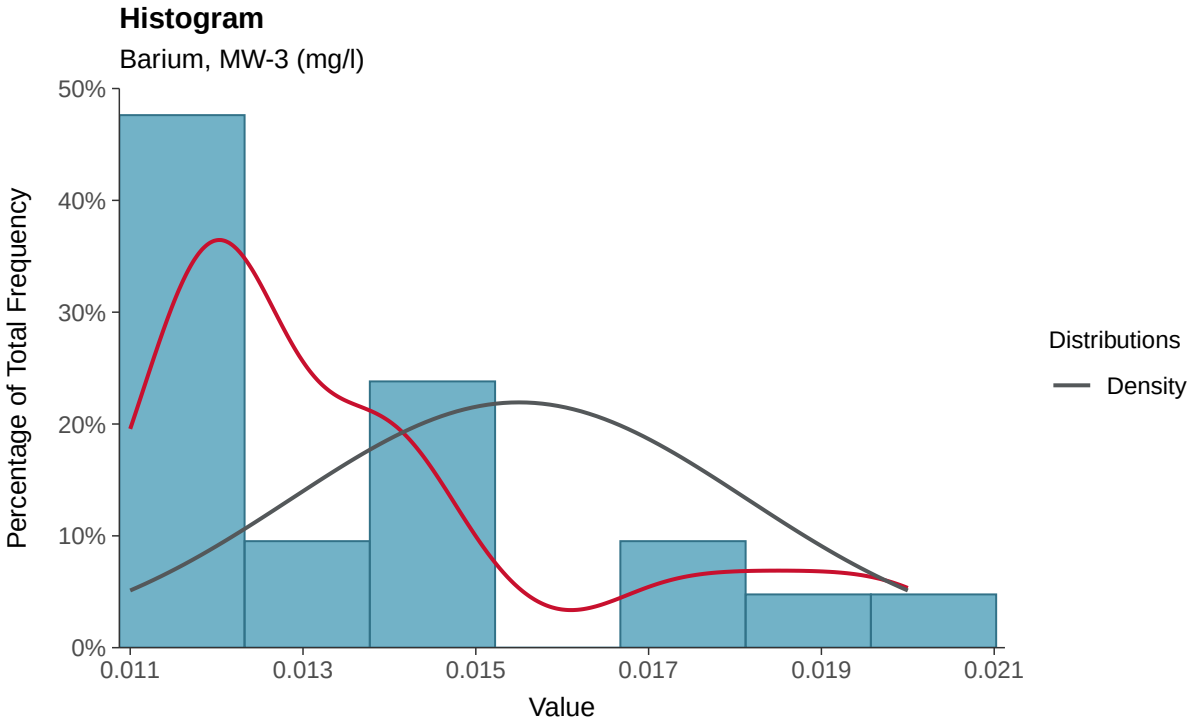



Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-3 (mg/l)
0.003
0.002
0.001
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-3

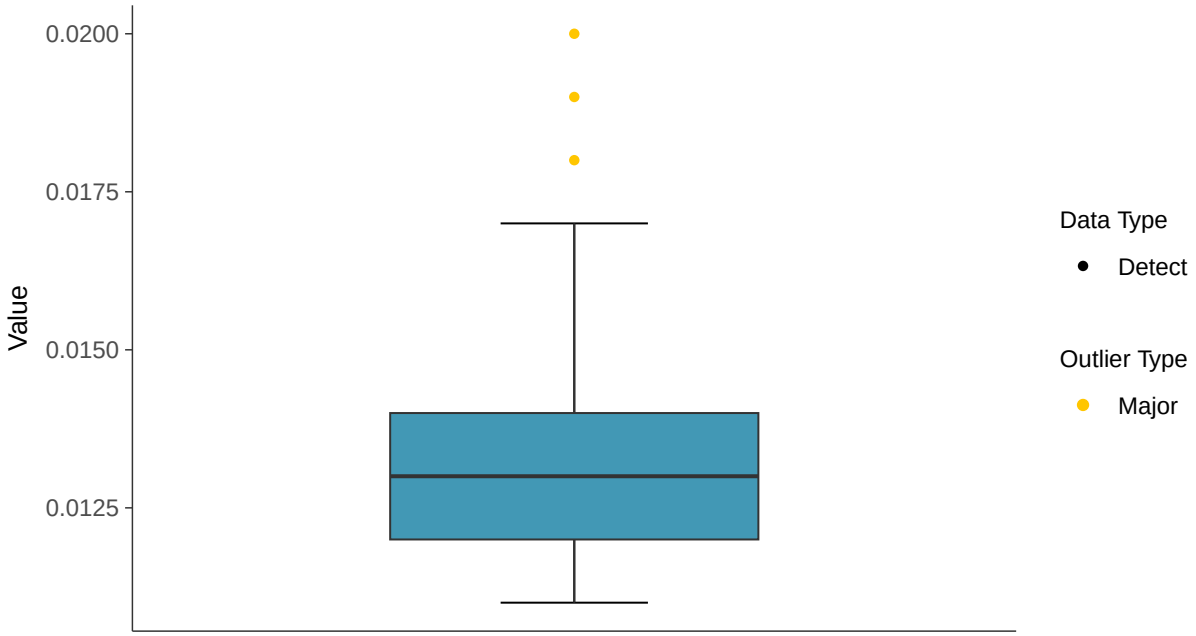
ID: 22_2_106





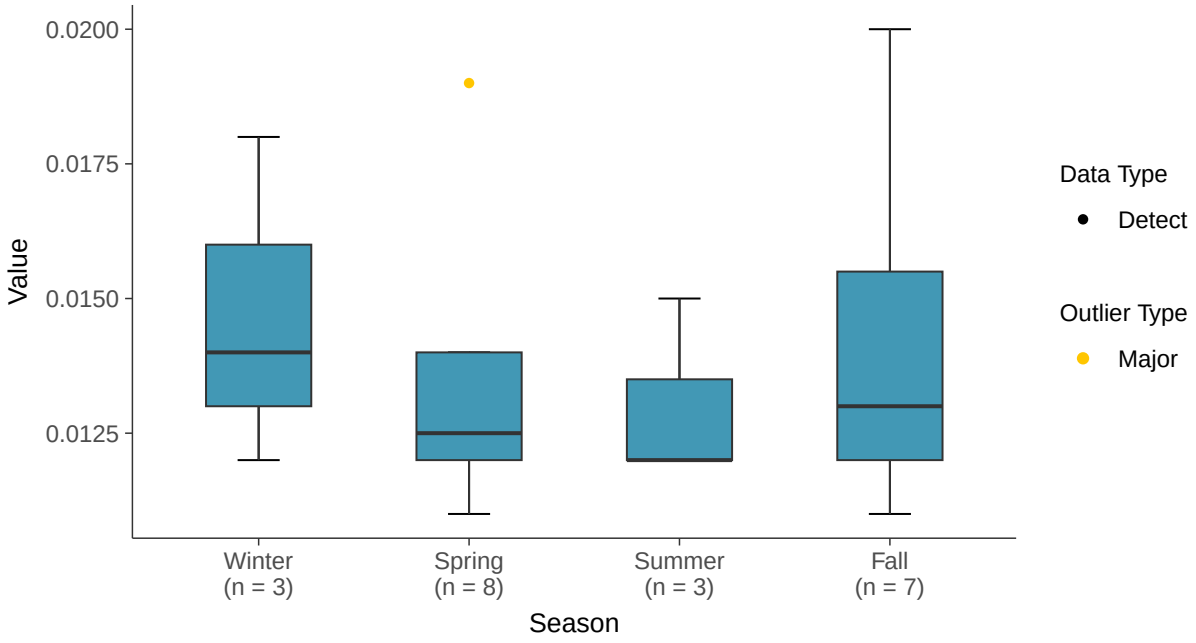
Boxplot

Barium, MW-3 (mg/l)



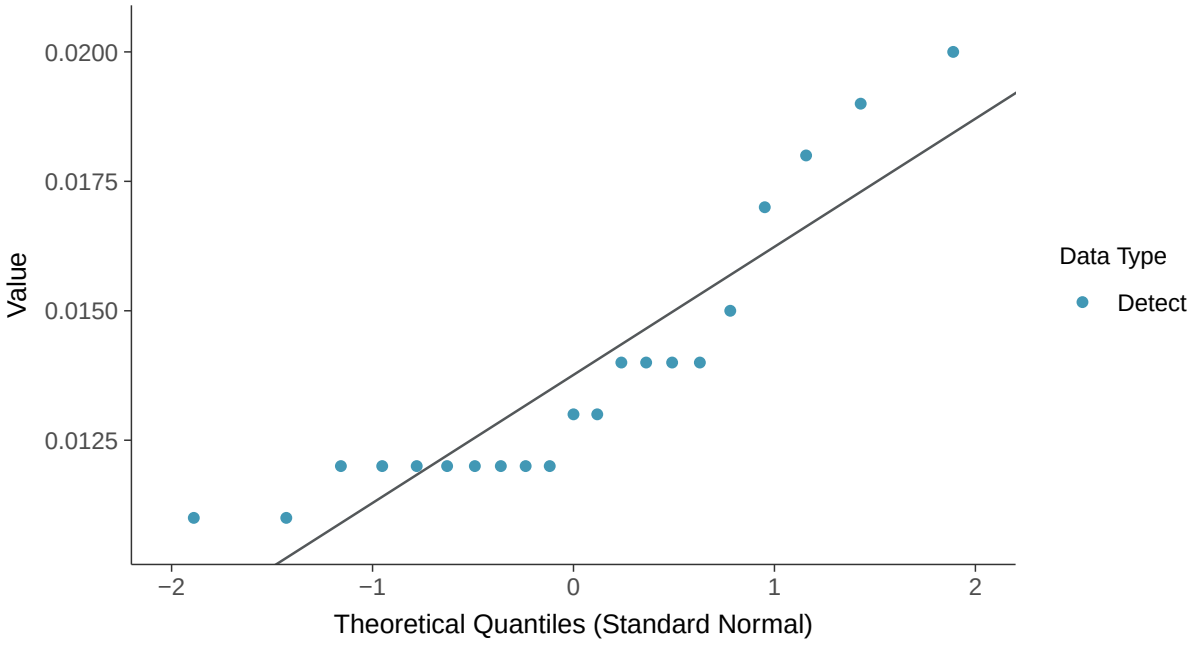
Boxplot by Season

Barium, MW-3 (mg/l)



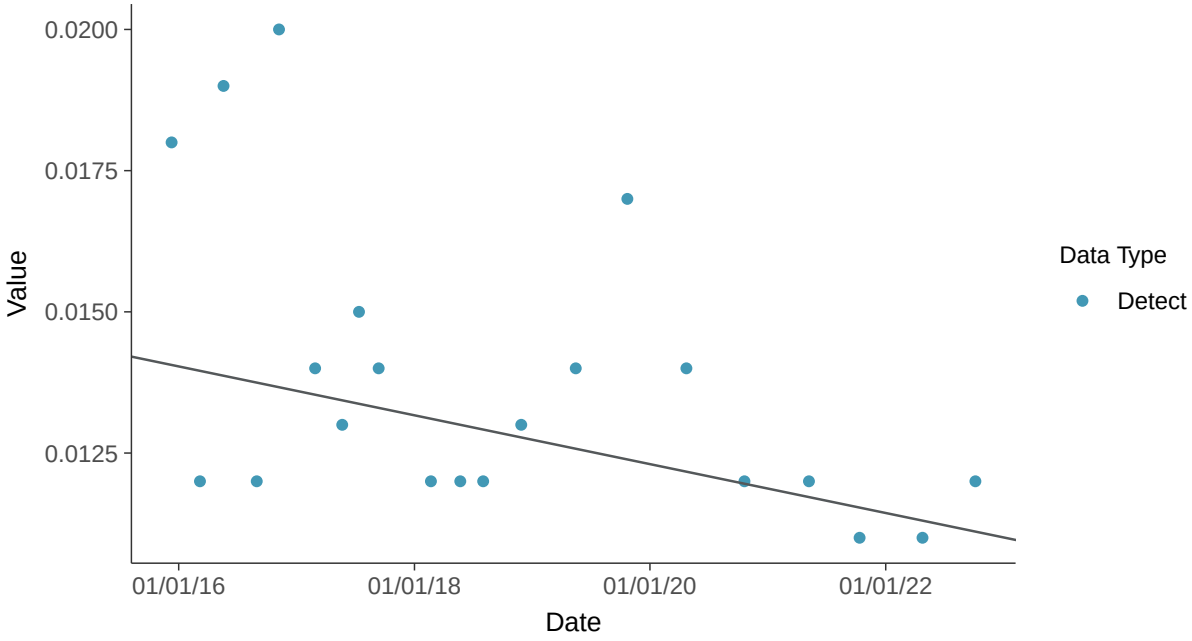
Normal Q-Q plot

Barium, MW-3 (mg/l)



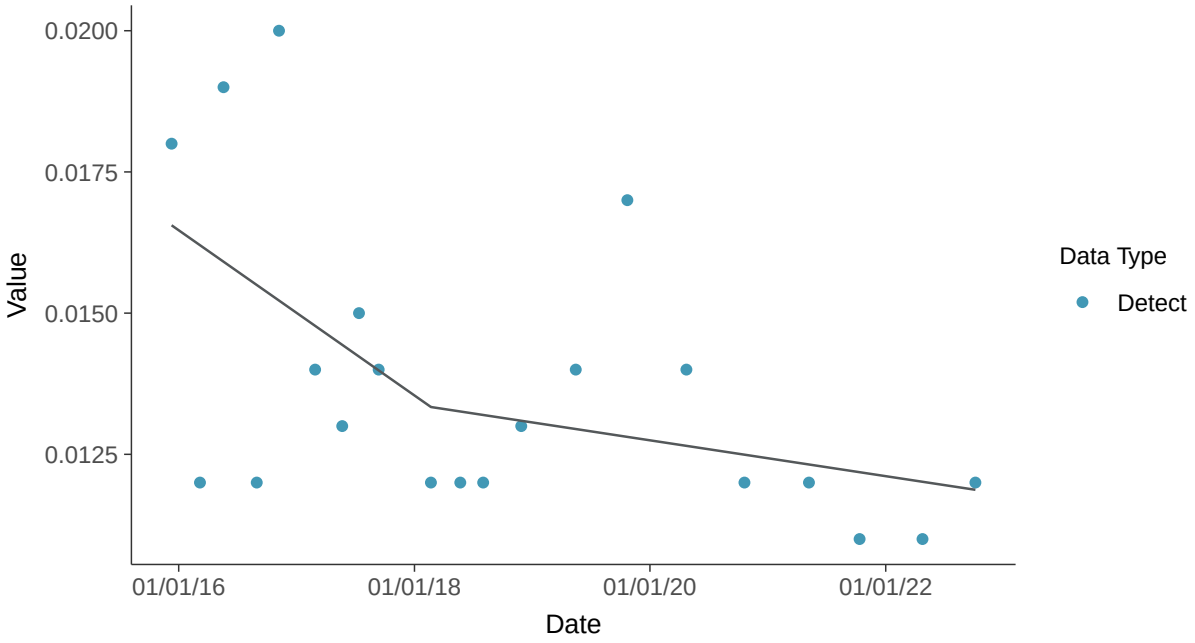
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-3 (mg/l)



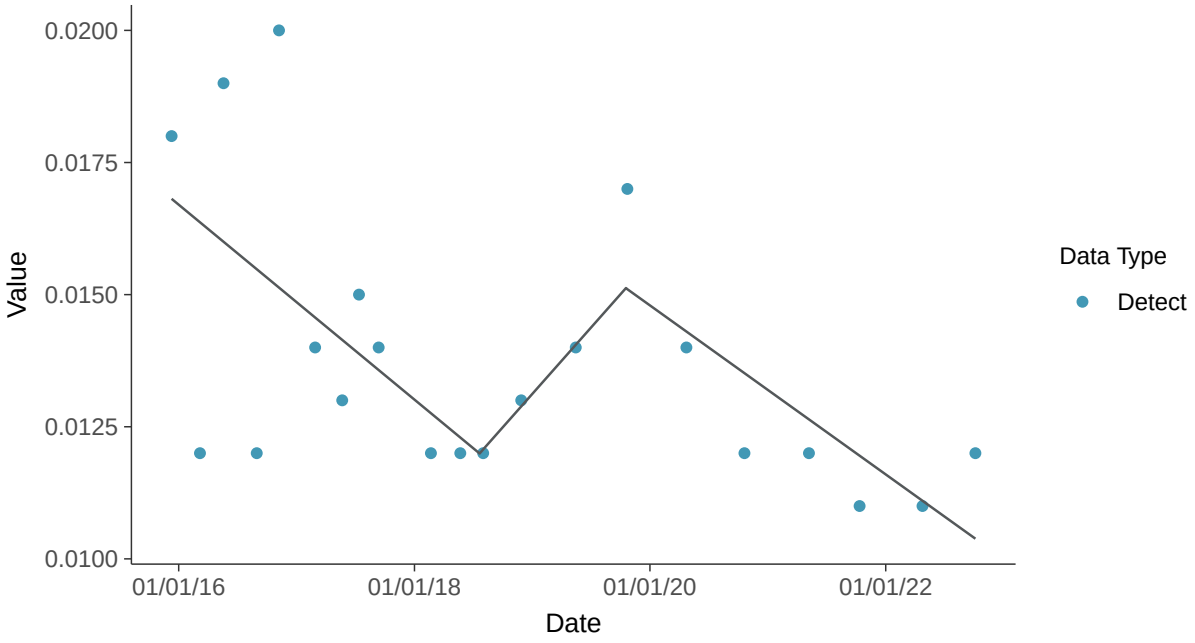
Trend Regression: Piecewise Linear-Linear

Barium, MW-3 (mg/l)



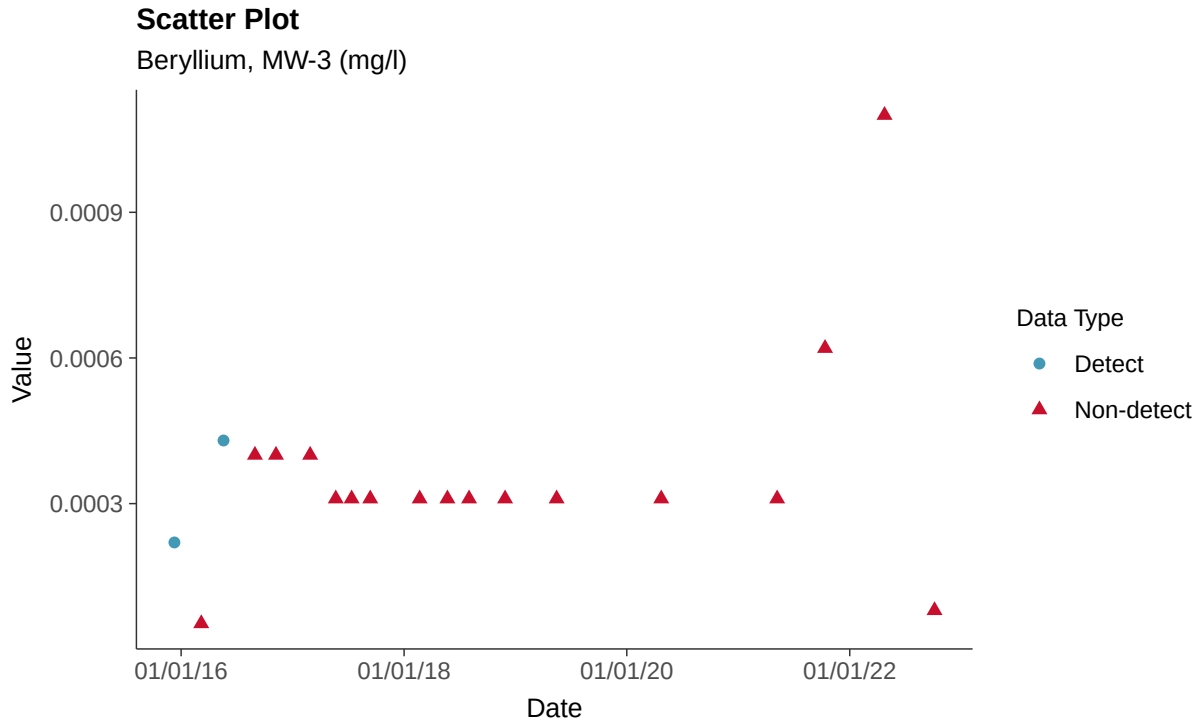
Trend Regression: Piecewise Linear-Linear-Linear

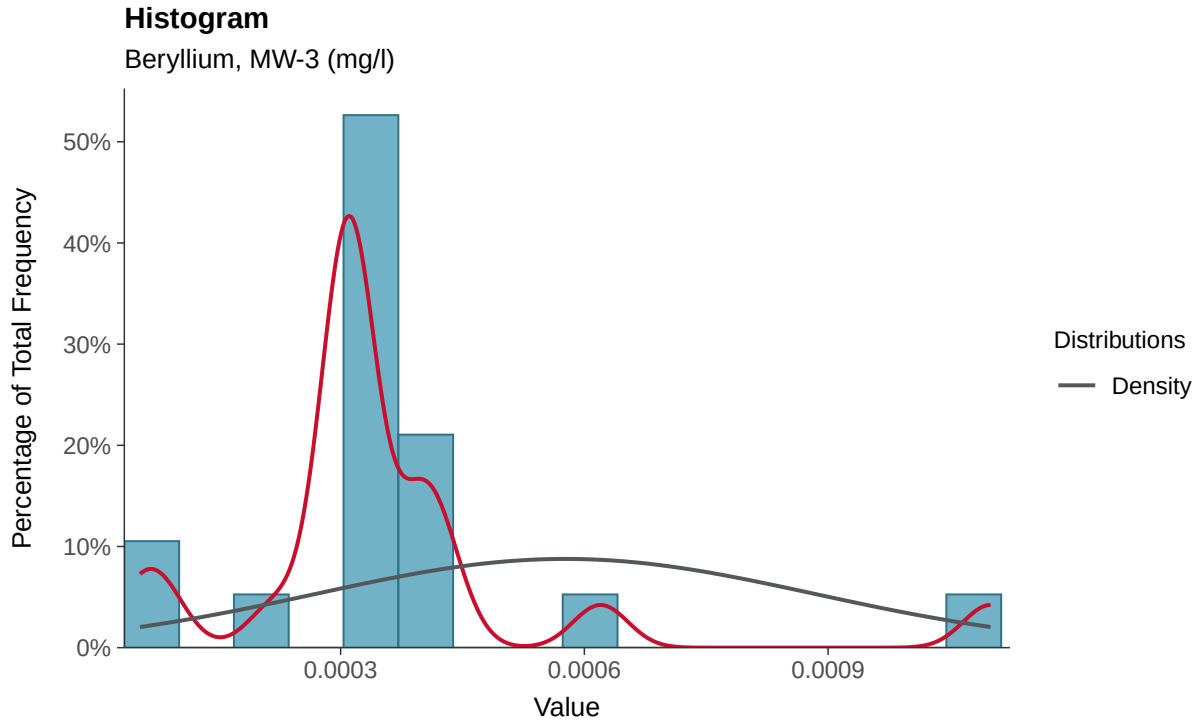
Barium, MW-3 (mg/l)



Appendix IV: Beryllium, MW-3

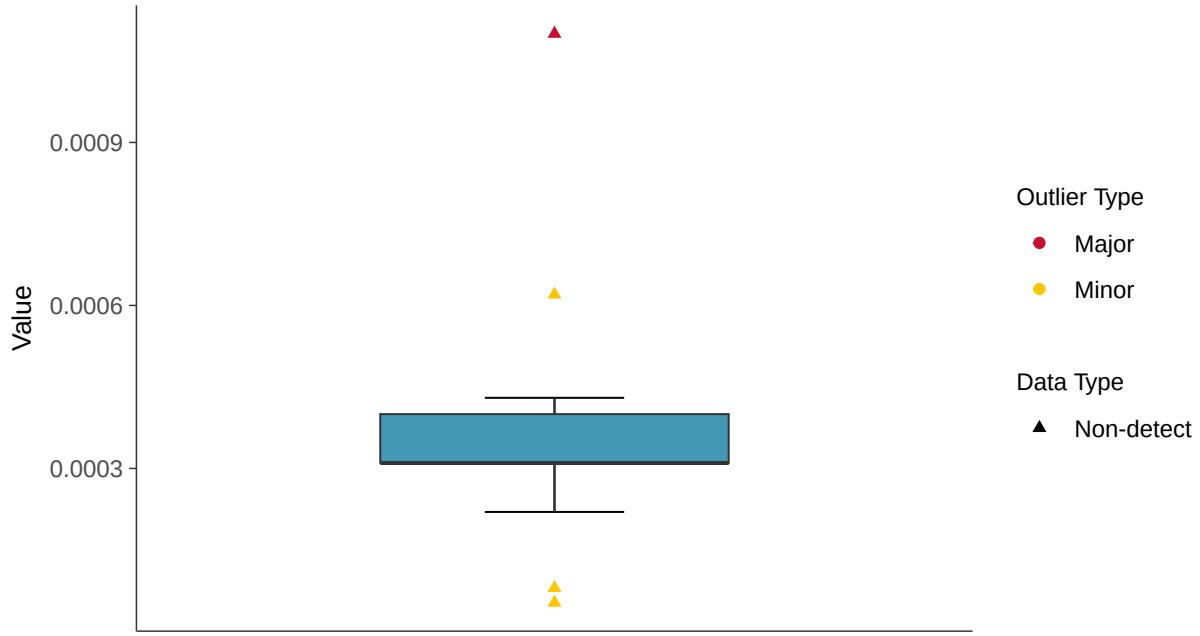
ID: 22_2_107





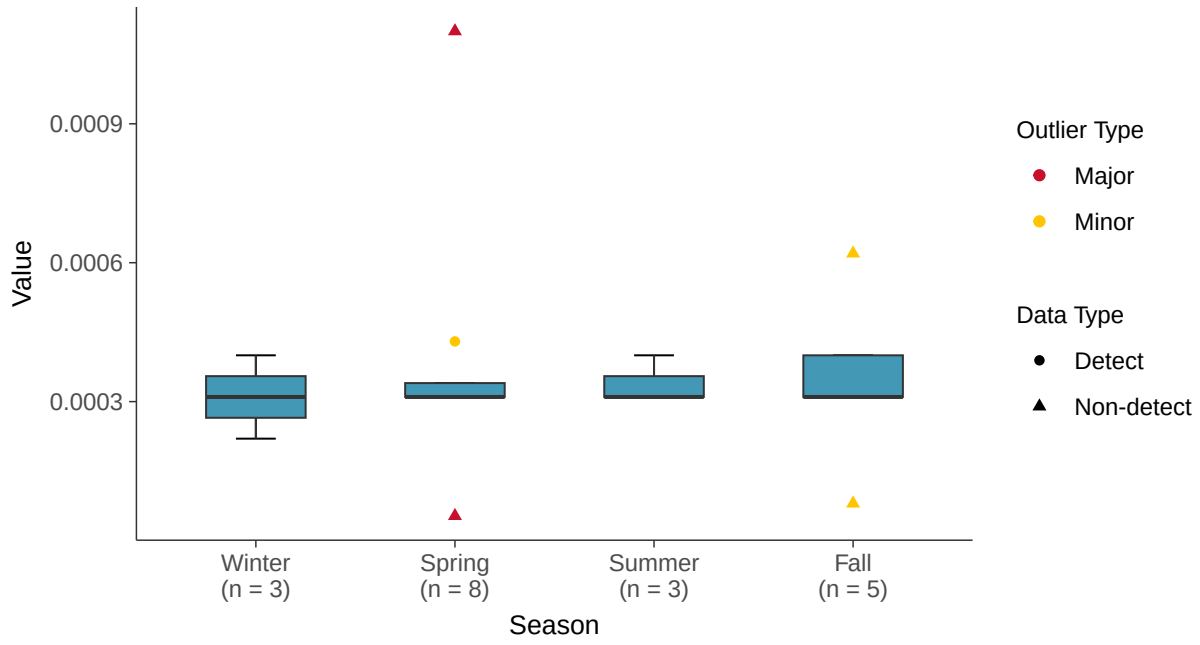
Boxplot

Beryllium, MW-3 (mg/l)



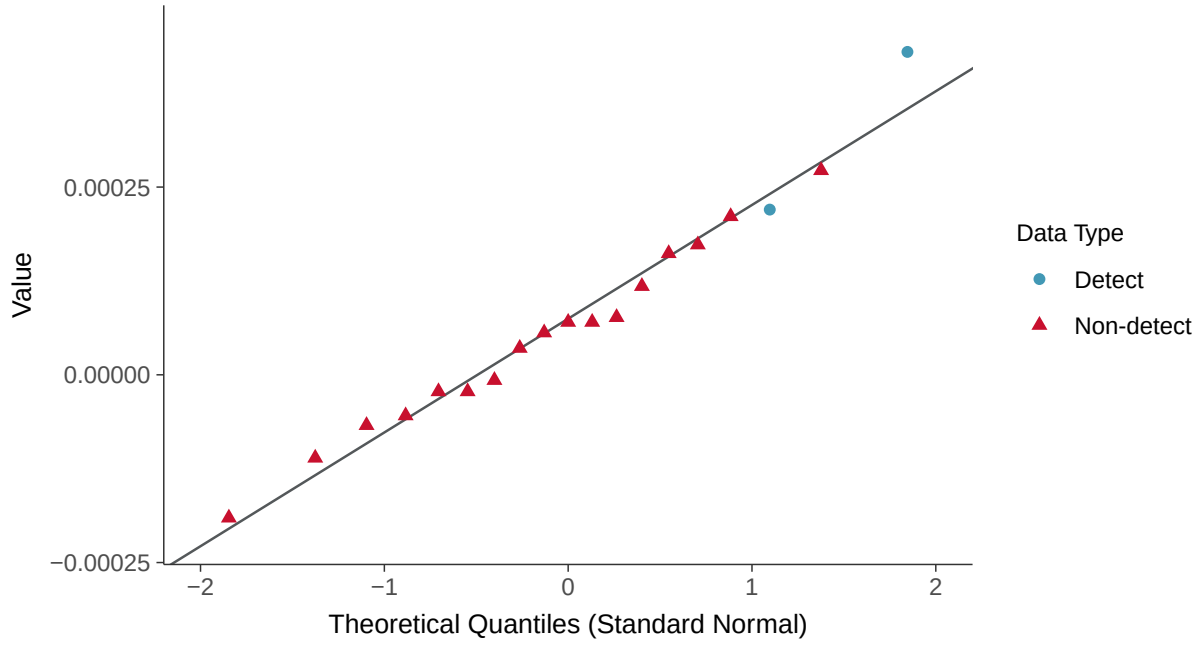
Boxplot by Season

Beryllium, MW-3 (mg/l)



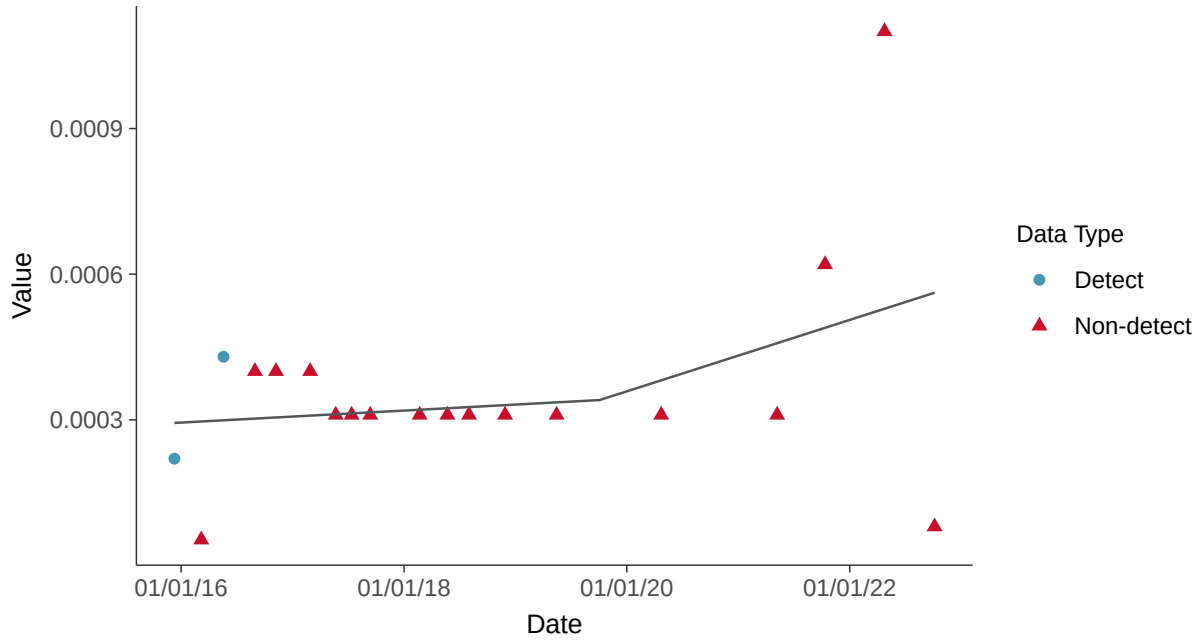
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-3 (mg/l)



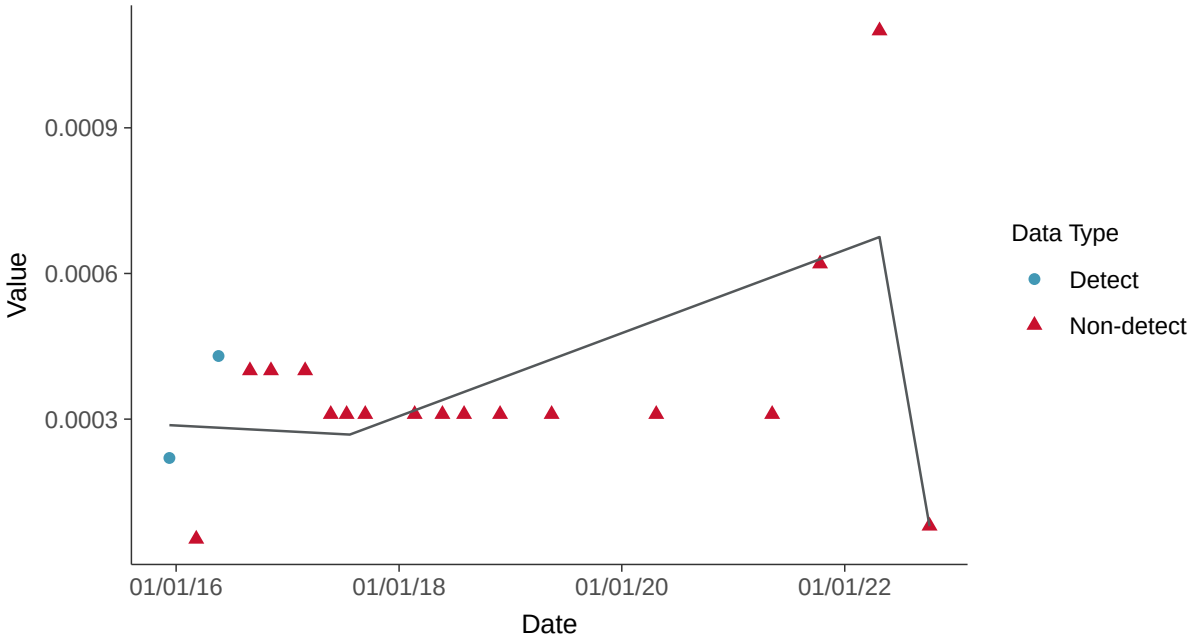
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-3 (mg/l)



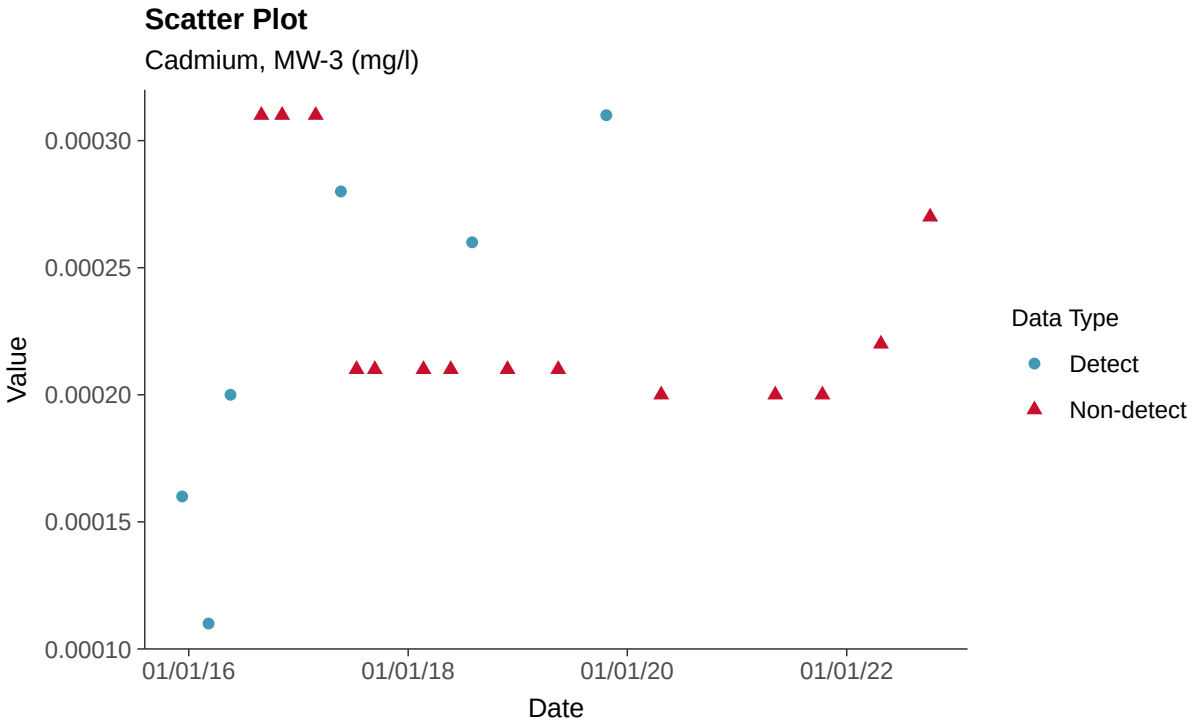
Trend Regression: Piecewise Linear-Linear-Linear

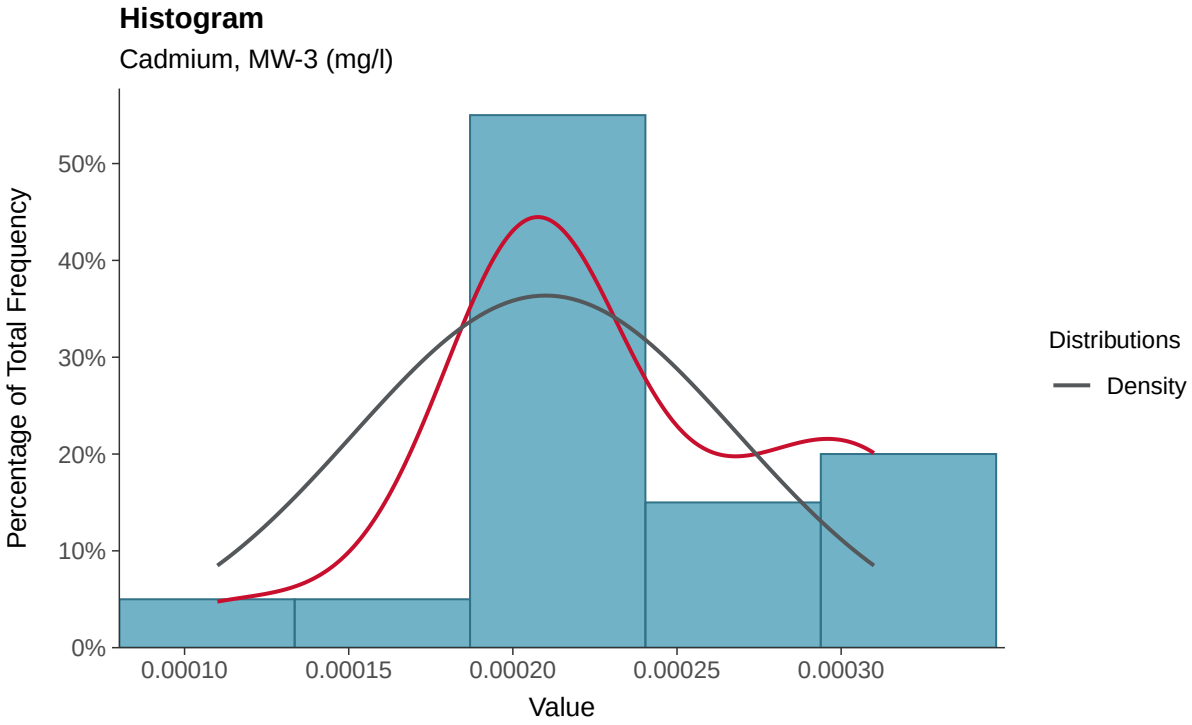
Beryllium, MW-3 (mg/l)



Appendix IV: Cadmium, MW-3

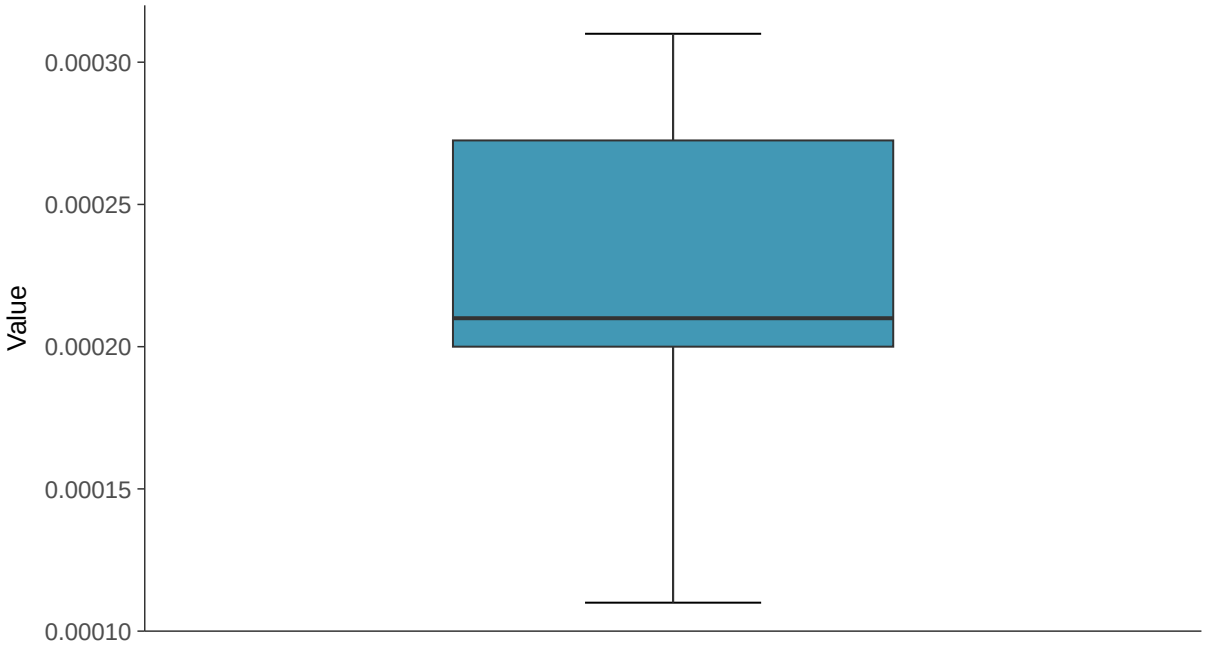
ID: 22_2_109





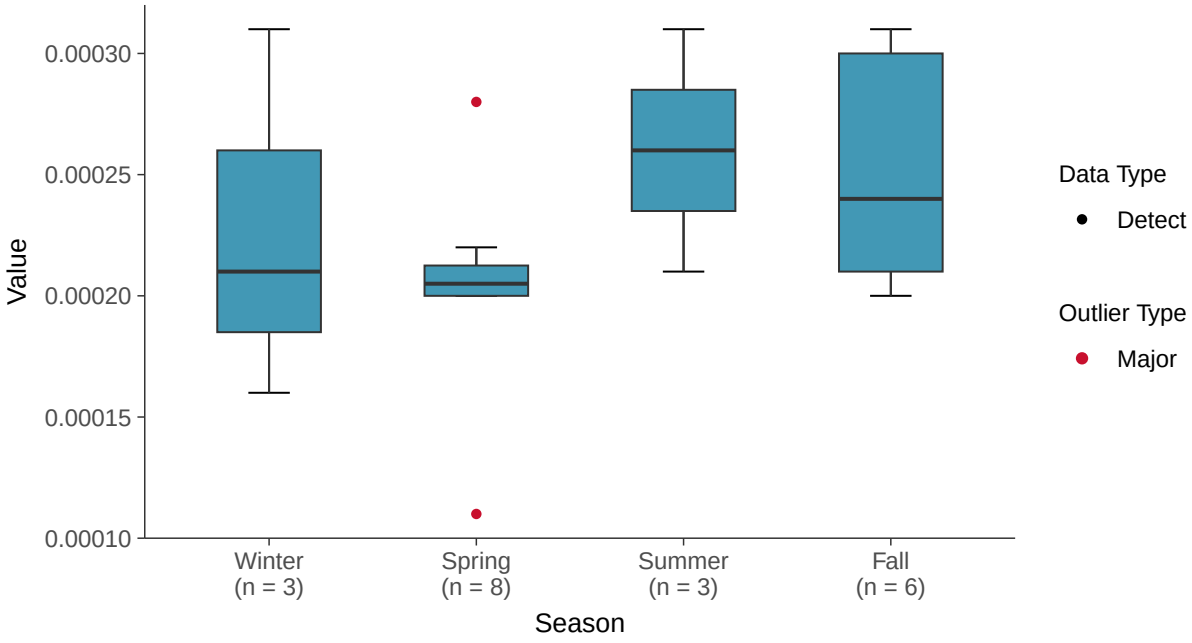
Boxplot

Cadmium, MW-3 (mg/l)



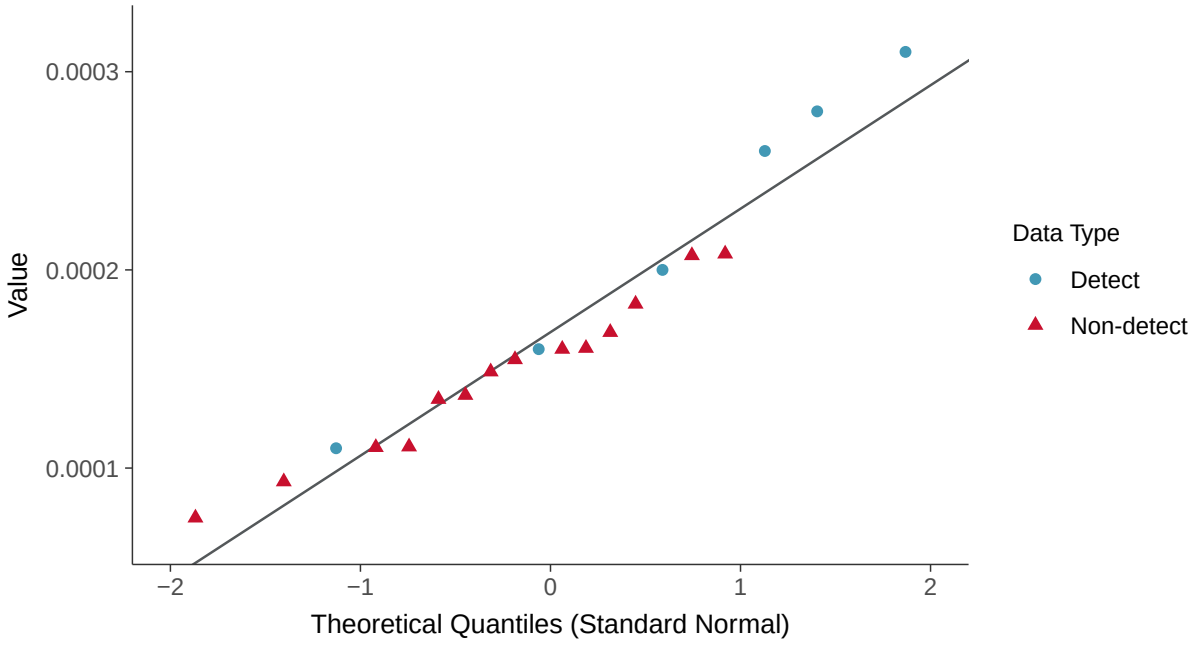
Boxplot by Season

Cadmium, MW-3 (mg/l)



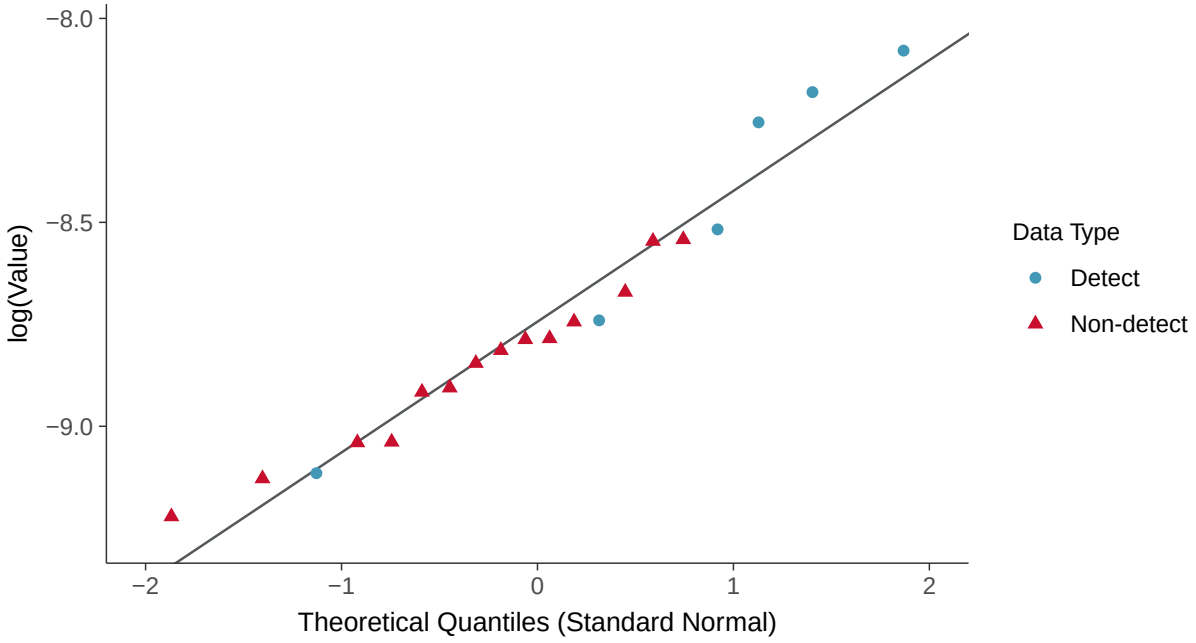
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-3 (mg/l)



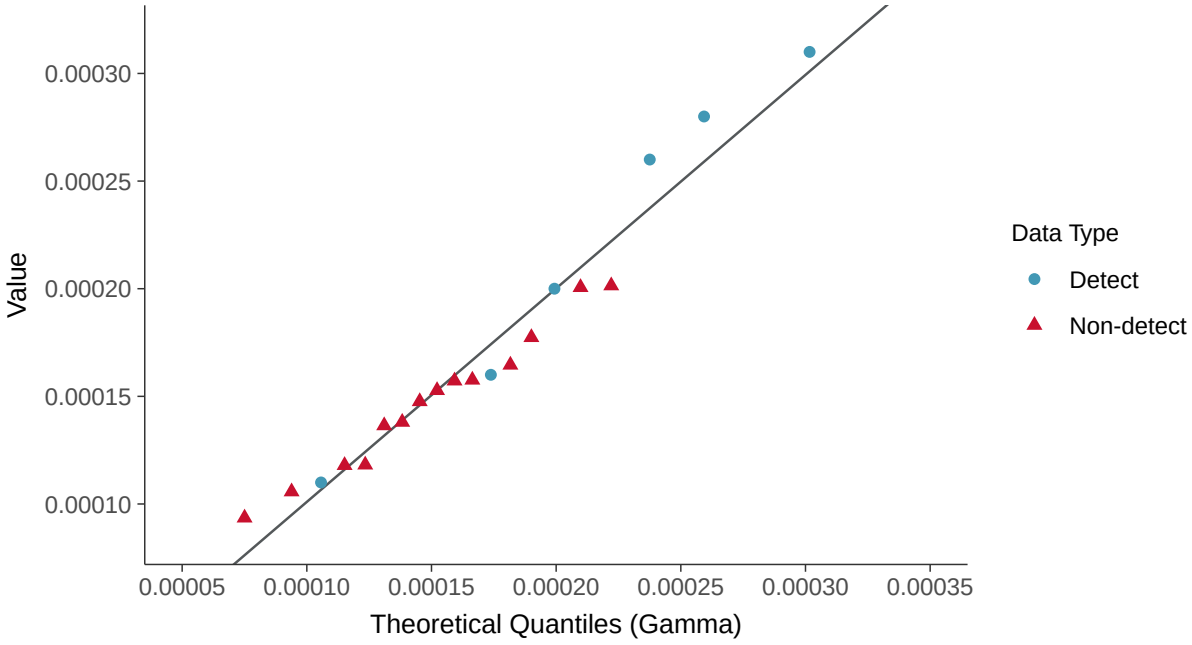
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-3 (mg/l)



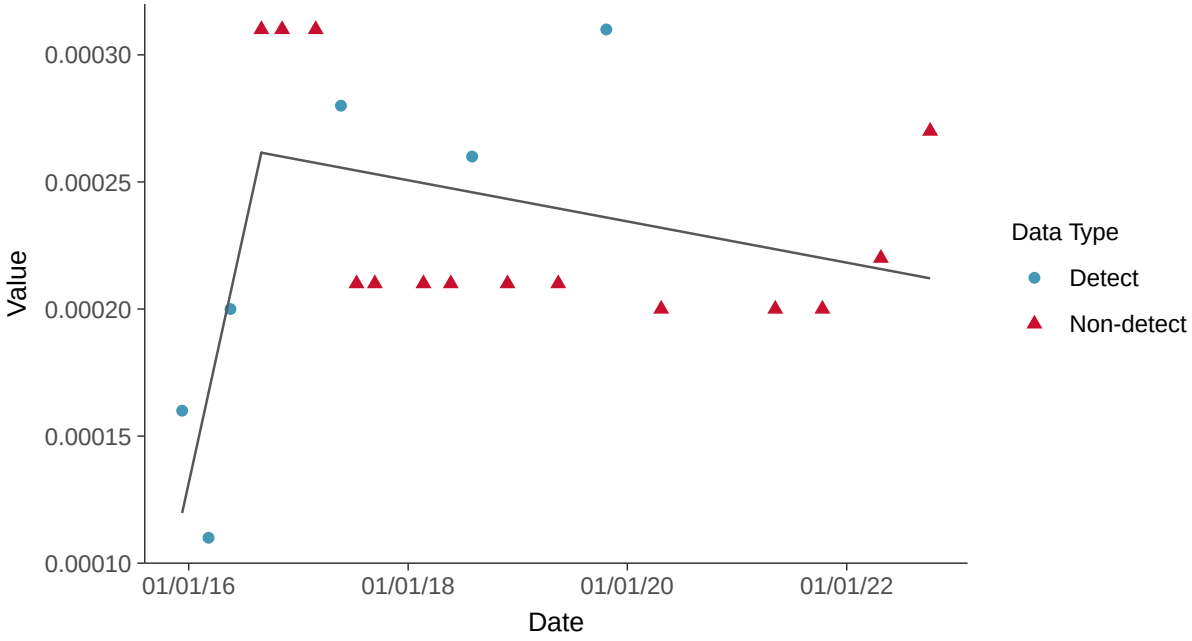
Gamma Q-Q plot using ROS Imputed Estimates

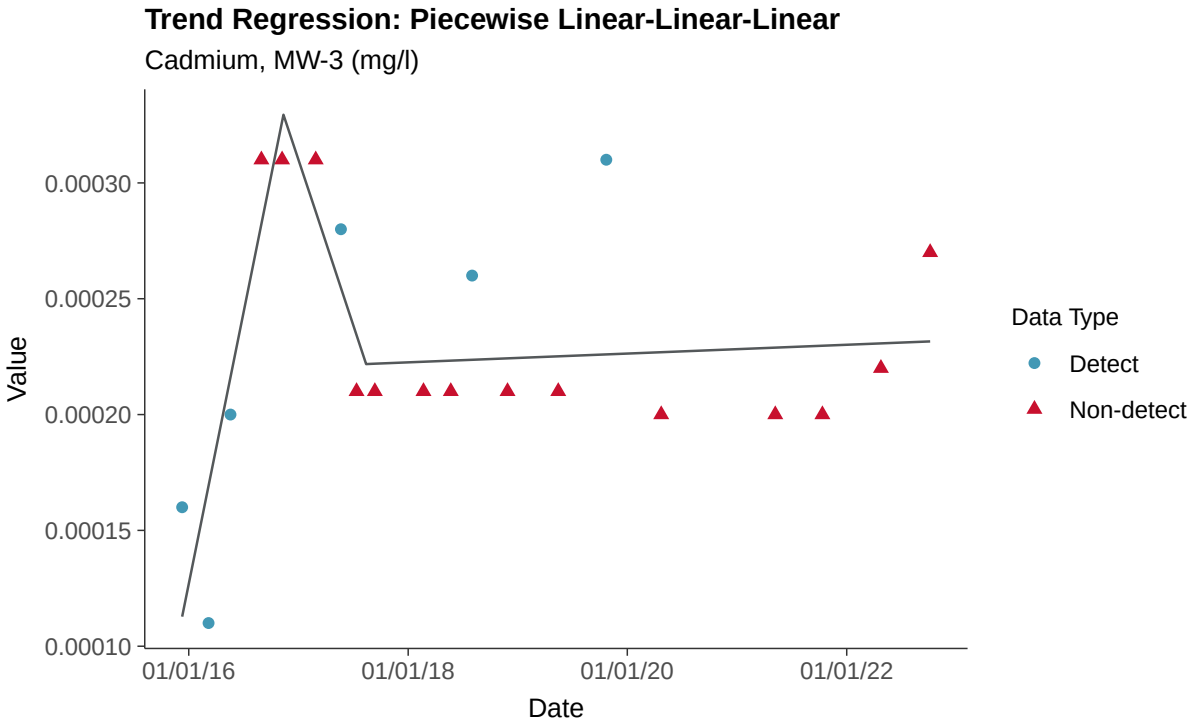
Cadmium, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear

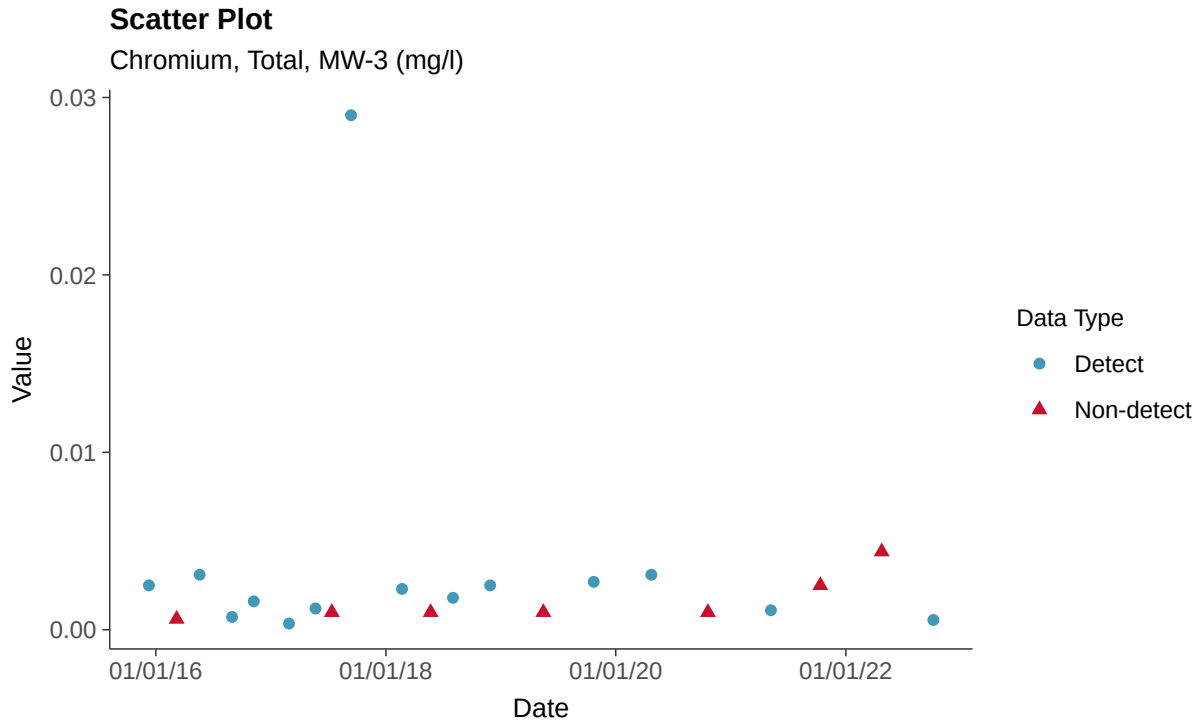
Cadmium, MW-3 (mg/l)

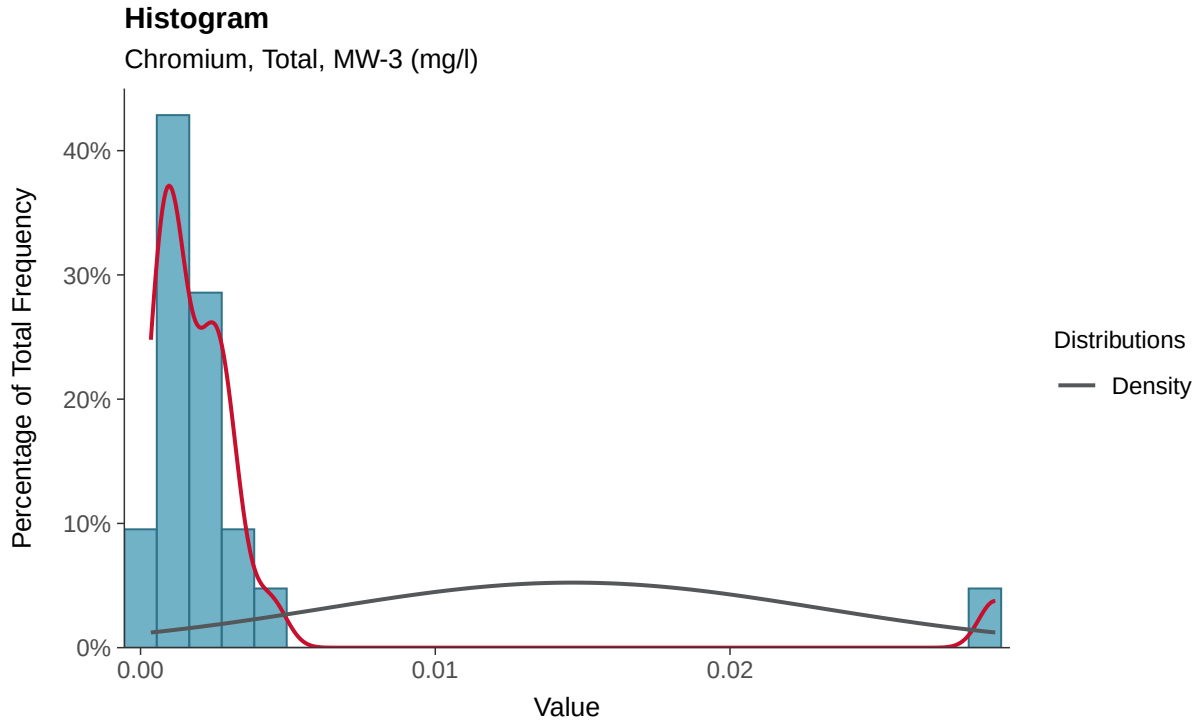



Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-3 (mg/l)
Value
0.00030
0.00025
0.00020
0.00015
0.00010
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-3

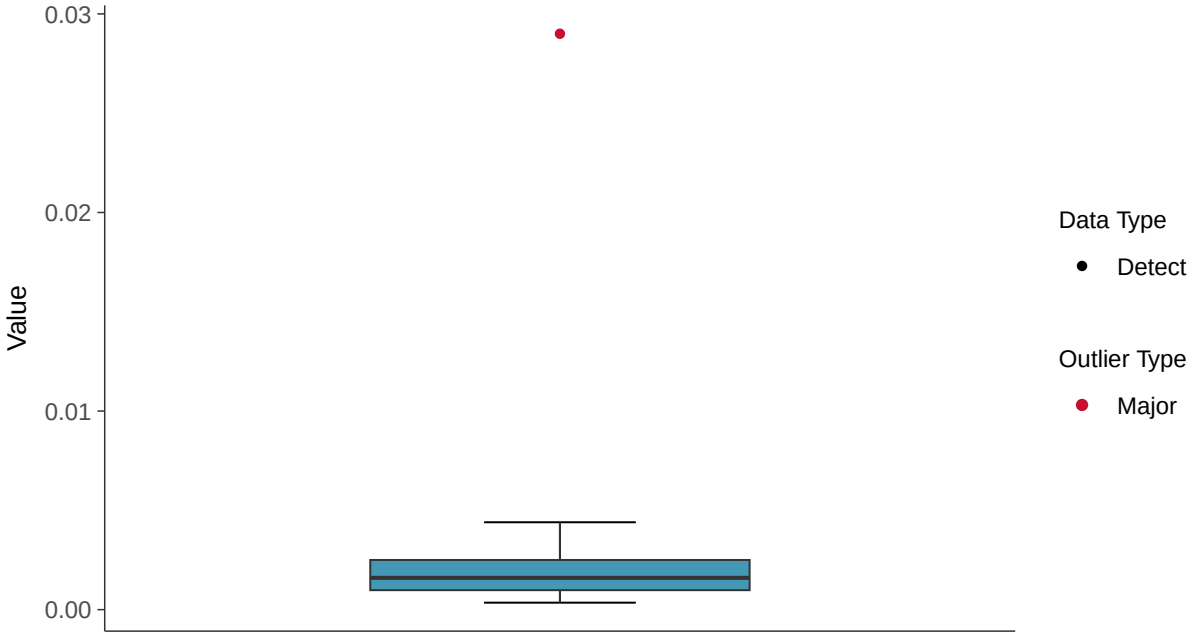
ID: 22_2_112





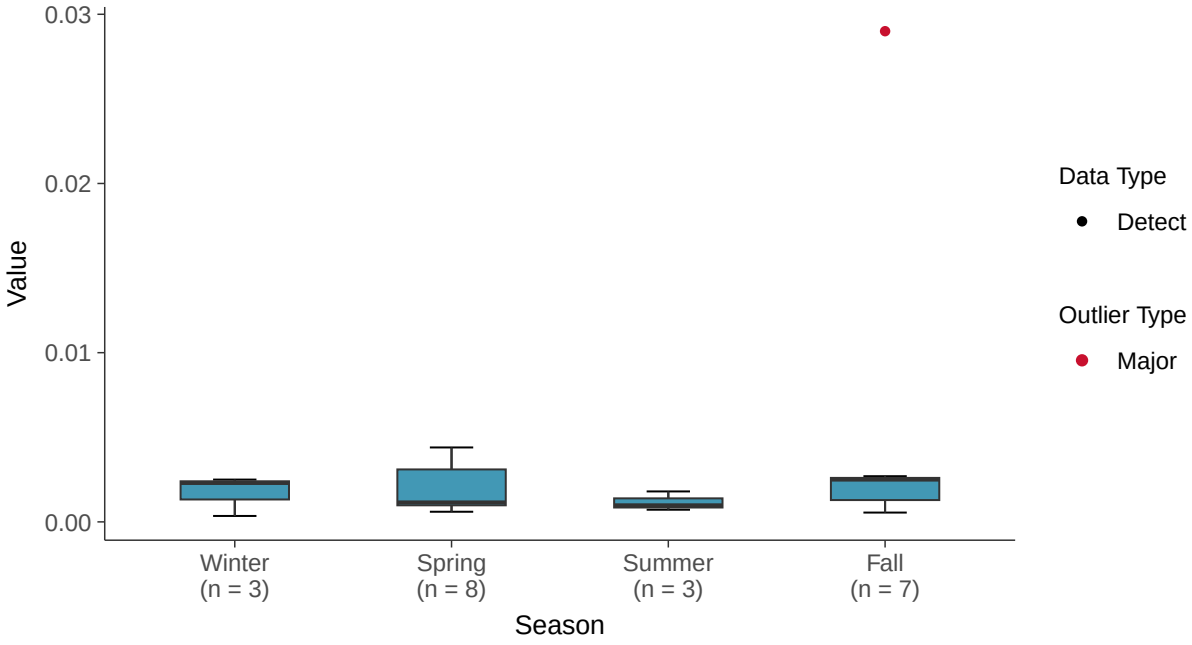
Boxplot

Chromium, Total, MW-3 (mg/l)



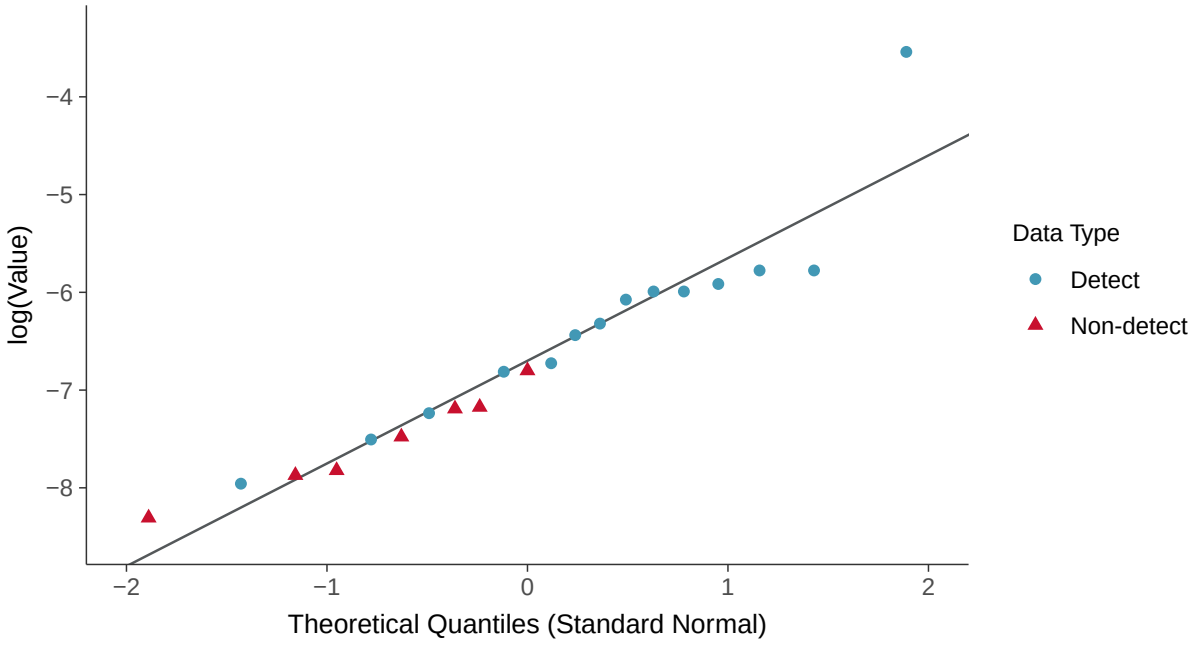
Boxplot by Season

Chromium, Total, MW-3 (mg/l)



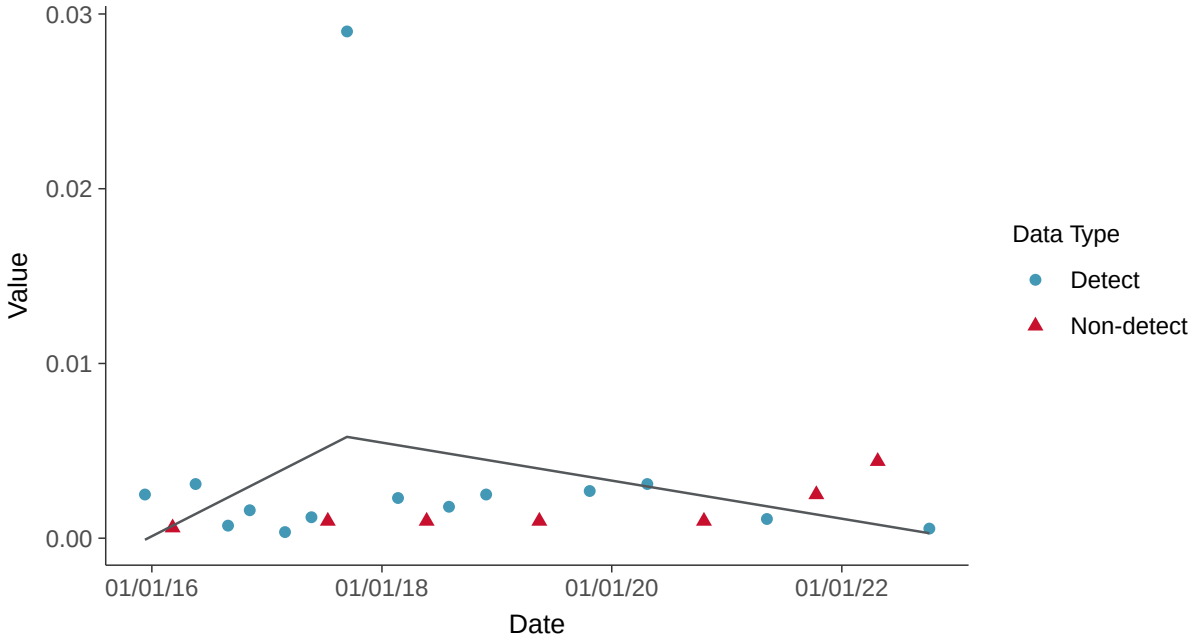
Lognormal Q-Q plot using ROS Imputed Estimates

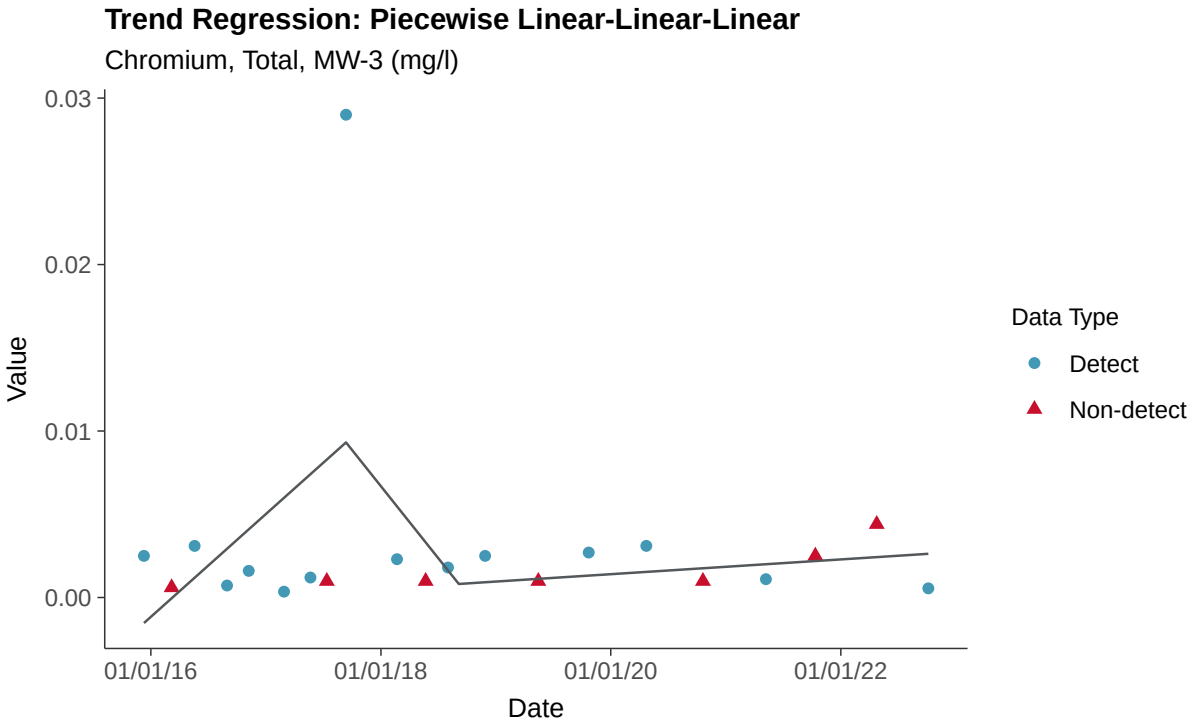
Chromium, Total, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear

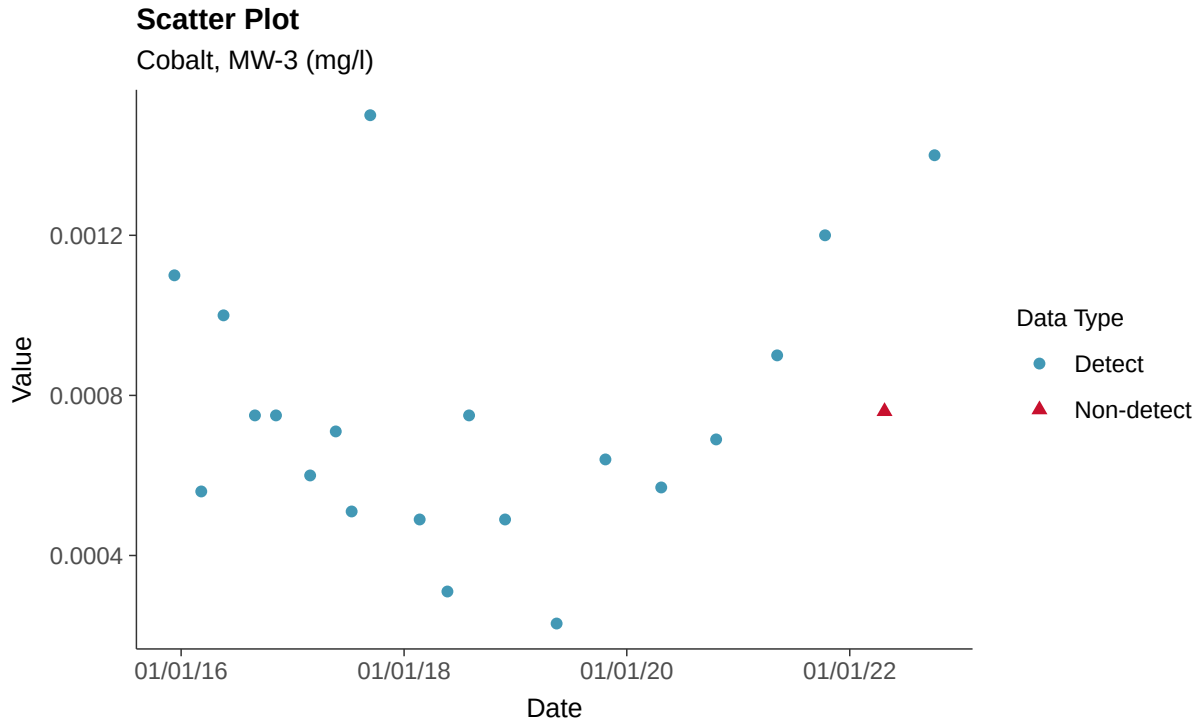
Chromium, Total, MW-3 (mg/l)

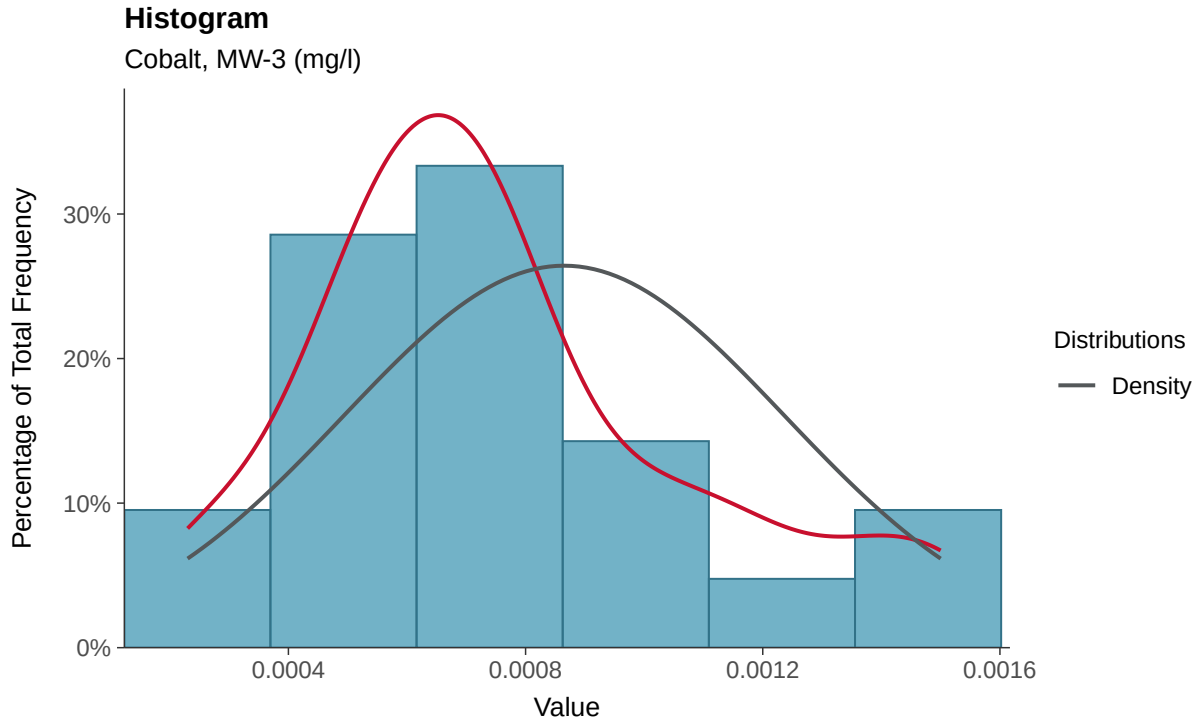



Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-3 (mg/l)
0.03
0.02
0.01
0.00
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-3

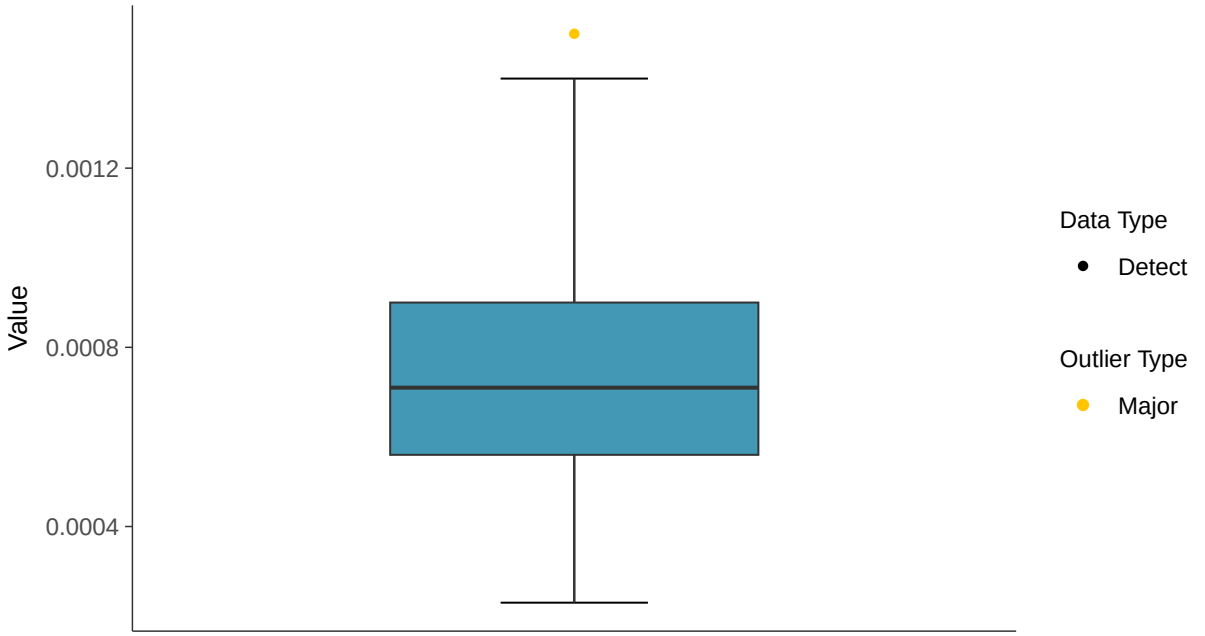
ID: 22_2_113





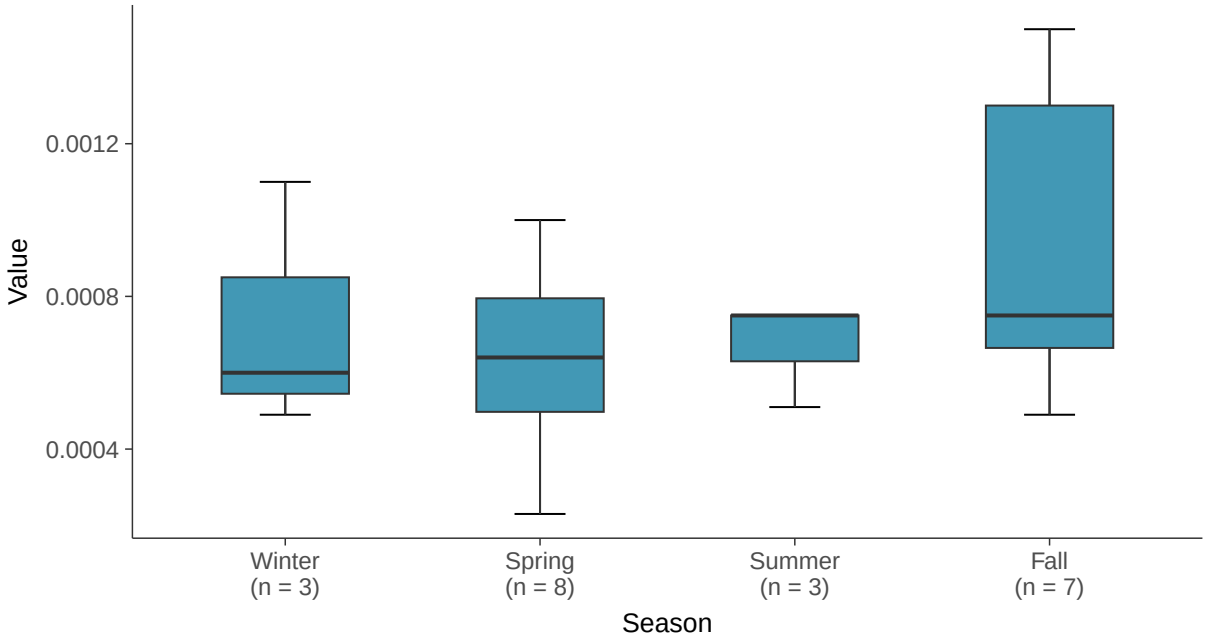
Boxplot

Cobalt, MW-3 (mg/l)



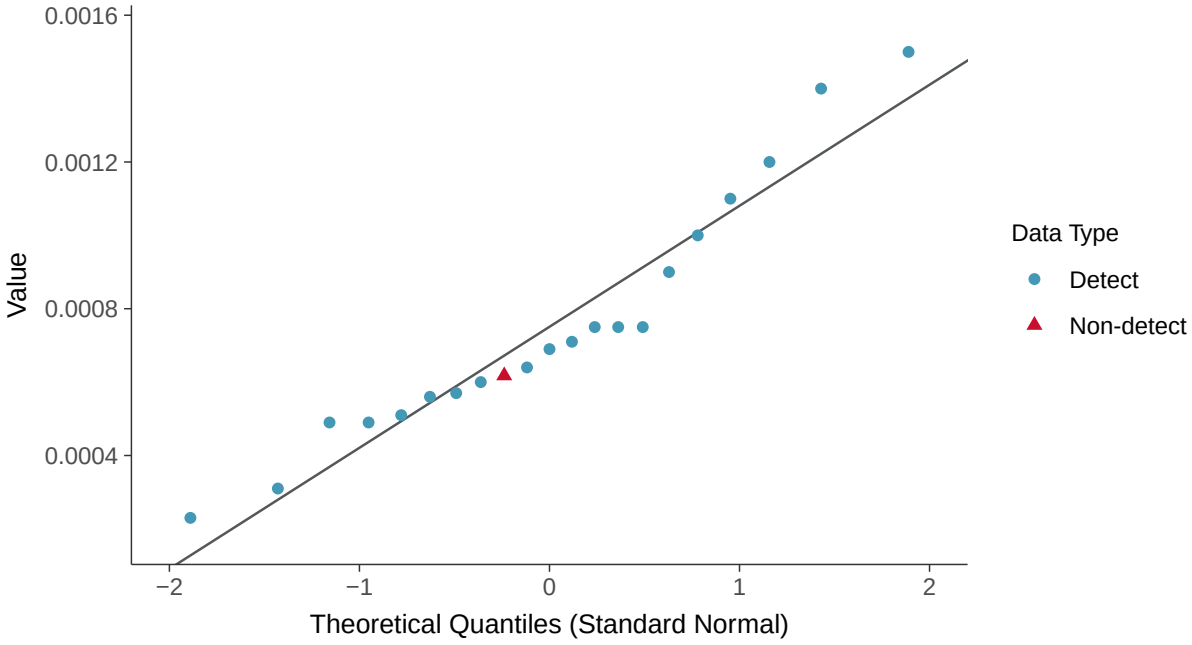
Boxplot by Season

Cobalt, MW-3 (mg/l)



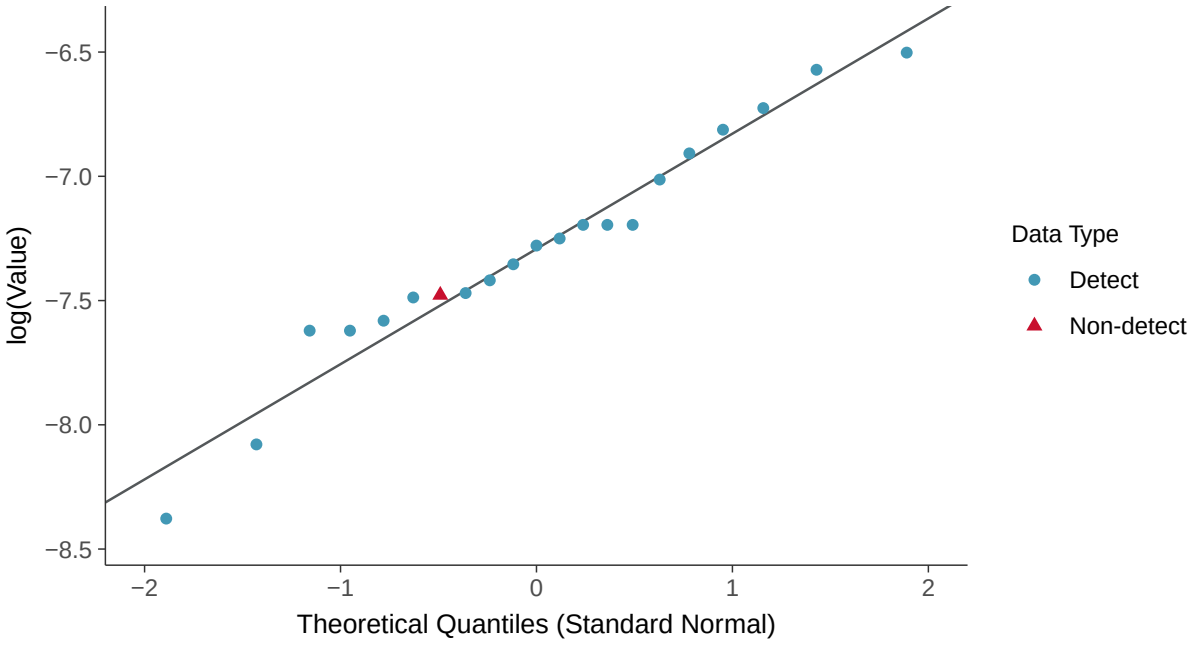
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-3 (mg/l)



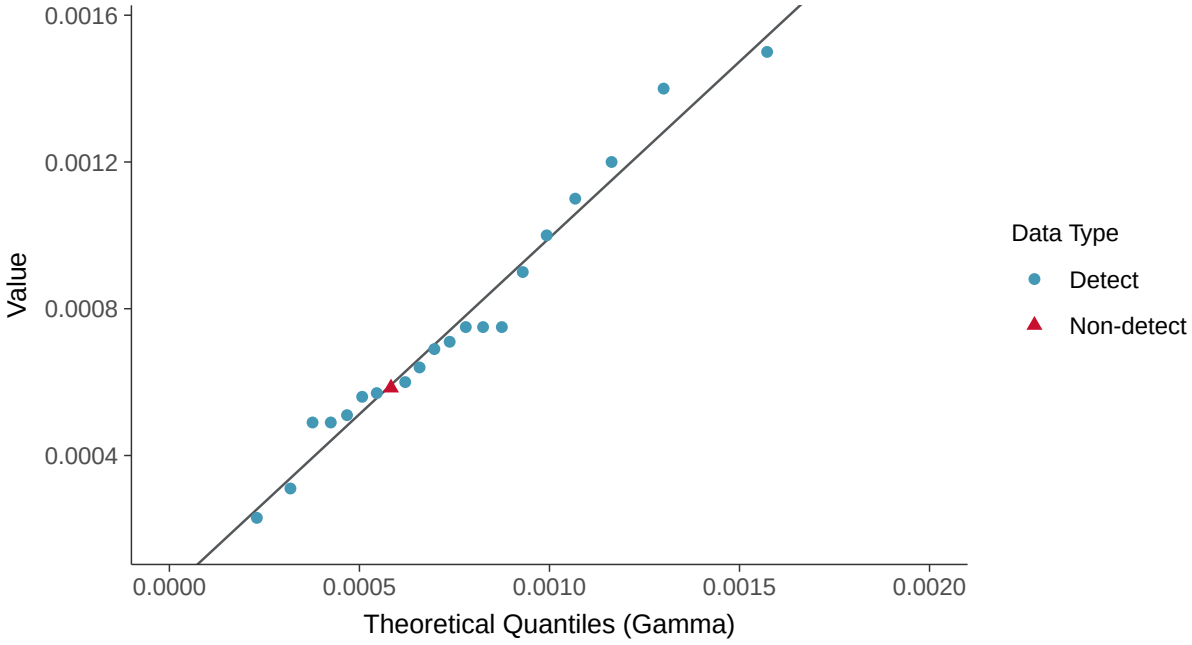
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-3 (mg/l)



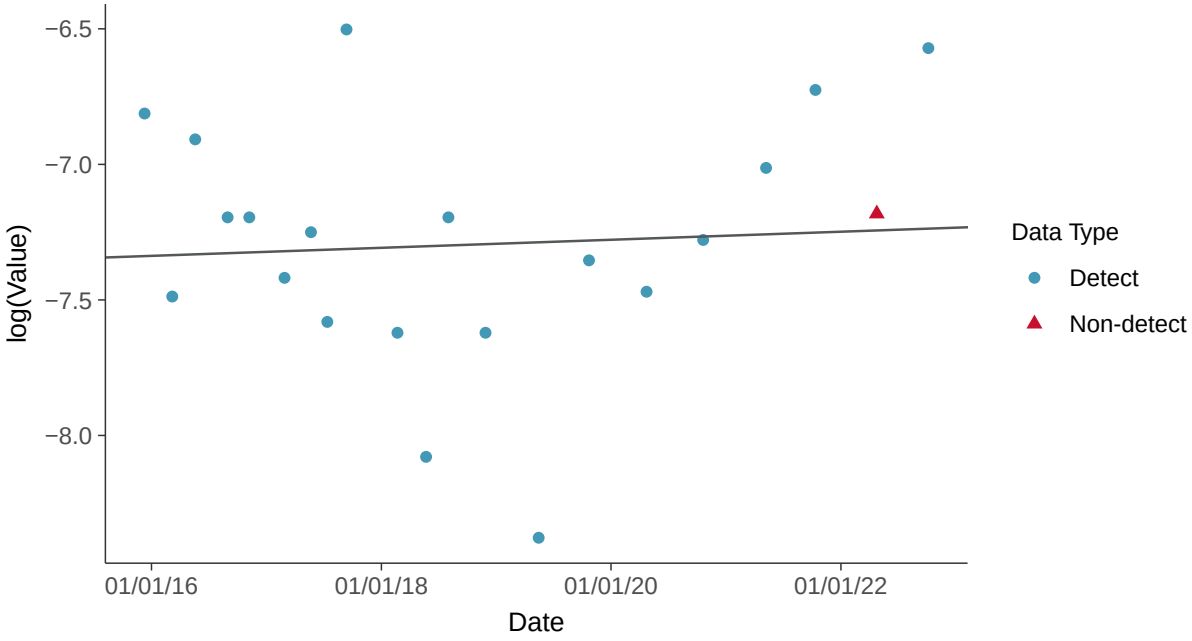
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-3 (mg/l)



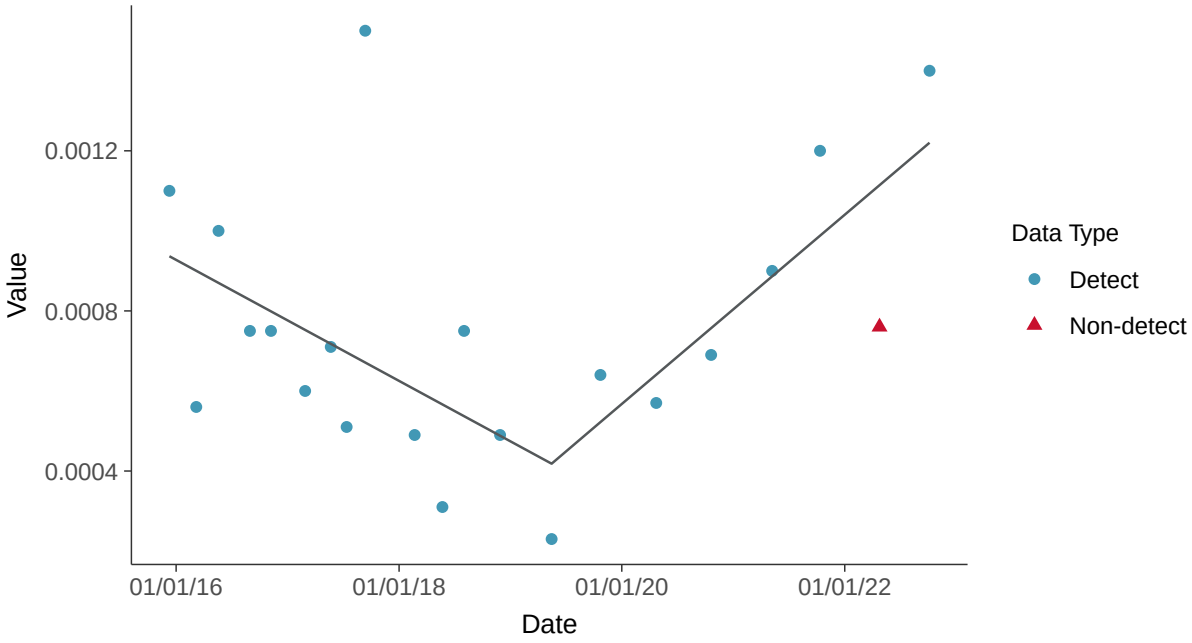
Trend Regression: Lognormal MLE

Cobalt, MW-3 (mg/l)



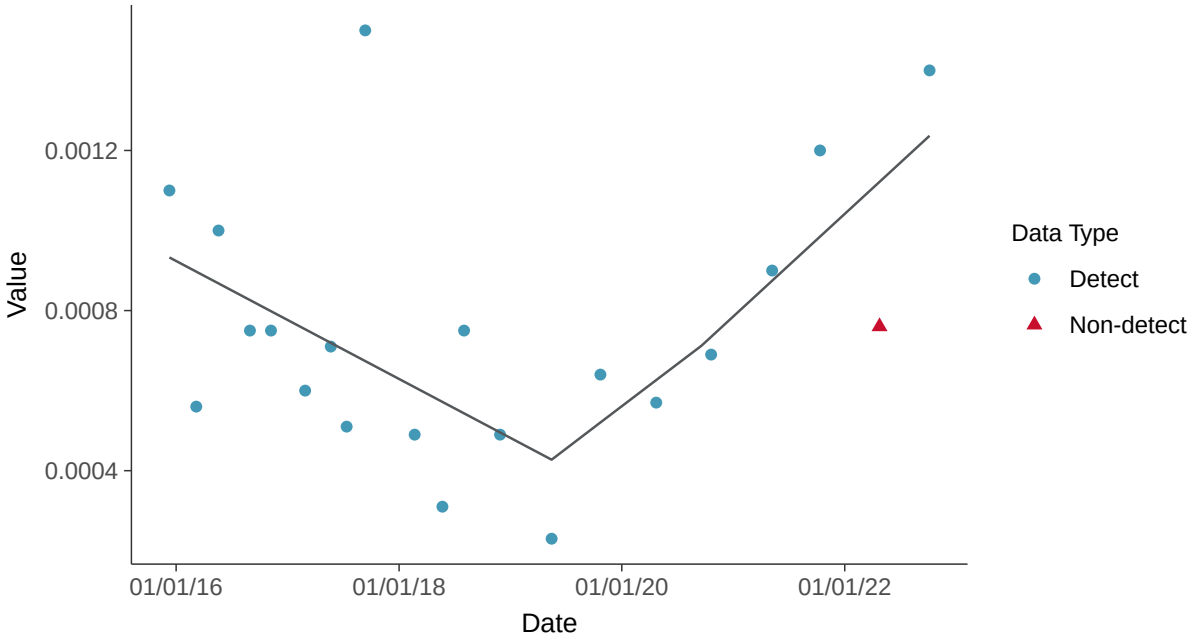
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-3 (mg/l)

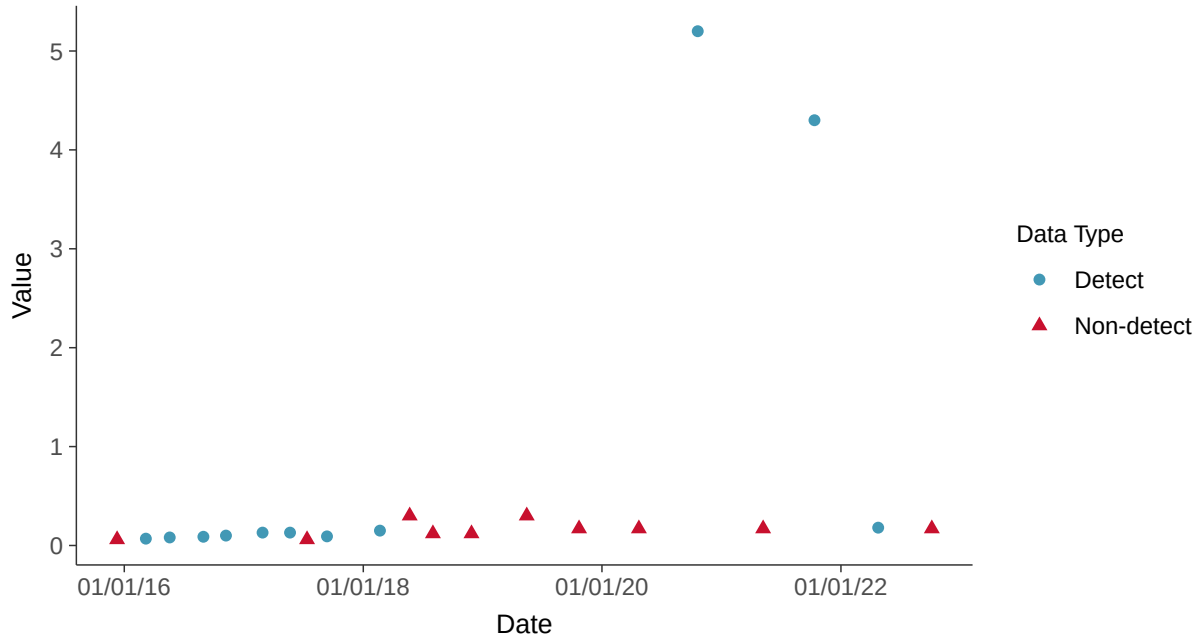


Appendix IV: Fluoride (App IV), MW-3

ID: 22_2_116

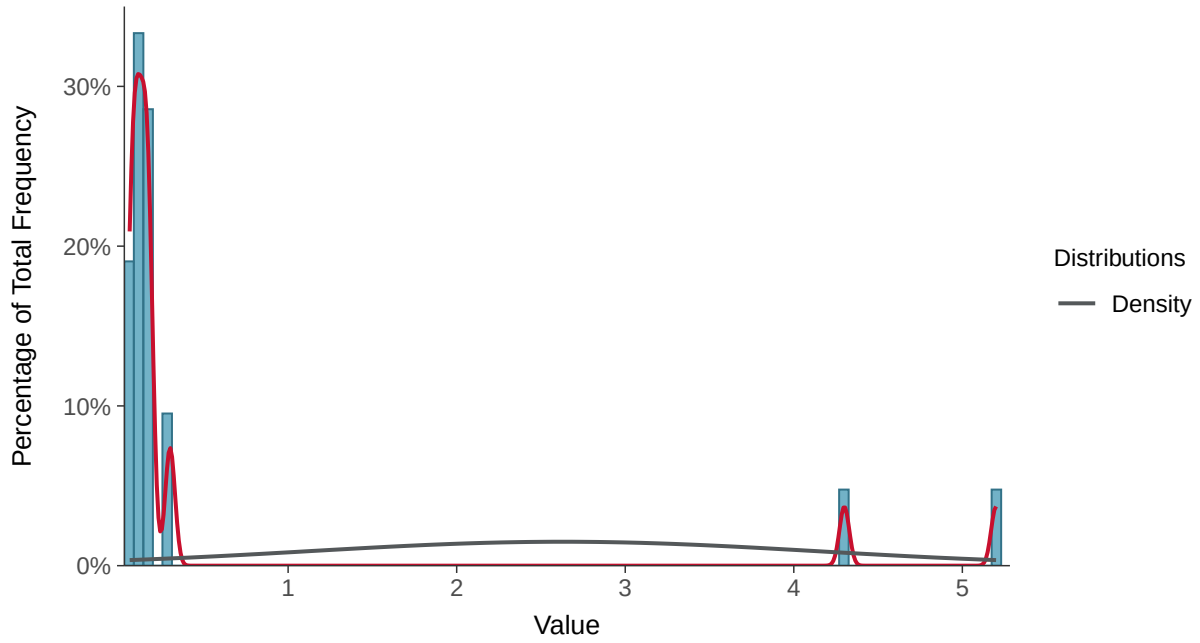
Scatter Plot

Fluoride (App IV), MW-3 (mg/l)



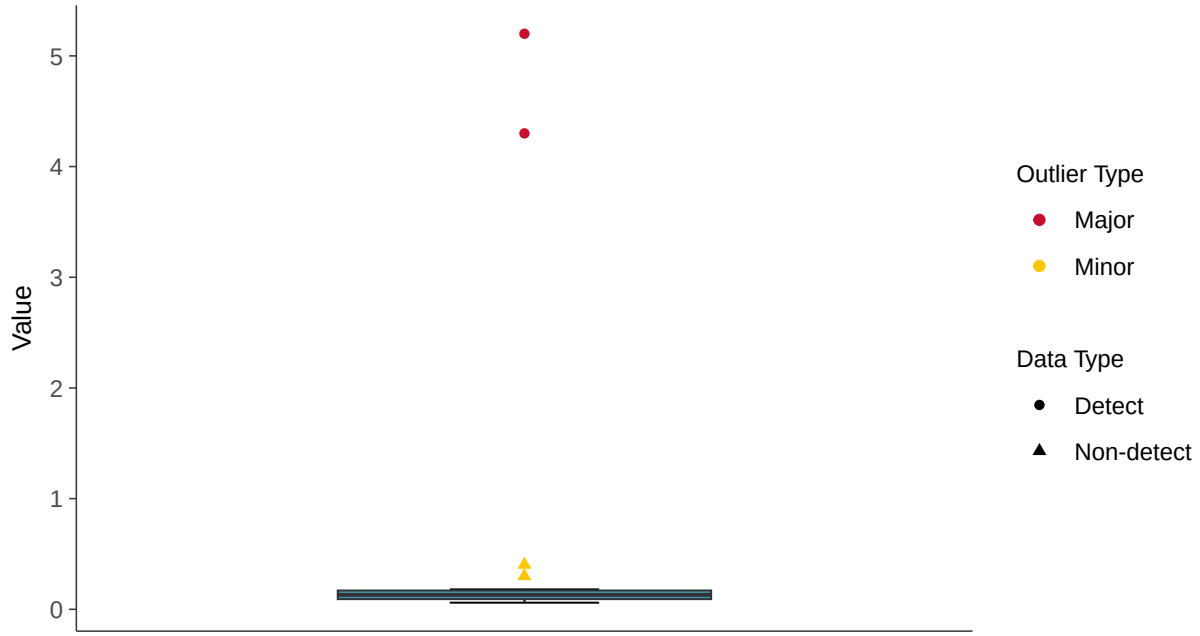
Histogram

Fluoride (App IV), MW-3 (mg/l)



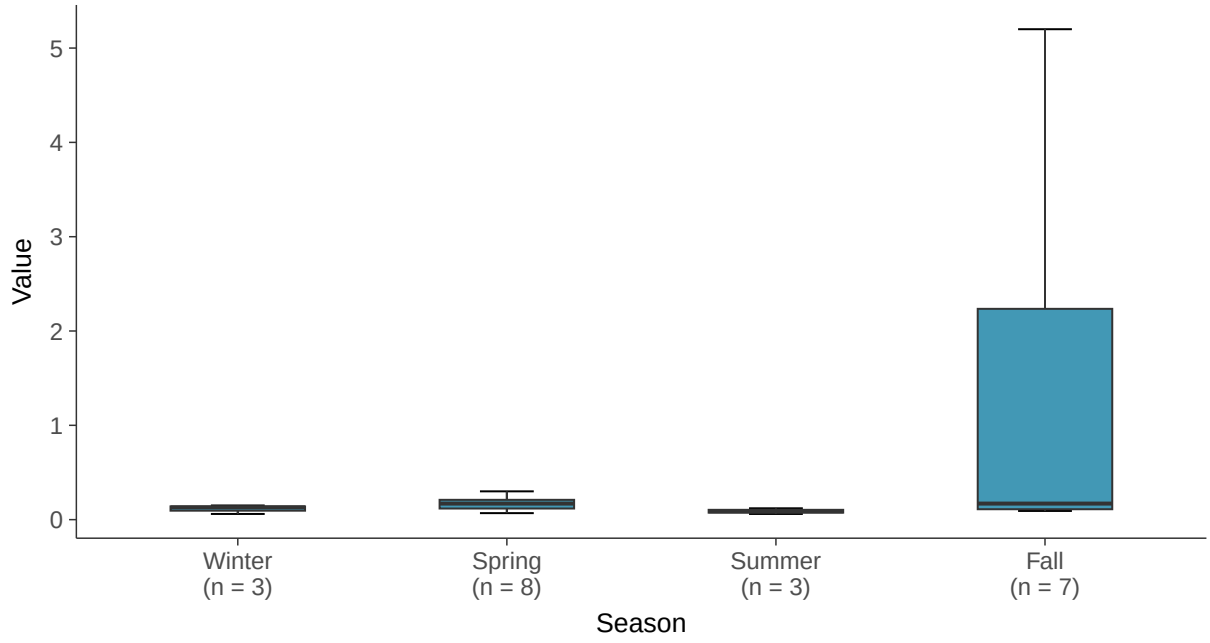
Boxplot

Fluoride (App IV), MW-3 (mg/l)



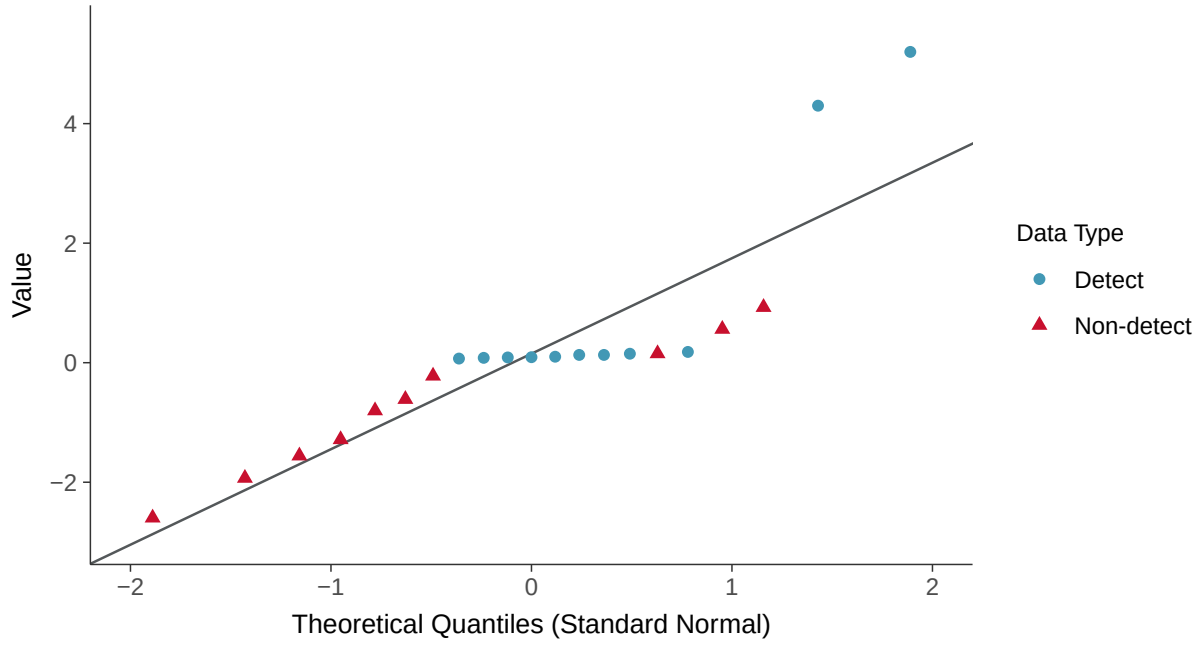
Boxplot by Season

Fluoride (App IV), MW-3 (mg/l)



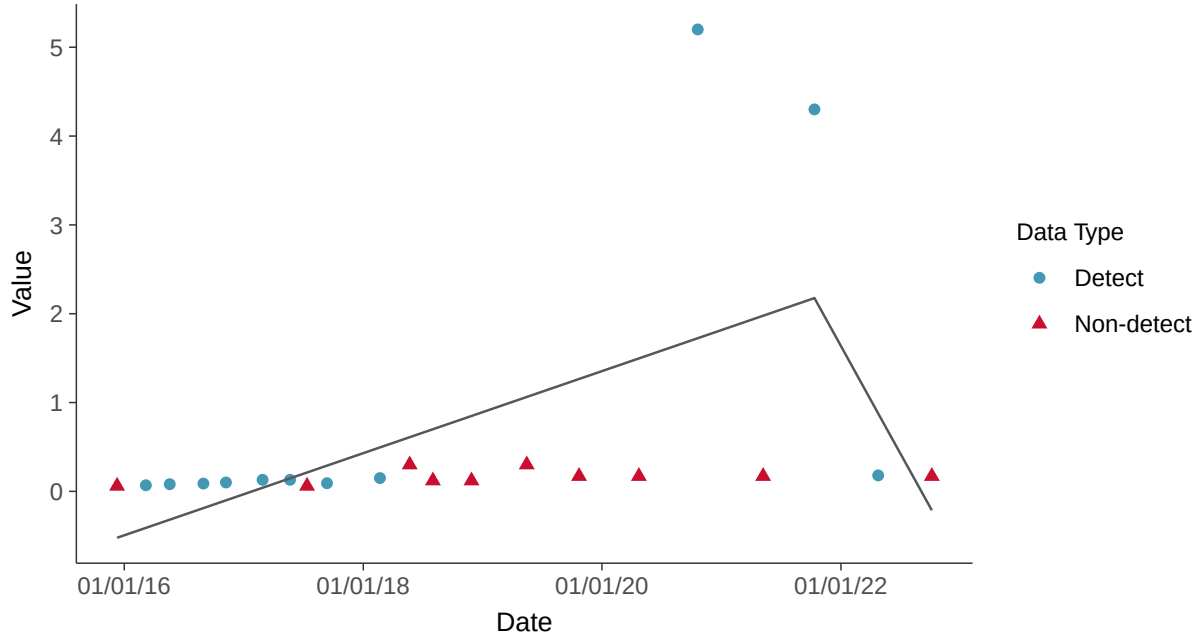
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-3 (mg/l)



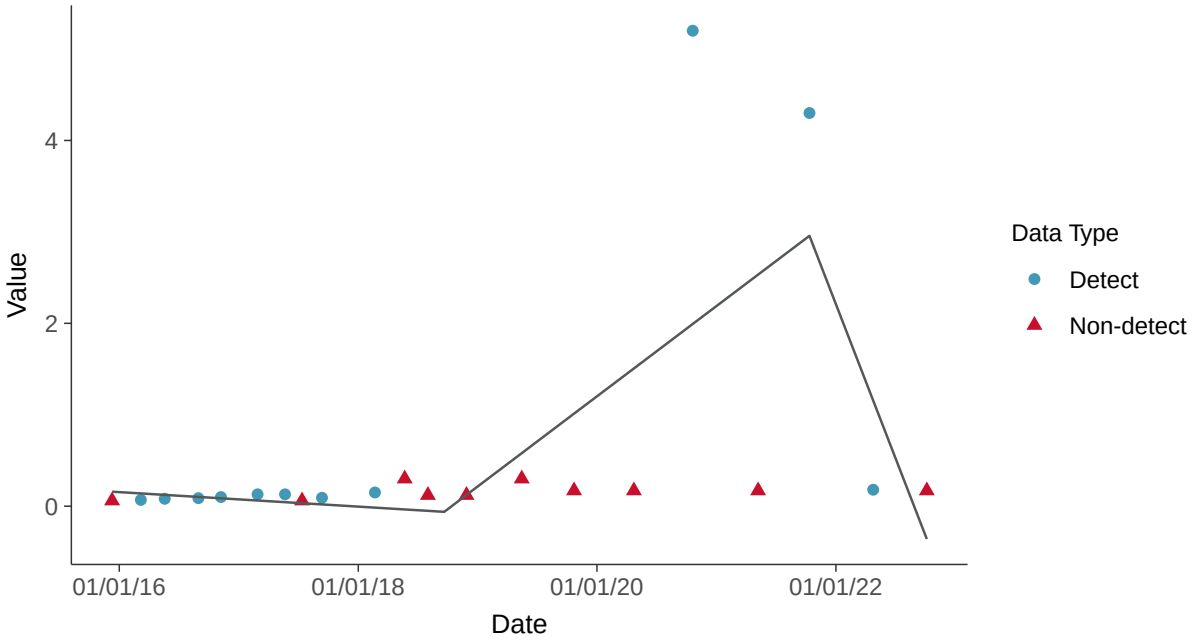
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-3 (mg/l)



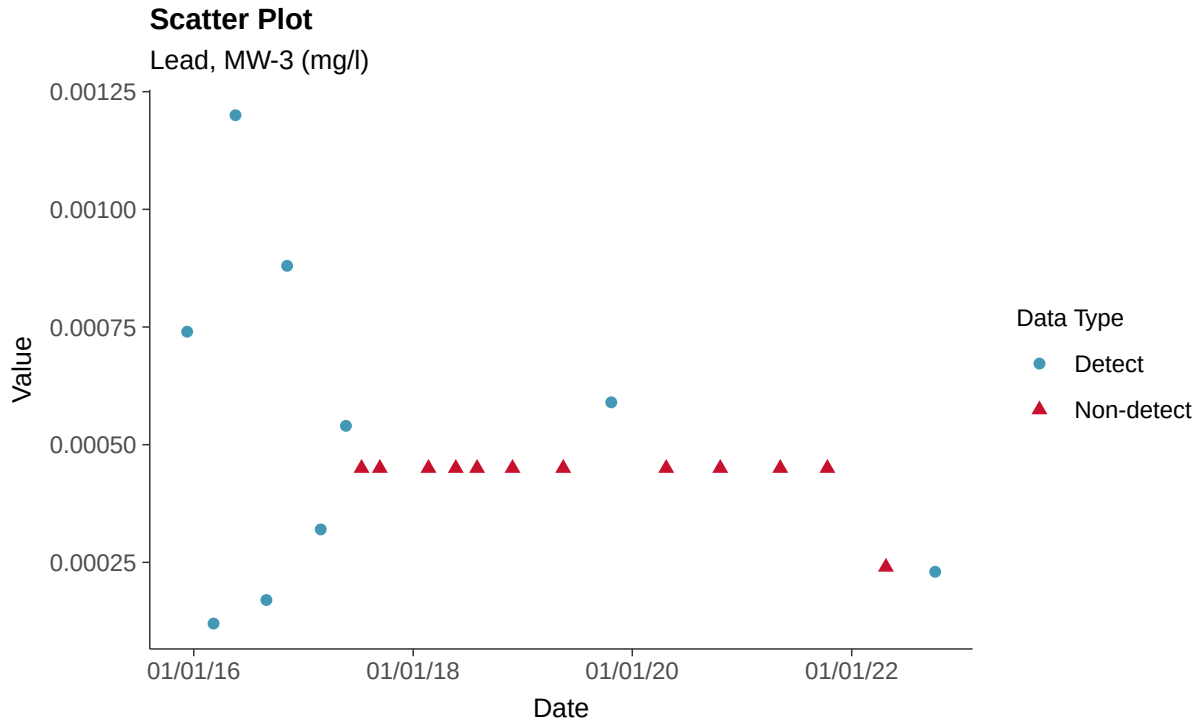
Trend Regression: Piecewise Linear-Linear-Linear

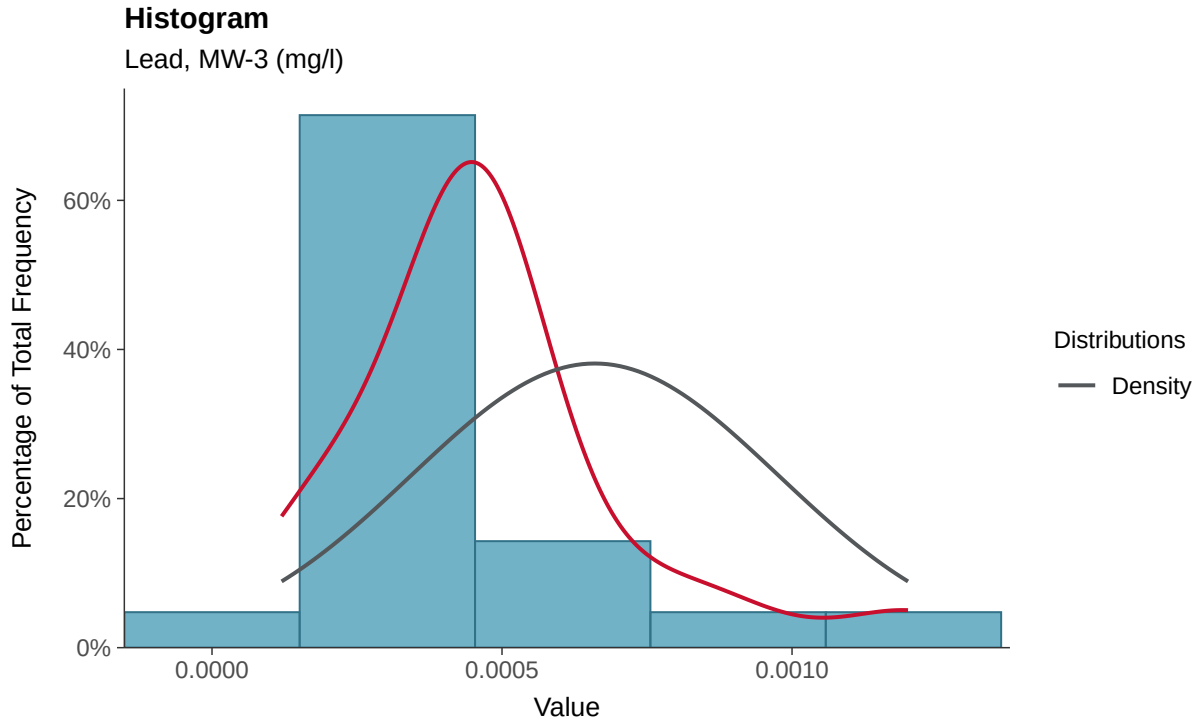
Fluoride (App IV), MW-3 (mg/l)



Appendix IV: Lead, MW-3

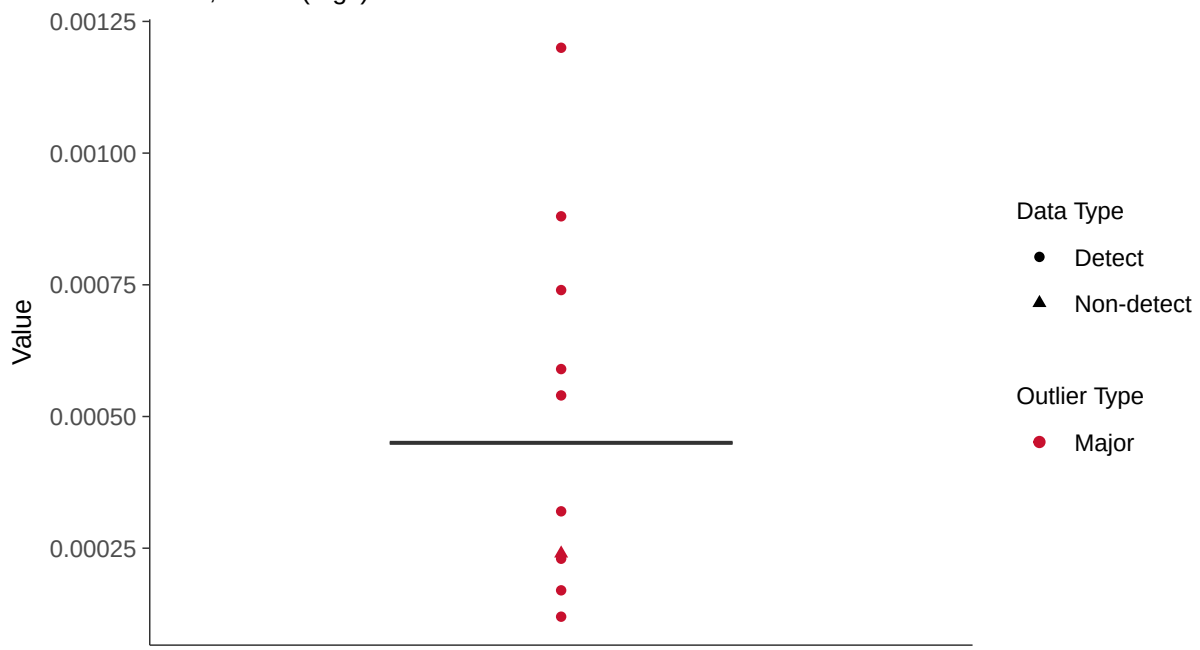
ID: 22_2_117





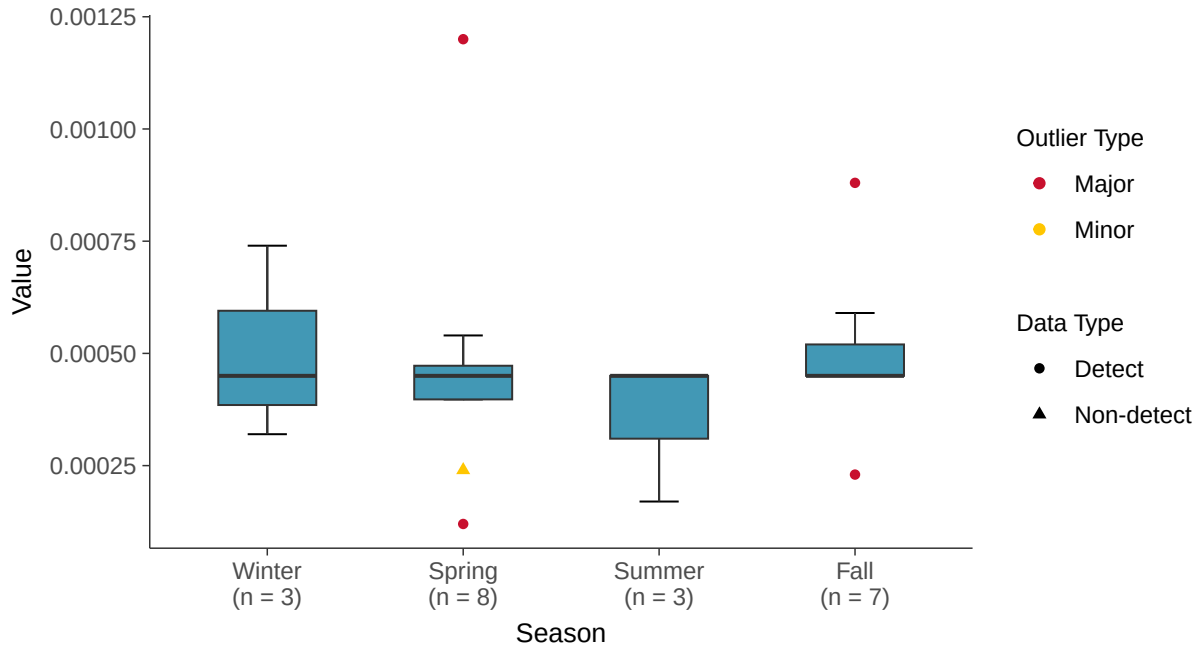
Boxplot

Lead, MW-3 (mg/l)



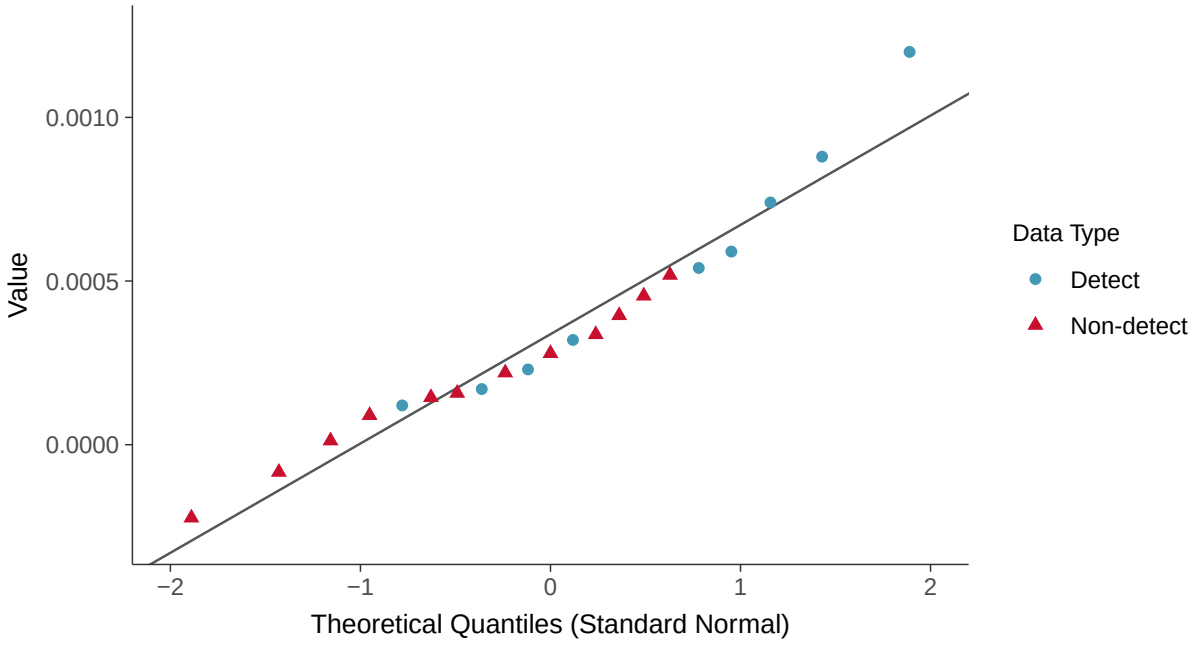
Boxplot by Season

Lead, MW-3 (mg/l)



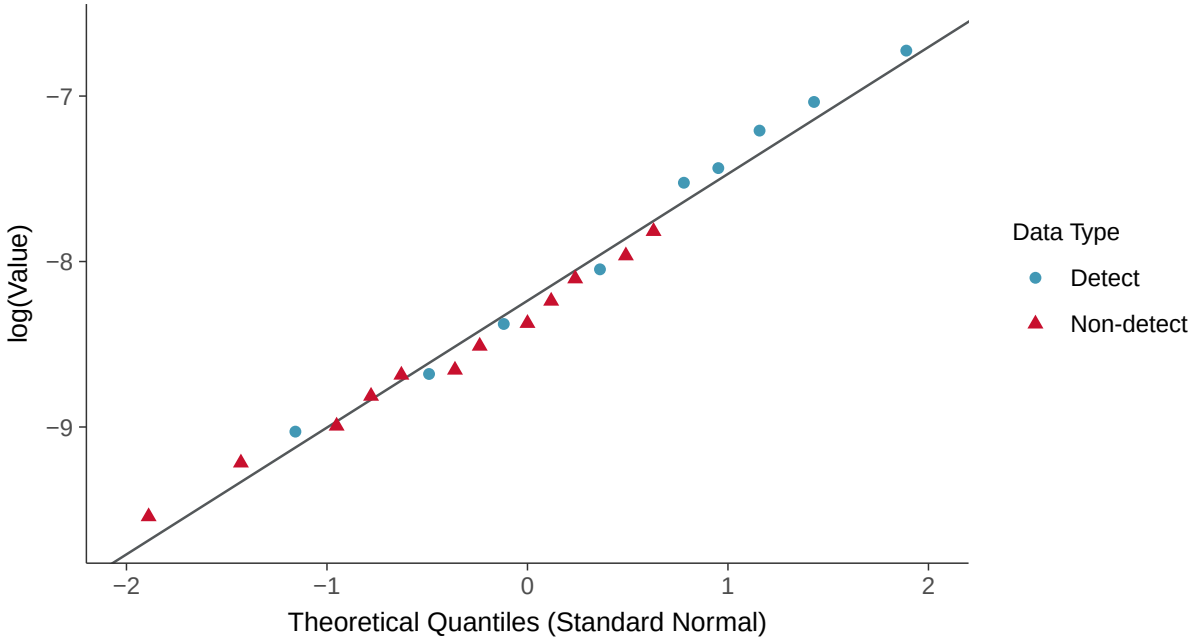
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-3 (mg/l)



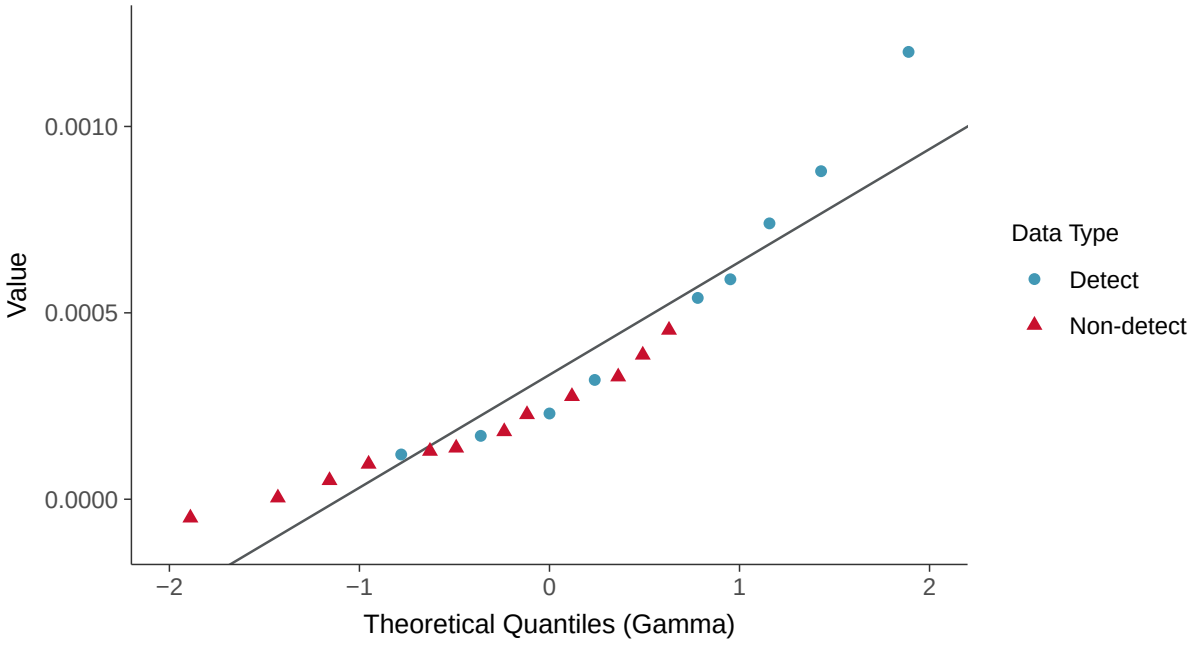
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-3 (mg/l)



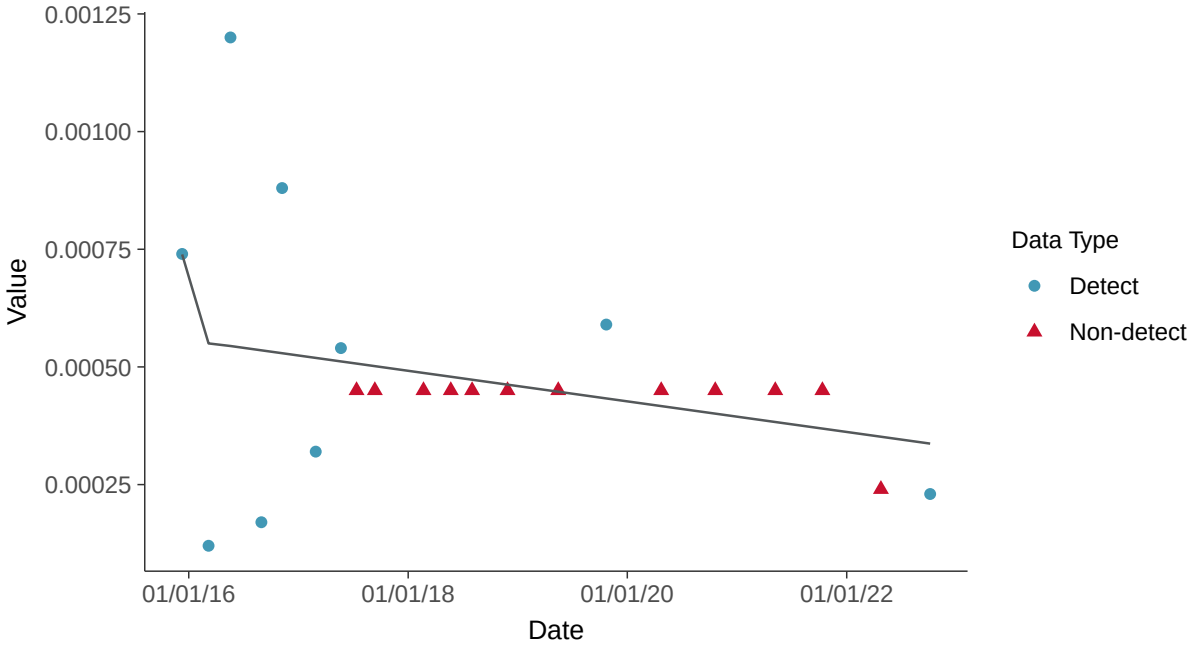
Gamma Q-Q plot using ROS Imputed Estimates

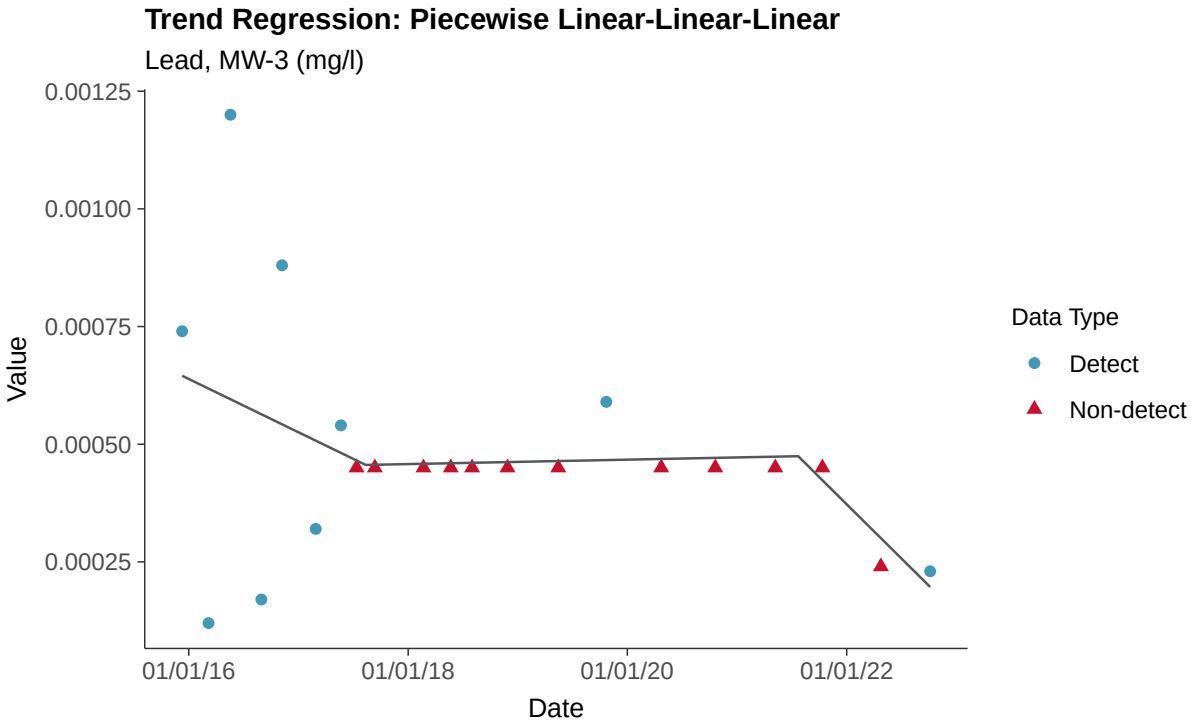
Lead, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear

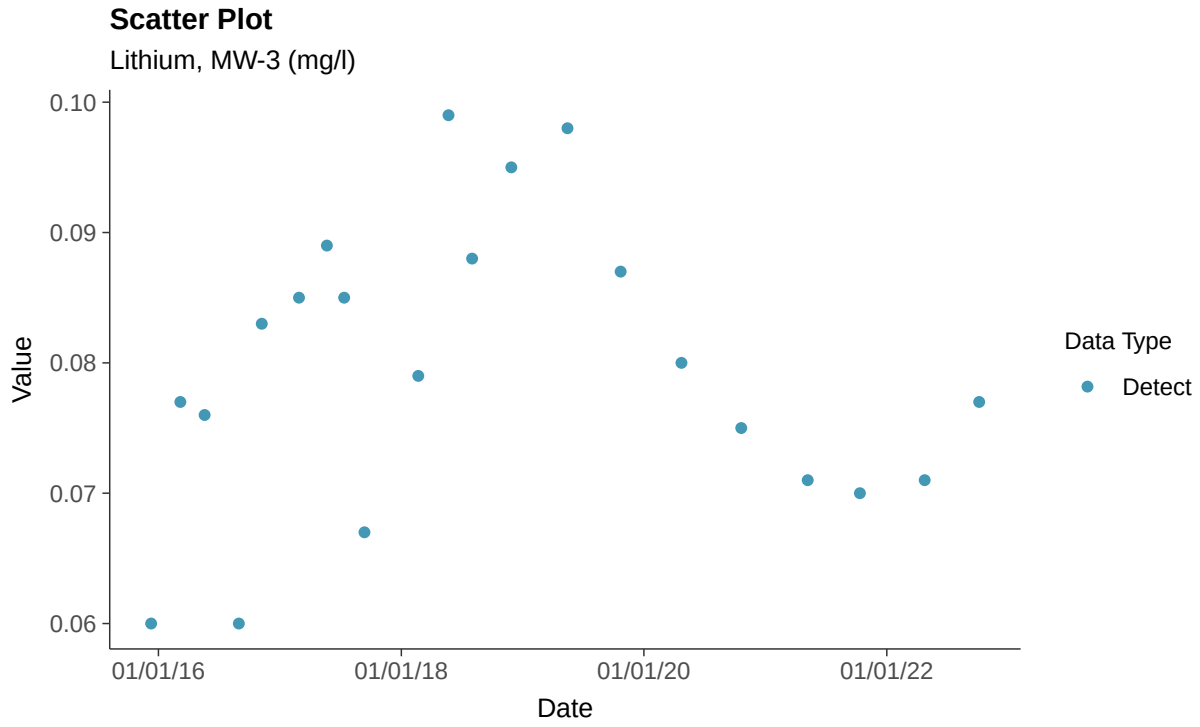
Lead, MW-3 (mg/l)

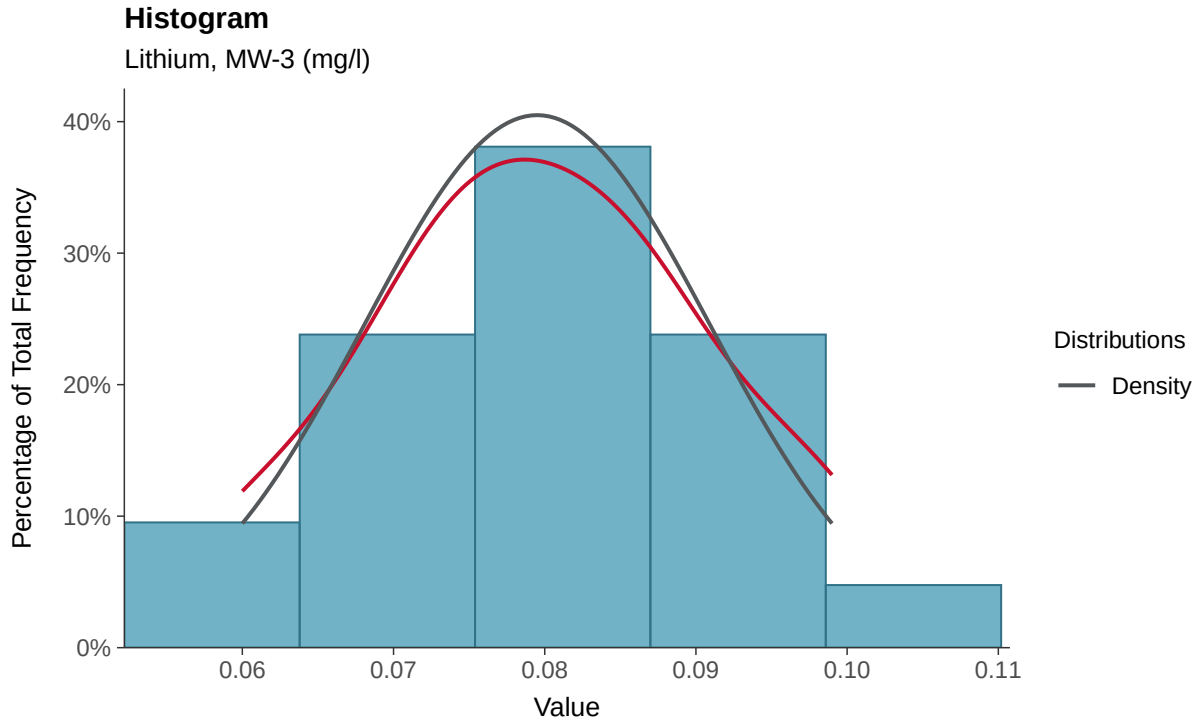



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-3 (mg/l)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-3

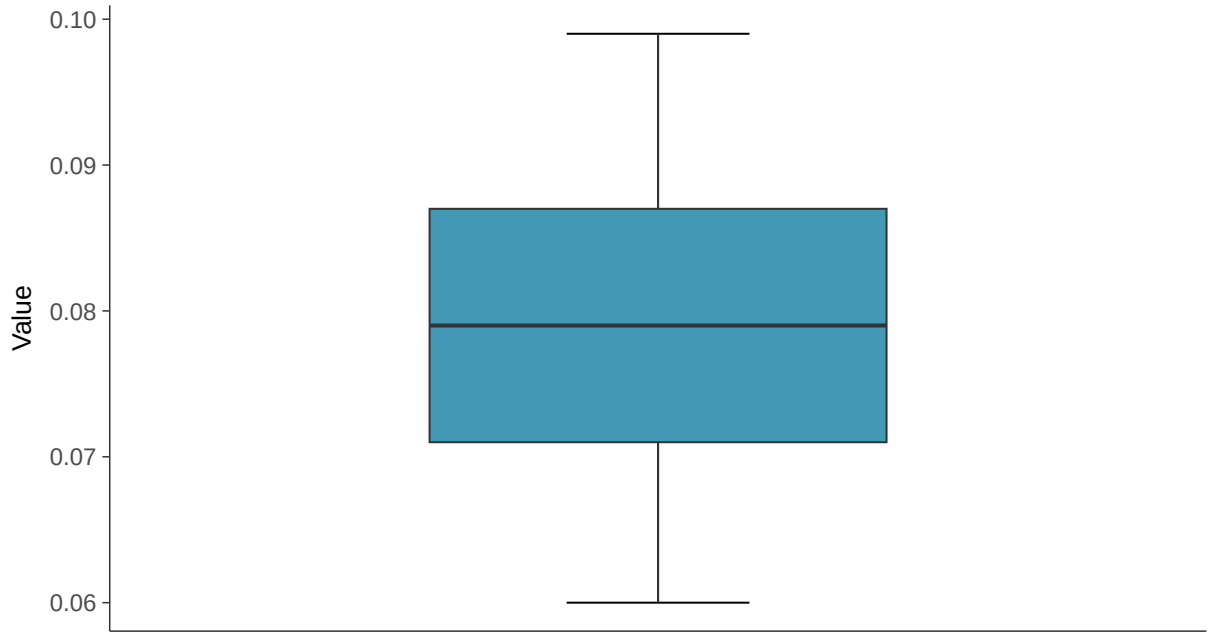
ID: 22_2_118





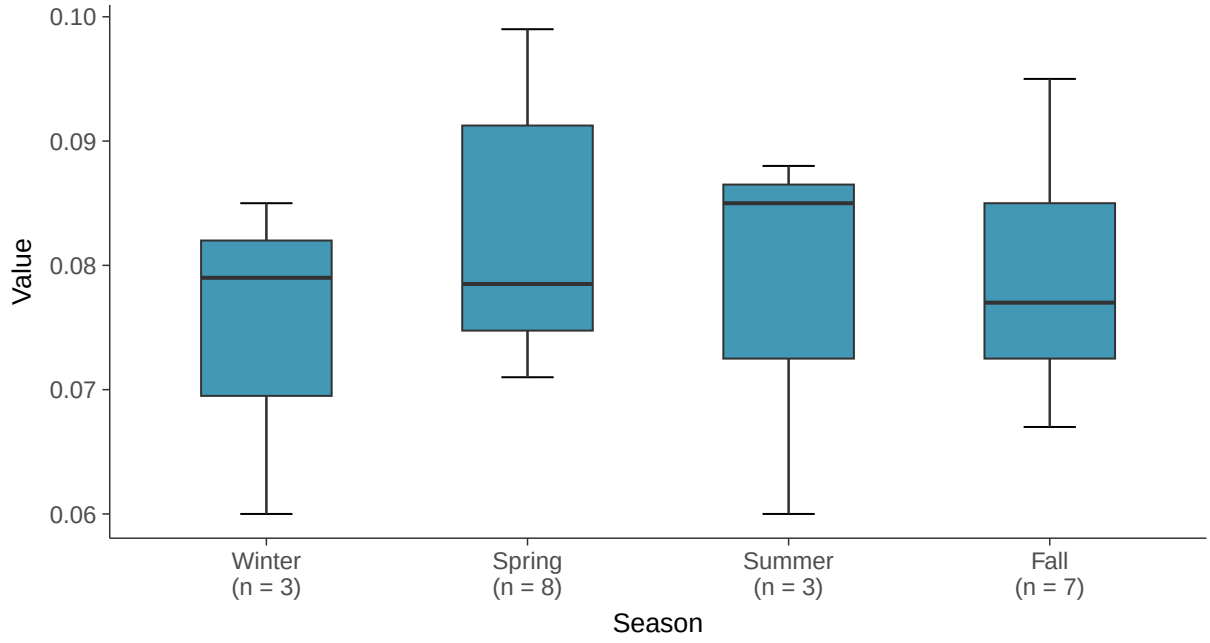
Boxplot

Lithium, MW-3 (mg/l)



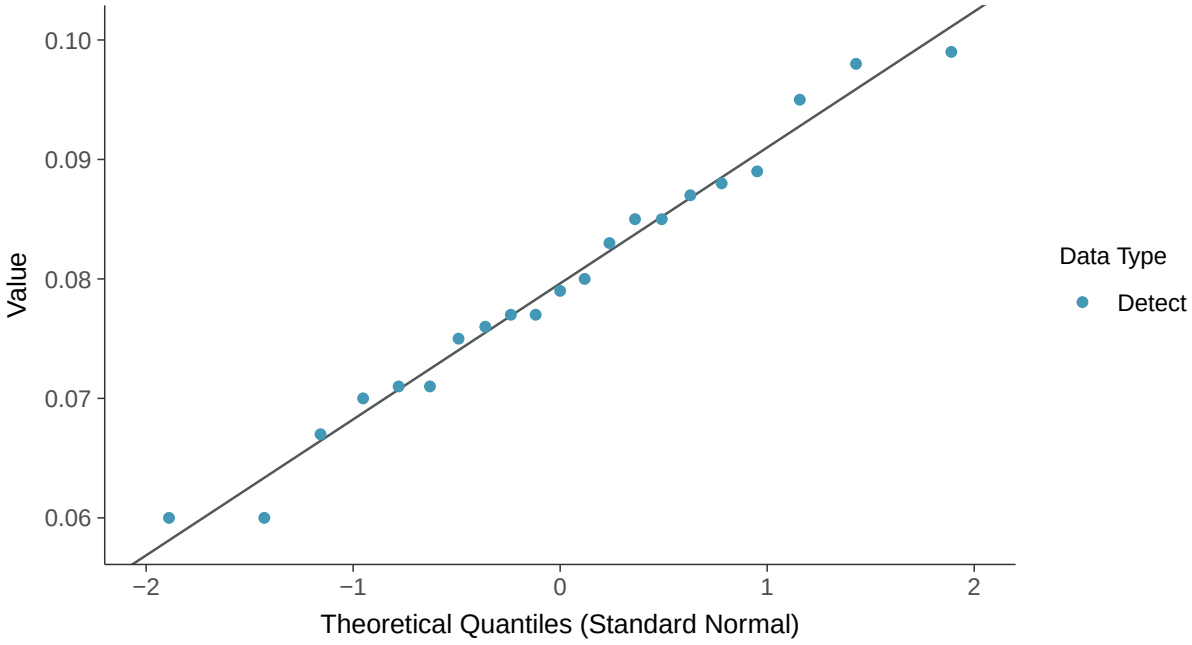
Boxplot by Season

Lithium, MW-3 (mg/l)



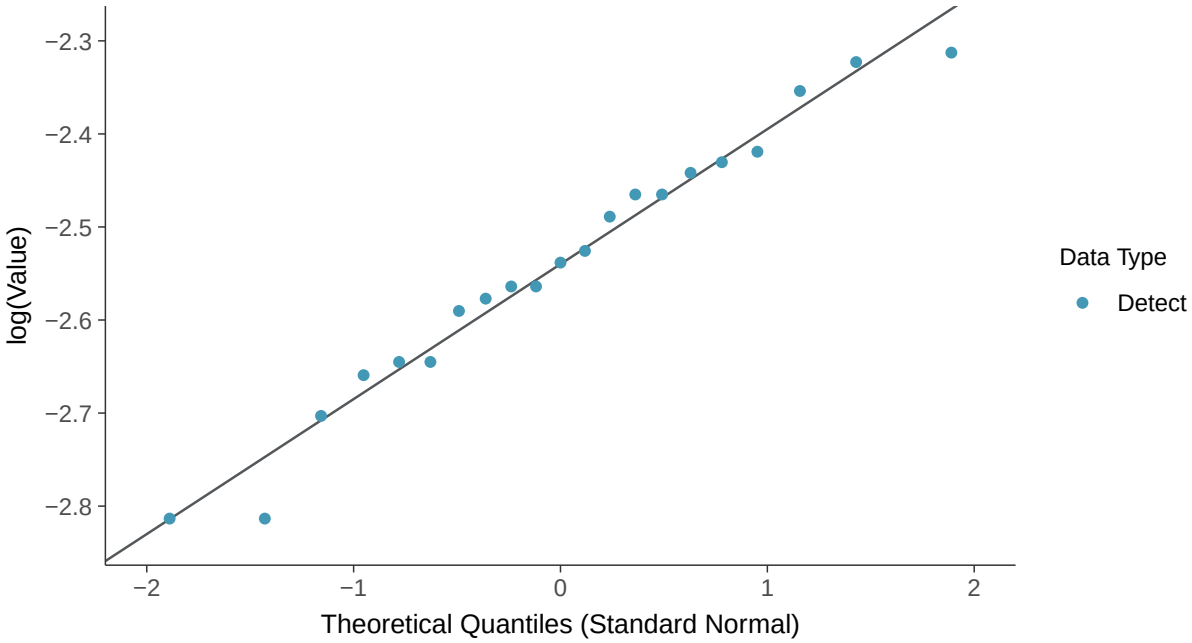
Normal Q-Q plot

Lithium, MW-3 (mg/l)



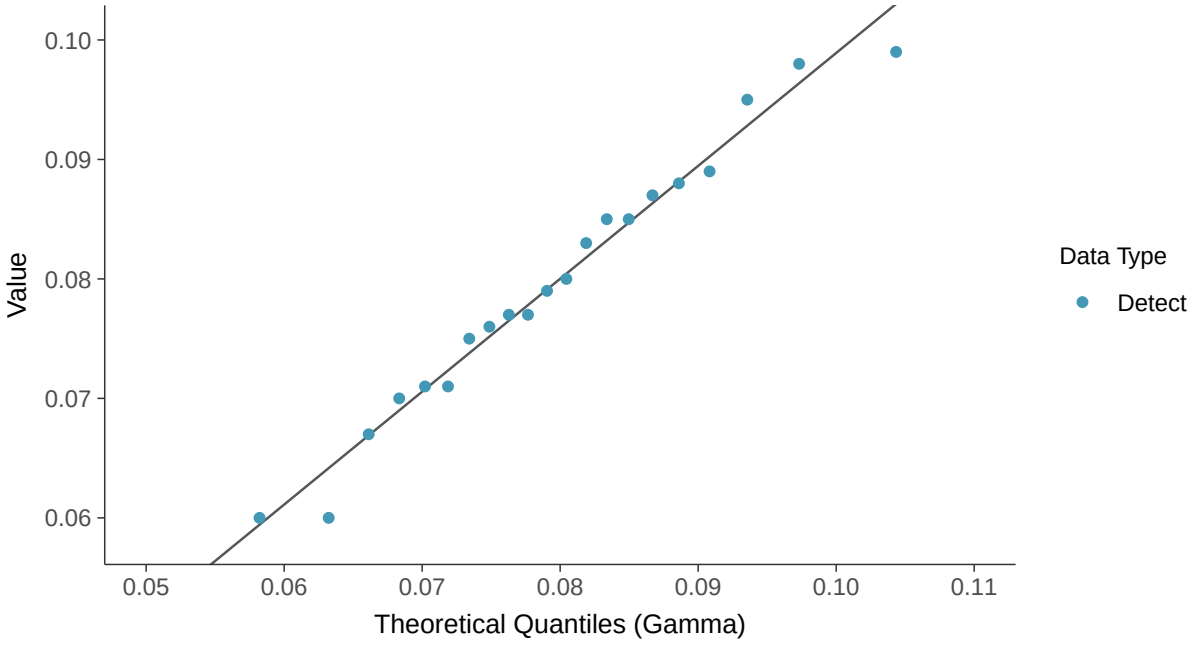
Lognormal Q-Q plot

Lithium, MW-3 (mg/l)



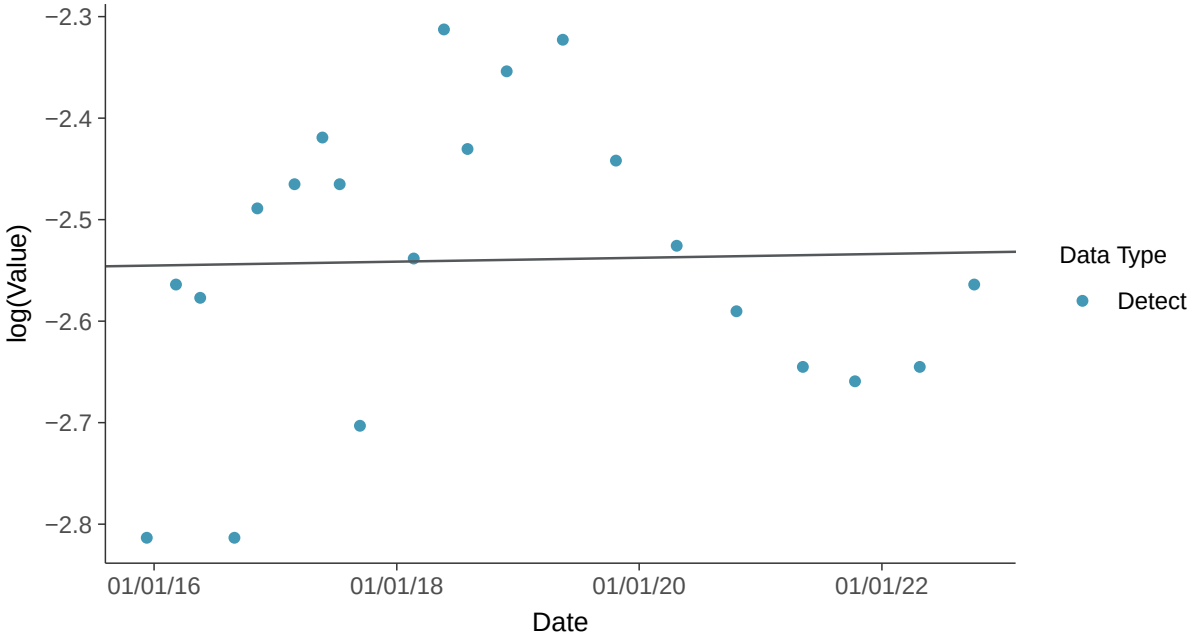
Gamma Q-Q plot

Lithium, MW-3 (mg/l)



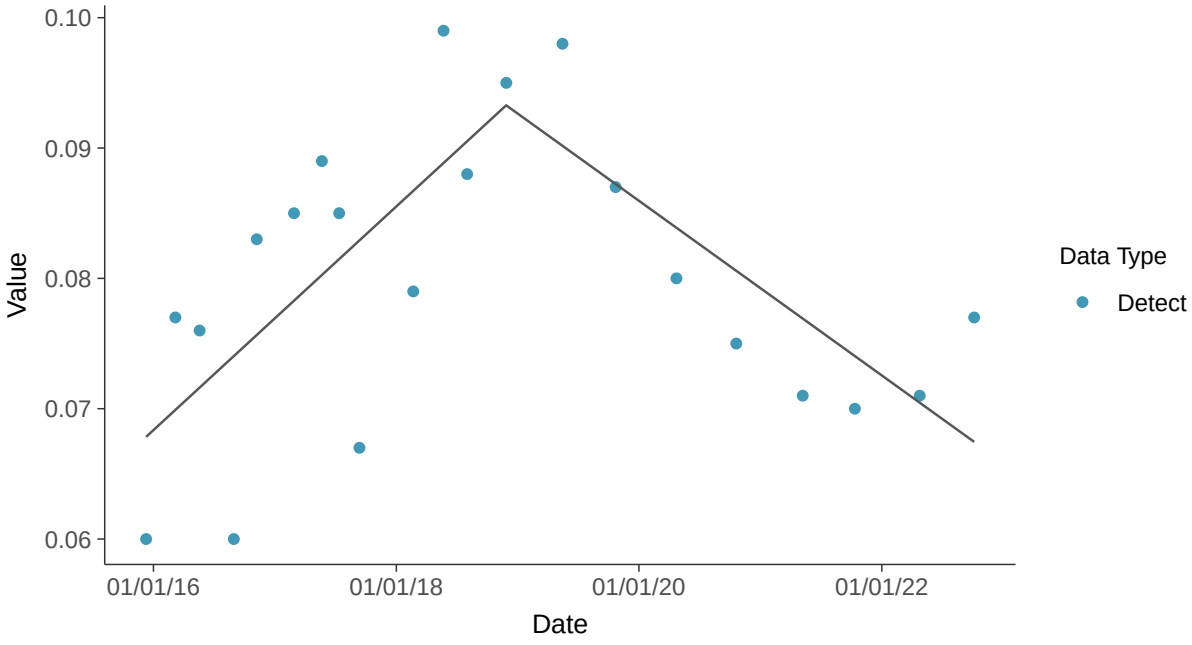
Trend Regression: Lognormal MLE

Lithium, MW-3 (mg/l)



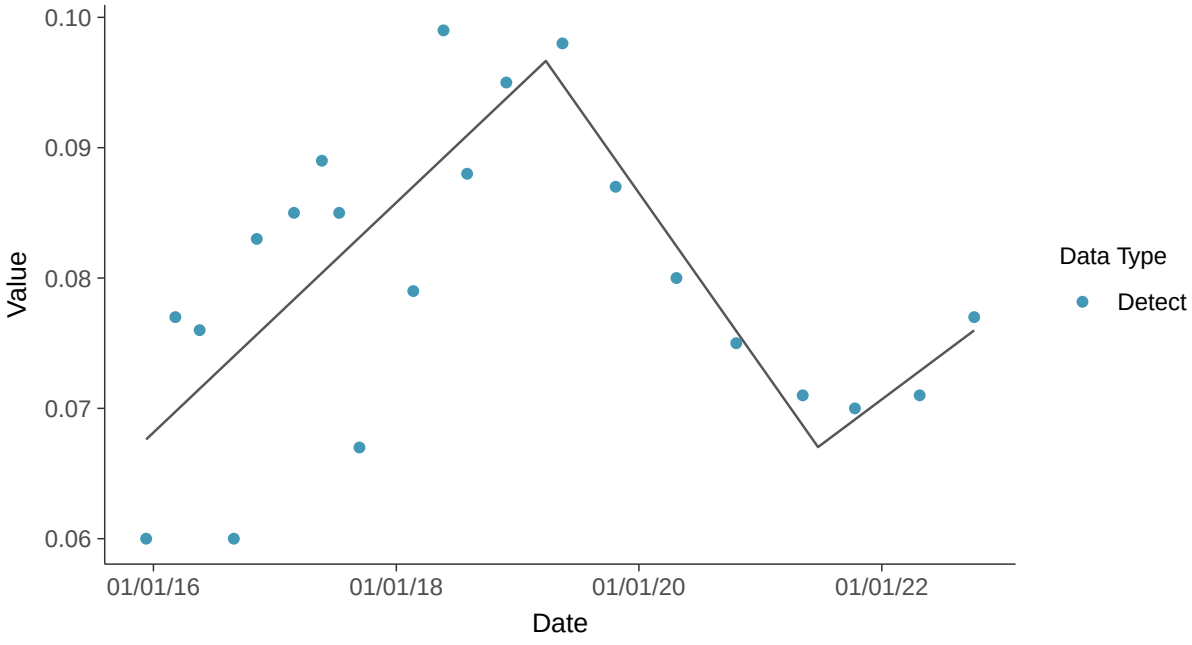
Trend Regression: Piecewise Linear-Linear

Lithium, MW-3 (mg/l)



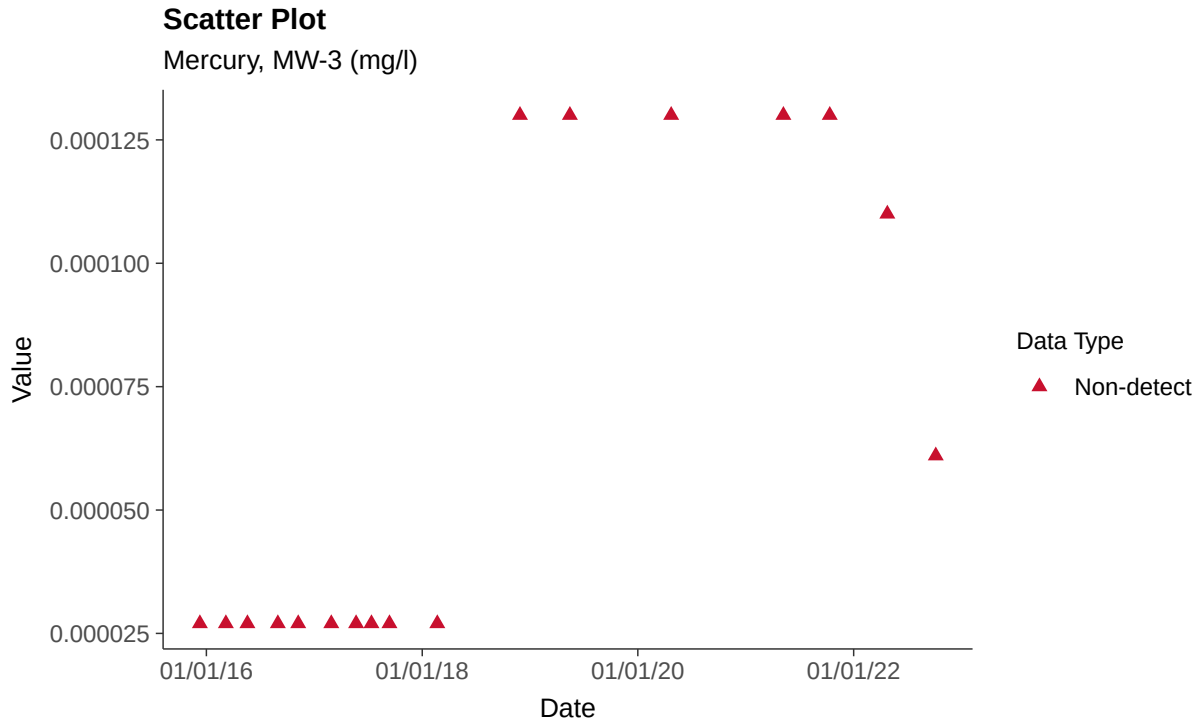
Trend Regression: Piecewise Linear-Linear-Linear

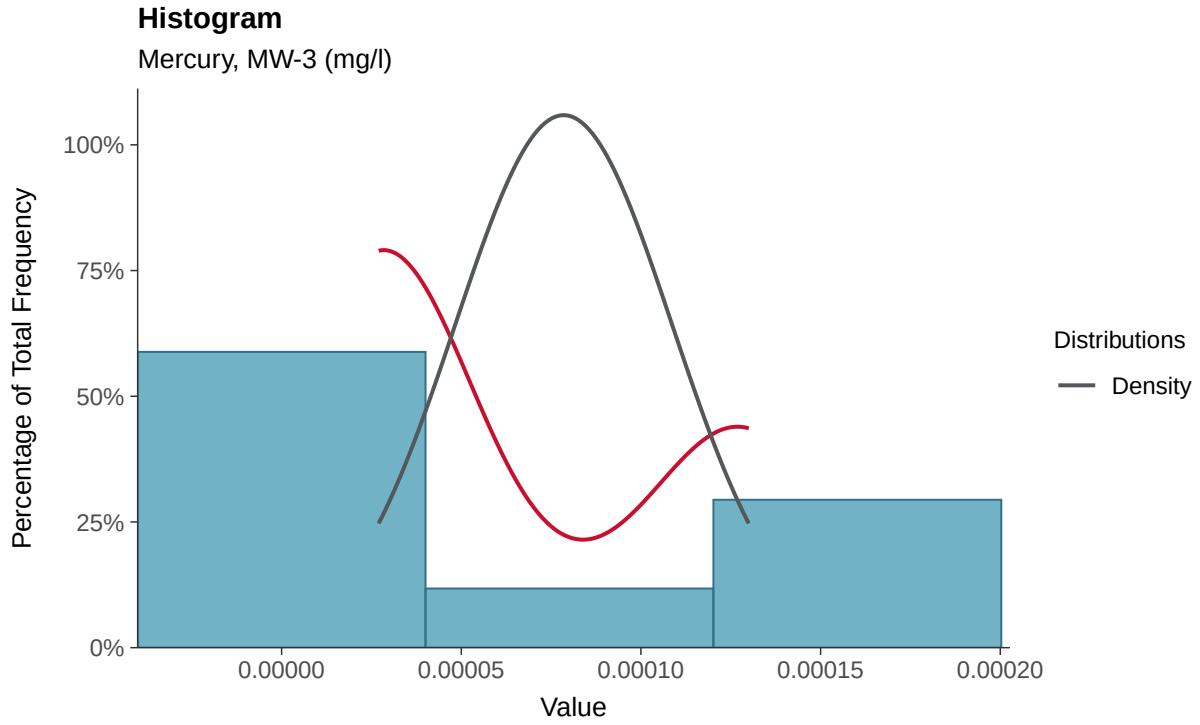
Lithium, MW-3 (mg/l)



Appendix IV: Mercury, MW-3

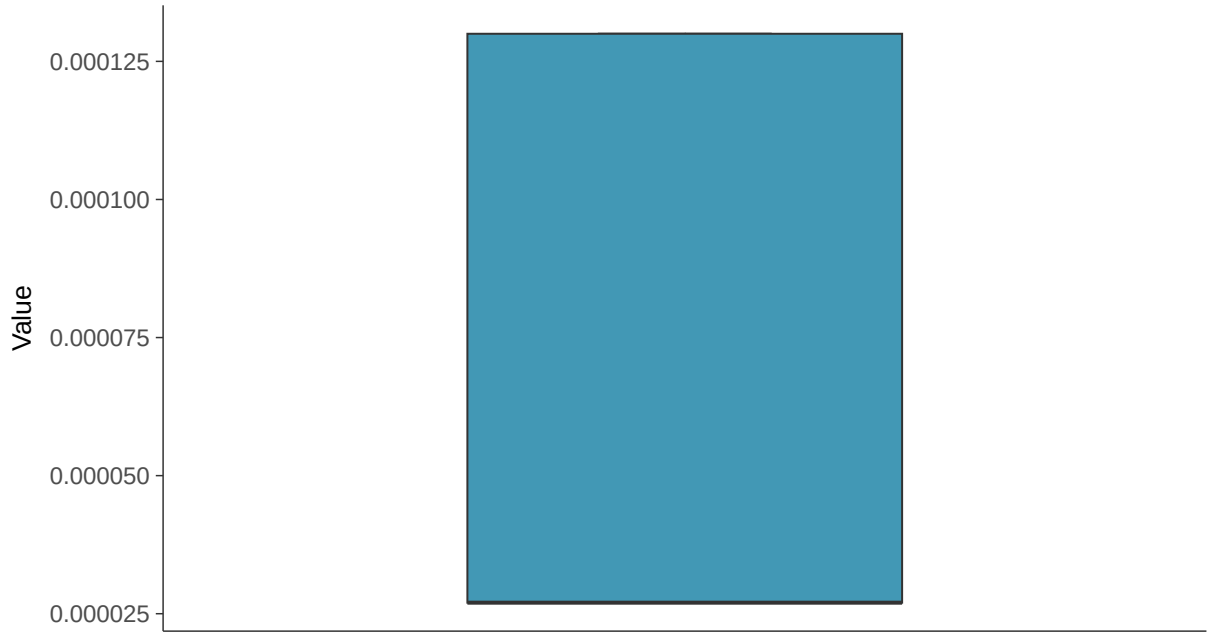
ID: 22_2_120





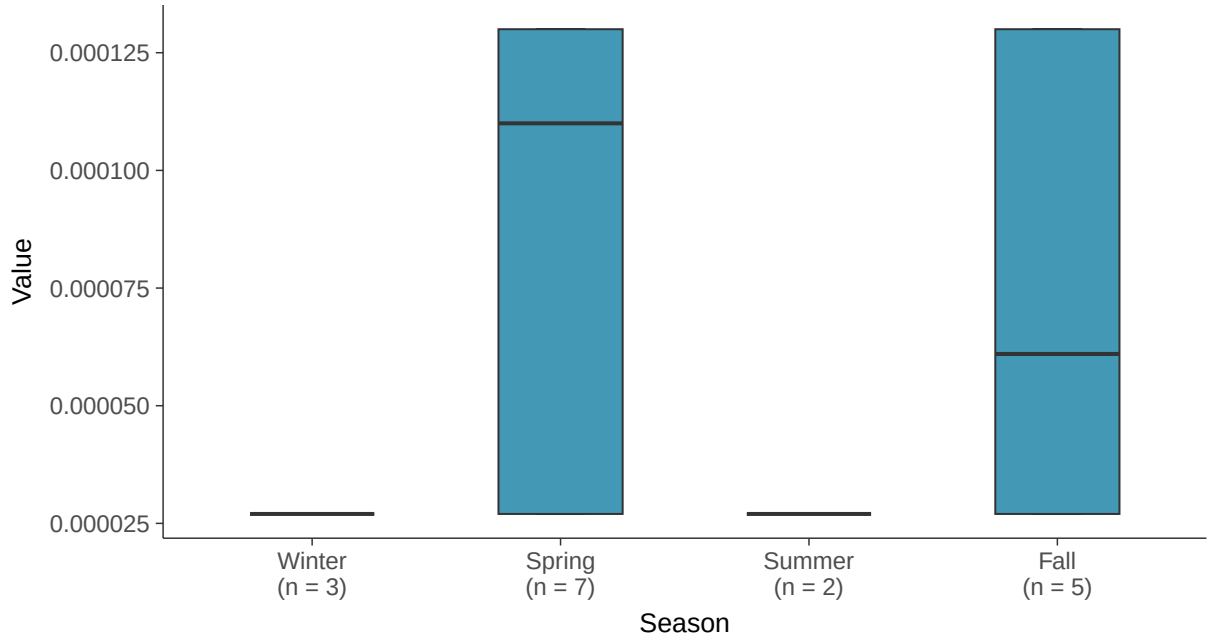
Boxplot

Mercury, MW-3 (mg/l)



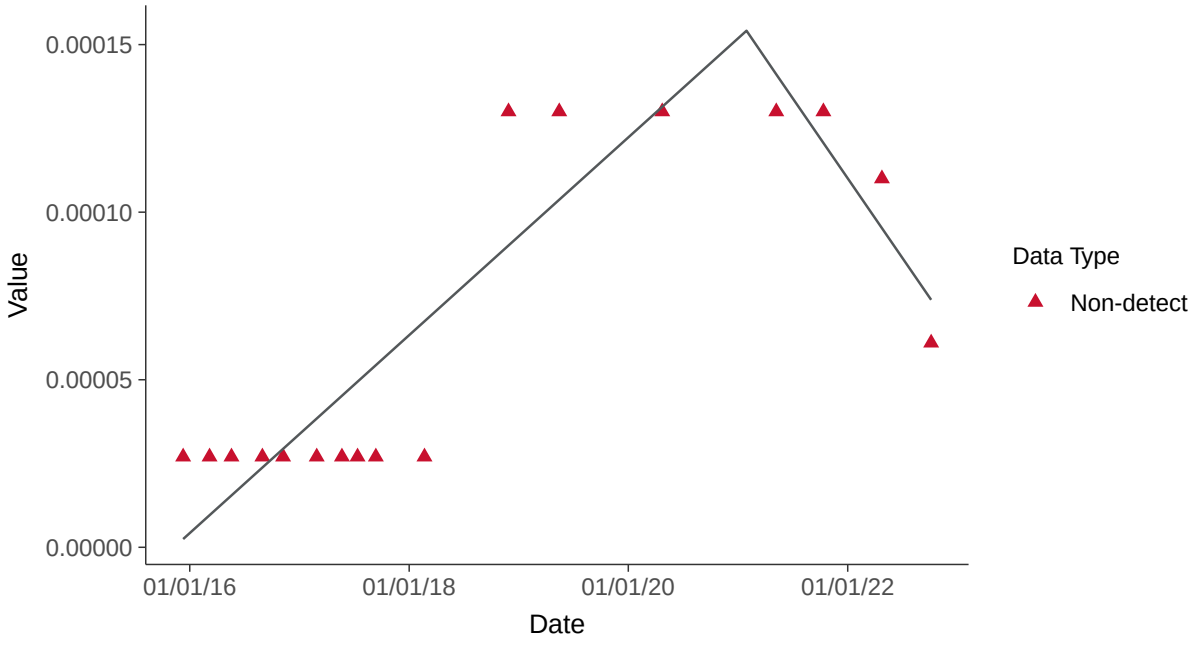
Boxplot by Season

Mercury, MW-3 (mg/l)



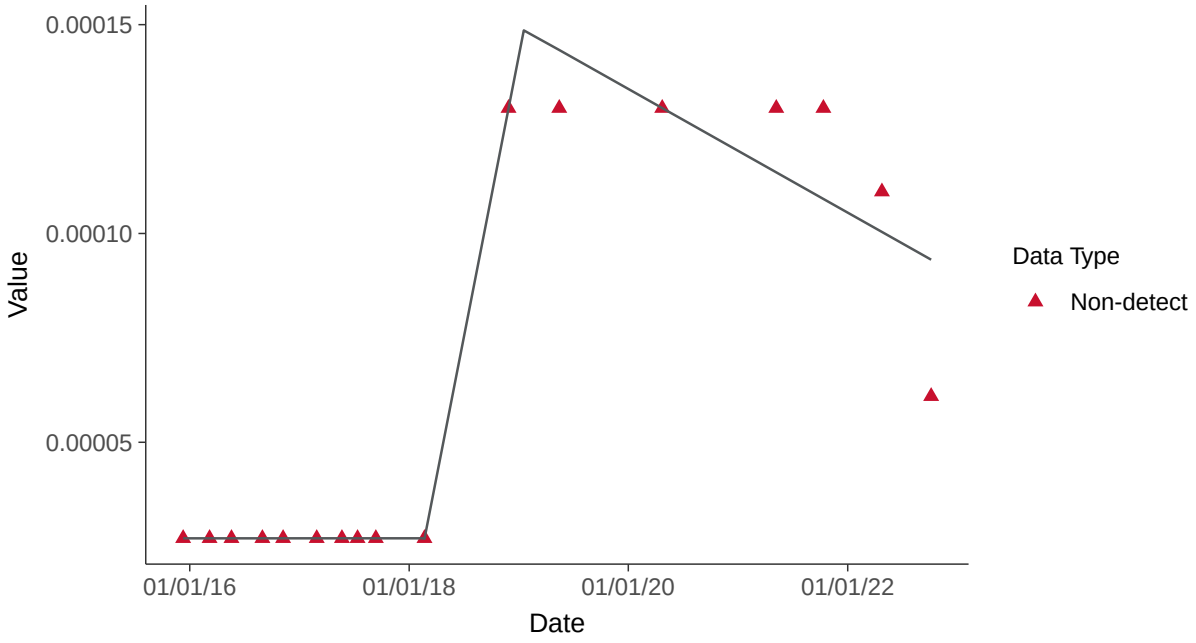
Trend Regression: Piecewise Linear-Linear

Mercury, MW-3 (mg/l)



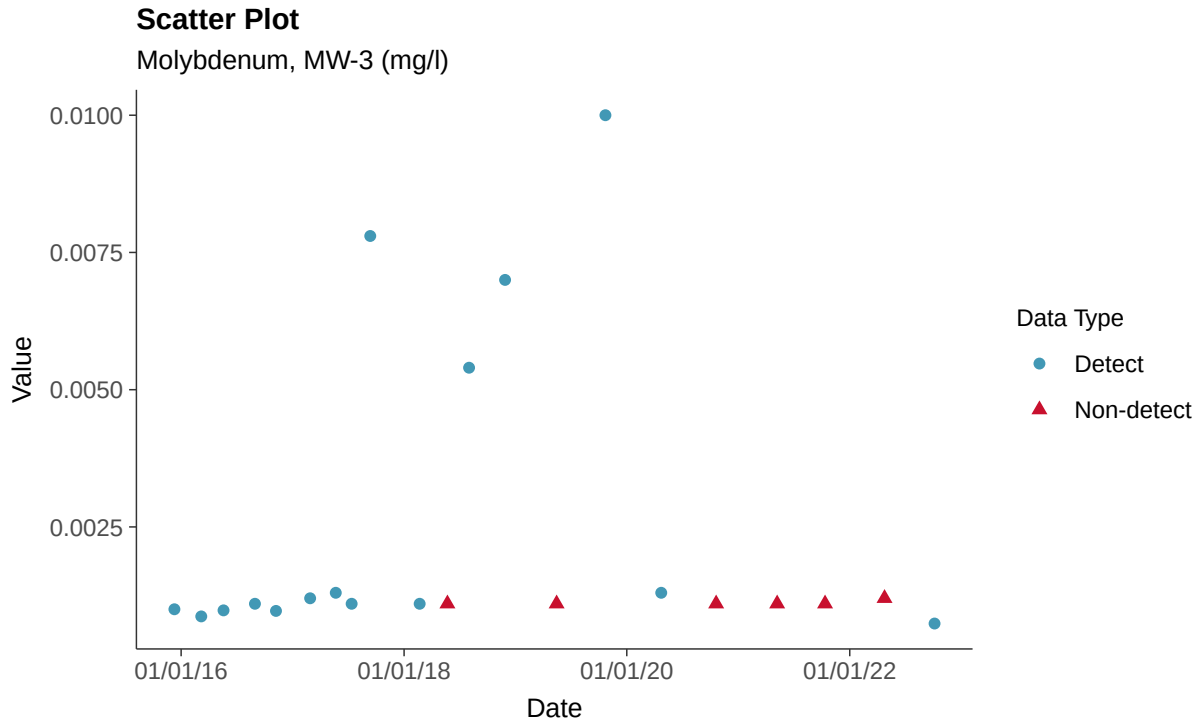
Trend Regression: Piecewise Linear-Linear-Linear

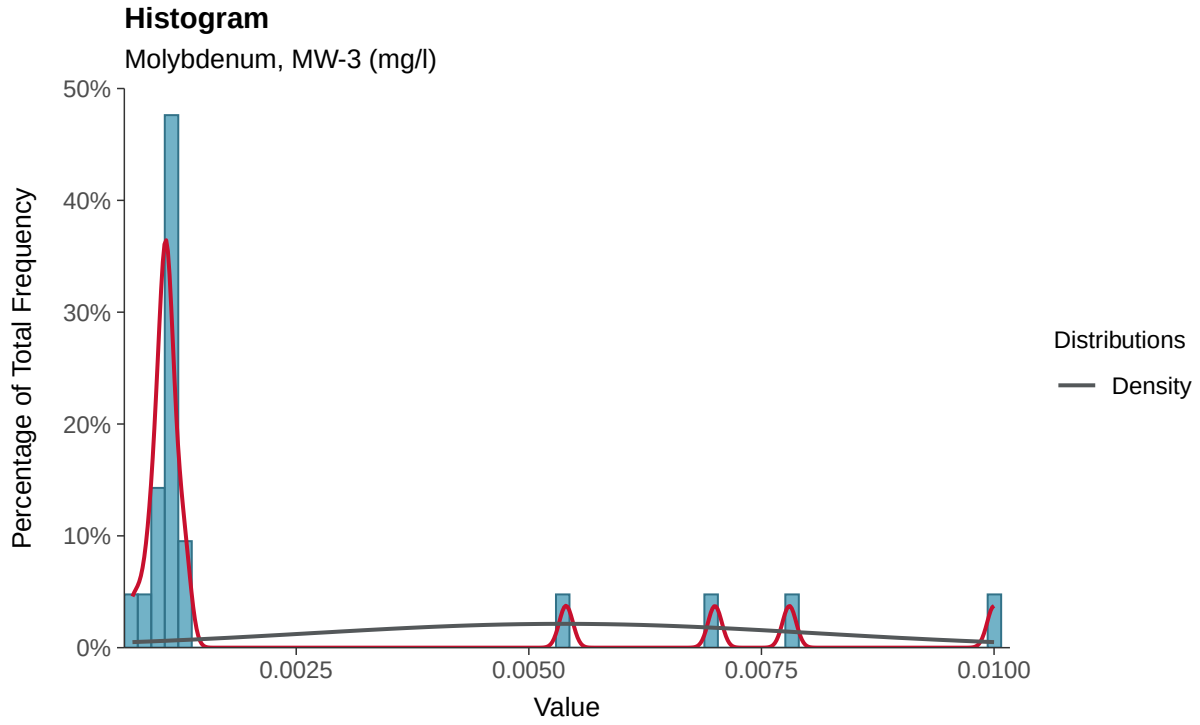
Mercury, MW-3 (mg/l)



Appendix IV: Molybdenum, MW-3

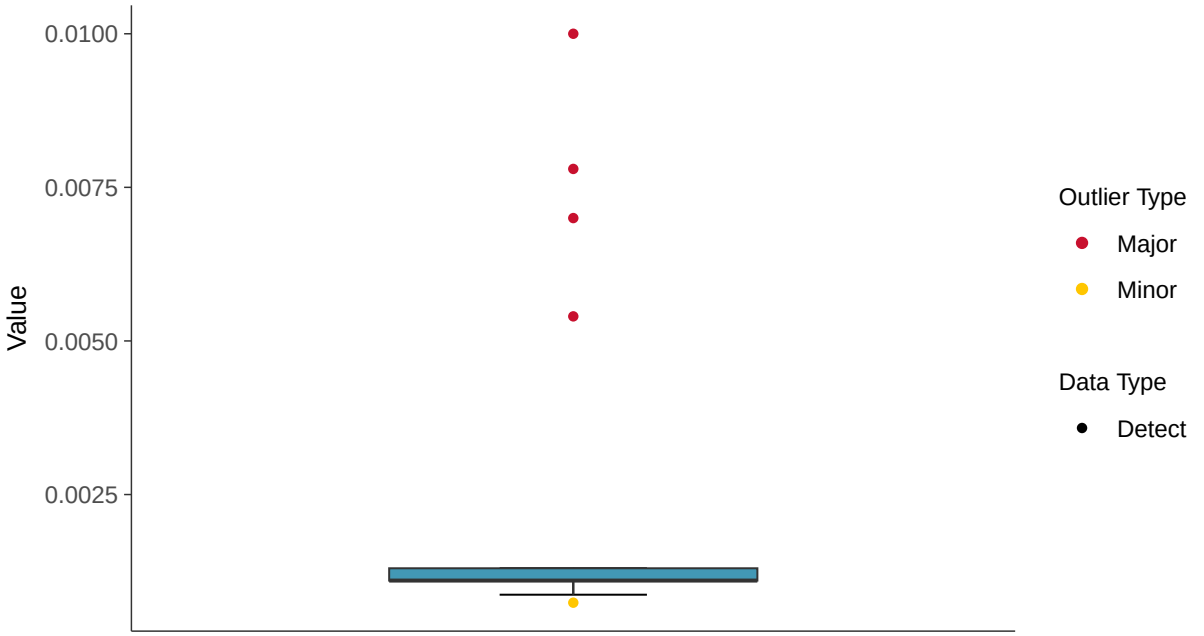
ID: 22_2_121





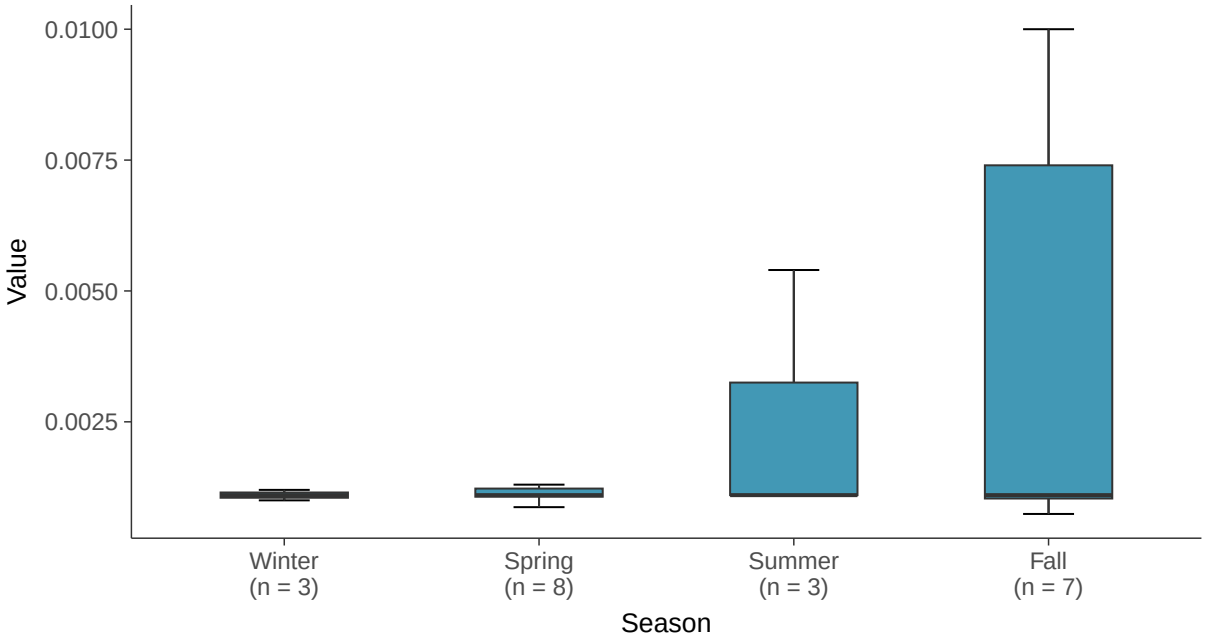
Boxplot

Molybdenum, MW-3 (mg/l)



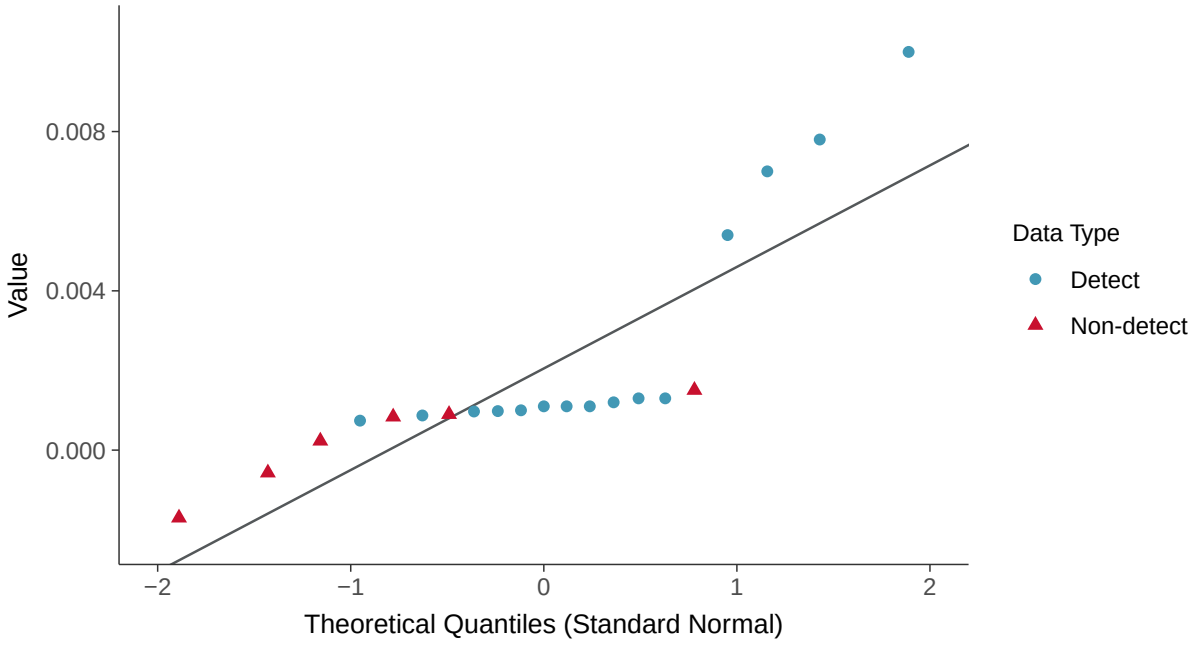
Boxplot by Season

Molybdenum, MW-3 (mg/l)



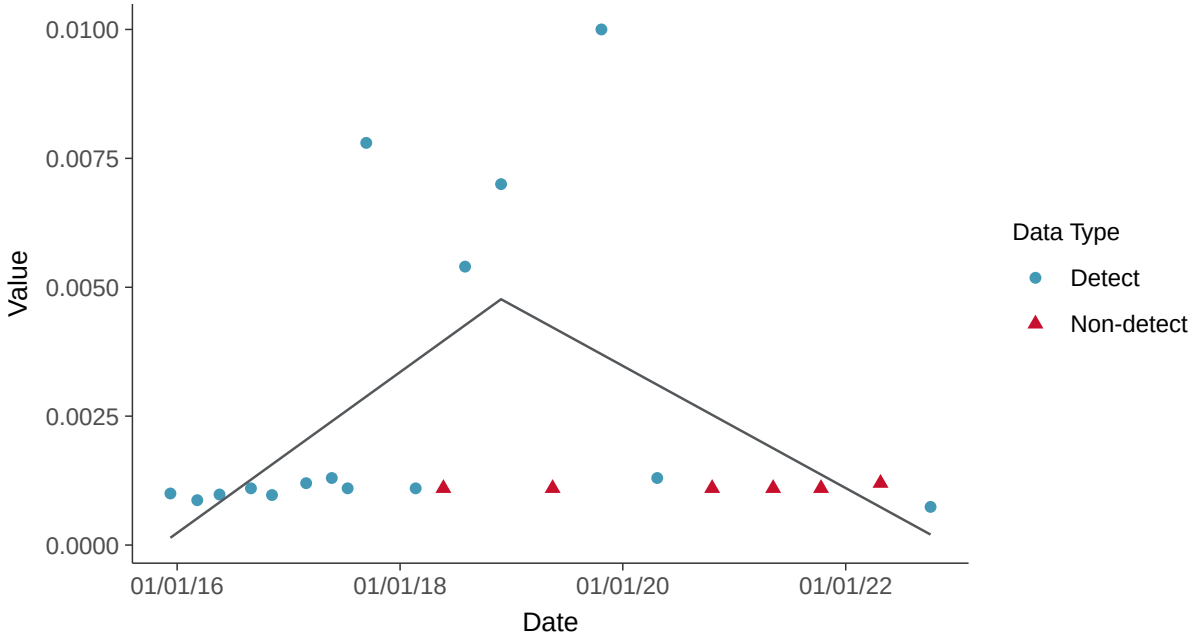
Normal Q-Q plot using ROS Imputed Estimates

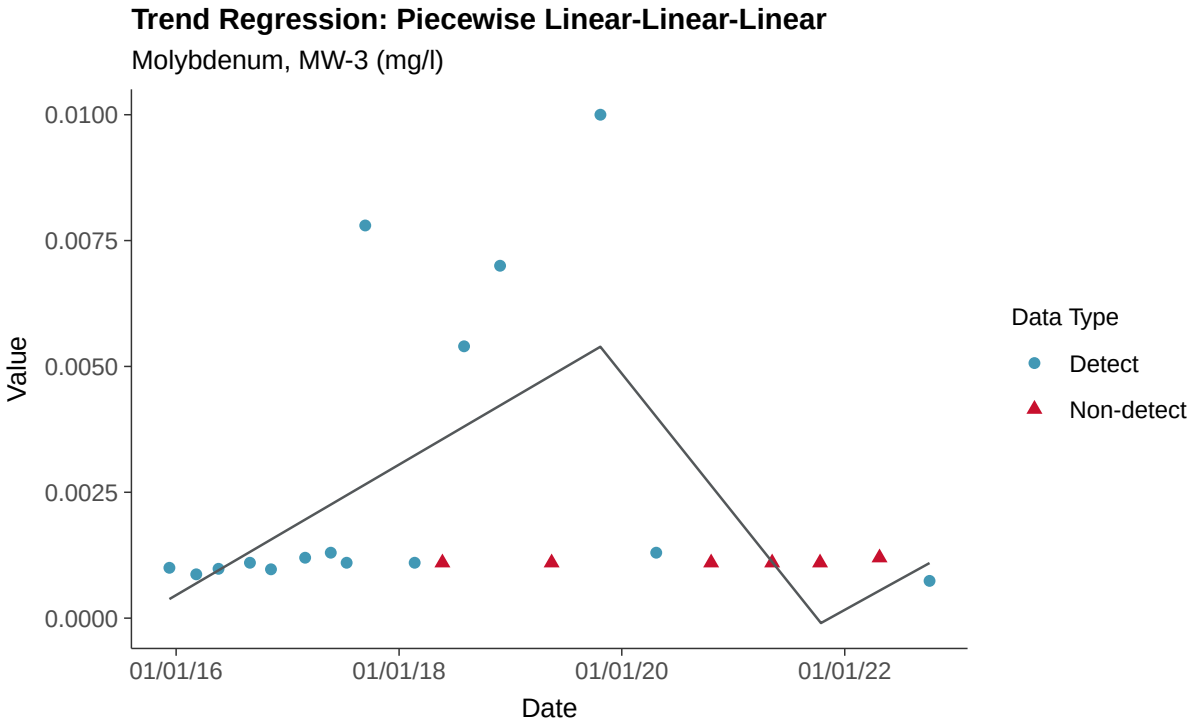
Molybdenum, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear

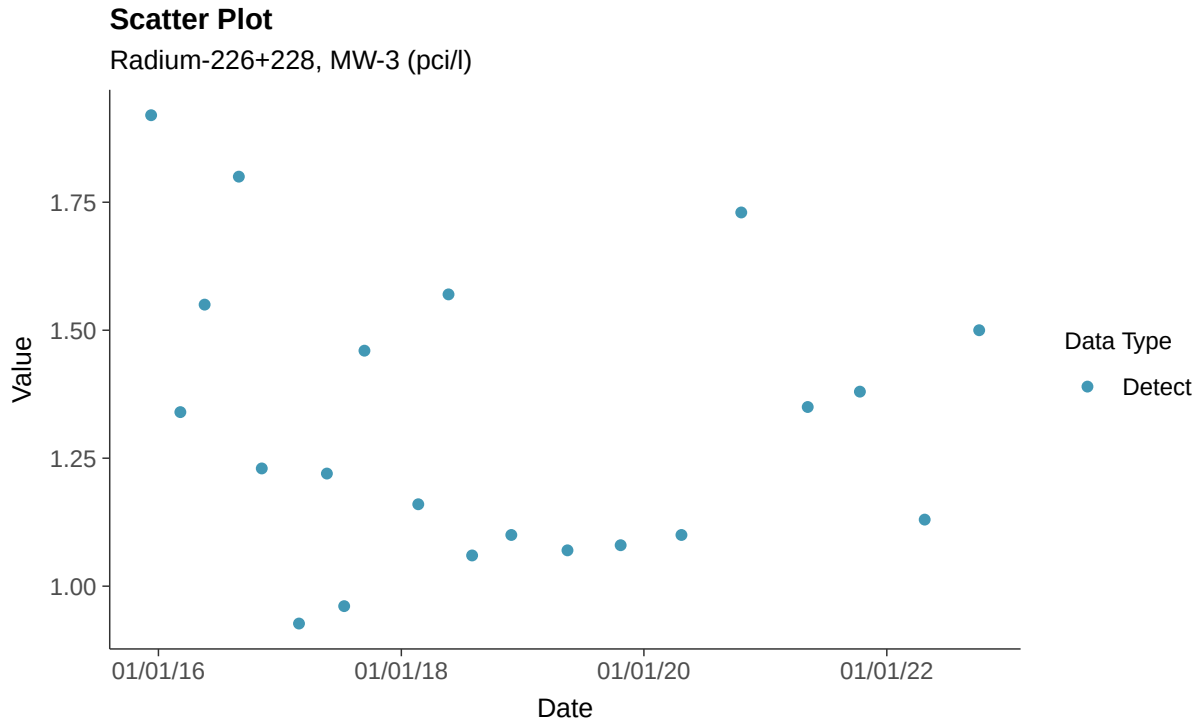
Molybdenum, MW-3 (mg/l)

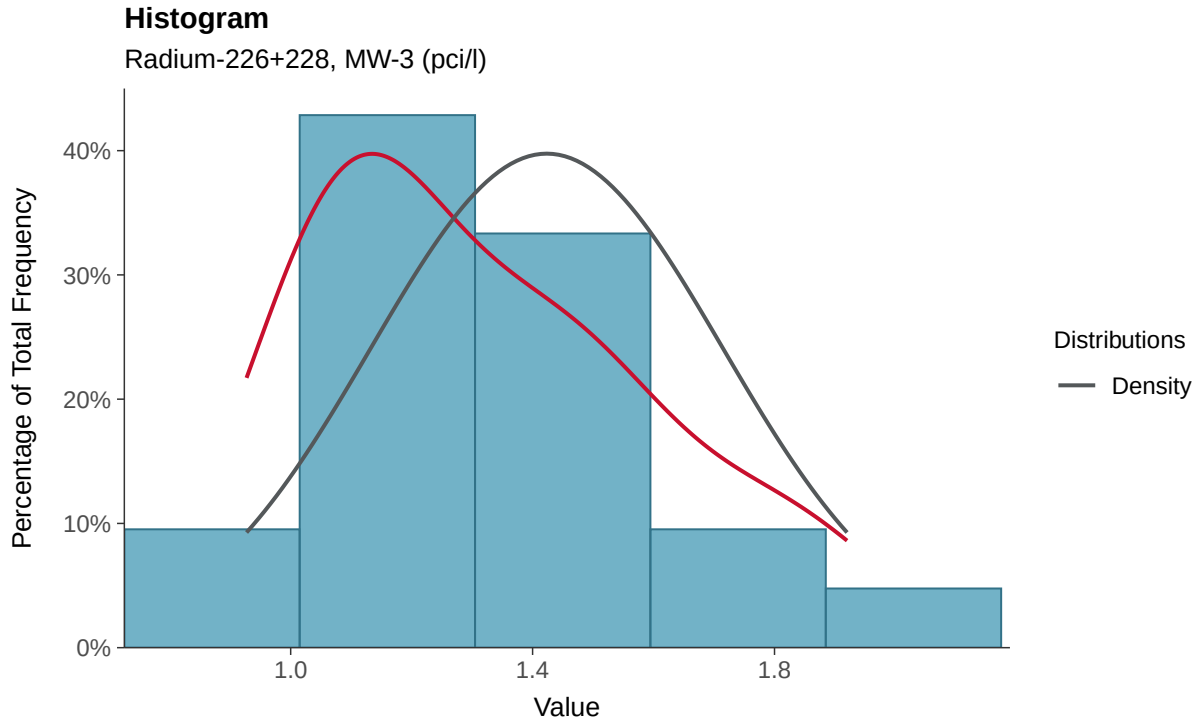



Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-3 (mg/l)
Value
0.0100
0.0075
0.0050
0.0025
0.0000
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Radium-226+228, MW-3

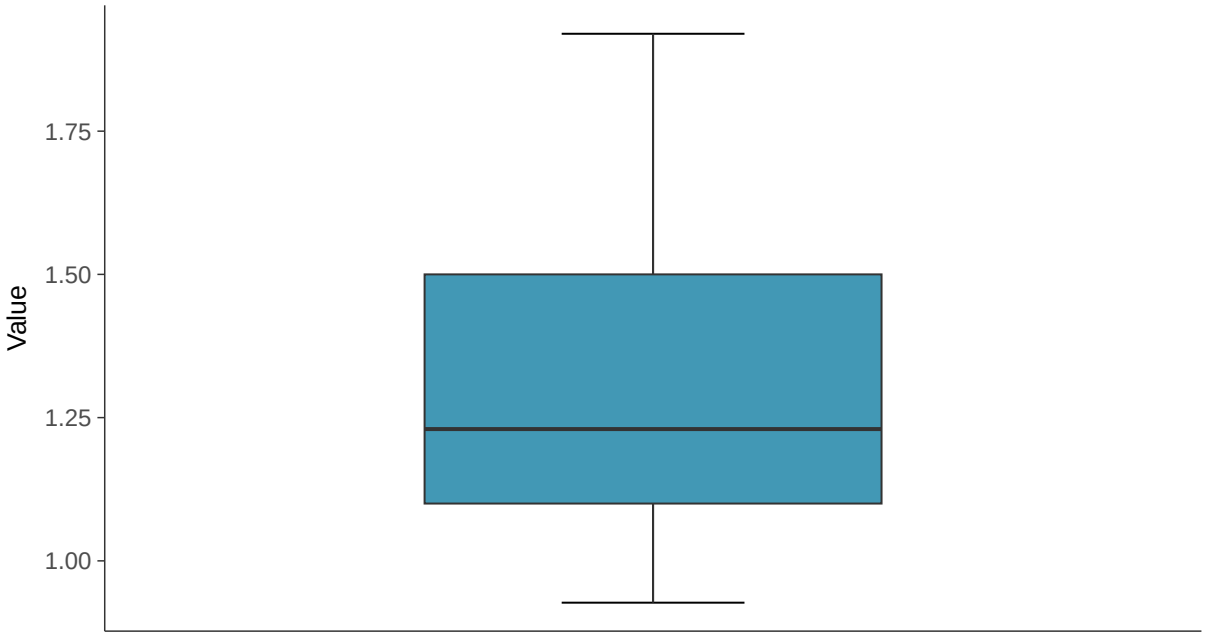
ID: 22_2_127





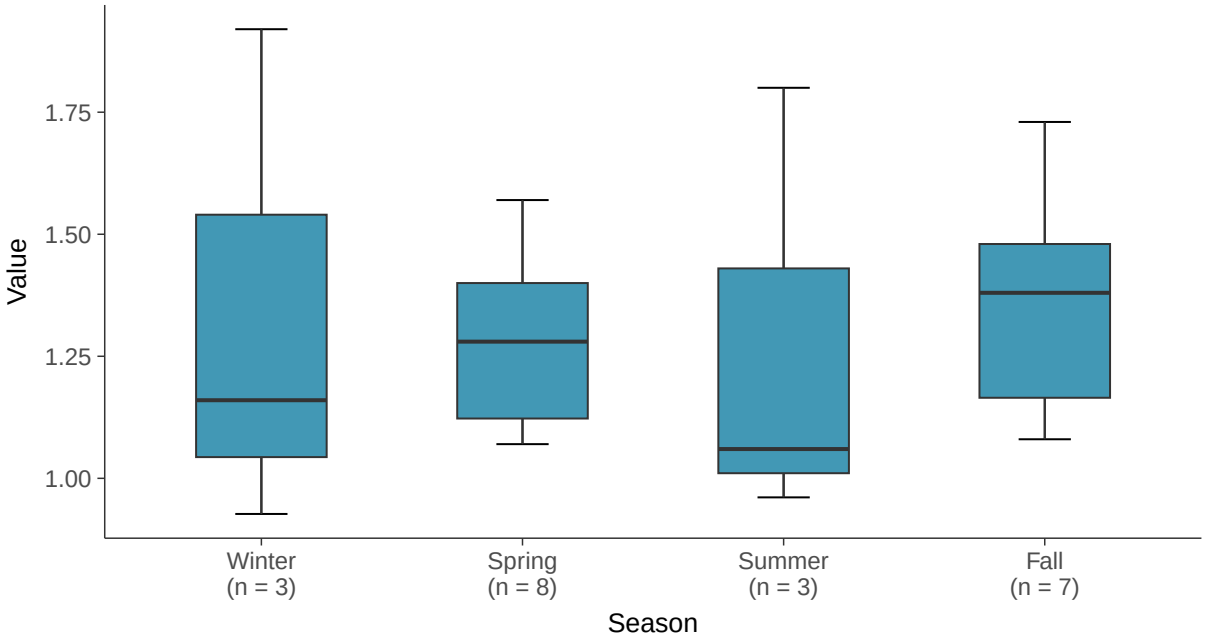
Boxplot

Radium-226+228, MW-3 (pci/l)



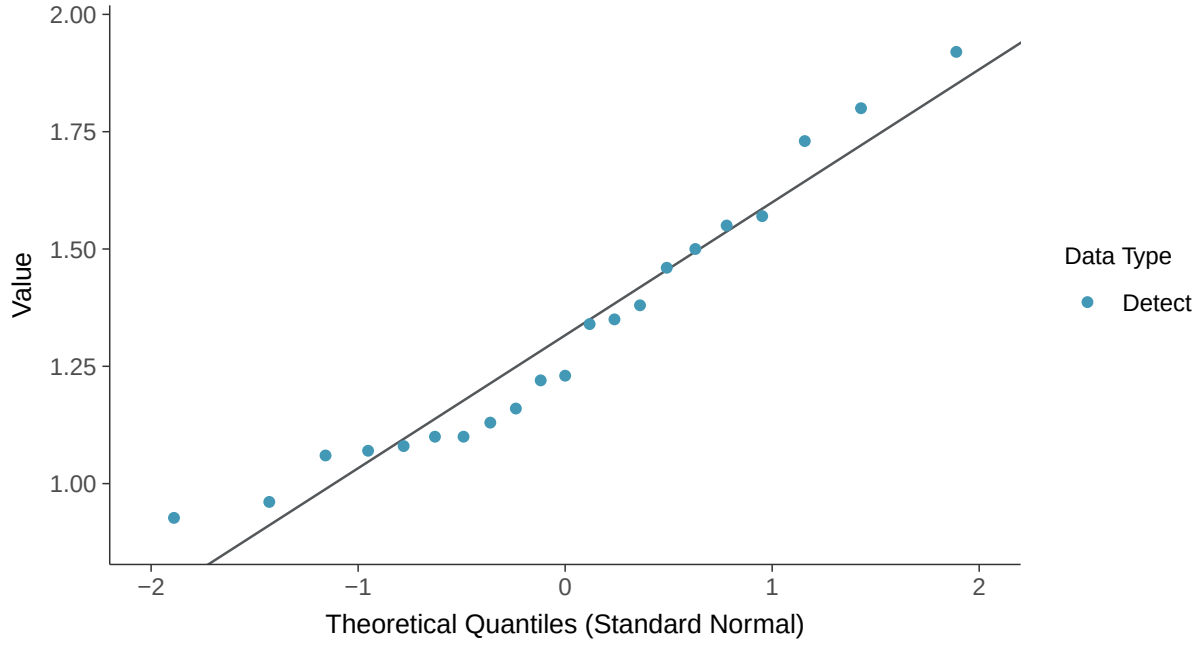
Boxplot by Season

Radium-226+228, MW-3 (pci/l)



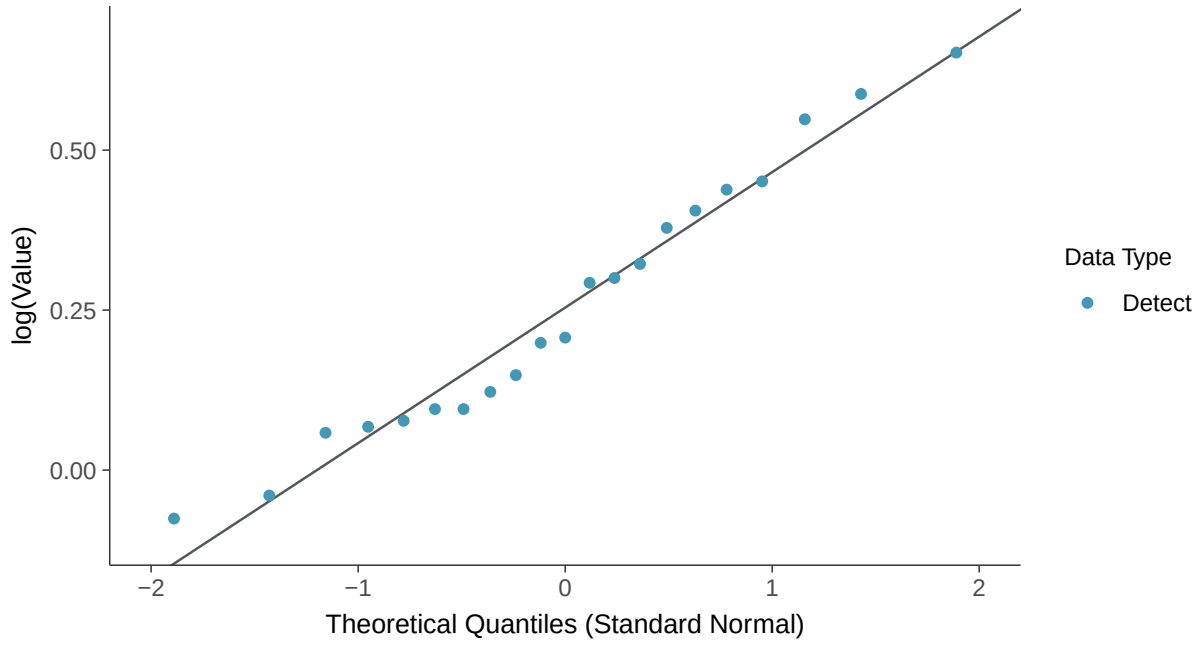
Normal Q-Q plot

Radium-226+228, MW-3 (pci/l)



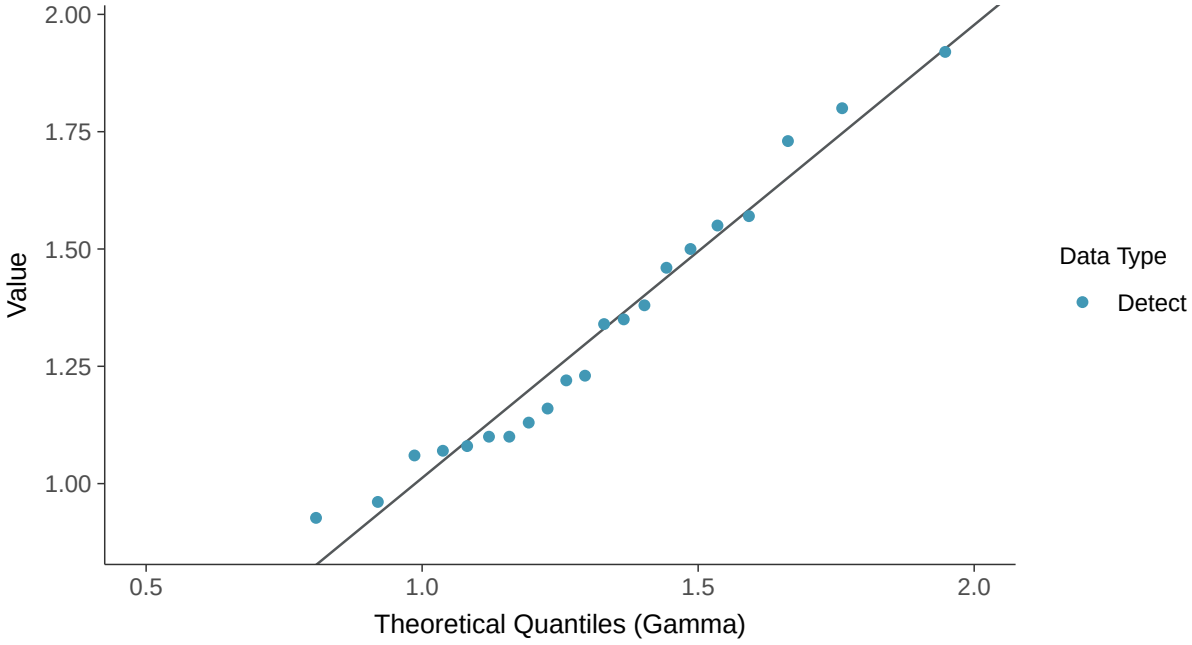
Lognormal Q-Q plot

Radium-226+228, MW-3 (pci/l)



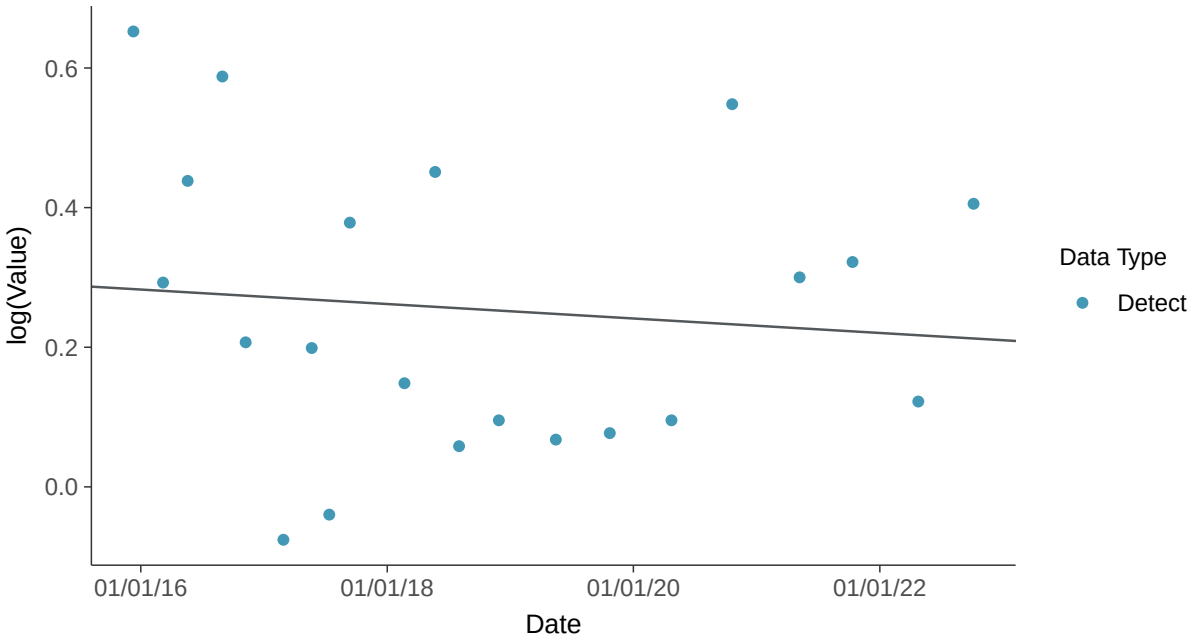
Gamma Q-Q plot

Radium-226+228, MW-3 (pci/l)



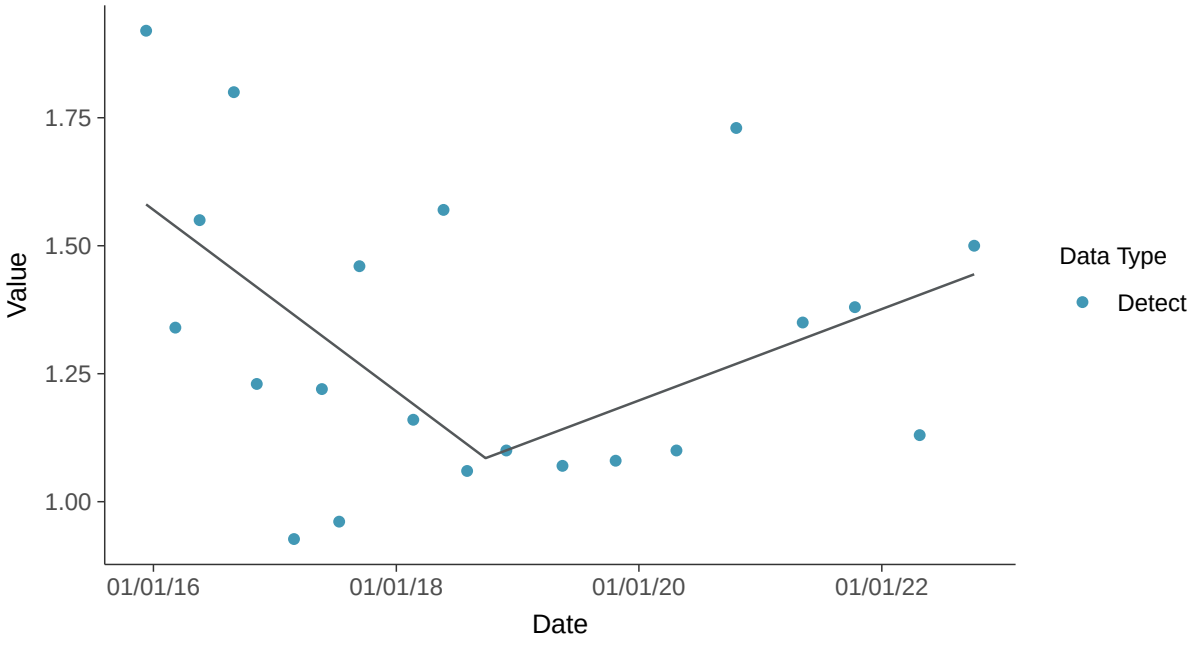
Trend Regression: Lognormal MLE

Radium-226+228, MW-3 (pci/l)



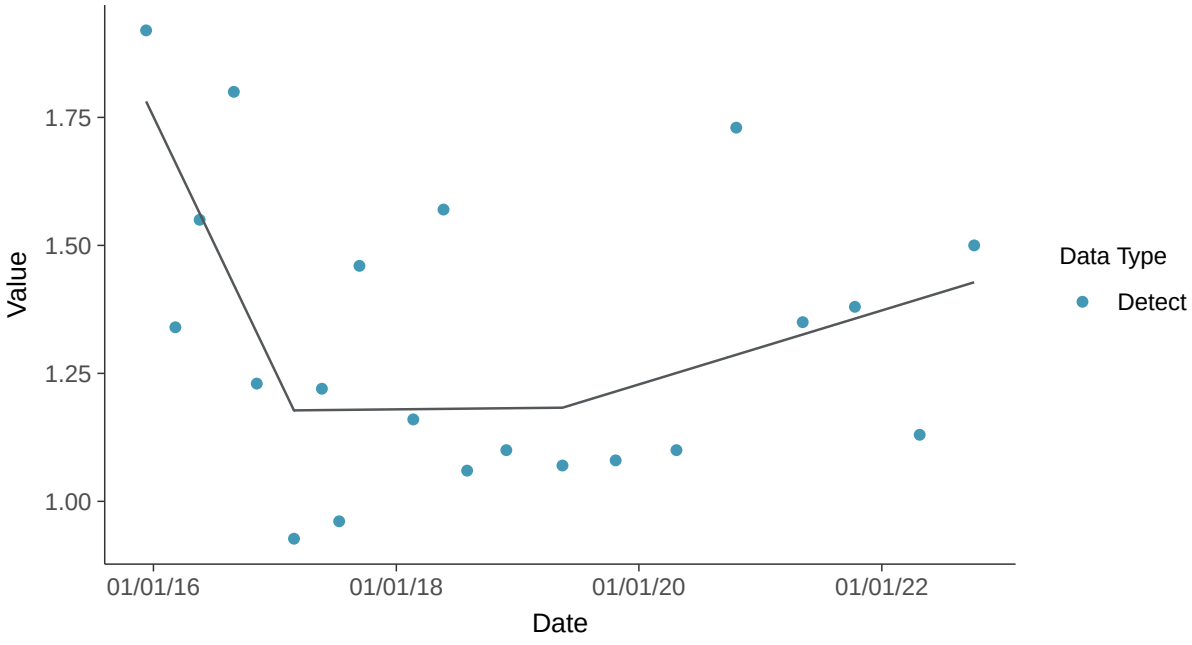
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-3 (pci/l)



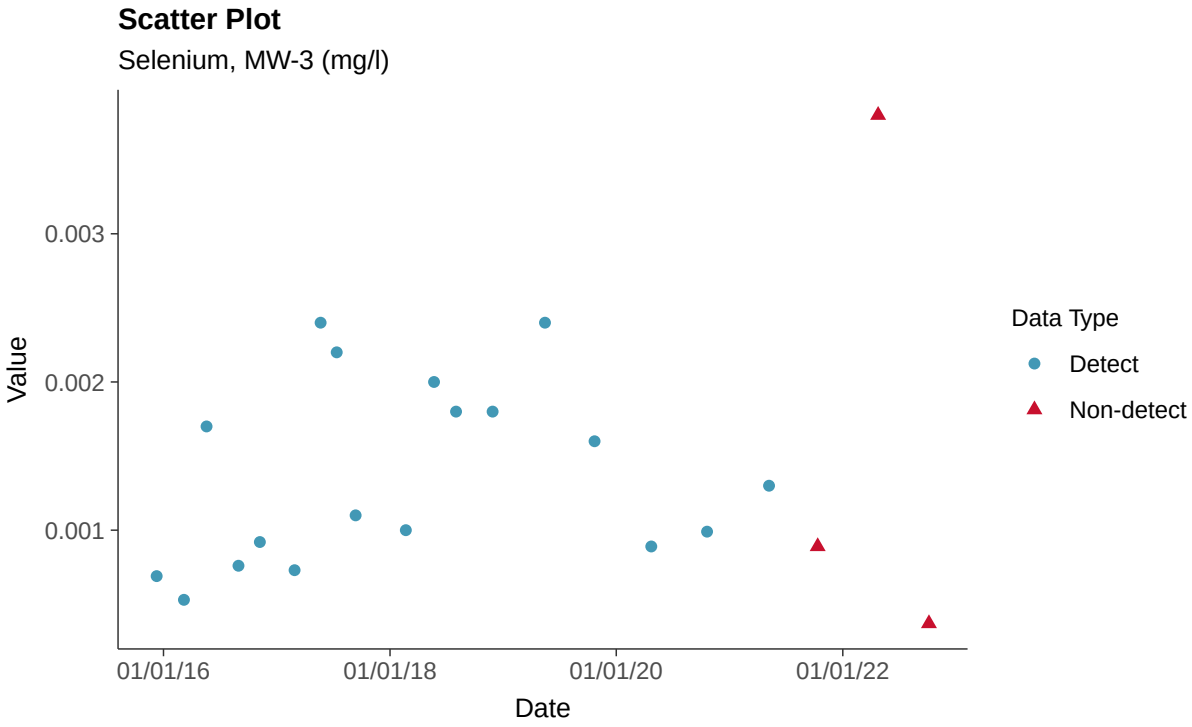
Trend Regression: Piecewise Linear-Linear-Linear

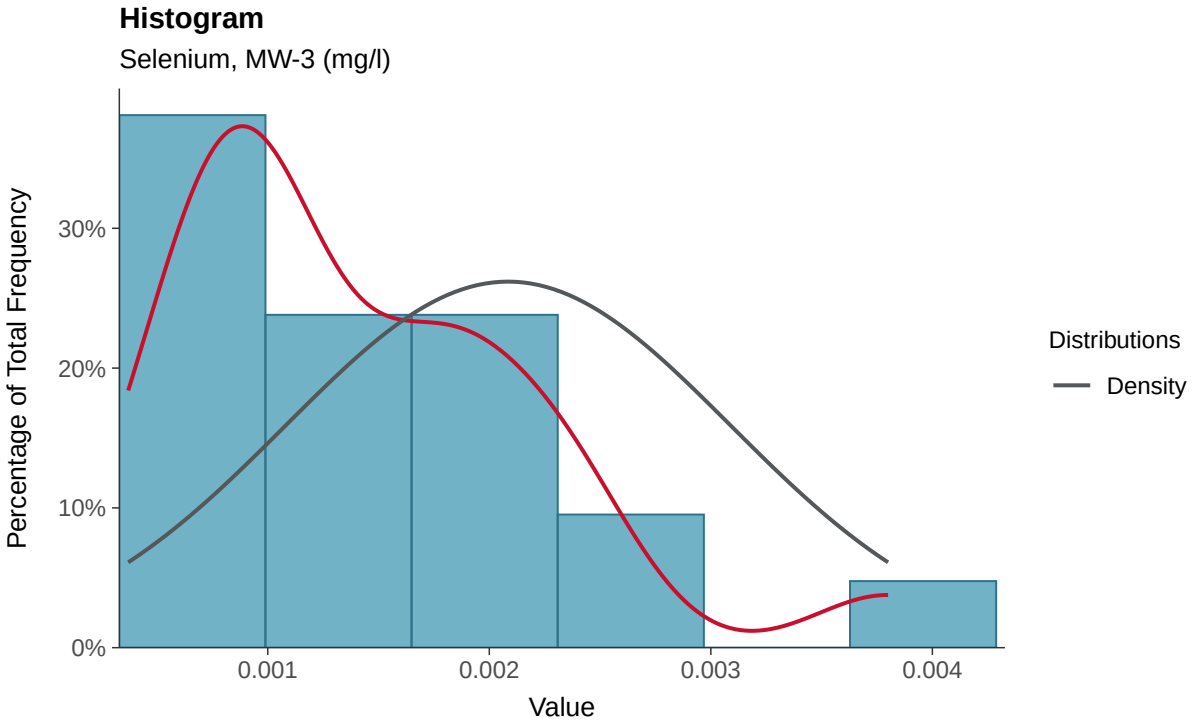
Radium-226+228, MW-3 (pci/l)



Appendix IV: Selenium, MW-3

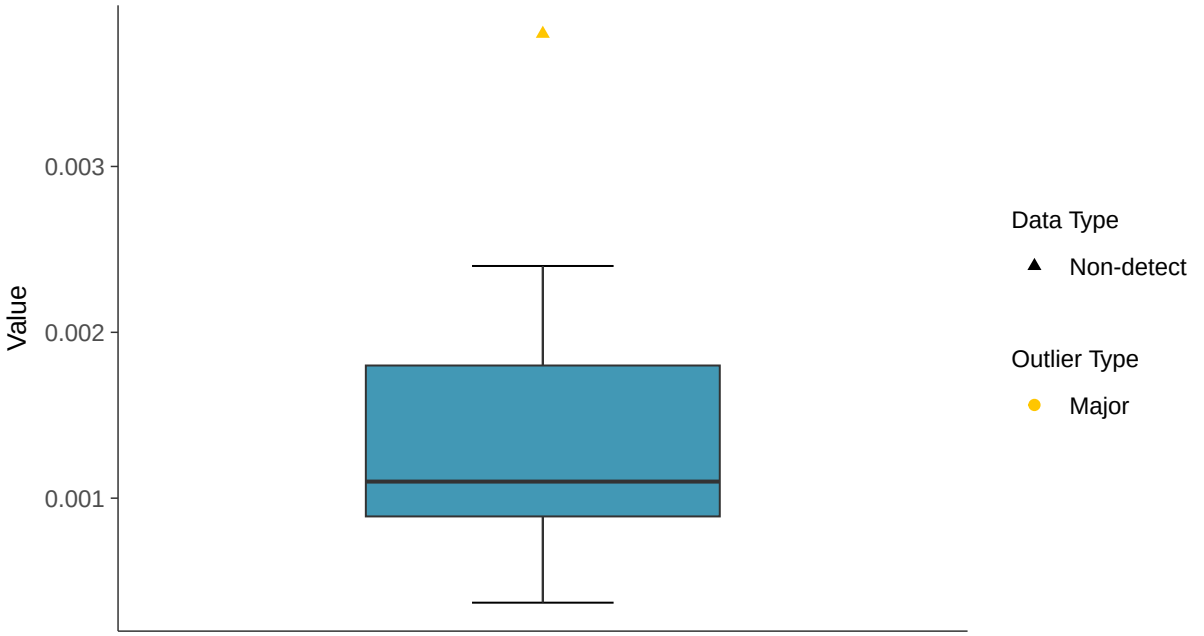
ID: 22_2_129





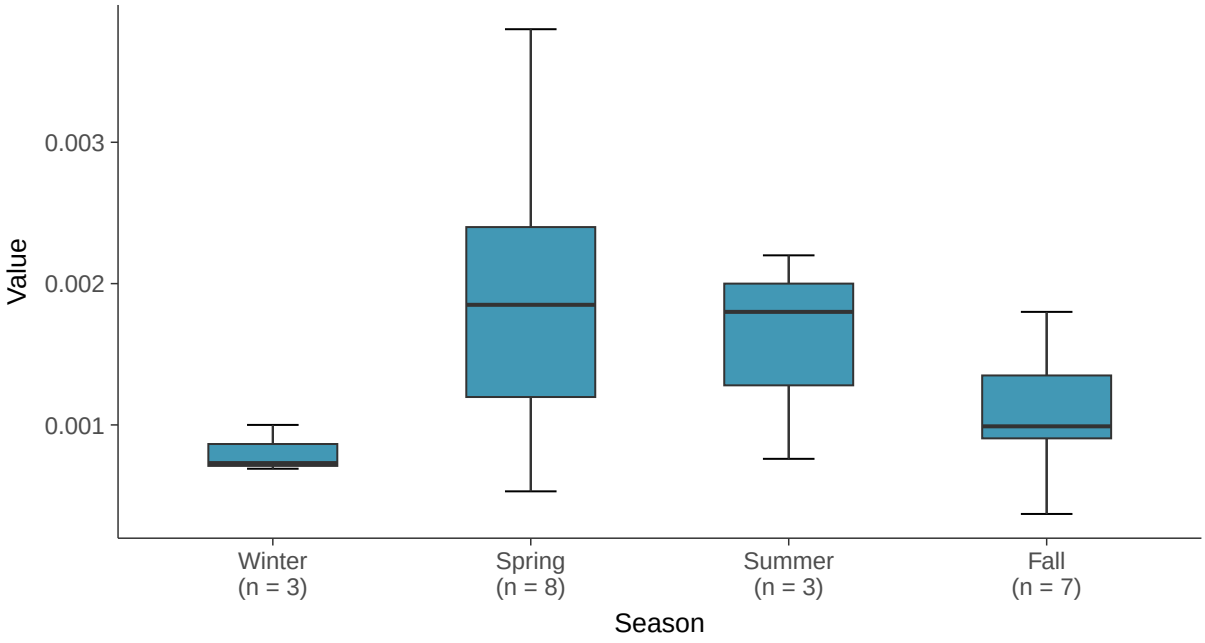
Boxplot

Selenium, MW-3 (mg/l)



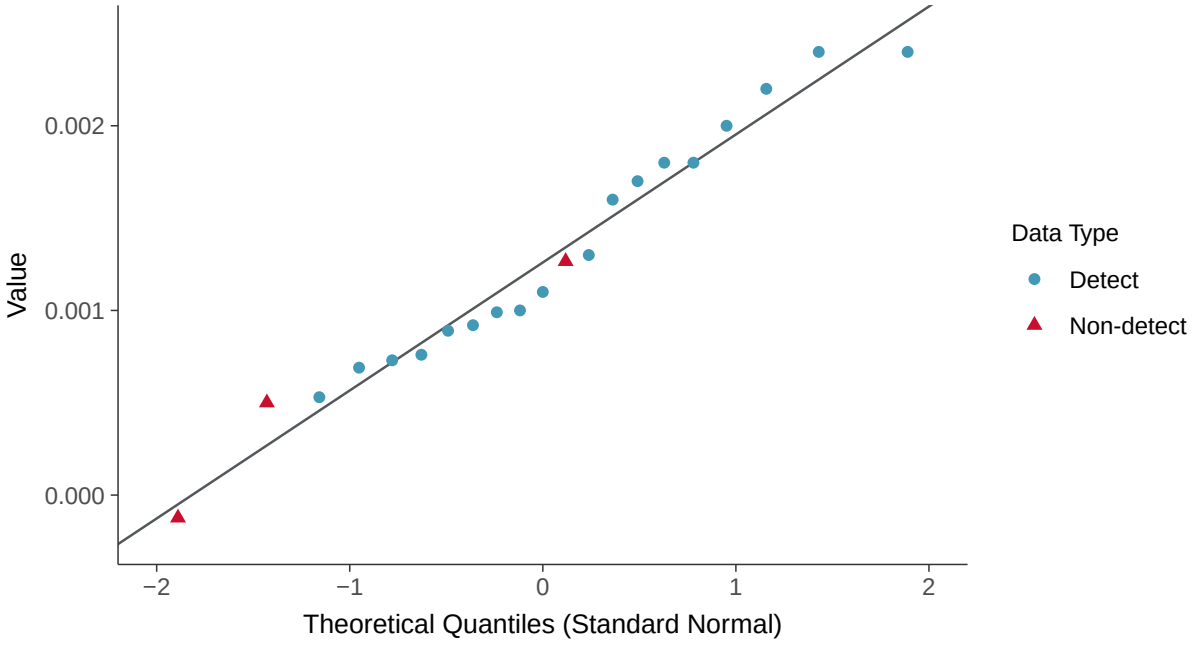
Boxplot by Season

Selenium, MW-3 (mg/l)



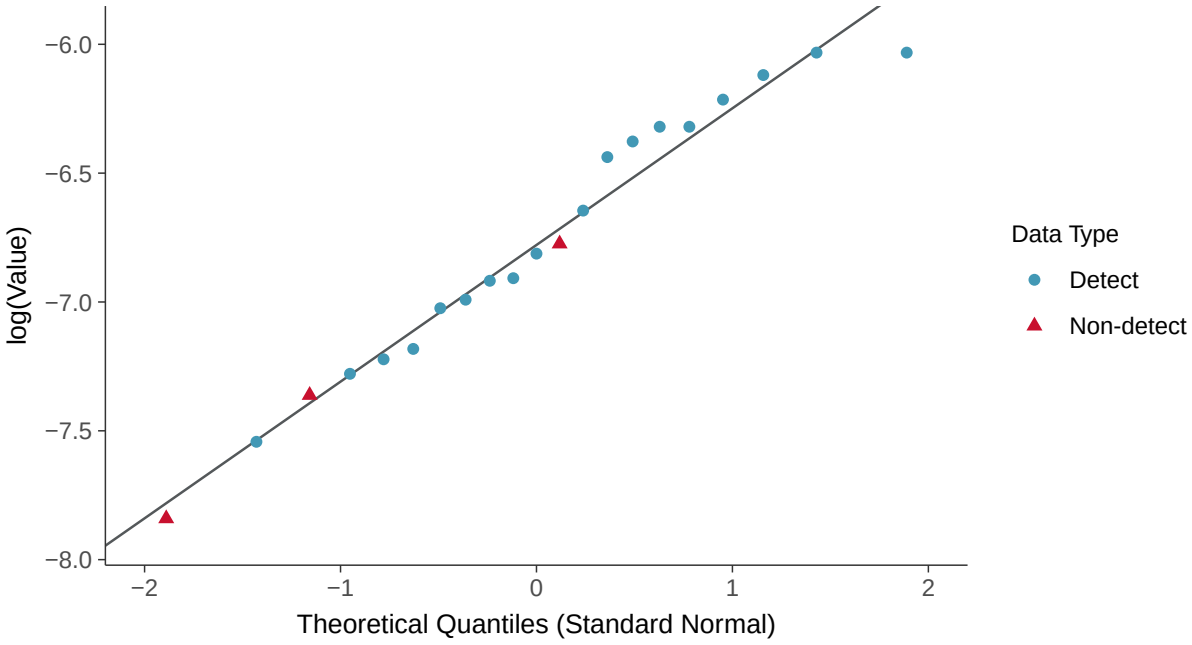
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-3 (mg/l)



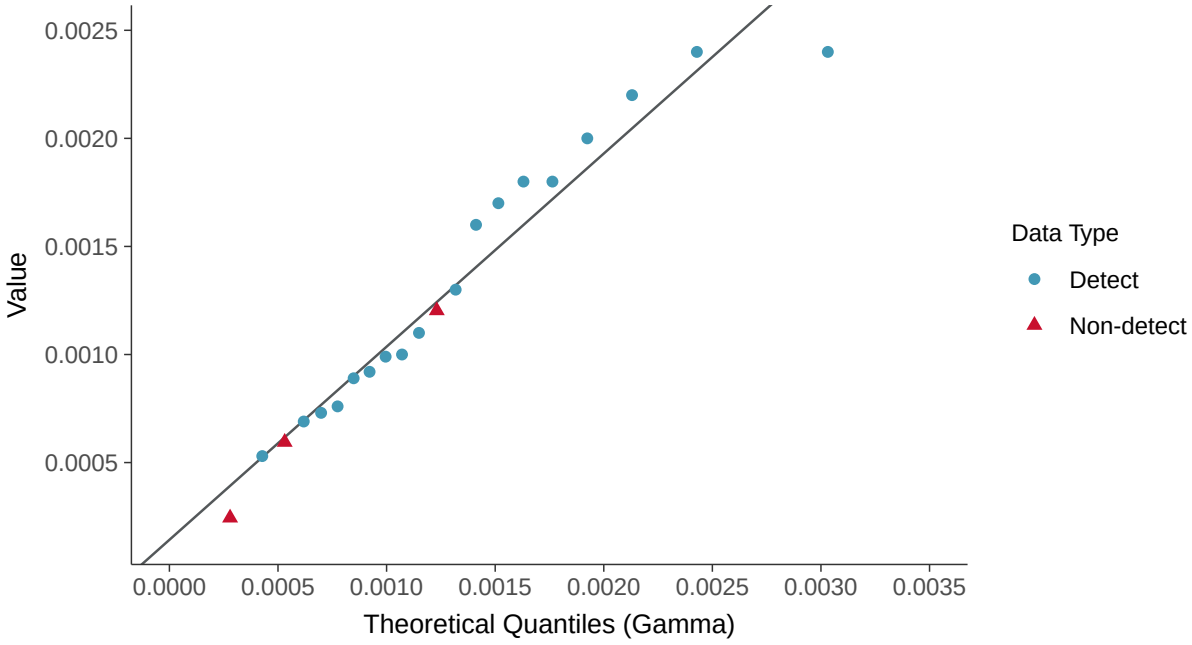
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-3 (mg/l)



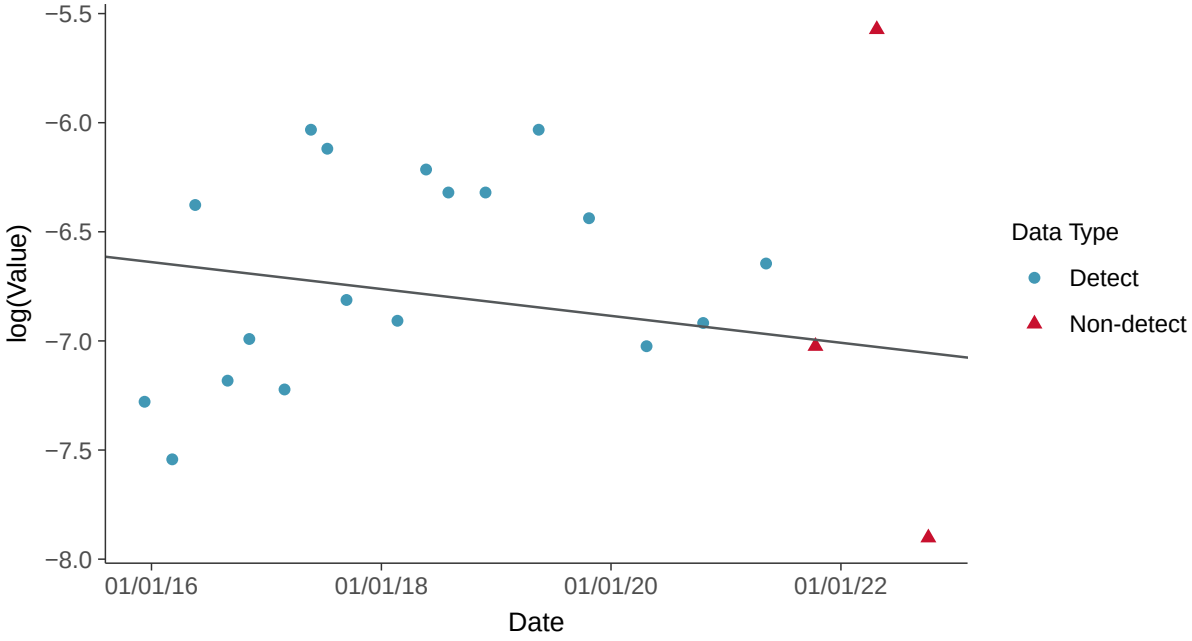
Gamma Q-Q plot using ROS Imputed Estimates

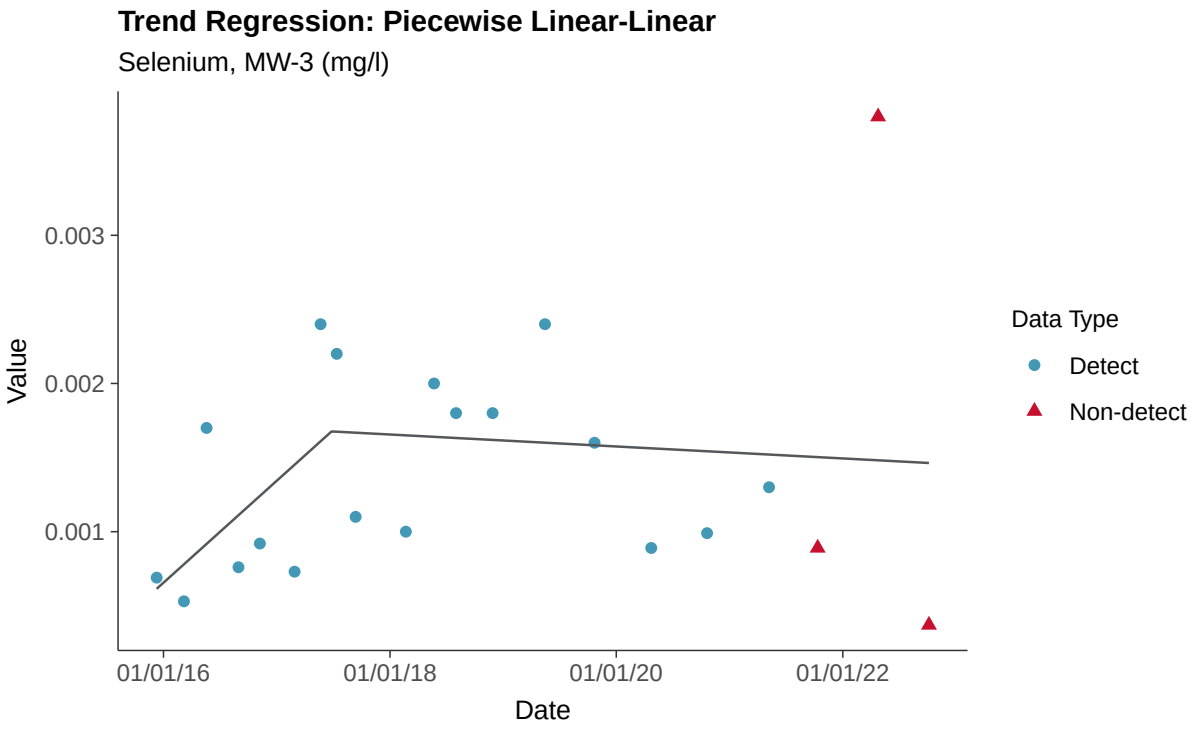
Selenium, MW-3 (mg/l)



Trend Regression: Lognormal MLE

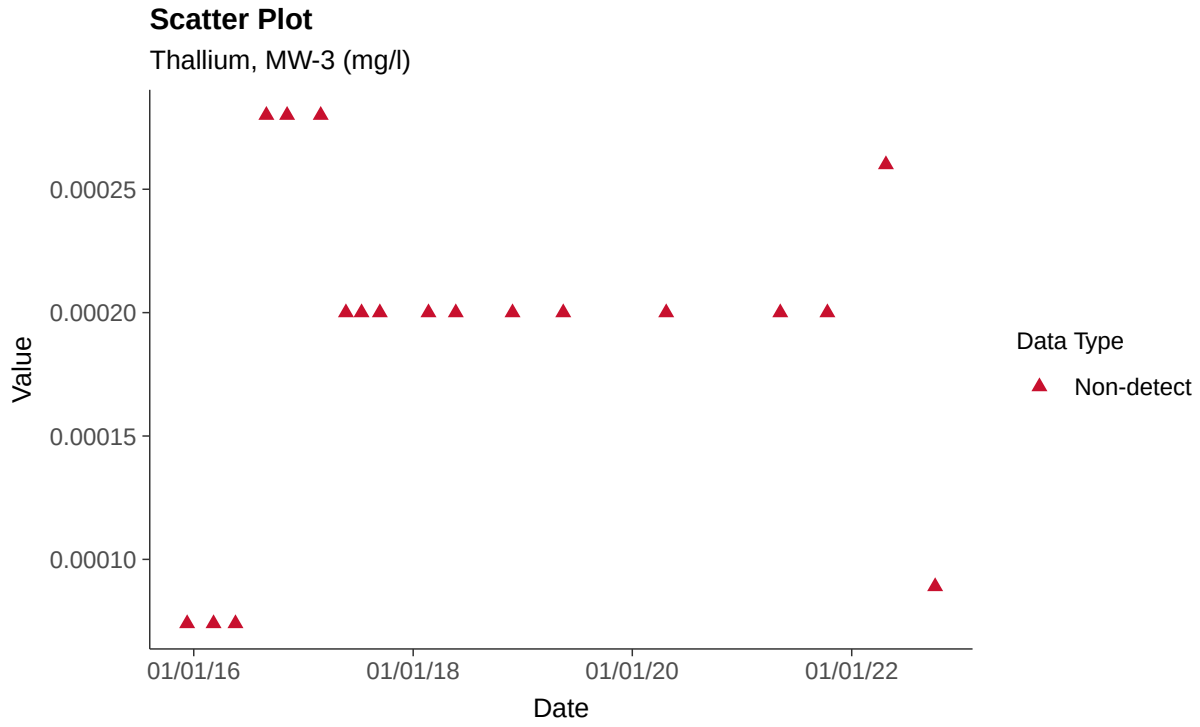
Selenium, MW-3 (mg/l)

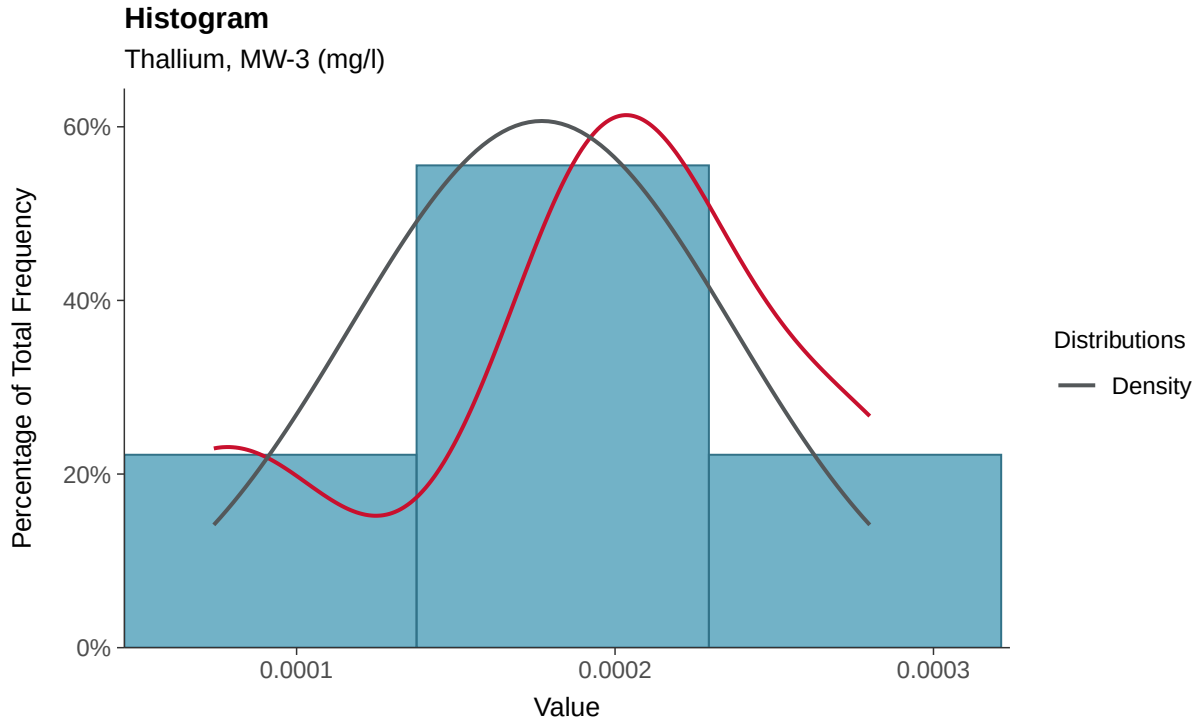



Trend Regression: Piecewise Linear-Linear
Selenium, MW-3 (mg/l)
Value
0.003
0.002
0.001
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-3

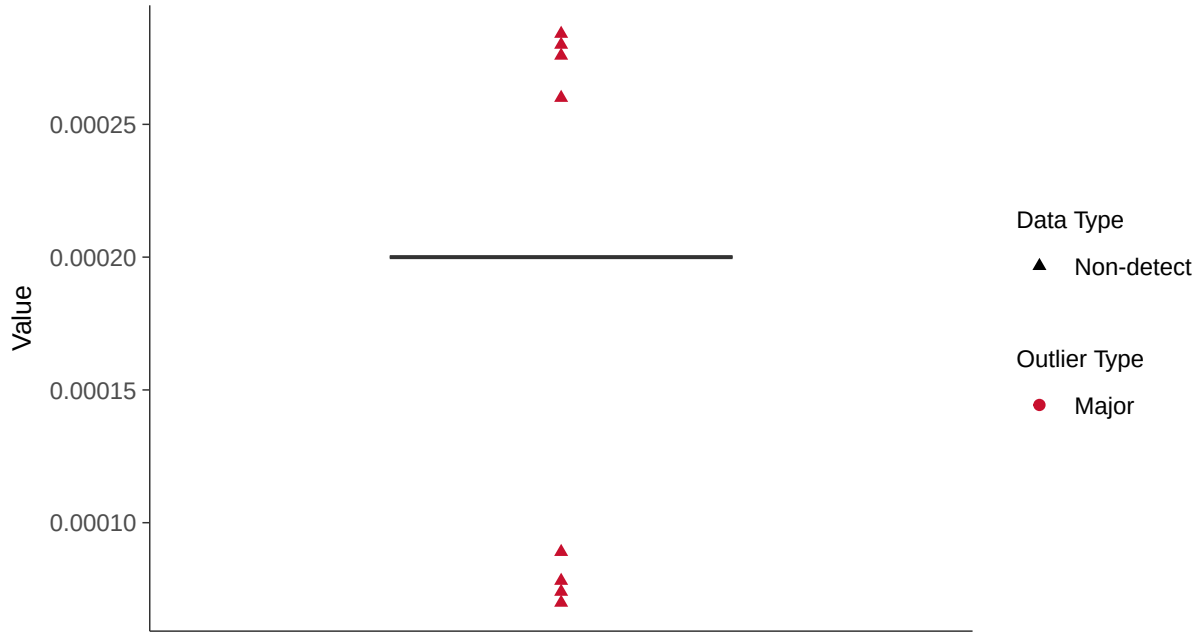
ID: 22_2_134





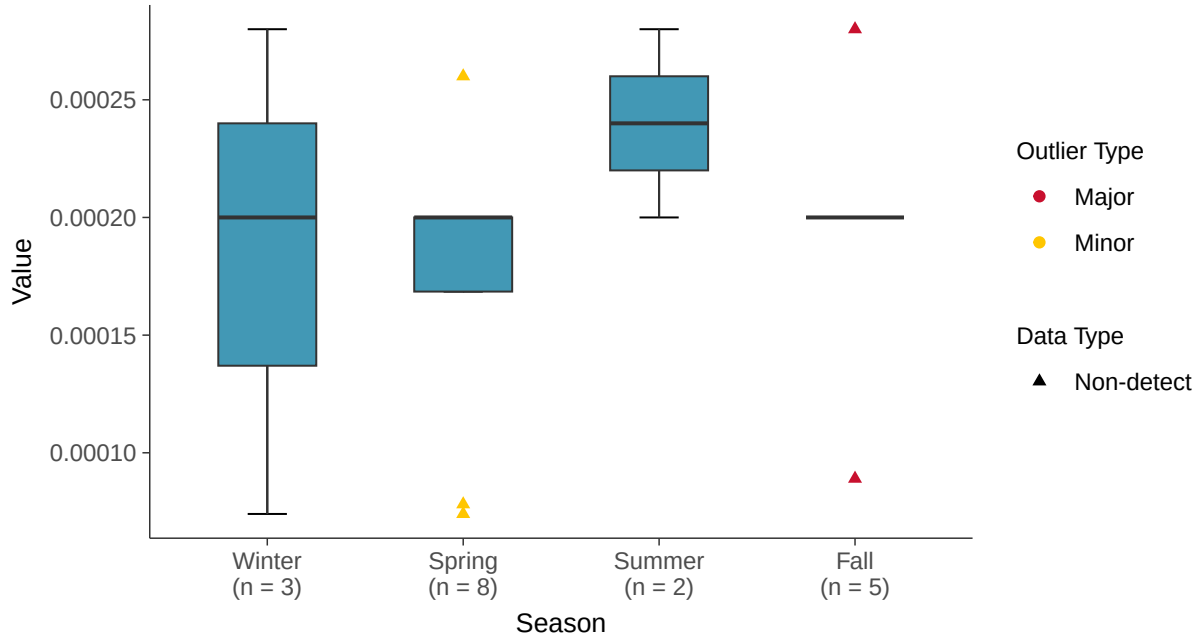
Boxplot

Thallium, MW-3 (mg/l)



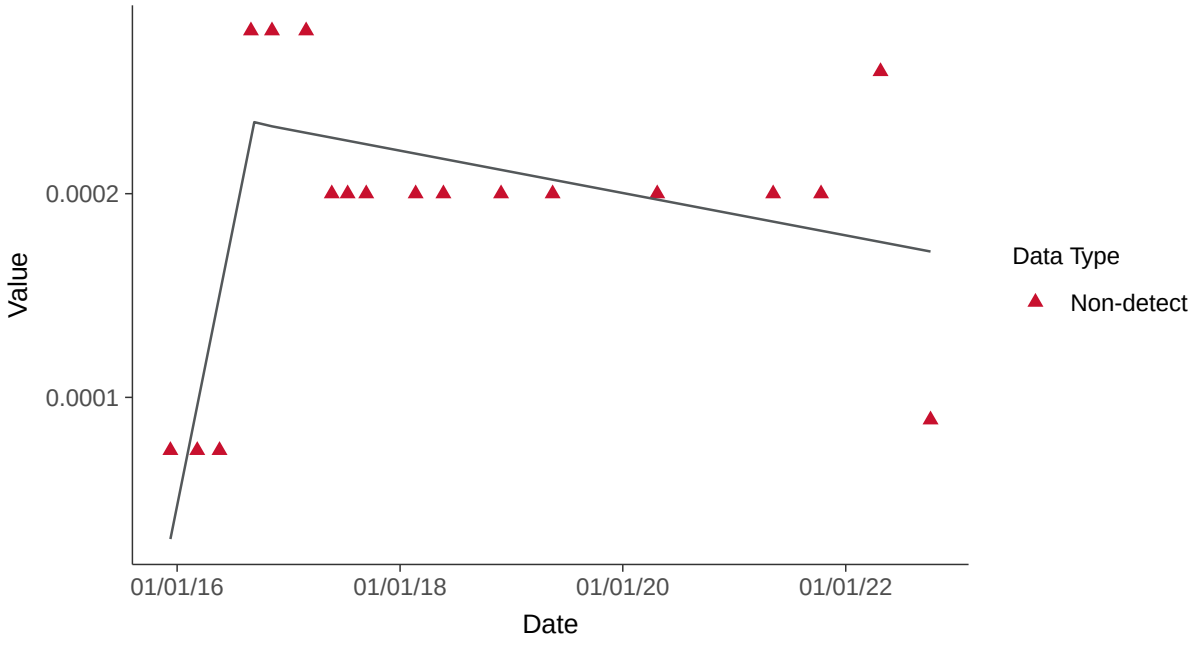
Boxplot by Season

Thallium, MW-3 (mg/l)



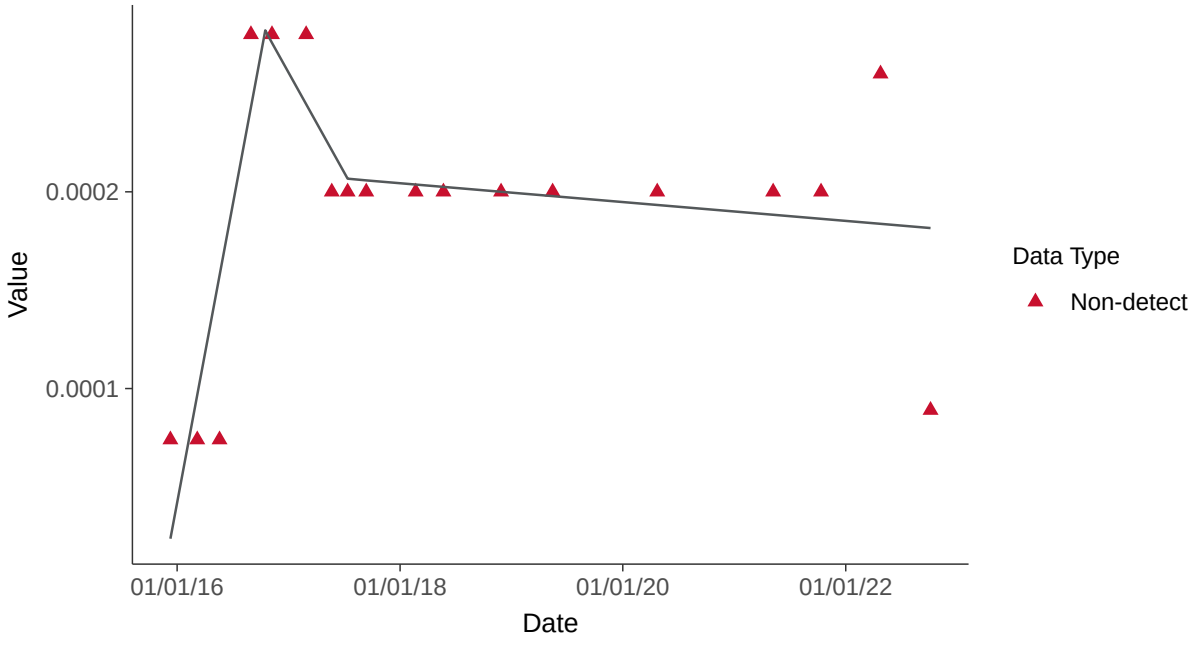
Trend Regression: Piecewise Linear-Linear

Thallium, MW-3 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-3 (mg/l)

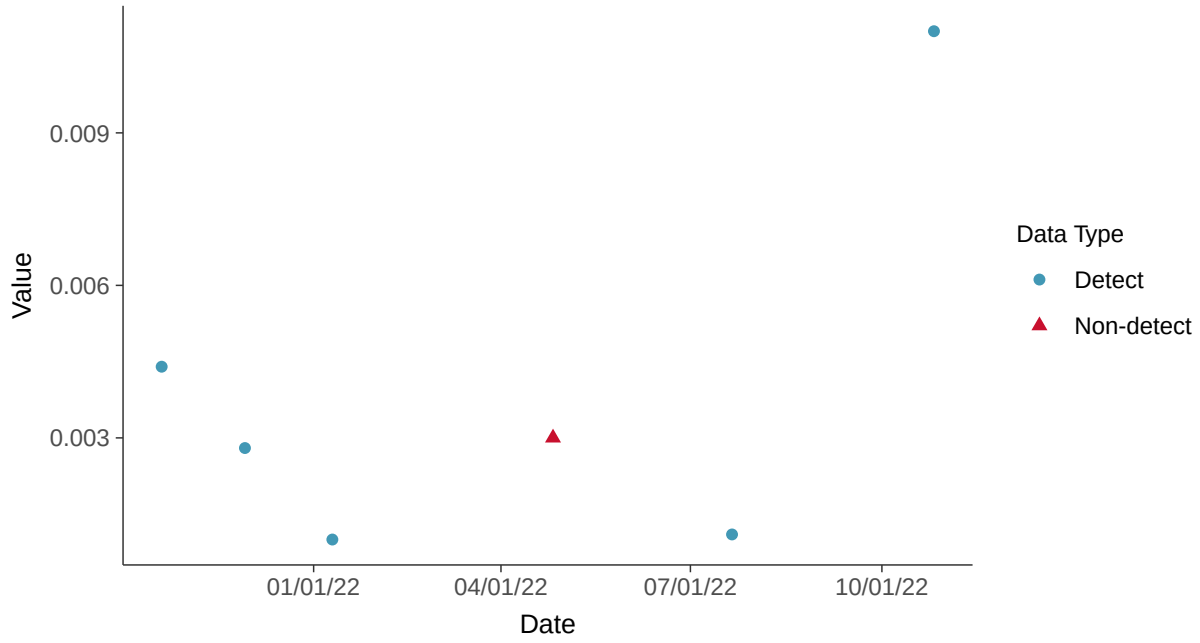


Appendix IV: Arsenic, MW-30

ID: 23_2_105

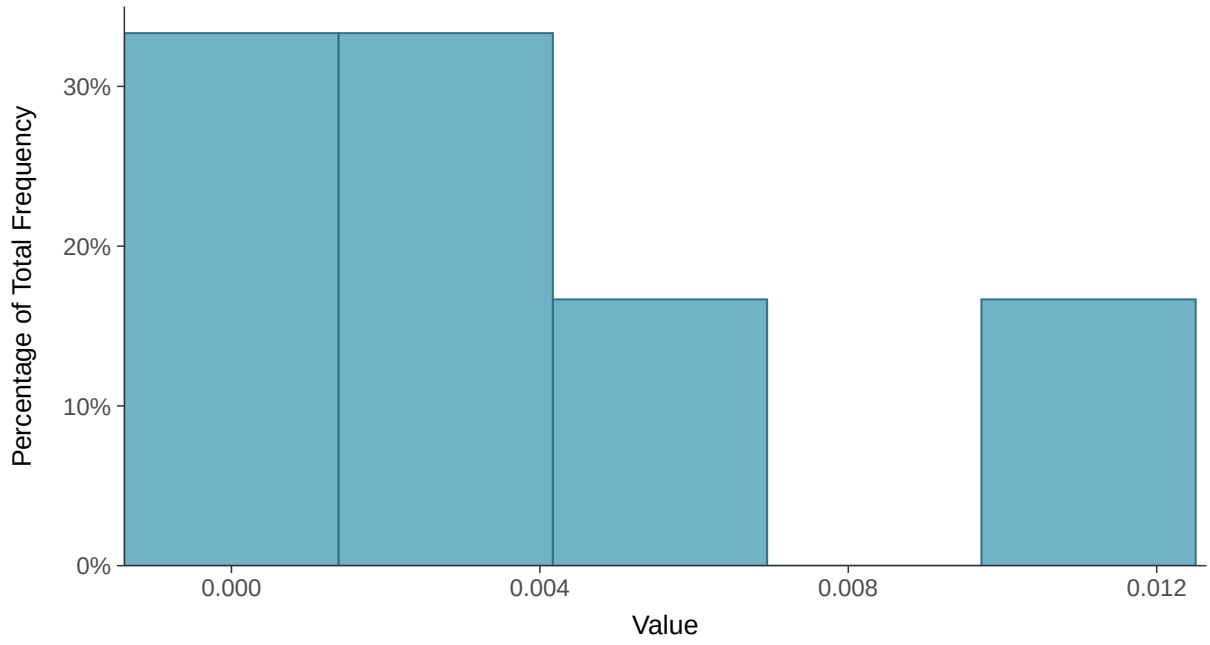
Scatter Plot

Arsenic, MW-30 (mg/l)



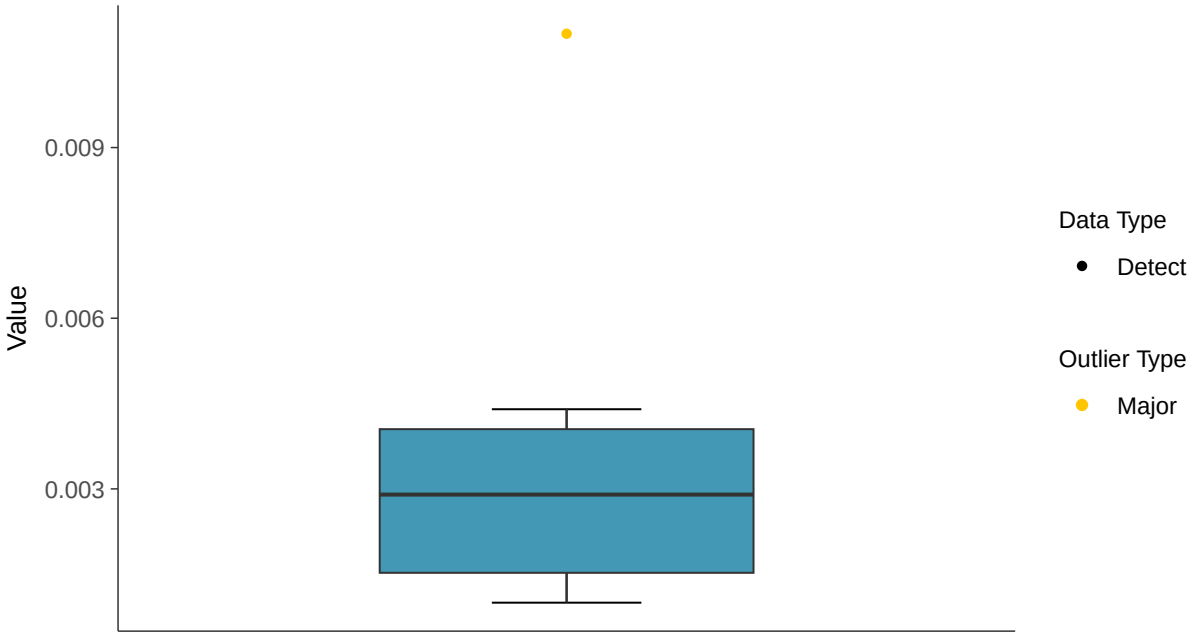
Histogram

Arsenic, MW-30 (mg/l)



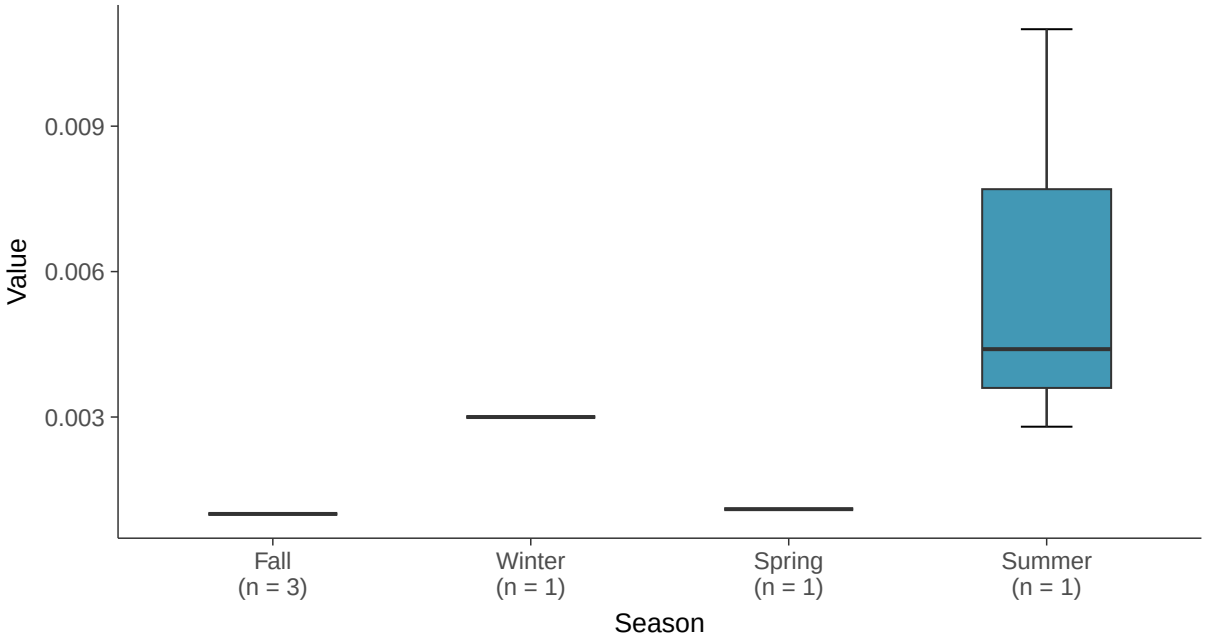
Boxplot

Arsenic, MW-30 (mg/l)



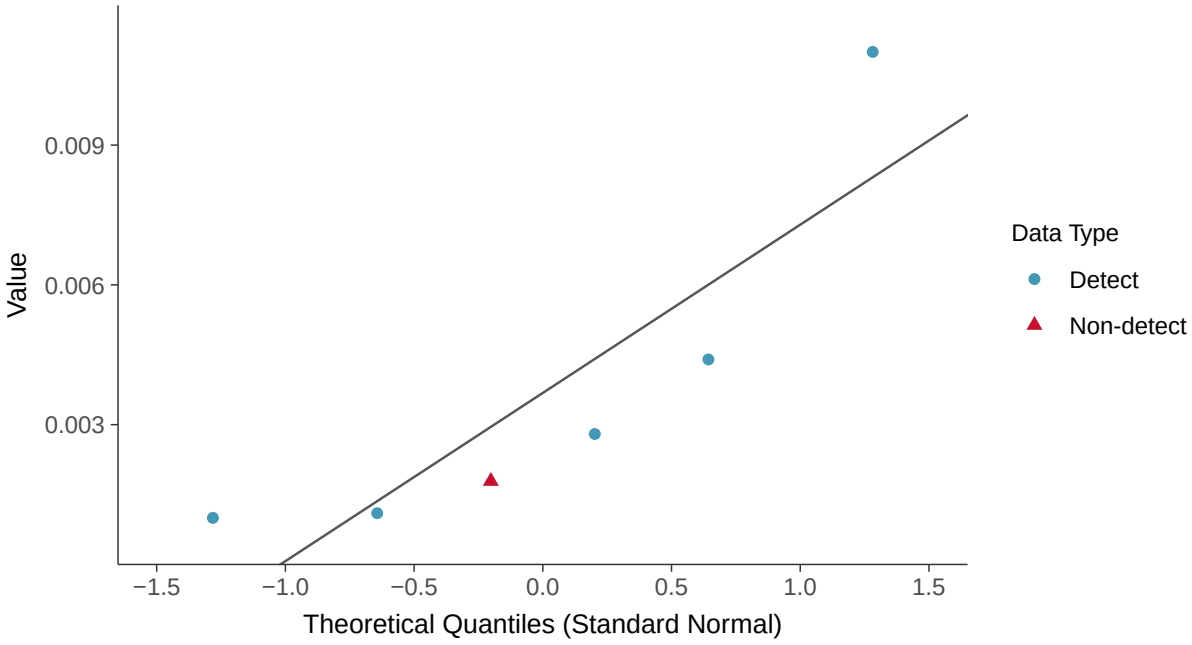
Boxplot by Season

Arsenic, MW-30 (mg/l)



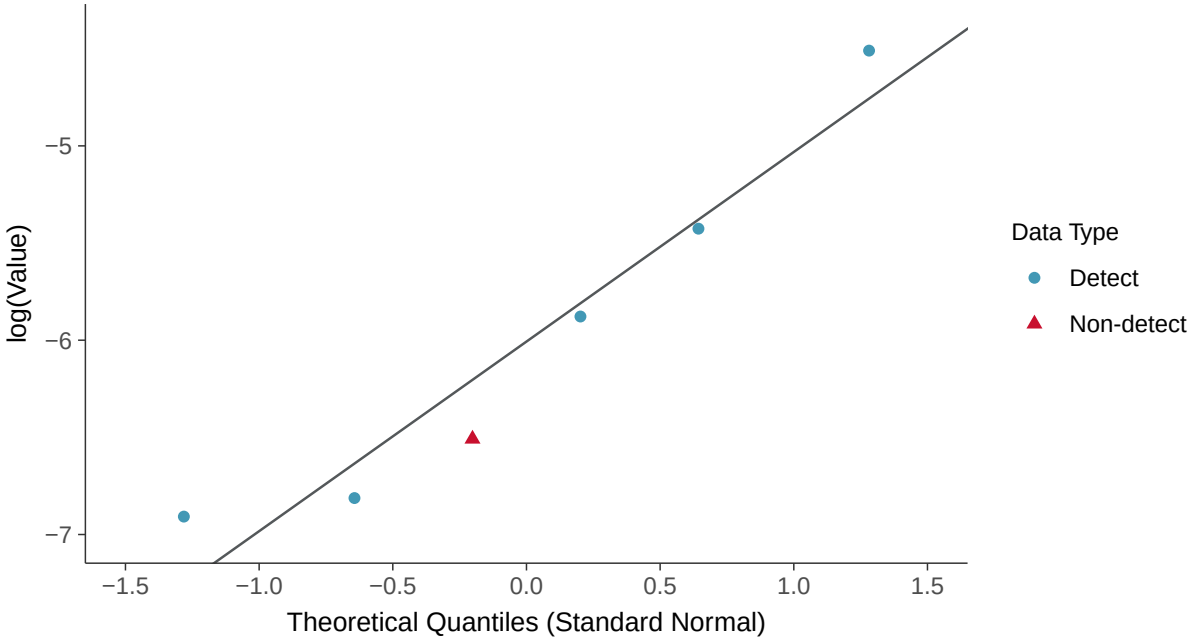
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-30 (mg/l)



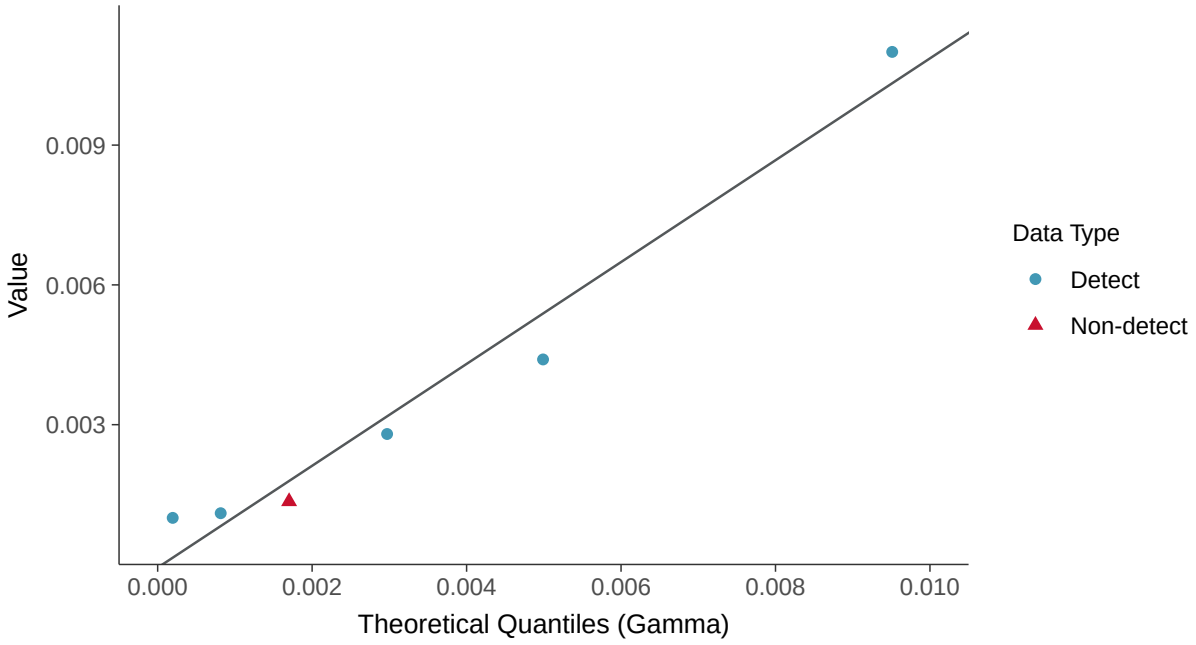
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-30 (mg/l)



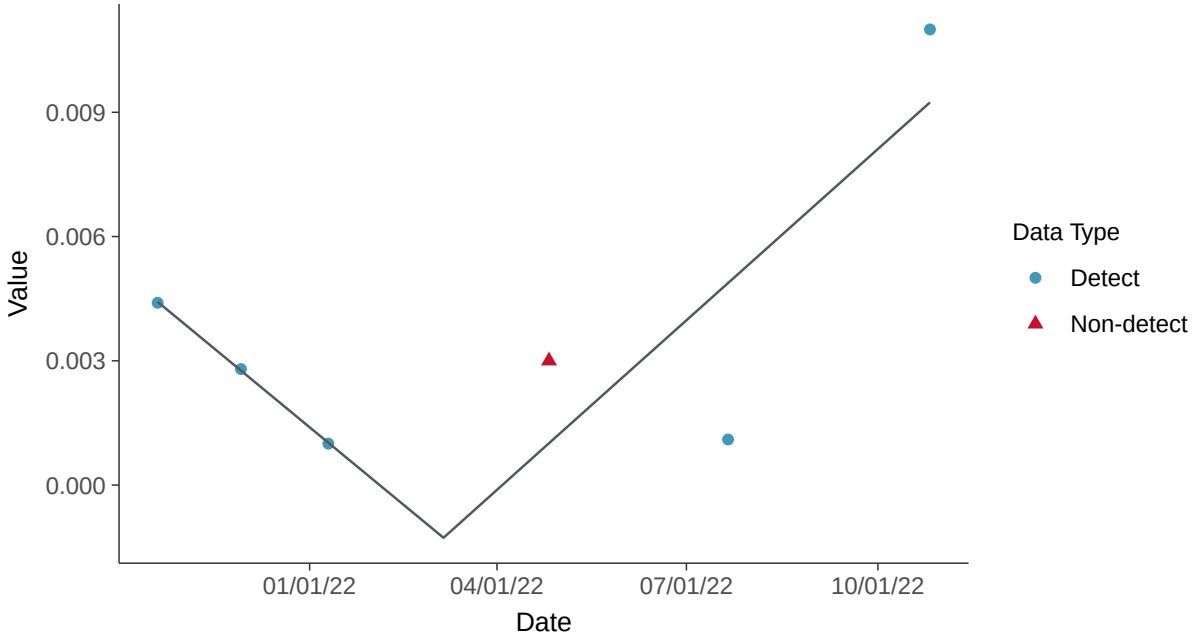
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-30 (mg/l)



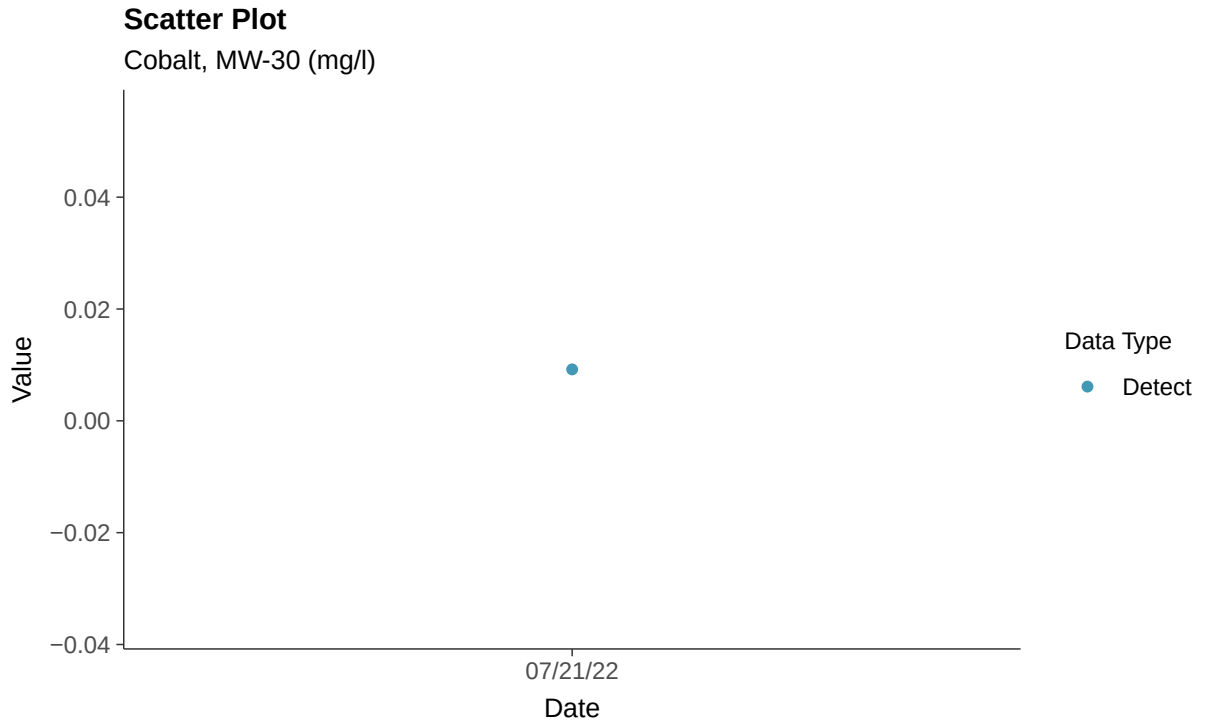
Trend Regression: Piecewise Linear-Linear

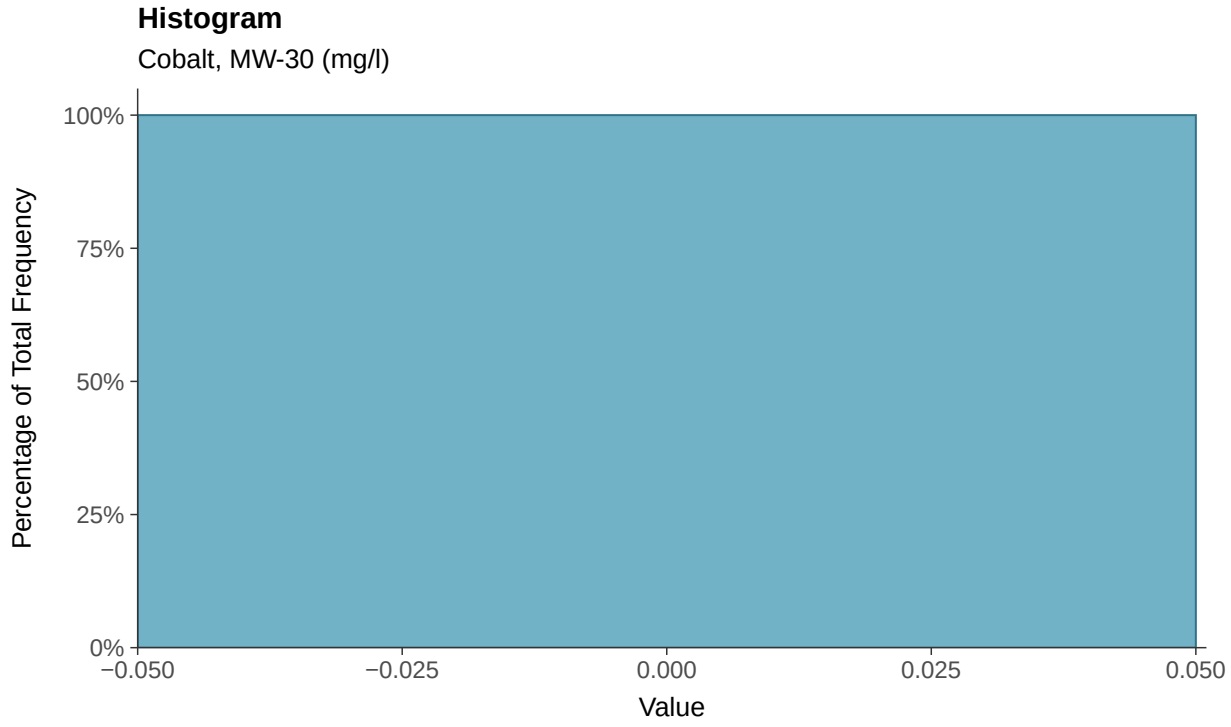
Arsenic, MW-30 (mg/l)



Appendix IV: Cobalt, MW-30

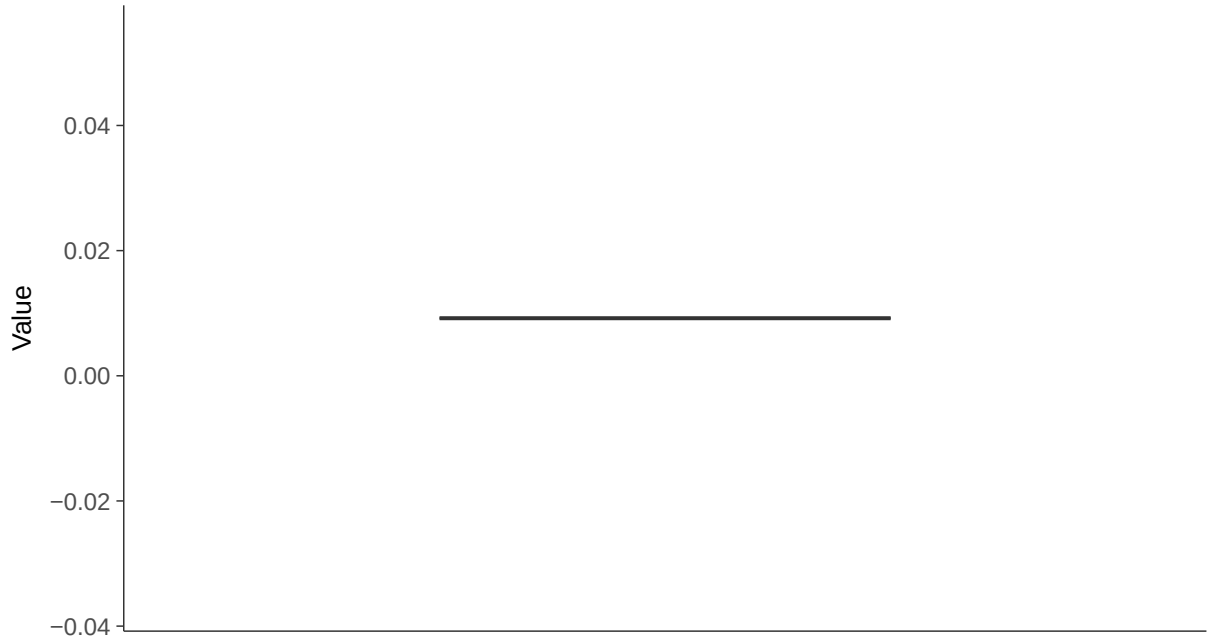
ID: 23_2_113





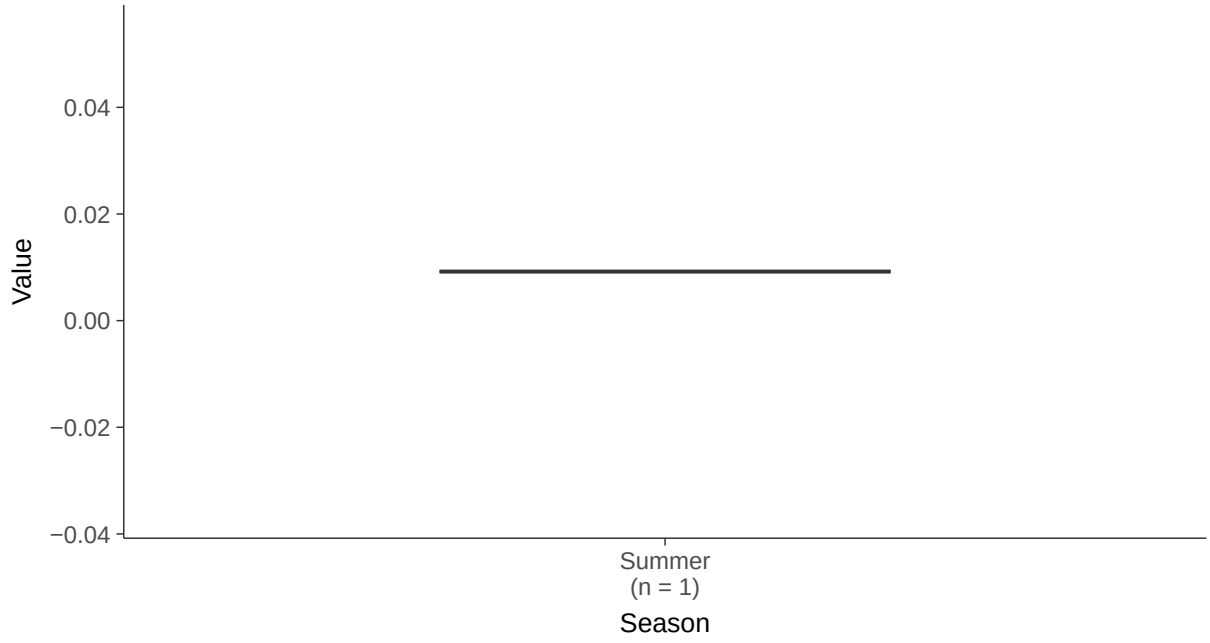
Boxplot

Cobalt, MW-30 (mg/l)



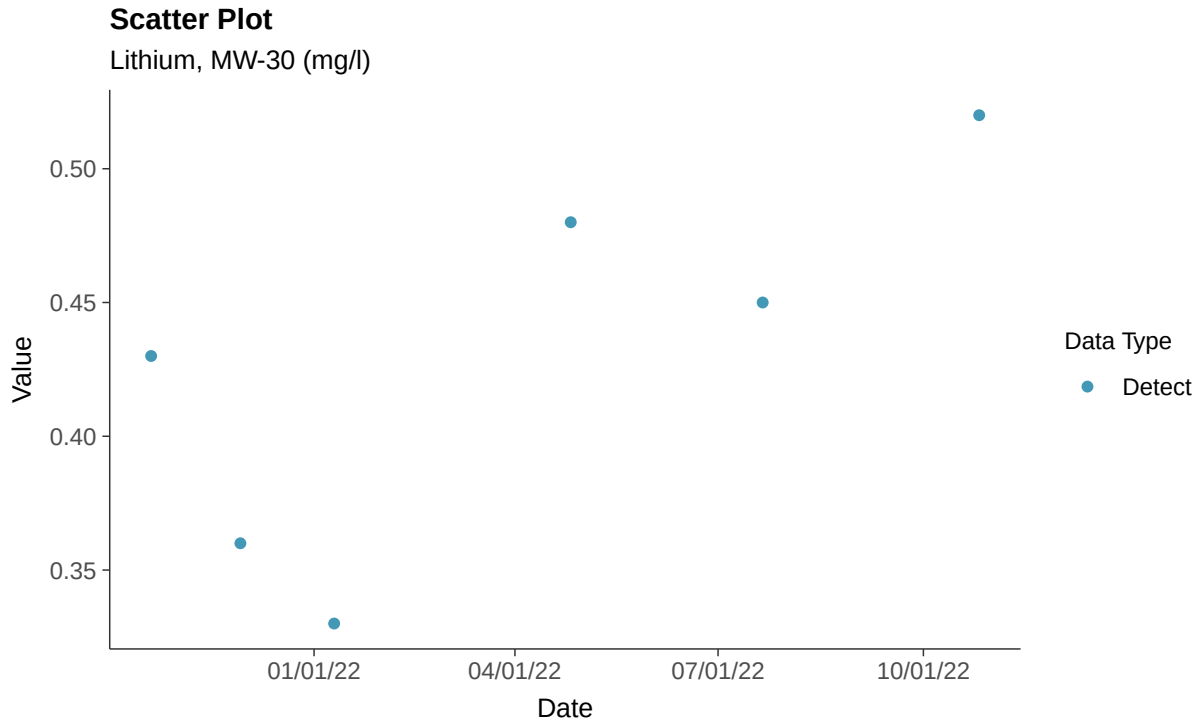
Boxplot by Season

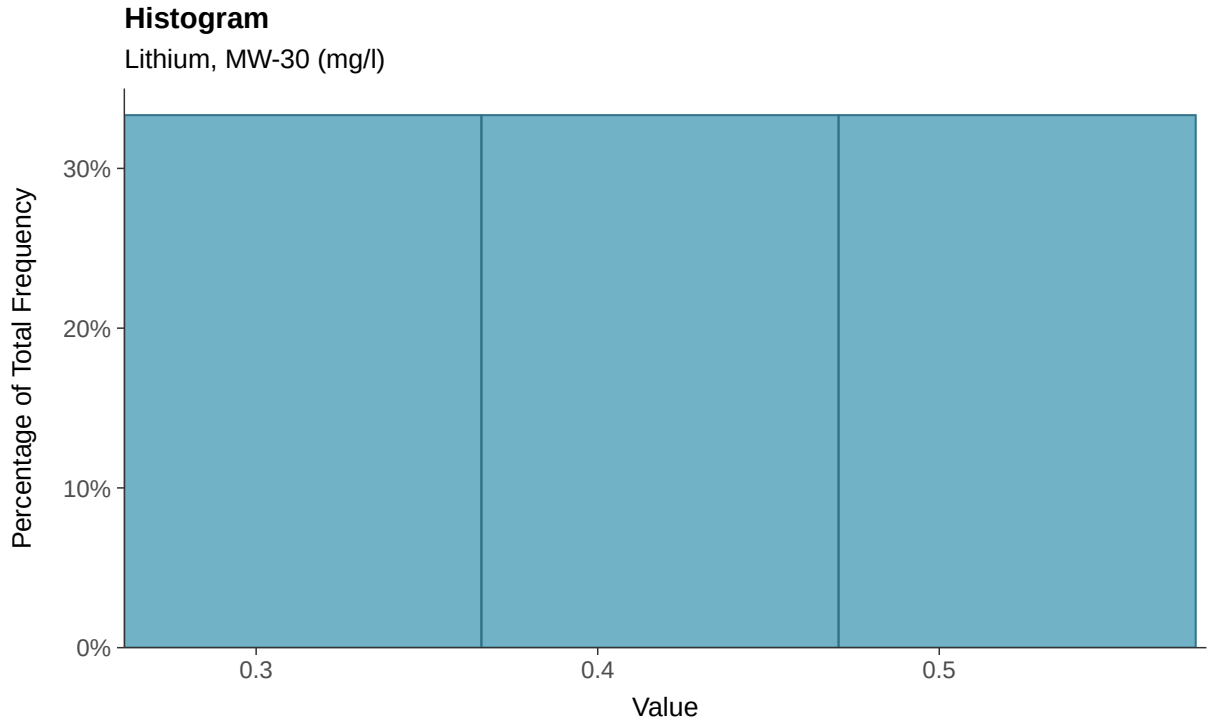
Cobalt, MW-30 (mg/l)



Appendix IV: Lithium, MW-30

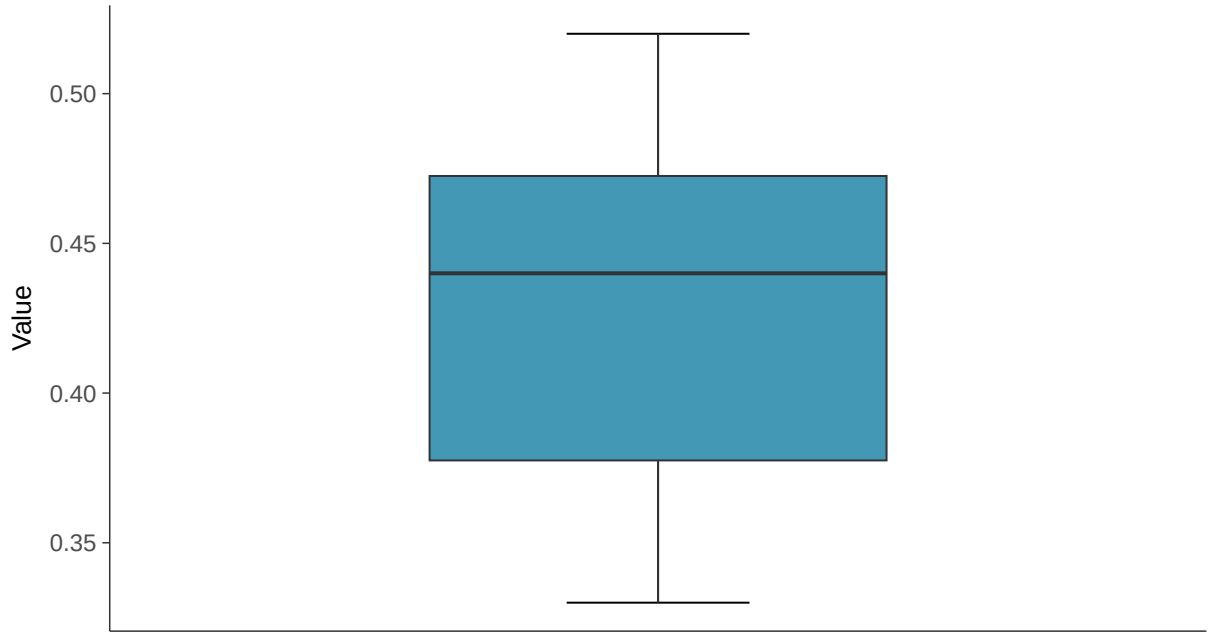
ID: 23_2_118





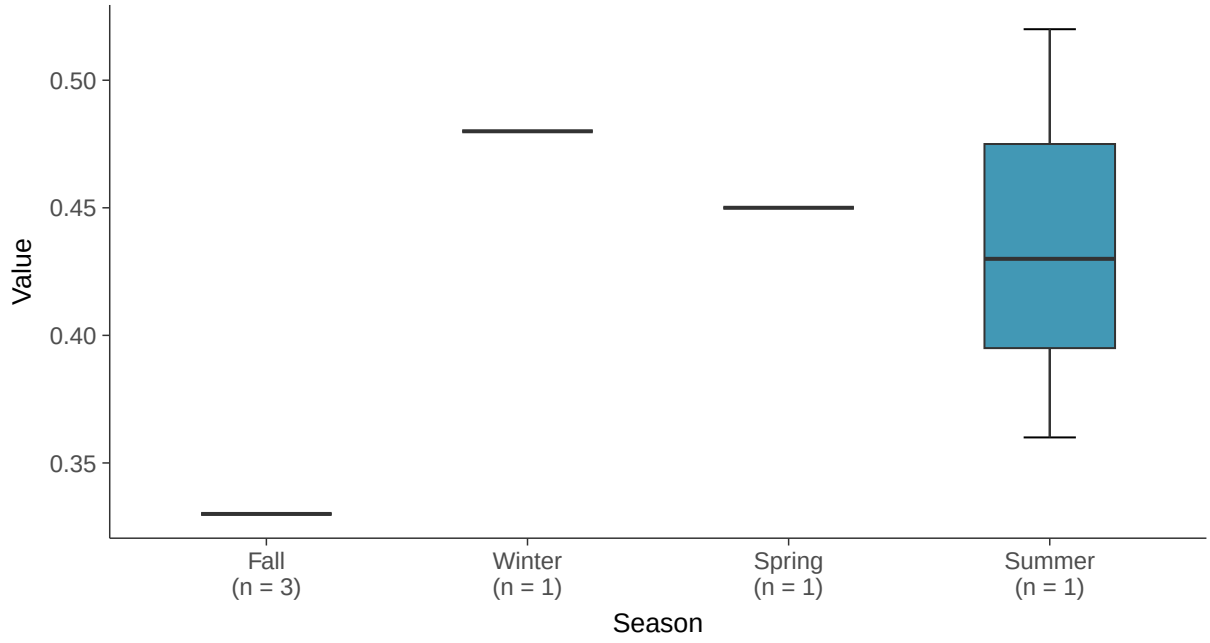
Boxplot

Lithium, MW-30 (mg/l)



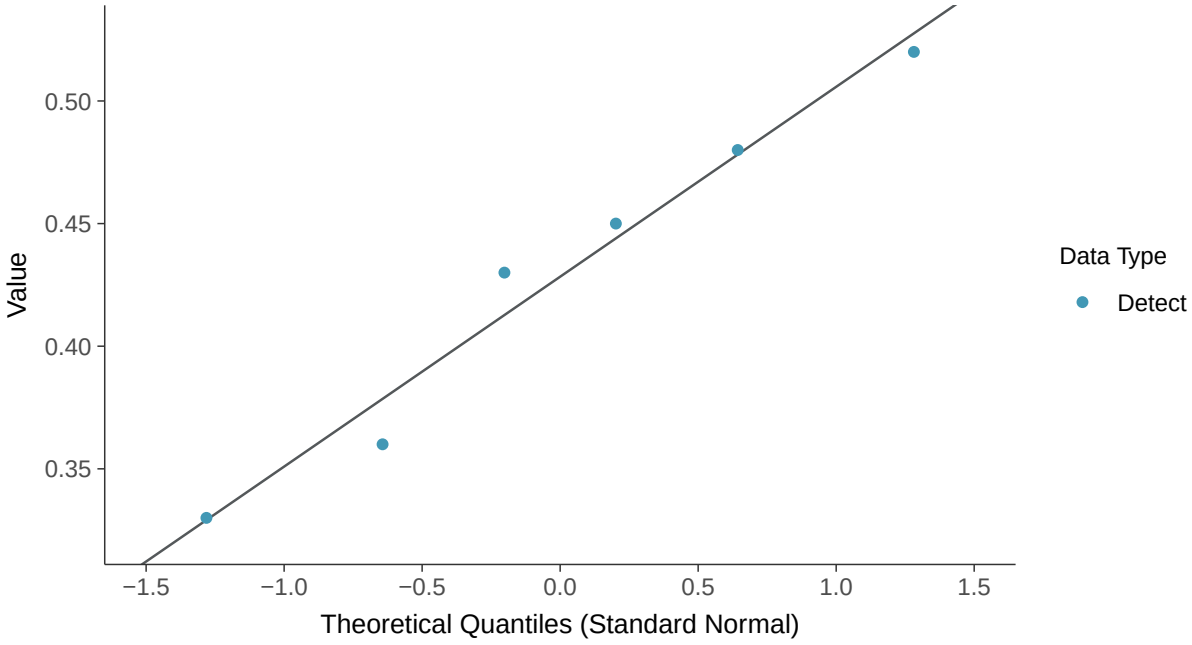
Boxplot by Season

Lithium, MW-30 (mg/l)



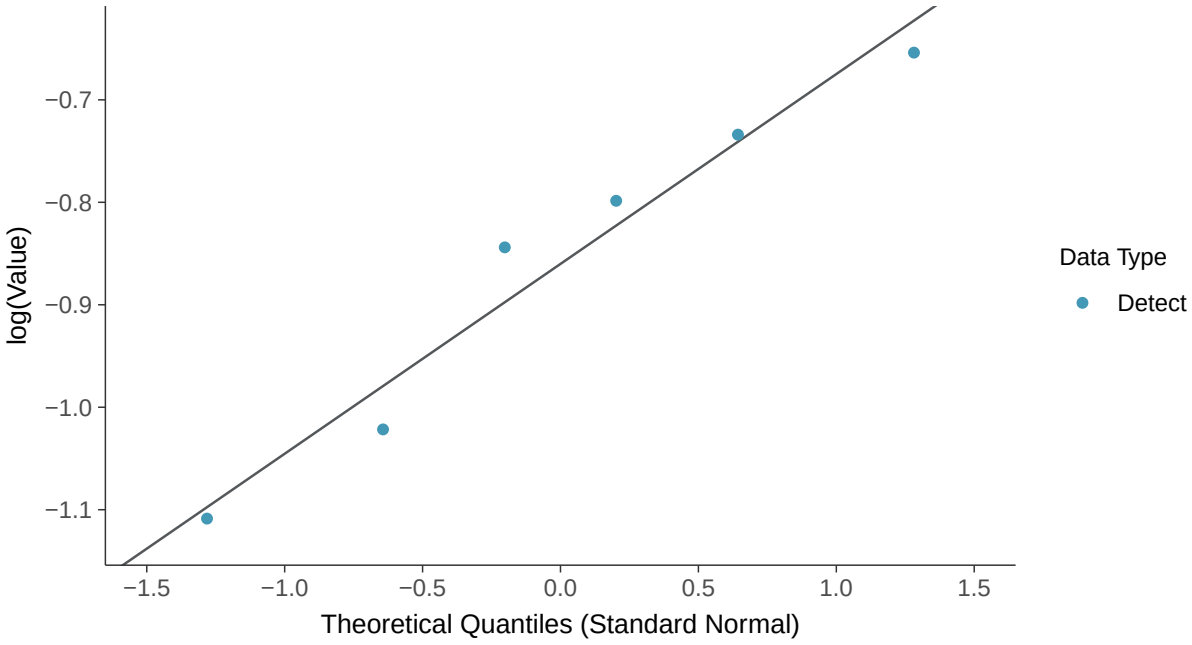
Normal Q-Q plot

Lithium, MW-30 (mg/l)



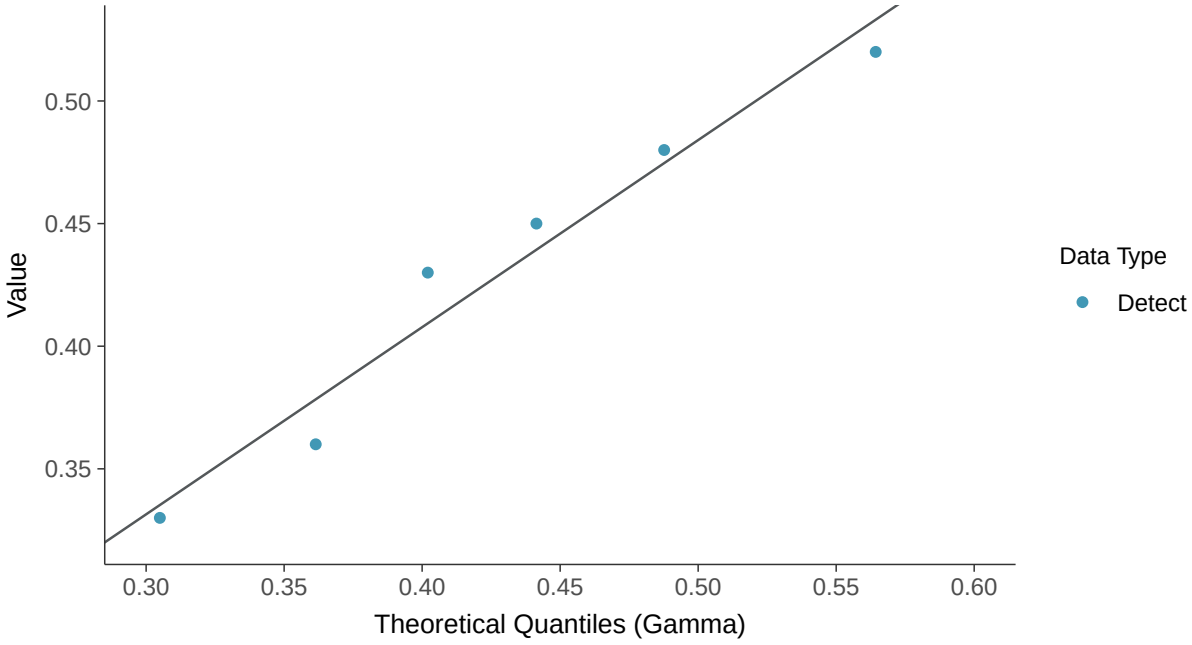
Lognormal Q-Q plot

Lithium, MW-30 (mg/l)



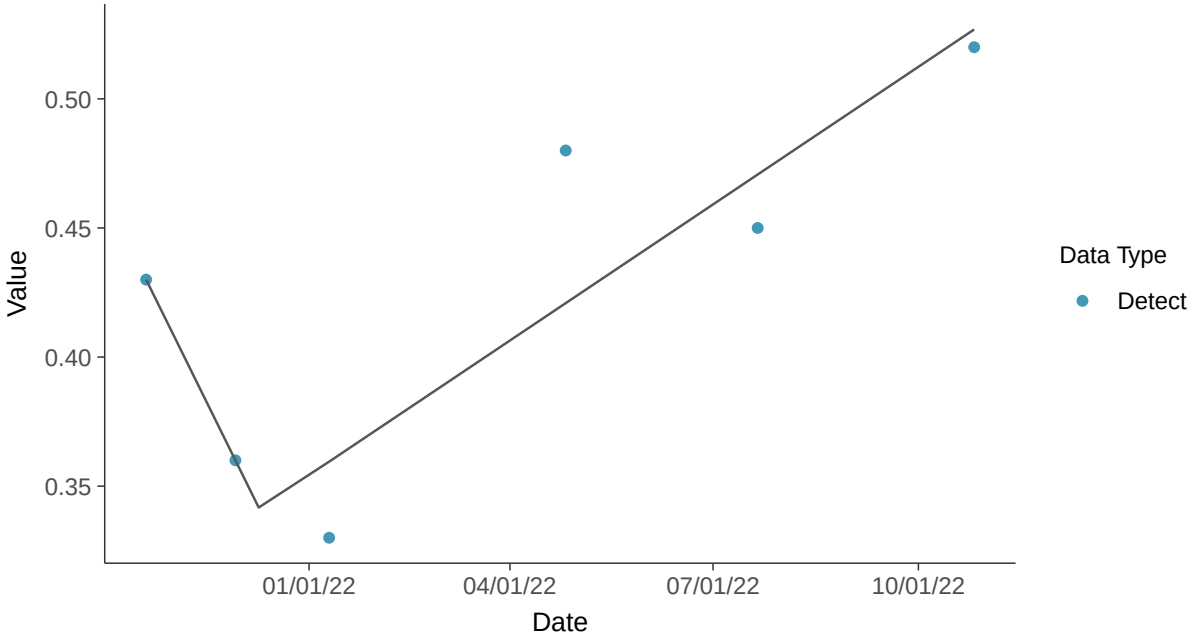
Gamma Q-Q plot

Lithium, MW-30 (mg/l)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-30 (mg/l)

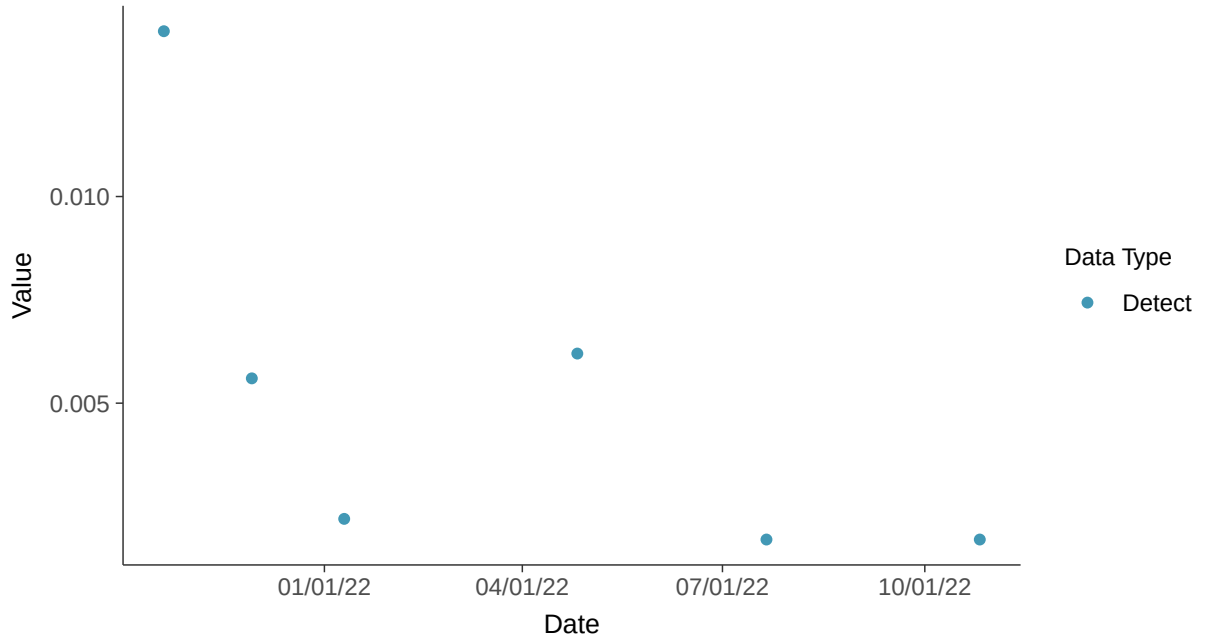


Appendix IV: Selenium, MW-30

ID: 23_2_129

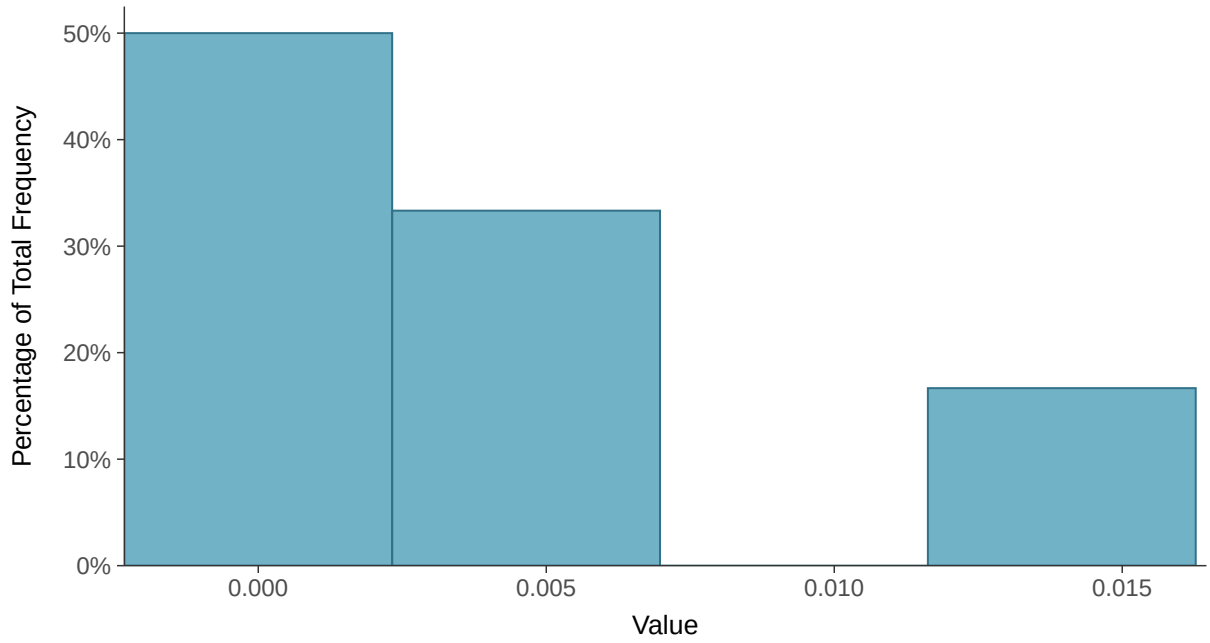
Scatter Plot

Selenium, MW-30 (mg/l)



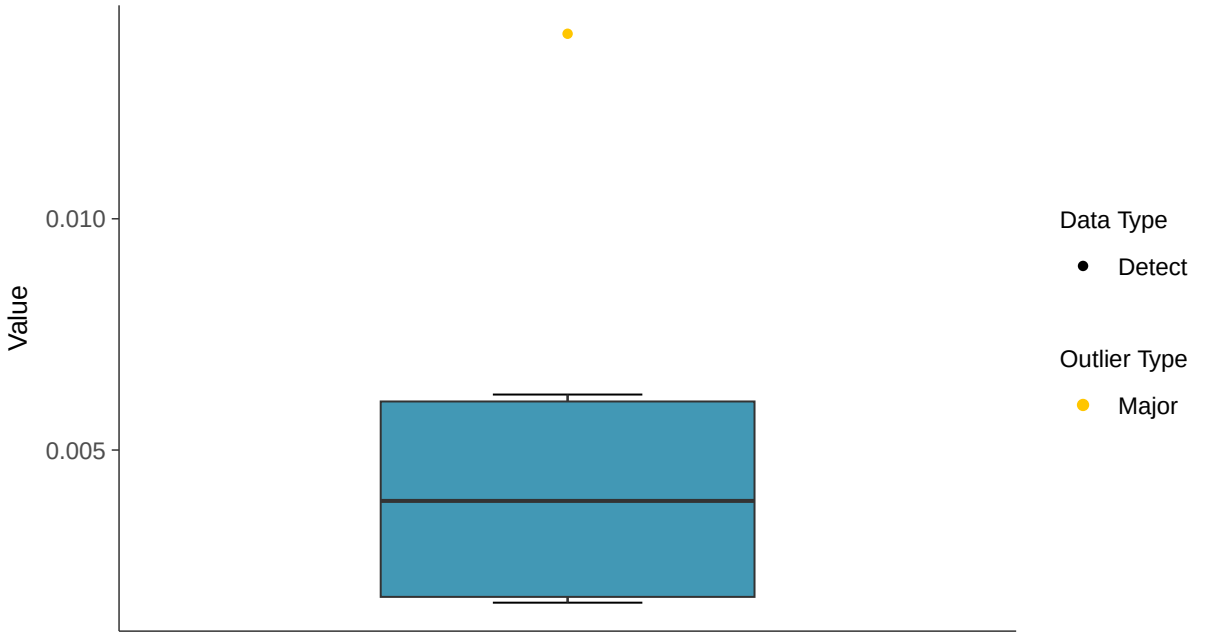
Histogram

Selenium, MW-30 (mg/l)



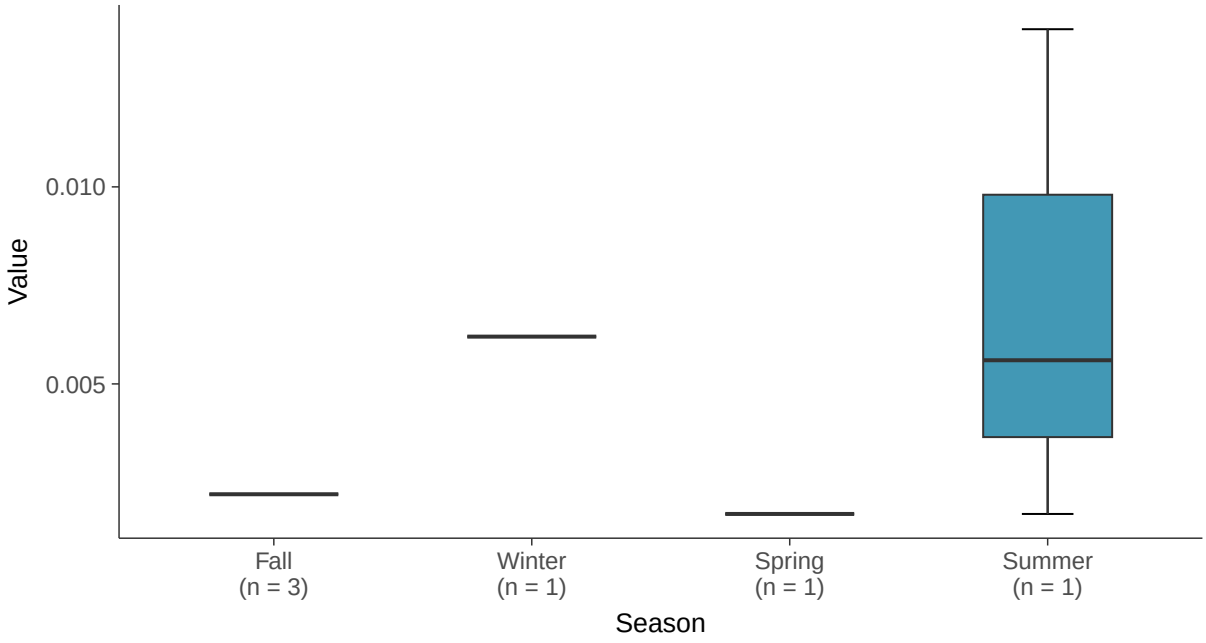
Boxplot

Selenium, MW-30 (mg/l)



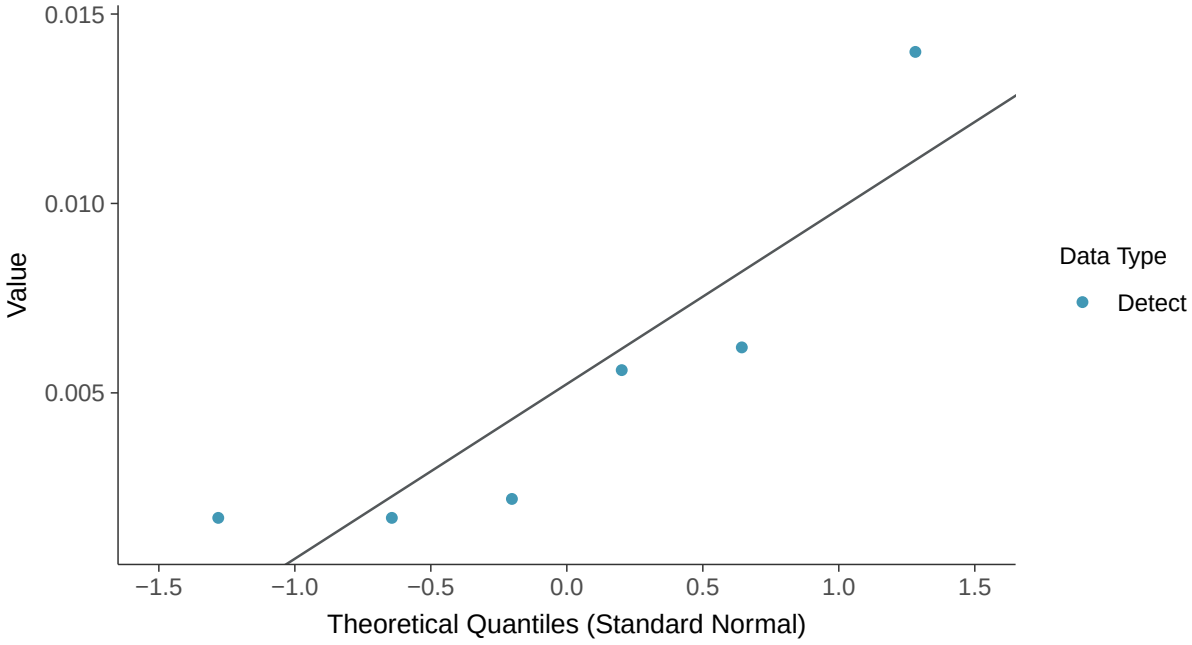
Boxplot by Season

Selenium, MW-30 (mg/l)



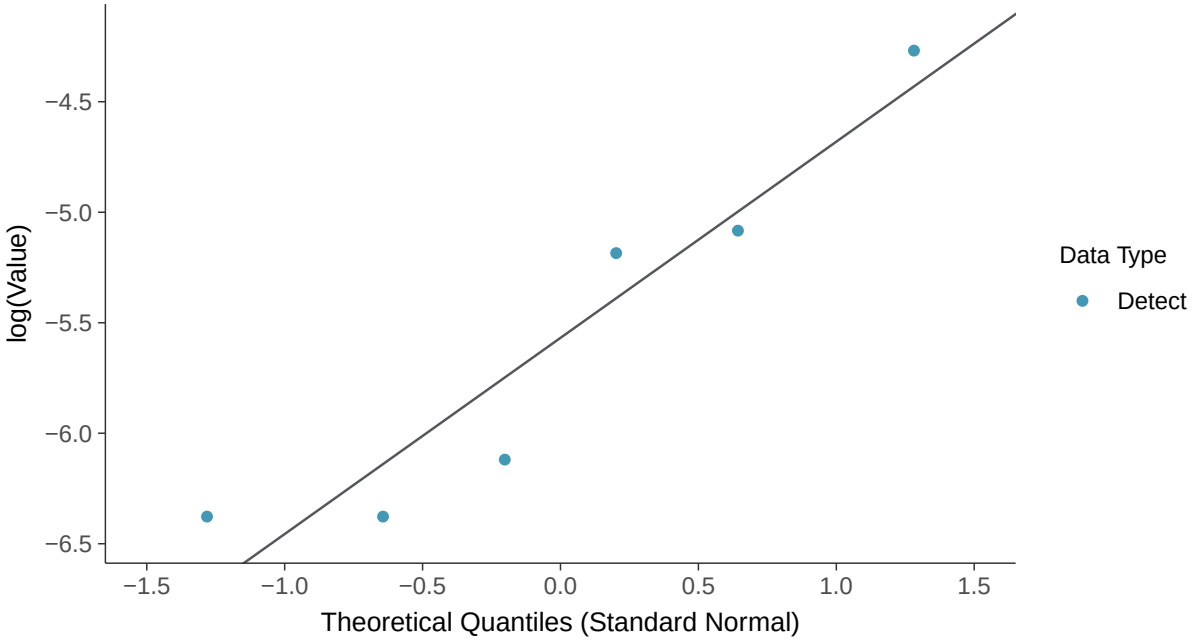
Normal Q-Q plot

Selenium, MW-30 (mg/l)



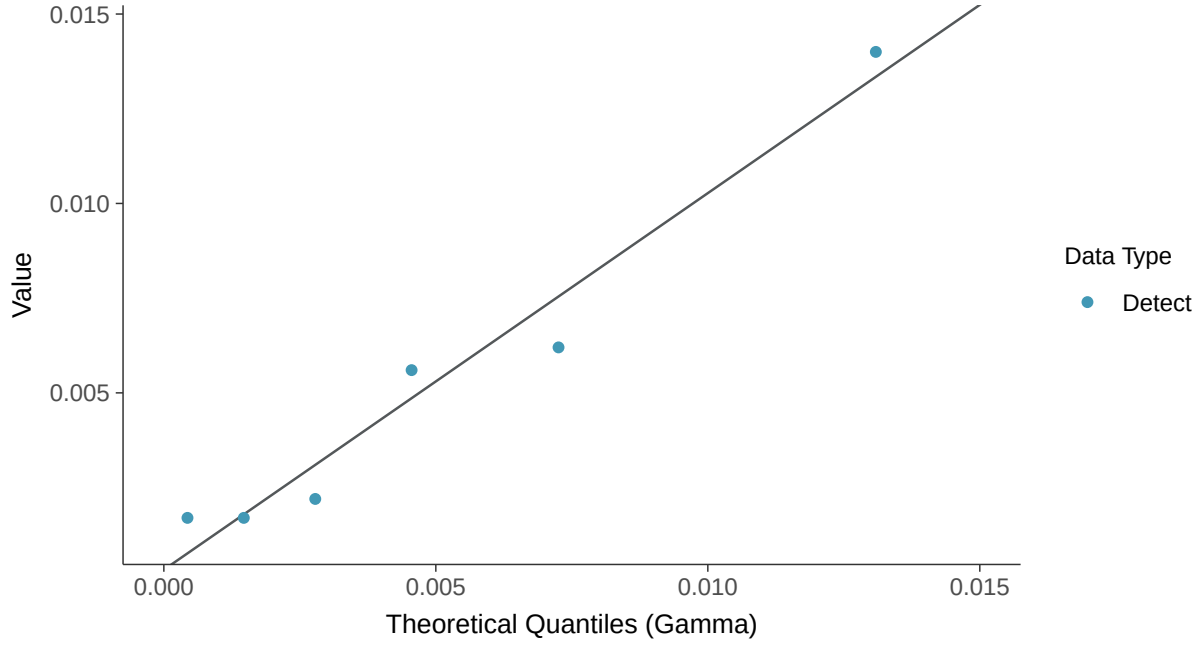
Lognormal Q-Q plot

Selenium, MW-30 (mg/l)



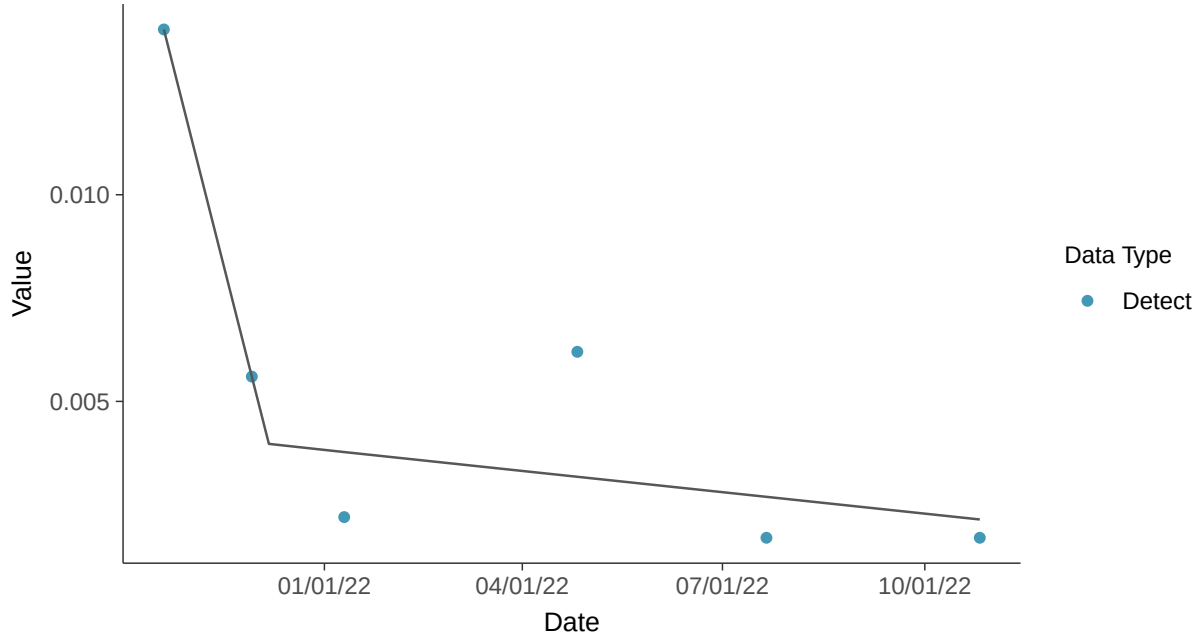
Gamma Q-Q plot

Selenium, MW-30 (mg/l)



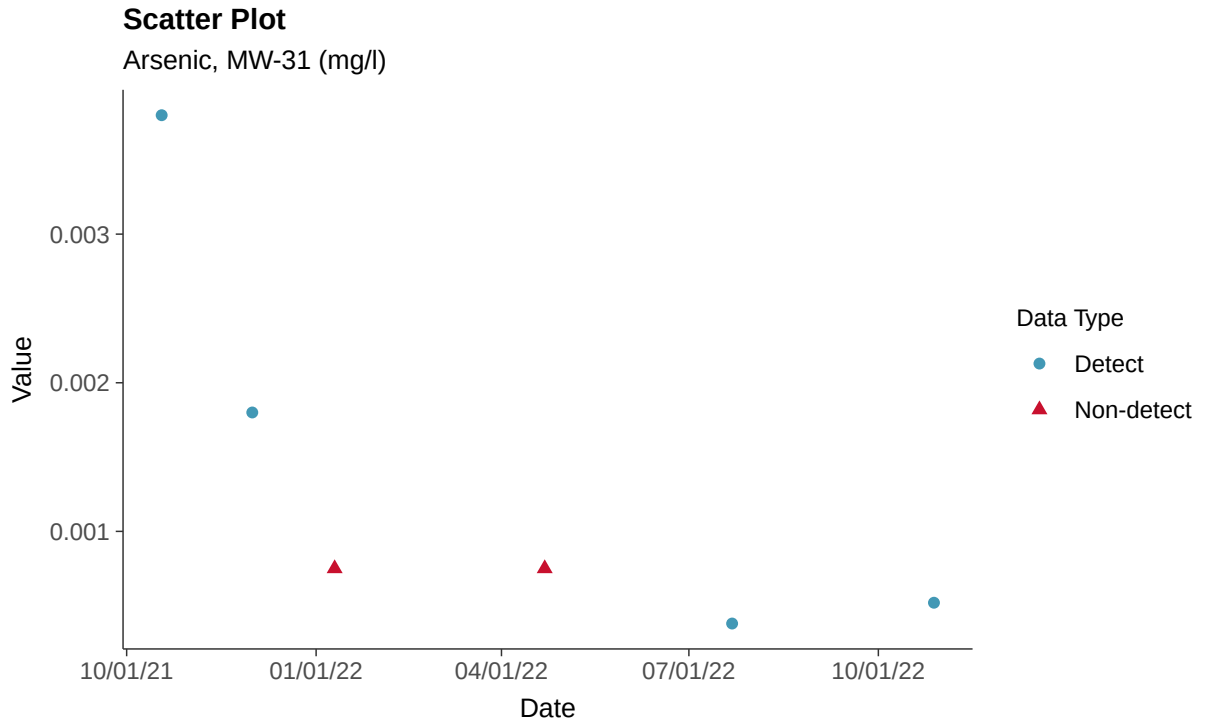
Trend Regression: Piecewise Linear-Linear

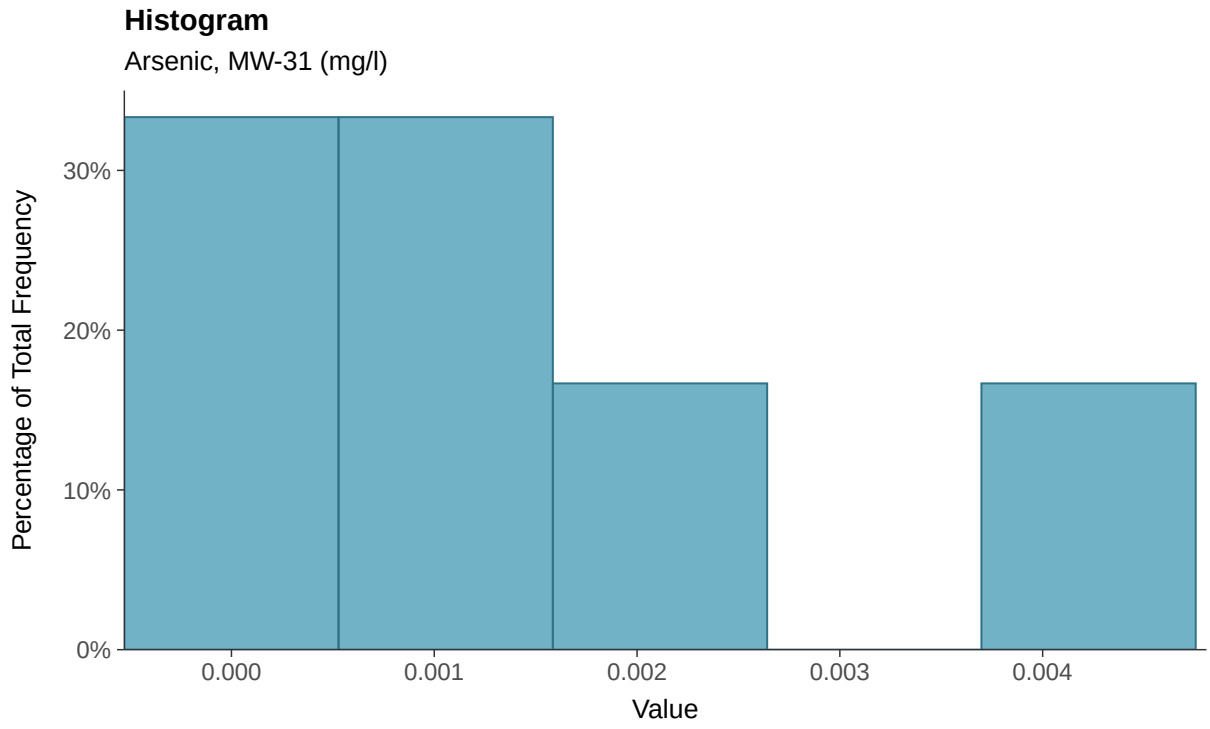
Selenium, MW-30 (mg/l)



Appendix IV: Arsenic, MW-31

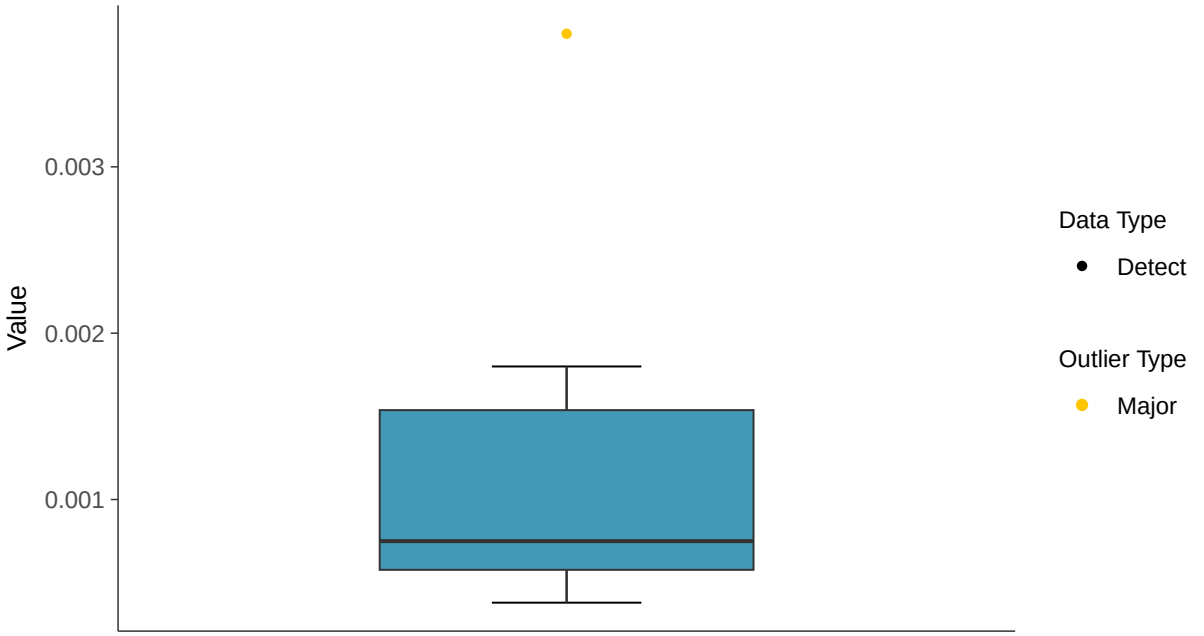
ID: 24_2_105





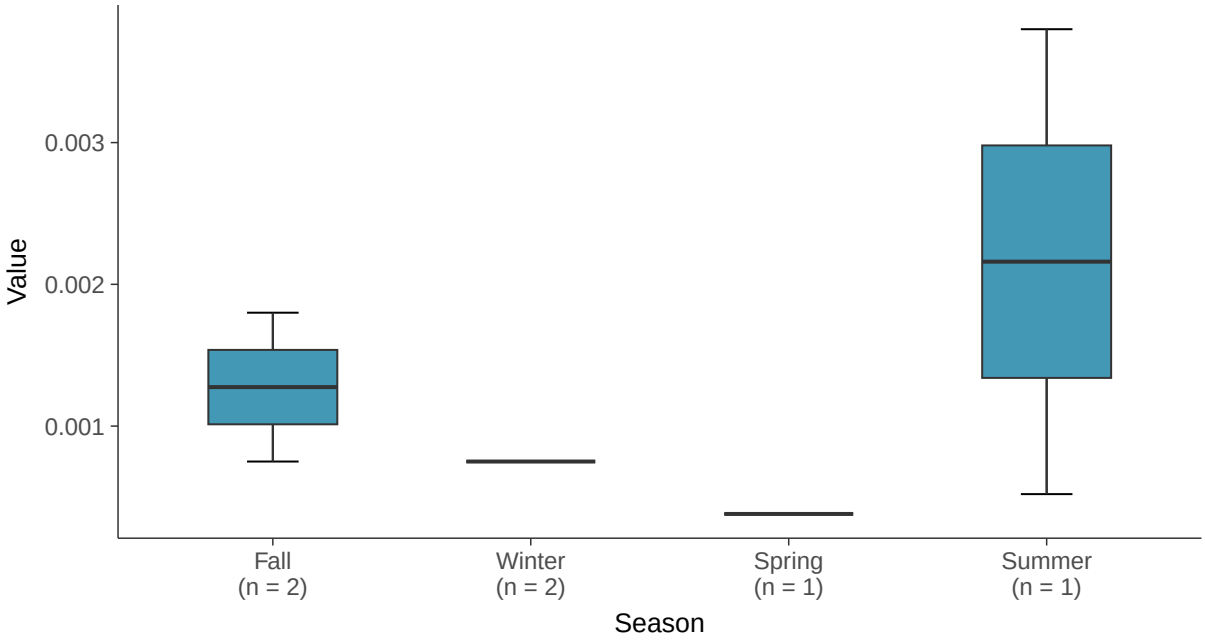
Boxplot

Arsenic, MW-31 (mg/l)



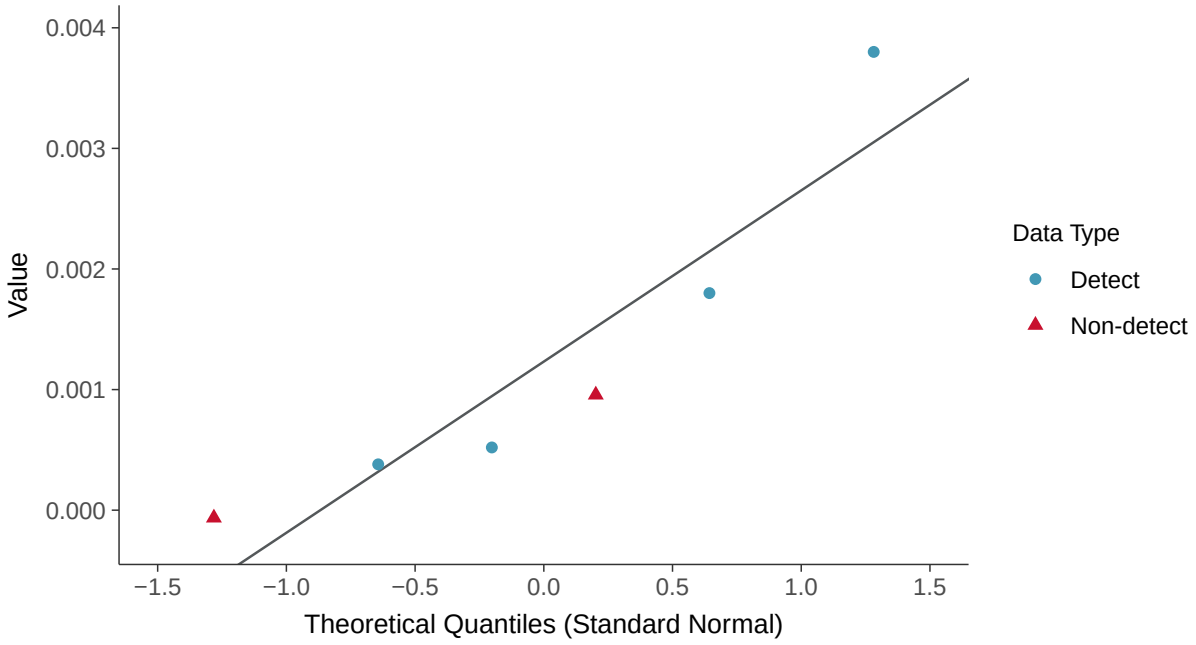
Boxplot by Season

Arsenic, MW-31 (mg/l)



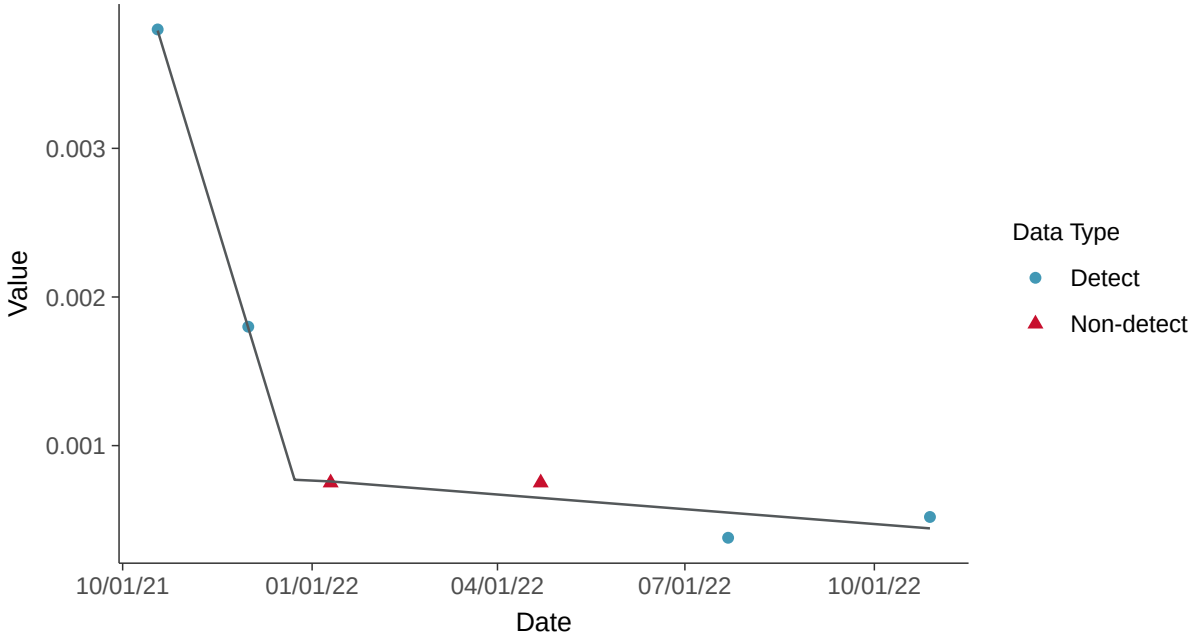
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-31 (mg/l)



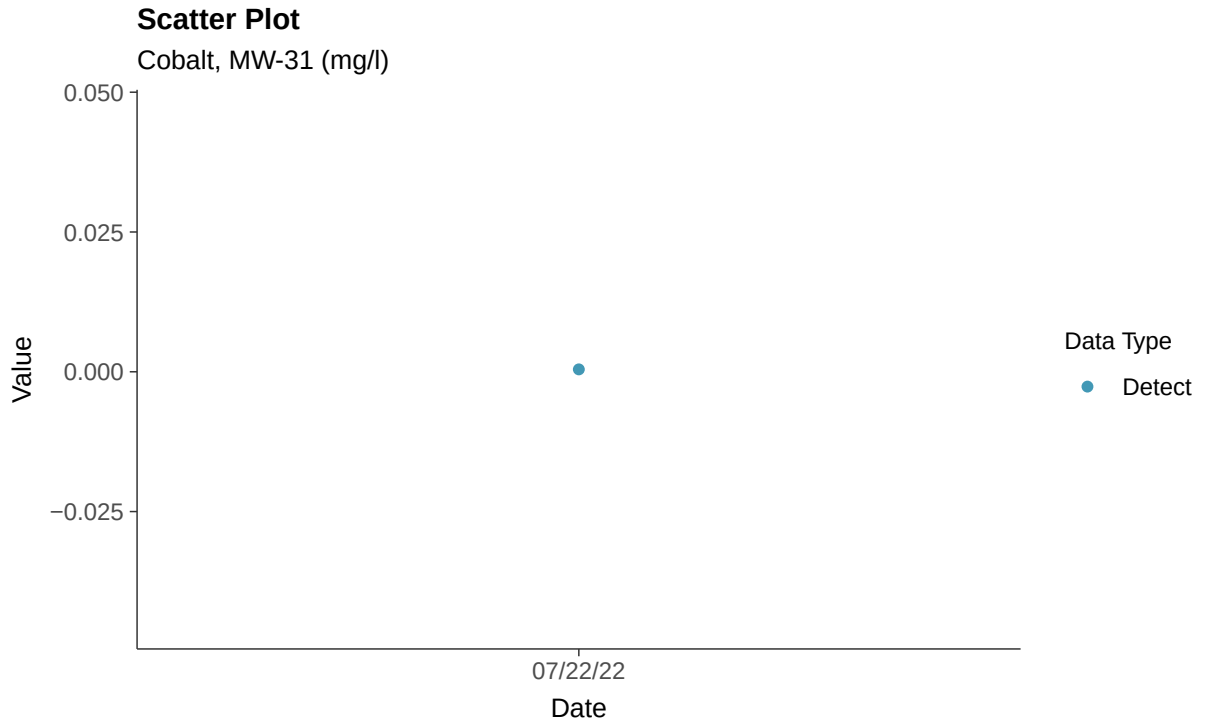
Trend Regression: Piecewise Linear-Linear

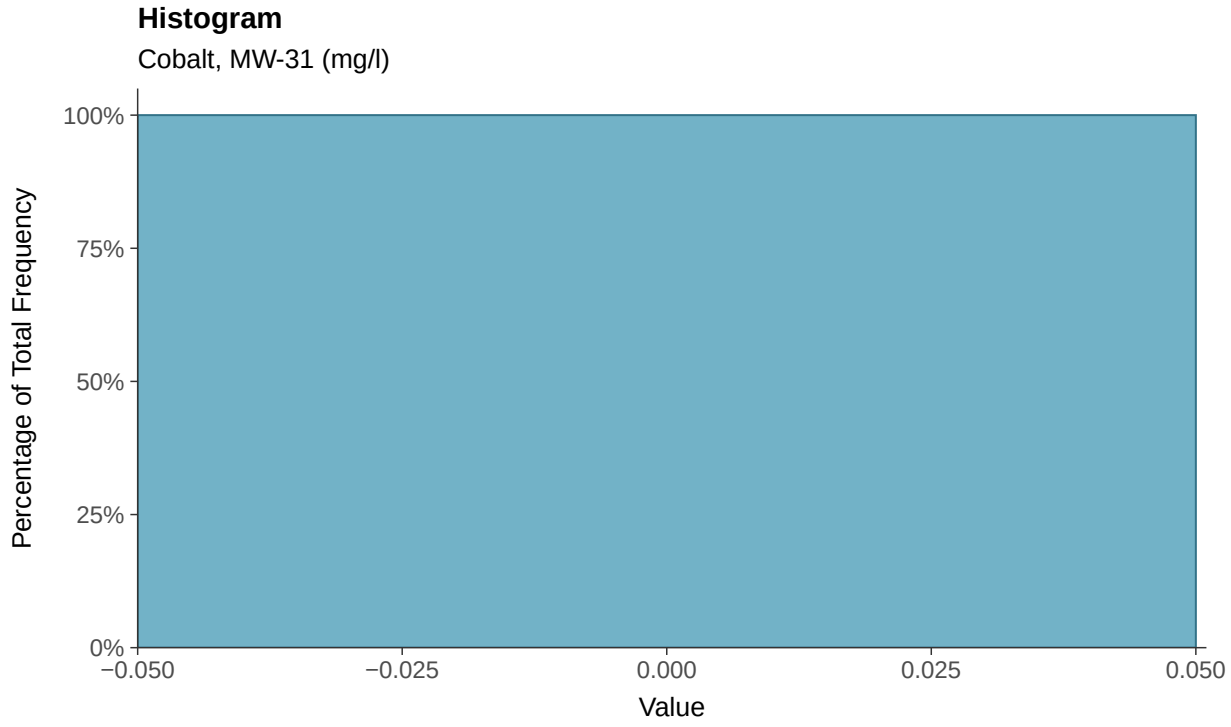
Arsenic, MW-31 (mg/l)



Appendix IV: Cobalt, MW-31

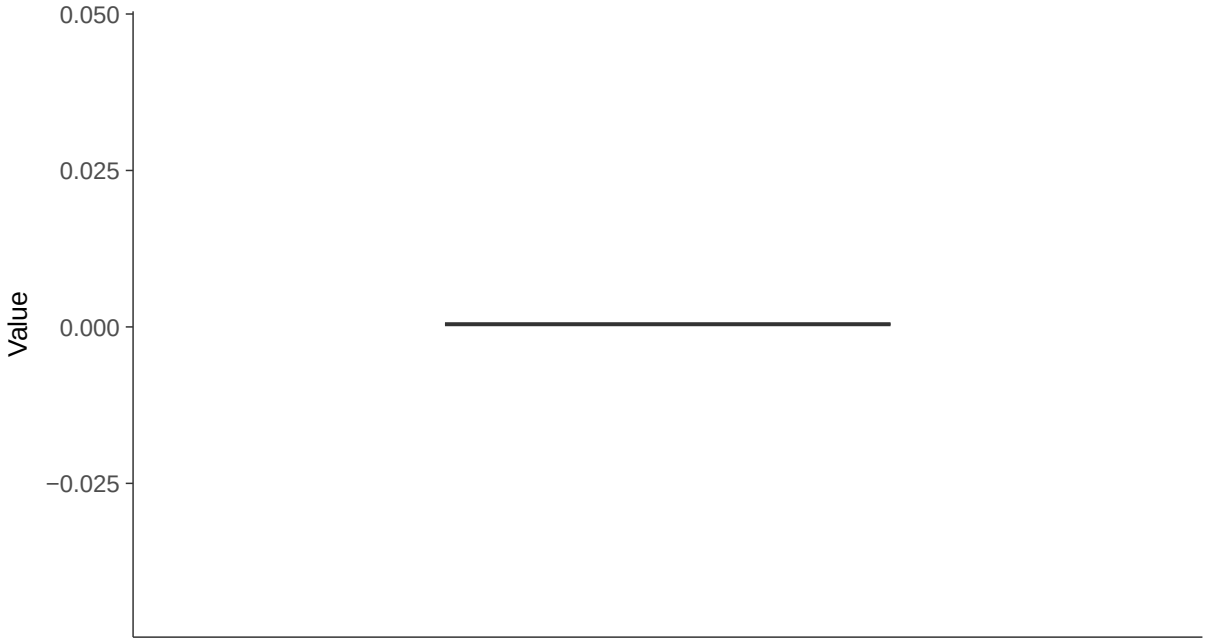
ID: 24_2_113





Boxplot

Cobalt, MW-31 (mg/l)

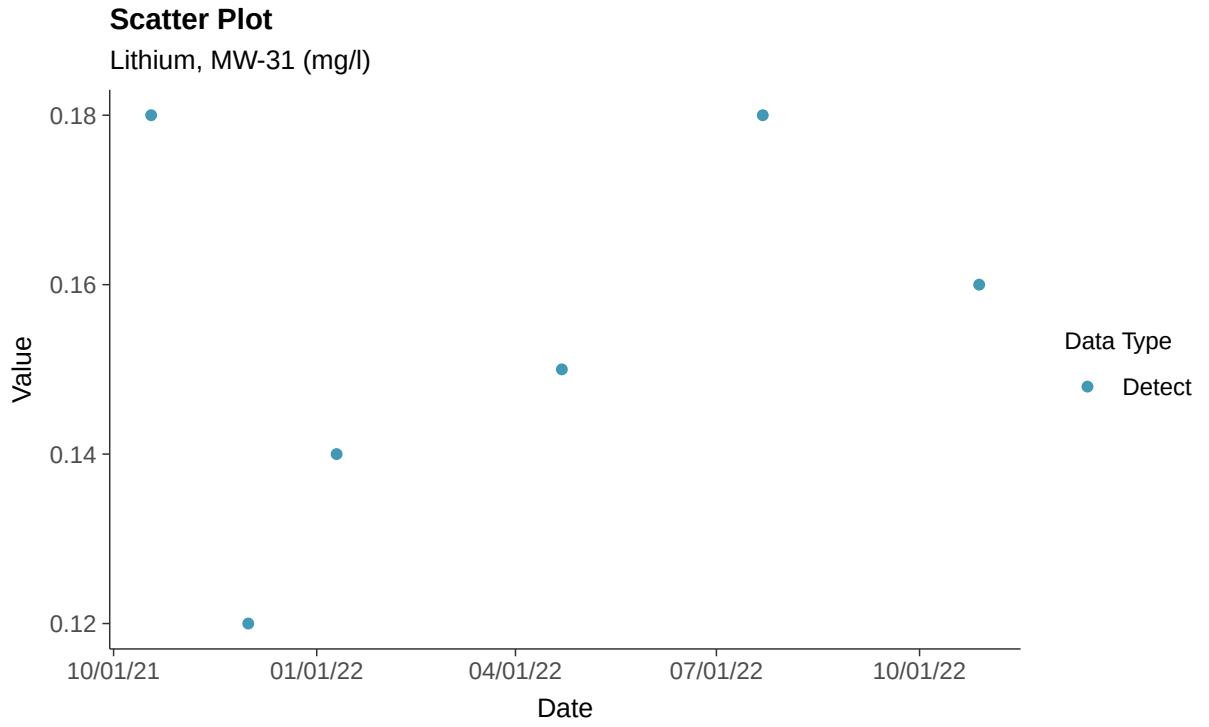


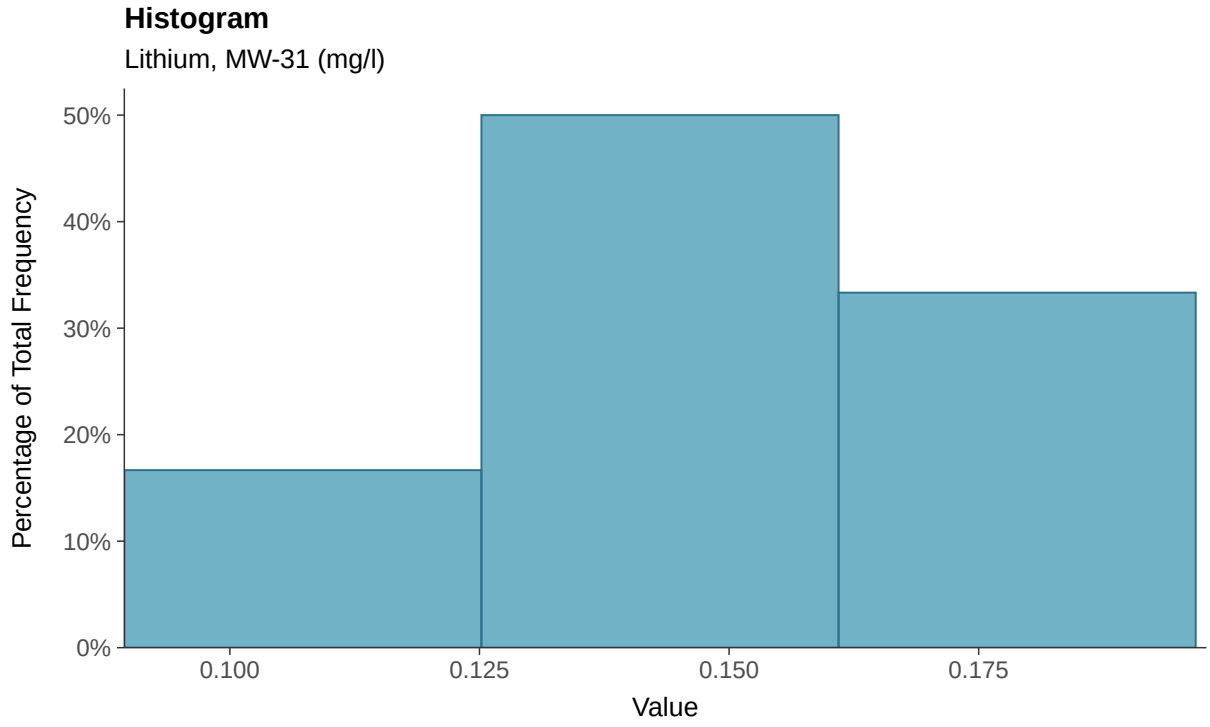
Boxplot by Season

Cobalt, MW-31 (mg/l)

Appendix IV: Lithium, MW-31

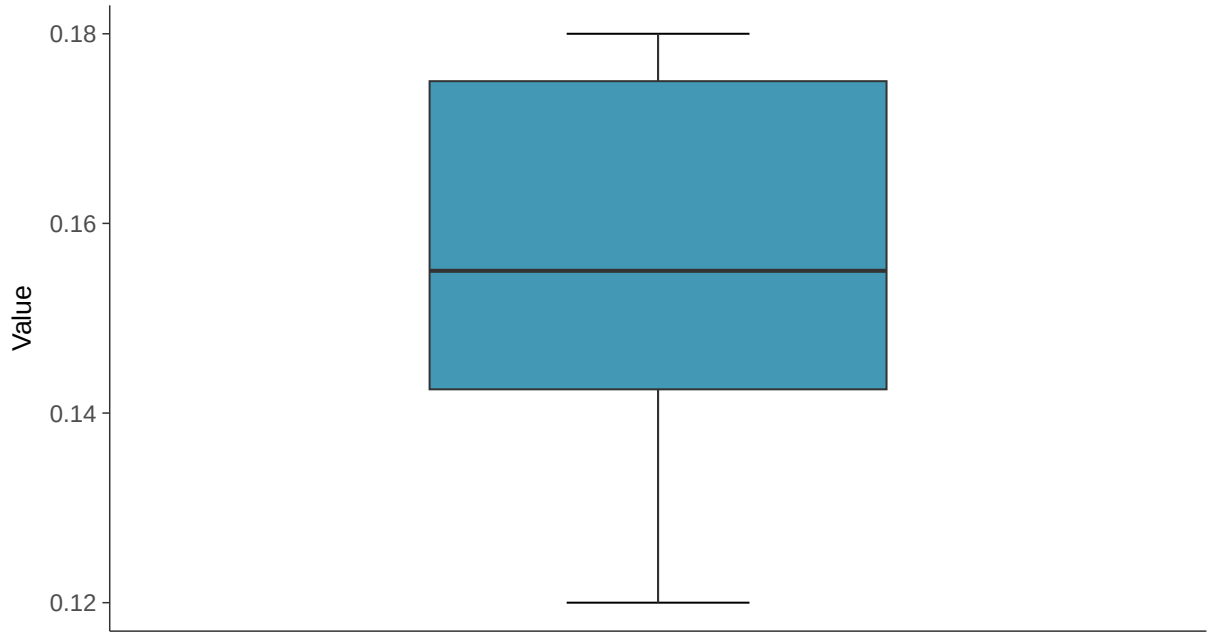
ID: 24_2_118





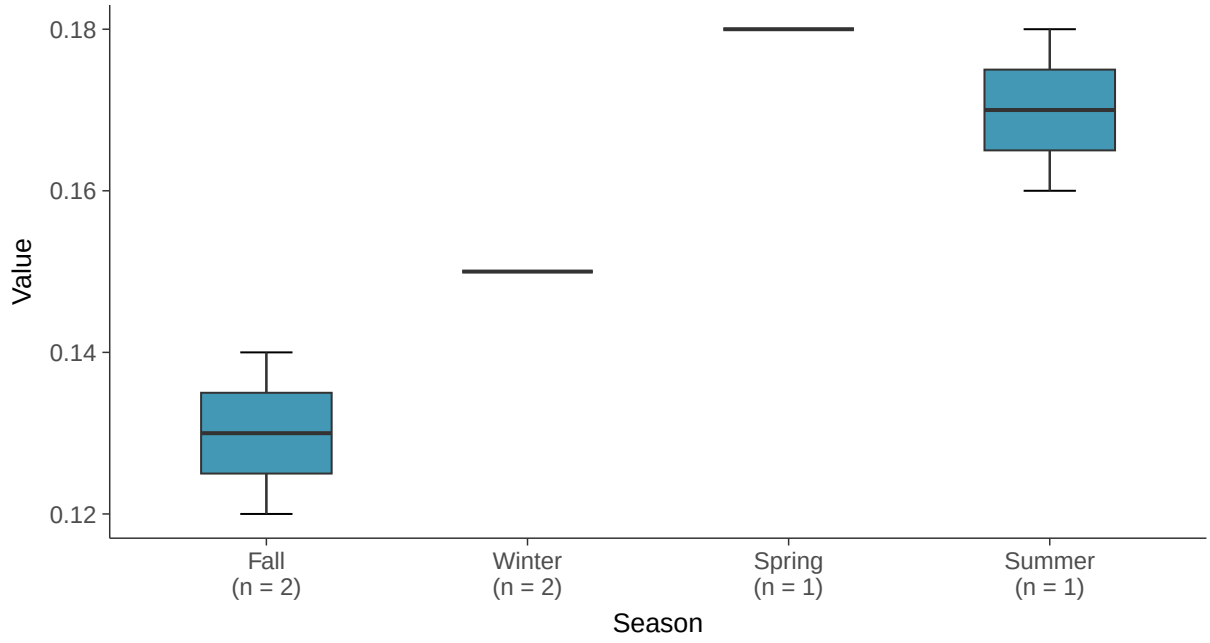
Boxplot

Lithium, MW-31 (mg/l)



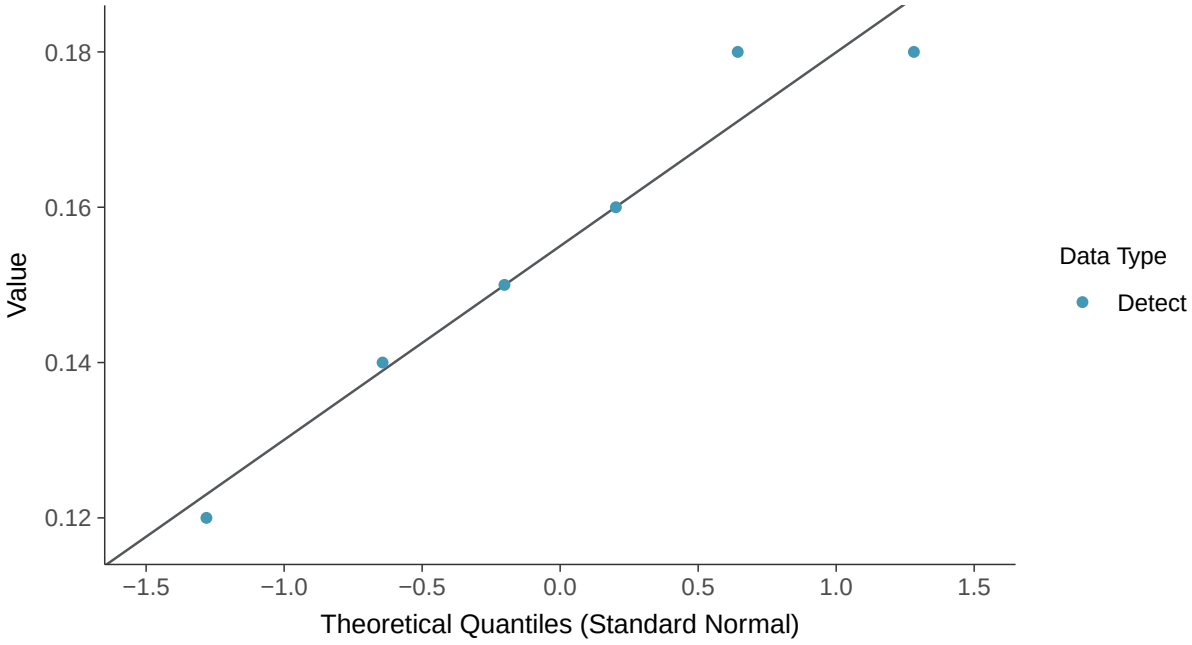
Boxplot by Season

Lithium, MW-31 (mg/l)



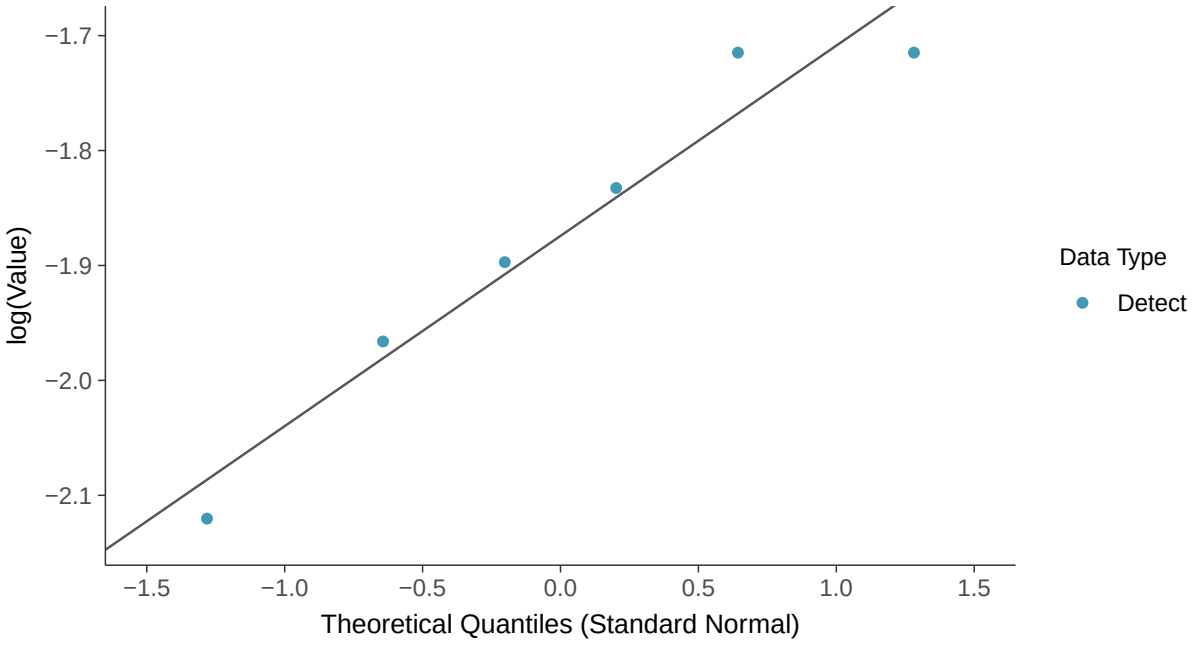
Normal Q-Q plot

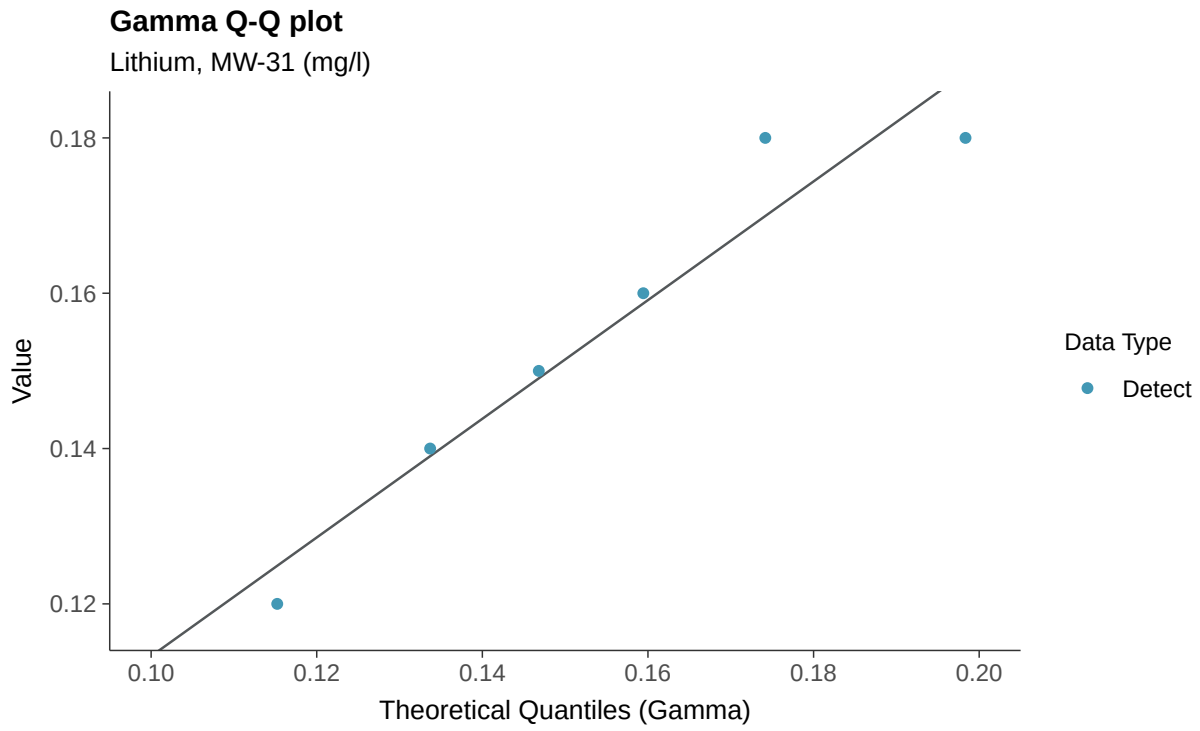
Lithium, MW-31 (mg/l)



Lognormal Q-Q plot

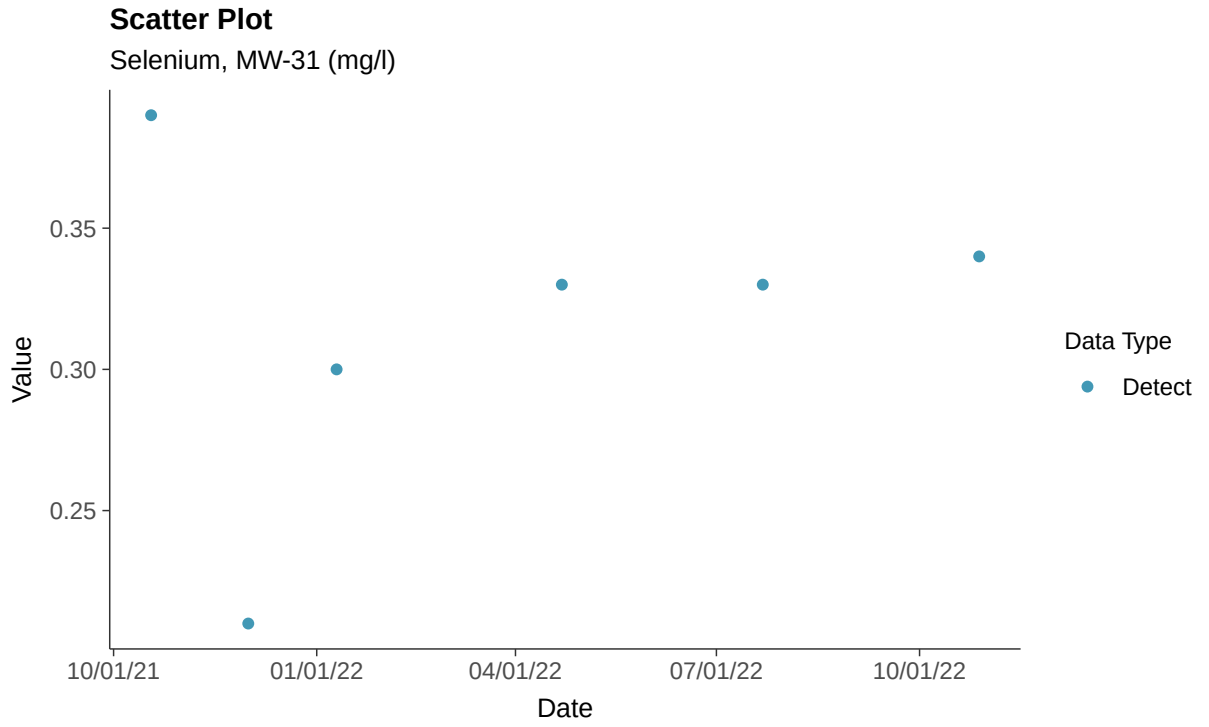
Lithium, MW-31 (mg/l)

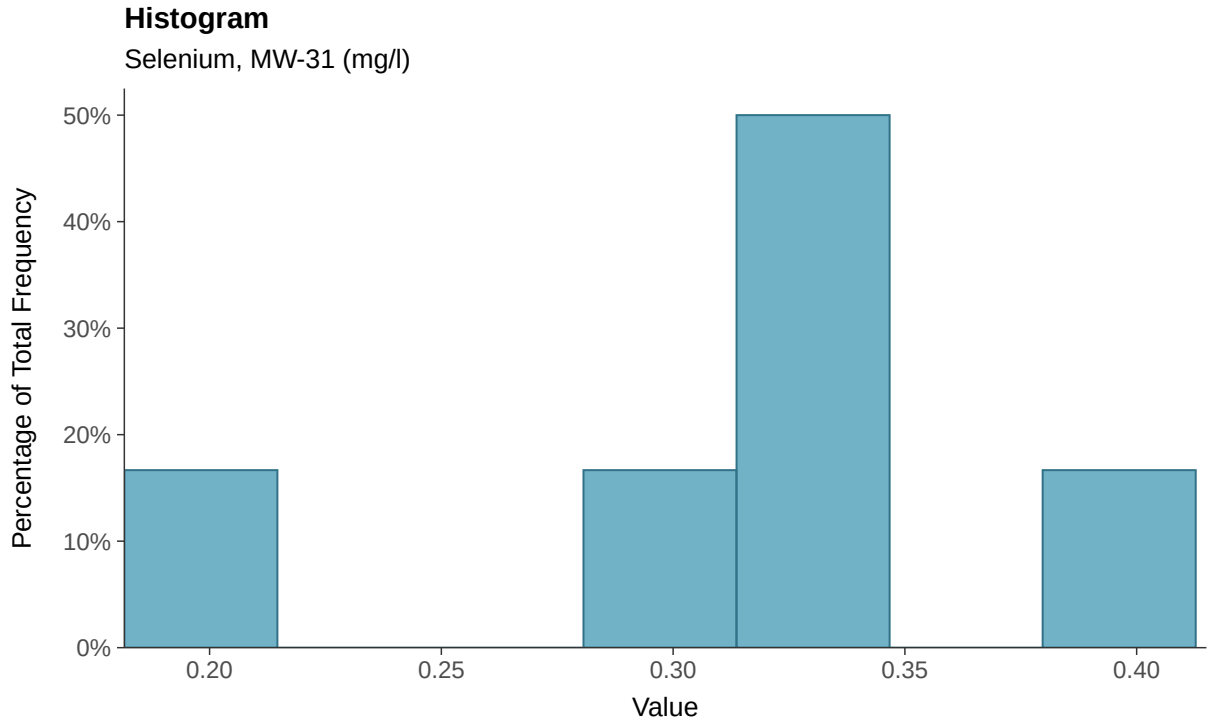



Gamma Q-Q plot
Lithium, MW-31 (mg/l)
Value
0.18
0.16
0.14
0.12
0.10
0.12
0.14
0.16
0.18
0.20
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Selenium, MW-31

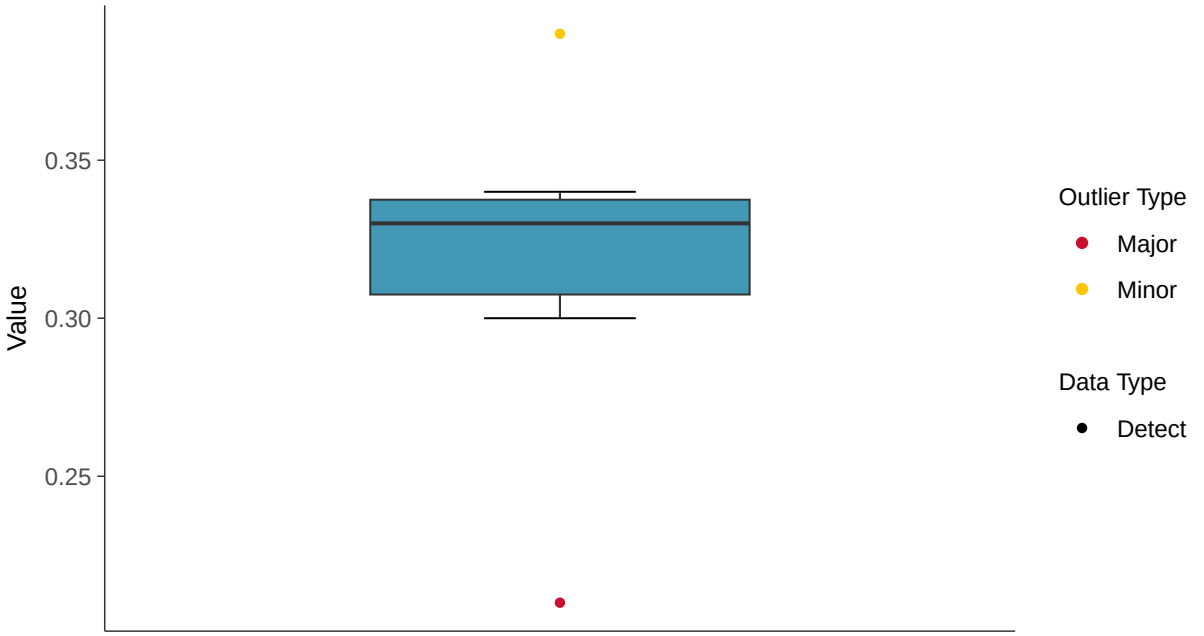
ID: 24_2_129





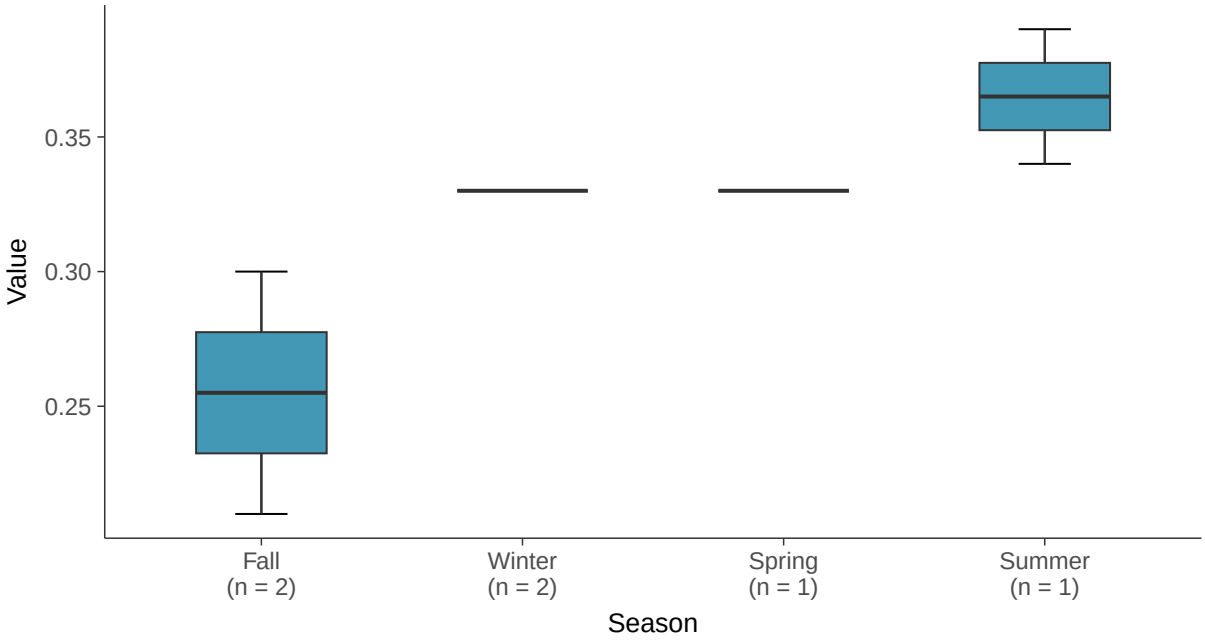
Boxplot

Selenium, MW-31 (mg/l)



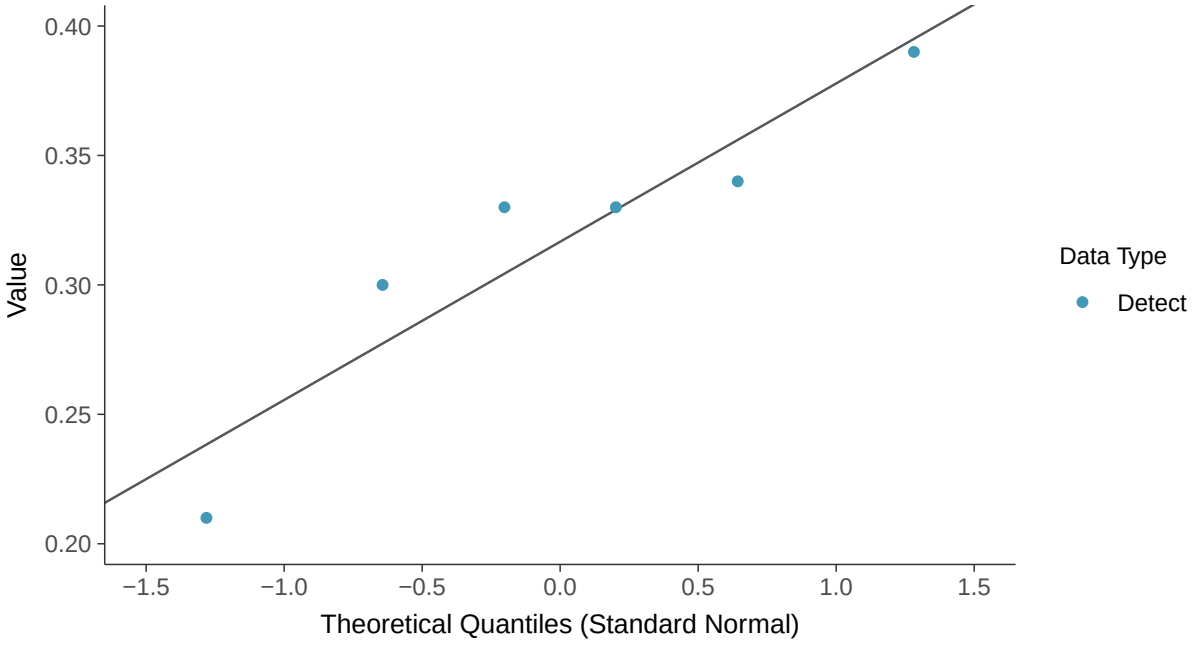
Boxplot by Season

Selenium, MW-31 (mg/l)



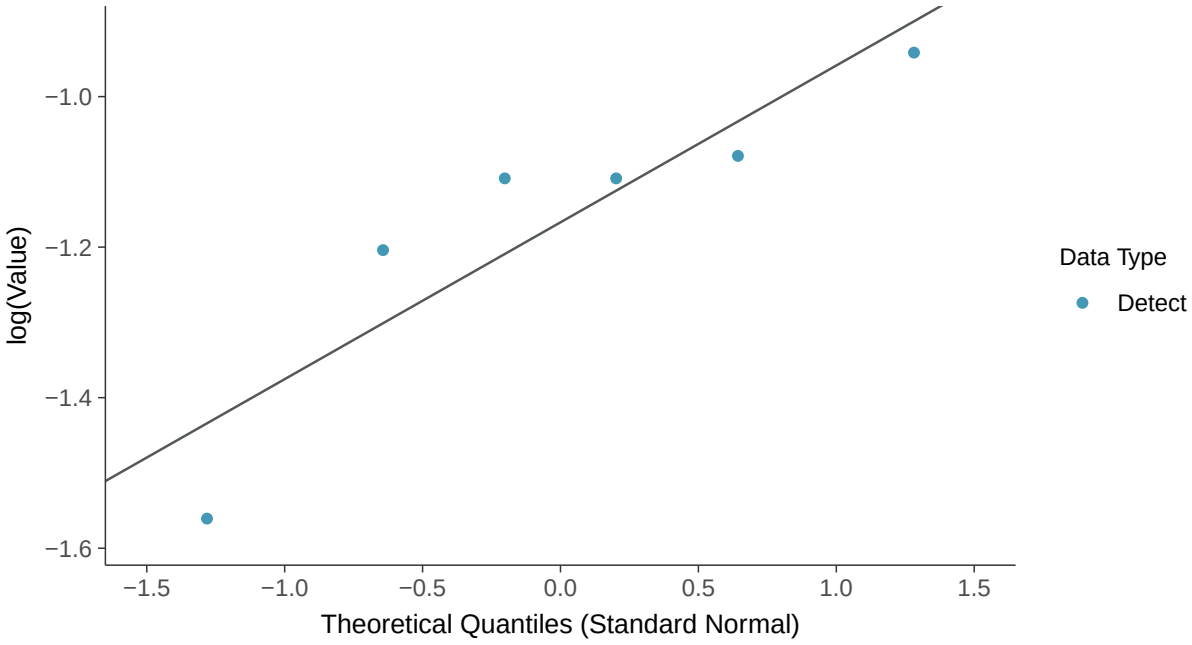
Normal Q-Q plot

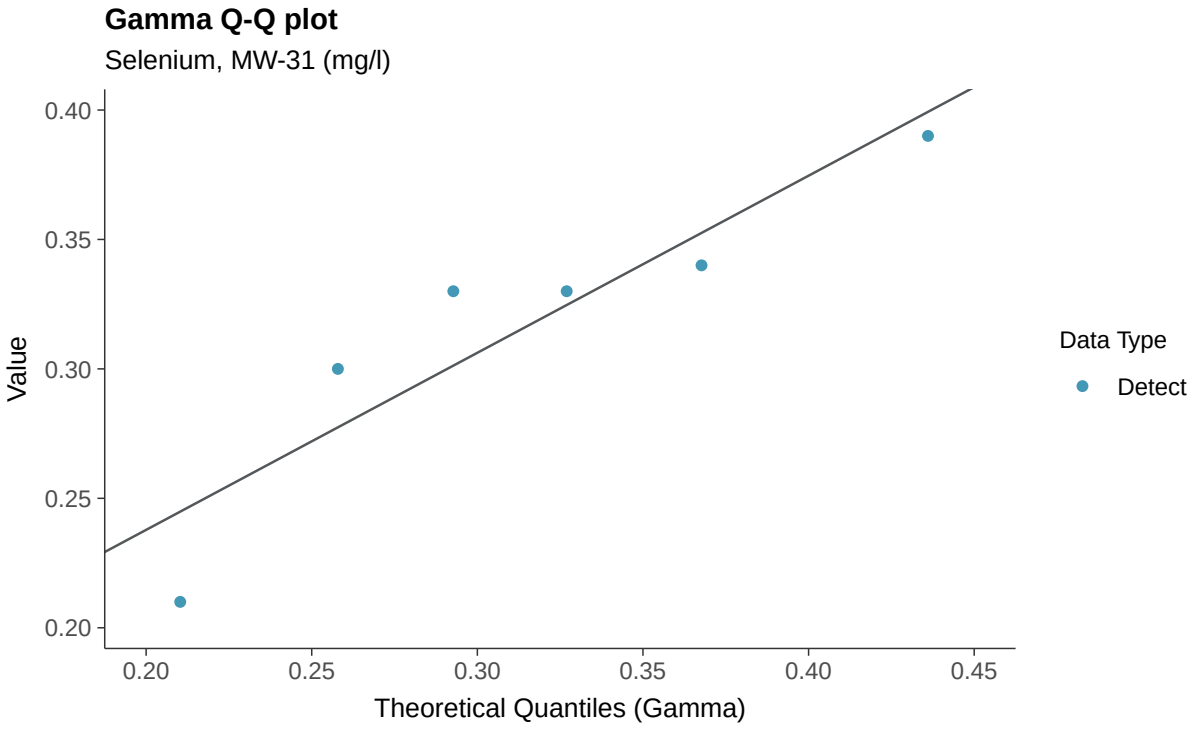
Selenium, MW-31 (mg/l)



Lognormal Q-Q plot

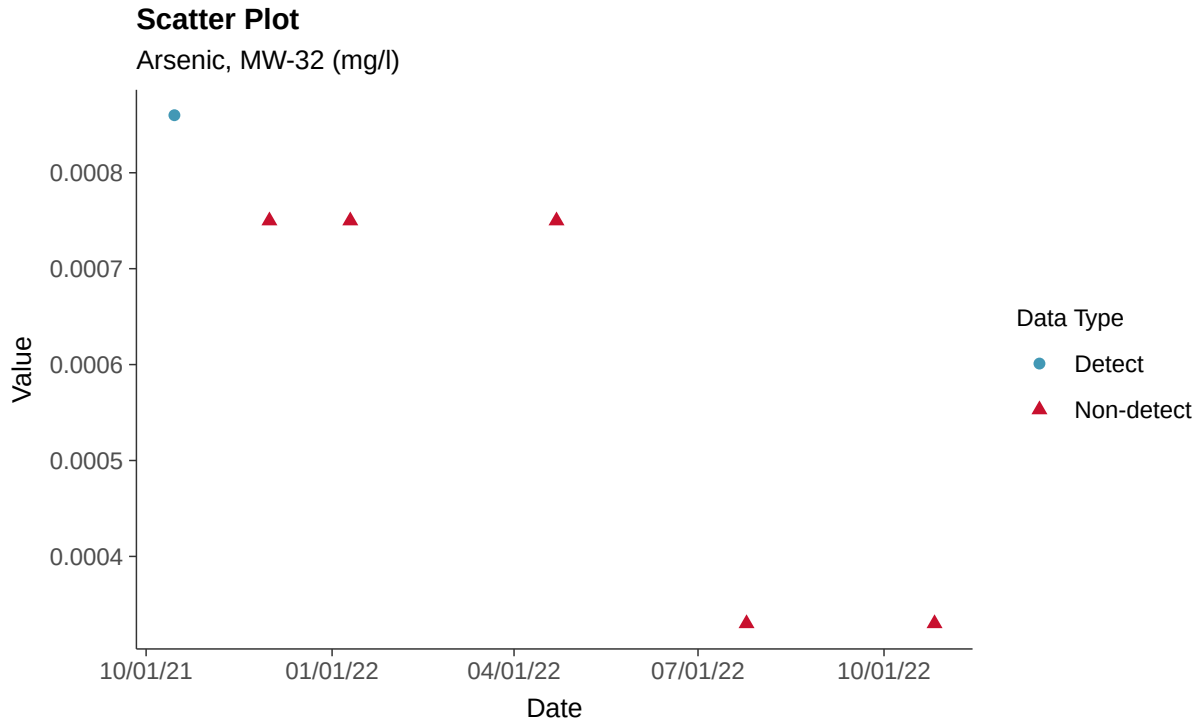
Selenium, MW-31 (mg/l)

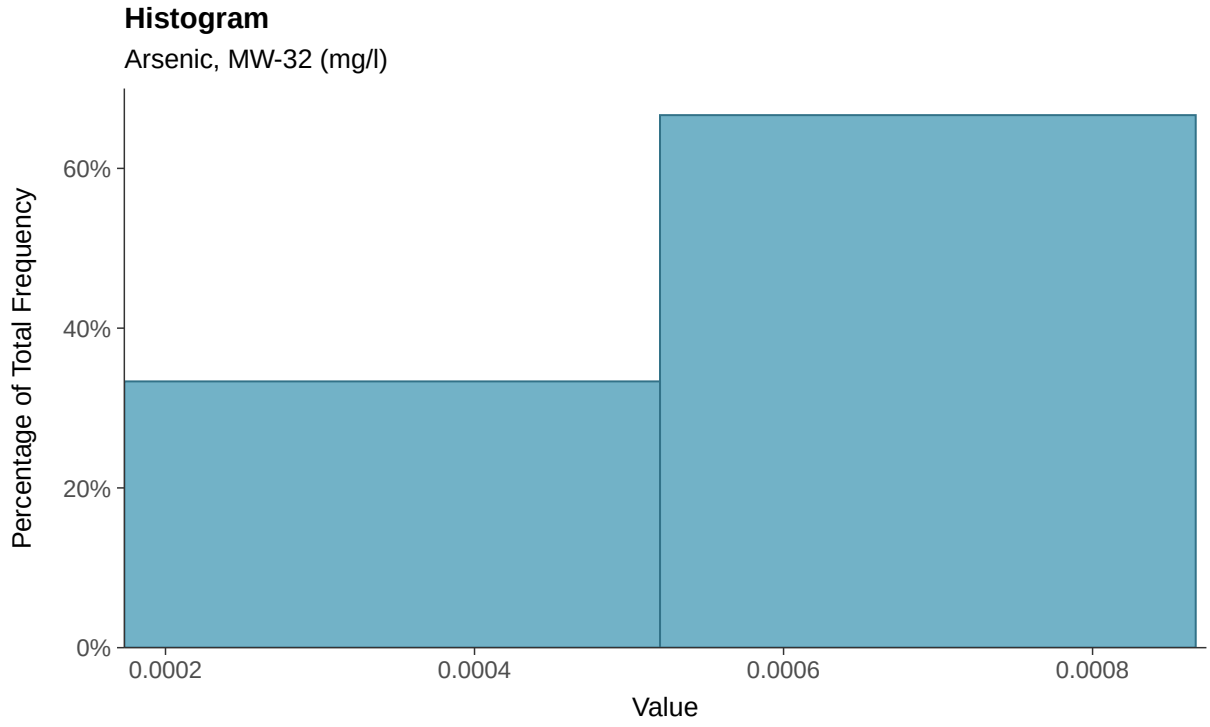



Gamma Q-Q plot
Selenium, MW-31 (mg/l)
Value
0.40
0.35
0.30
0.25
0.20
0.20
0.25
0.30
0.35
0.40
0.45
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Arsenic, MW-32

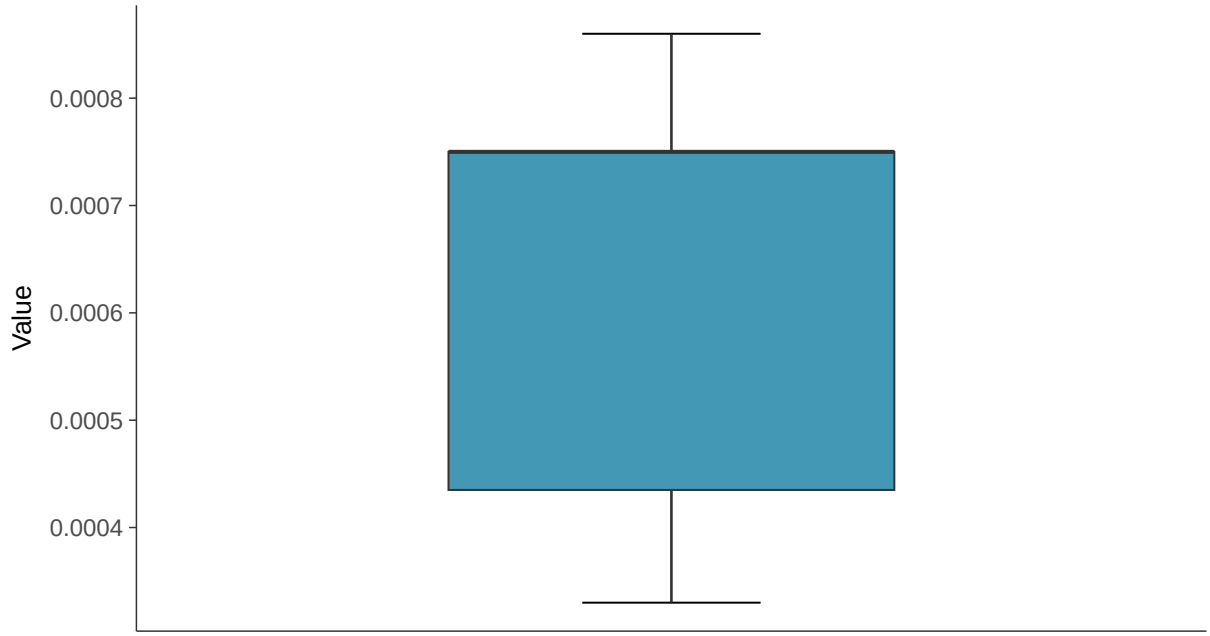
ID: 25_2_105





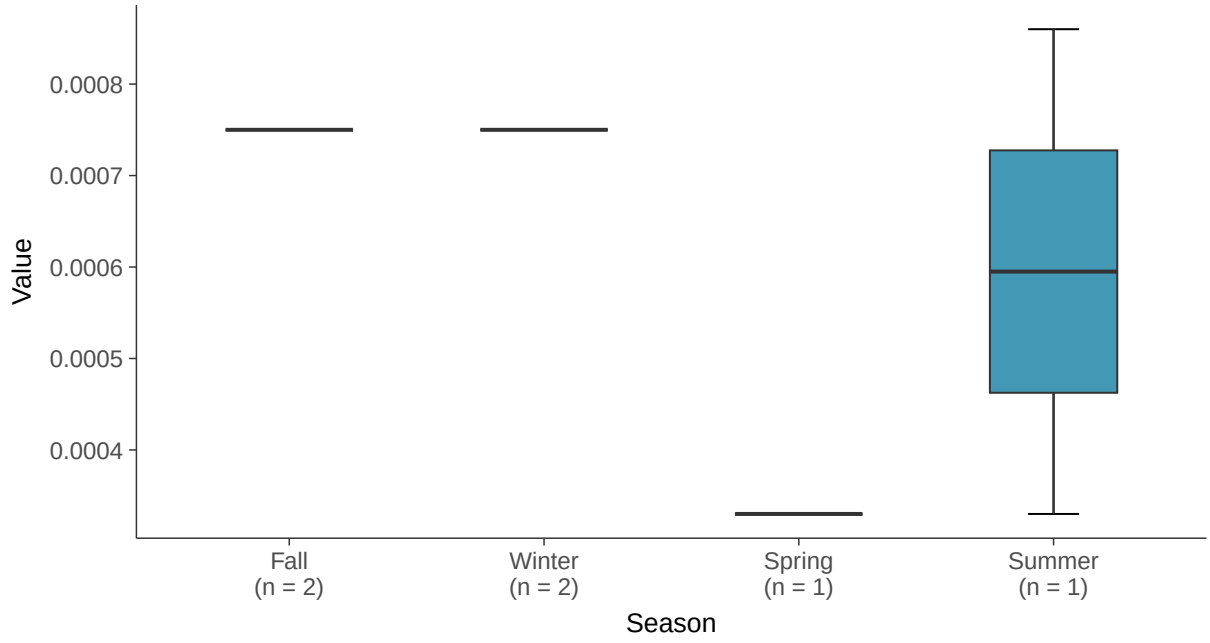
Boxplot

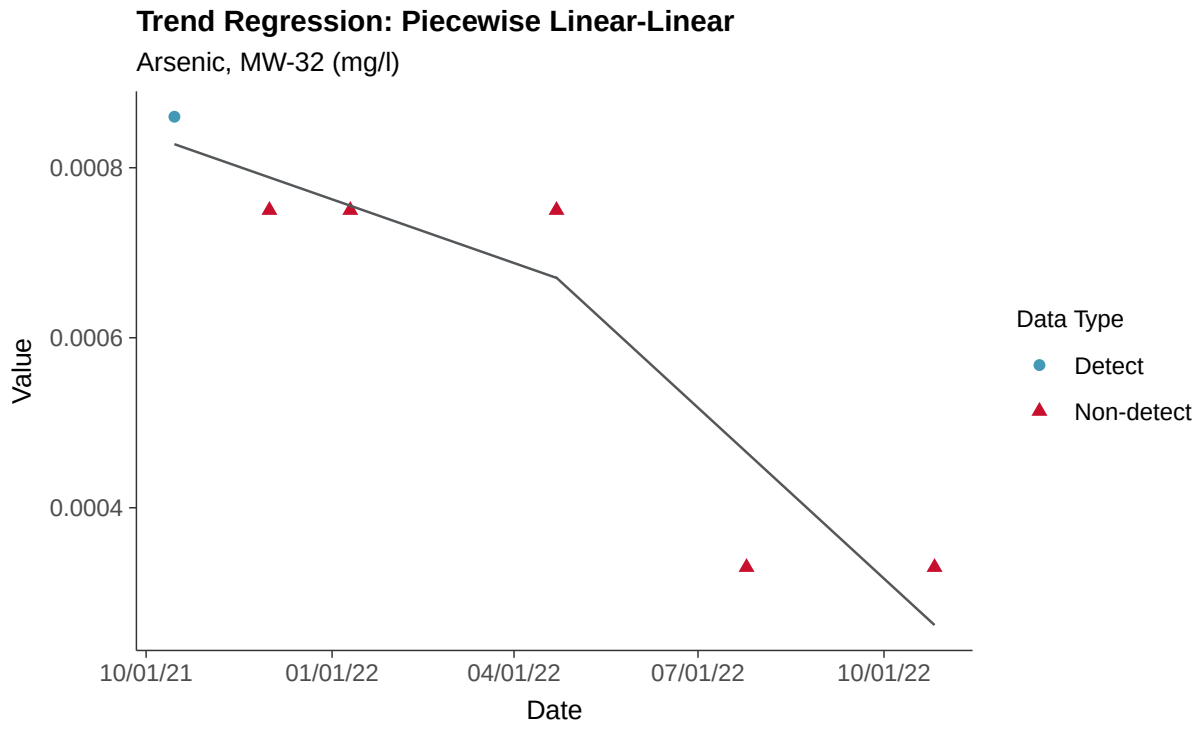
Arsenic, MW-32 (mg/l)



Boxplot by Season

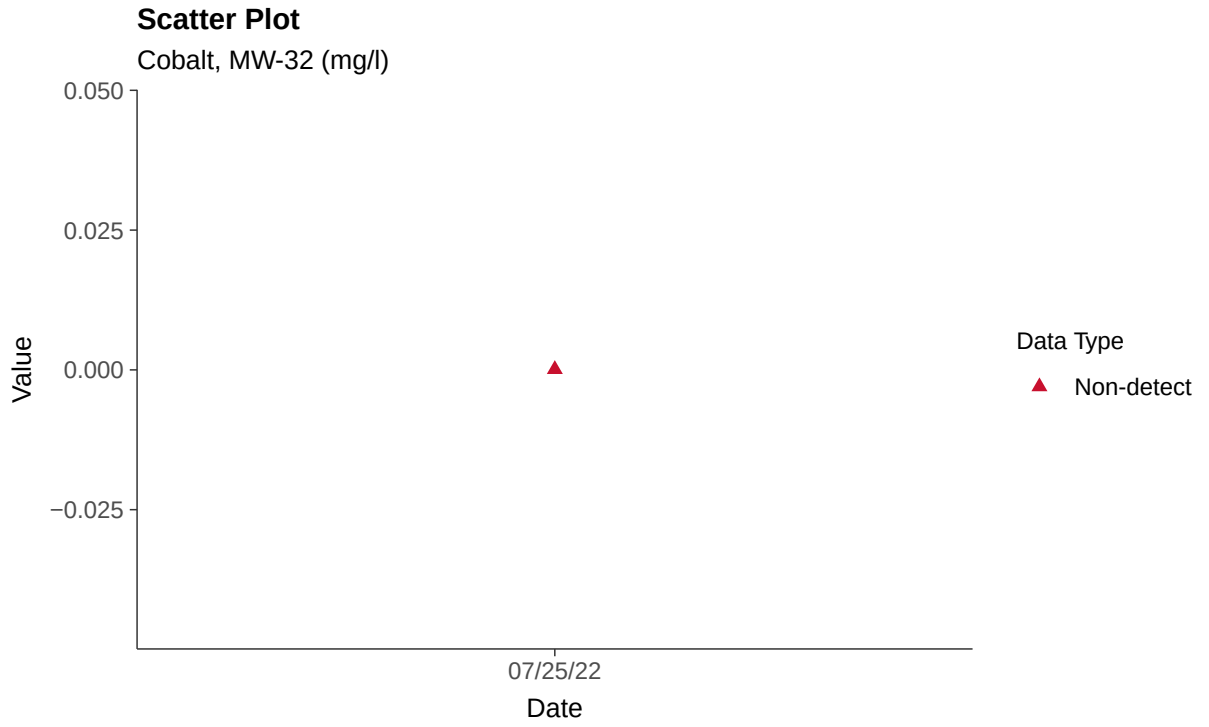
Arsenic, MW-32 (mg/l)

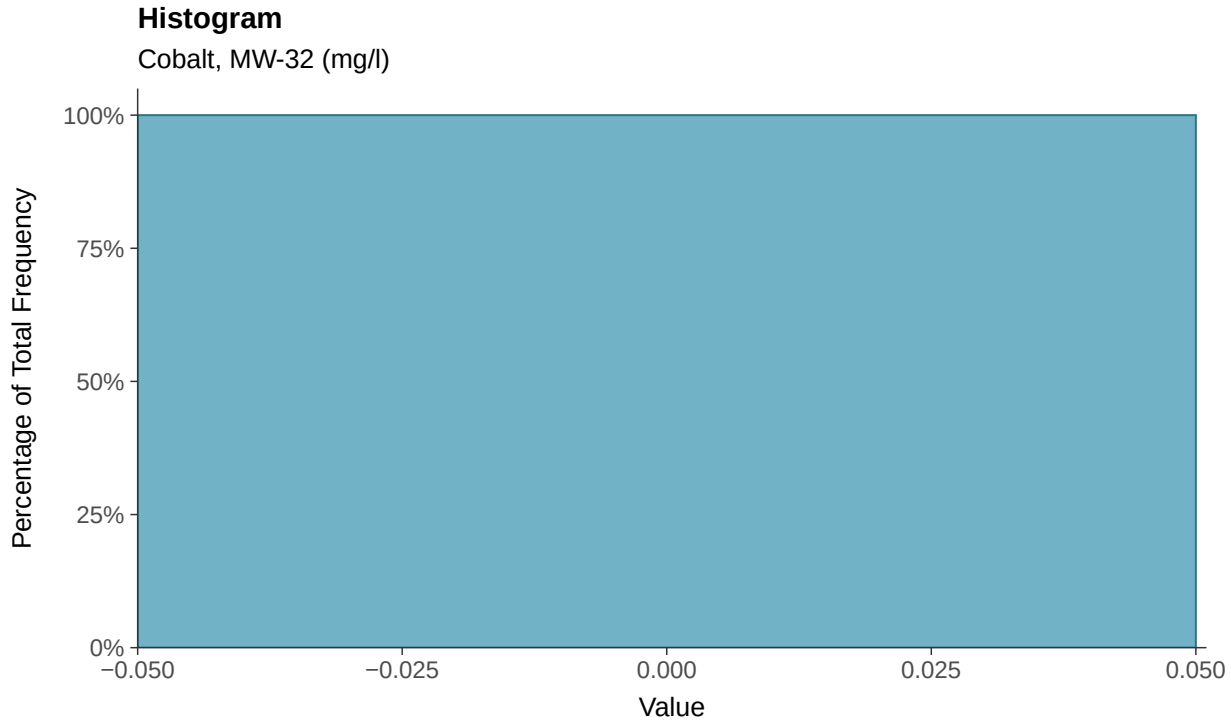



Trend Regression: Piecewise Linear-Linear
Arsenic, MW-32 (mg/l)
0.0008
0.0006
0.0004
Value
10/01/21
01/01/22
04/01/22
07/01/22
10/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-32

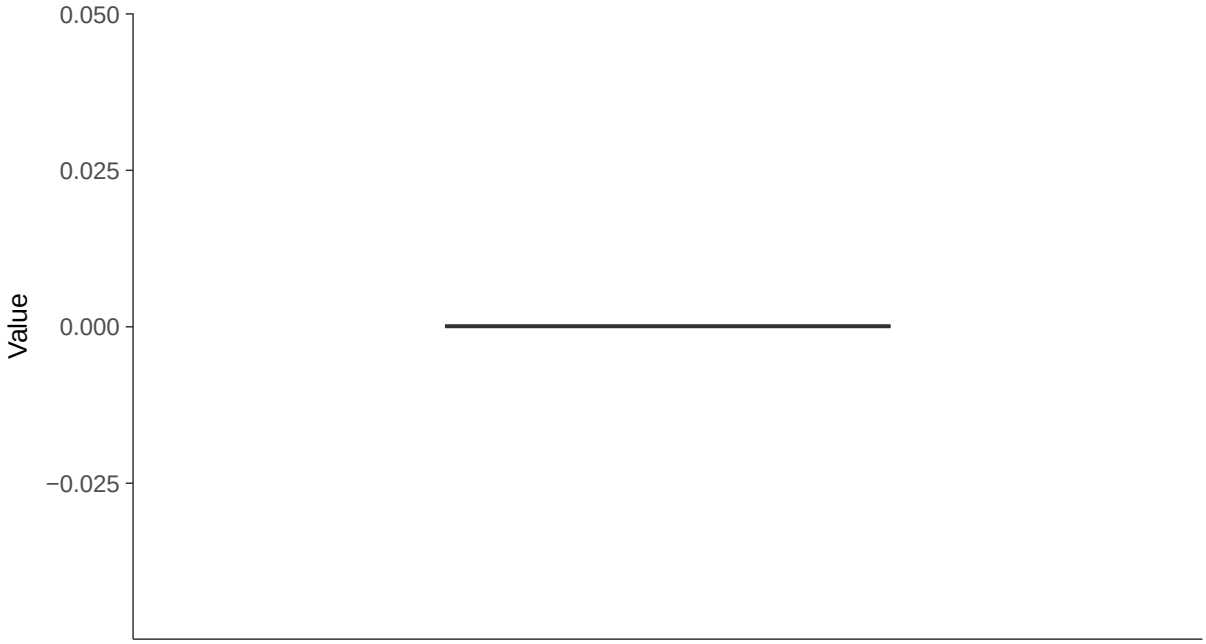
ID: 25_2_113





Boxplot

Cobalt, MW-32 (mg/l)

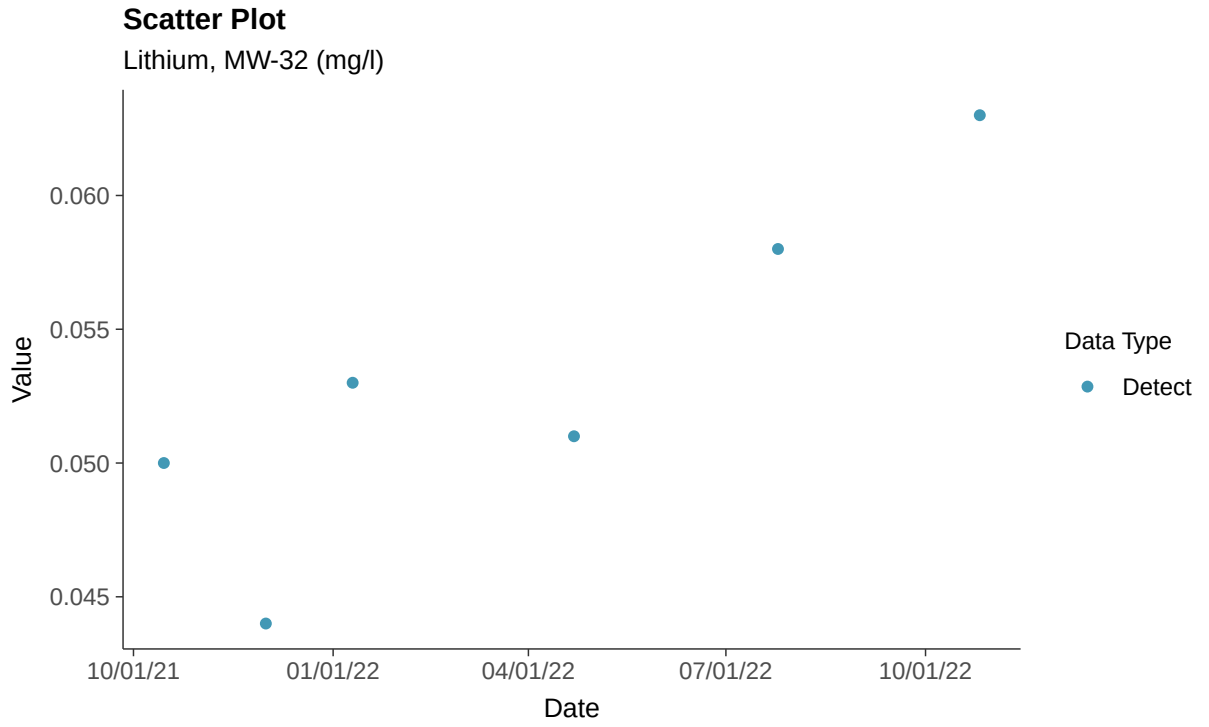


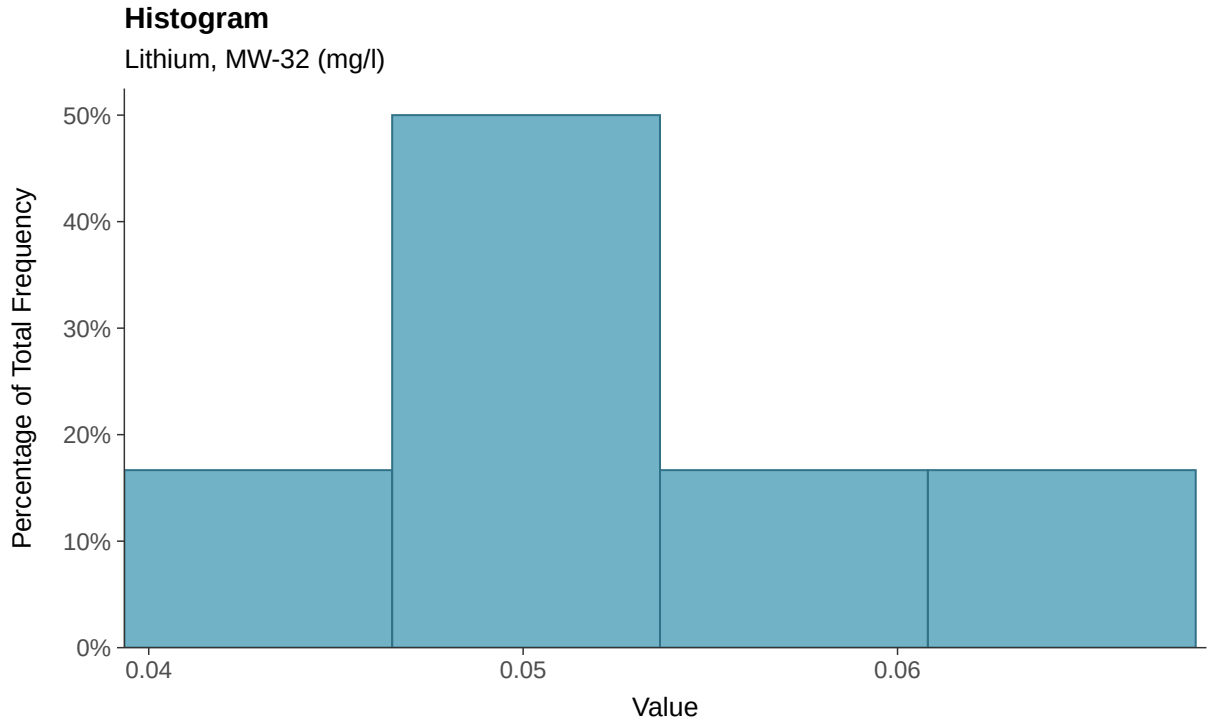
Boxplot by Season

Cobalt, MW-32 (mg/l)

Appendix IV: Lithium, MW-32

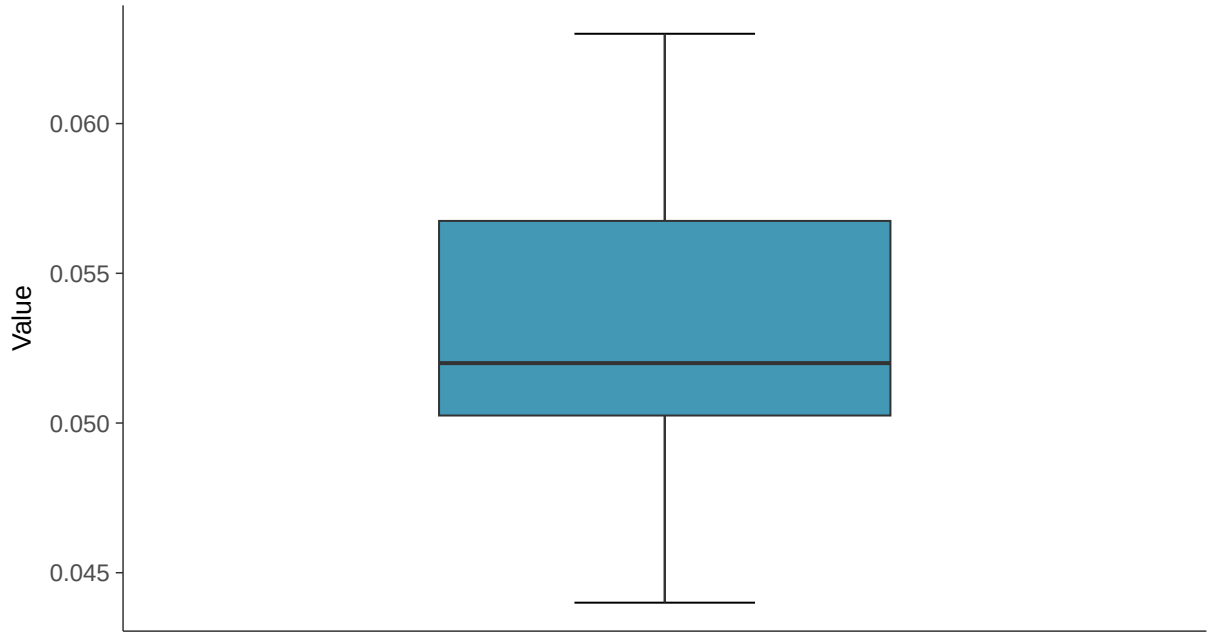
ID: 25_2_118





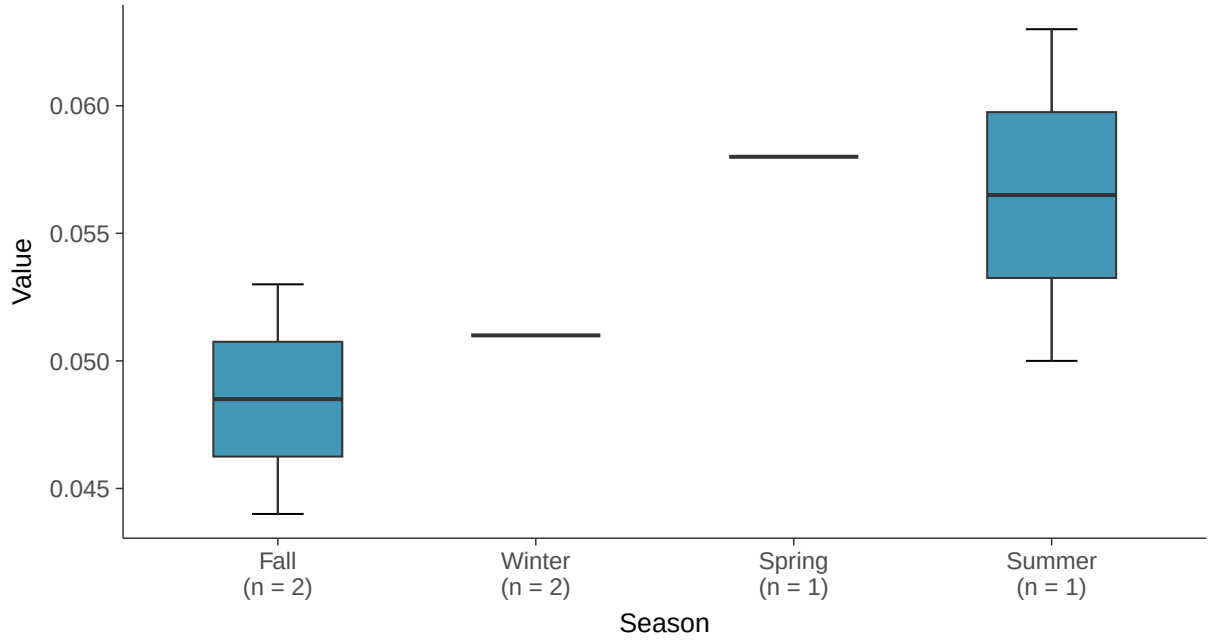
Boxplot

Lithium, MW-32 (mg/l)



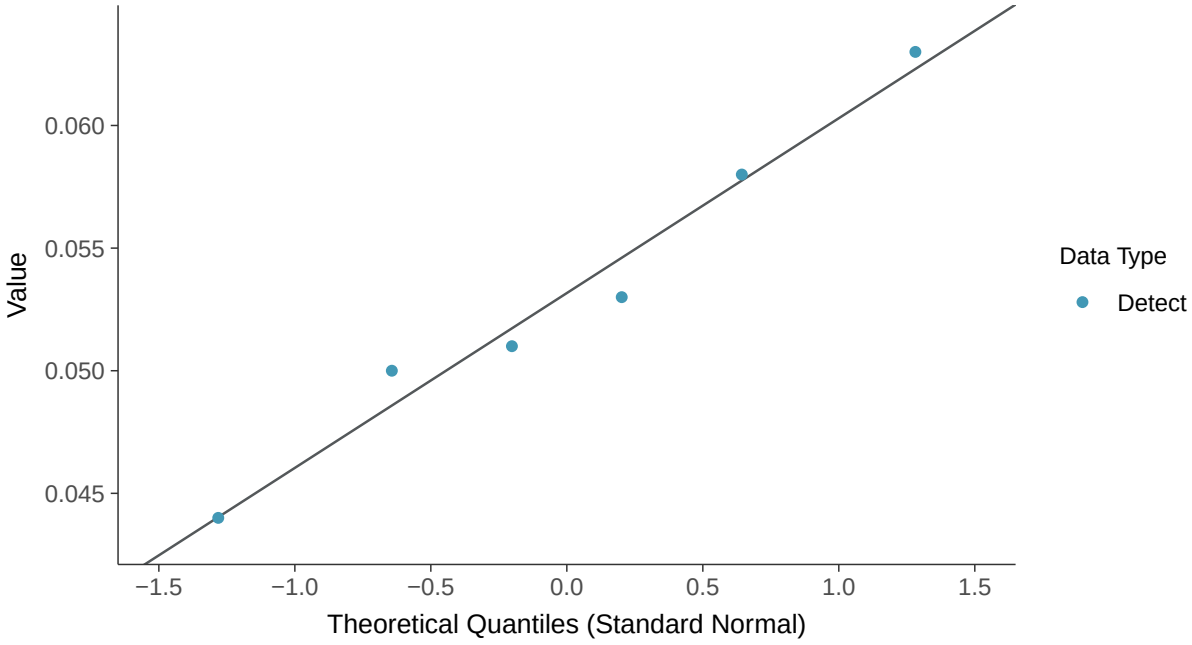
Boxplot by Season

Lithium, MW-32 (mg/l)



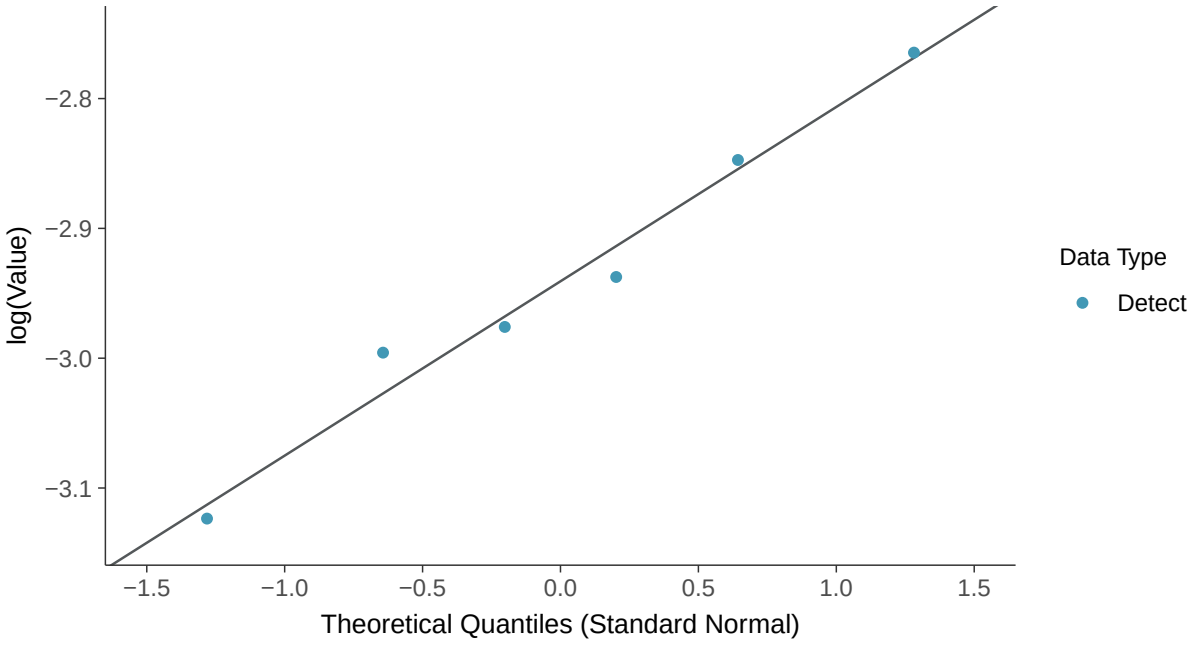
Normal Q-Q plot

Lithium, MW-32 (mg/l)



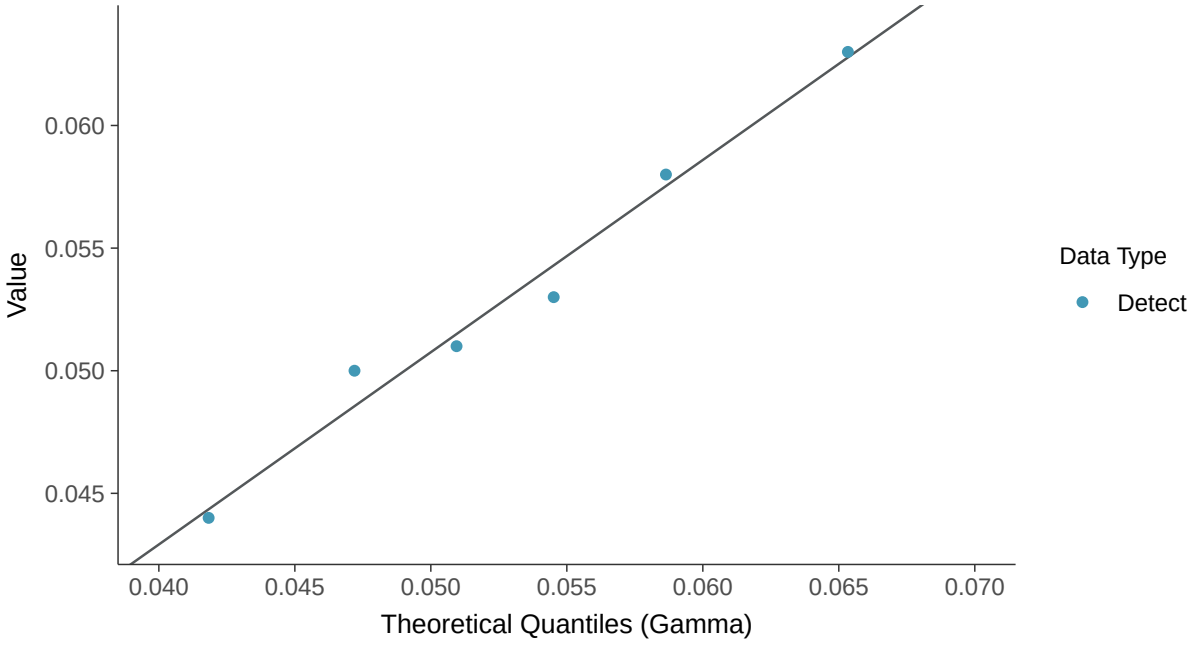
Lognormal Q-Q plot

Lithium, MW-32 (mg/l)



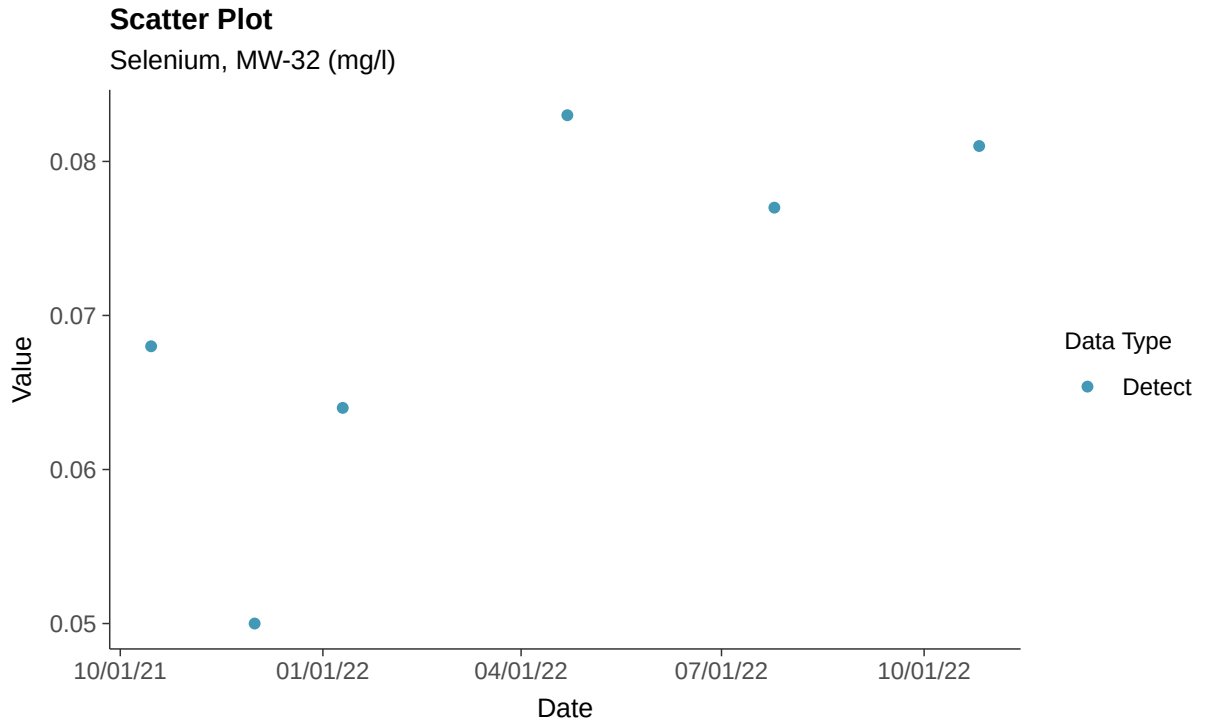
Gamma Q-Q plot

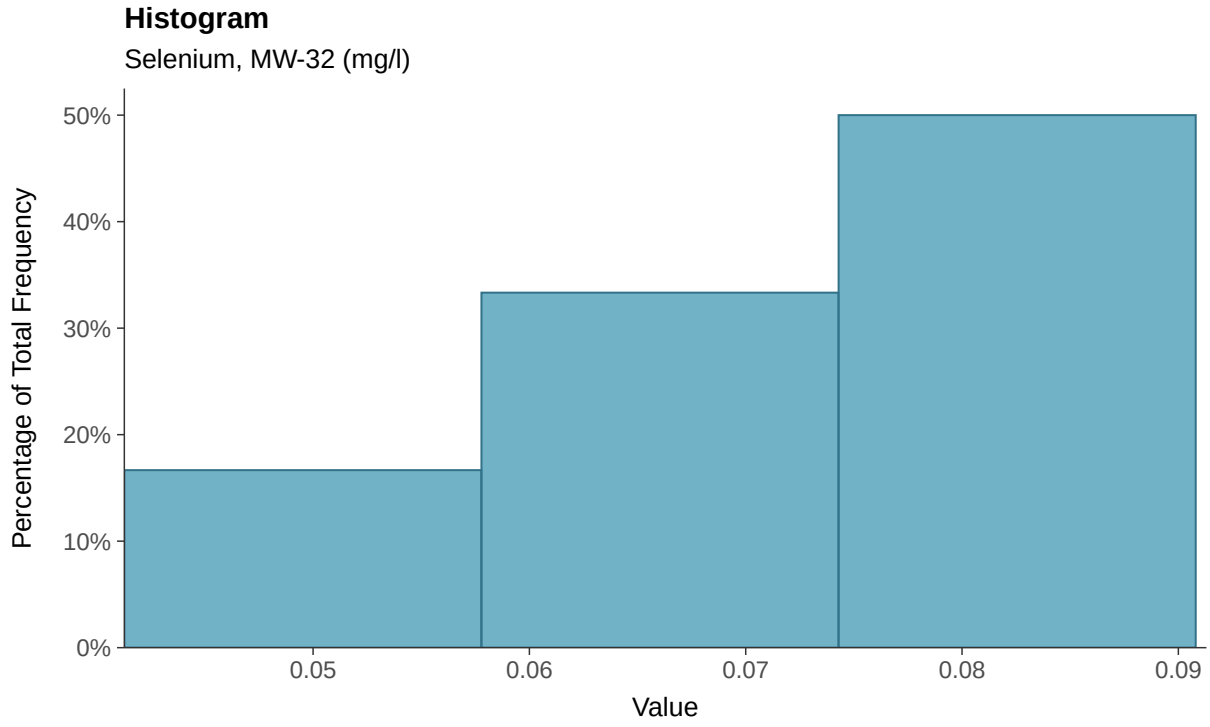
Lithium, MW-32 (mg/l)



Appendix IV: Selenium, MW-32

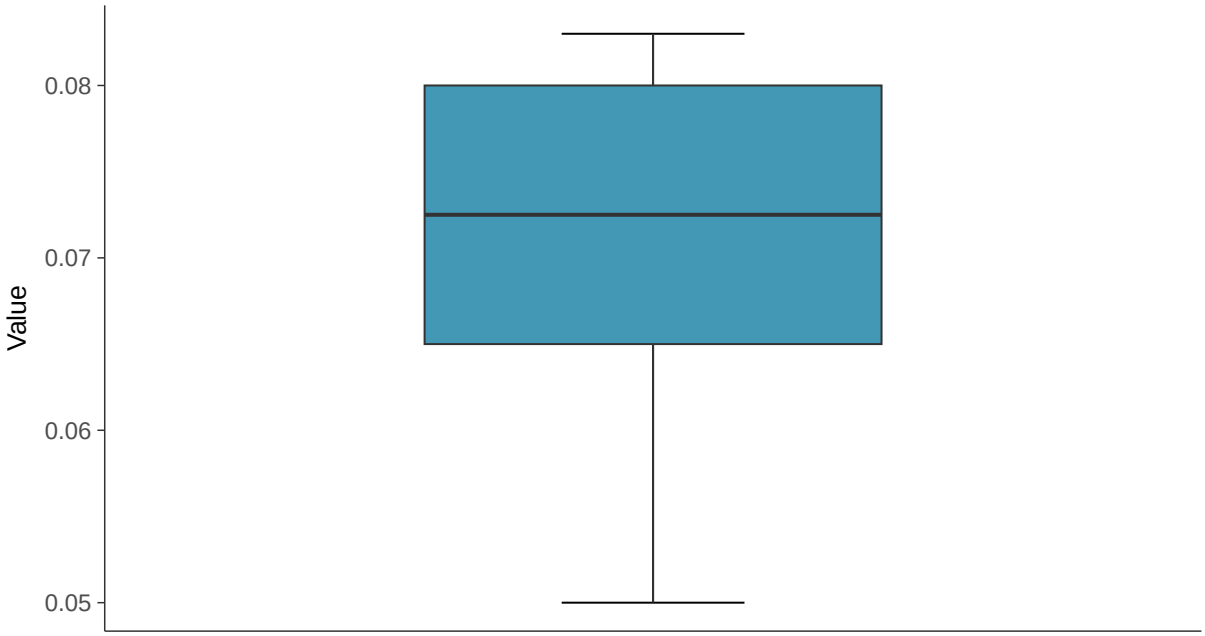
ID: 25_2_129





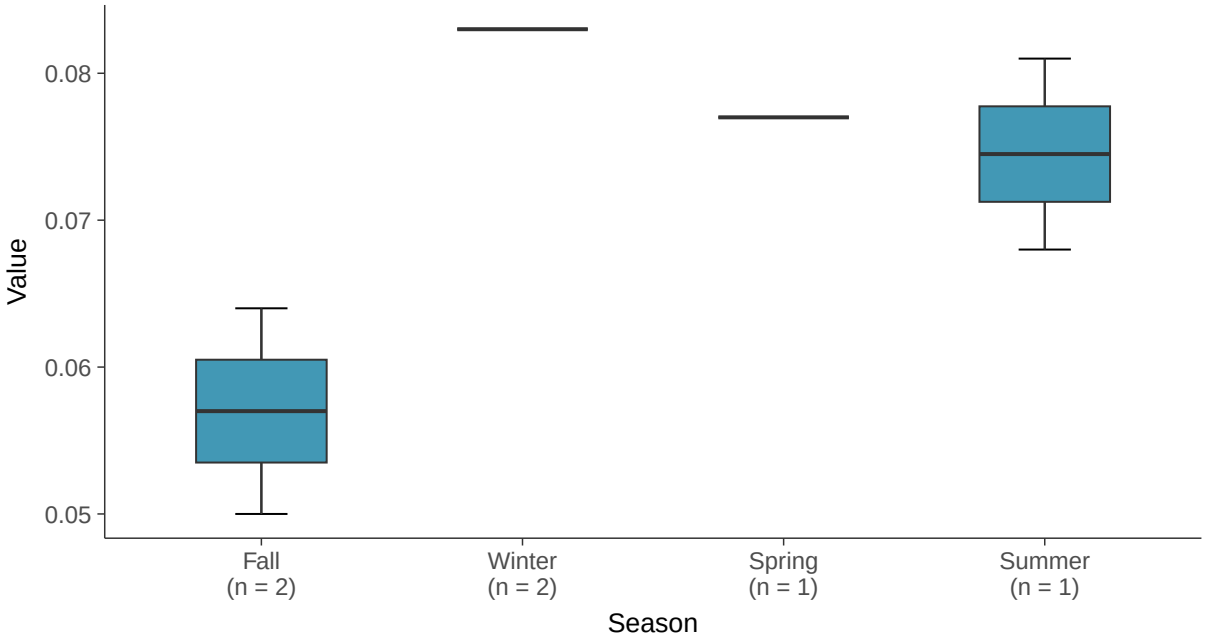
Boxplot

Selenium, MW-32 (mg/l)



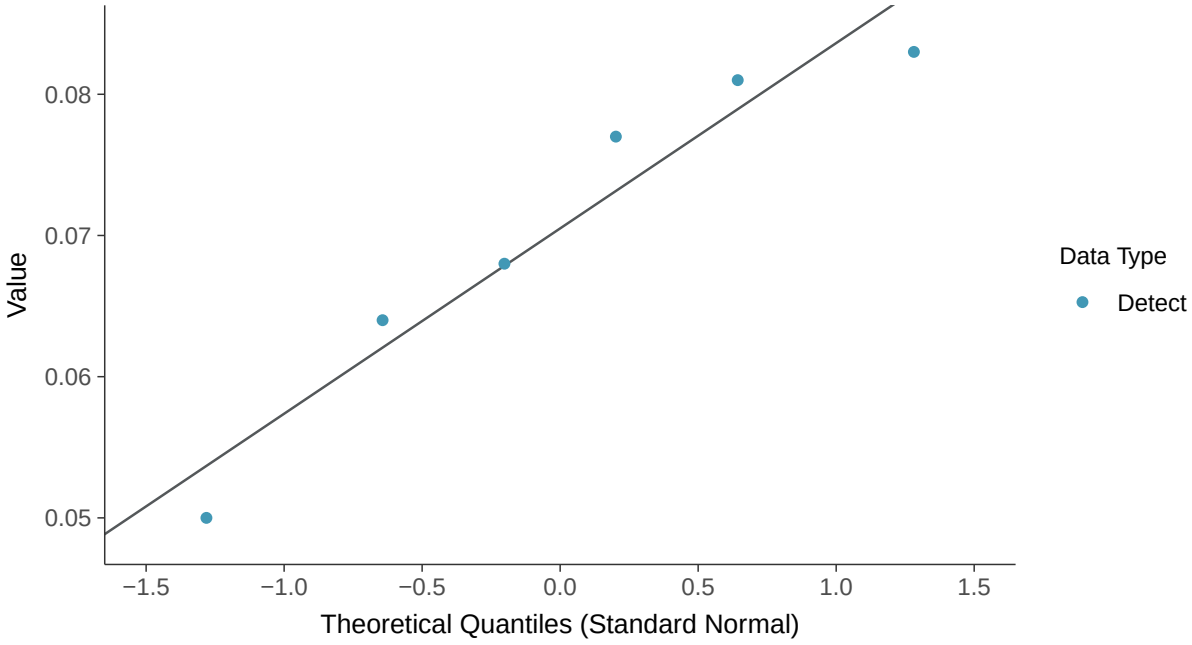
Boxplot by Season

Selenium, MW-32 (mg/l)



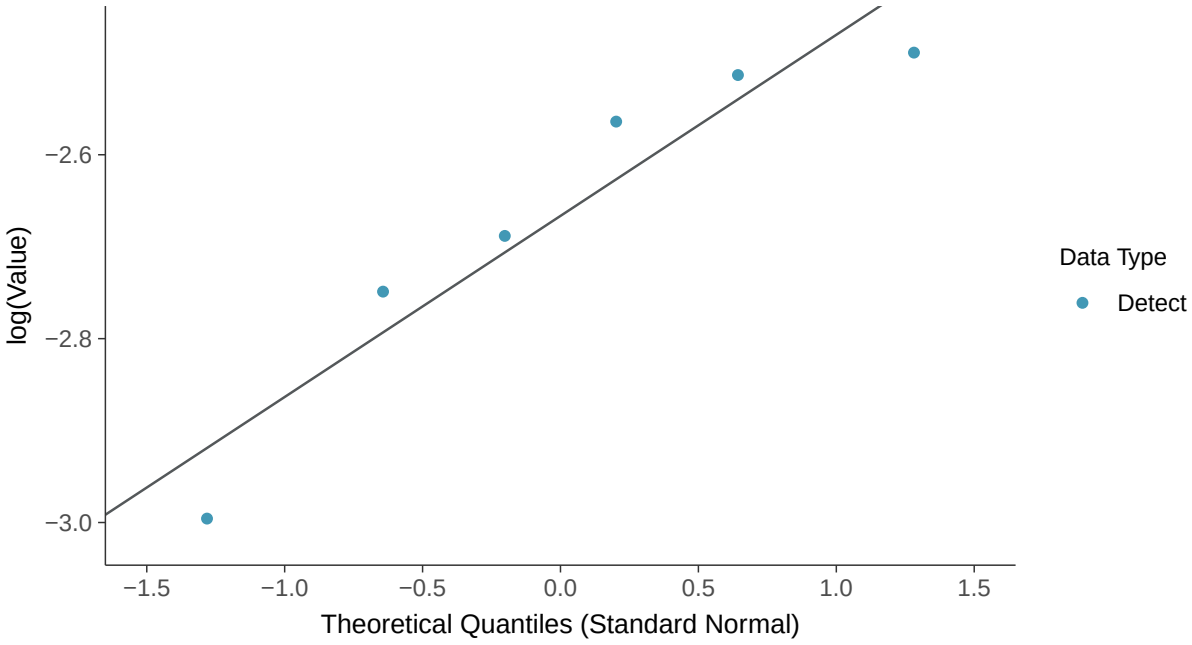
Normal Q-Q plot

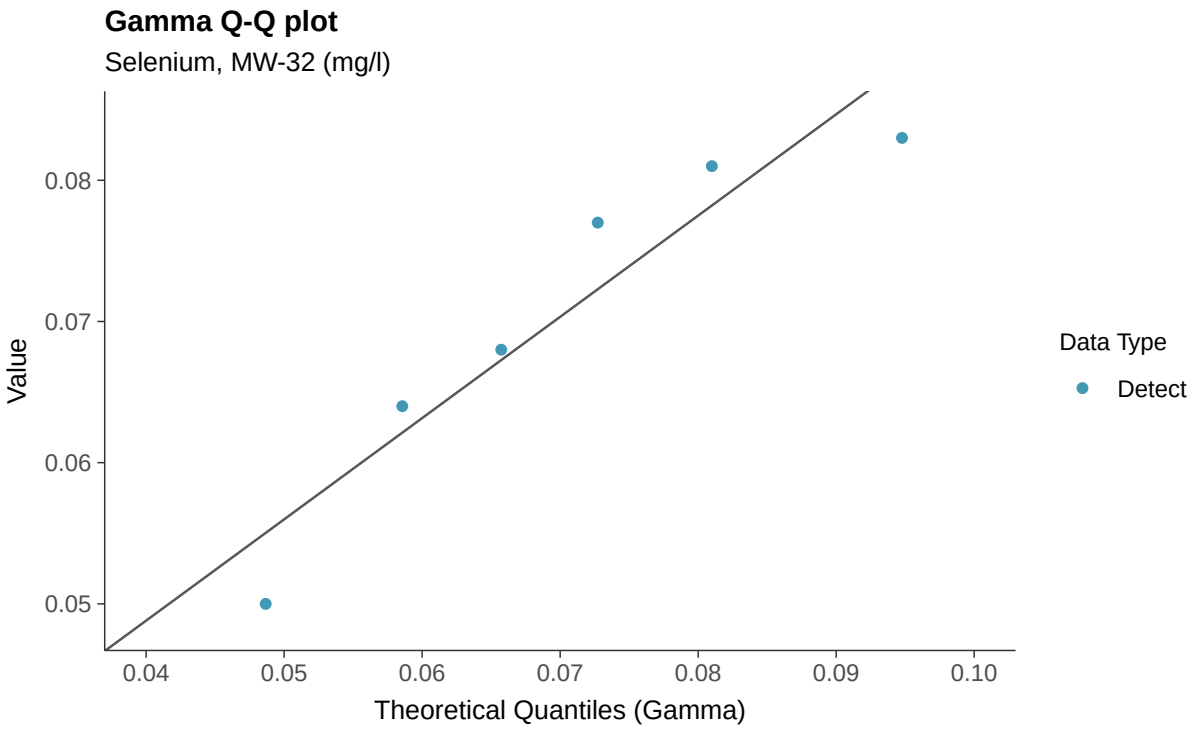
Selenium, MW-32 (mg/l)



Lognormal Q-Q plot

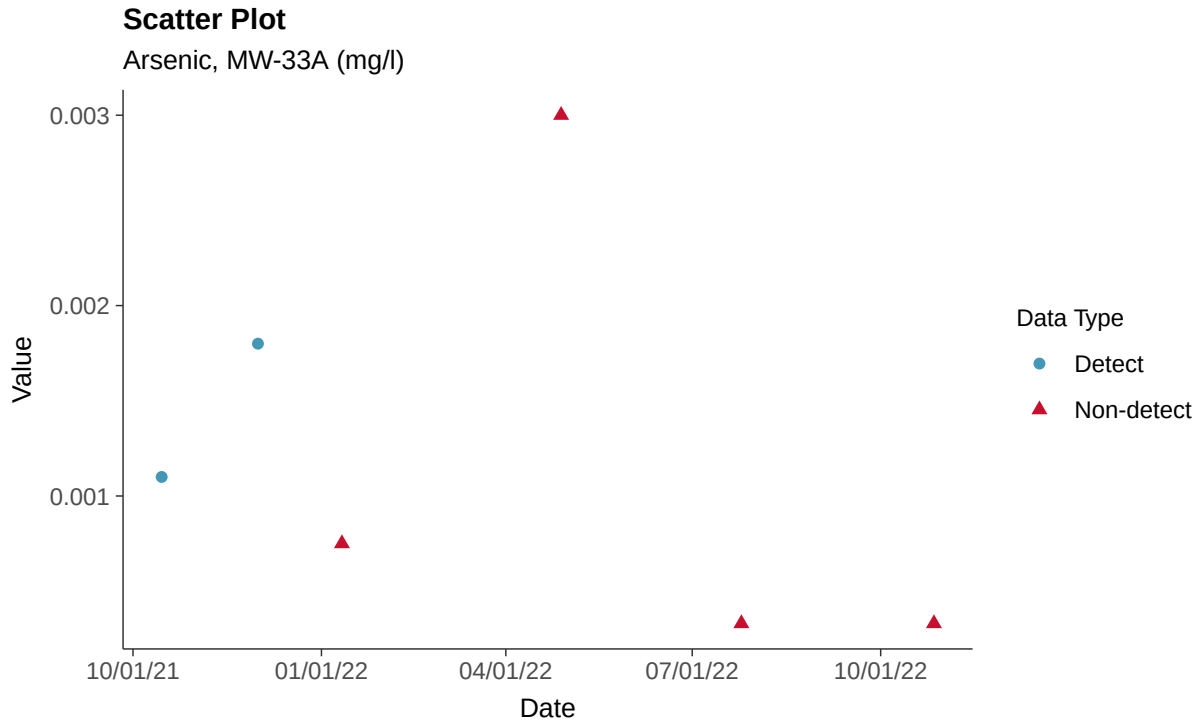
Selenium, MW-32 (mg/l)

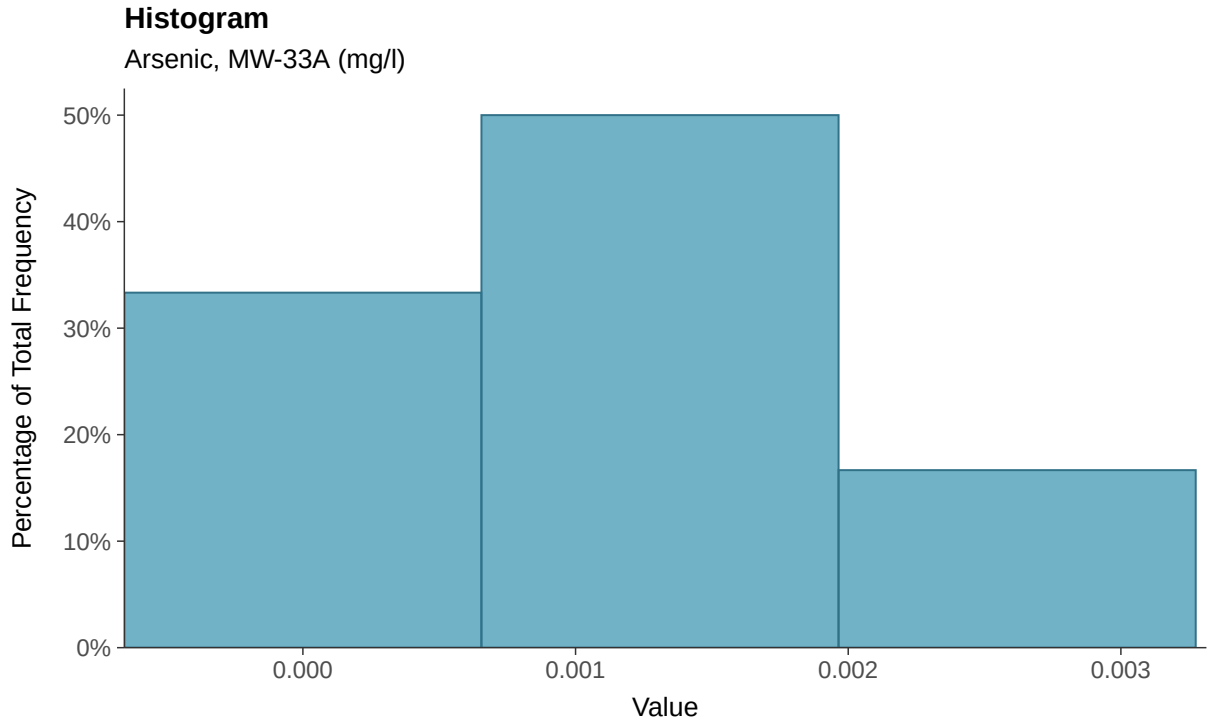



Gamma Q-Q plot
Selenium, MW-32 (mg/l)
Value
0.08
0.07
0.06
0.05
0.04
0.05
0.06
0.07
0.08
0.09
0.10
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Arsenic, MW-33A

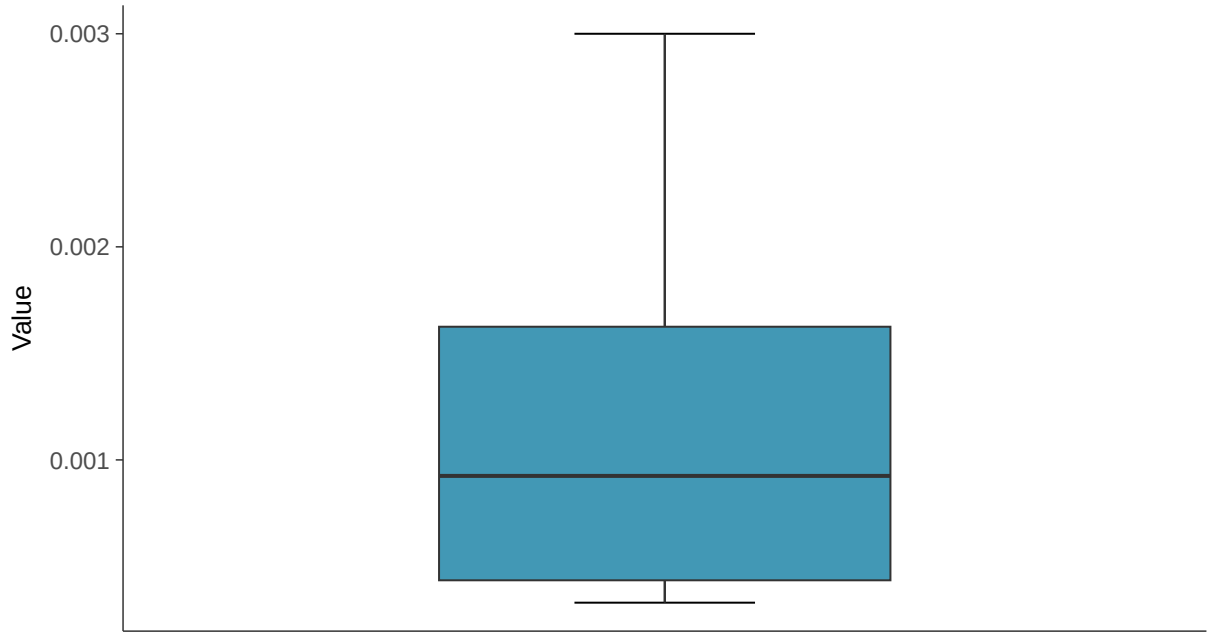
ID: 26_2_105





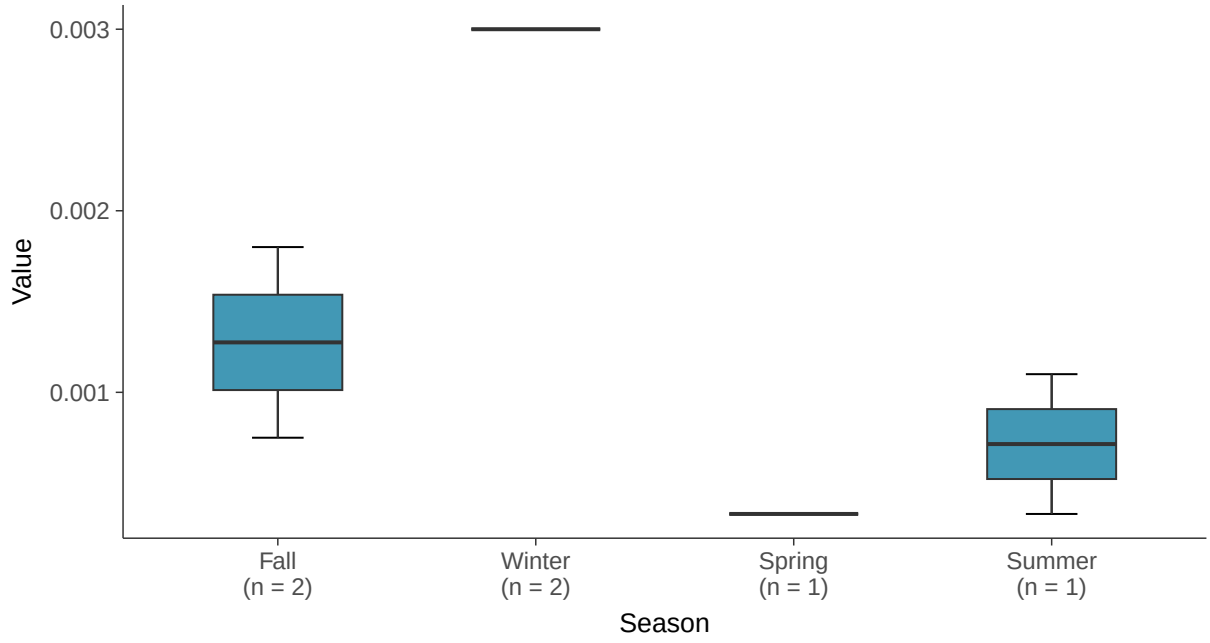
Boxplot

Arsenic, MW-33A (mg/l)



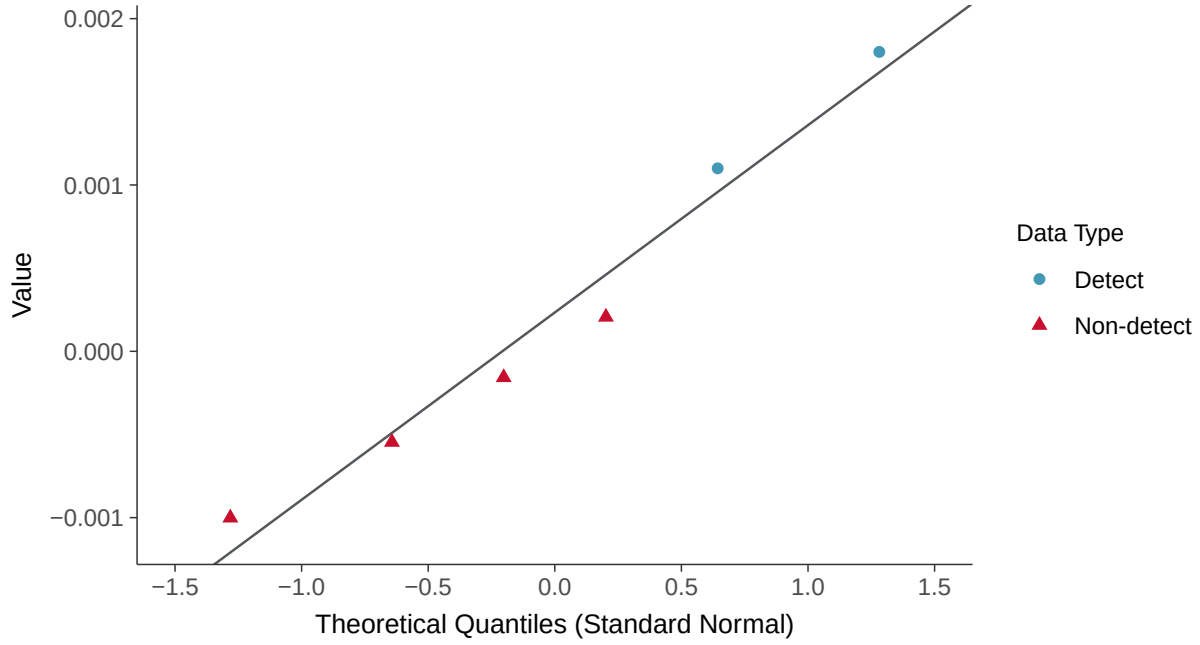
Boxplot by Season

Arsenic, MW-33A (mg/l)



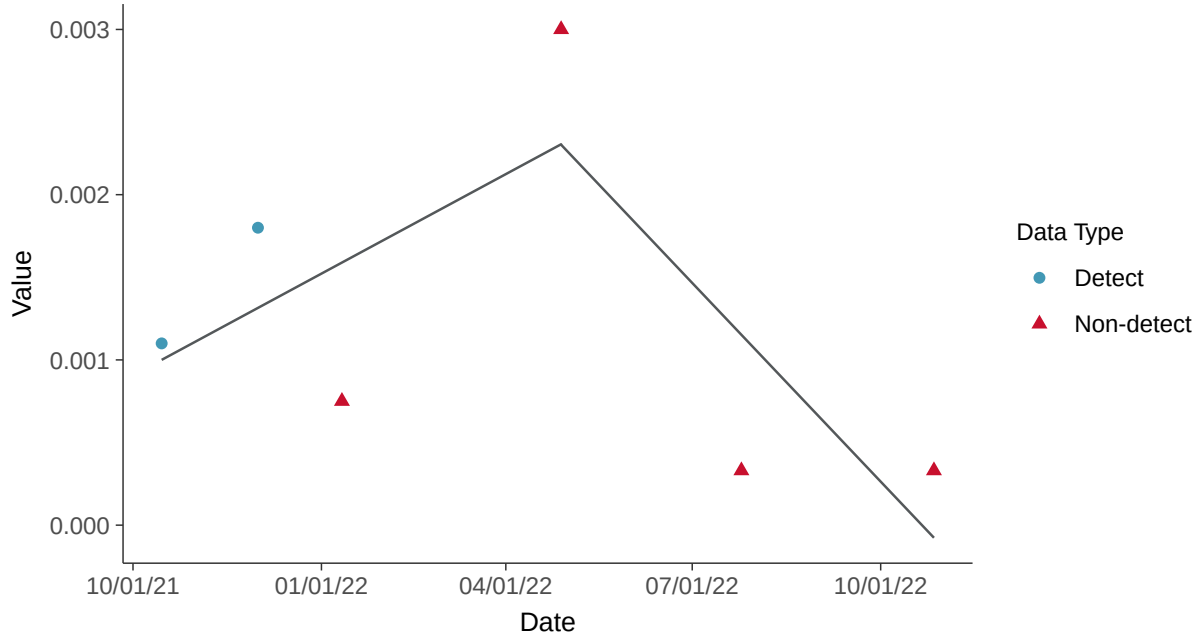
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-33A (mg/l)



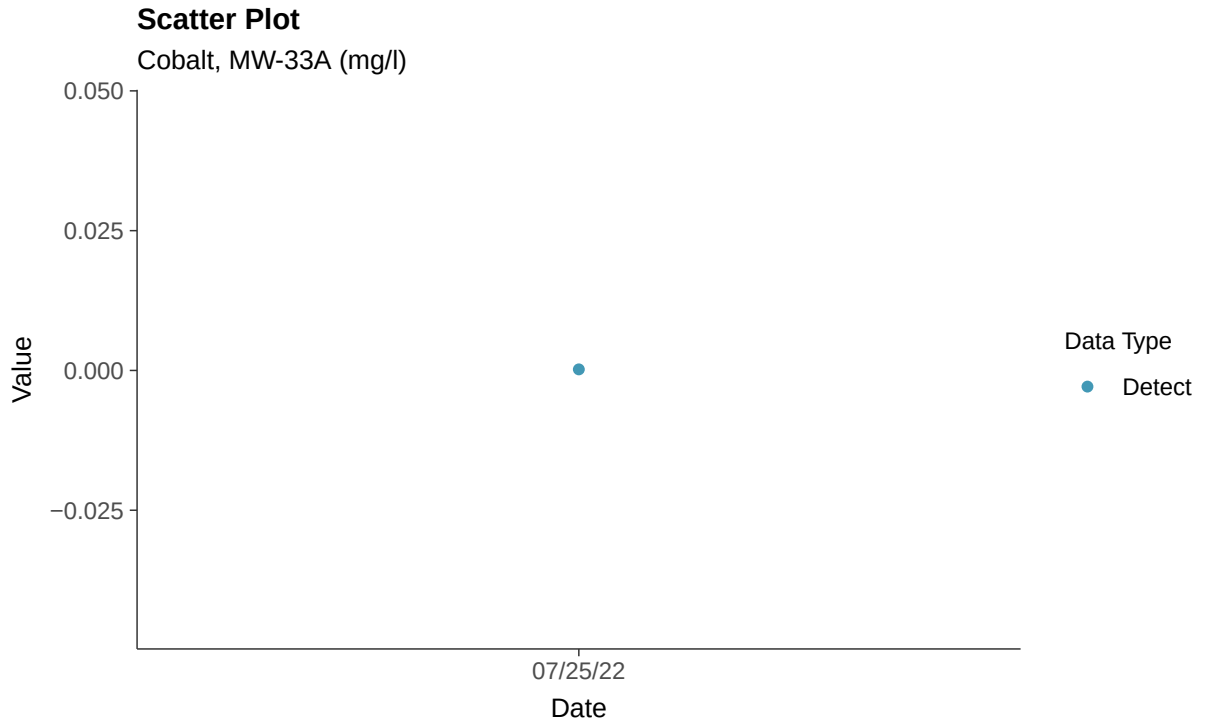
Trend Regression: Piecewise Linear-Linear

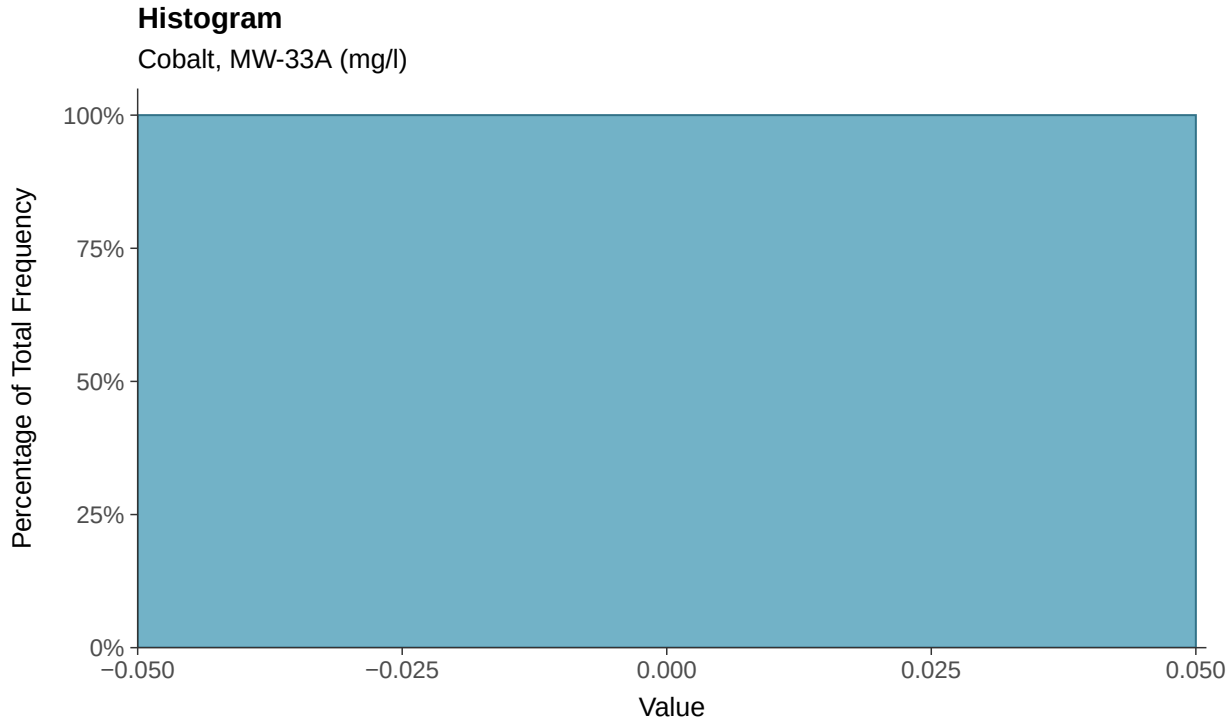
Arsenic, MW-33A (mg/l)



Appendix IV: Cobalt, MW-33A

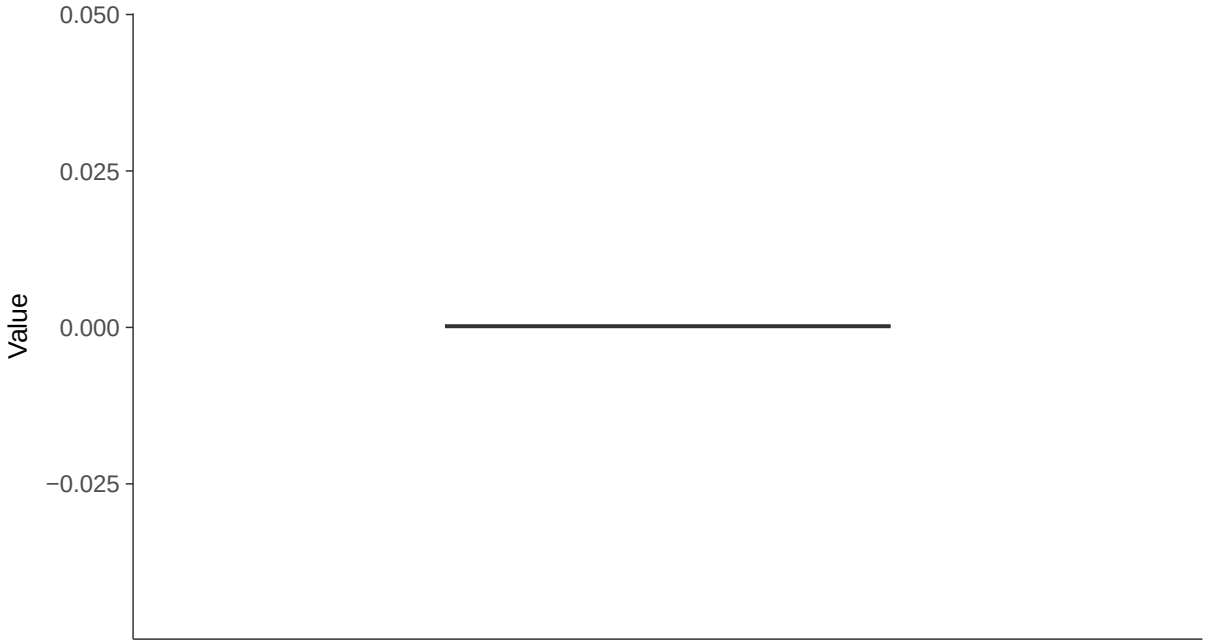
ID: 26_2_113





Boxplot

Cobalt, MW-33A (mg/l)

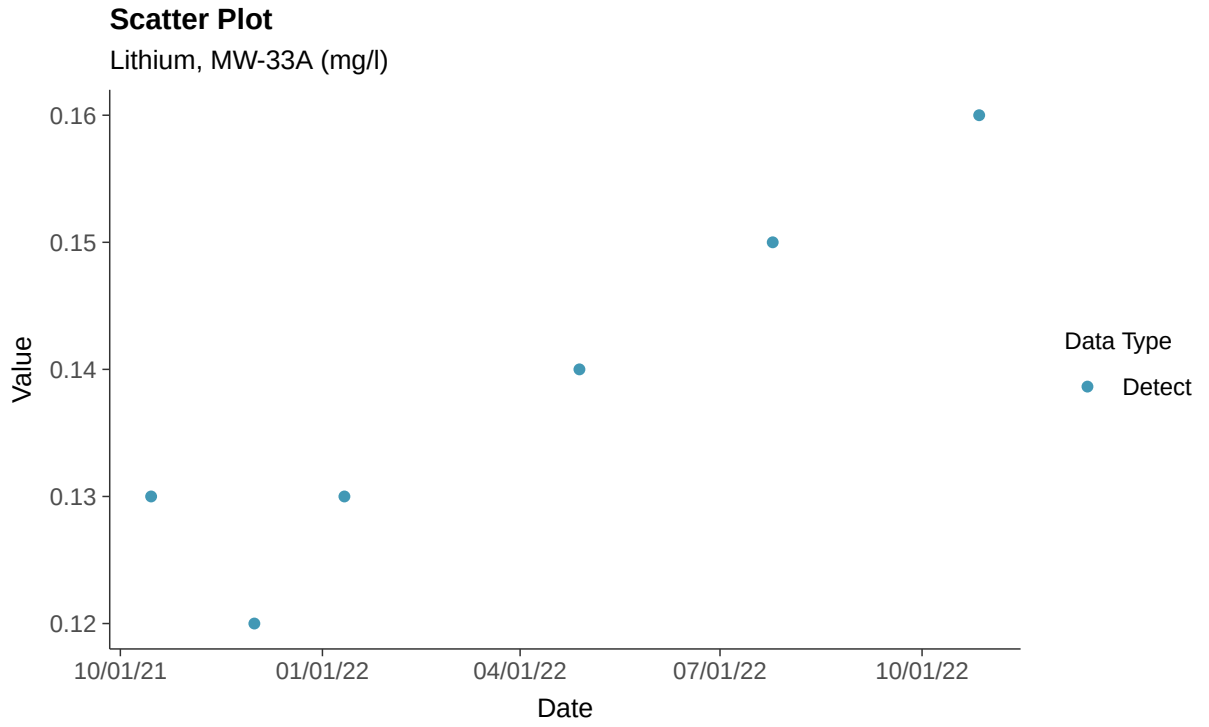


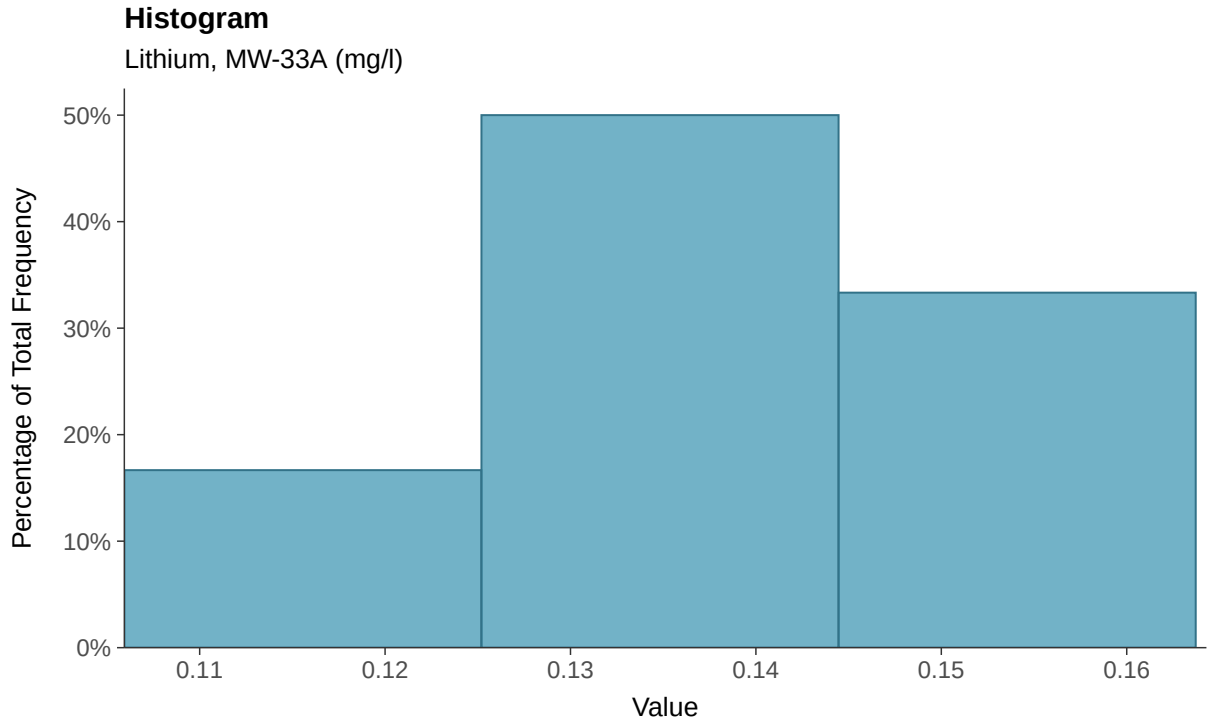
Boxplot by Season

Cobalt, MW-33A (mg/l)

Appendix IV: Lithium, MW-33A

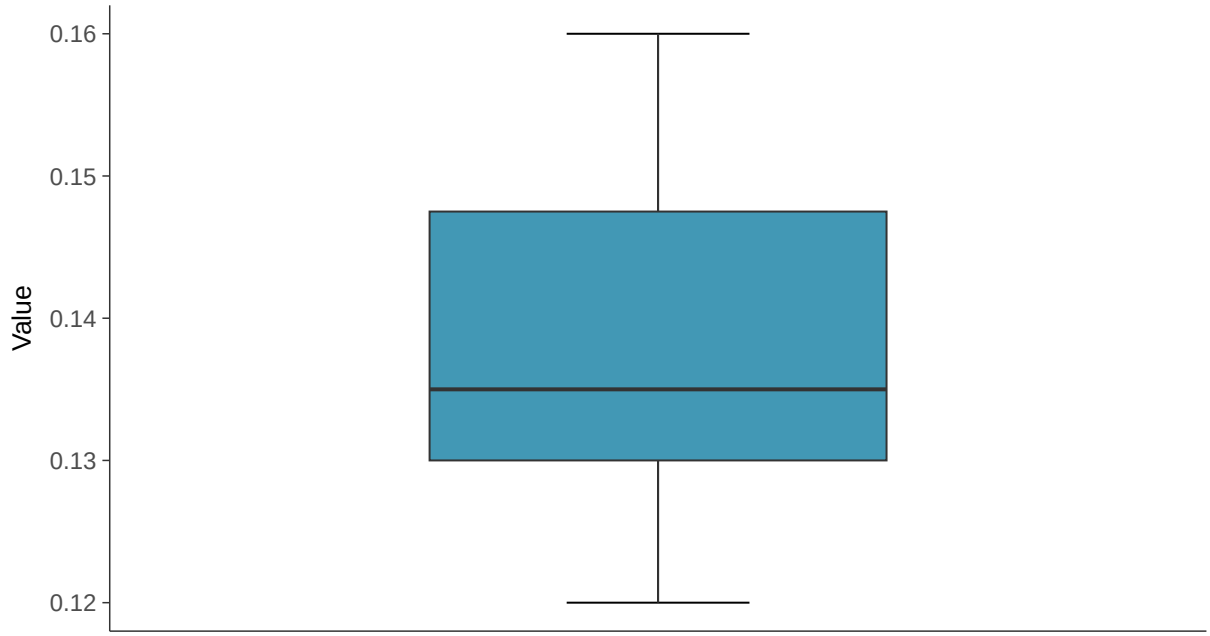
ID: 26_2_118





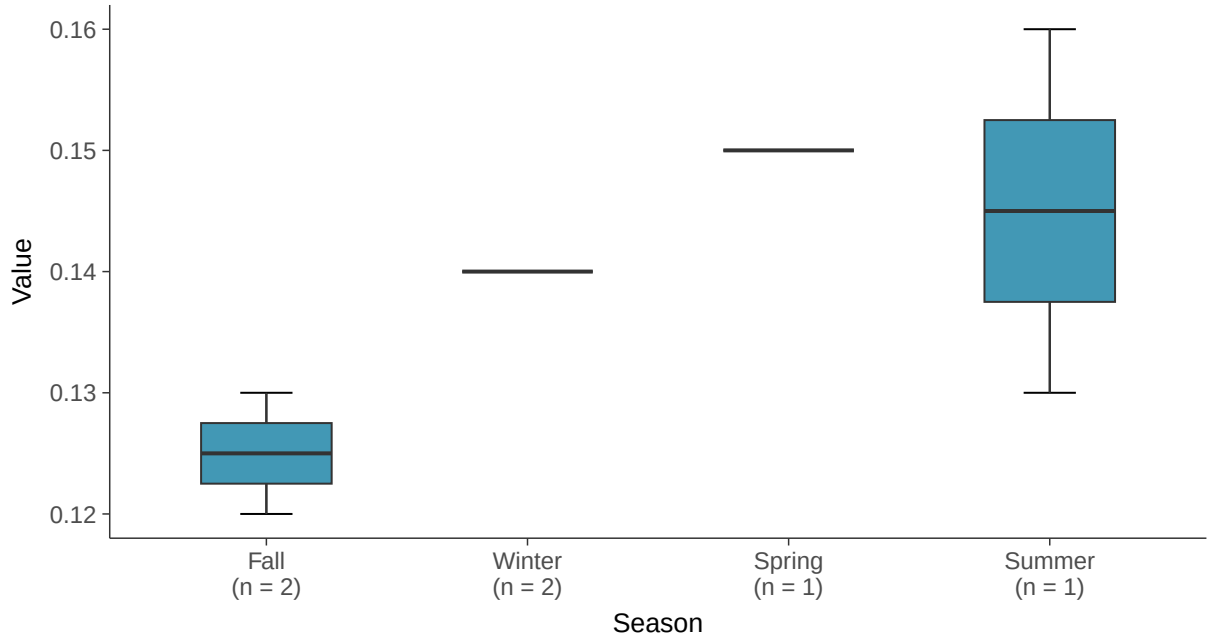
Boxplot

Lithium, MW-33A (mg/l)



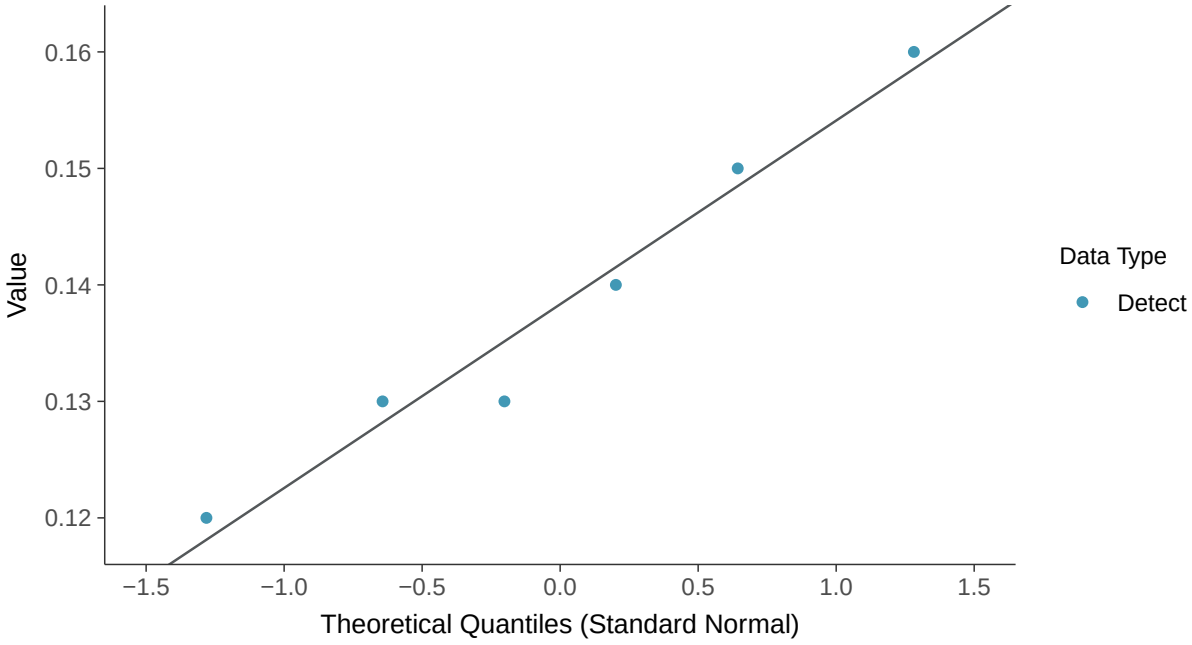
Boxplot by Season

Lithium, MW-33A (mg/l)



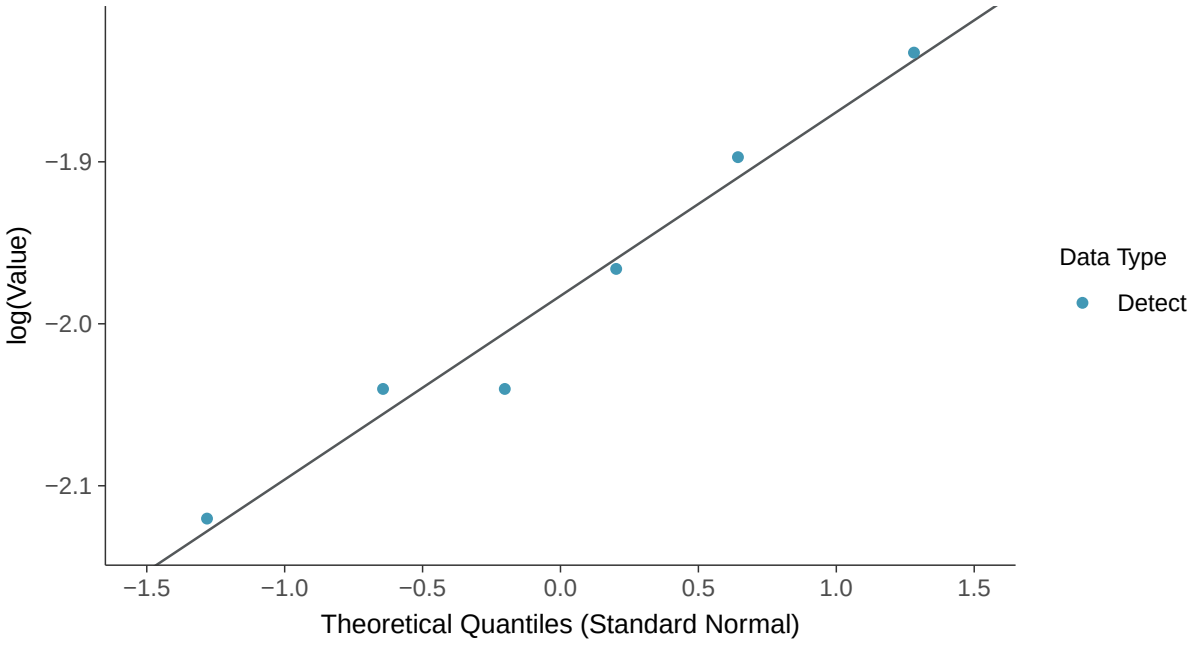
Normal Q-Q plot

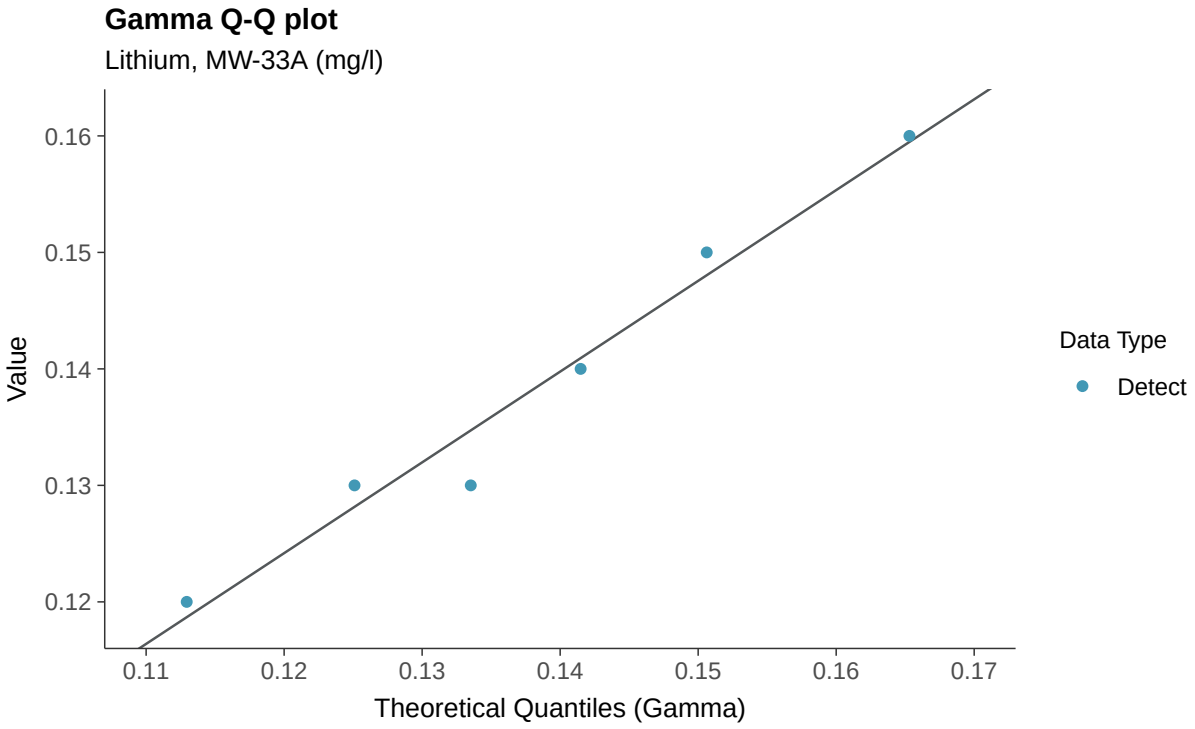
Lithium, MW-33A (mg/l)



Lognormal Q-Q plot

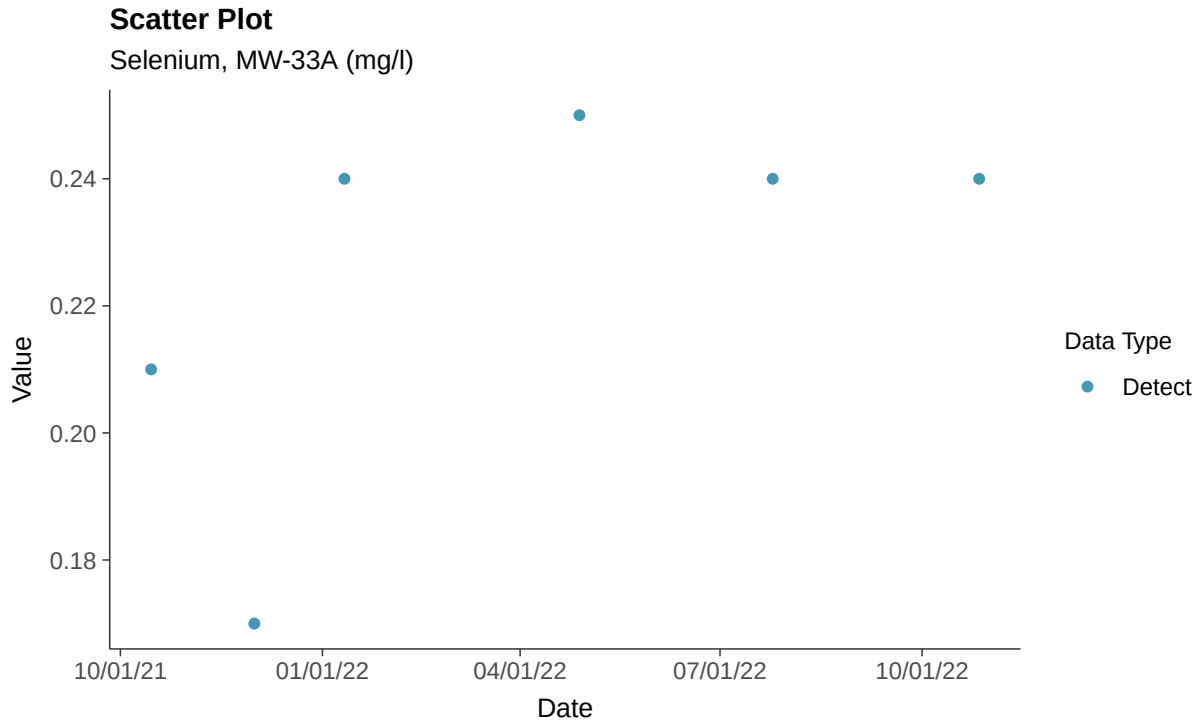
Lithium, MW-33A (mg/l)

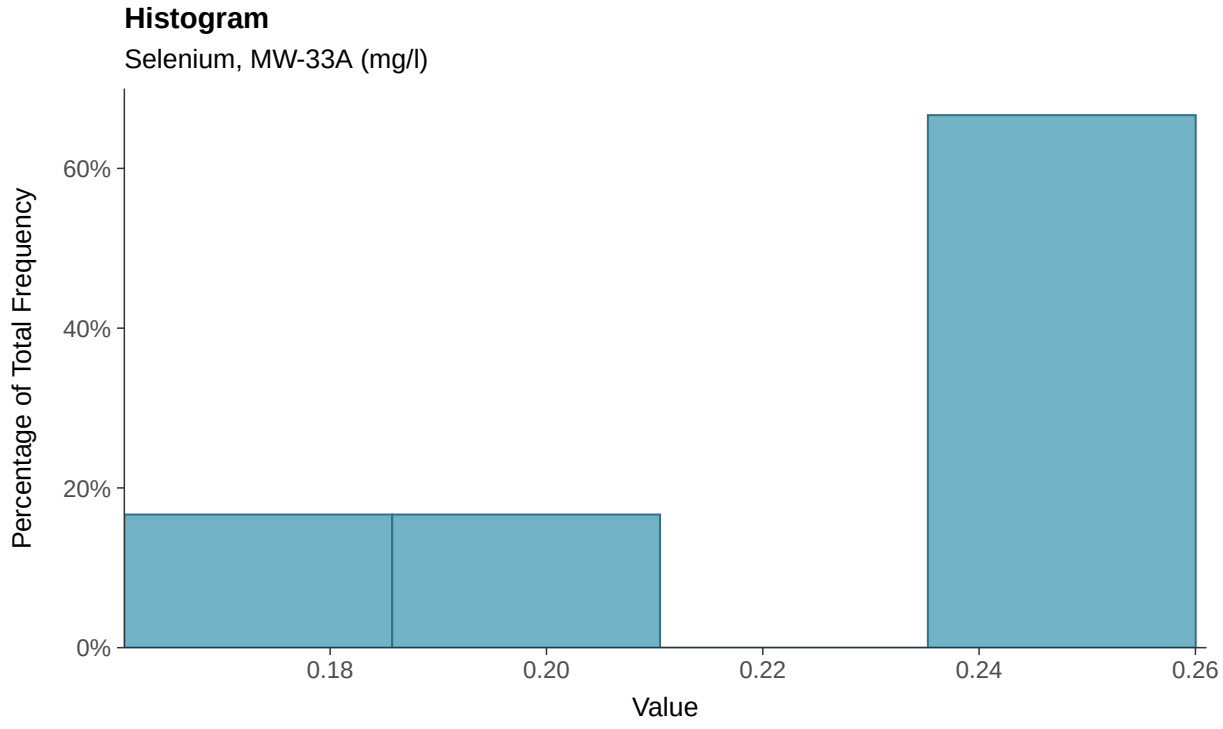



Gamma Q-Q plot
Lithium, MW-33A (mg/l)
Value
0.16
0.15
0.14
0.13
0.12
0.11
0.12
0.13
0.14
0.15
0.16
0.17
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Selenium, MW-33A

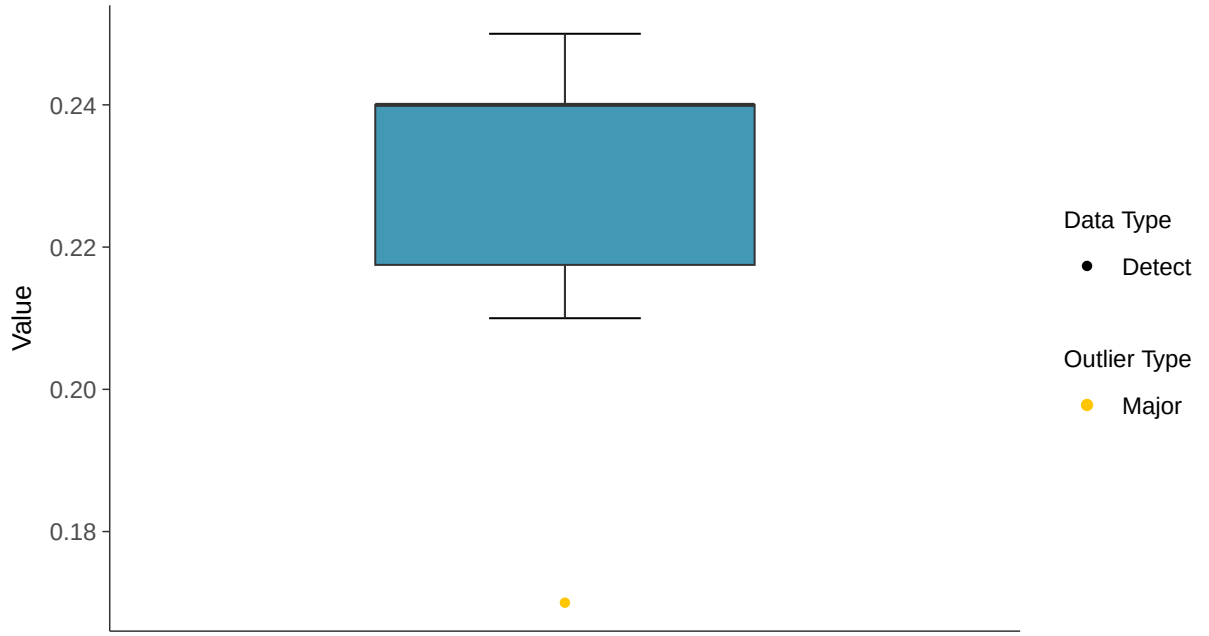
ID: 26_2_129





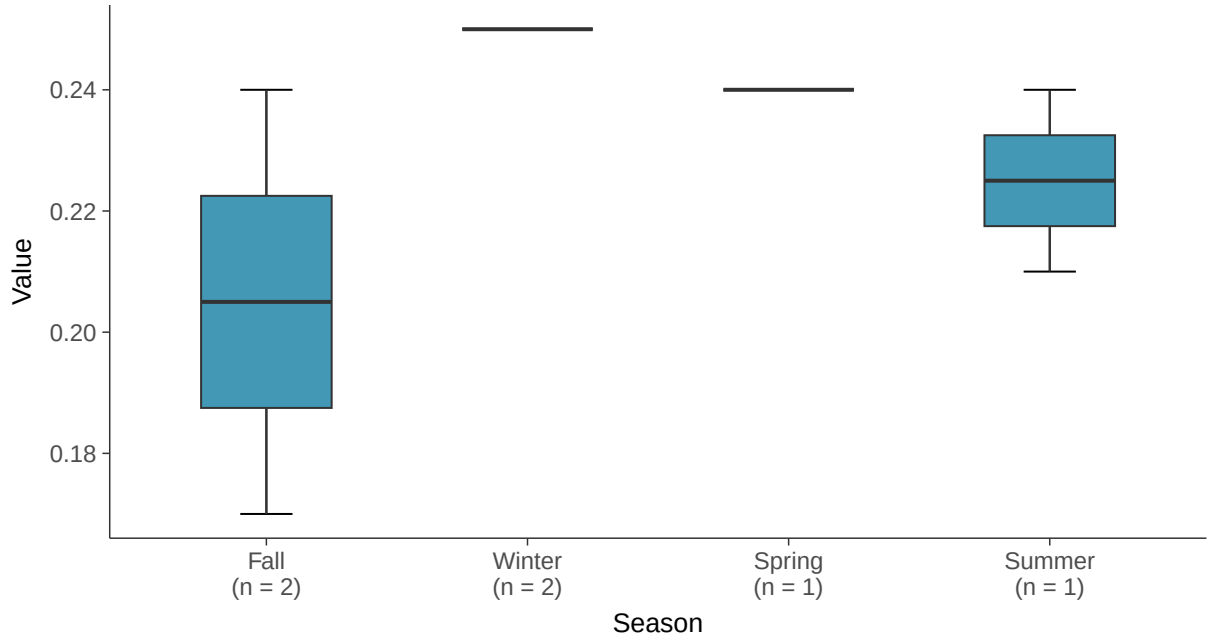
Boxplot

Selenium, MW-33A (mg/l)



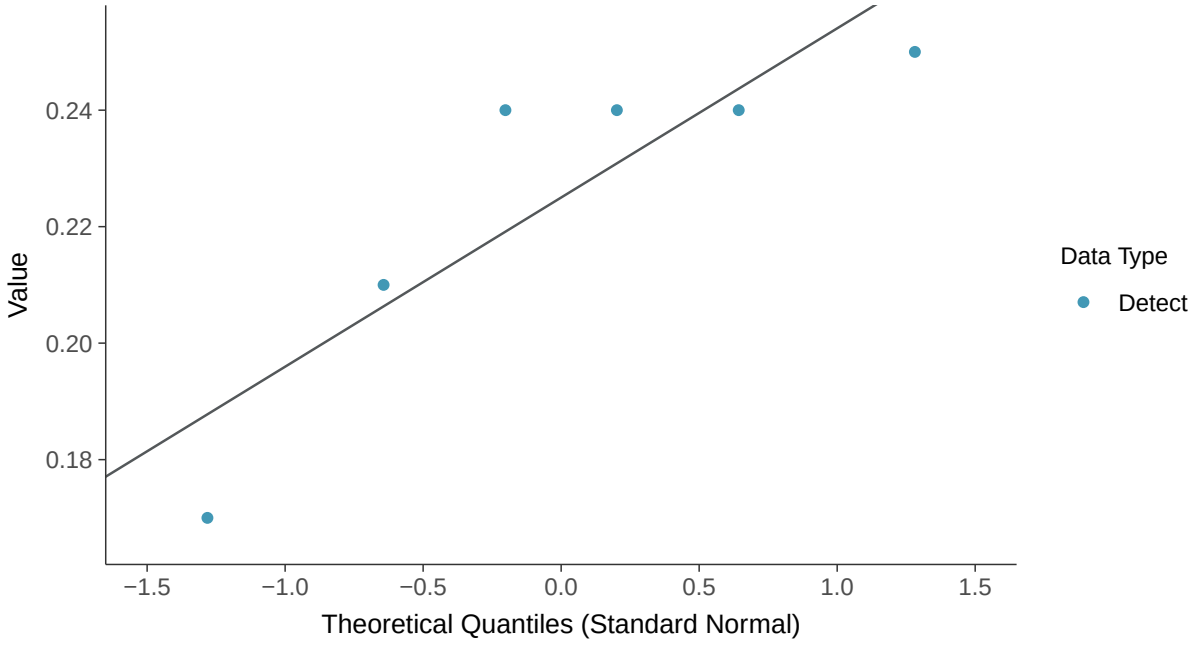
Boxplot by Season

Selenium, MW-33A (mg/l)



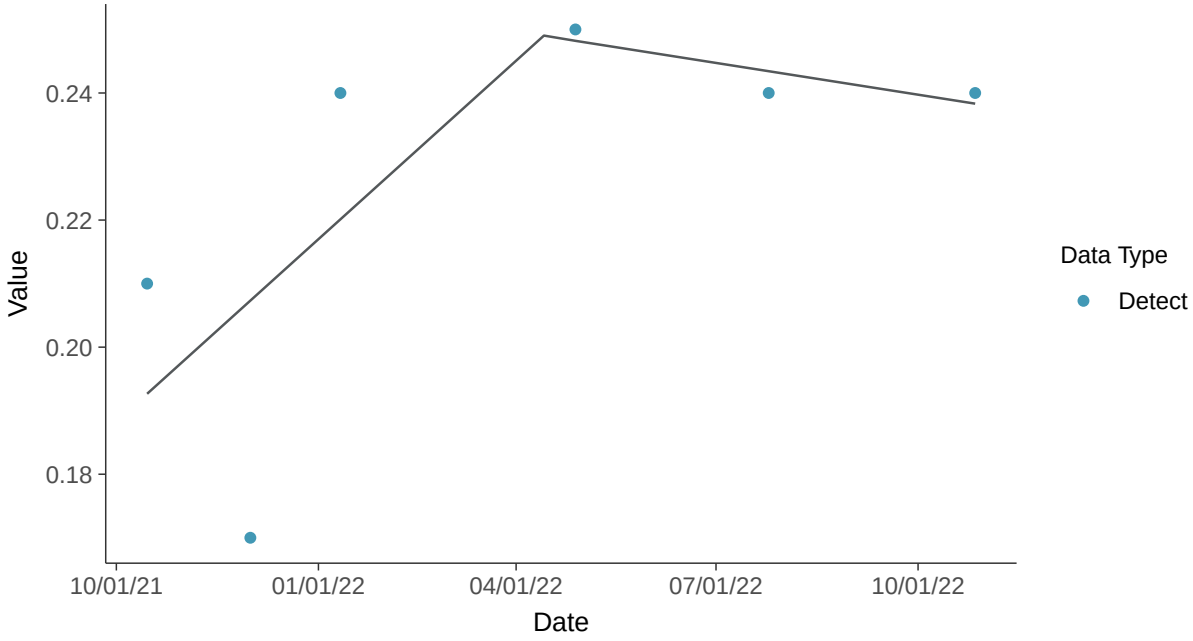
Normal Q-Q plot

Selenium, MW-33A (mg/l)



Trend Regression: Piecewise Linear-Linear

Selenium, MW-33A (mg/l)

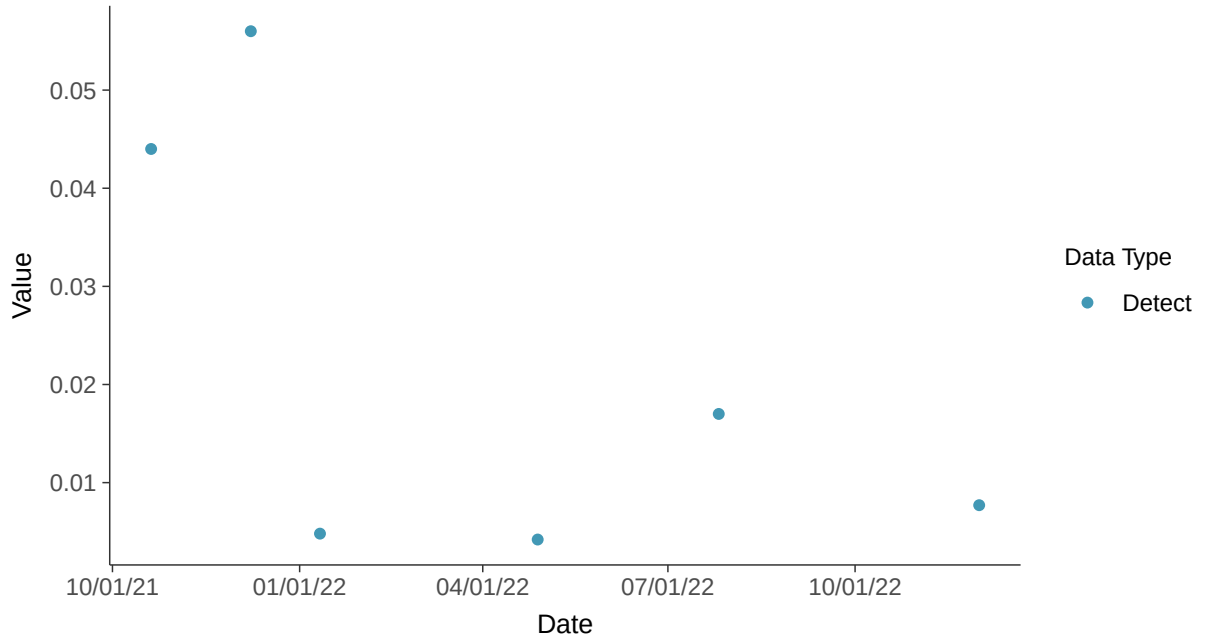


Appendix IV: Arsenic, MW-33B

ID: 27_2_105

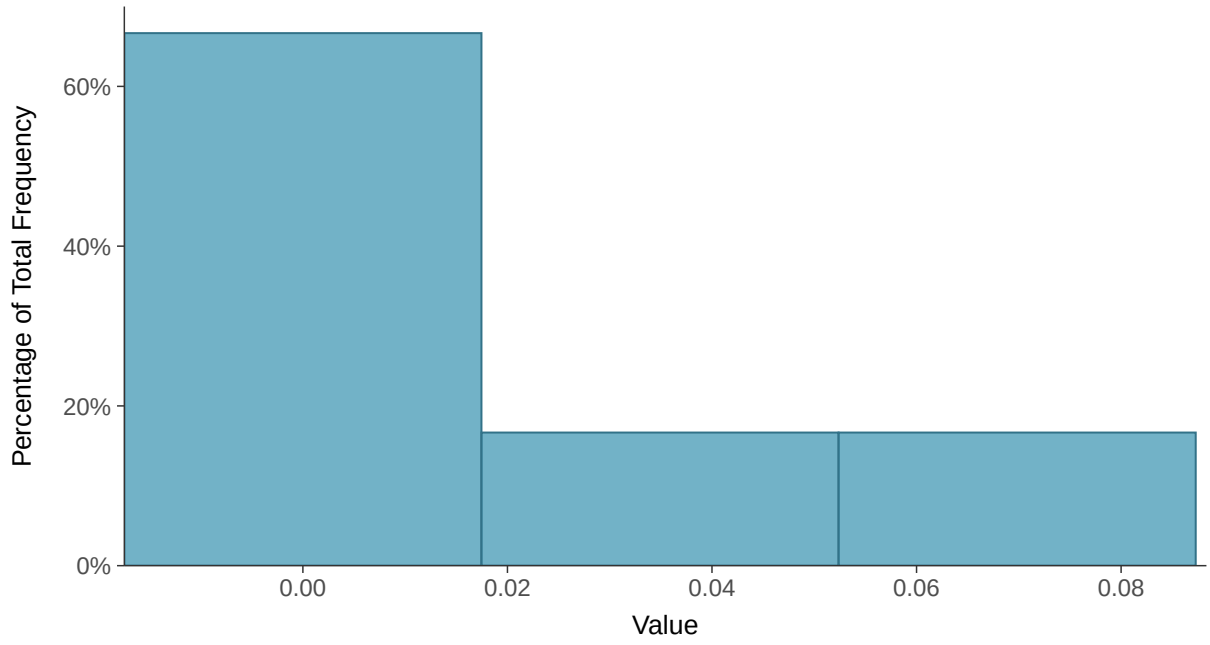
Scatter Plot

Arsenic, MW-33B (mg/l)



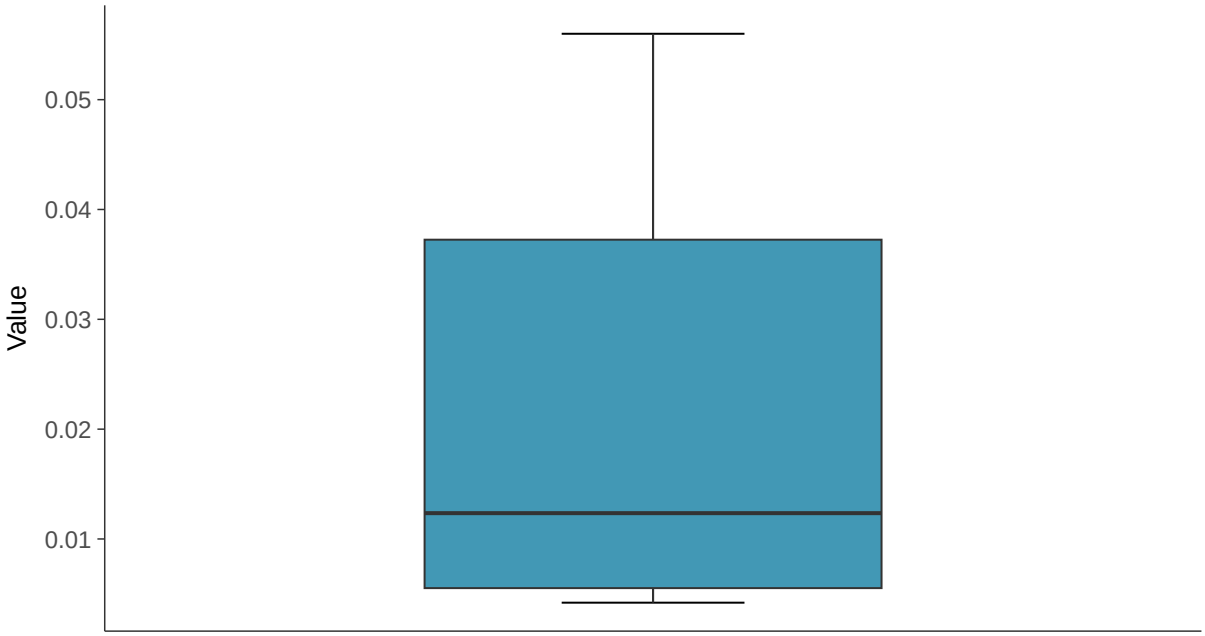
Histogram

Arsenic, MW-33B (mg/l)



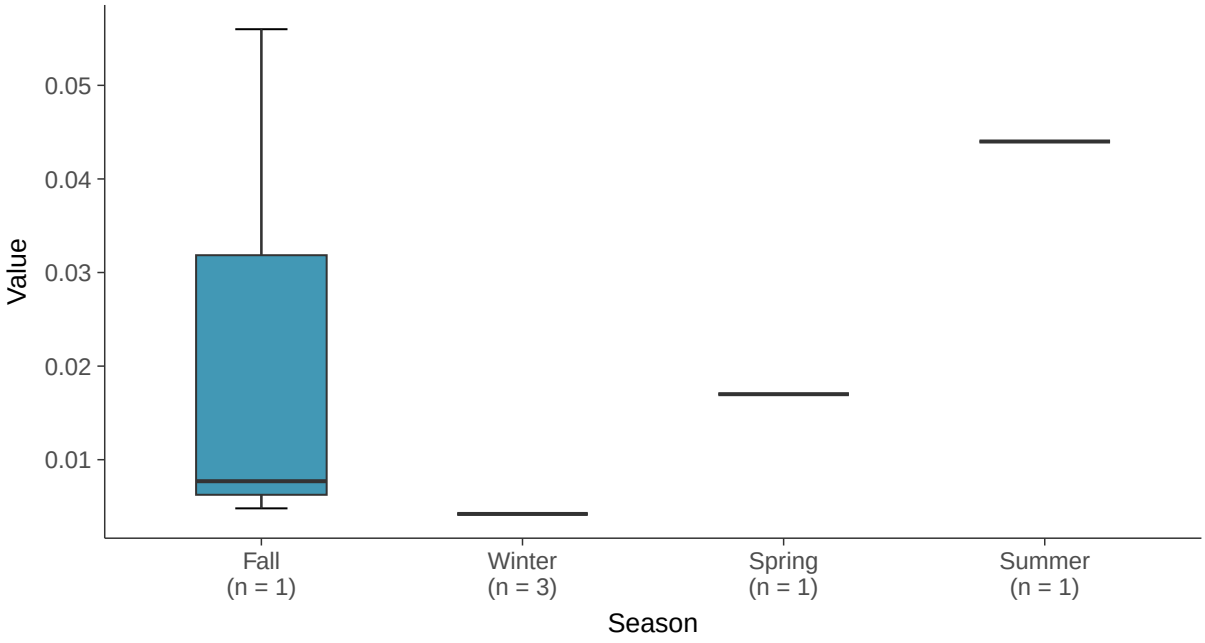
Boxplot

Arsenic, MW-33B (mg/l)



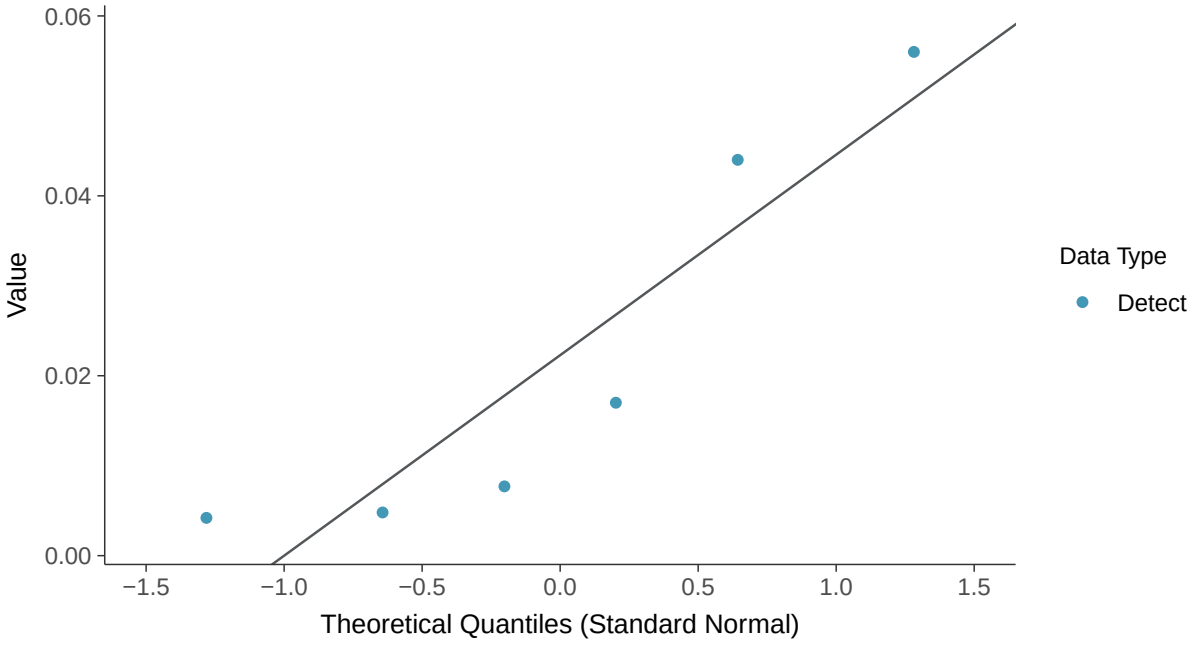
Boxplot by Season

Arsenic, MW-33B (mg/l)



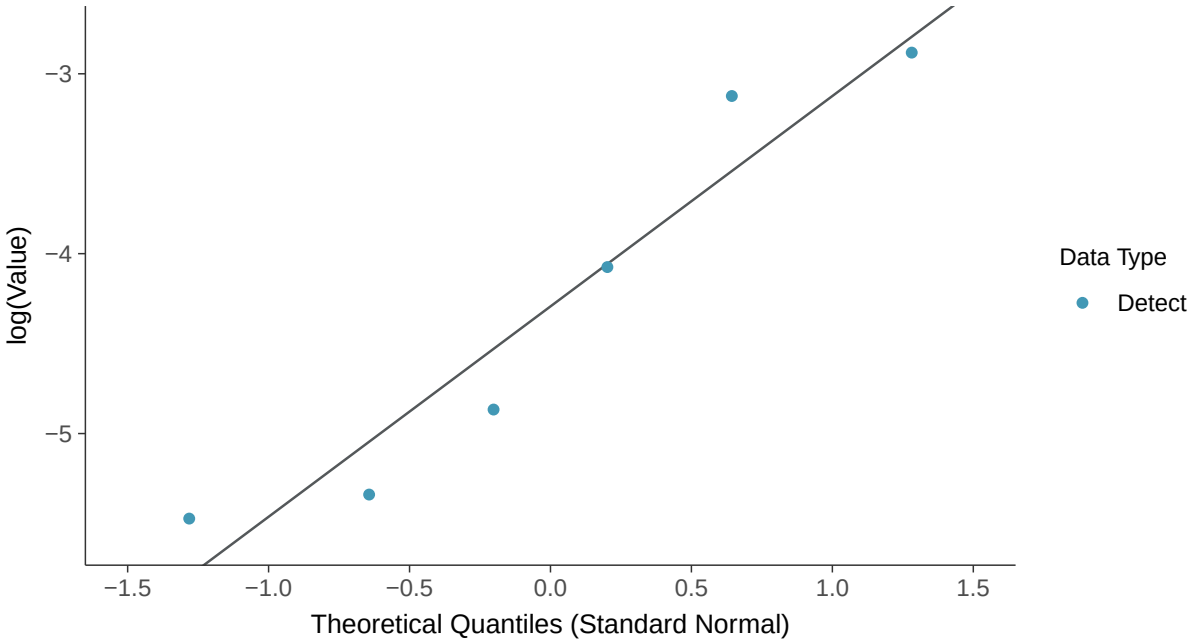
Normal Q-Q plot

Arsenic, MW-33B (mg/l)



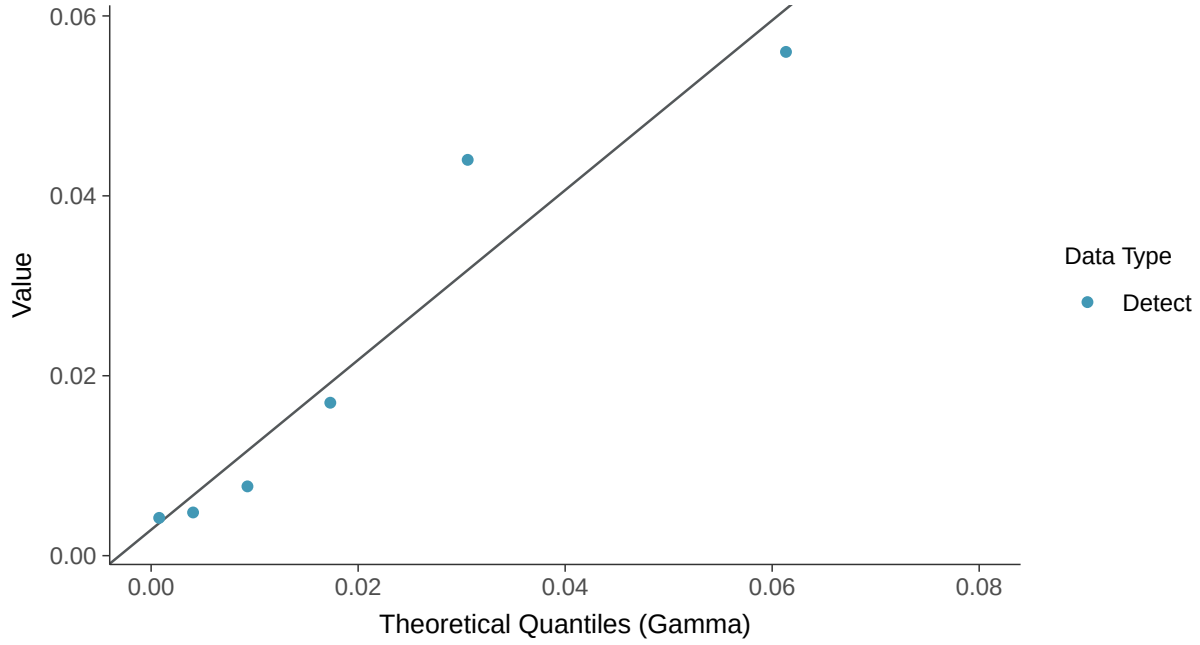
Lognormal Q-Q plot

Arsenic, MW-33B (mg/l)



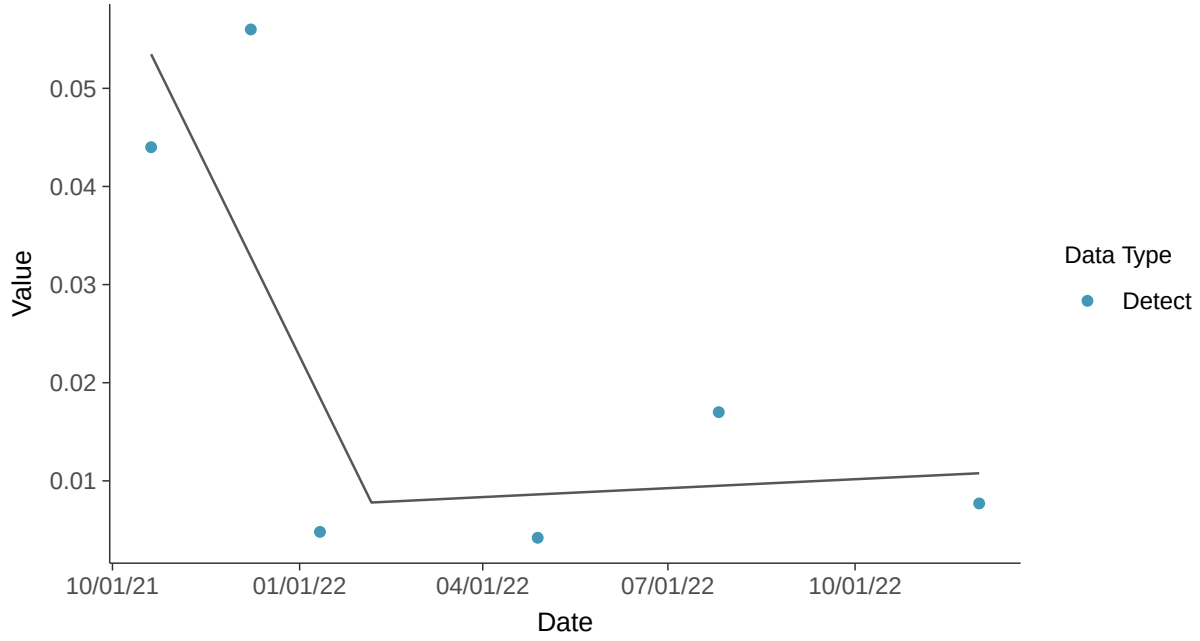
Gamma Q-Q plot

Arsenic, MW-33B (mg/l)



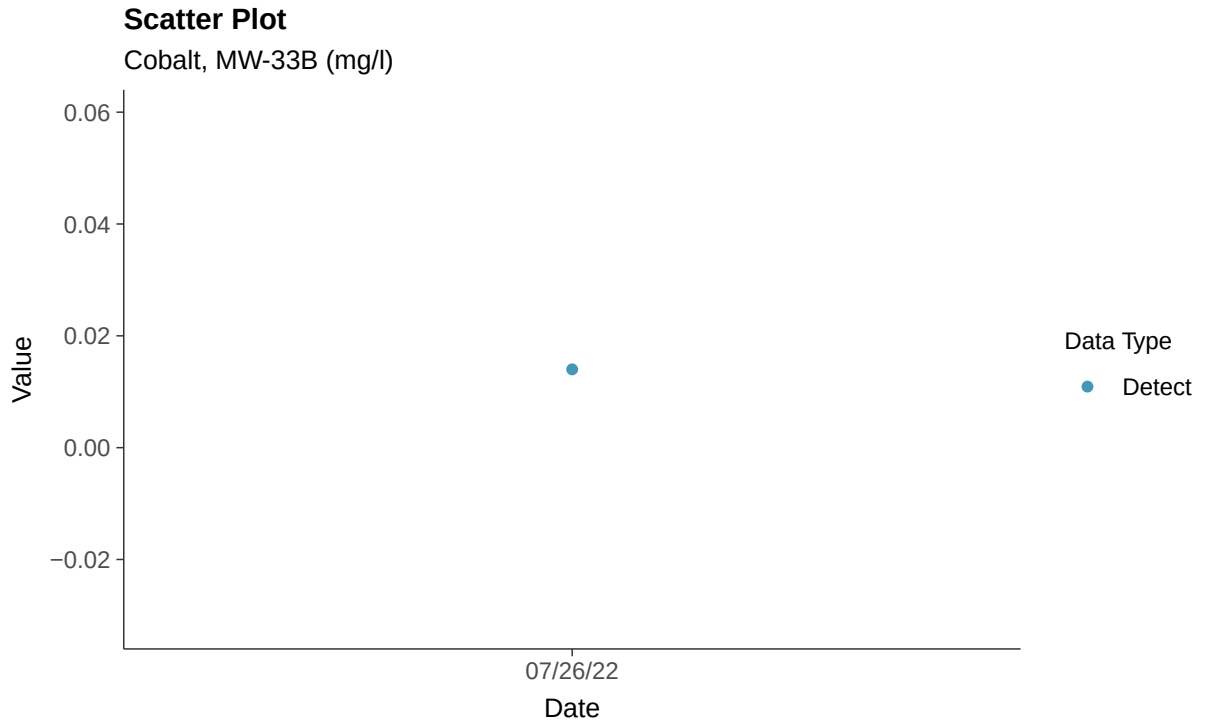
Trend Regression: Piecewise Linear-Linear

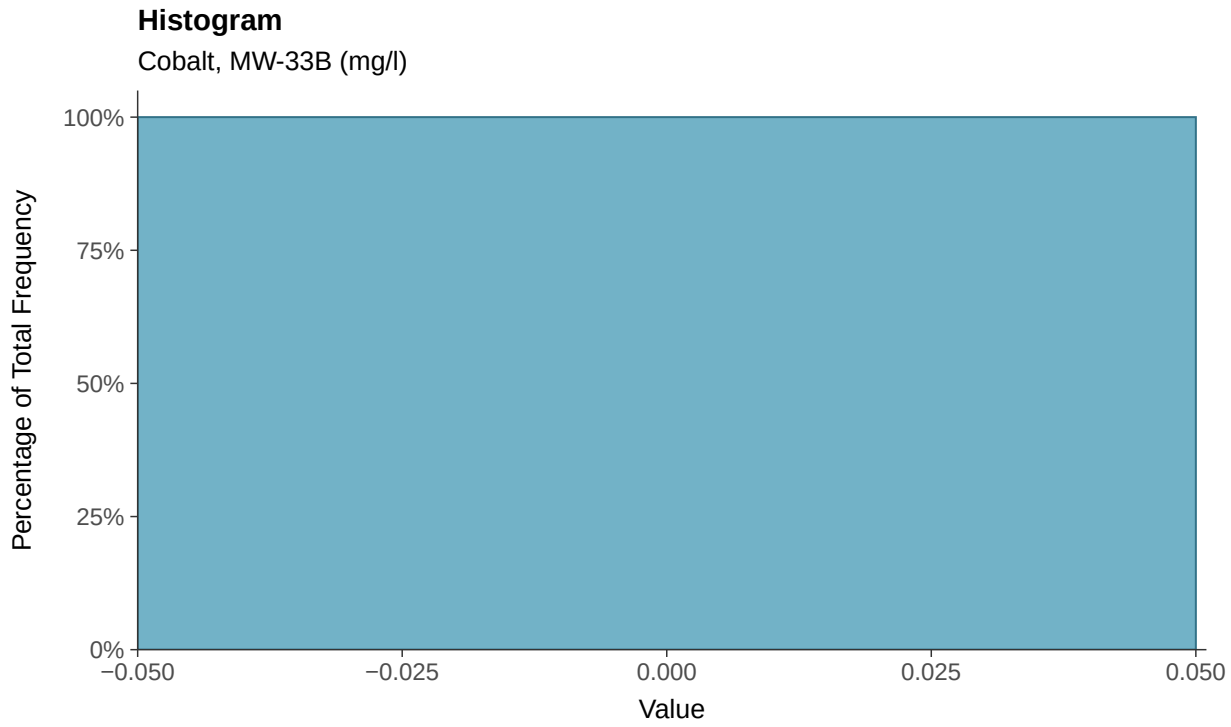
Arsenic, MW-33B (mg/l)



Appendix IV: Cobalt, MW-33B

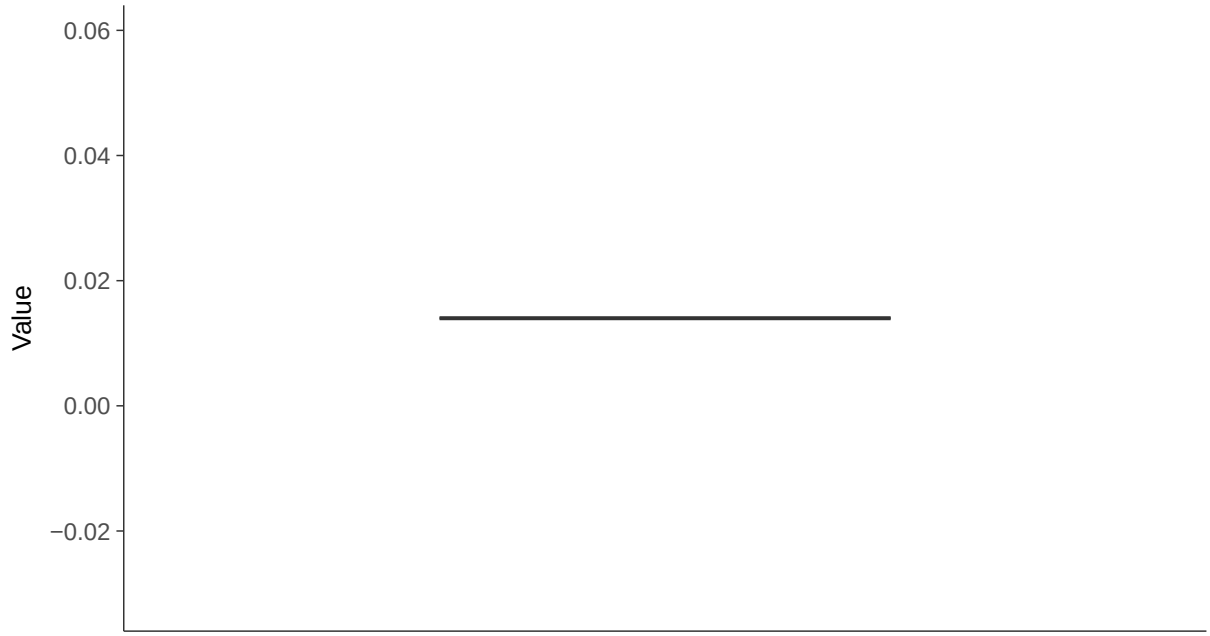
ID: 27_2_113





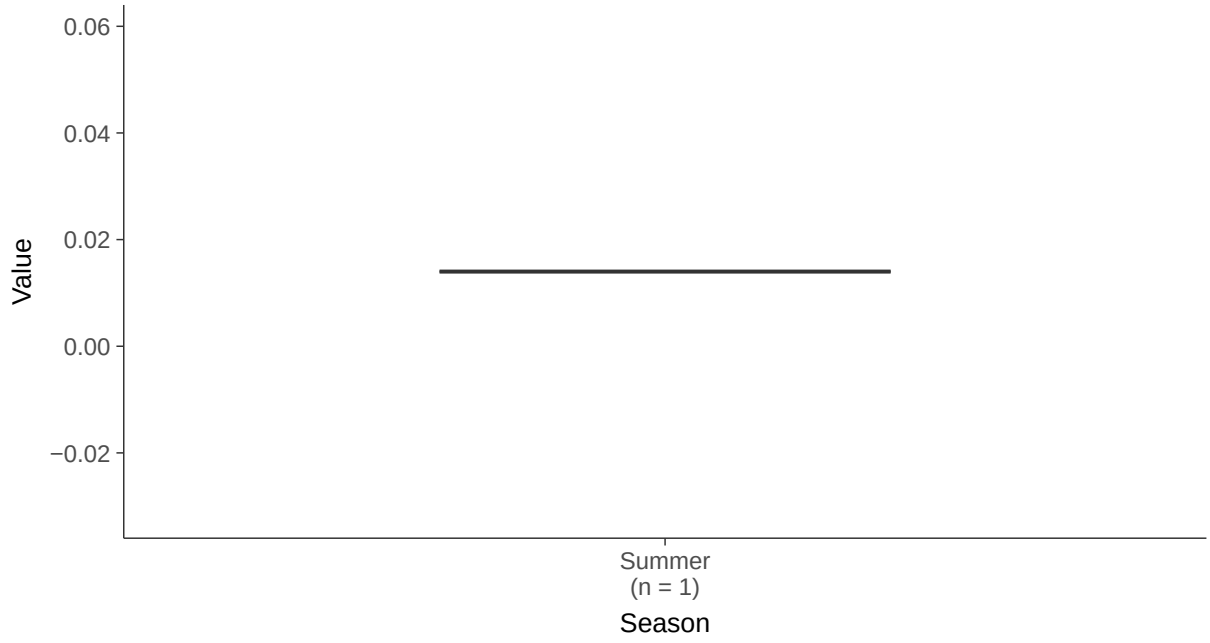
Boxplot

Cobalt, MW-33B (mg/l)



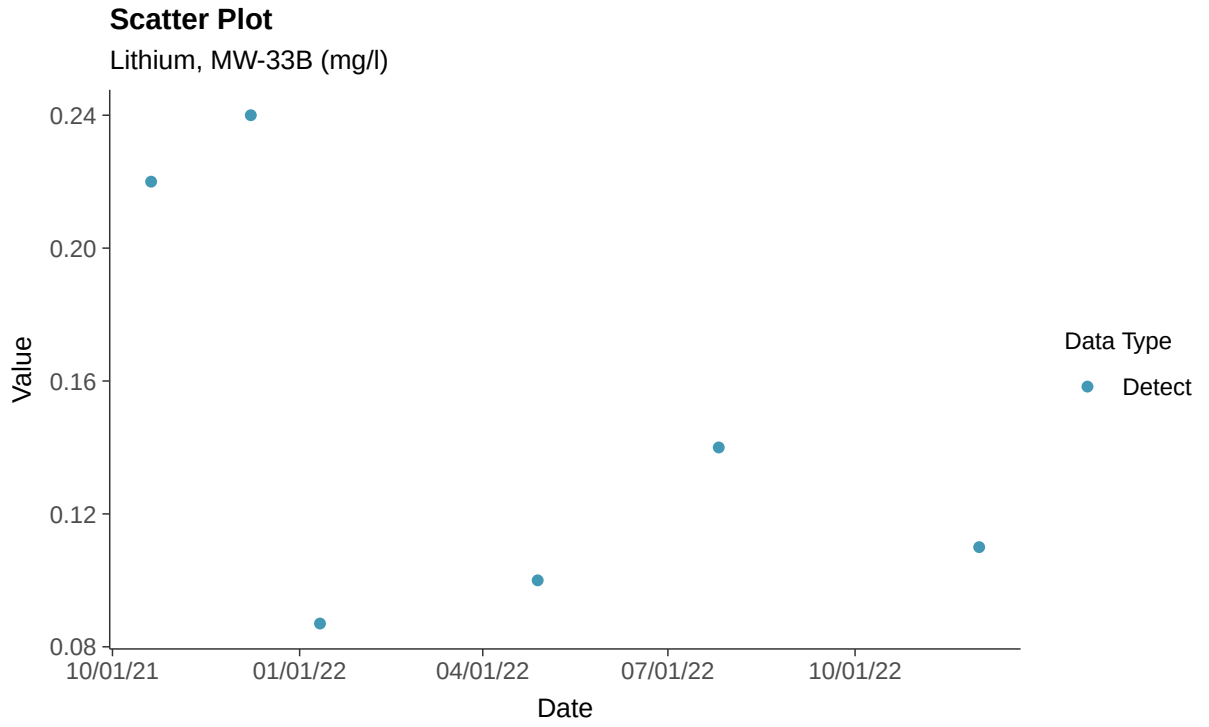
Boxplot by Season

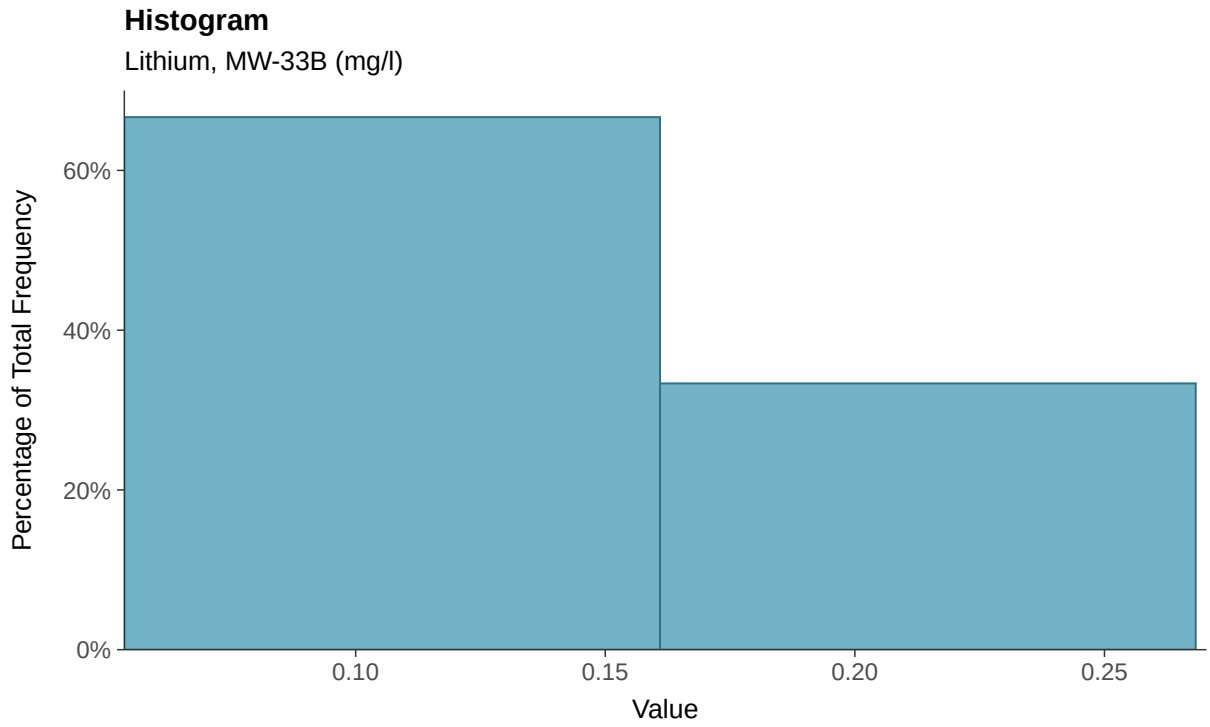
Cobalt, MW-33B (mg/l)



Appendix IV: Lithium, MW-33B

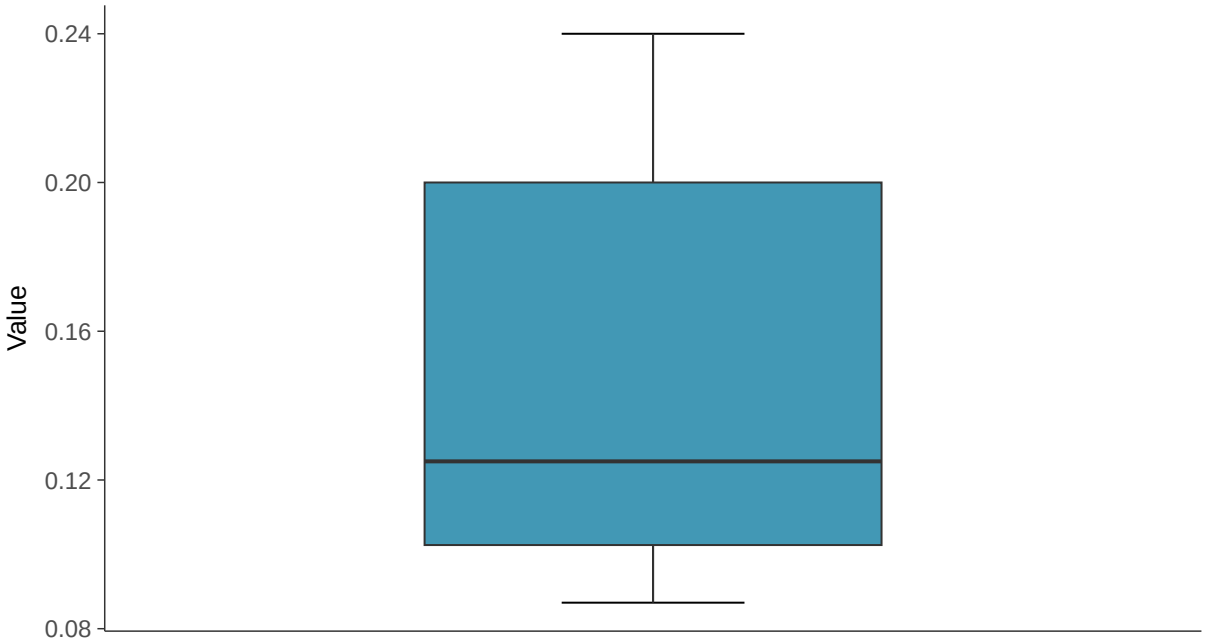
ID: 27_2_118





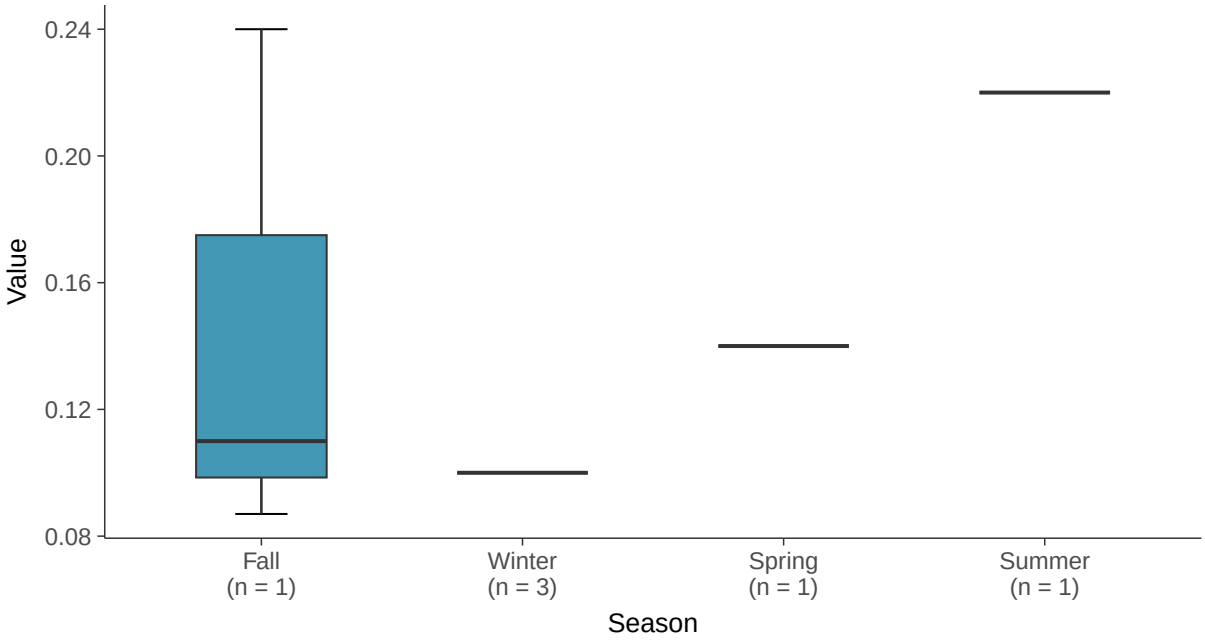
Boxplot

Lithium, MW-33B (mg/l)



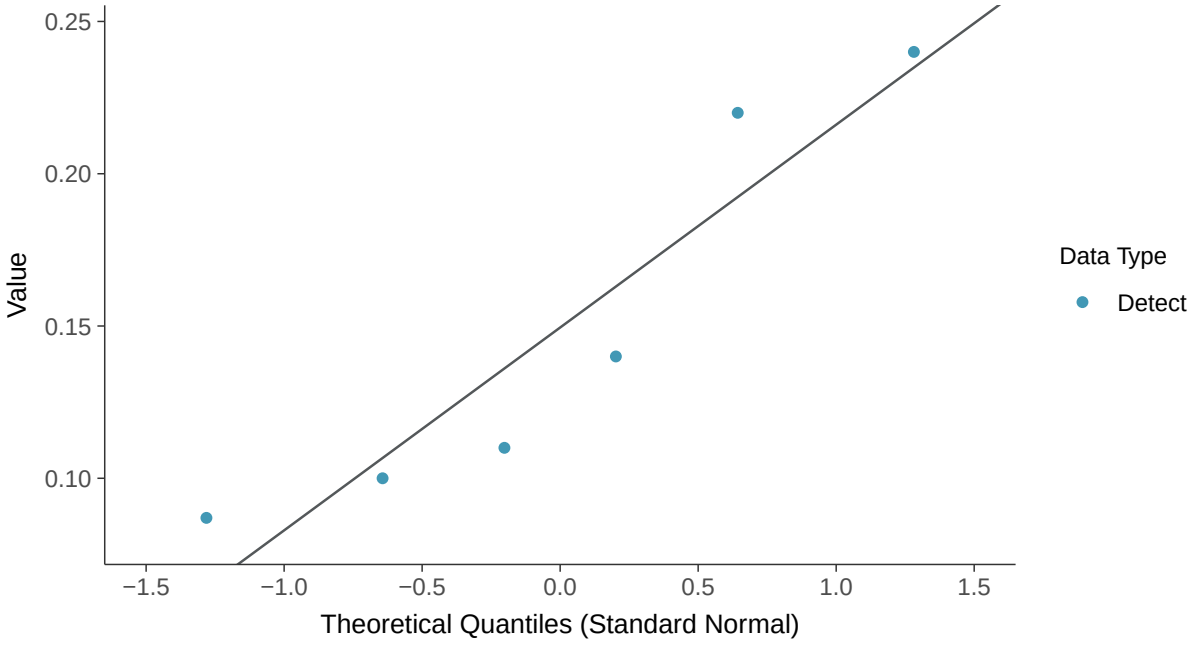
Boxplot by Season

Lithium, MW-33B (mg/l)



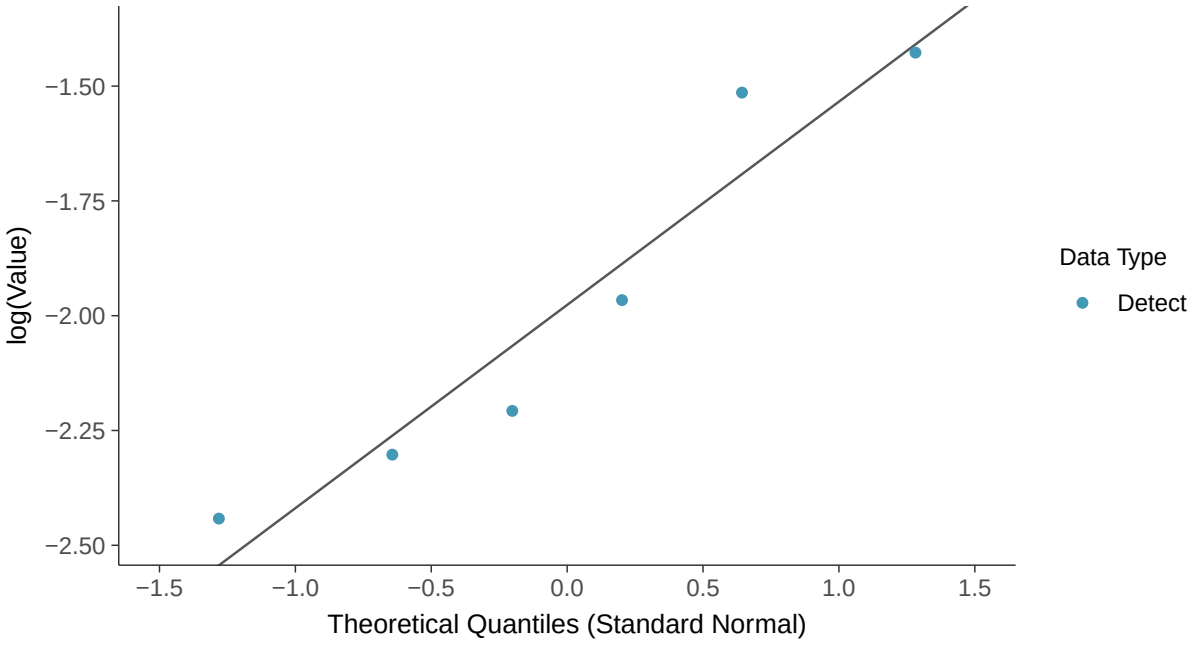
Normal Q-Q plot

Lithium, MW-33B (mg/l)



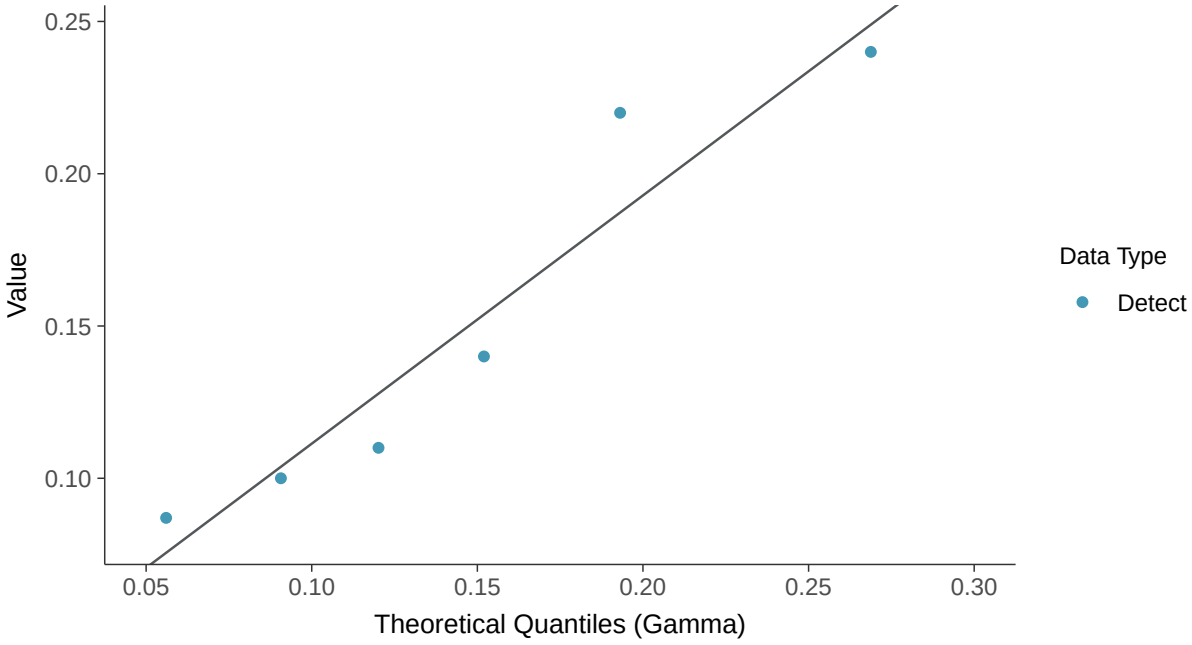
Lognormal Q-Q plot

Lithium, MW-33B (mg/l)



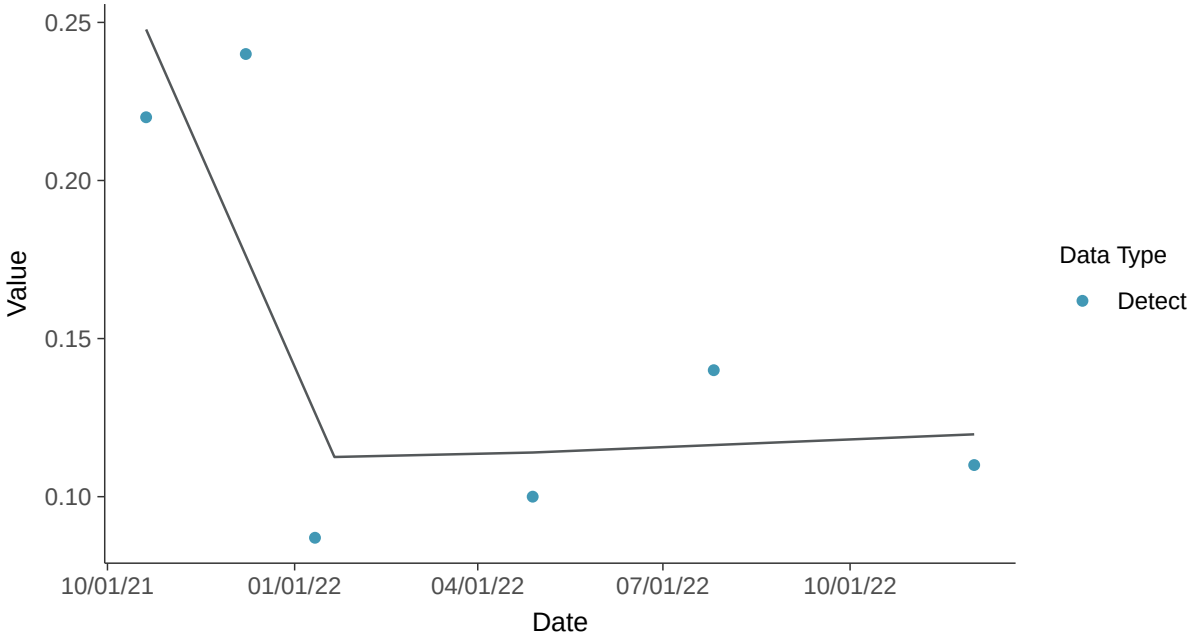
Gamma Q-Q plot

Lithium, MW-33B (mg/l)



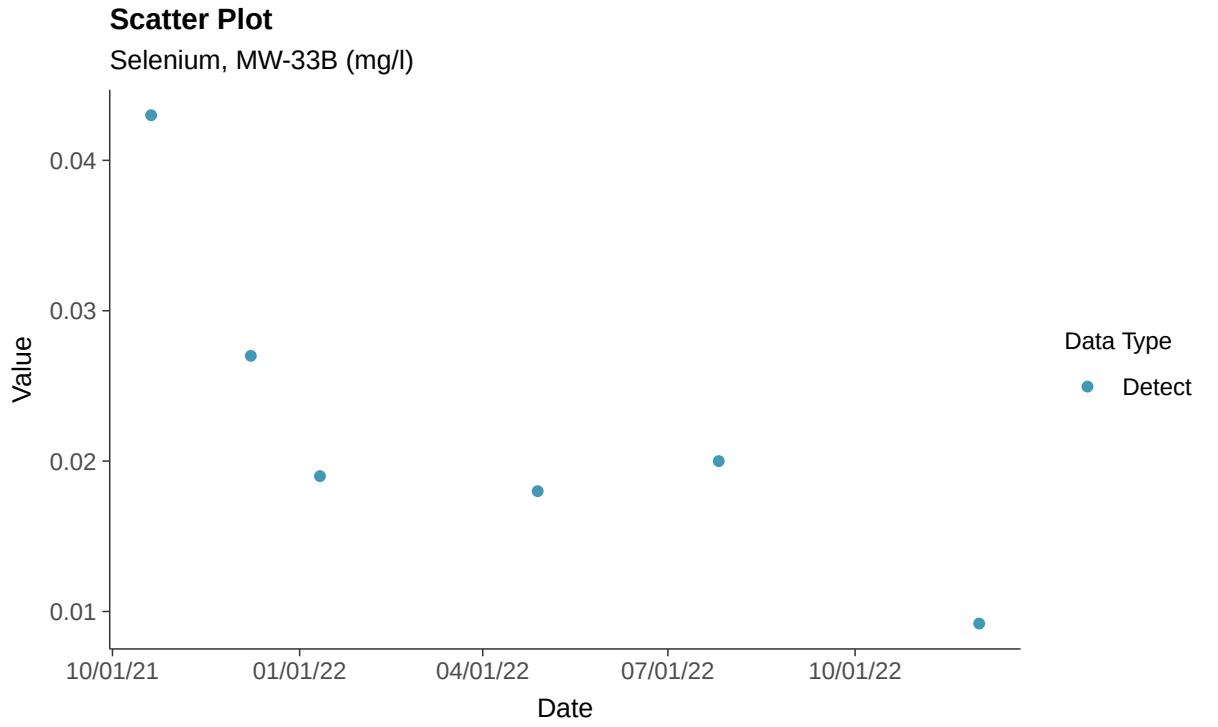
Trend Regression: Piecewise Linear-Linear

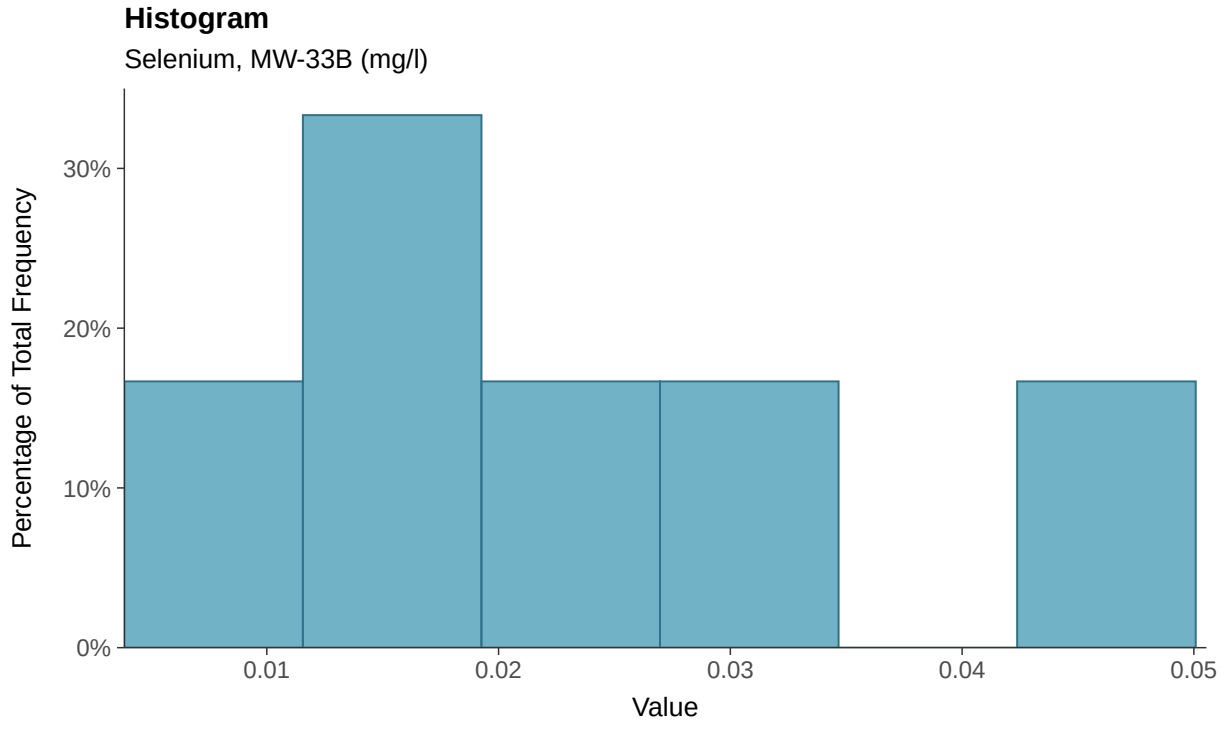
Lithium, MW-33B (mg/l)



Appendix IV: Selenium, MW-33B

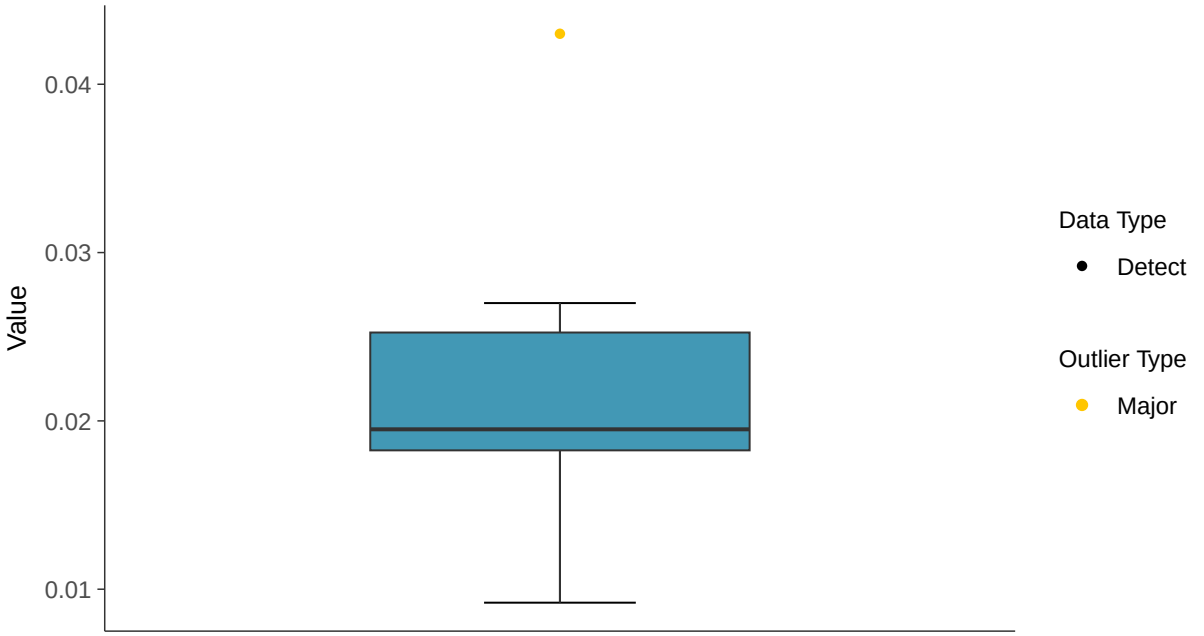
ID: 27_2_129





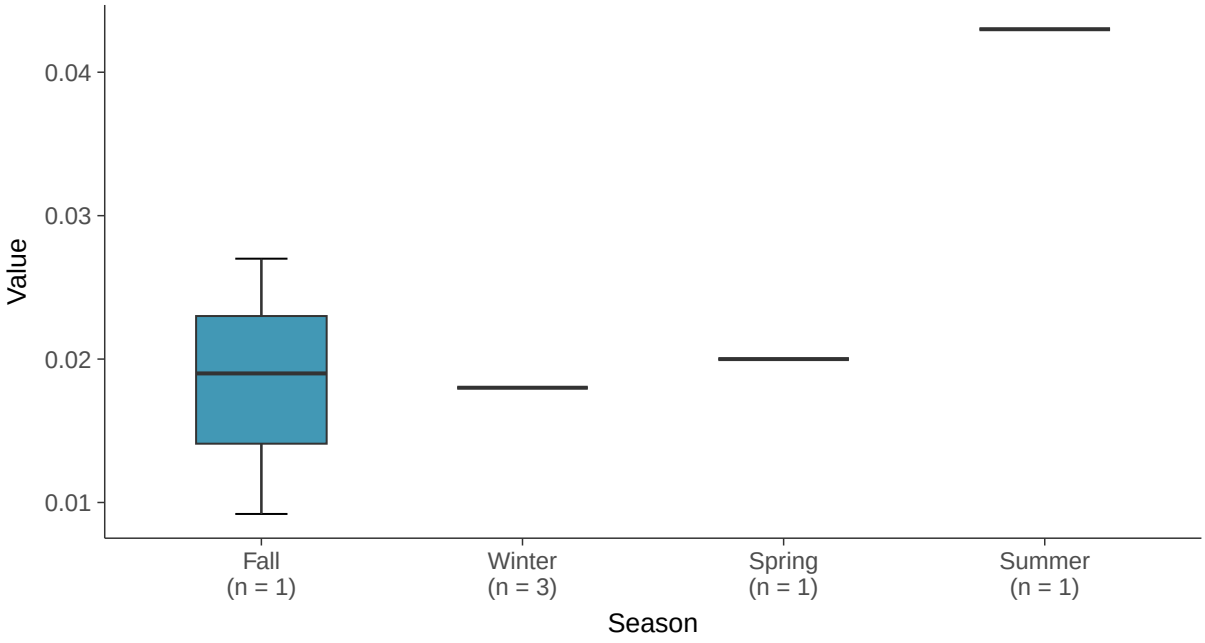
Boxplot

Selenium, MW-33B (mg/l)



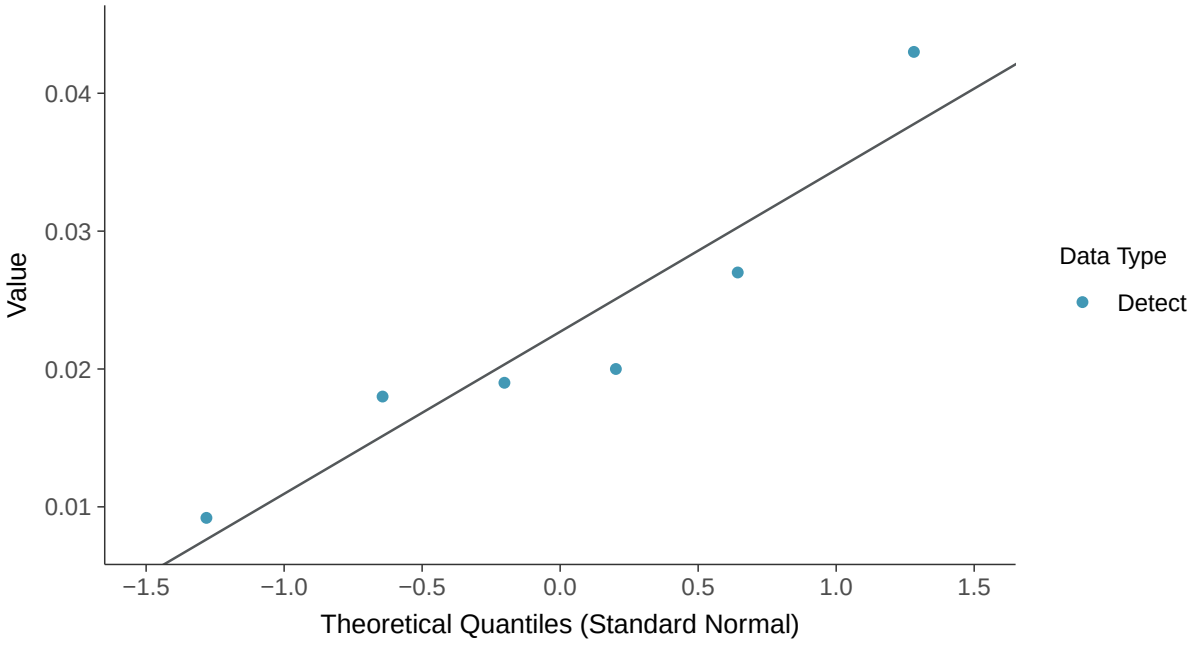
Boxplot by Season

Selenium, MW-33B (mg/l)



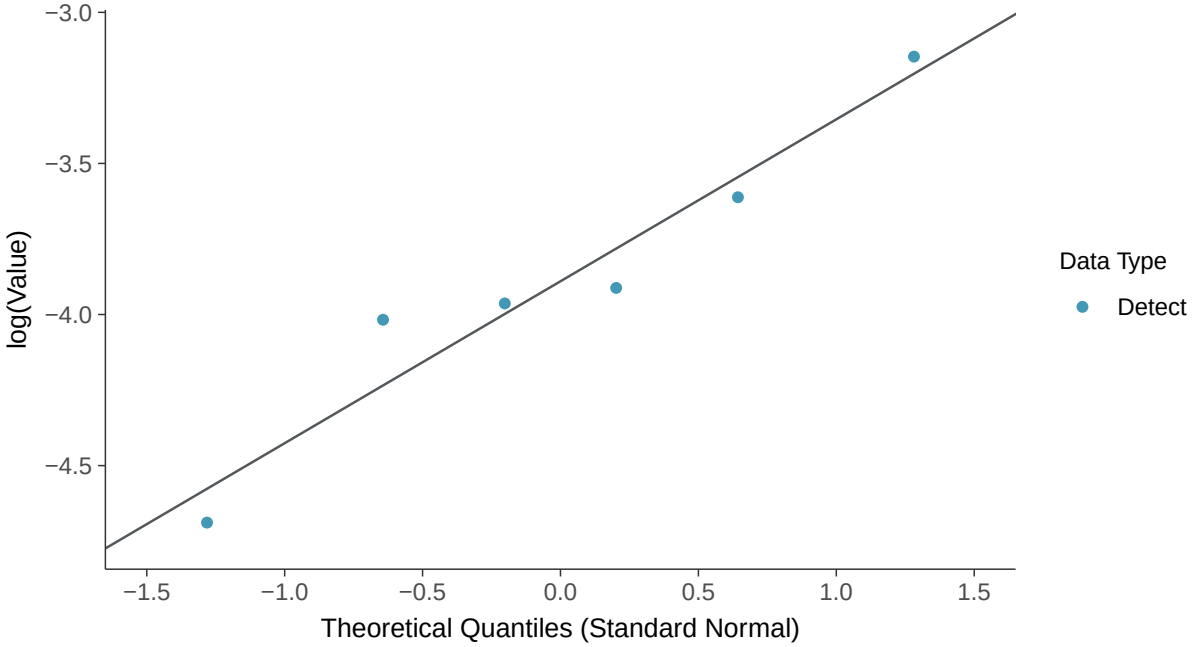
Normal Q-Q plot

Selenium, MW-33B (mg/l)



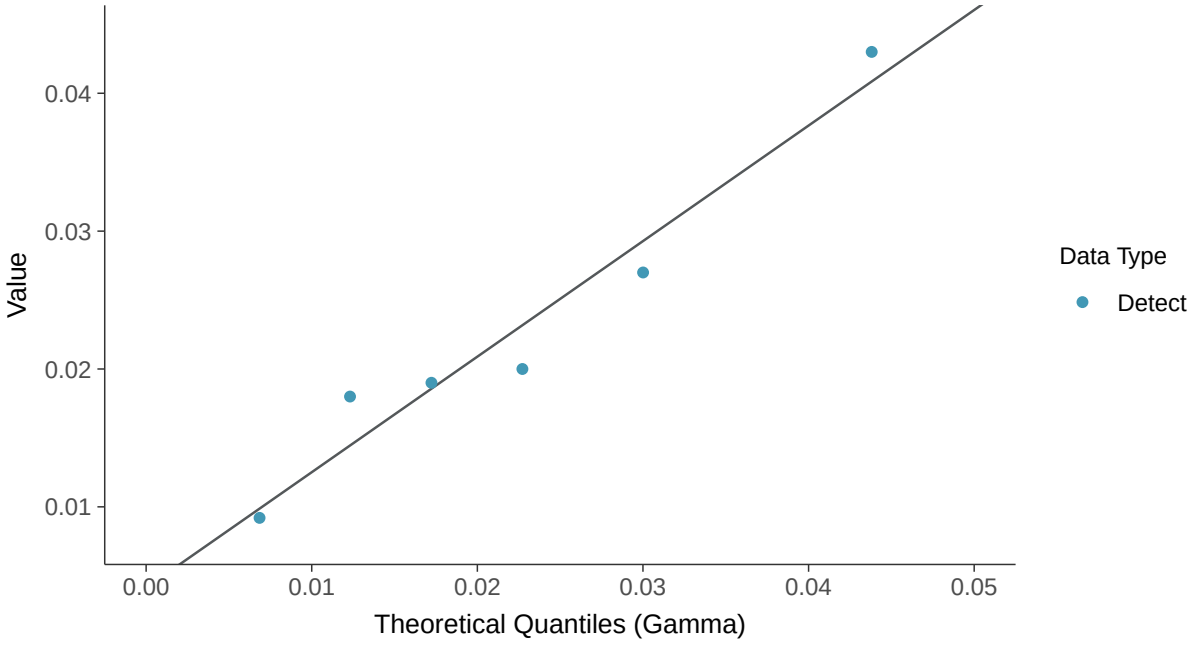
Lognormal Q-Q plot

Selenium, MW-33B (mg/l)



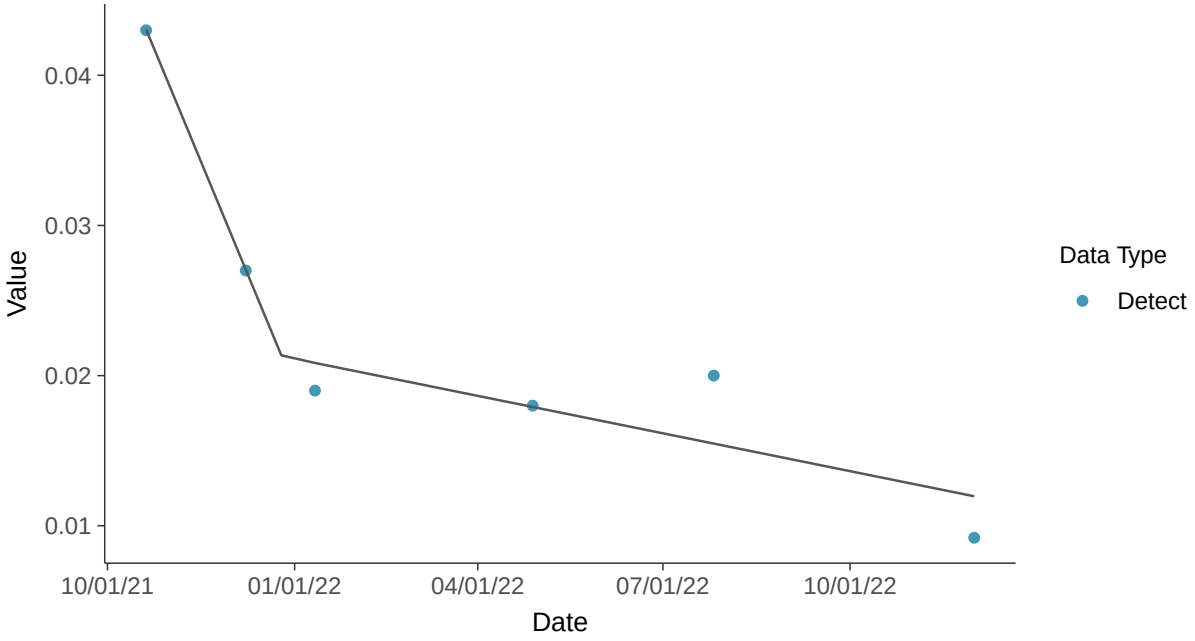
Gamma Q-Q plot

Selenium, MW-33B (mg/l)



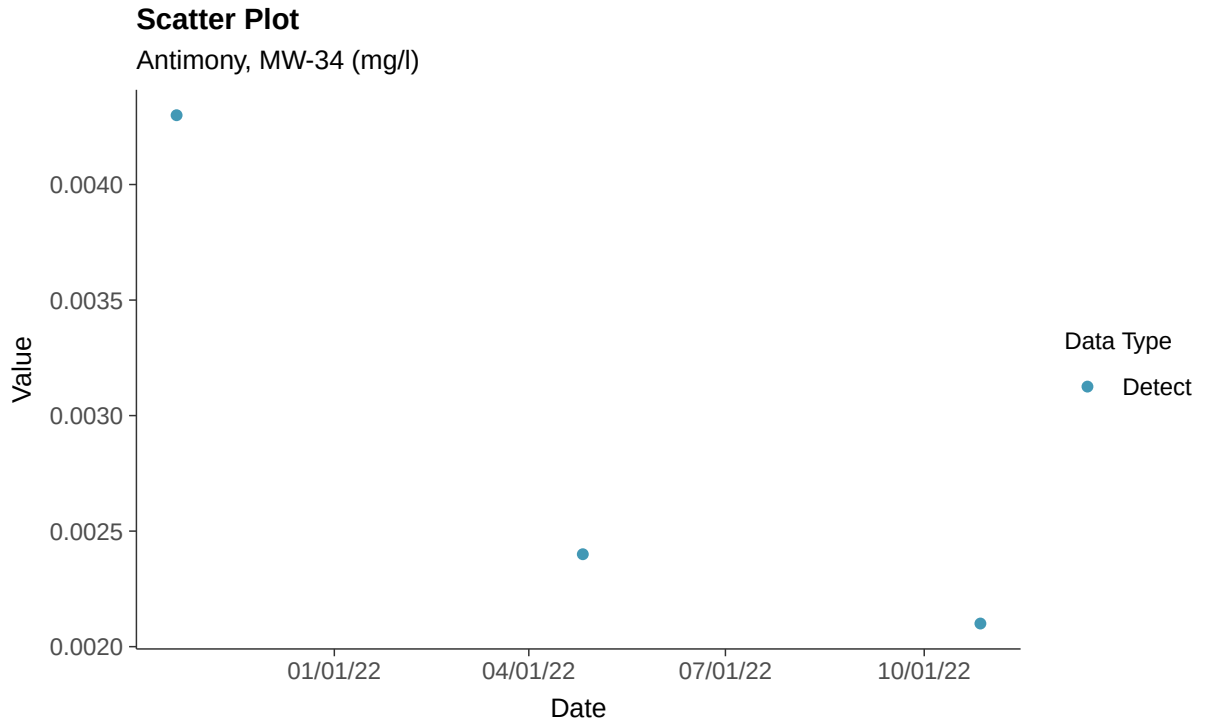
Trend Regression: Piecewise Linear-Linear

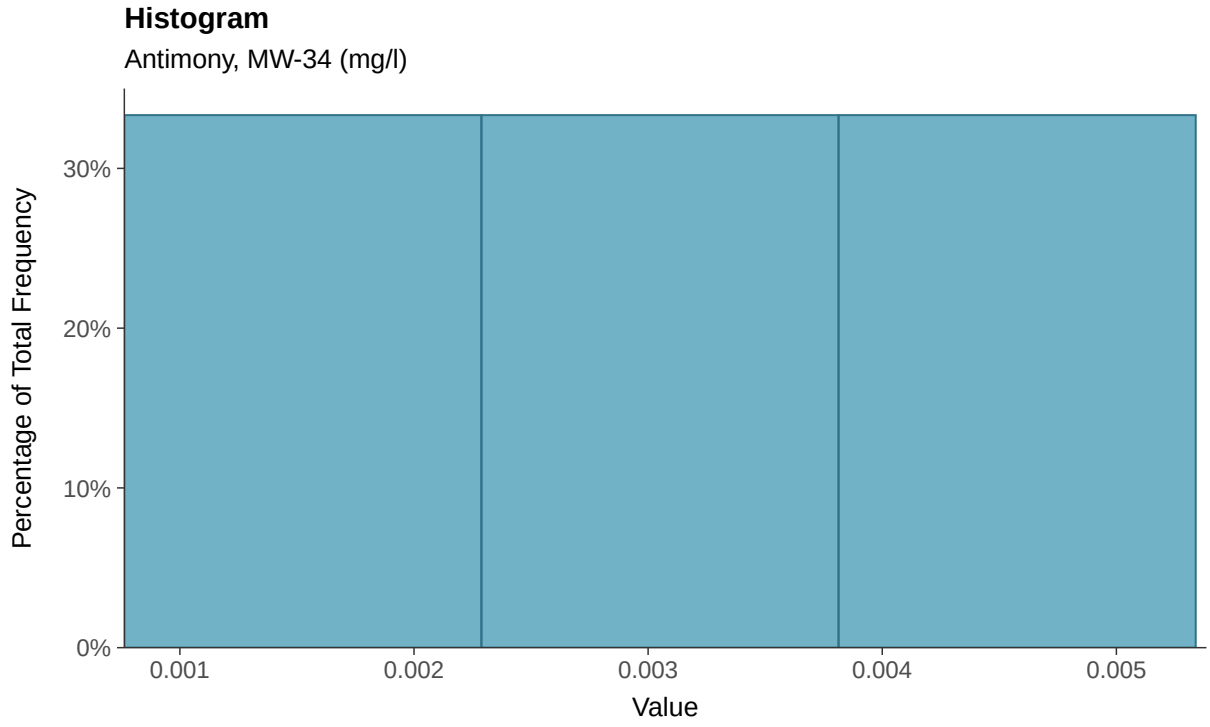
Selenium, MW-33B (mg/l)



Appendix IV: Antimony, MW-34

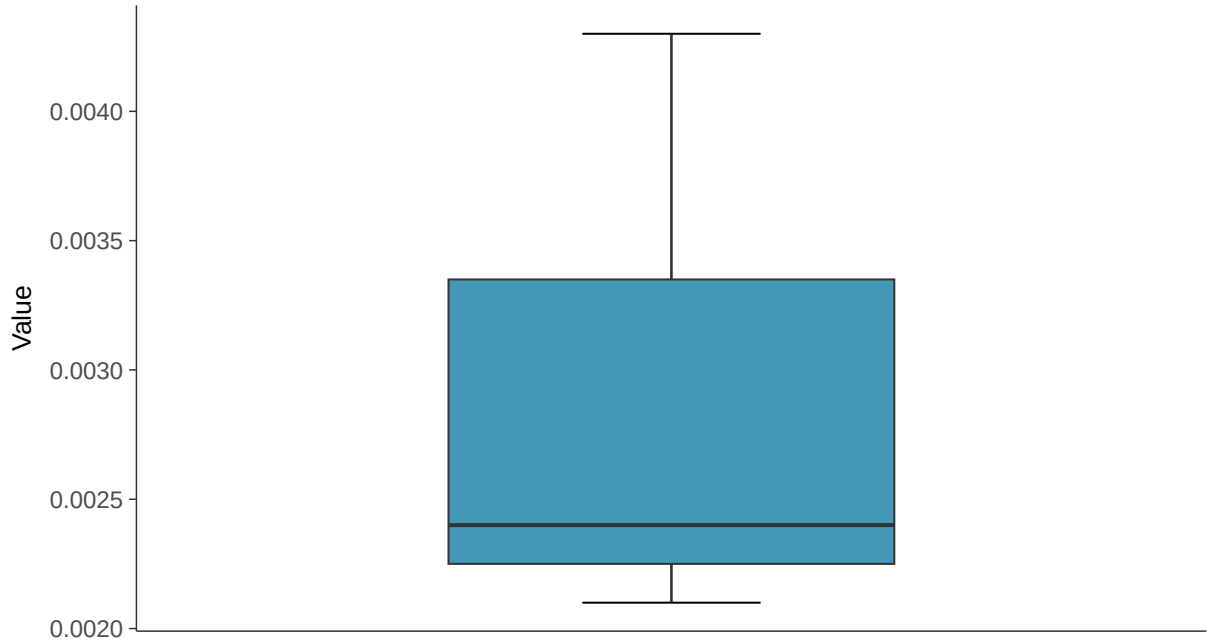
ID: 28_2_104





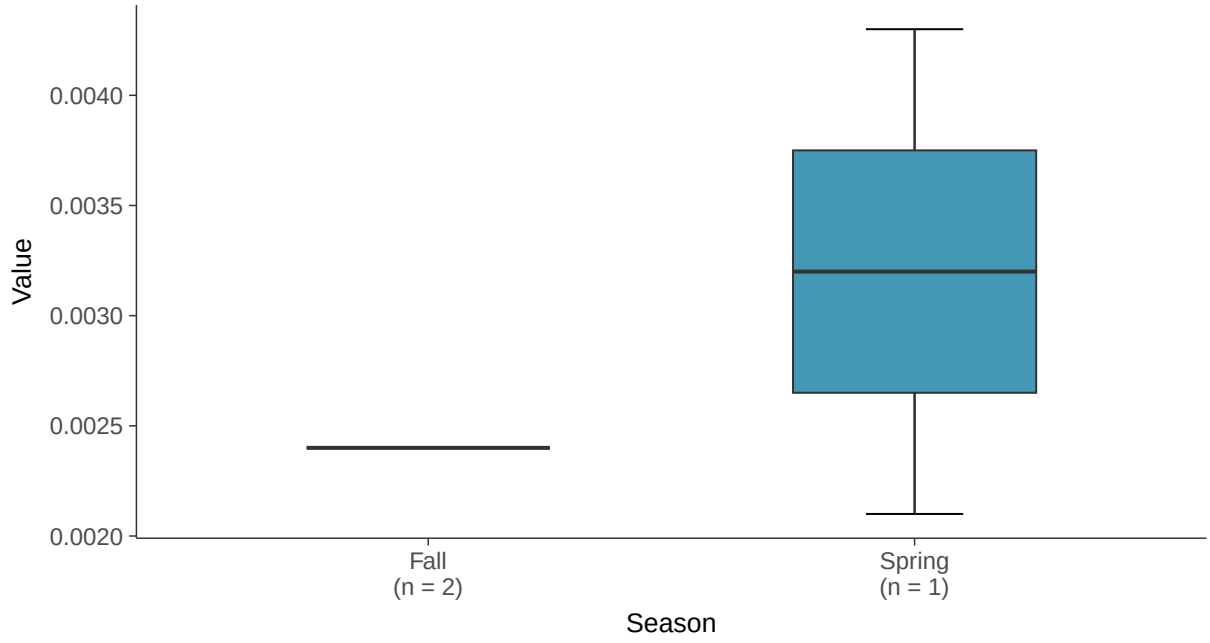
Boxplot

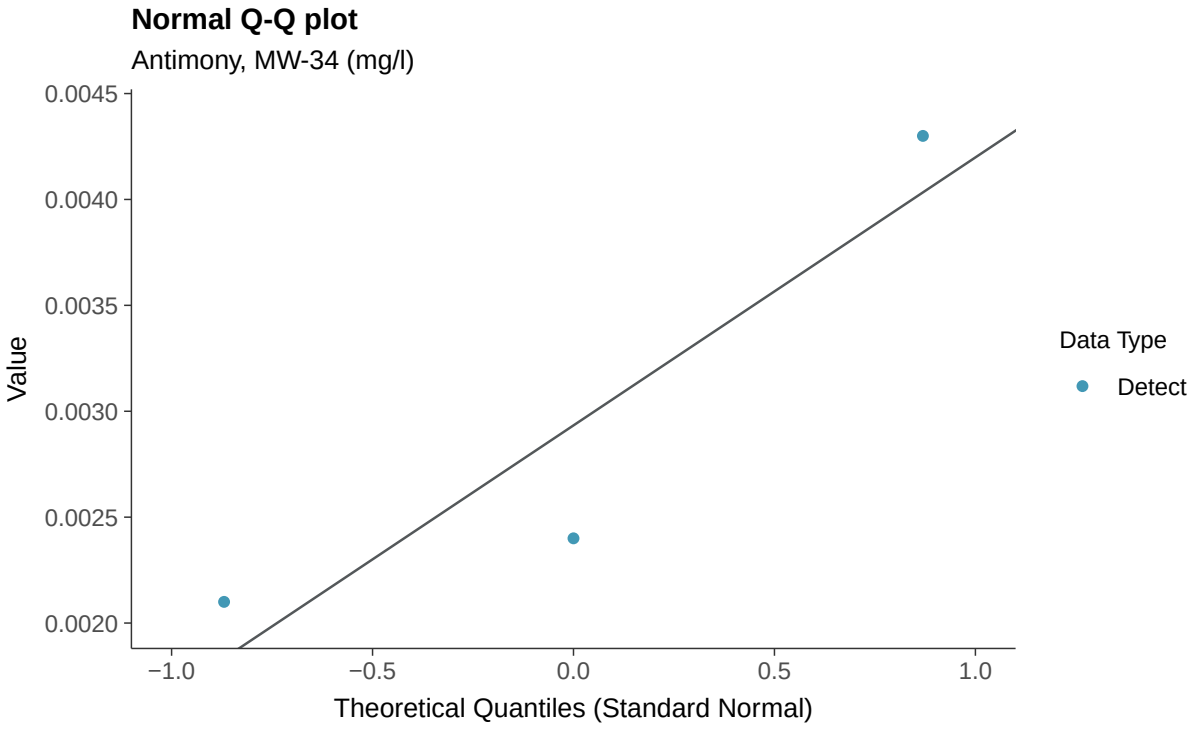
Antimony, MW-34 (mg/l)



Boxplot by Season

Antimony, MW-34 (mg/l)



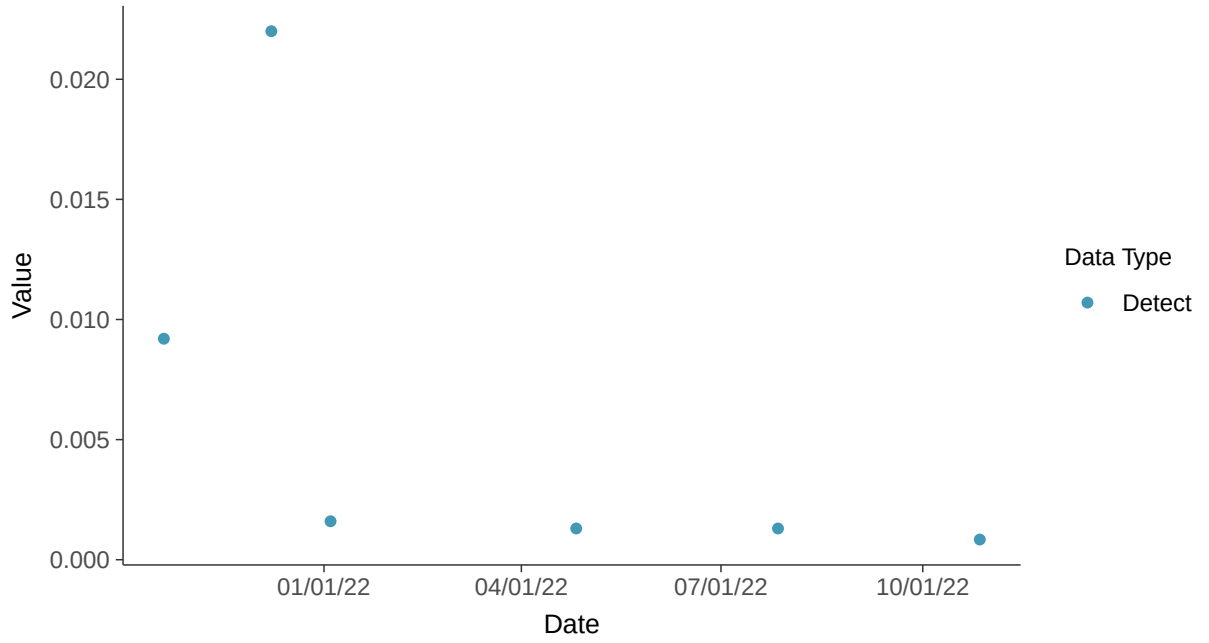

Normal Q-Q plot
Antimony, MW-34 (mg/l)
Value
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Arsenic, MW-34

ID: 28_2_105

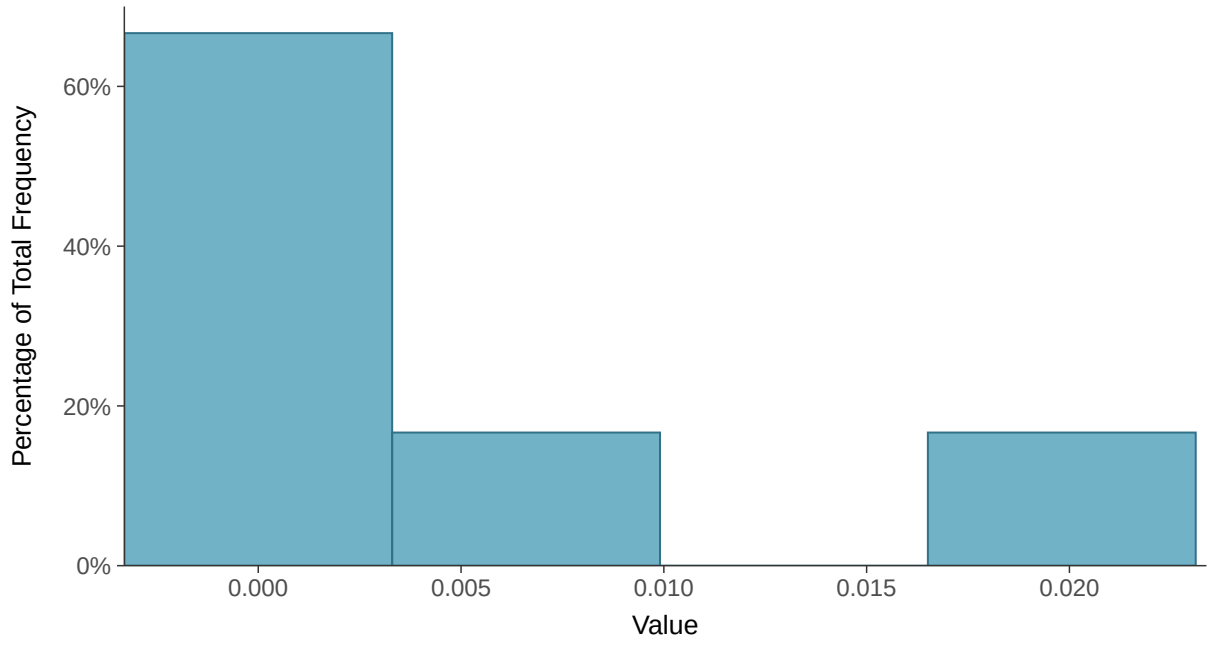
Scatter Plot

Arsenic, MW-34 (mg/l)



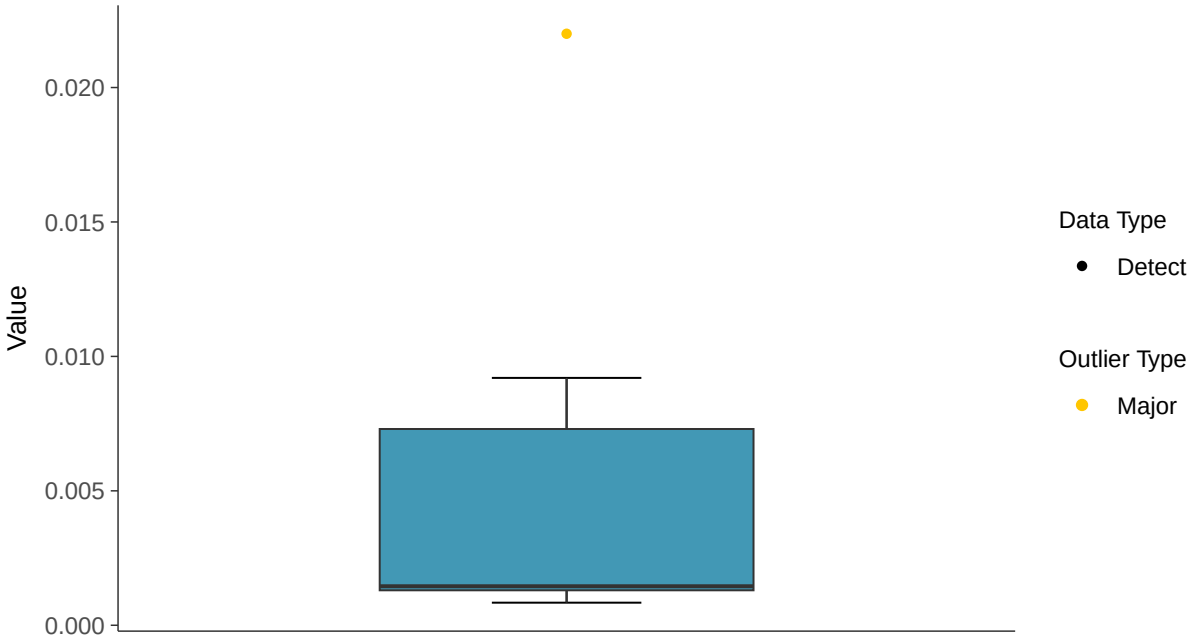
Histogram

Arsenic, MW-34 (mg/l)



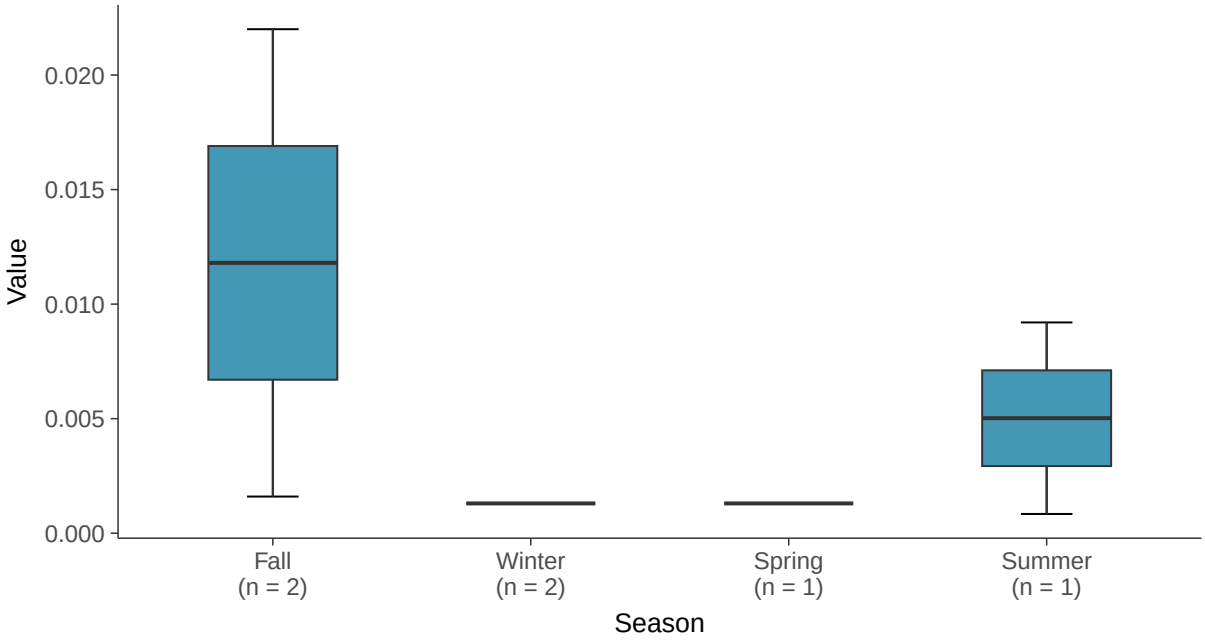
Boxplot

Arsenic, MW-34 (mg/l)



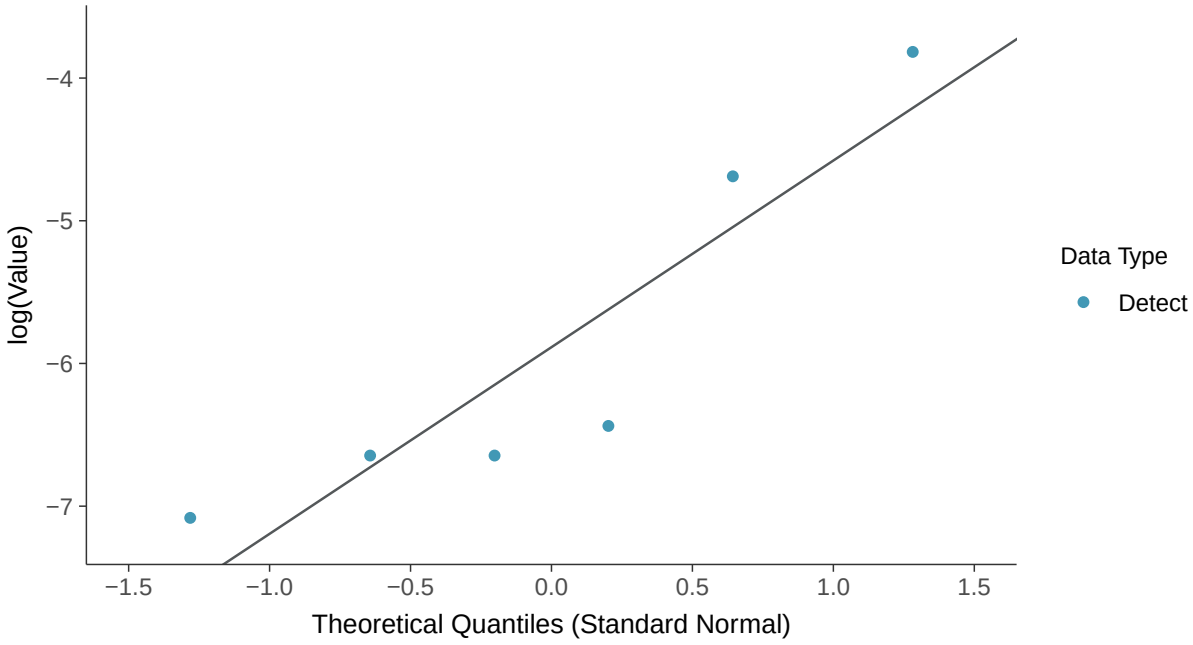
Boxplot by Season

Arsenic, MW-34 (mg/l)



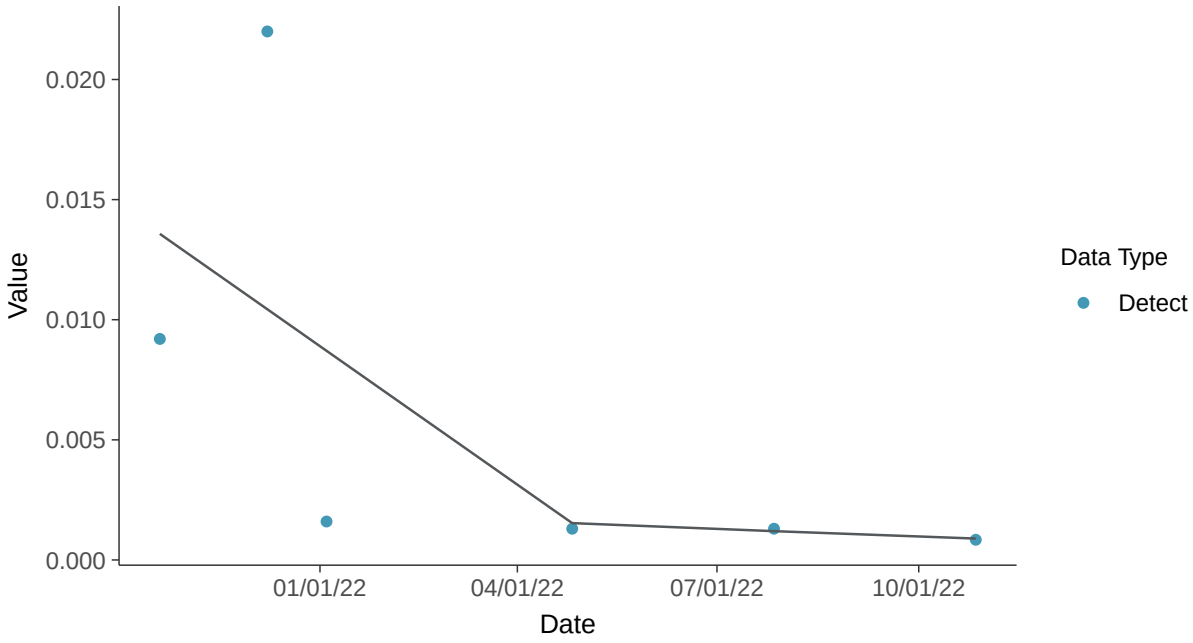
Lognormal Q-Q plot

Arsenic, MW-34 (mg/l)



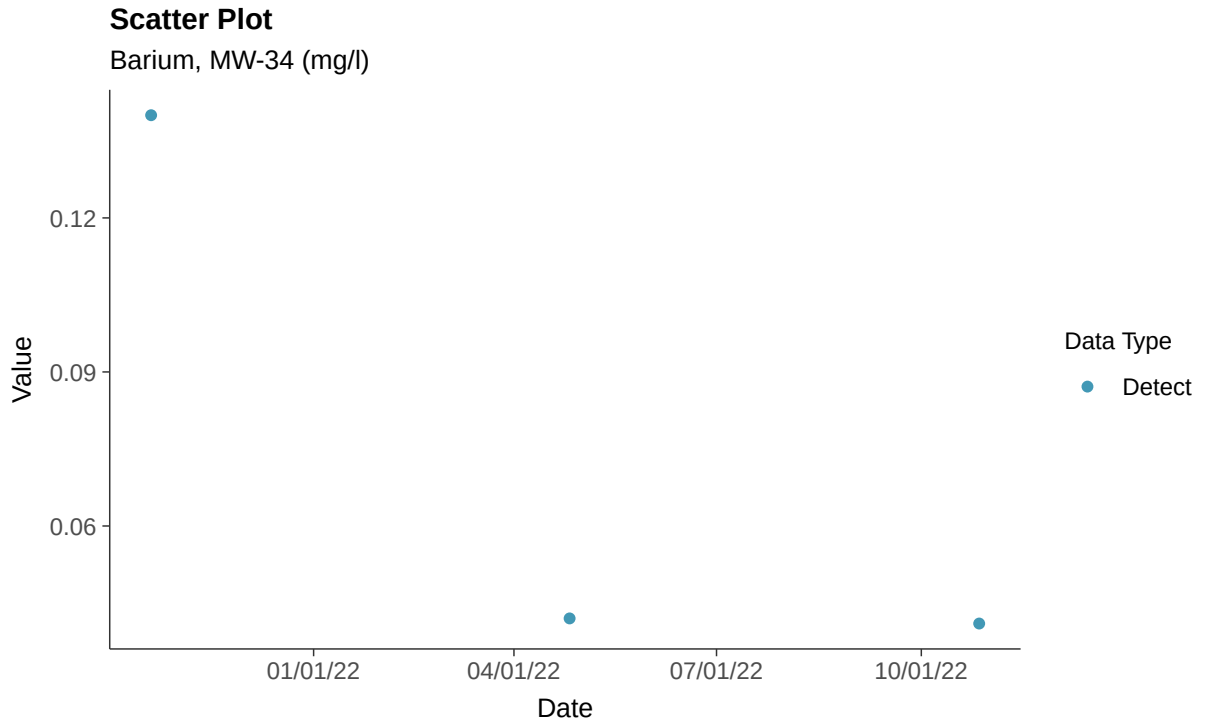
Trend Regression: Piecewise Linear-Linear

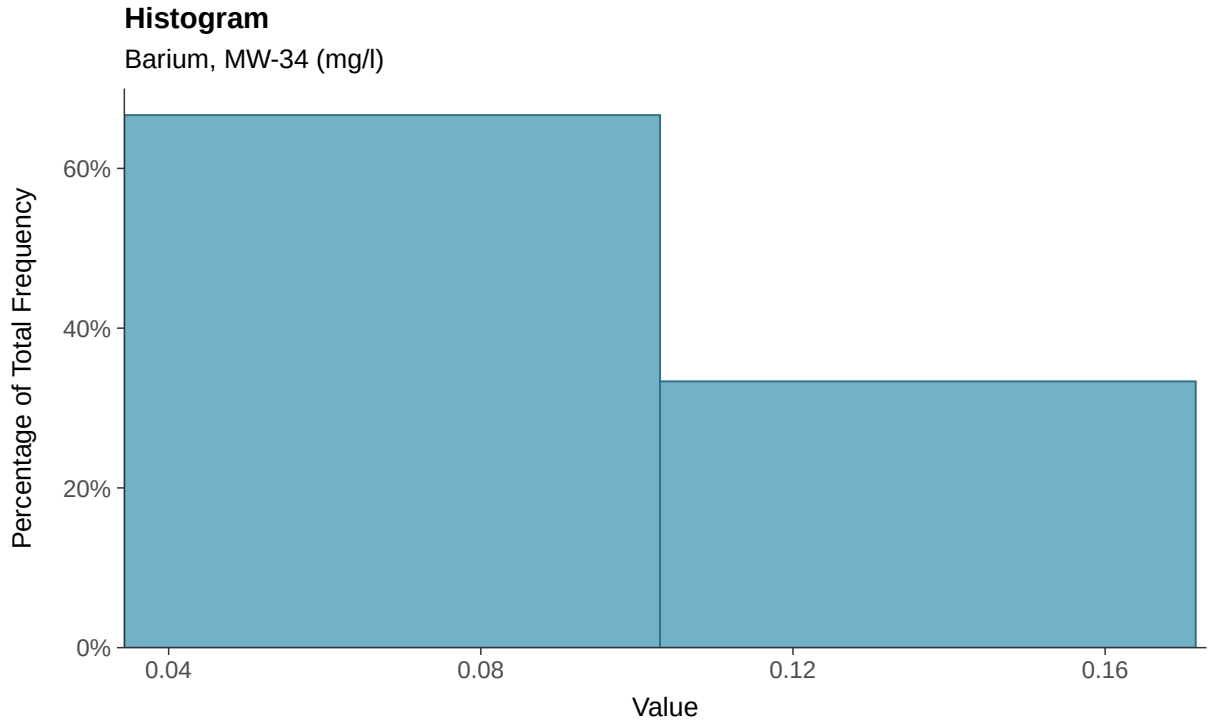
Arsenic, MW-34 (mg/l)



Appendix IV: Barium, MW-34

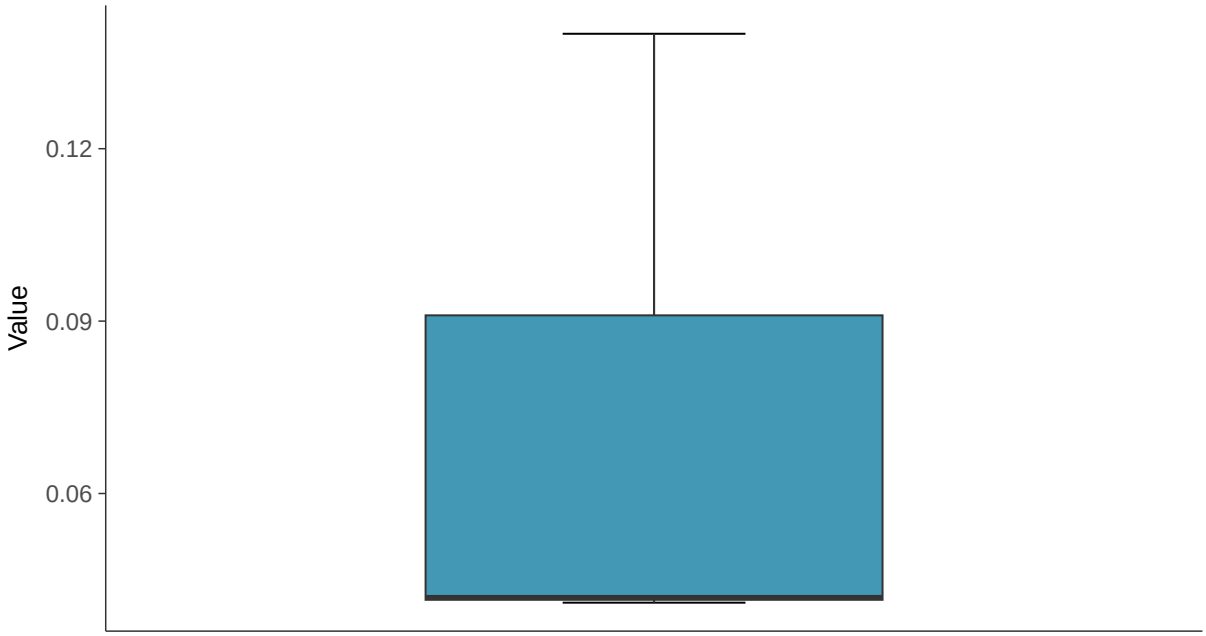
ID: 28_2_106





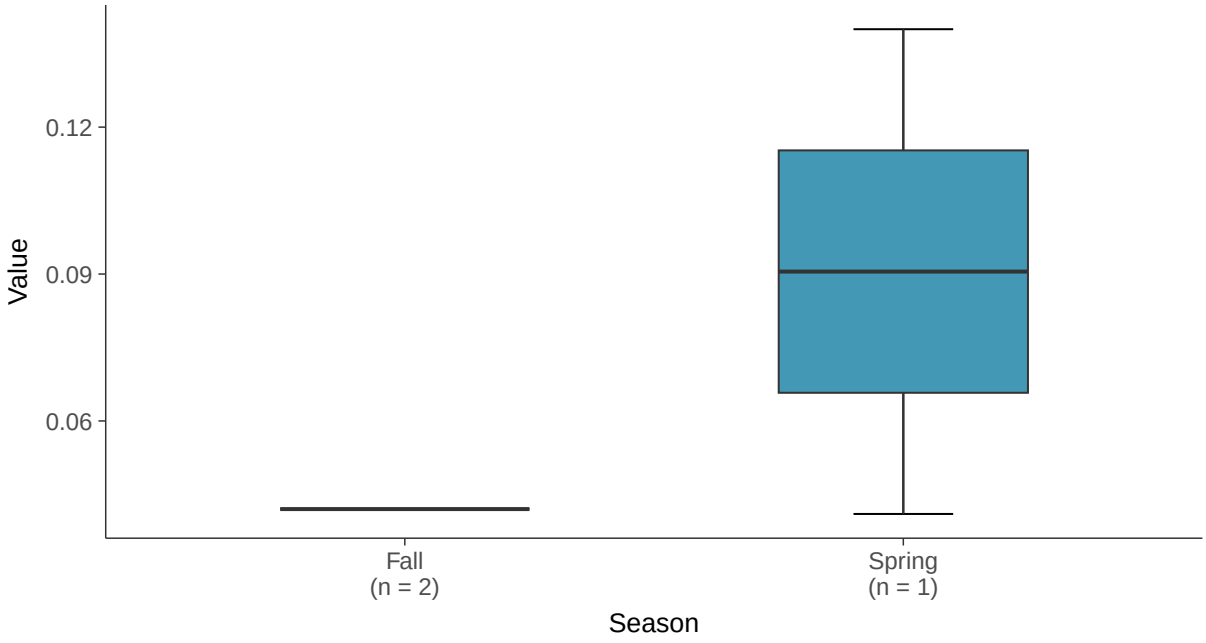
Boxplot

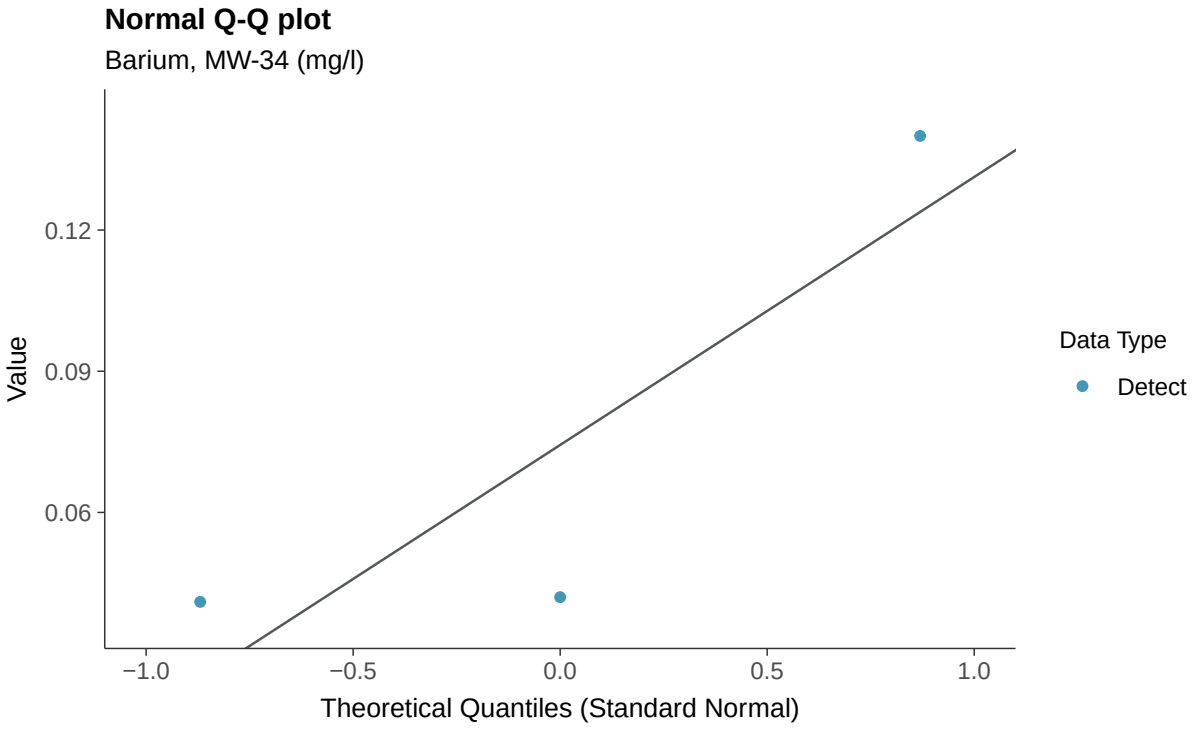
Barium, MW-34 (mg/l)



Boxplot by Season

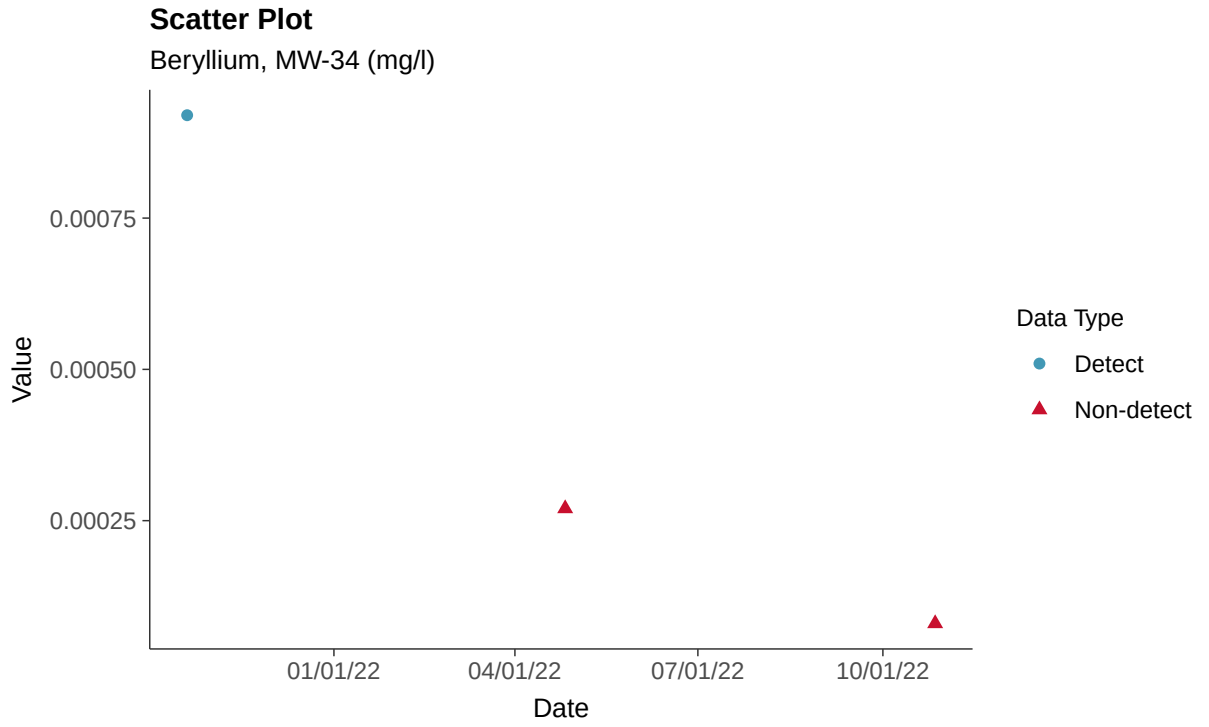
Barium, MW-34 (mg/l)

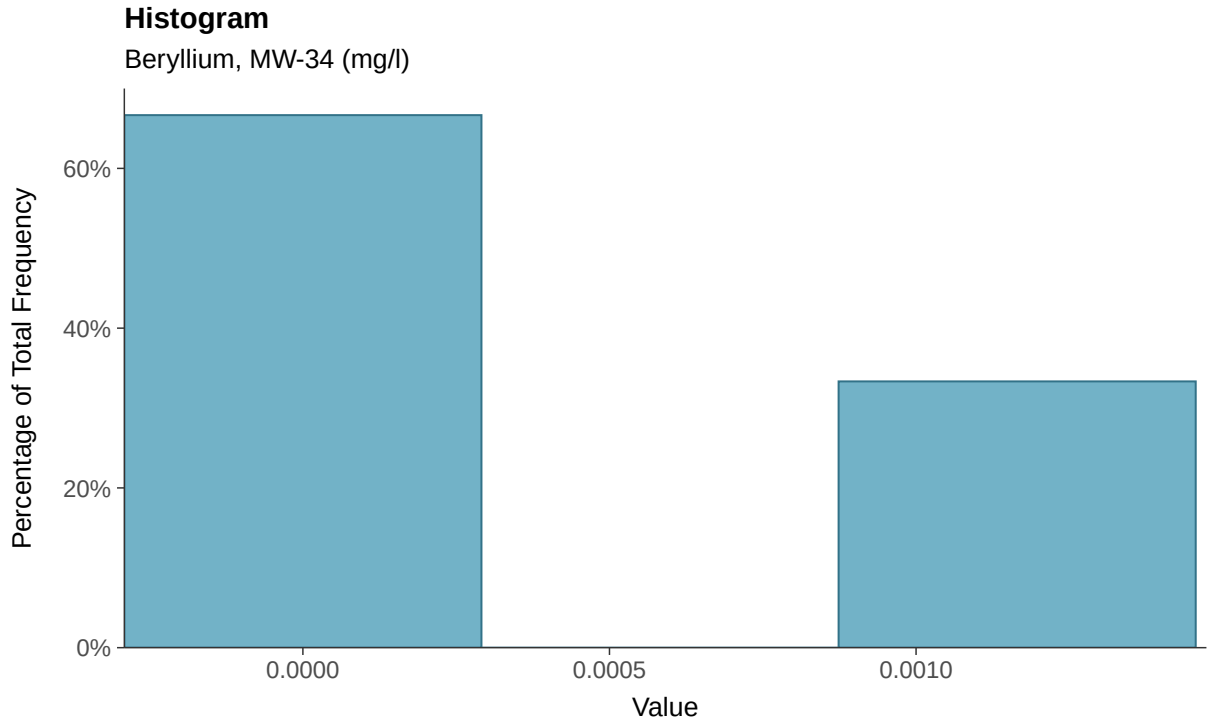



Normal Q-Q plot
Barium, MW-34 (mg/l)
Value
0.12
0.09
0.06
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Beryllium, MW-34

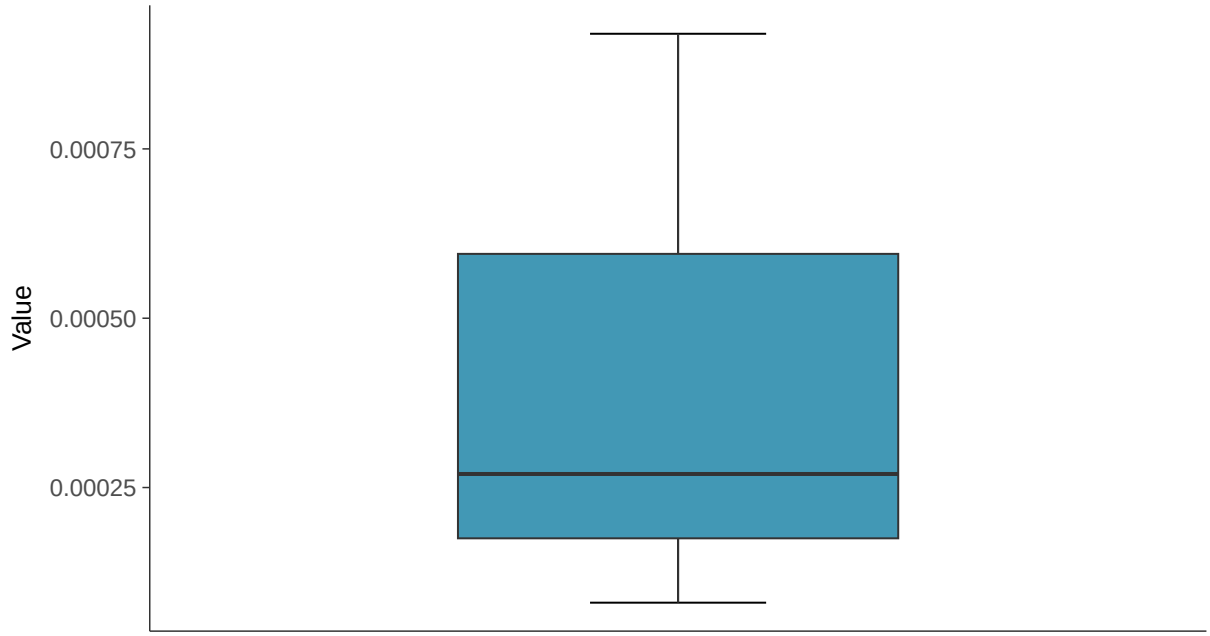
ID: 28_2_107





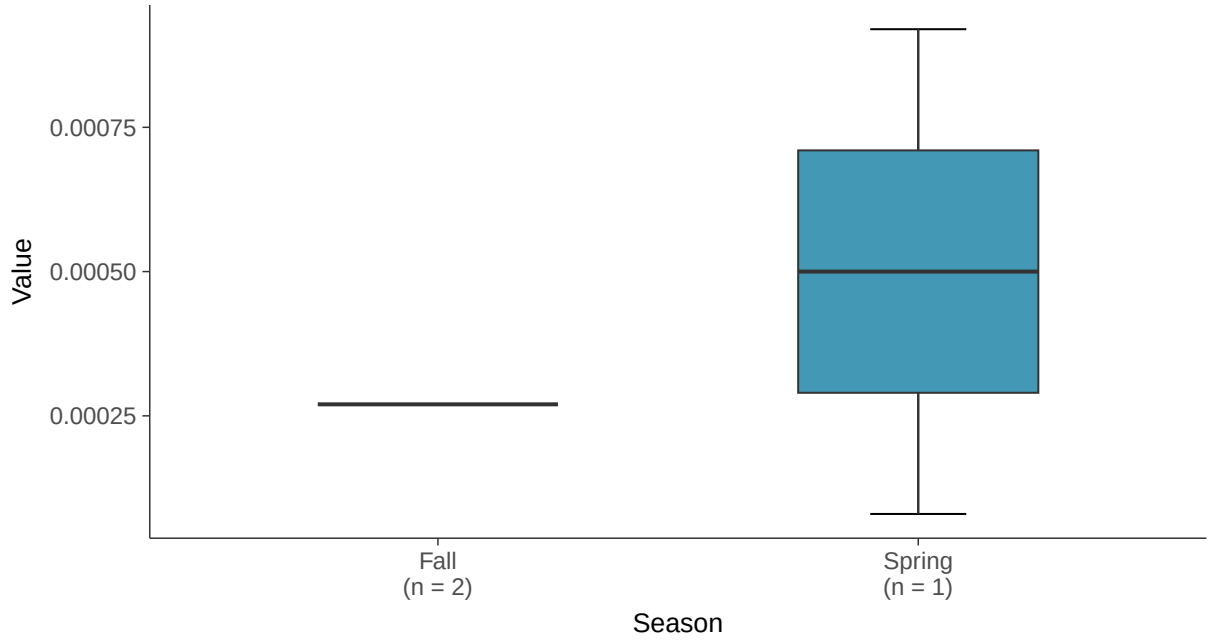
Boxplot

Beryllium, MW-34 (mg/l)



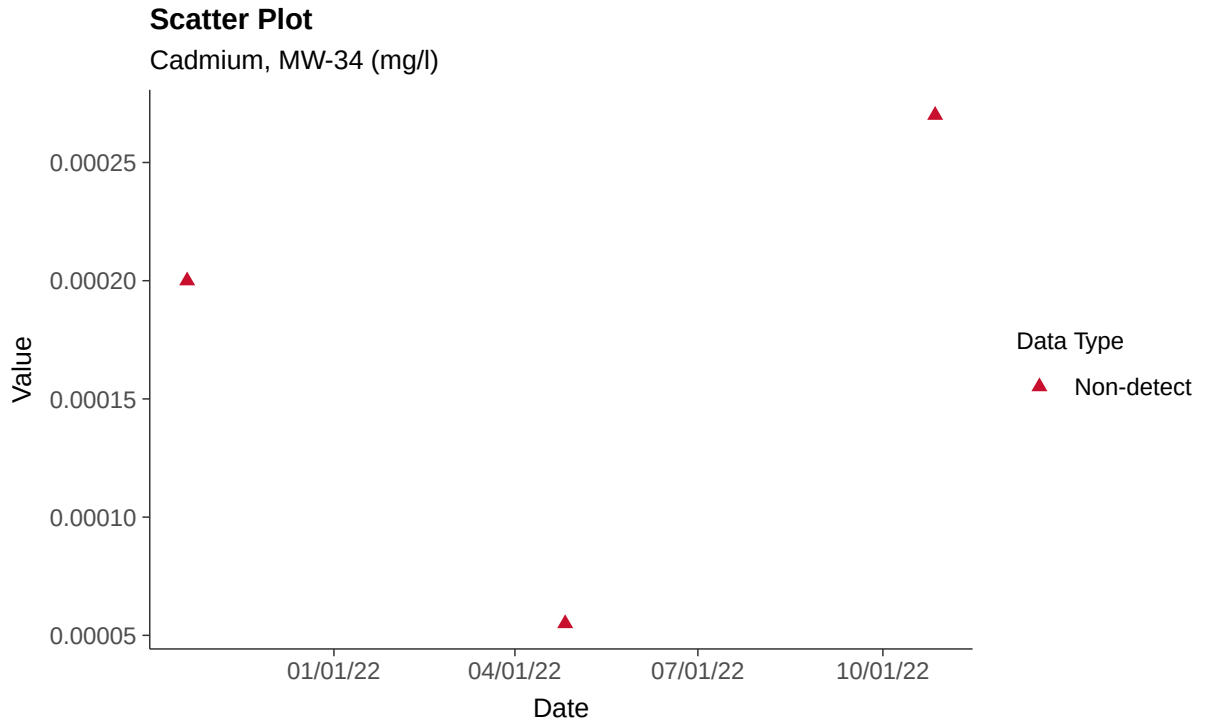
Boxplot by Season

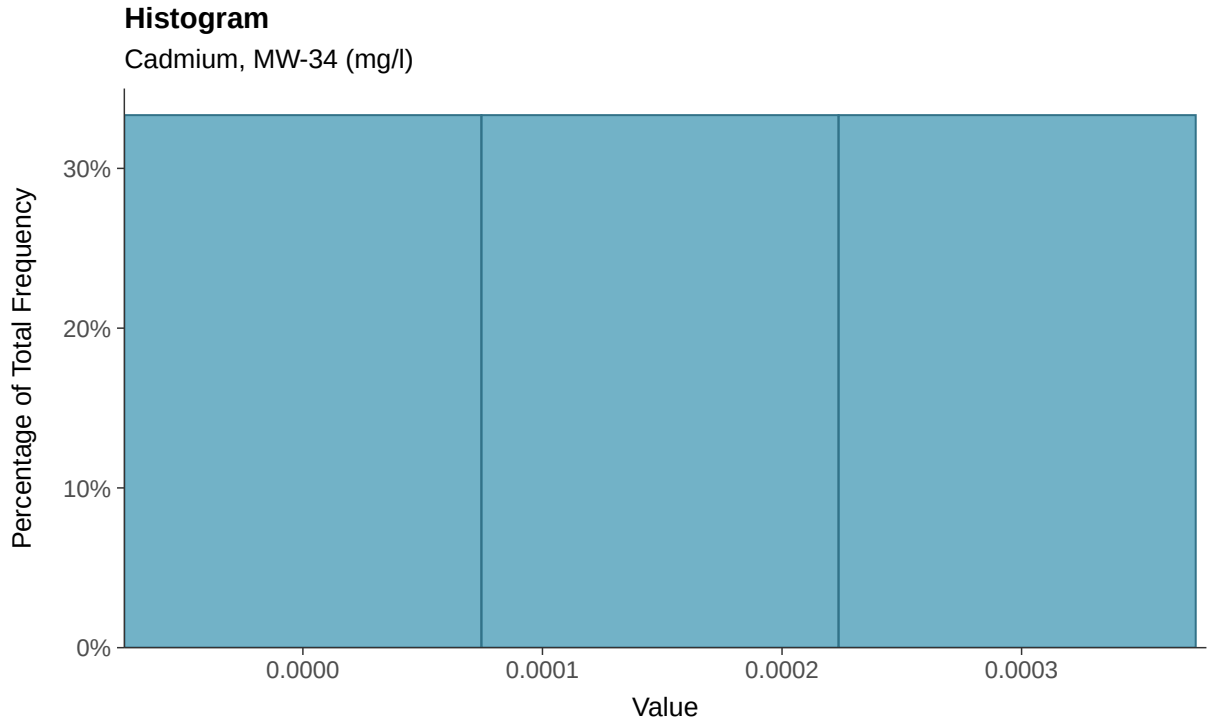
Beryllium, MW-34 (mg/l)



Appendix IV: Cadmium, MW-34

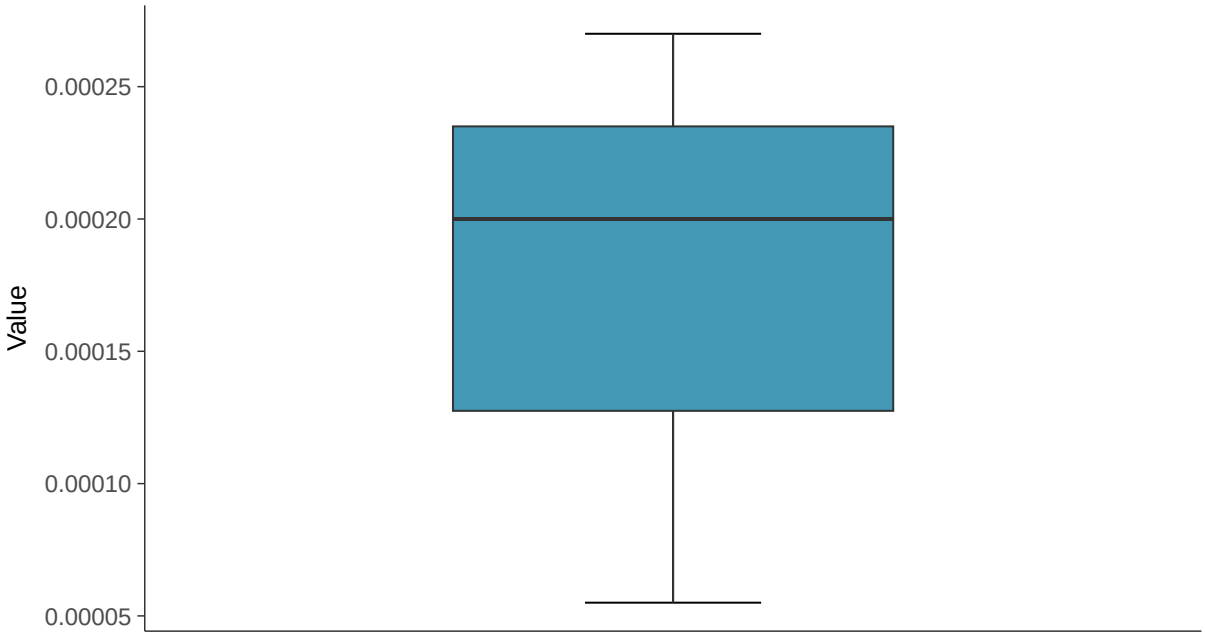
ID: 28_2_109





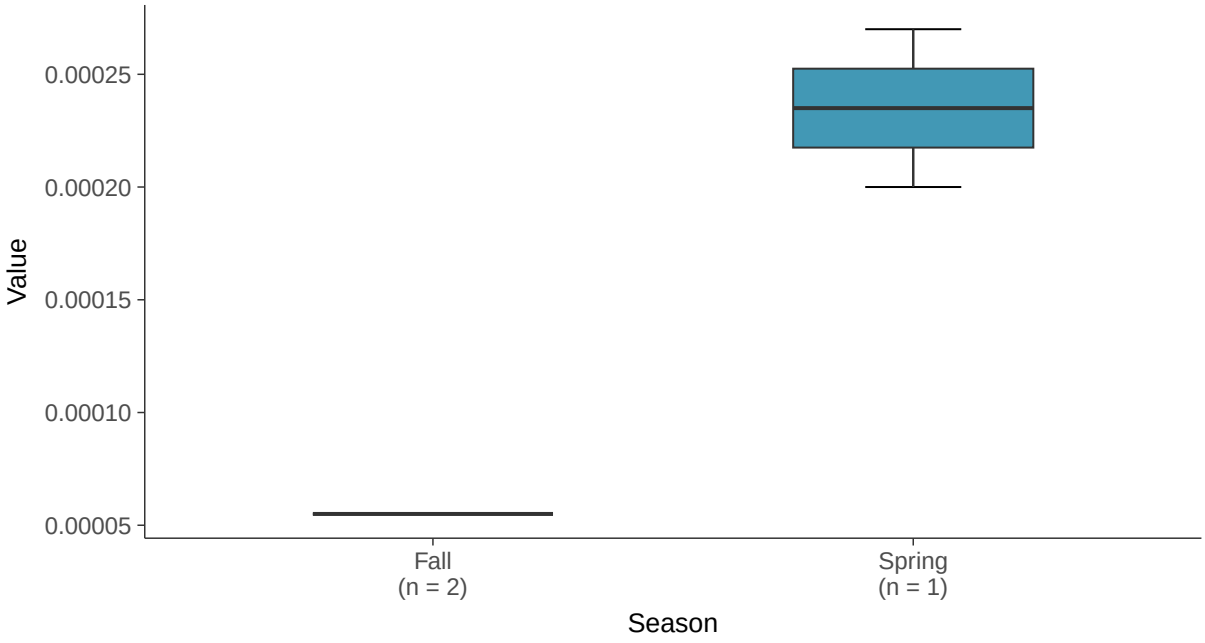
Boxplot

Cadmium, MW-34 (mg/l)



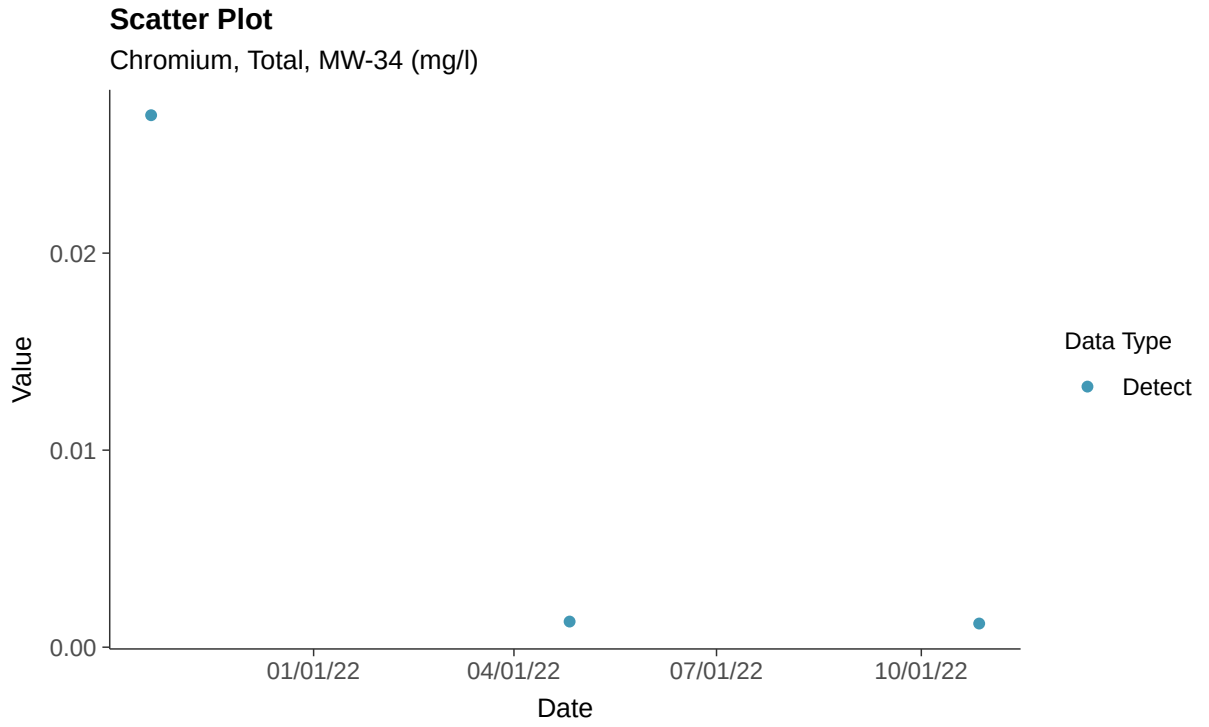
Boxplot by Season

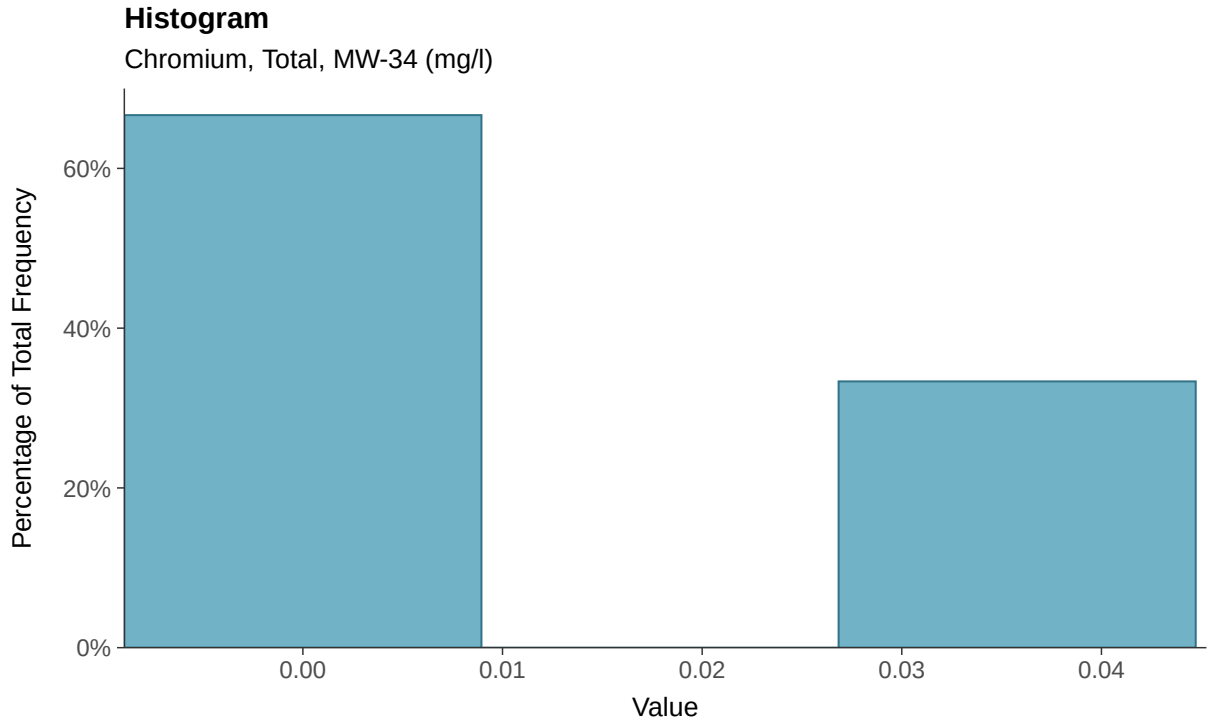
Cadmium, MW-34 (mg/l)



Appendix IV: Chromium, Total, MW-34

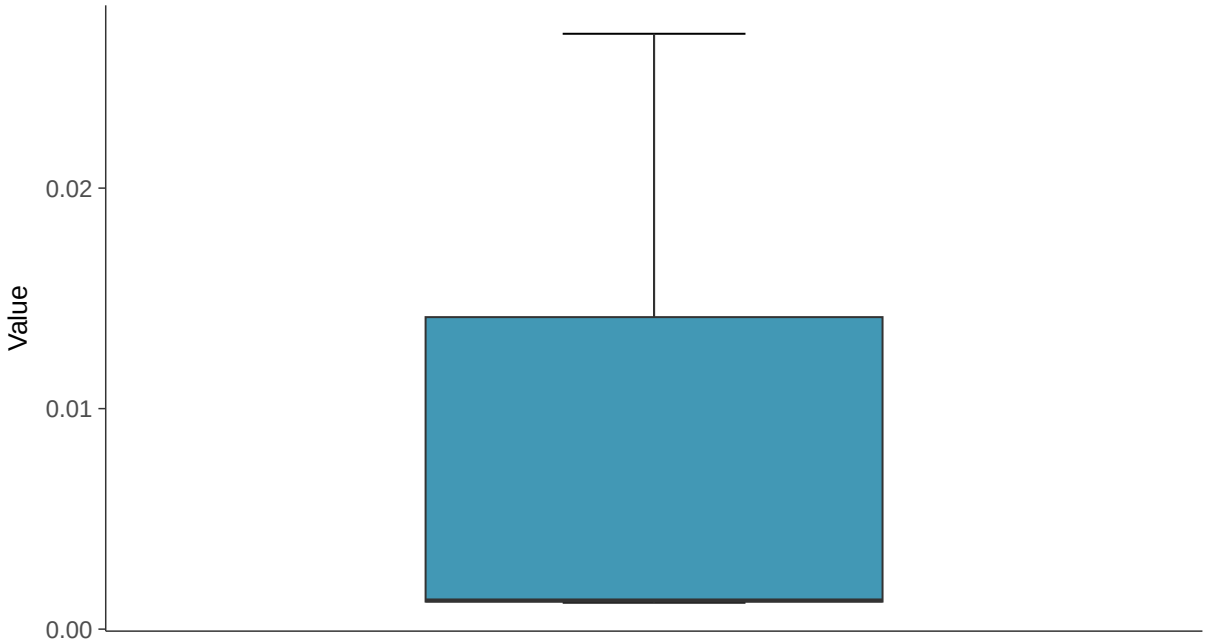
ID: 28_2_112





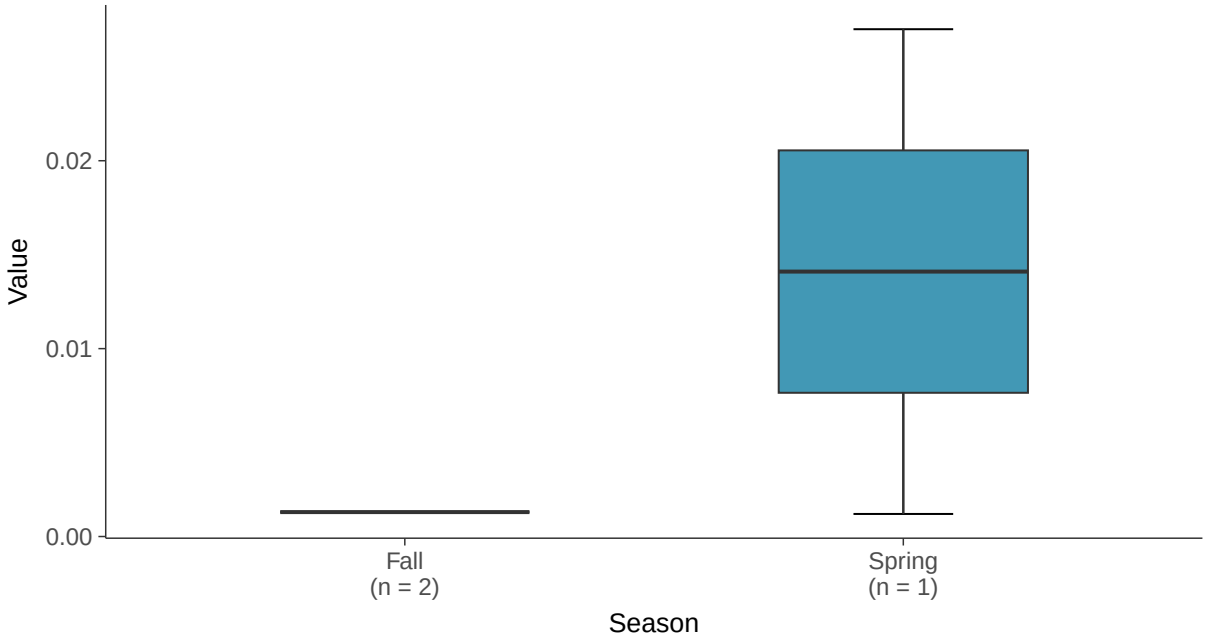
Boxplot

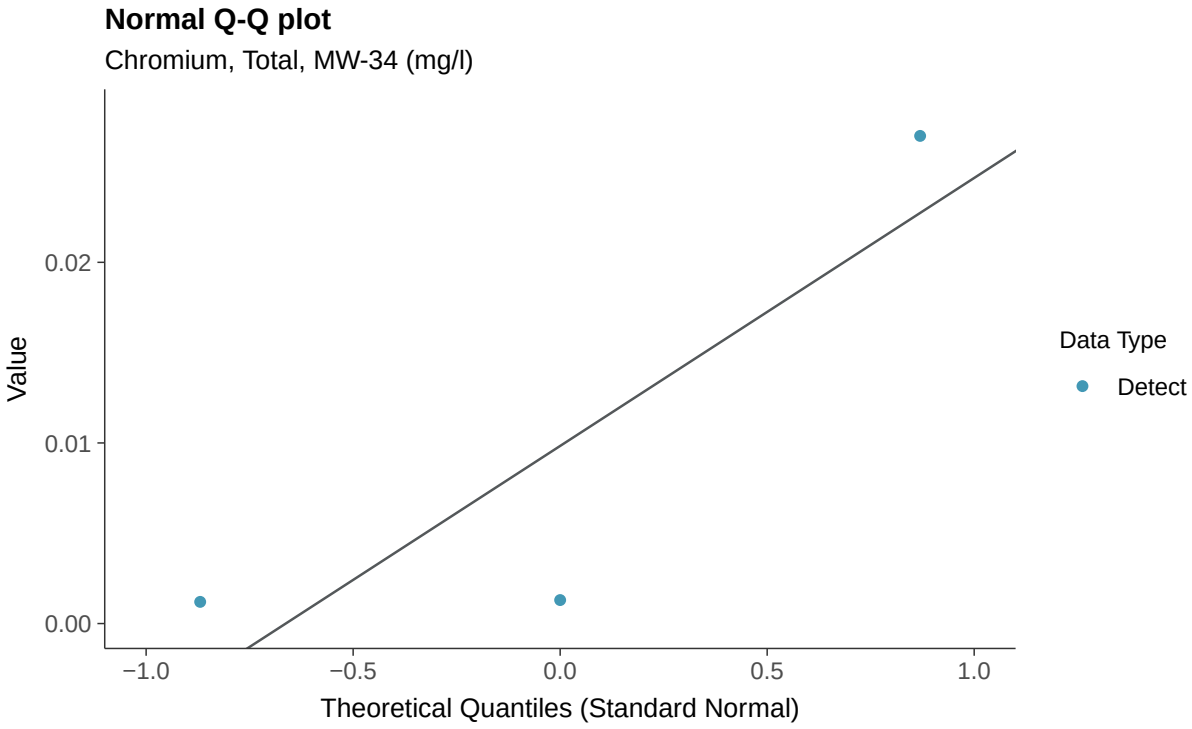
Chromium, Total, MW-34 (mg/l)



Boxplot by Season

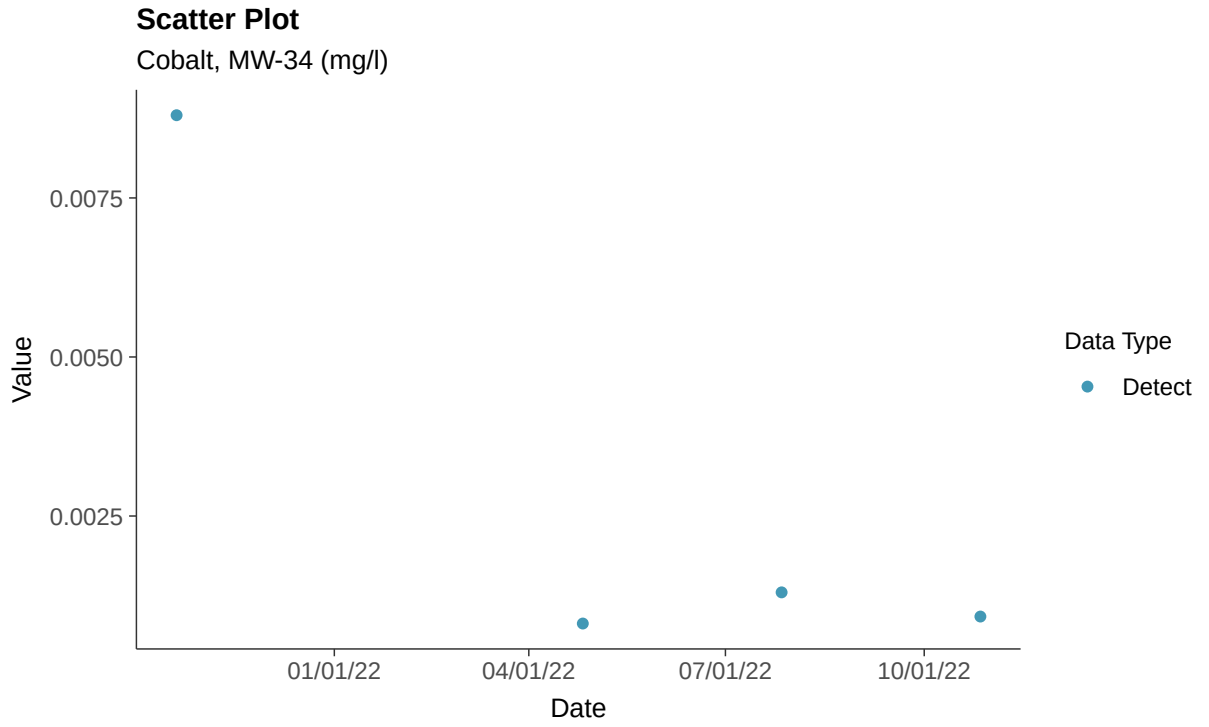
Chromium, Total, MW-34 (mg/l)

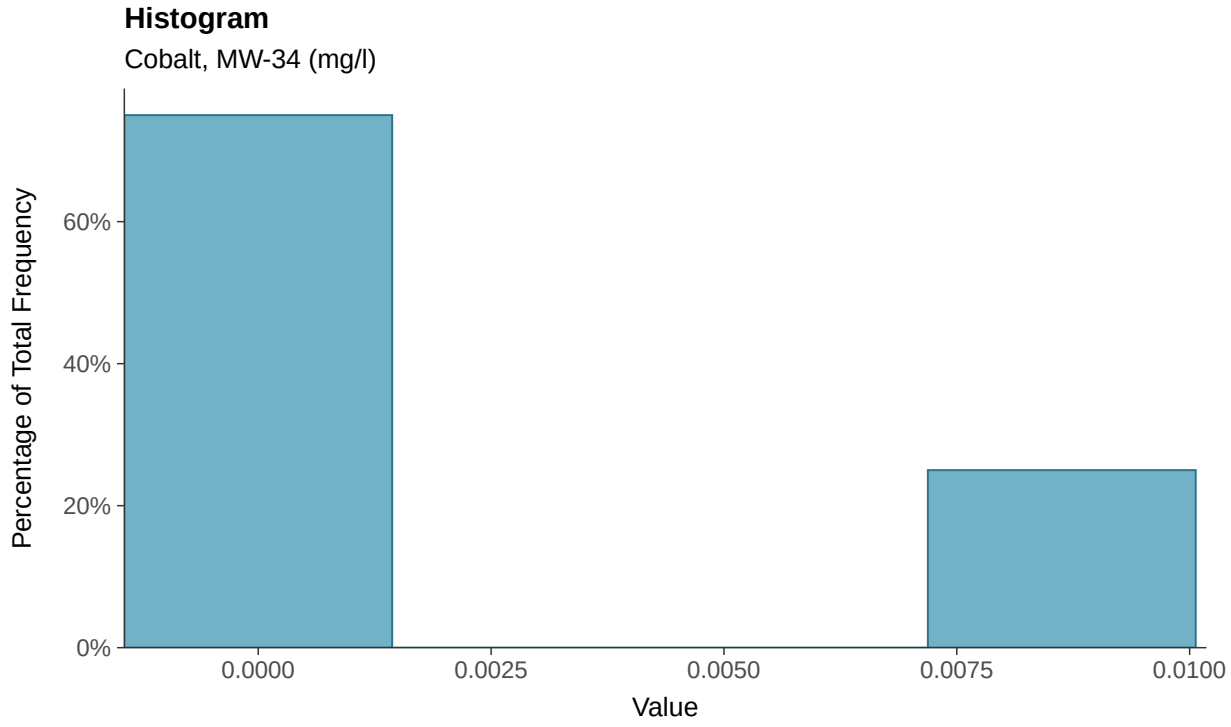



Normal Q-Q plot
Chromium, Total, MW-34 (mg/l)
Value
0.02
0.01
0.00
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Cobalt, MW-34

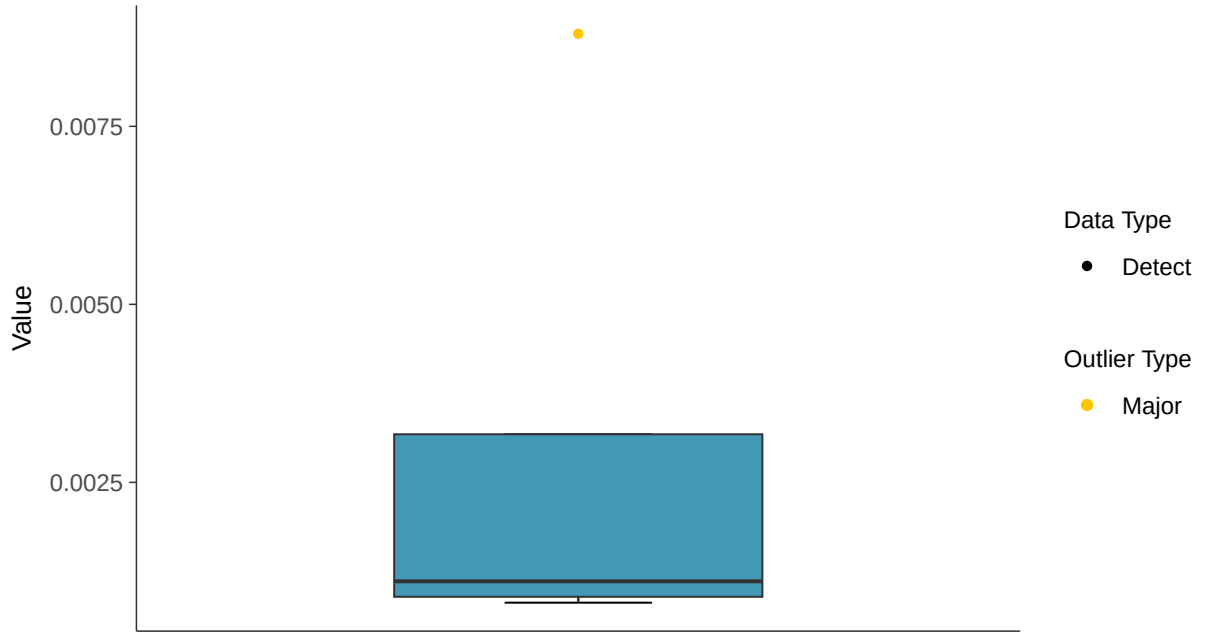
ID: 28_2_113





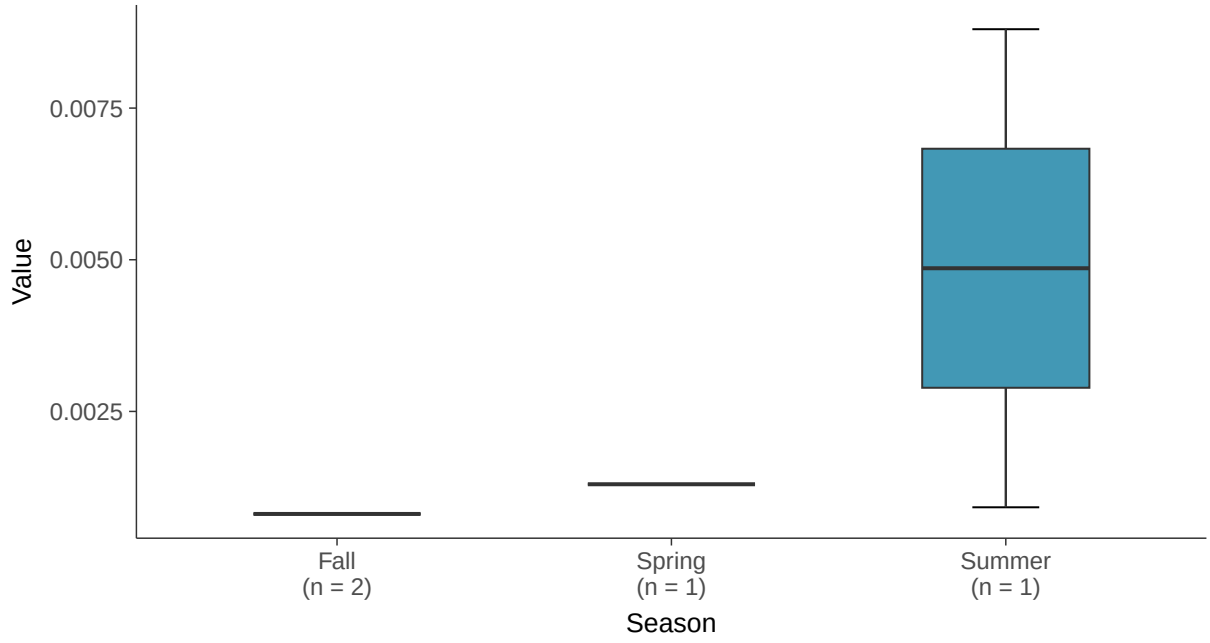
Boxplot

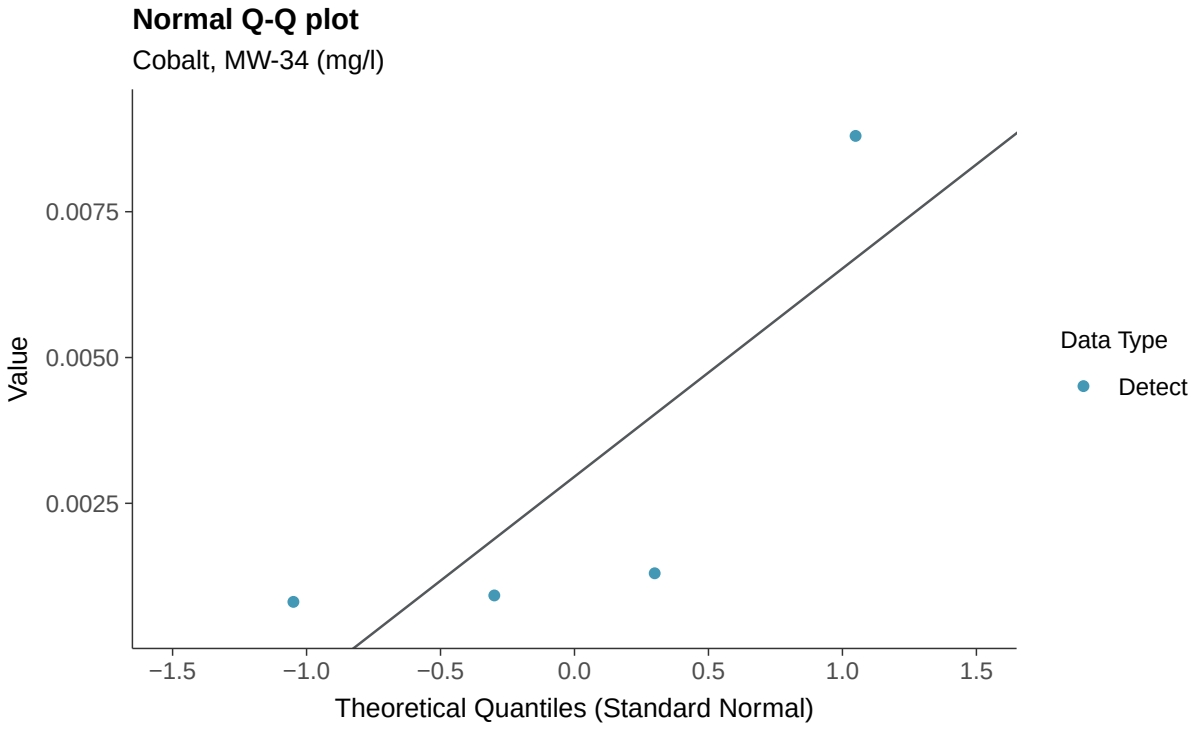
Cobalt, MW-34 (mg/l)



Boxplot by Season

Cobalt, MW-34 (mg/l)



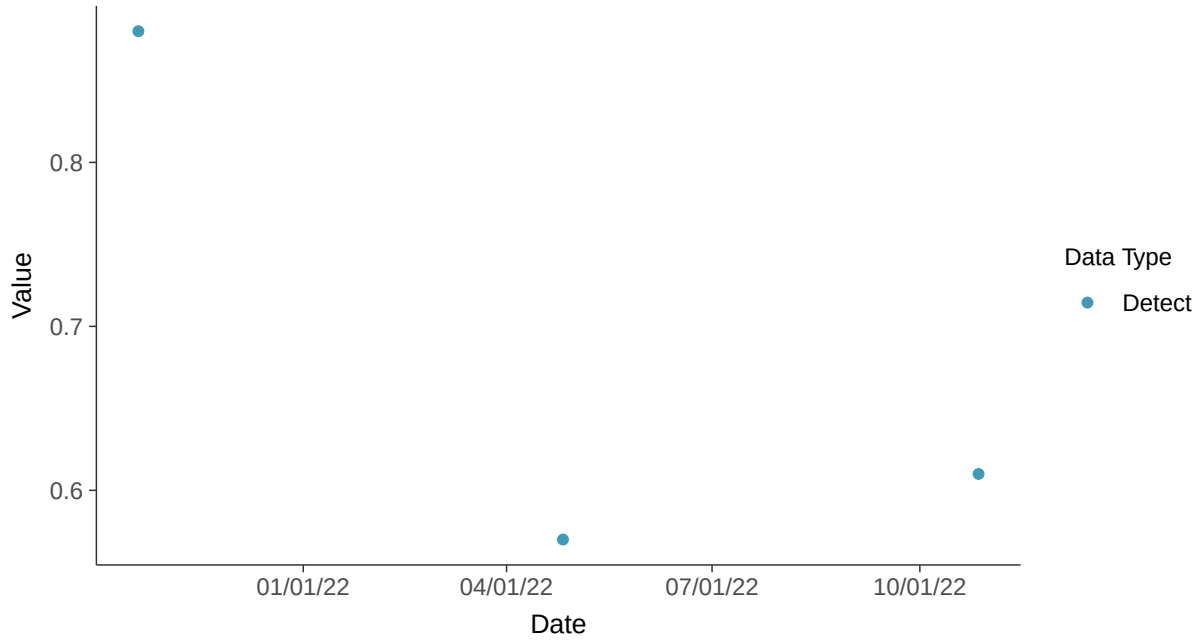

Normal Q-Q plot
Cobalt, MW-34 (mg/l)
Value
0.0075
0.0050
0.0025
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-34

ID: 28_2_116

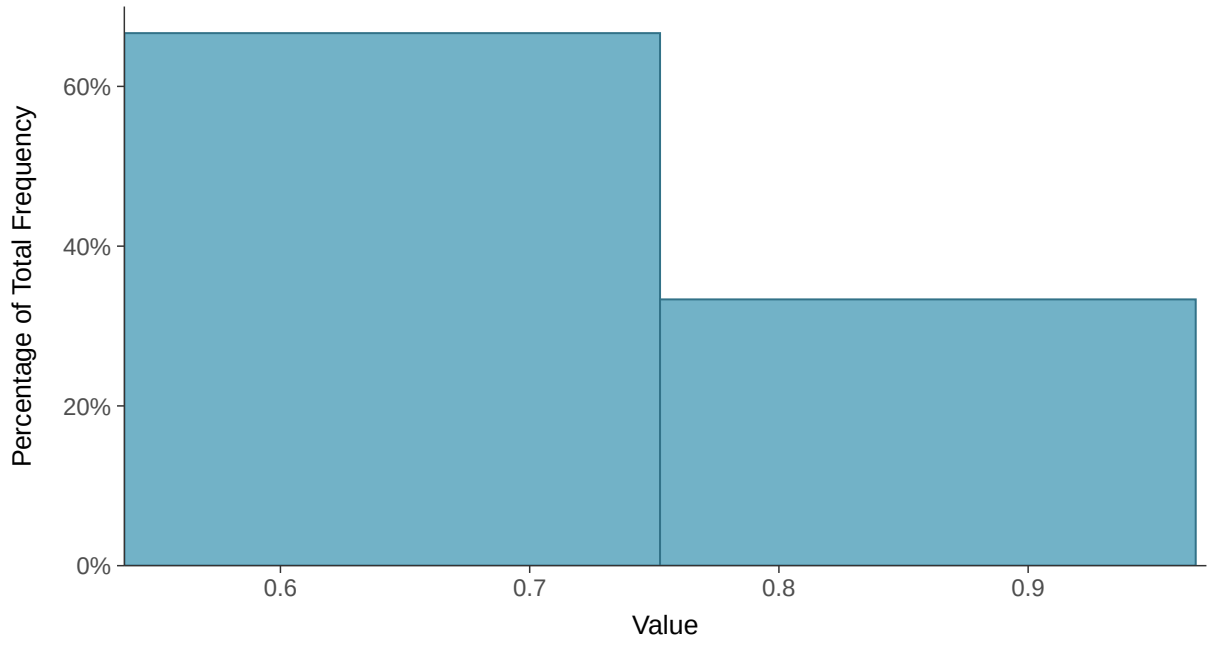
Scatter Plot

Fluoride (App IV), MW-34 (mg/l)



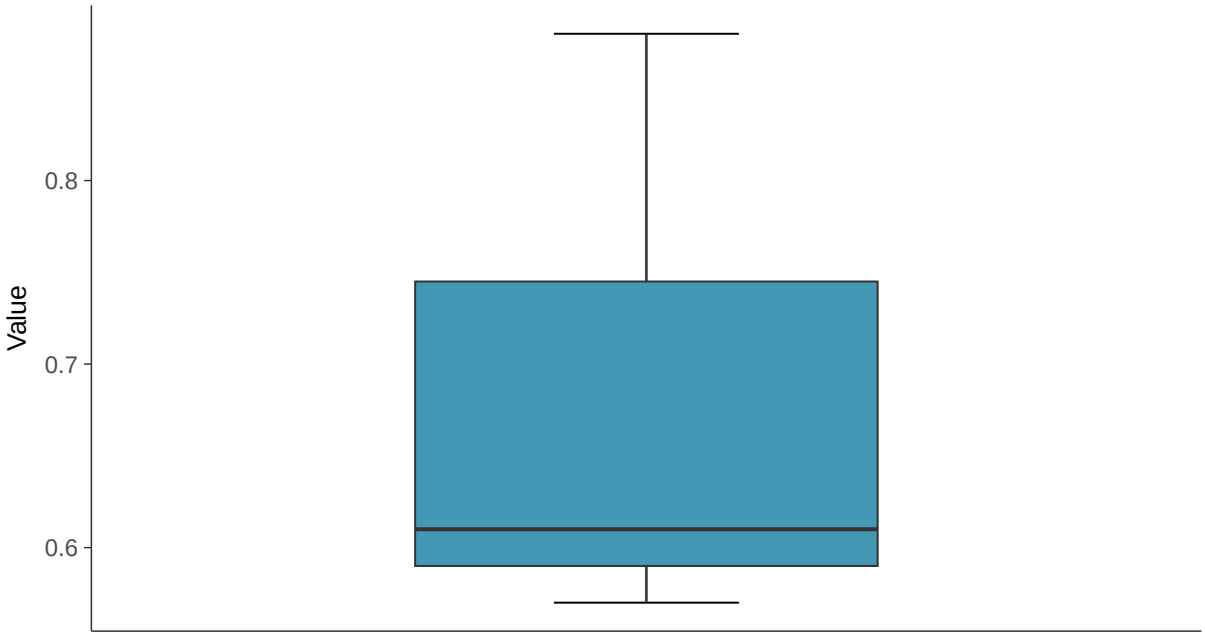
Histogram

Fluoride (App IV), MW-34 (mg/l)



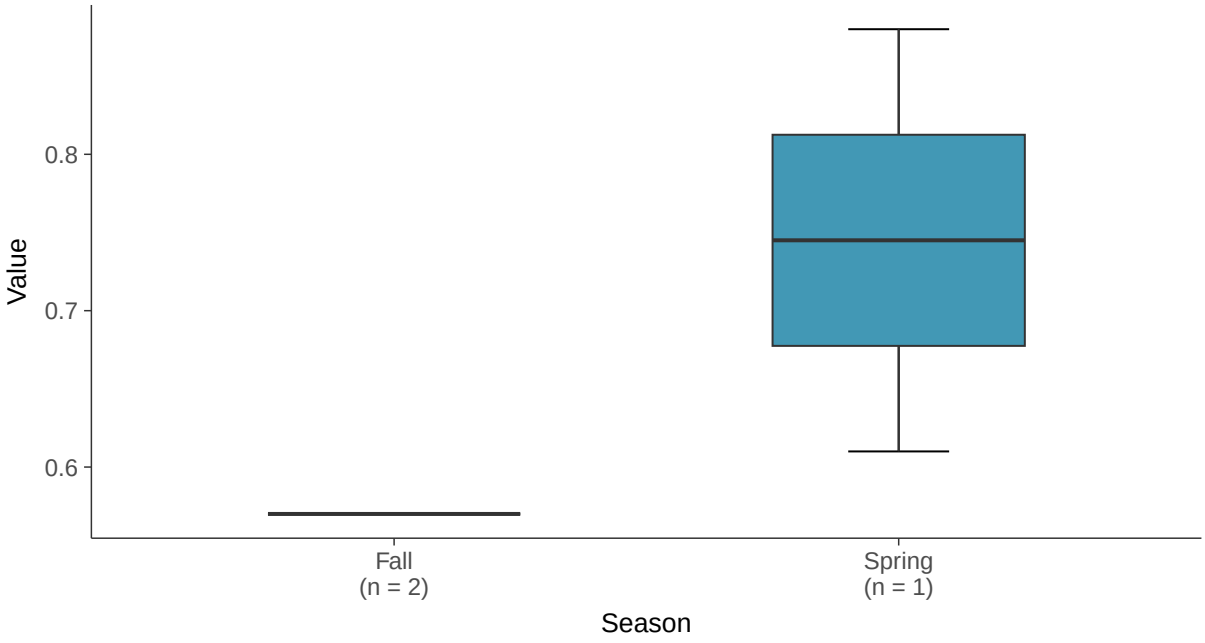
Boxplot

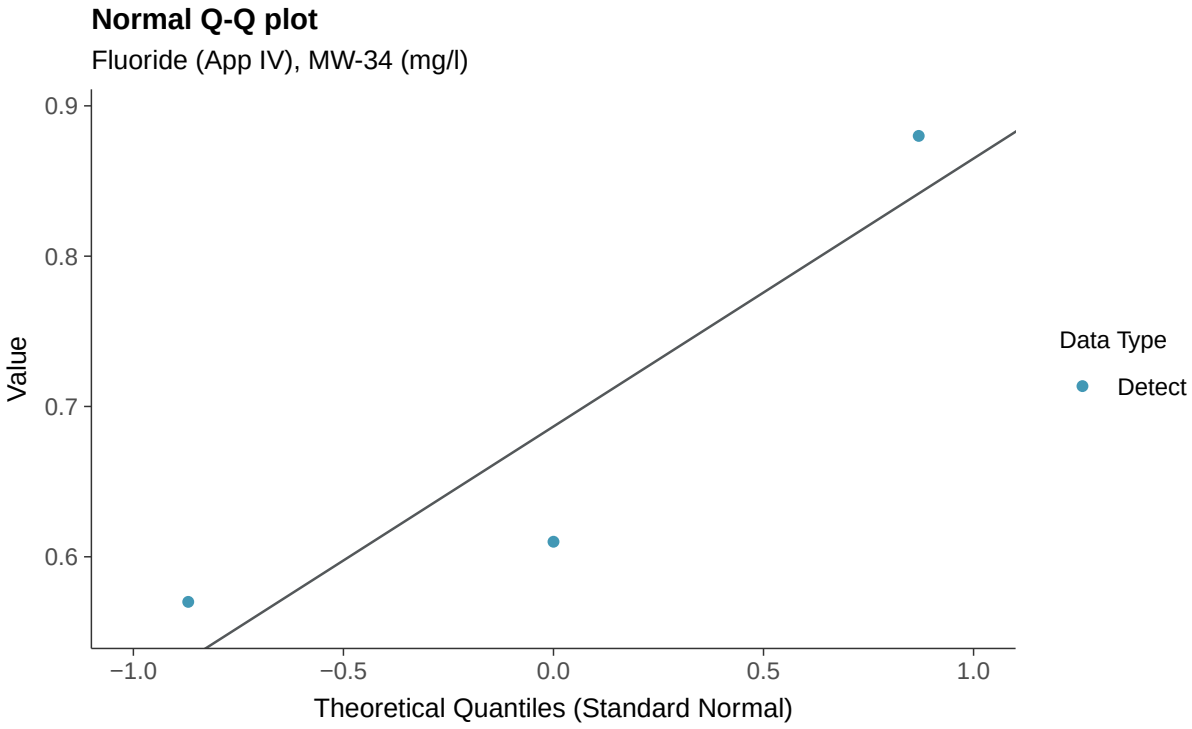
Fluoride (App IV), MW-34 (mg/l)



Boxplot by Season

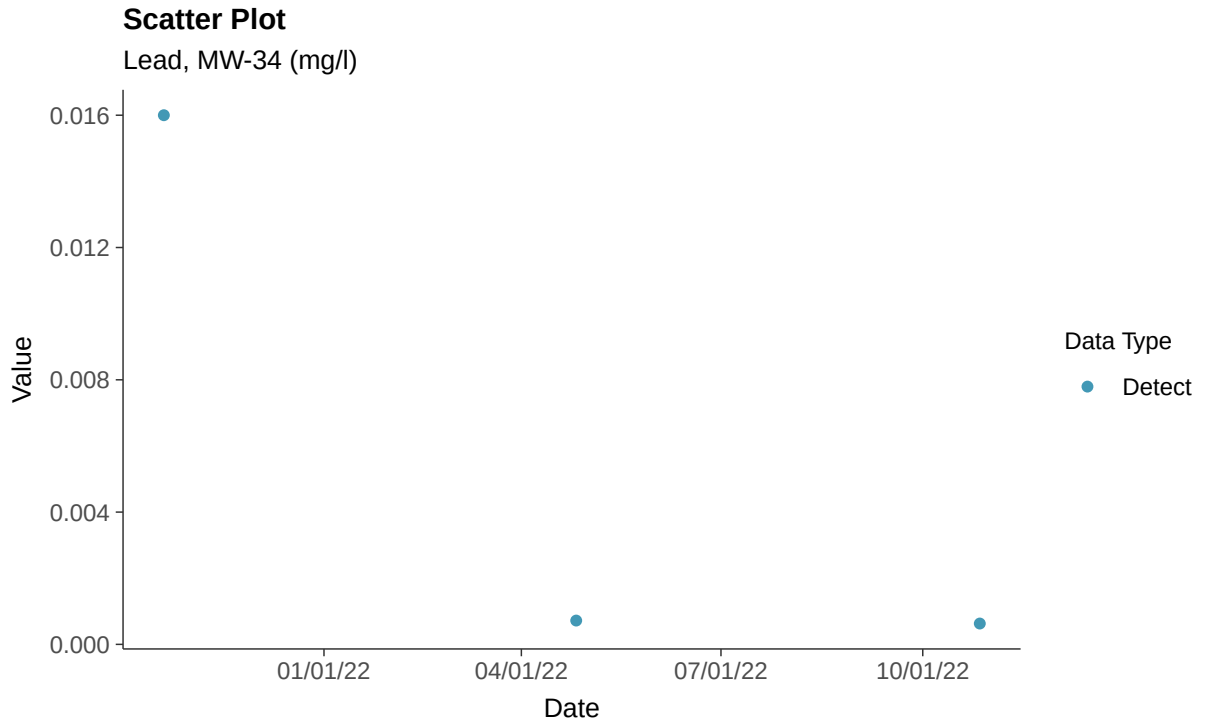
Fluoride (App IV), MW-34 (mg/l)

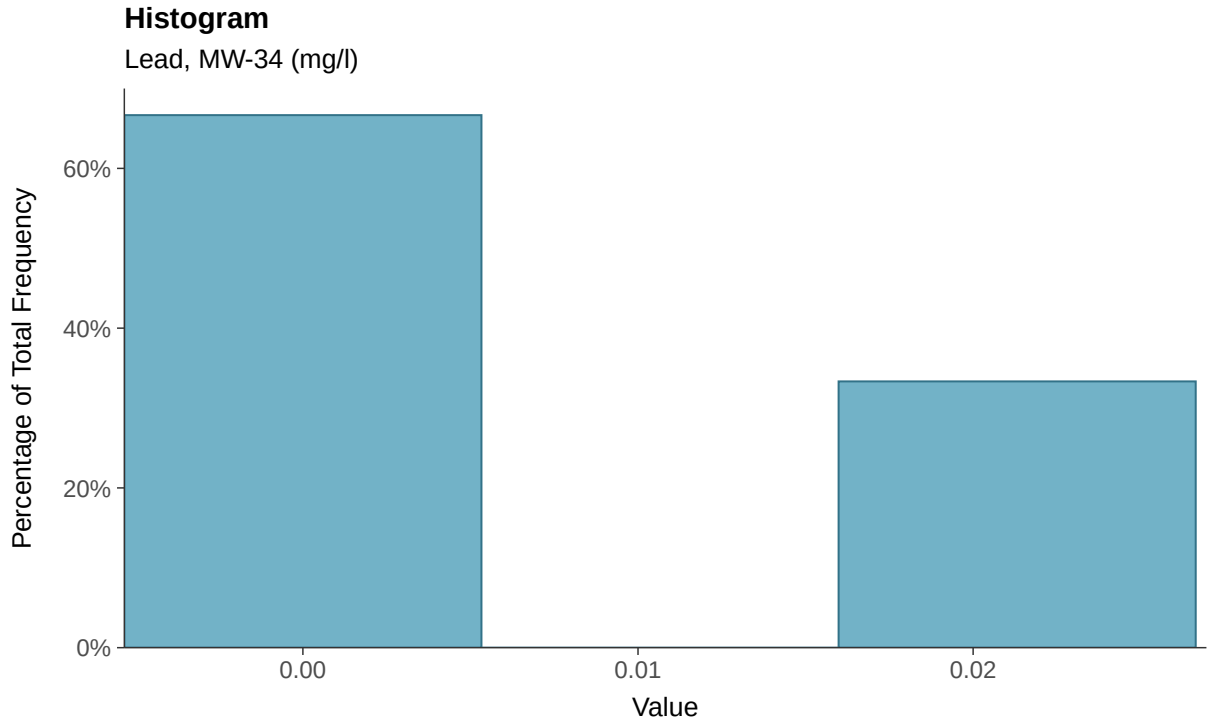



Normal Q-Q plot
Fluoride (App IV), MW-34 (mg/l)
Value
0.9
0.8
0.7
0.6
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Lead, MW-34

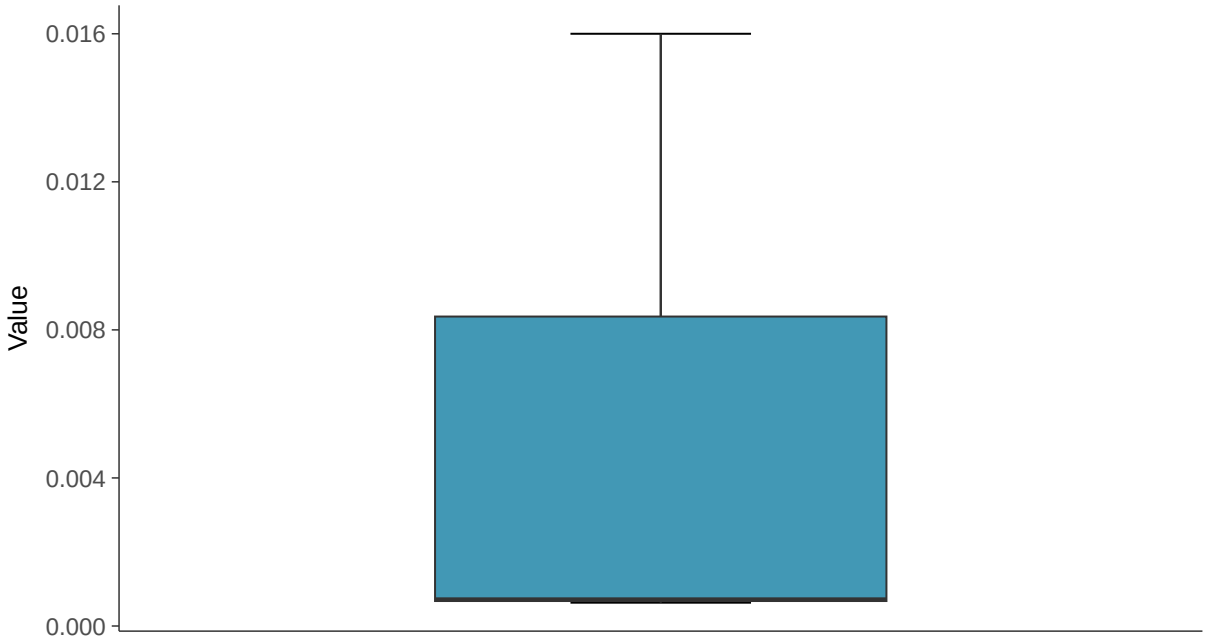
ID: 28_2_117





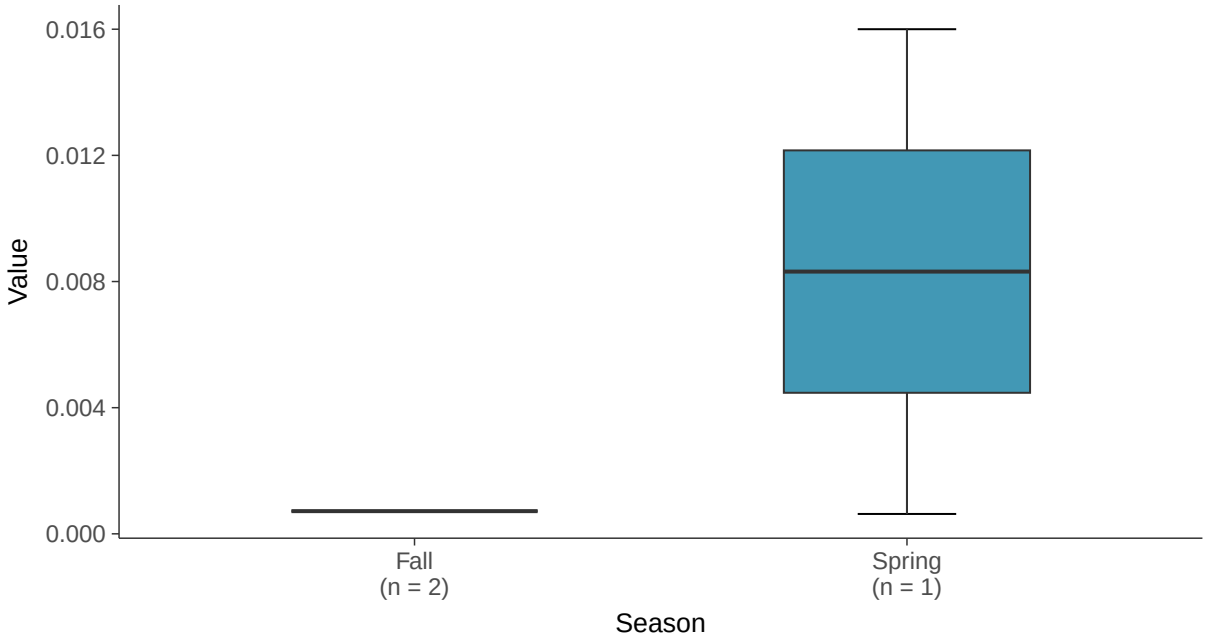
Boxplot

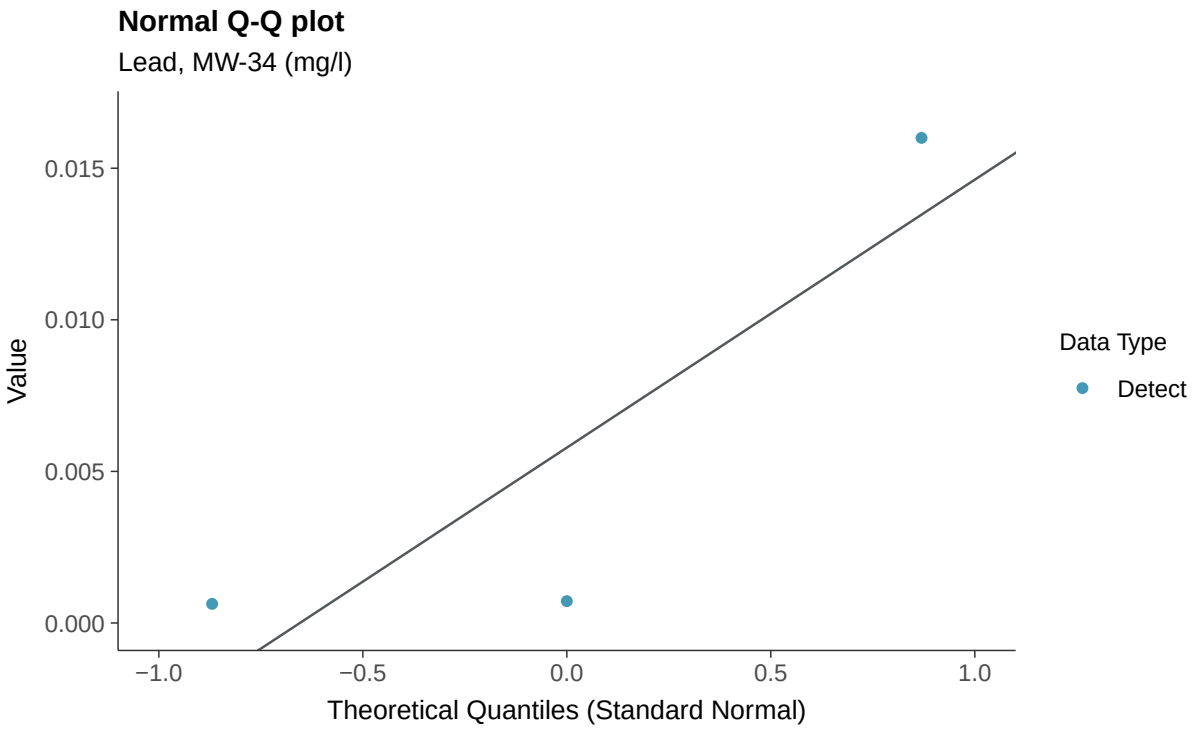
Lead, MW-34 (mg/l)



Boxplot by Season

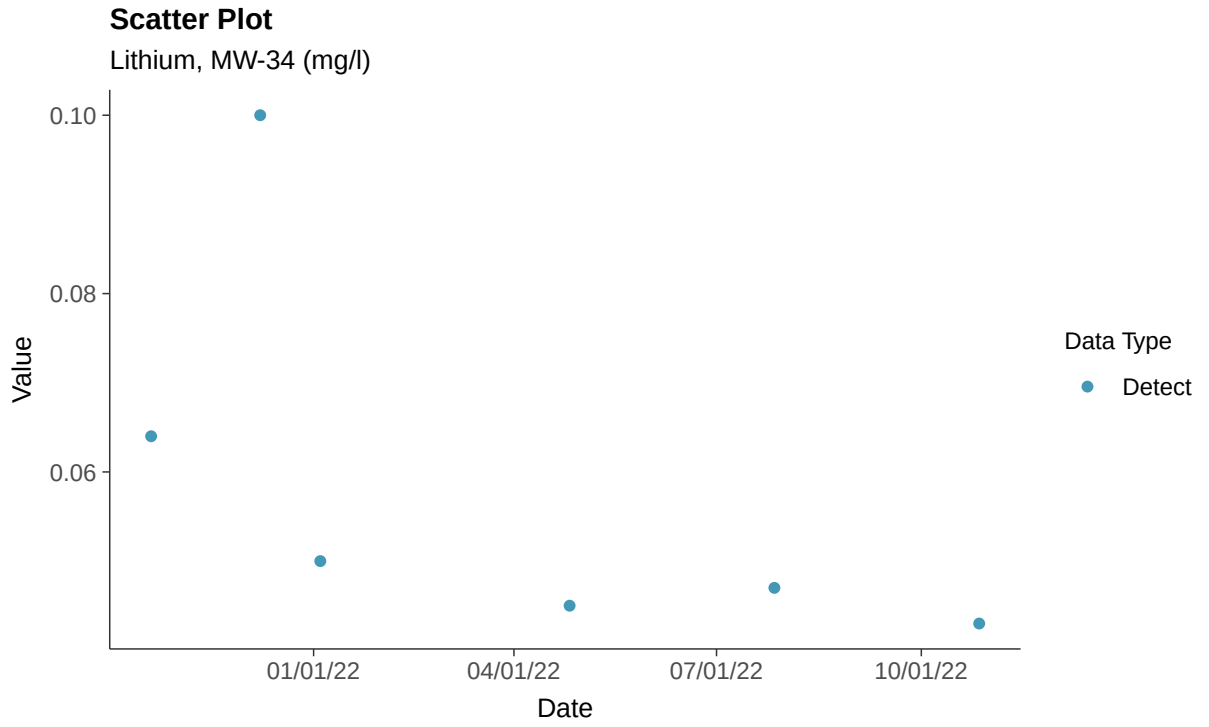
Lead, MW-34 (mg/l)

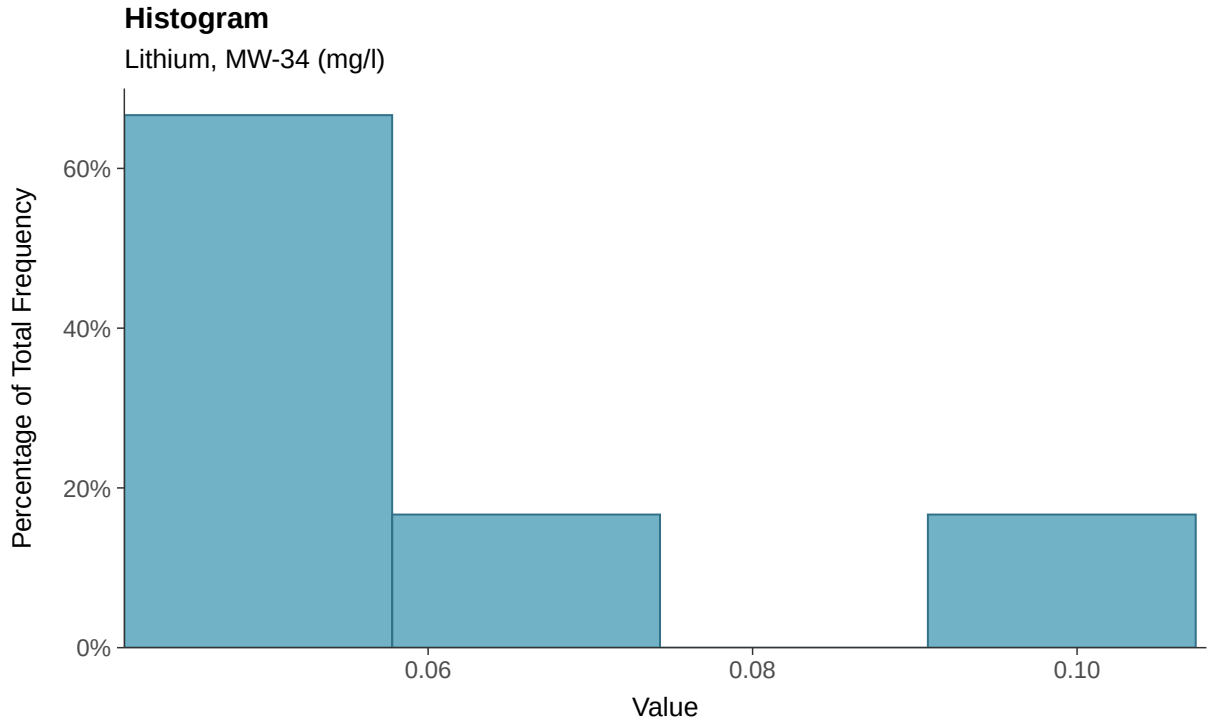



Normal Q-Q plot
Lead, MW-34 (mg/l)
Value
0.015
0.010
0.005
0.000
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Lithium, MW-34

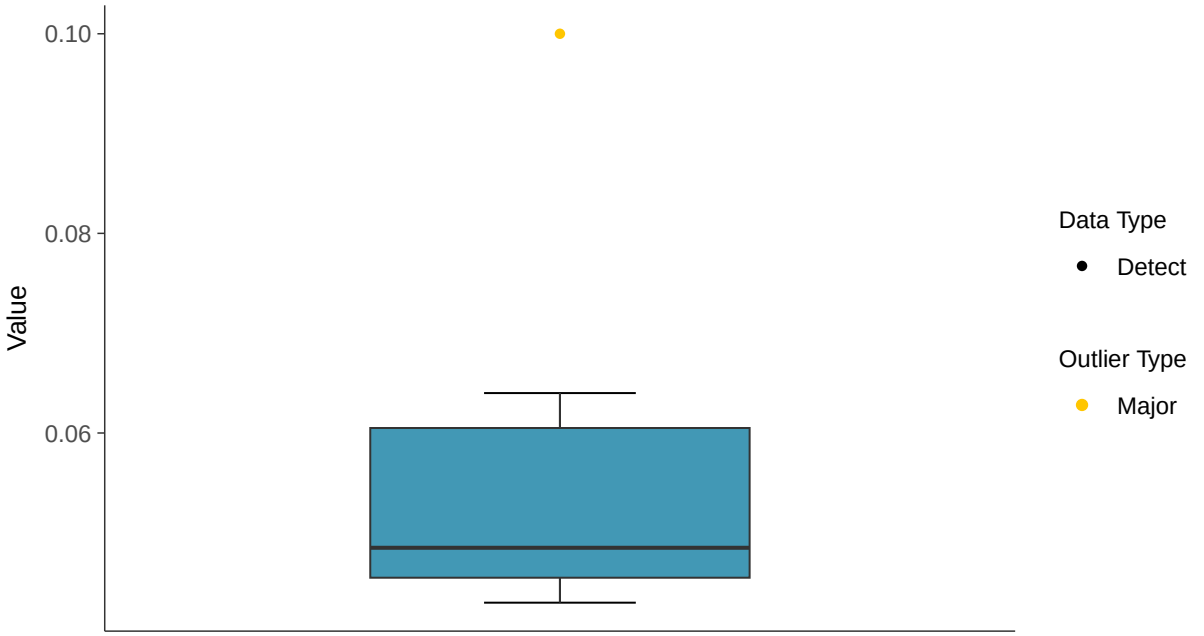
ID: 28_2_118





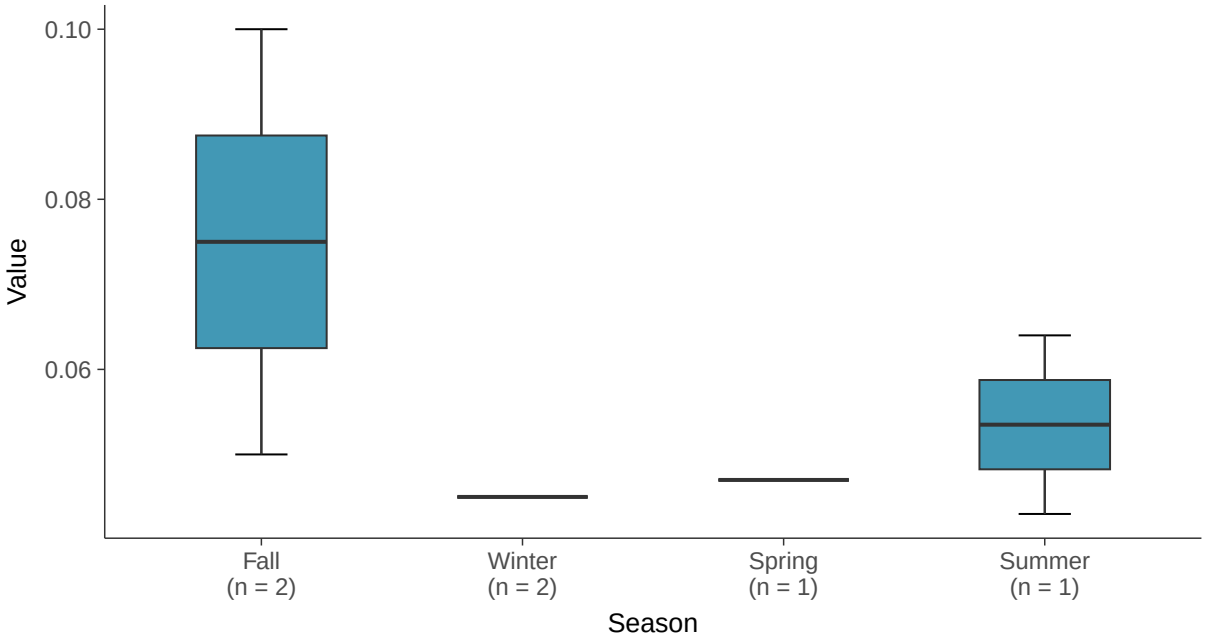
Boxplot

Lithium, MW-34 (mg/l)



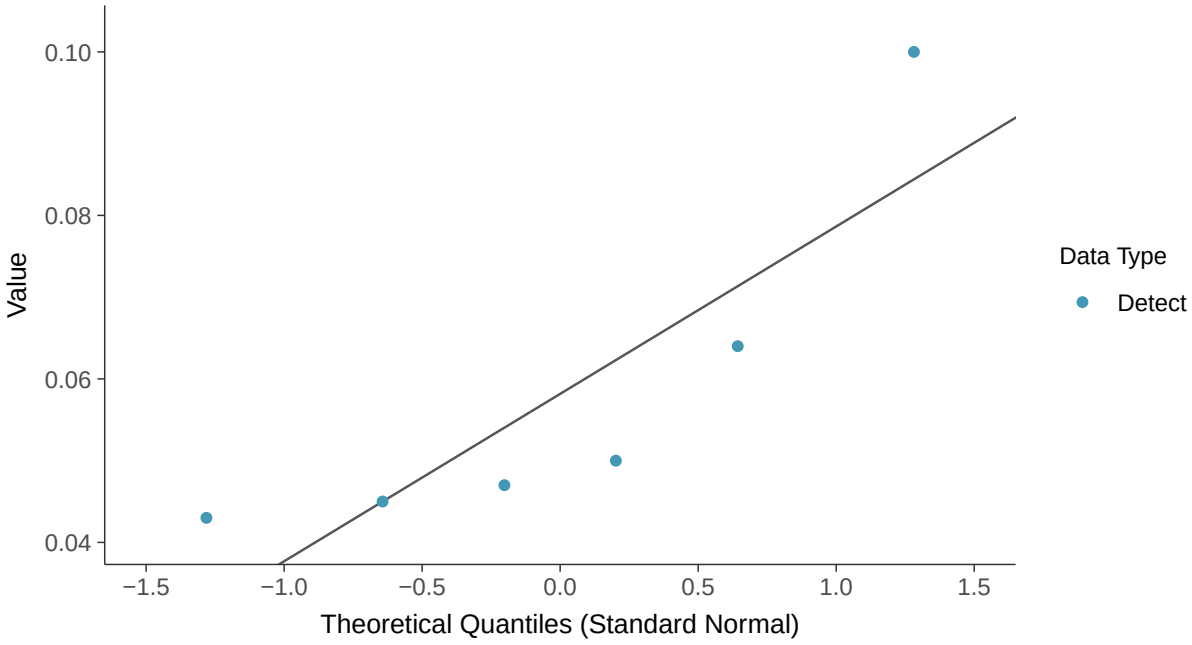
Boxplot by Season

Lithium, MW-34 (mg/l)



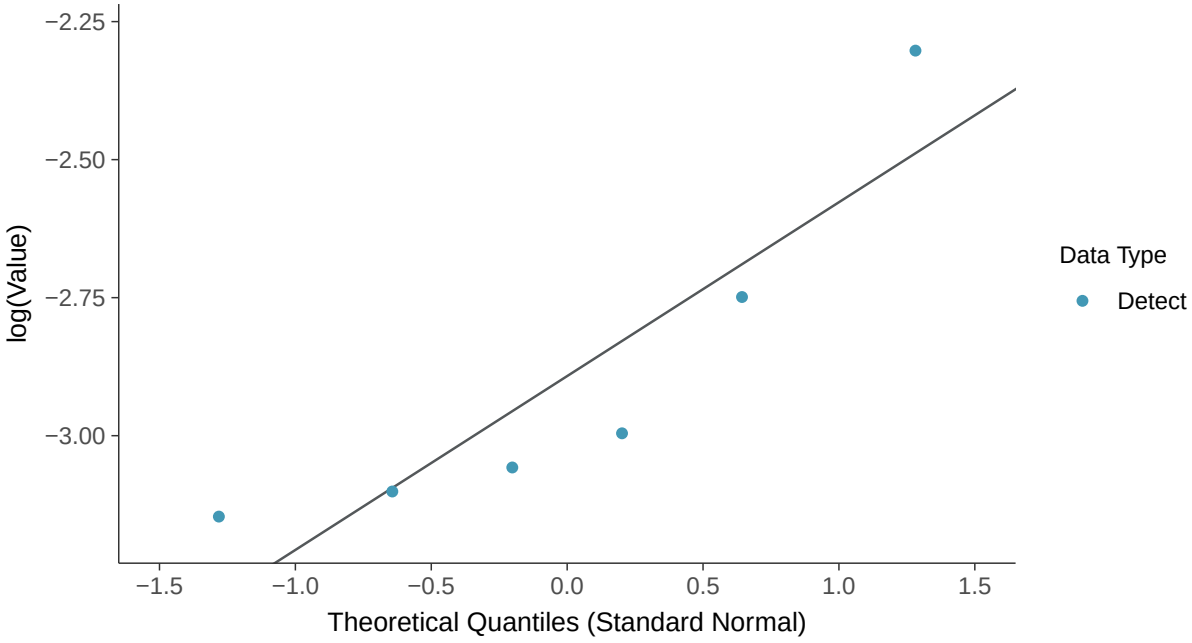
Normal Q-Q plot

Lithium, MW-34 (mg/l)



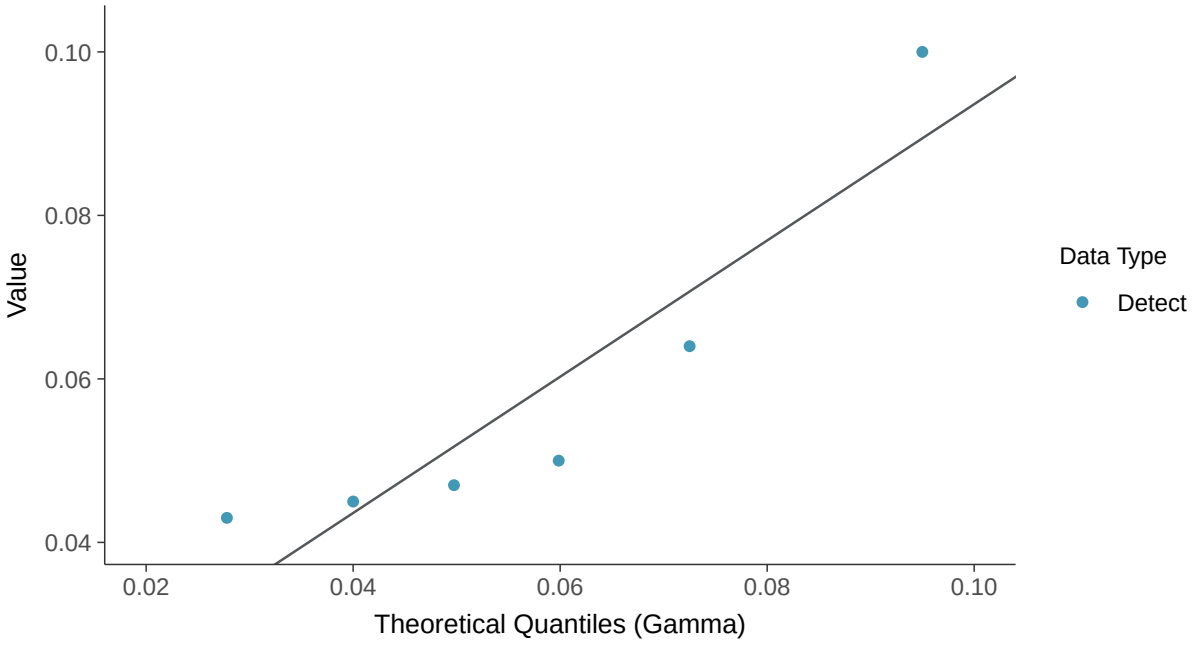
Lognormal Q-Q plot

Lithium, MW-34 (mg/l)



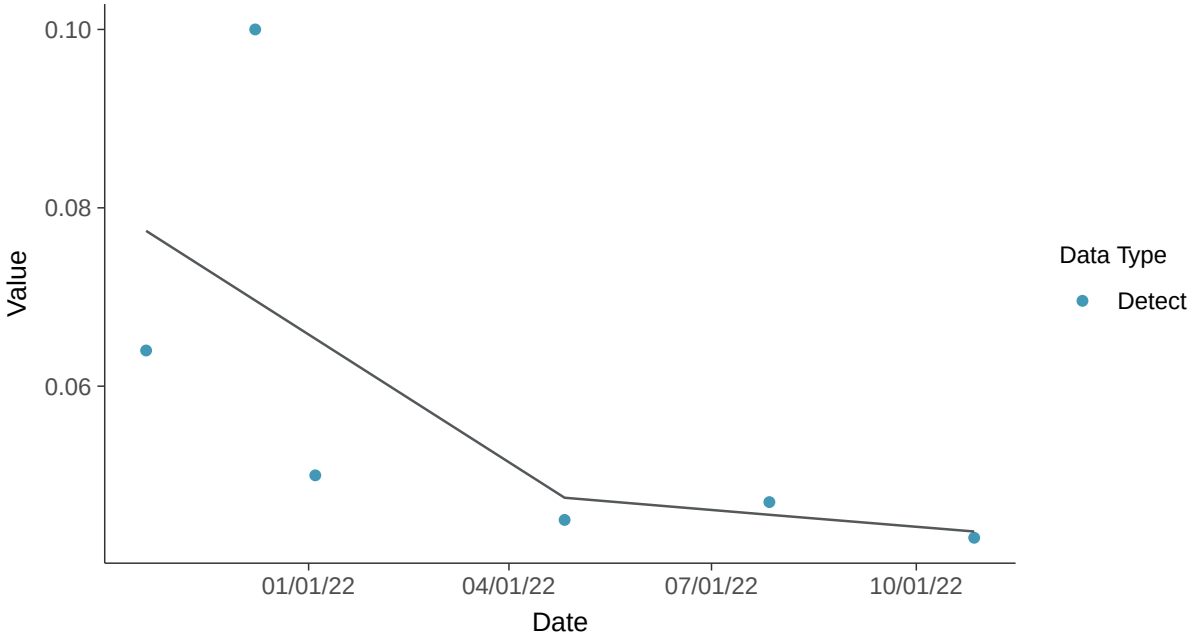
Gamma Q-Q plot

Lithium, MW-34 (mg/l)



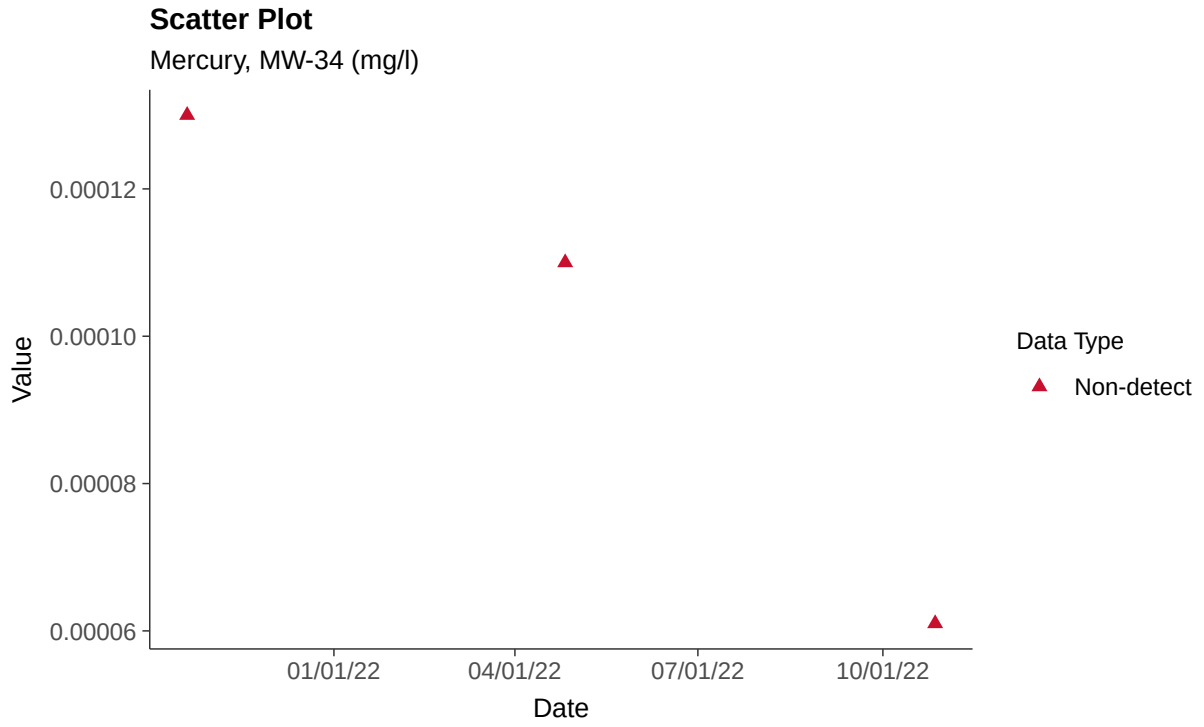
Trend Regression: Piecewise Linear-Linear

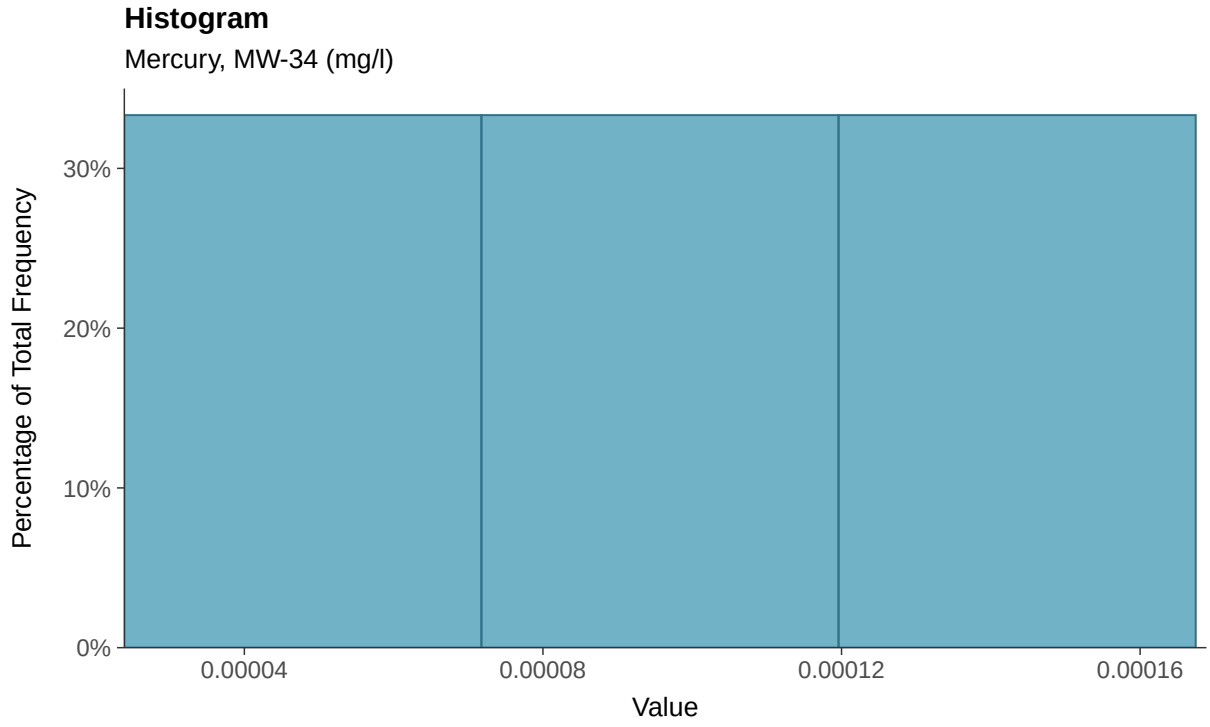
Lithium, MW-34 (mg/l)



Appendix IV: Mercury, MW-34

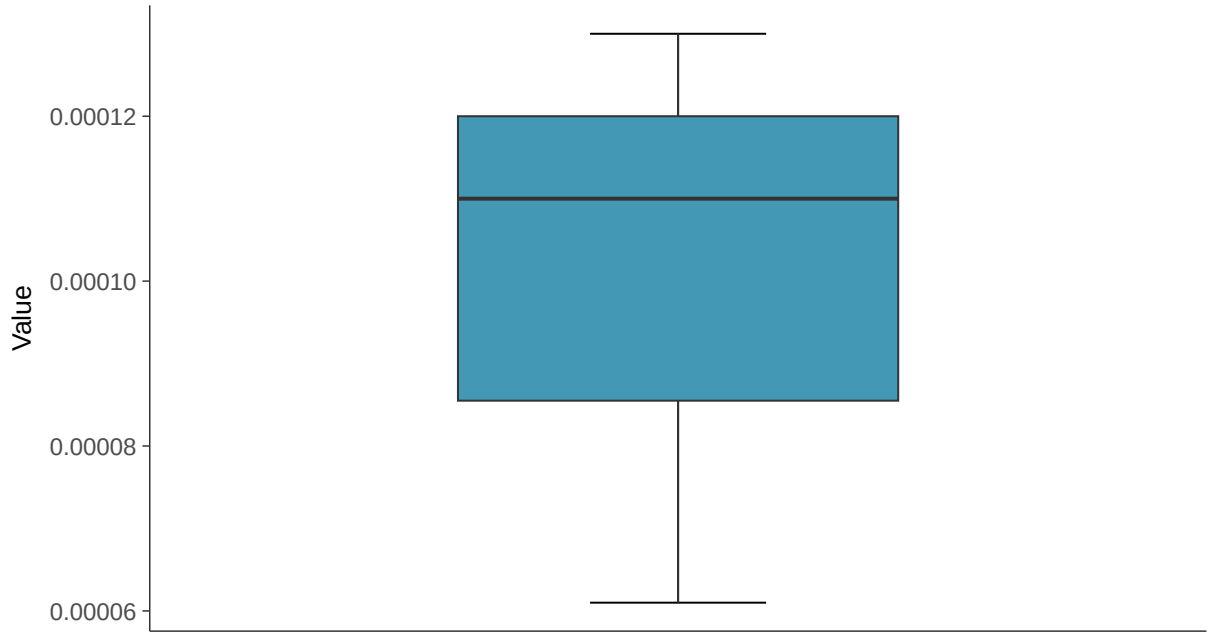
ID: 28_2_120





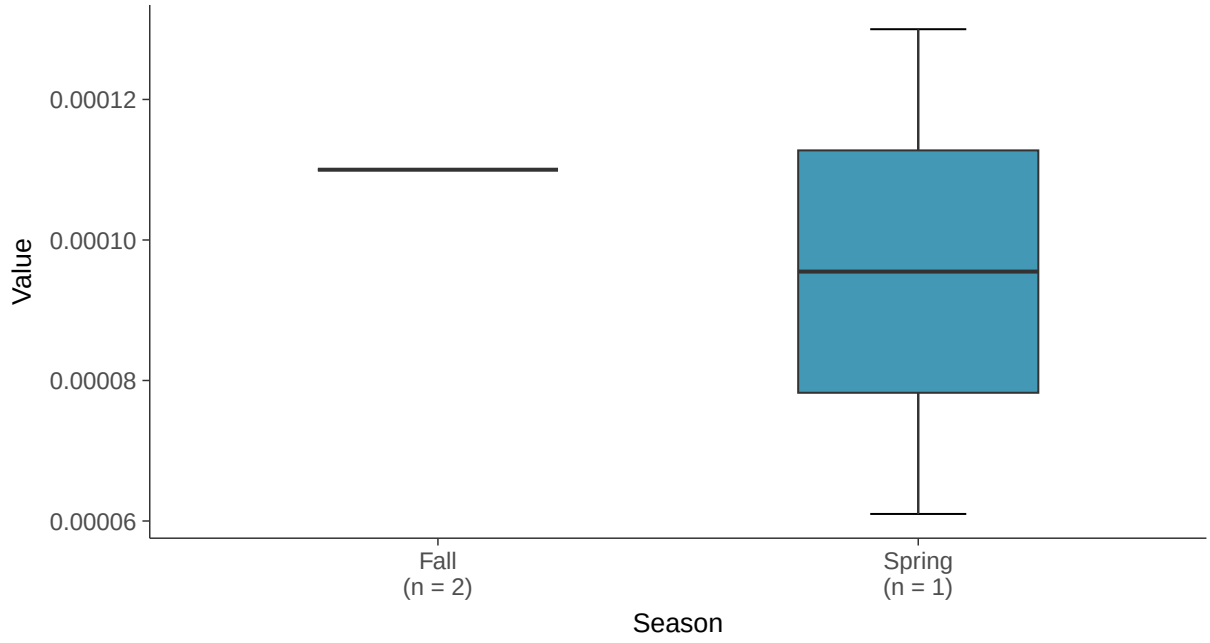
Boxplot

Mercury, MW-34 (mg/l)



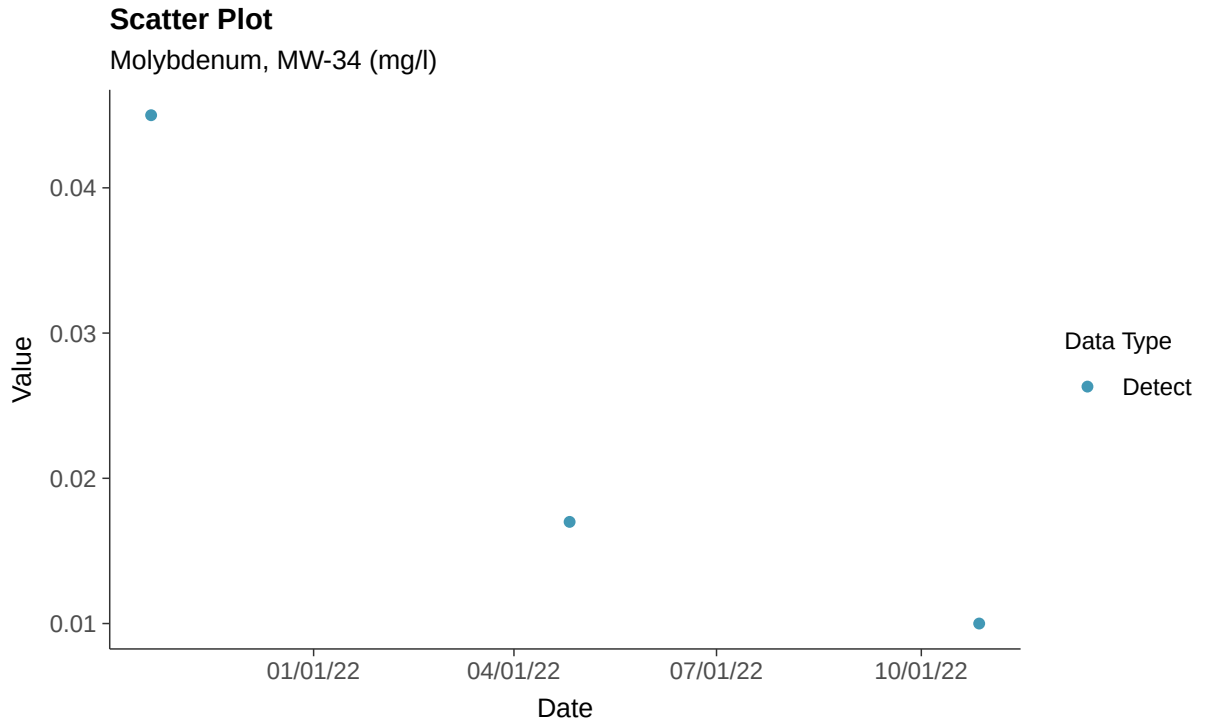
Boxplot by Season

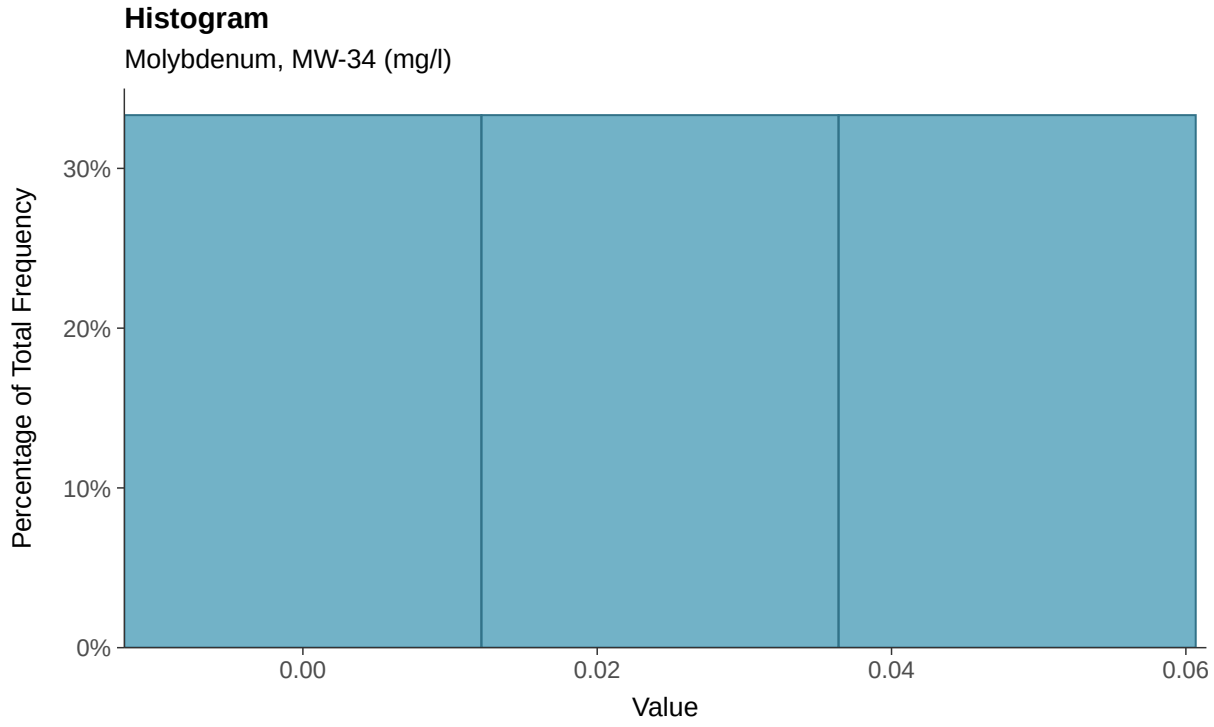
Mercury, MW-34 (mg/l)



Appendix IV: Molybdenum, MW-34

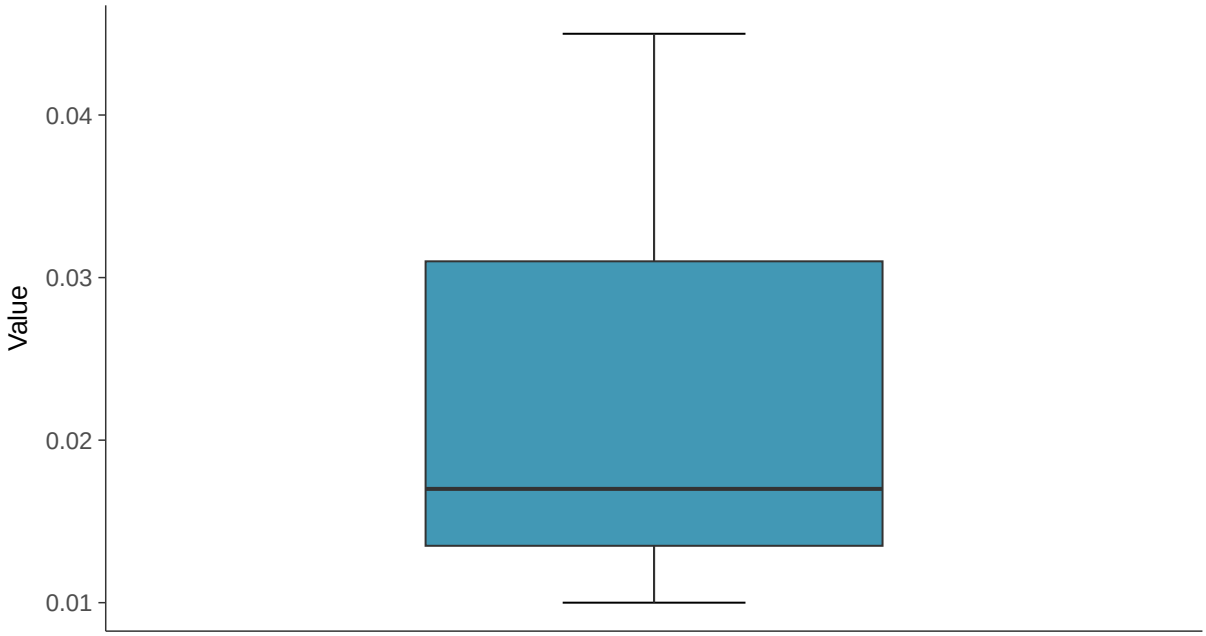
ID: 28_2_121





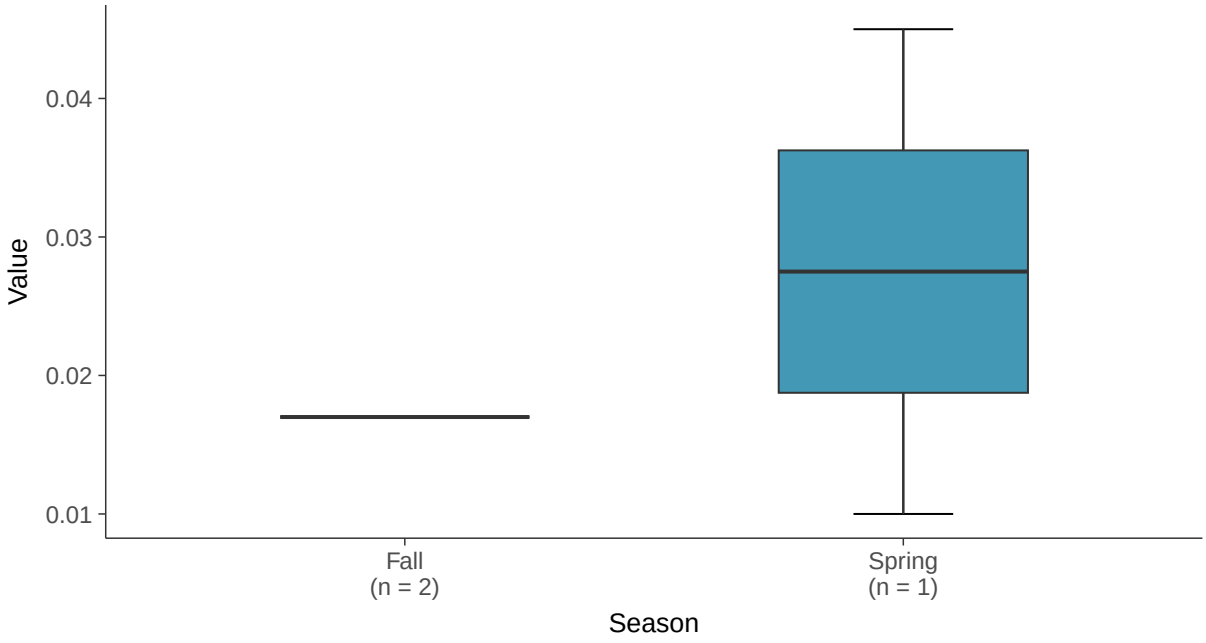
Boxplot

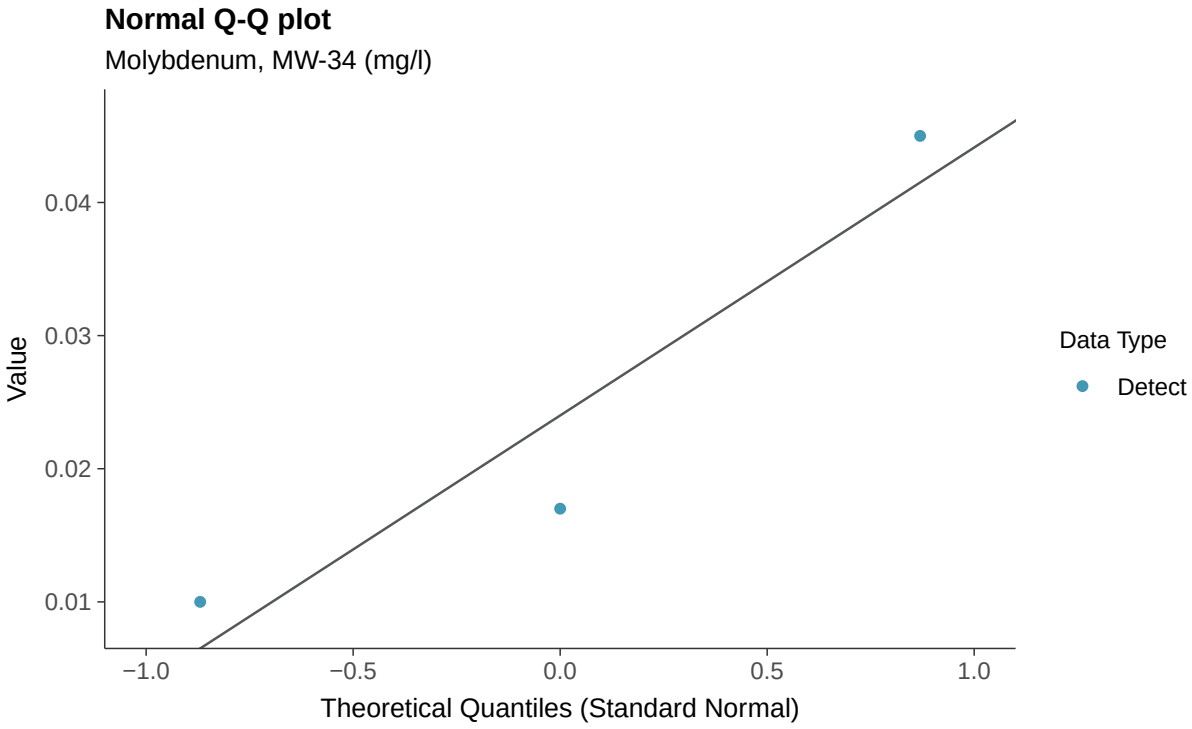
Molybdenum, MW-34 (mg/l)



Boxplot by Season

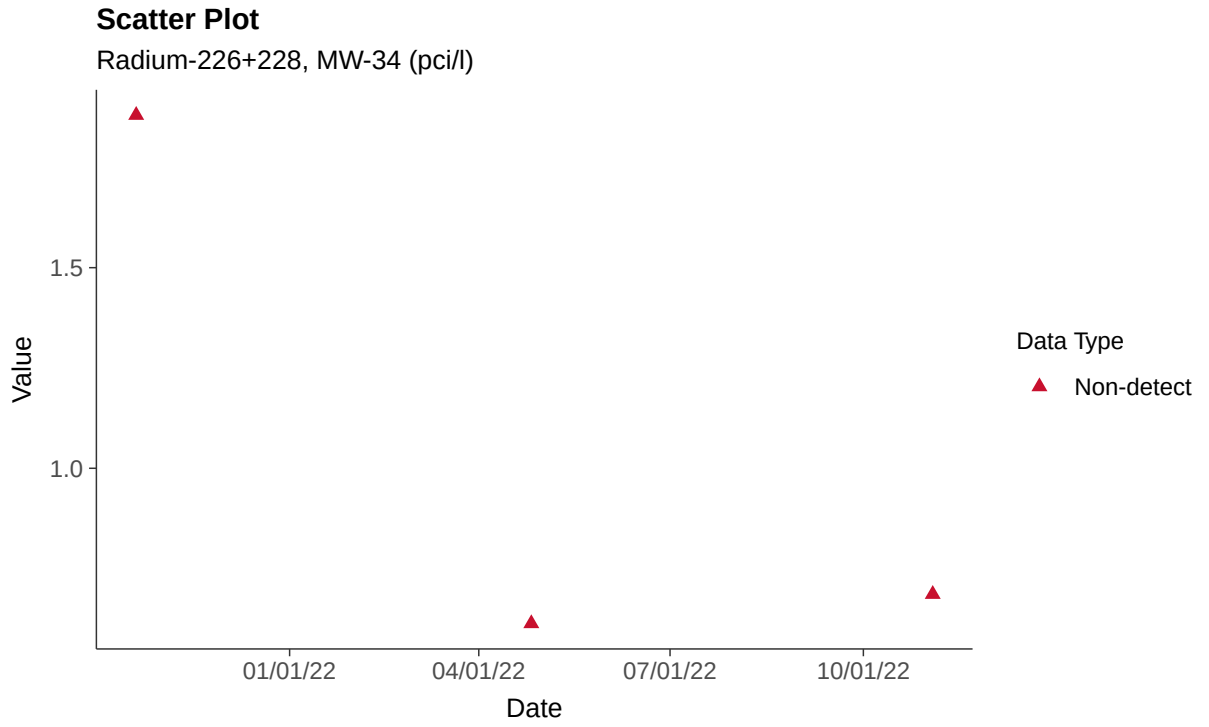
Molybdenum, MW-34 (mg/l)

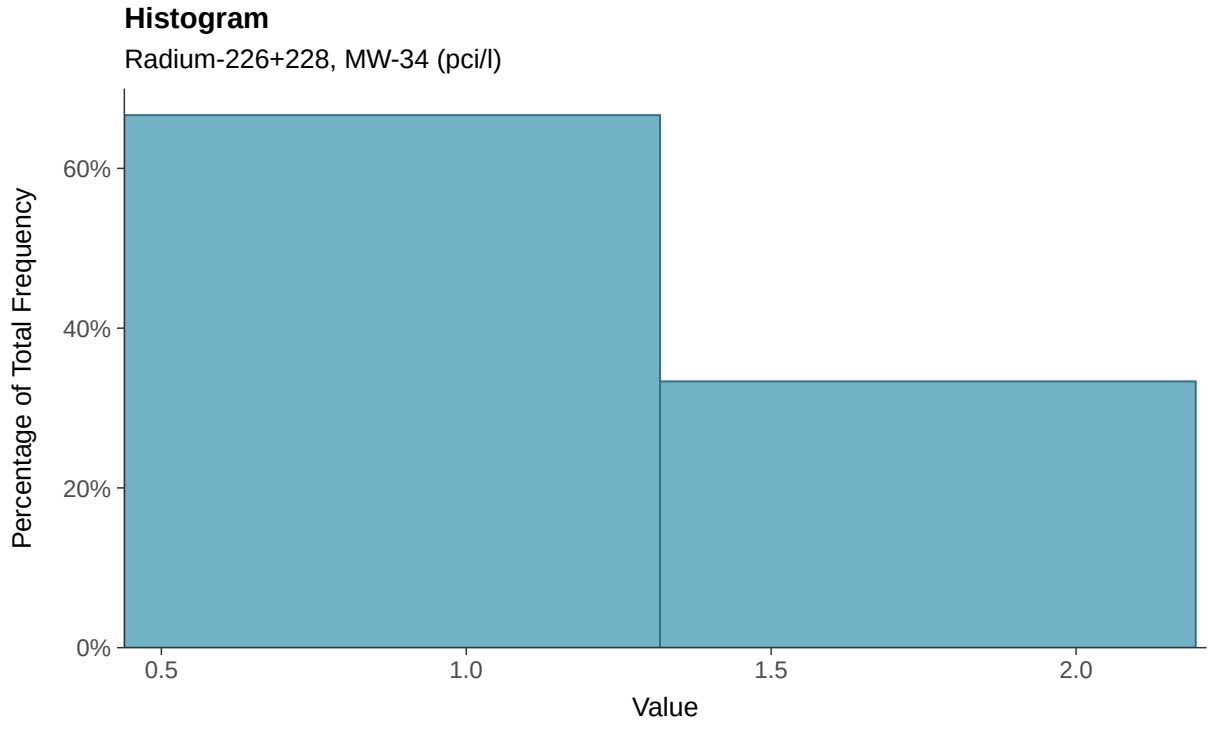



Normal Q-Q plot
Molybdenum, MW-34 (mg/l)
Value
0.04
0.03
0.02
0.01
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Radium-226+228, MW-34

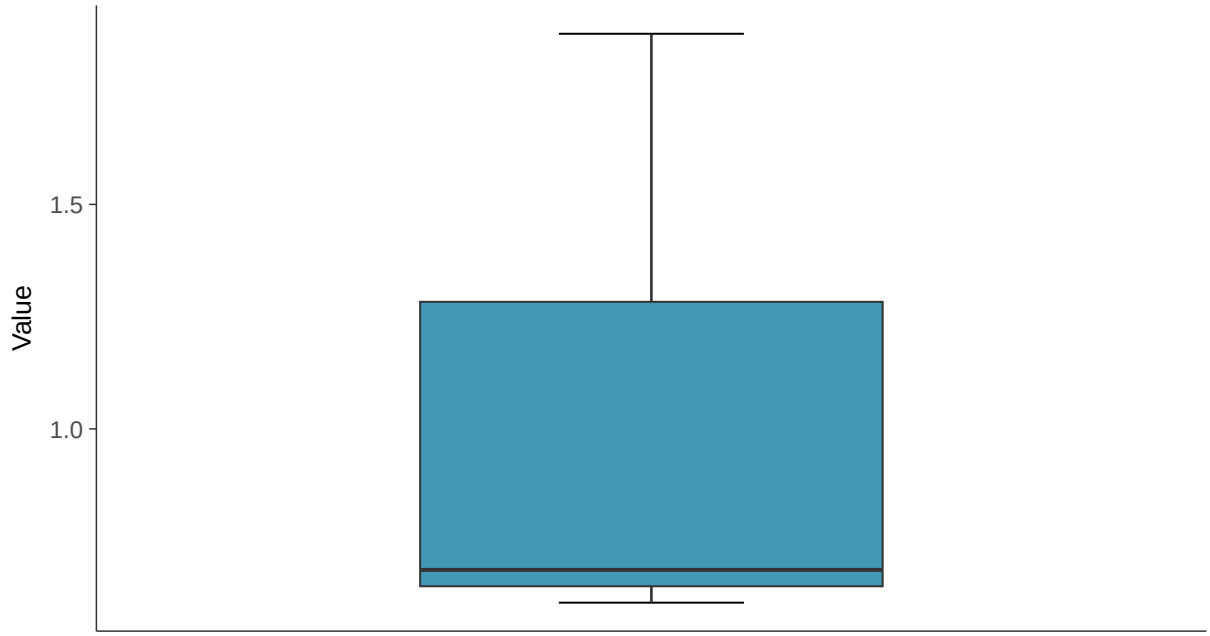
ID: 28_2_127





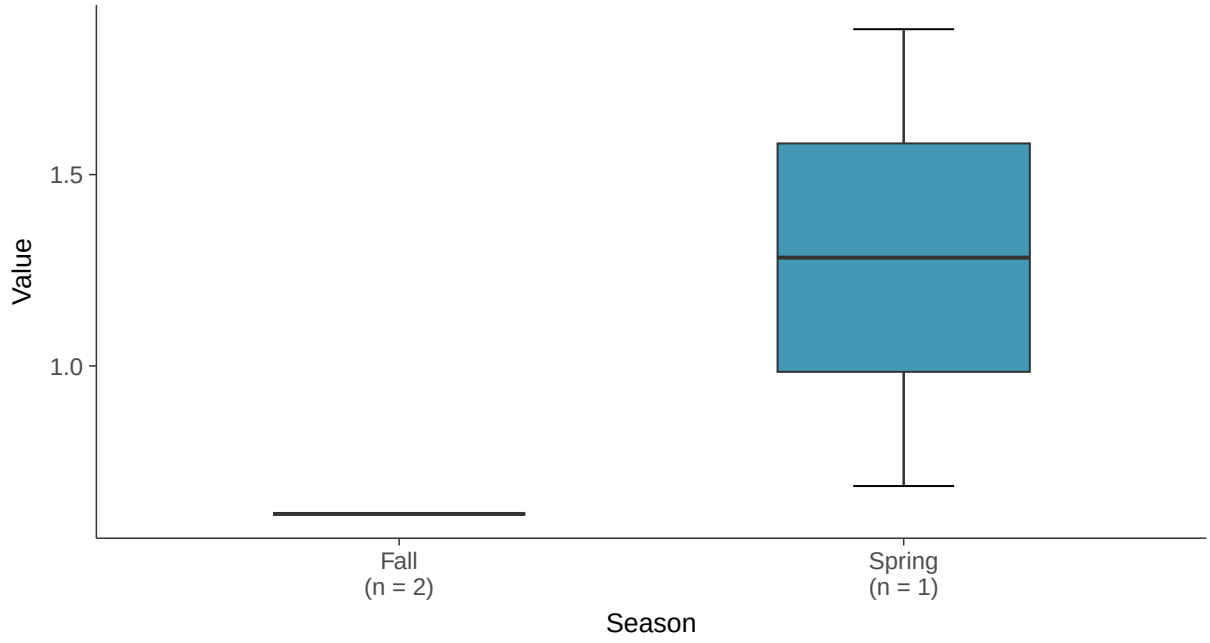
Boxplot

Radium-226+228, MW-34 (pci/l)



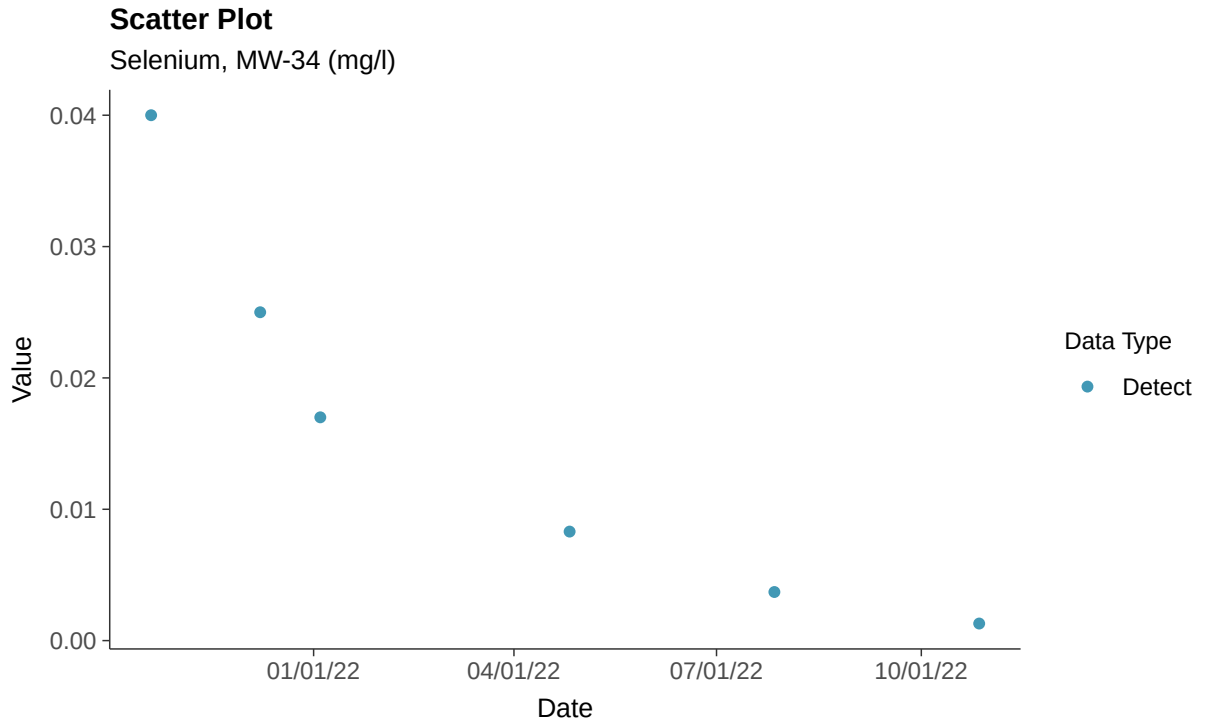
Boxplot by Season

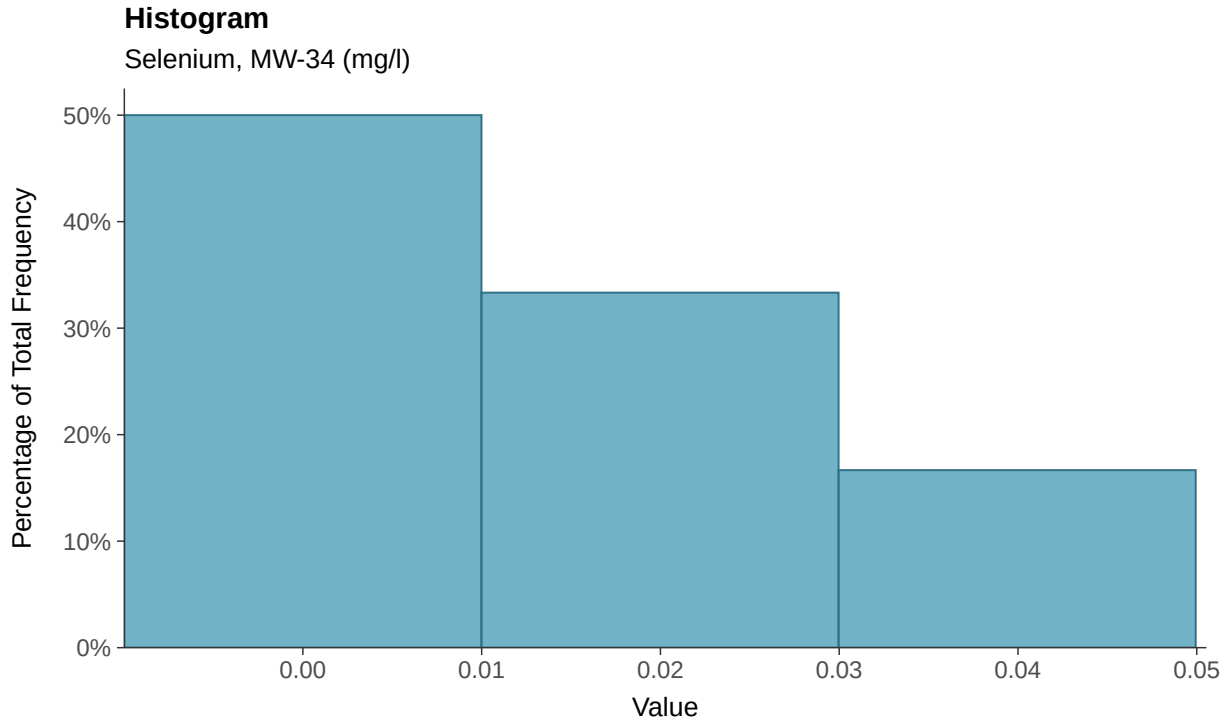
Radium-226+228, MW-34 (pci/l)



Appendix IV: Selenium, MW-34

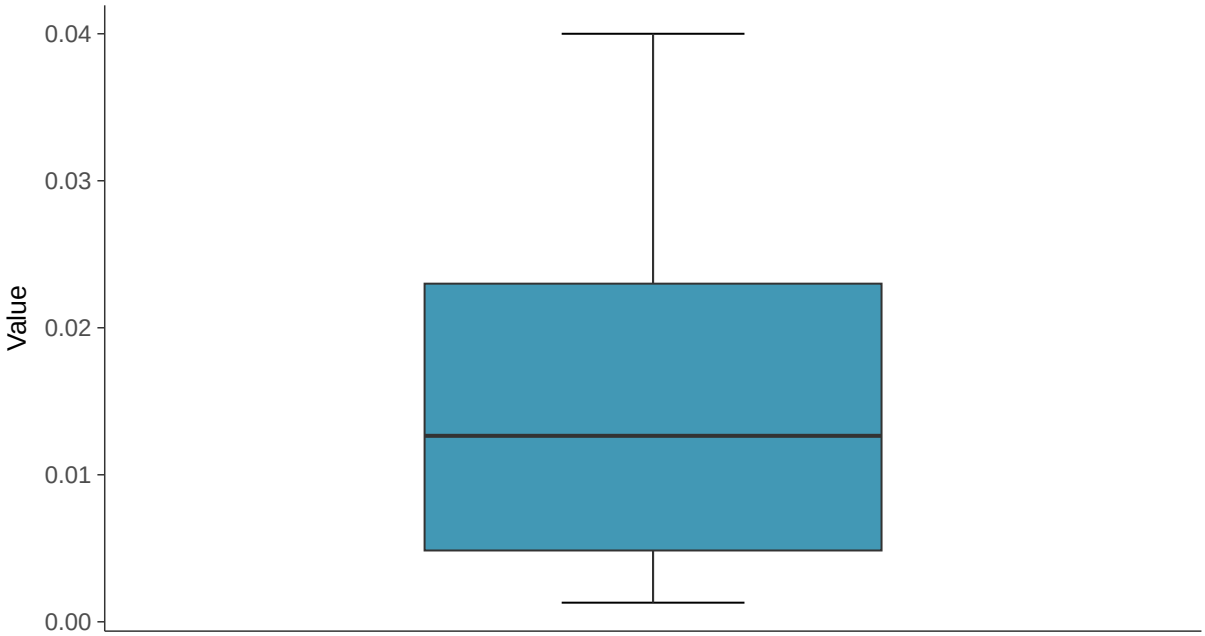
ID: 28_2_129





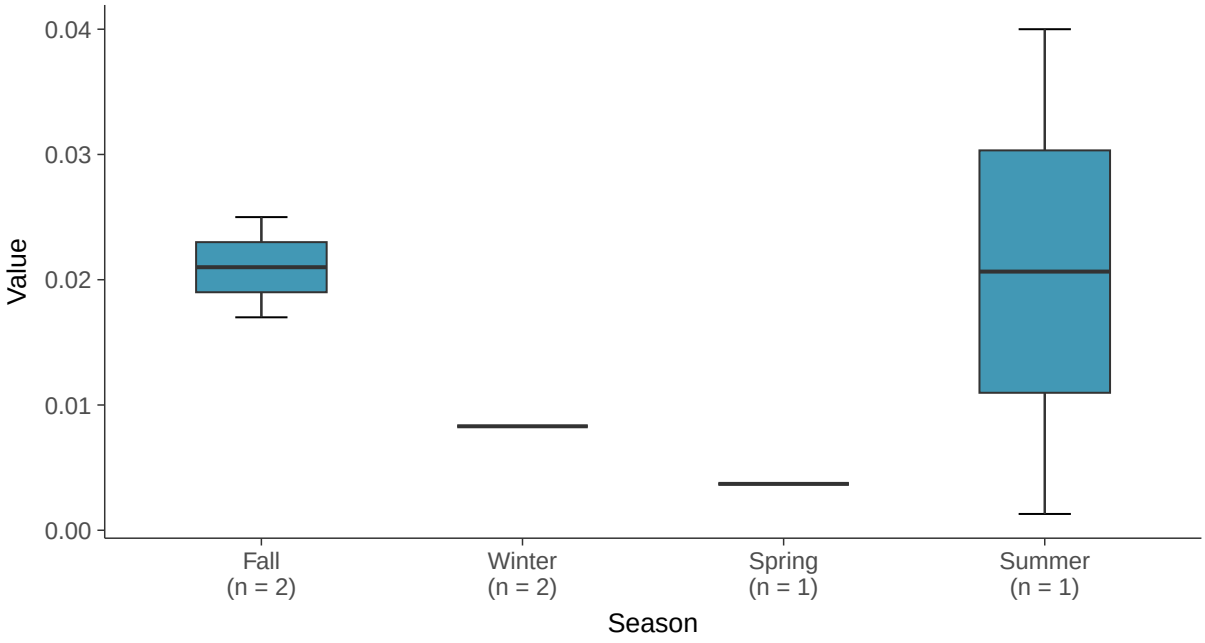
Boxplot

Selenium, MW-34 (mg/l)



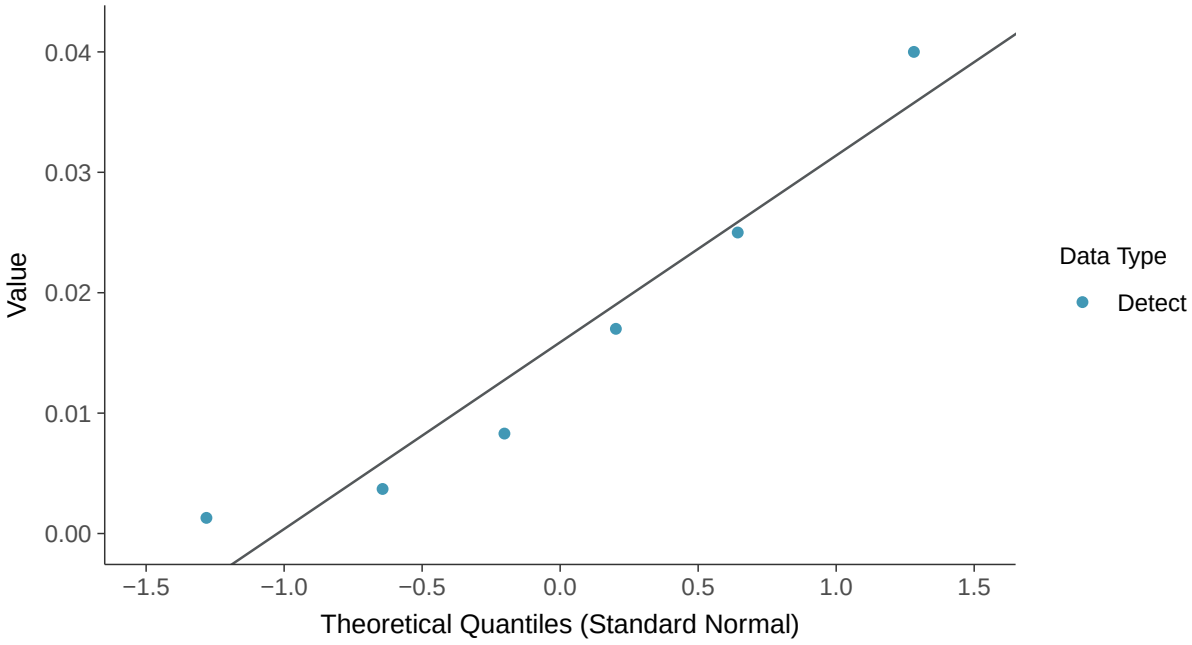
Boxplot by Season

Selenium, MW-34 (mg/l)



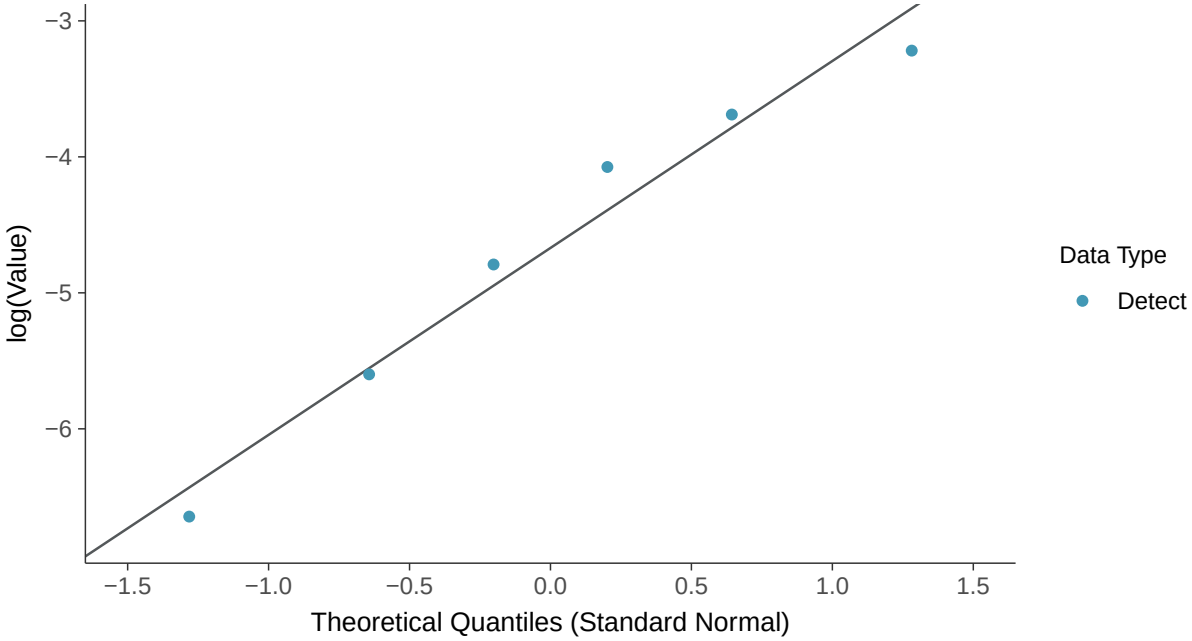
Normal Q-Q plot

Selenium, MW-34 (mg/l)



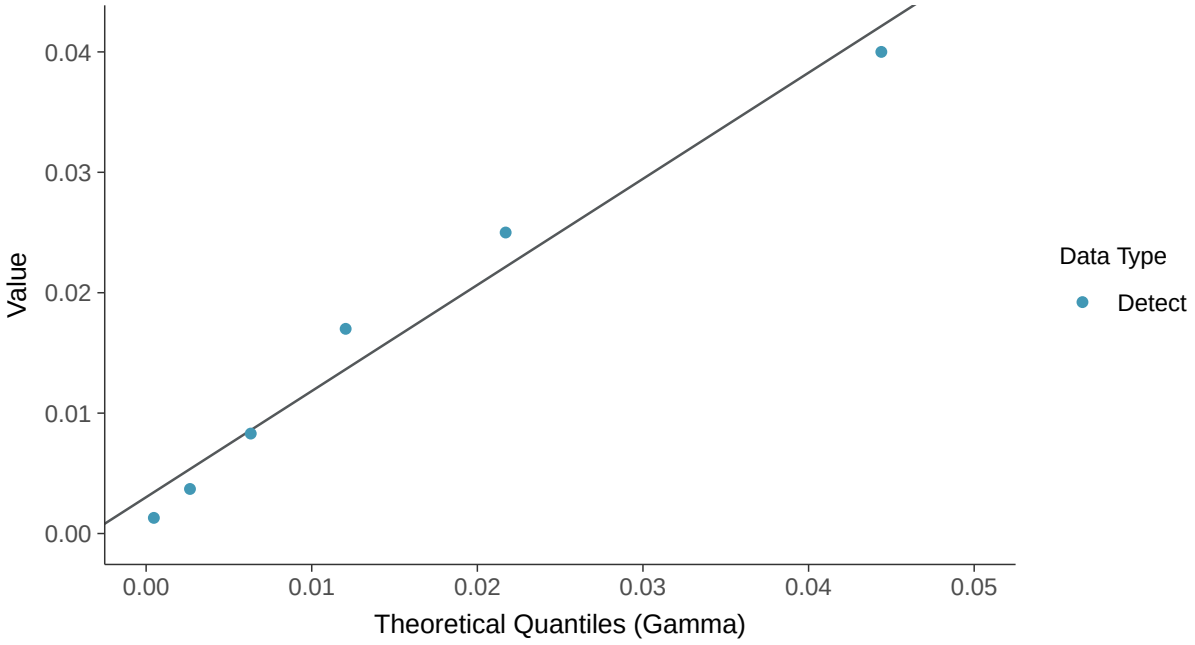
Lognormal Q-Q plot

Selenium, MW-34 (mg/l)



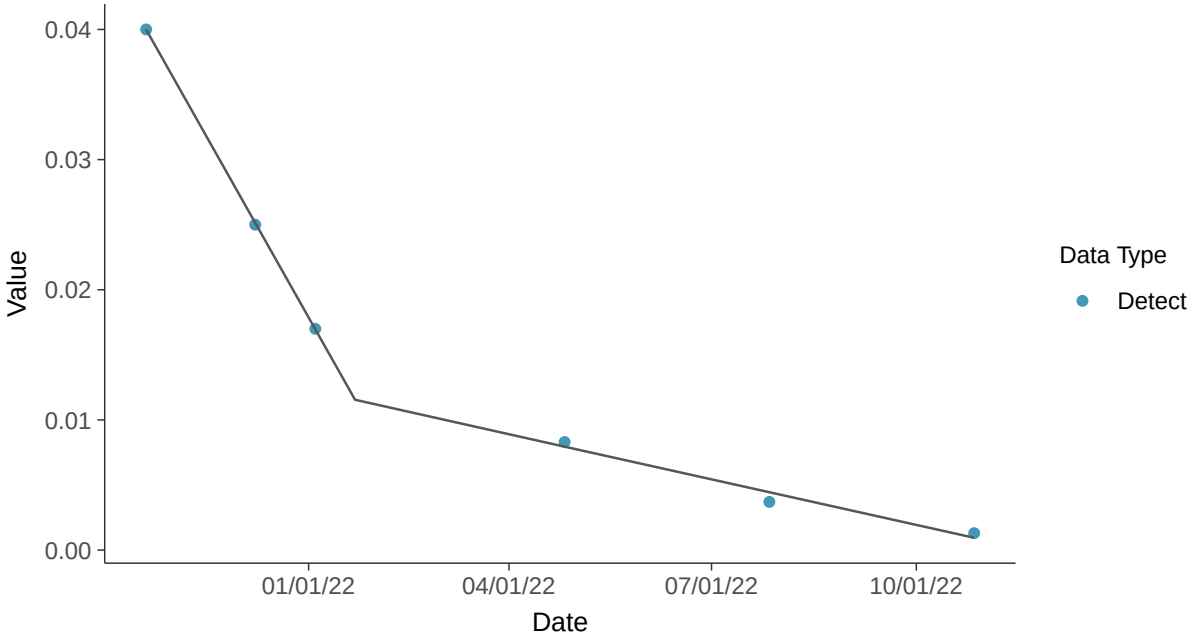
Gamma Q-Q plot

Selenium, MW-34 (mg/l)



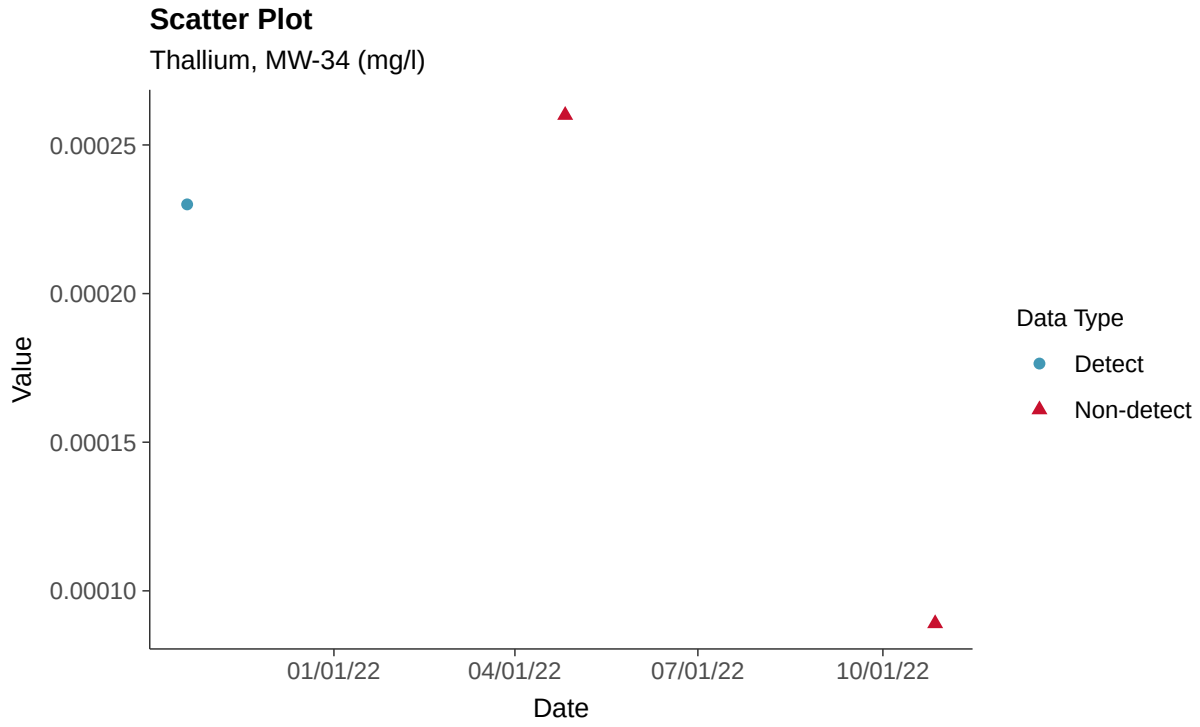
Trend Regression: Piecewise Linear-Linear

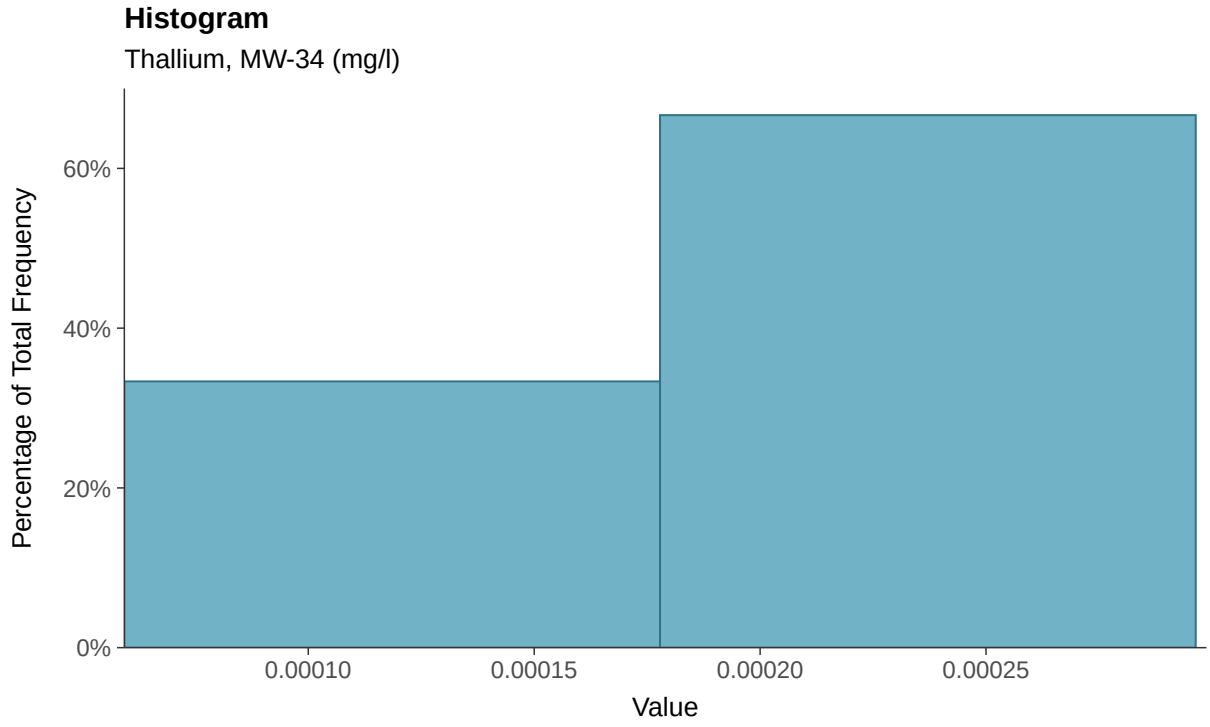
Selenium, MW-34 (mg/l)



Appendix IV: Thallium, MW-34

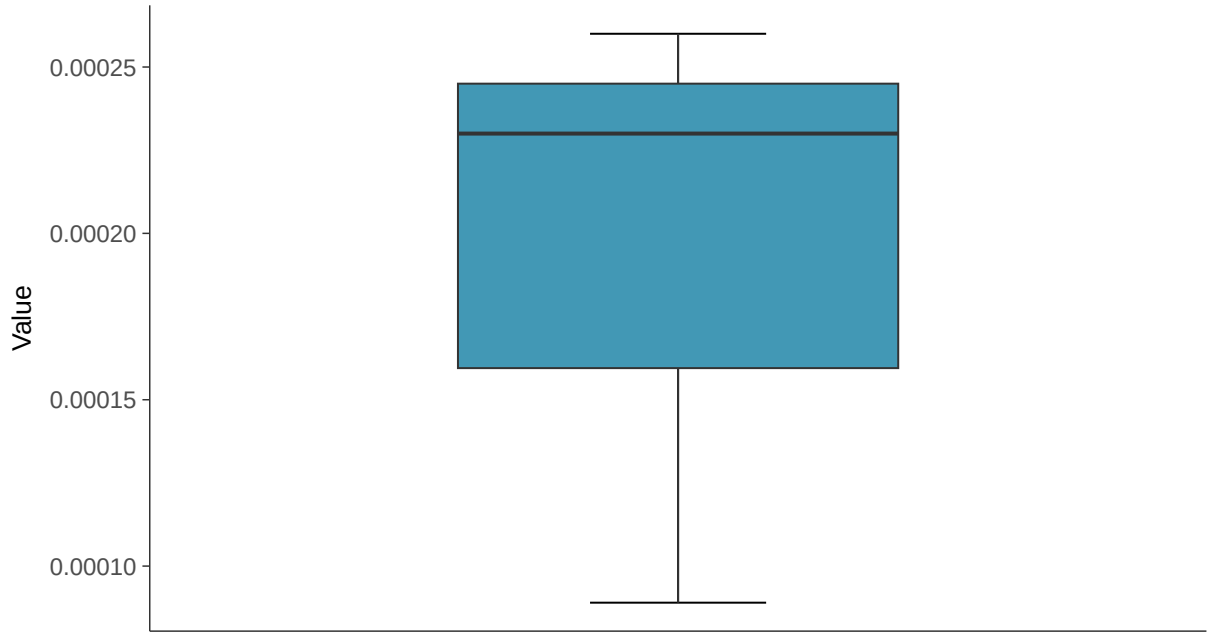
ID: 28_2_134





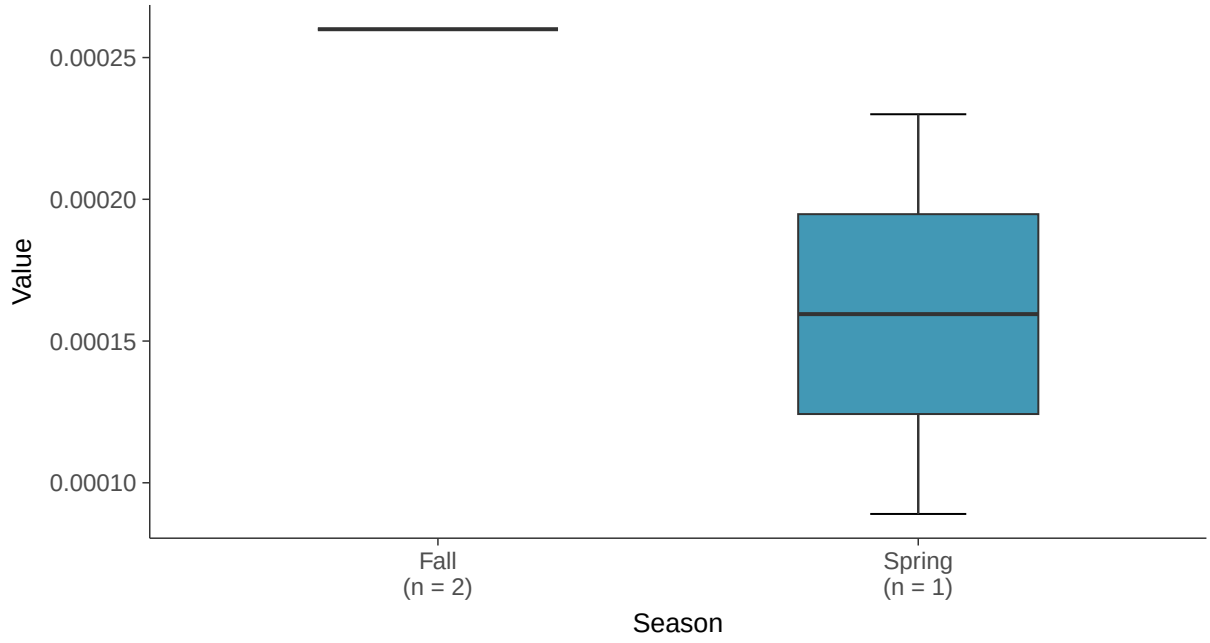
Boxplot

Thallium, MW-34 (mg/l)



Boxplot by Season

Thallium, MW-34 (mg/l)

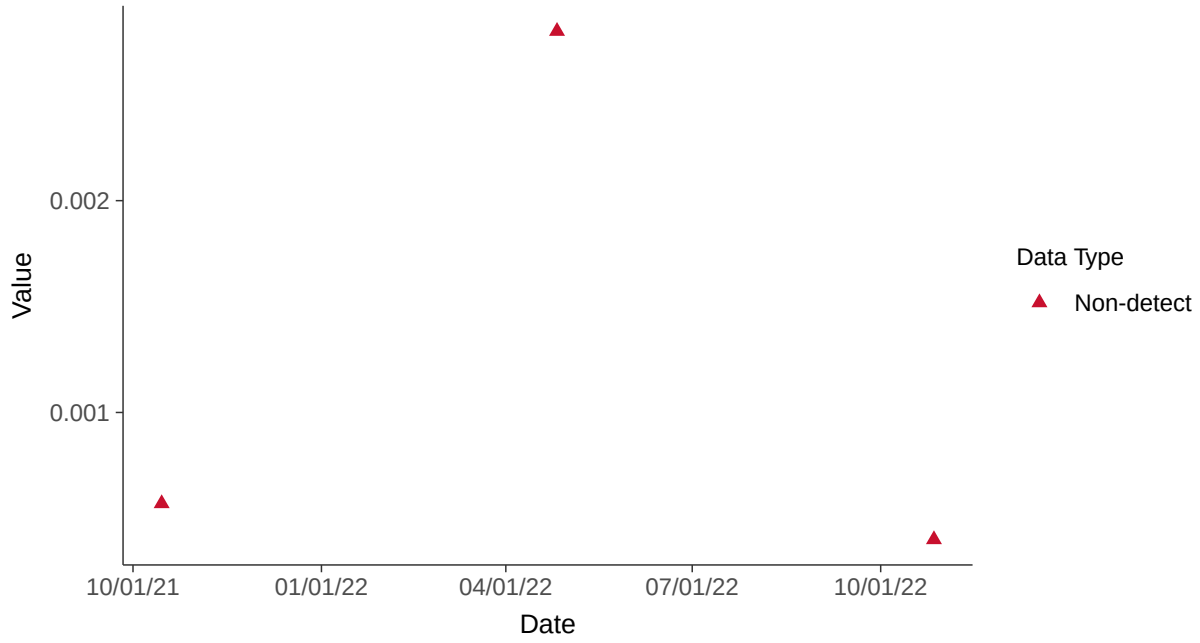


Appendix IV: Antimony, MW-35

ID: 29_2_104

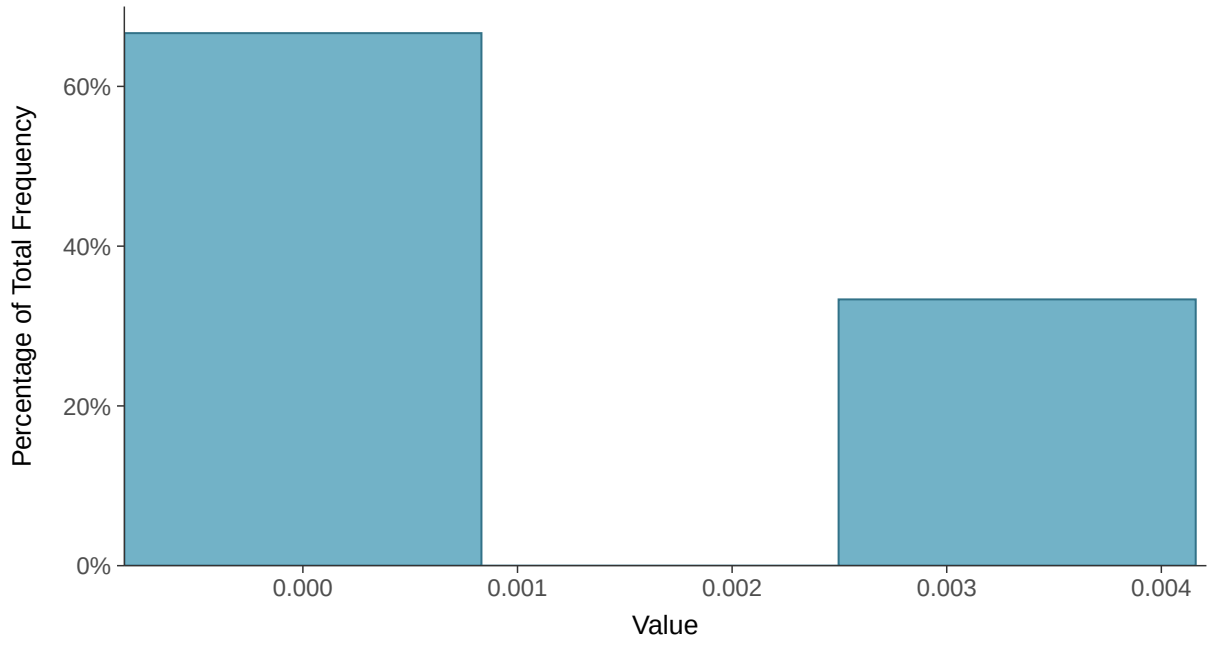
Scatter Plot

Antimony, MW-35 (mg/l)



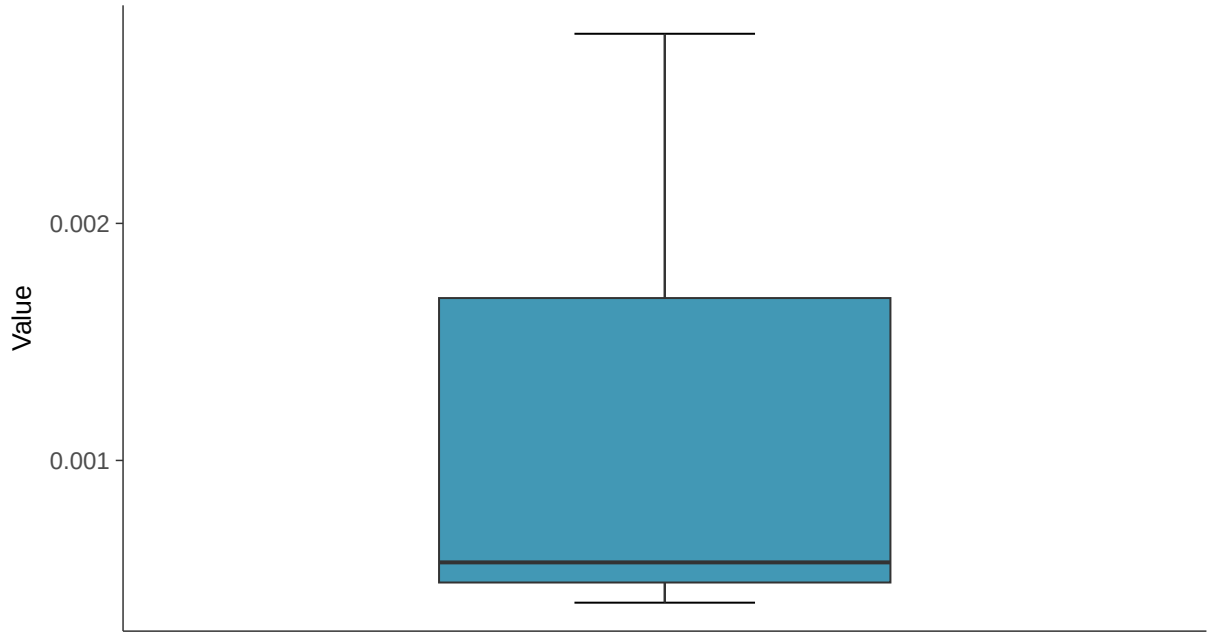
Histogram

Antimony, MW-35 (mg/l)



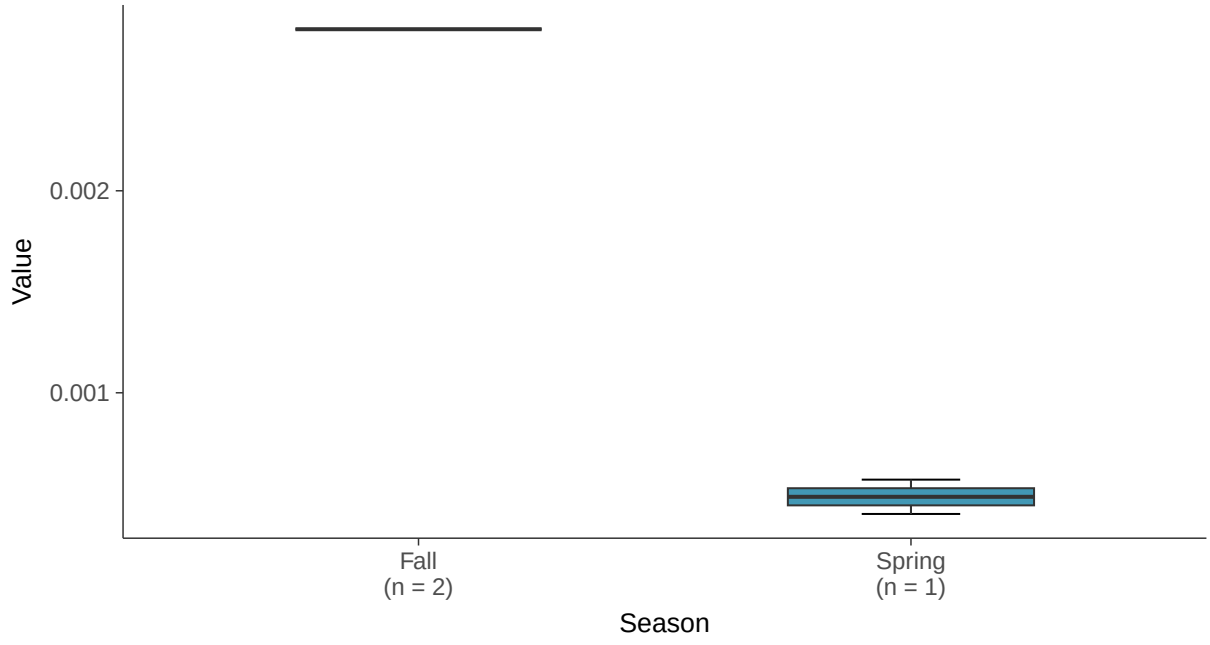
Boxplot

Antimony, MW-35 (mg/l)



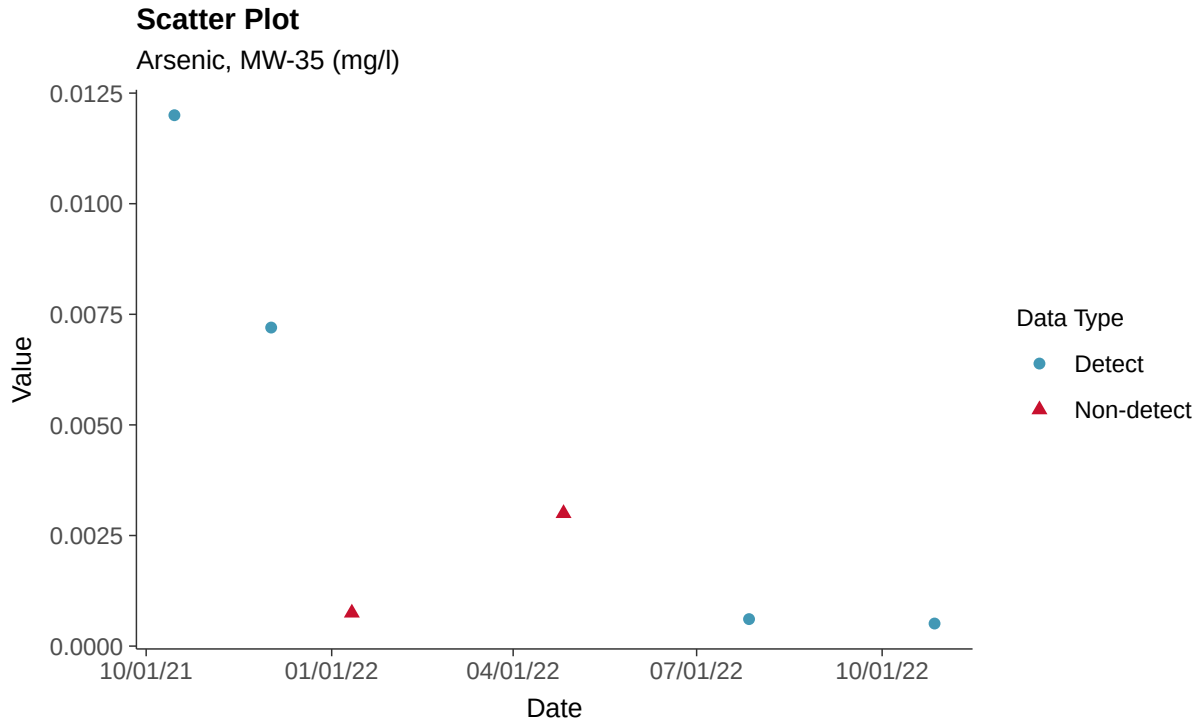
Boxplot by Season

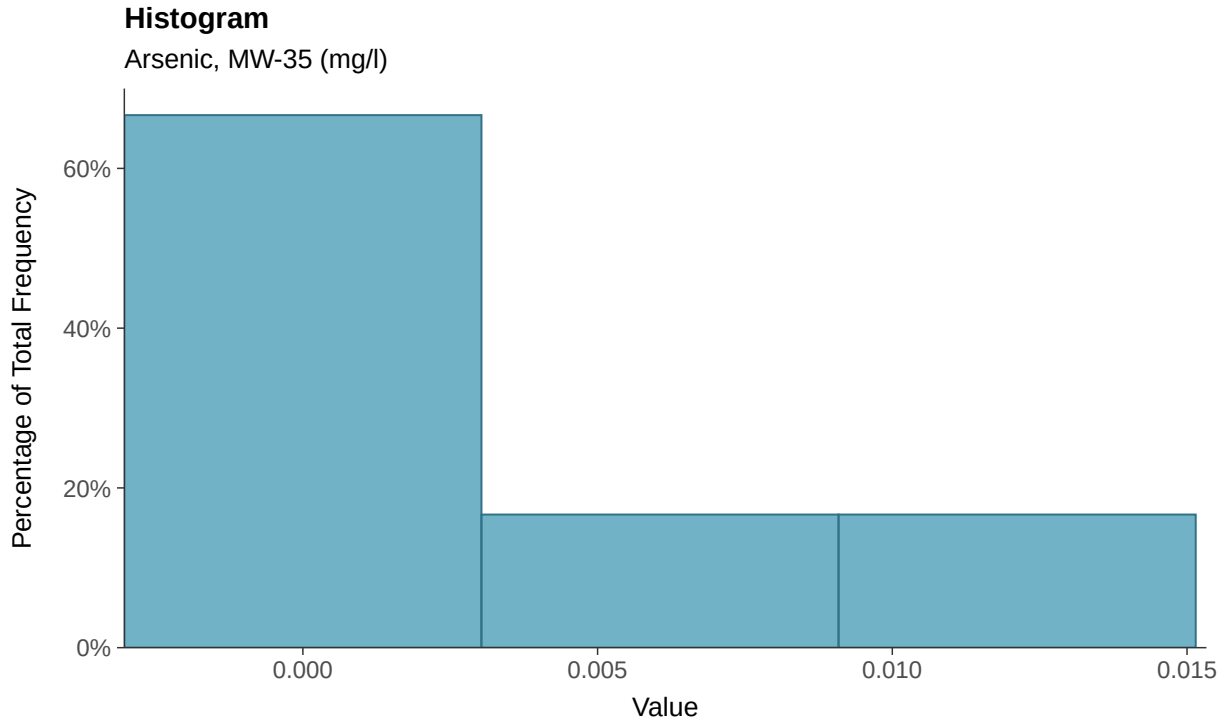
Antimony, MW-35 (mg/l)



Appendix IV: Arsenic, MW-35

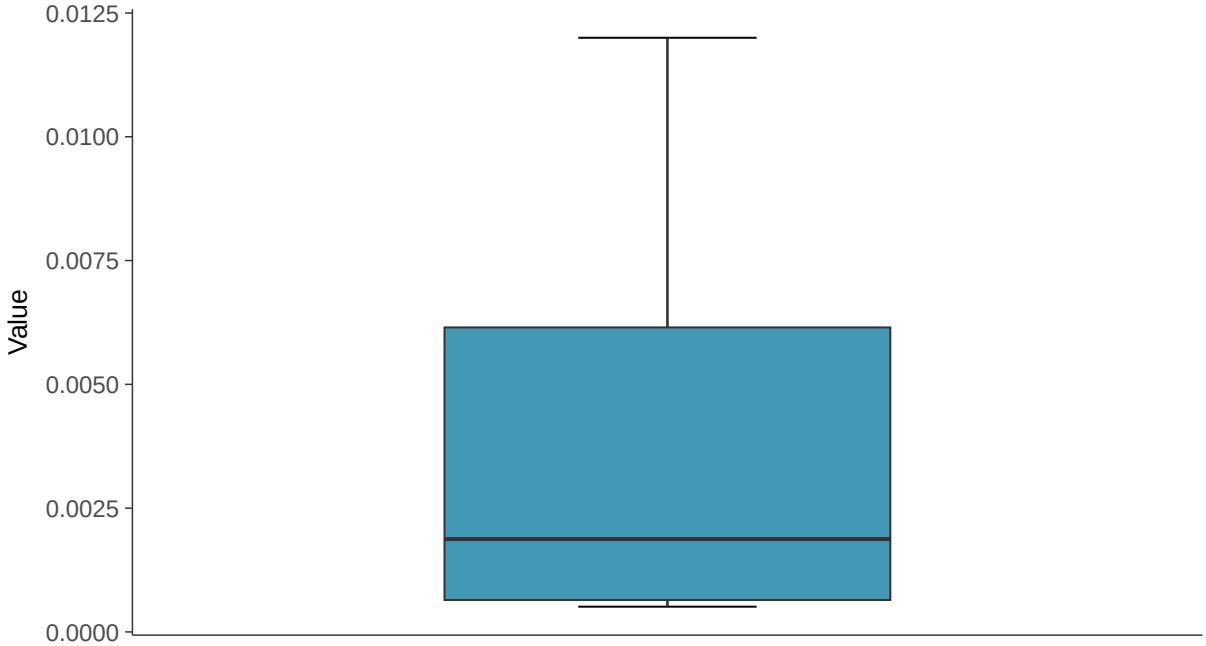
ID: 29_2_105





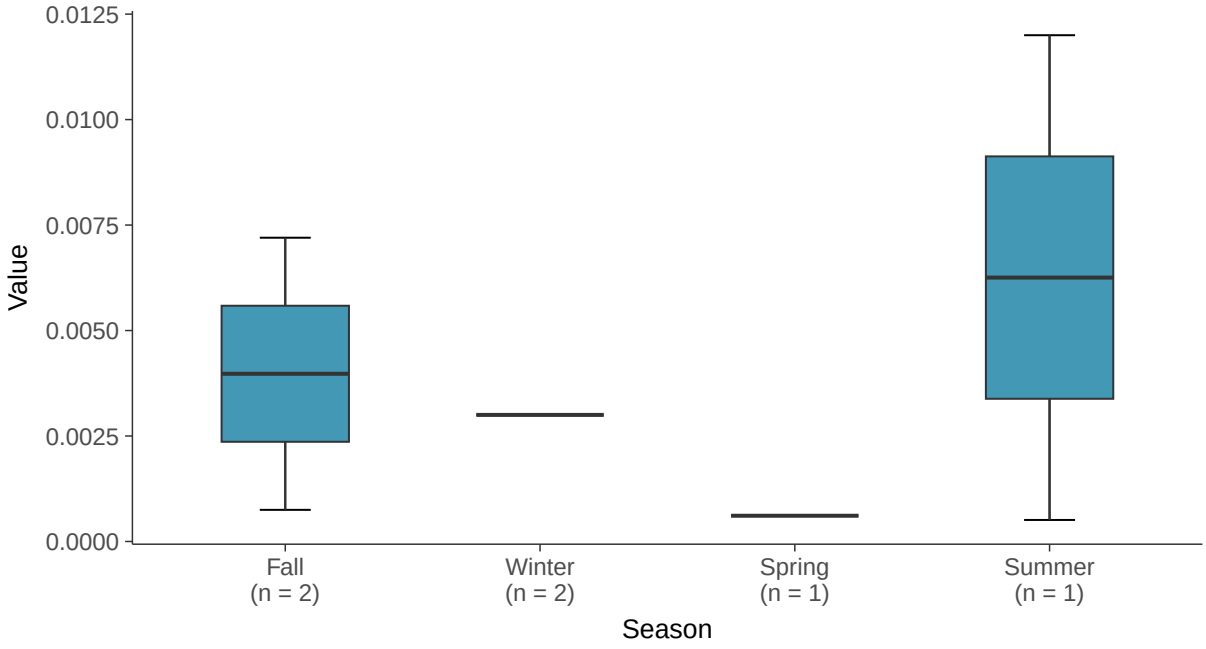
Boxplot

Arsenic, MW-35 (mg/l)



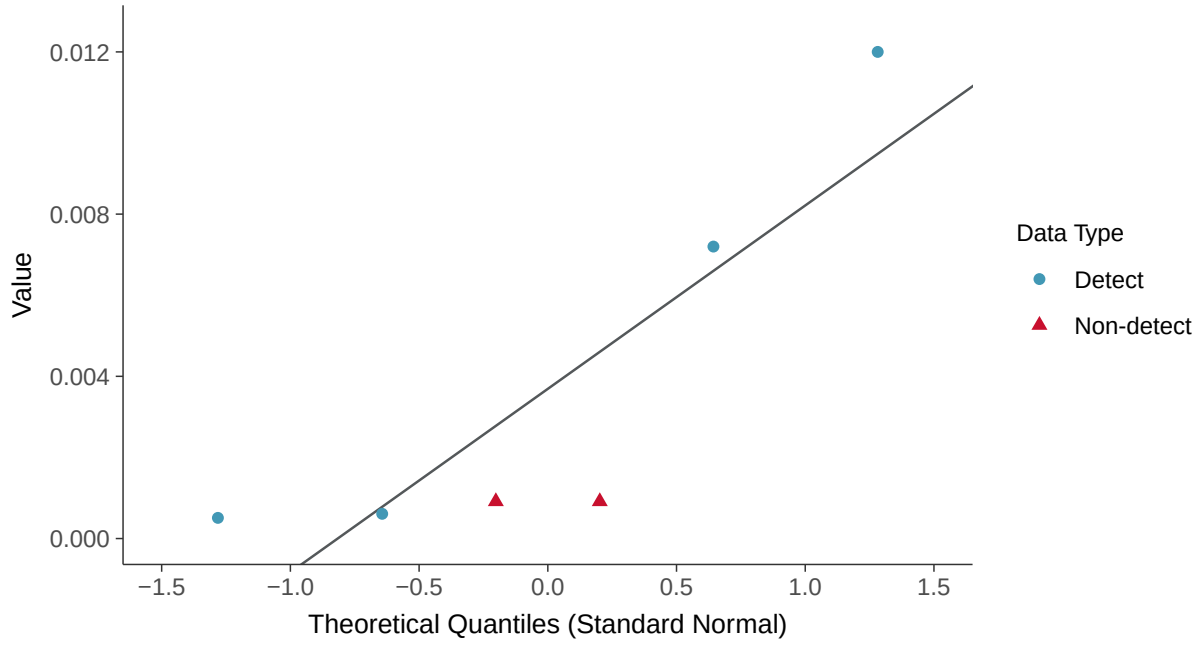
Boxplot by Season

Arsenic, MW-35 (mg/l)



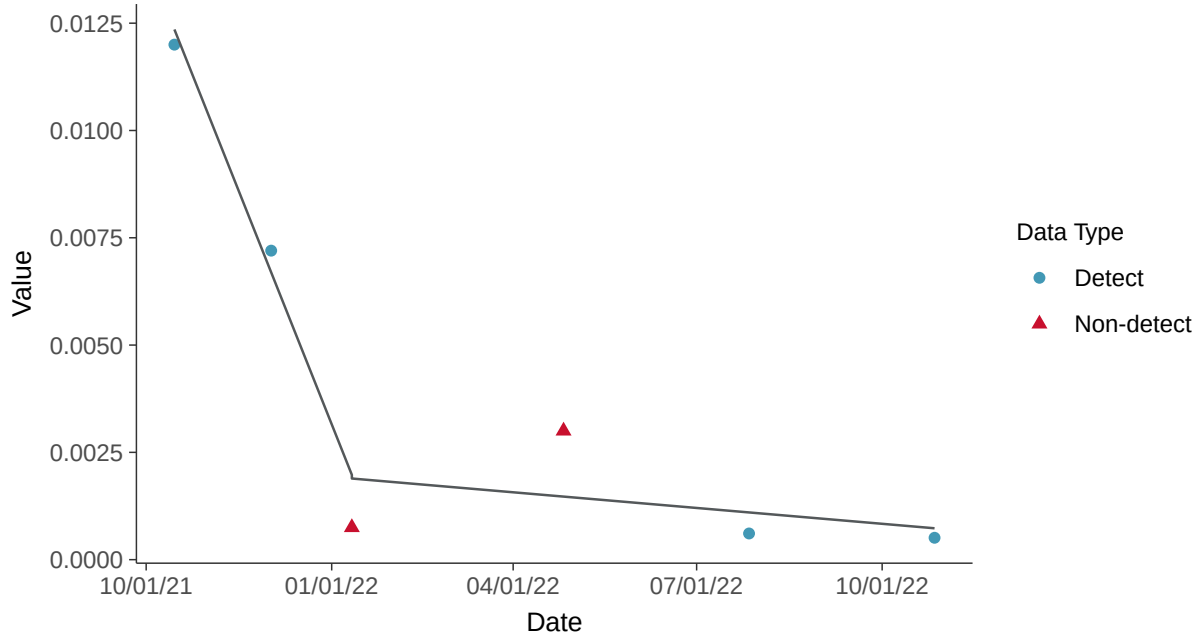
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-35 (mg/l)



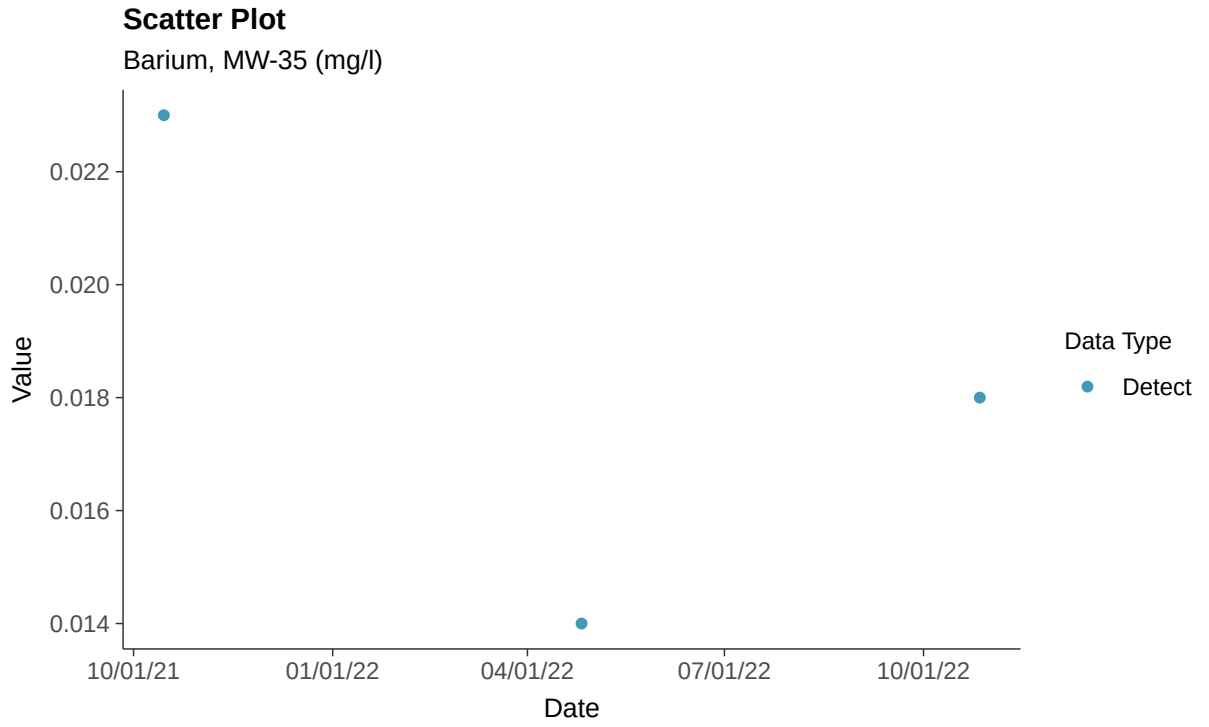
Trend Regression: Piecewise Linear-Linear

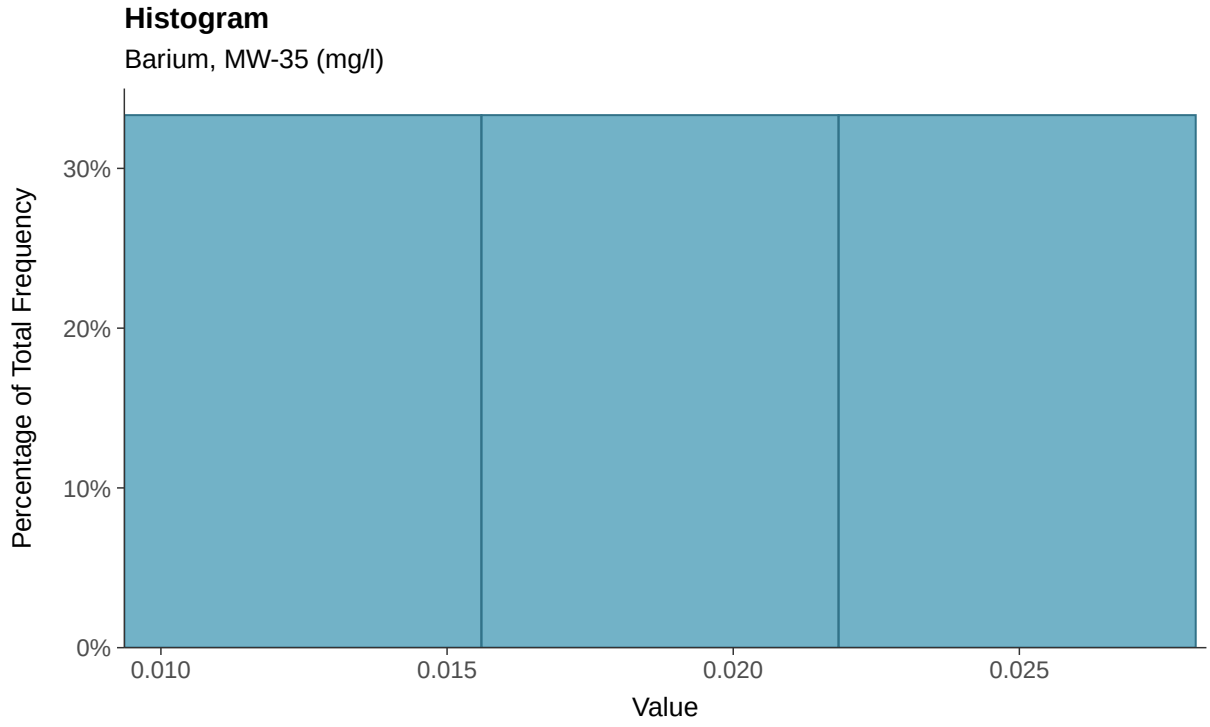
Arsenic, MW-35 (mg/l)



Appendix IV: Barium, MW-35

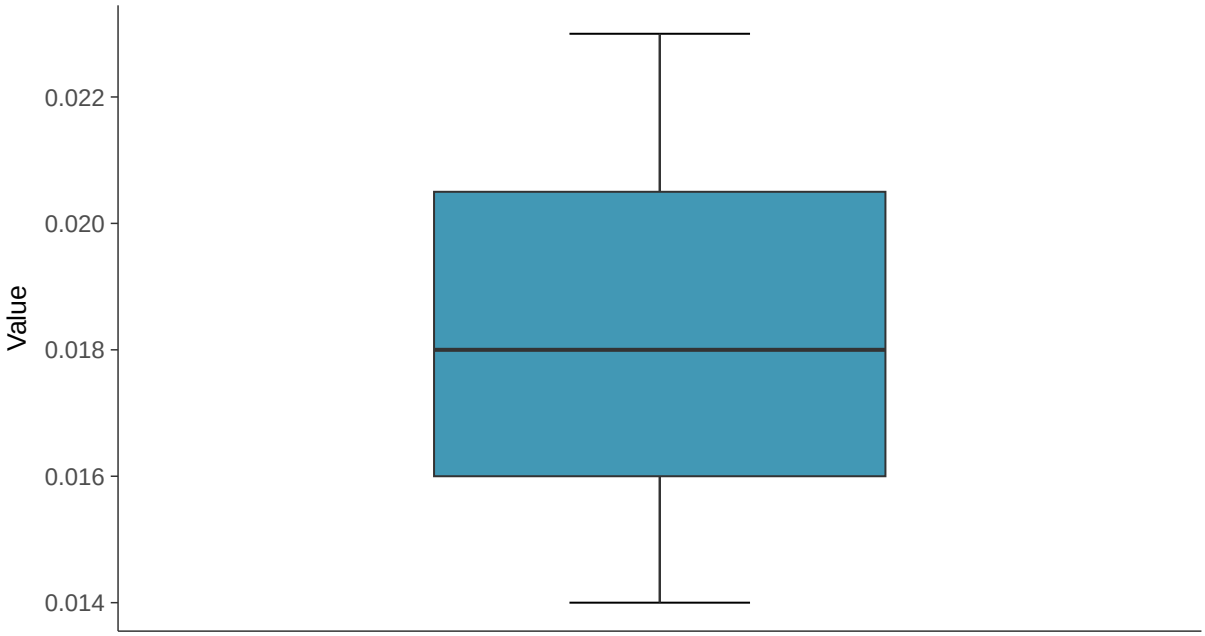
ID: 29_2_106





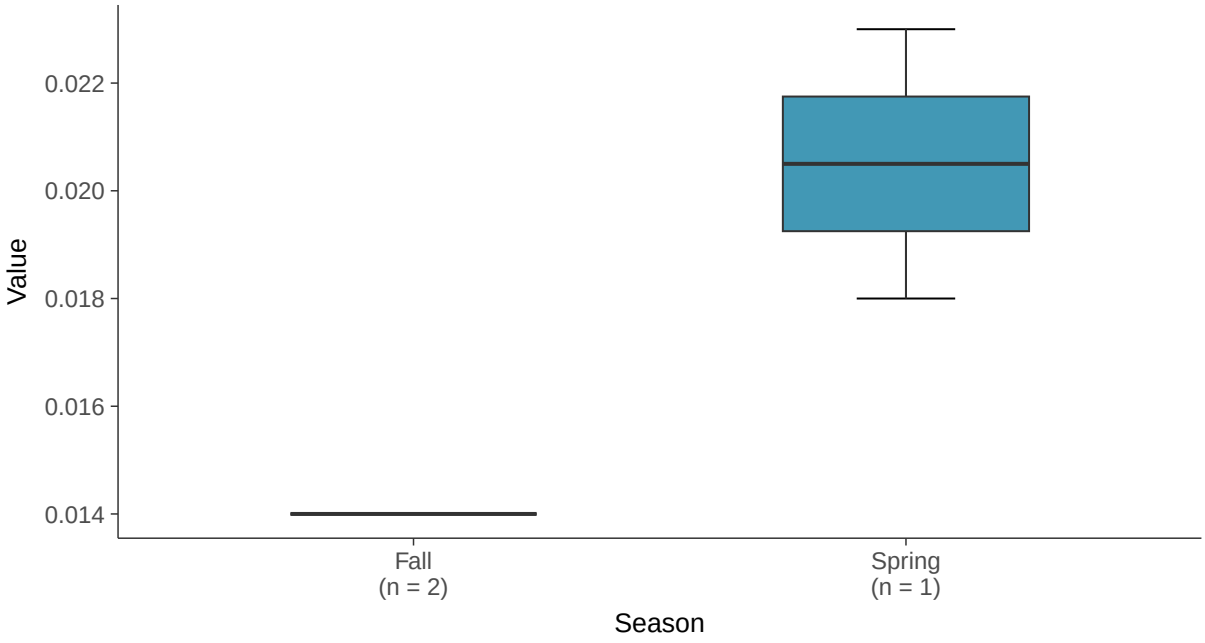
Boxplot

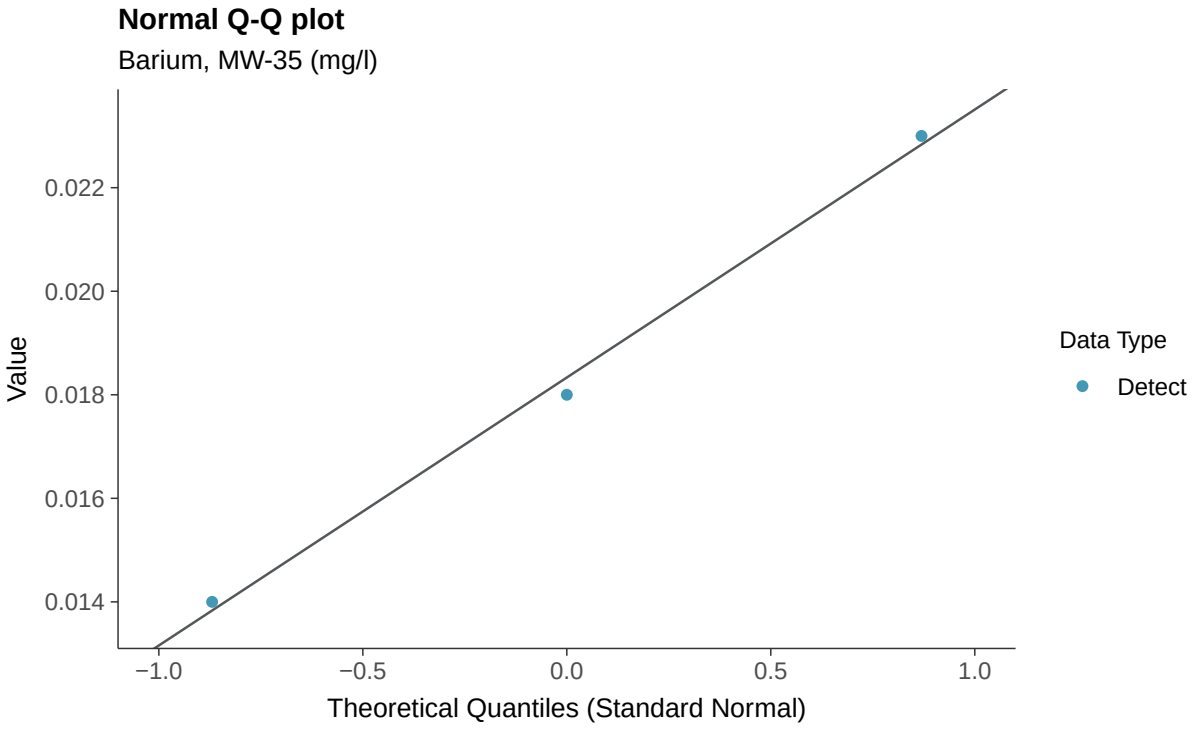
Barium, MW-35 (mg/l)



Boxplot by Season

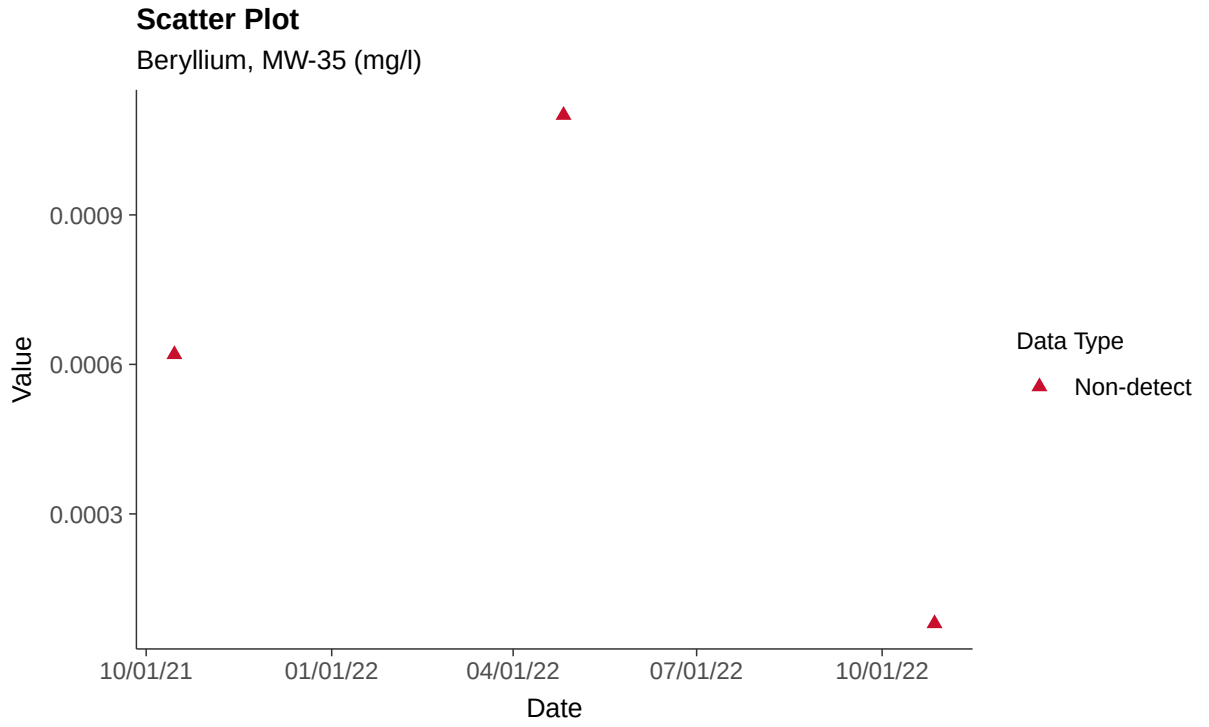
Barium, MW-35 (mg/l)

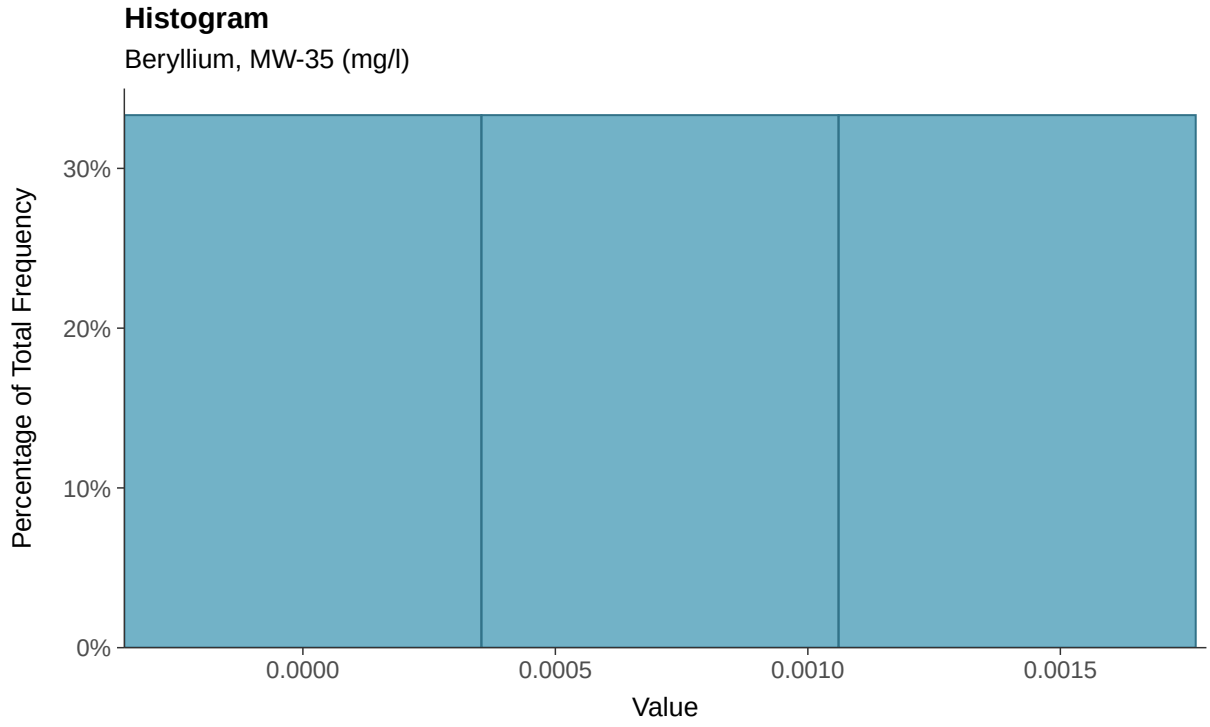



Normal Q-Q plot
Barium, MW-35 (mg/l)
Value
0.022
0.020
0.018
0.016
0.014
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Beryllium, MW-35

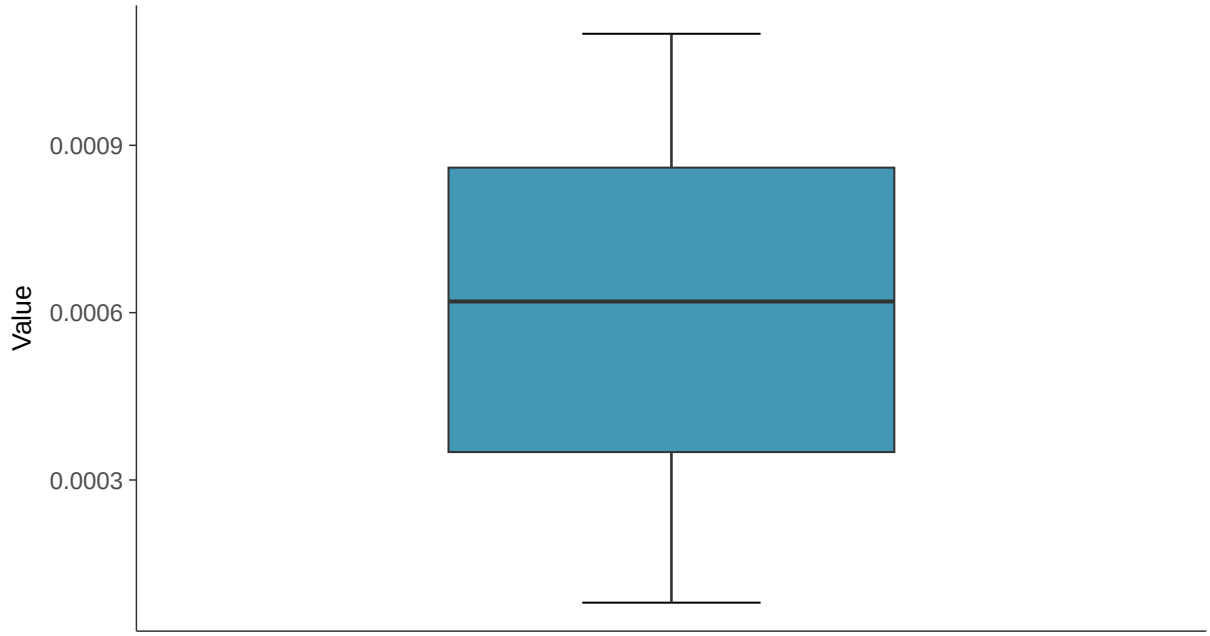
ID: 29_2_107





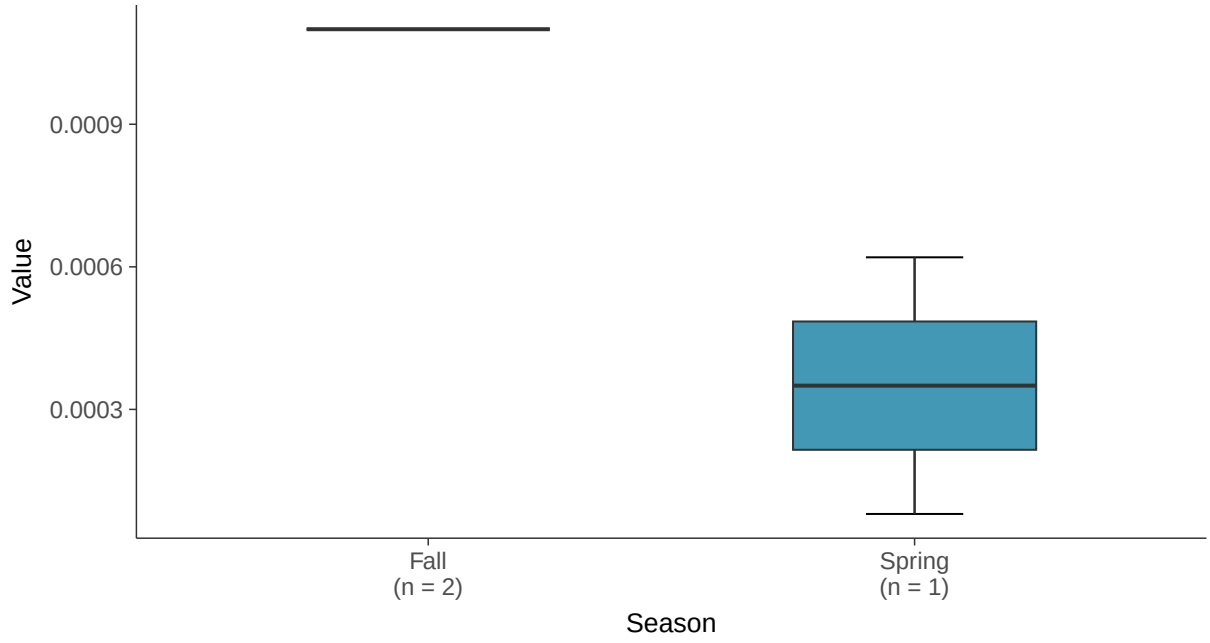
Boxplot

Beryllium, MW-35 (mg/l)



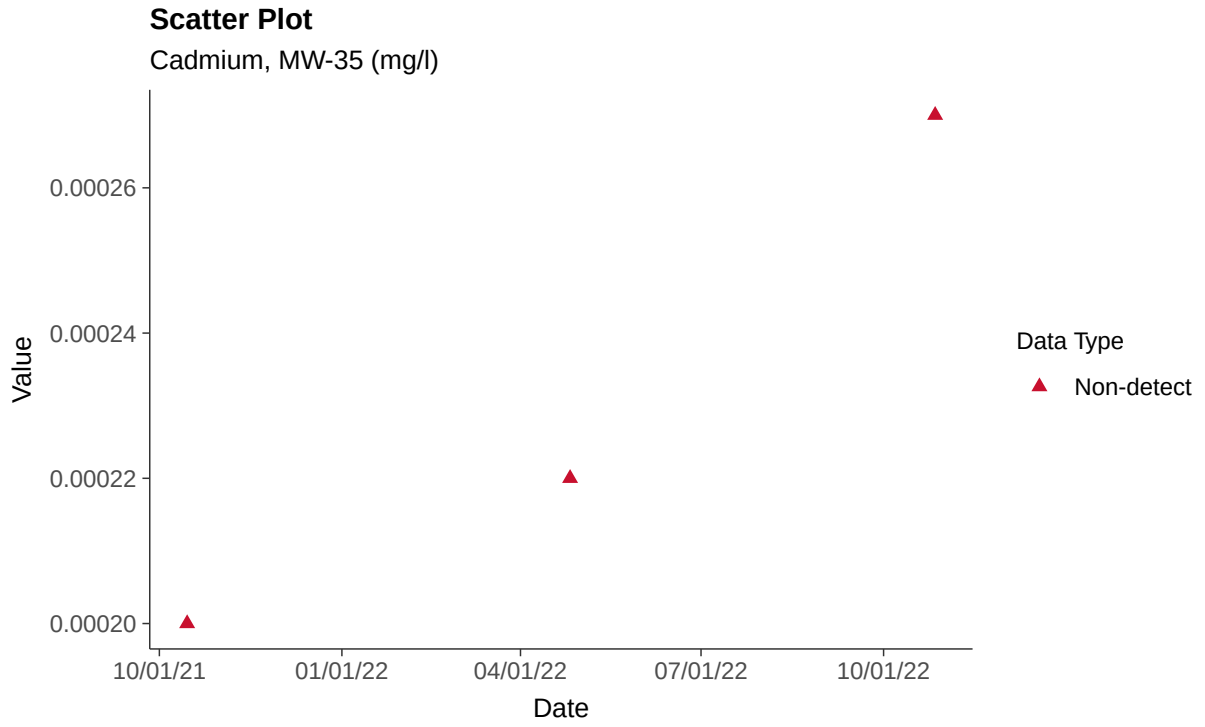
Boxplot by Season

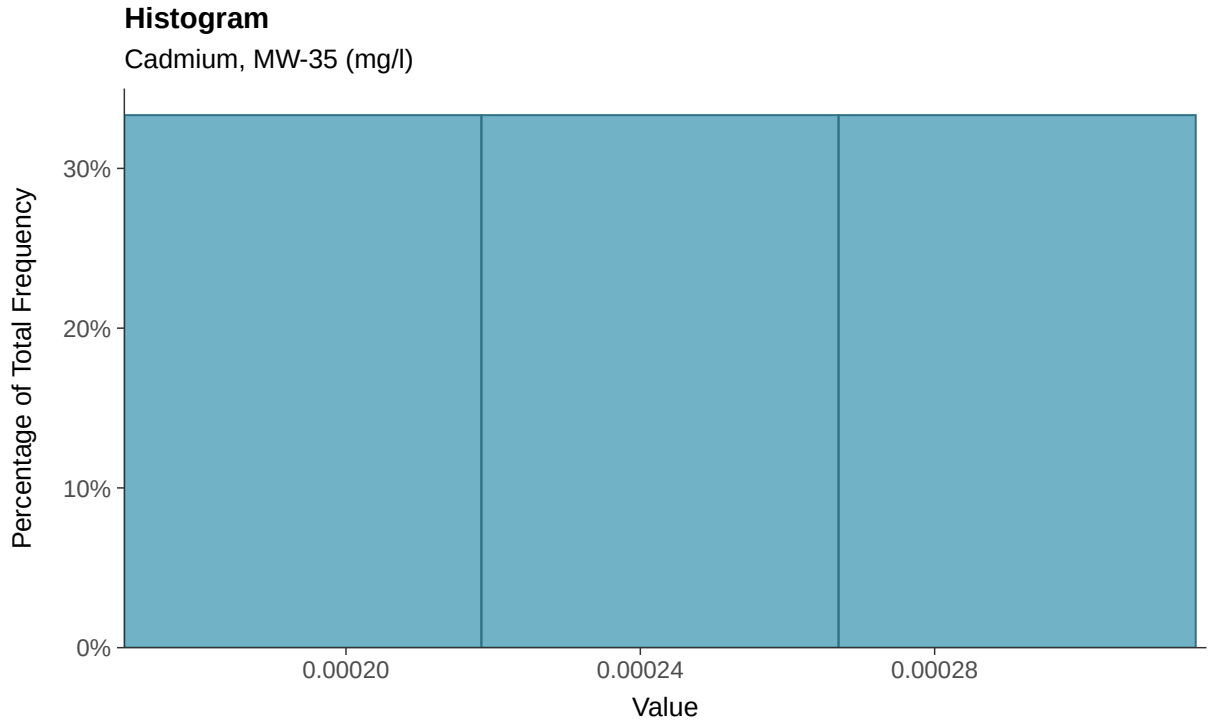
Beryllium, MW-35 (mg/l)



Appendix IV: Cadmium, MW-35

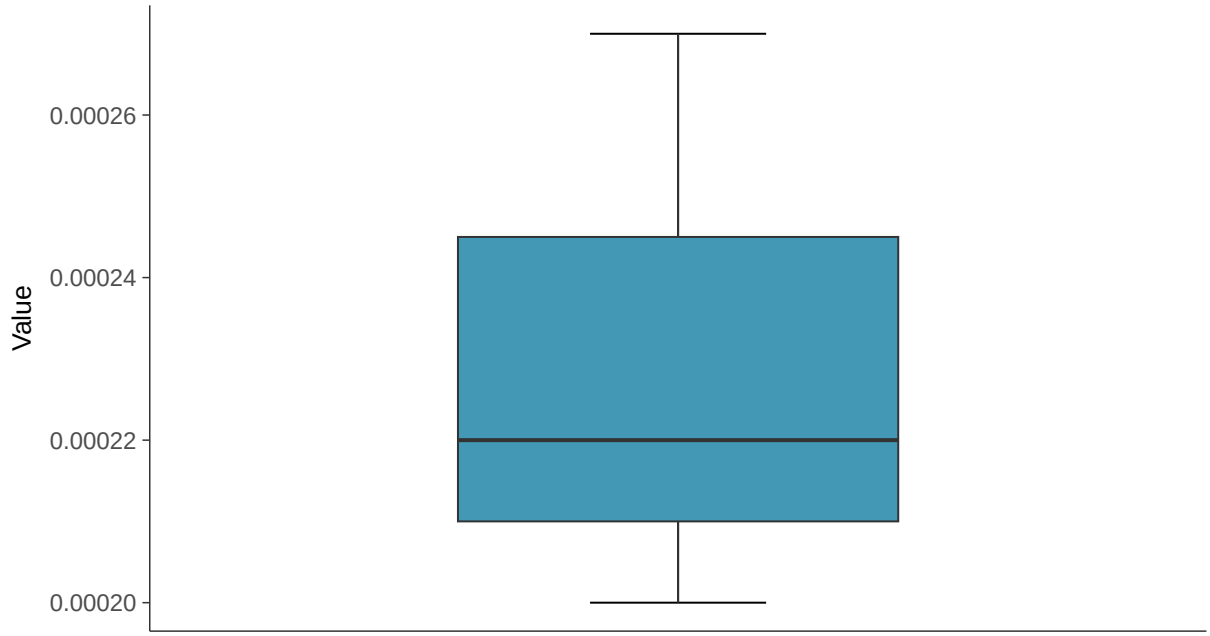
ID: 29_2_109





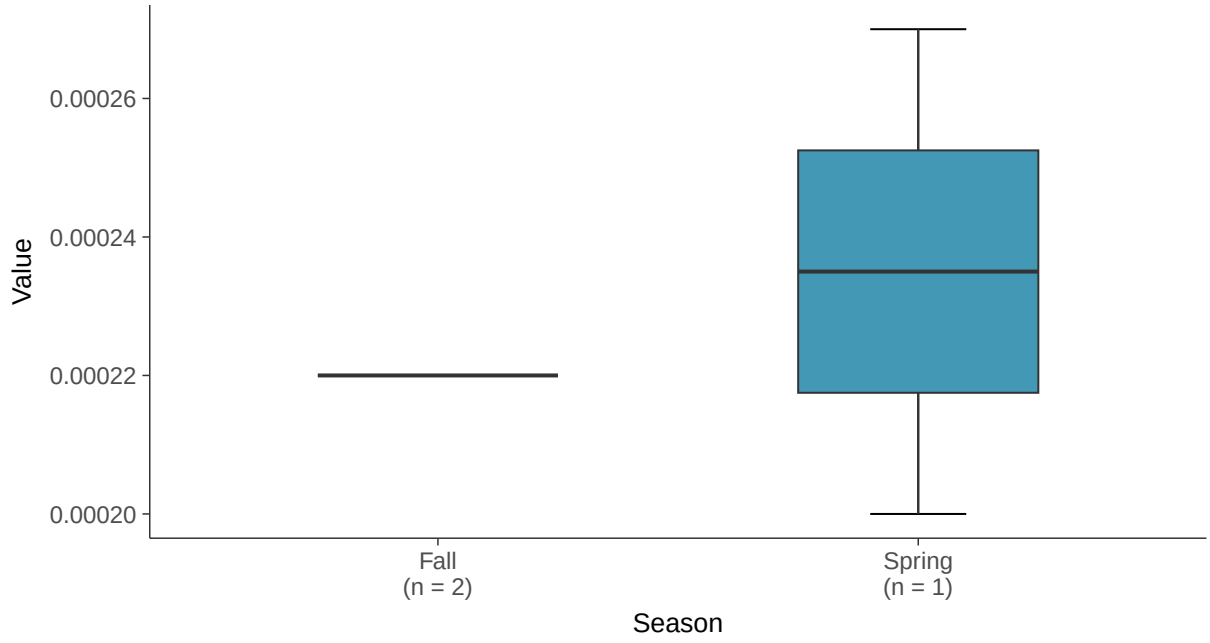
Boxplot

Cadmium, MW-35 (mg/l)



Boxplot by Season

Cadmium, MW-35 (mg/l)

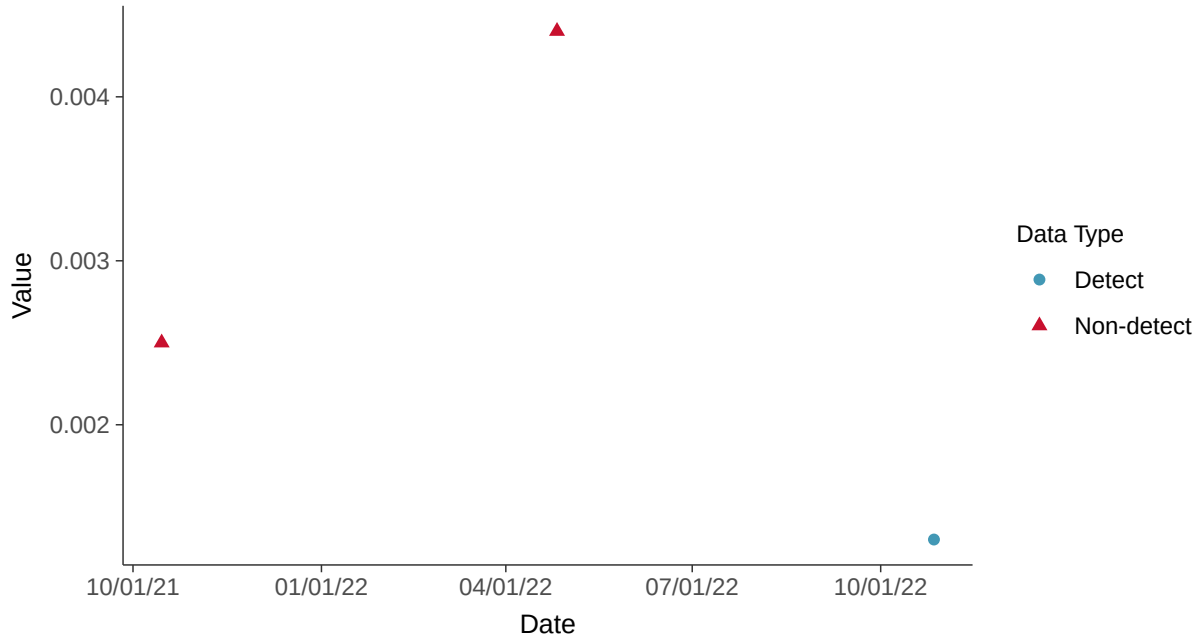


Appendix IV: Chromium, Total, MW-35

ID: 29_2_112

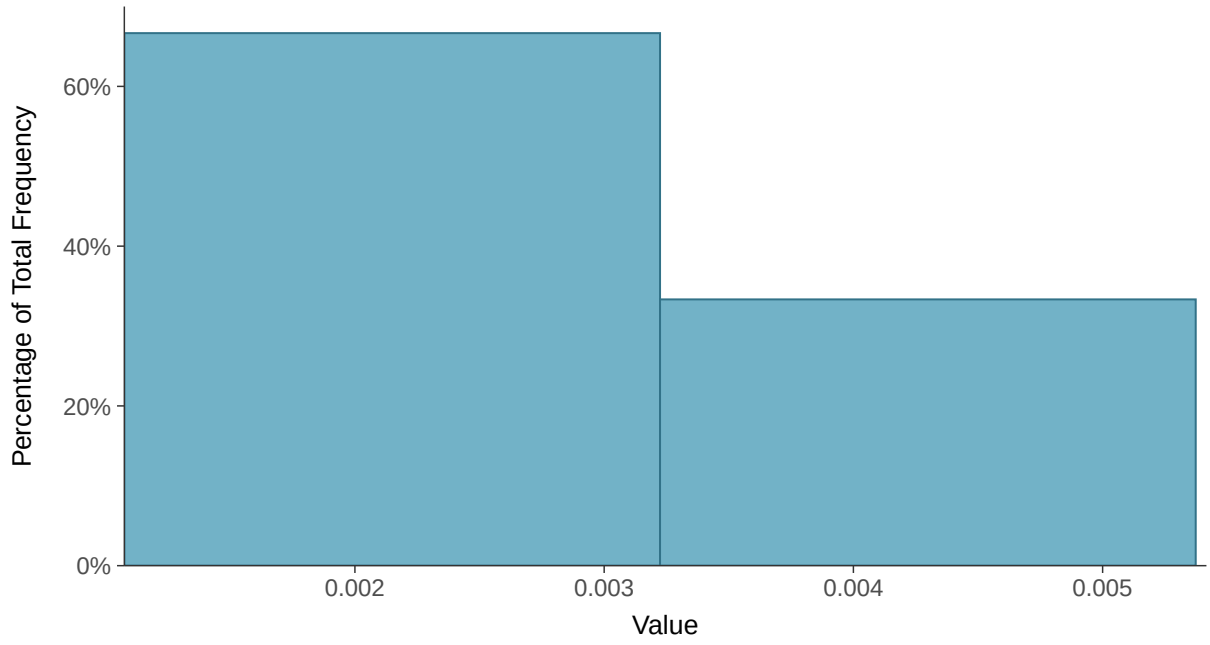
Scatter Plot

Chromium, Total, MW-35 (mg/l)



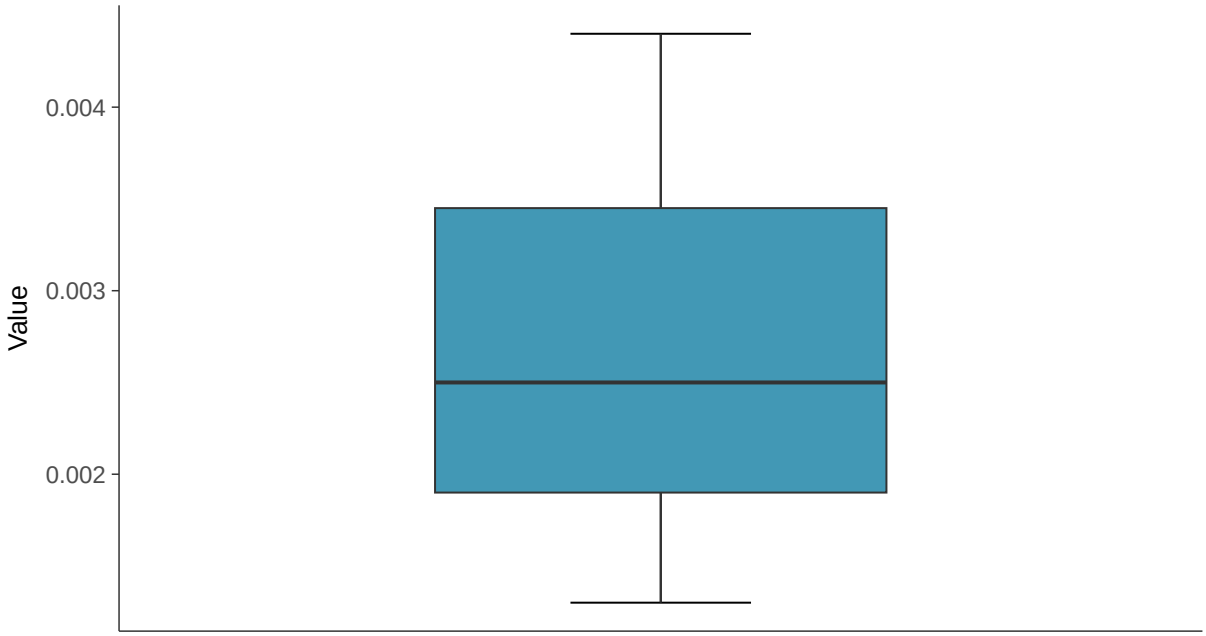
Histogram

Chromium, Total, MW-35 (mg/l)



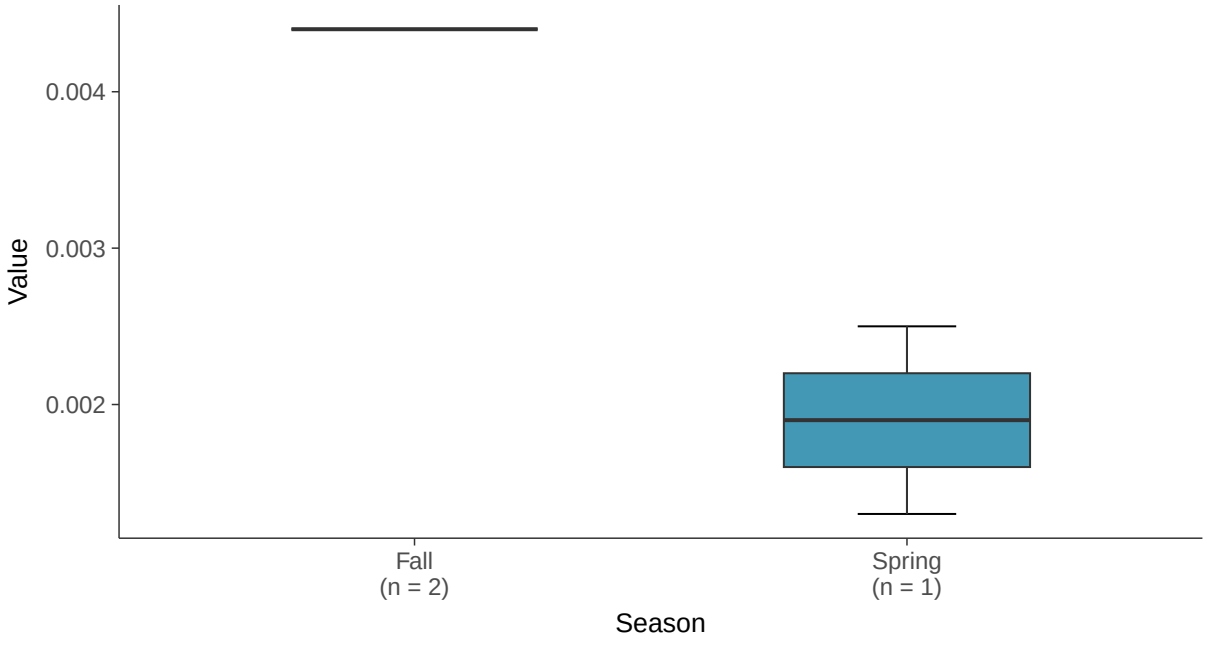
Boxplot

Chromium, Total, MW-35 (mg/l)



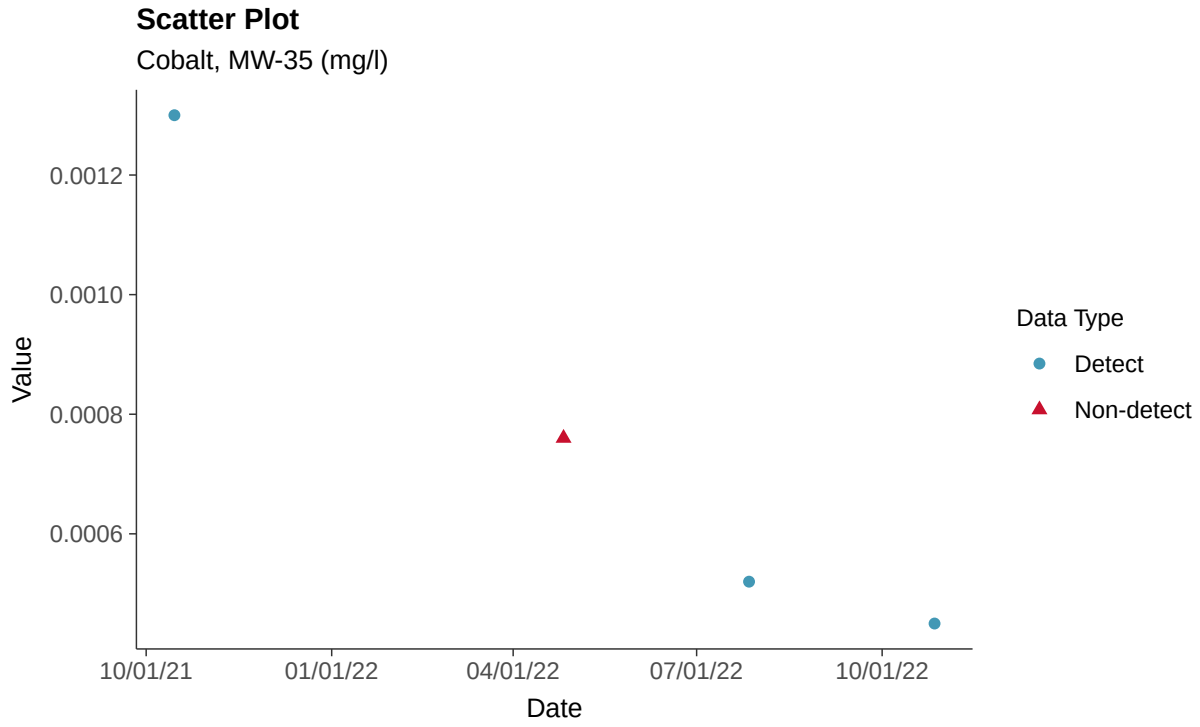
Boxplot by Season

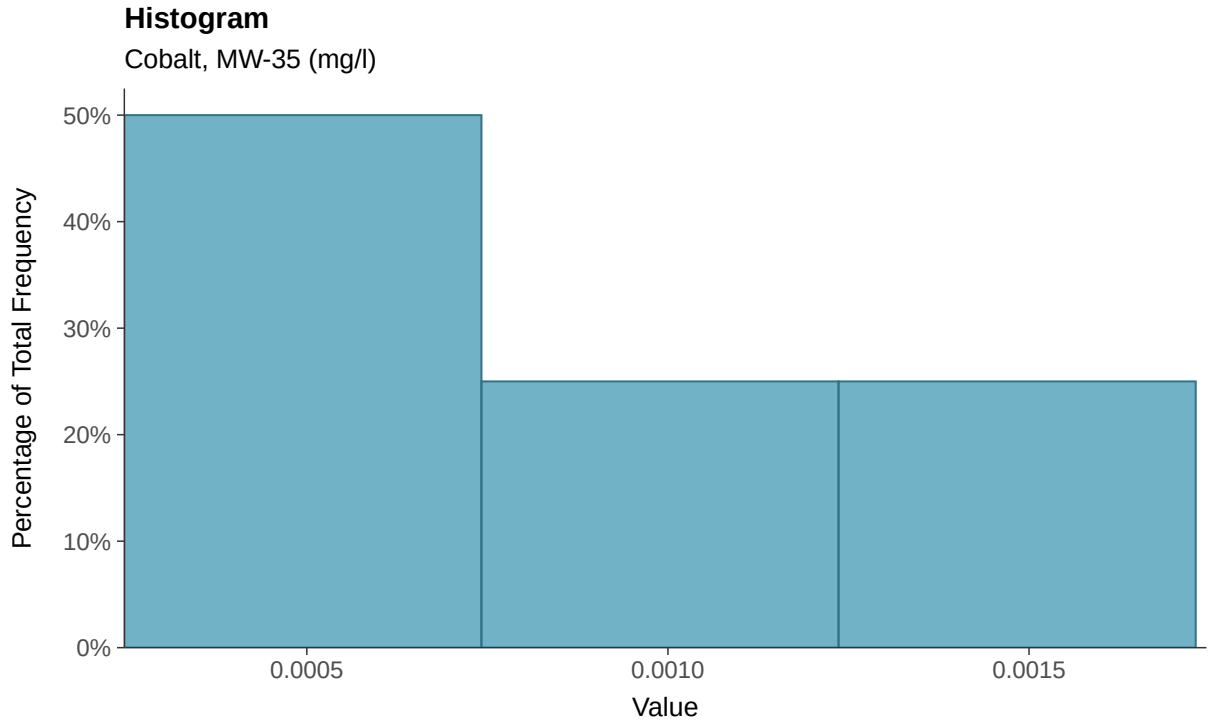
Chromium, Total, MW-35 (mg/l)



Appendix IV: Cobalt, MW-35

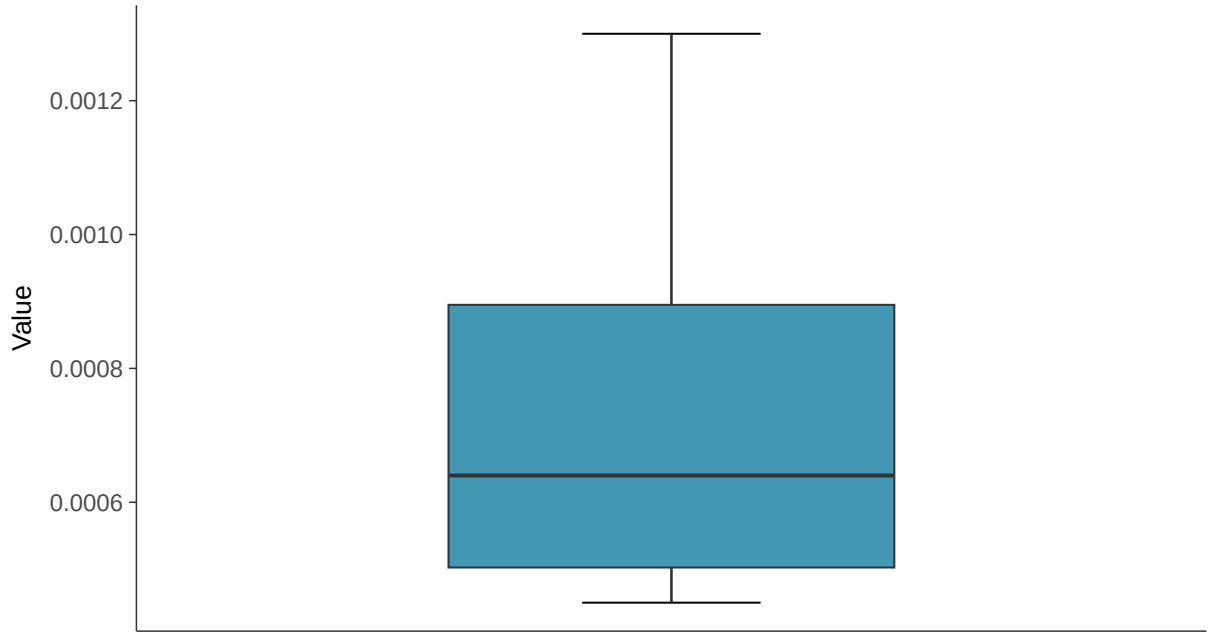
ID: 29_2_113





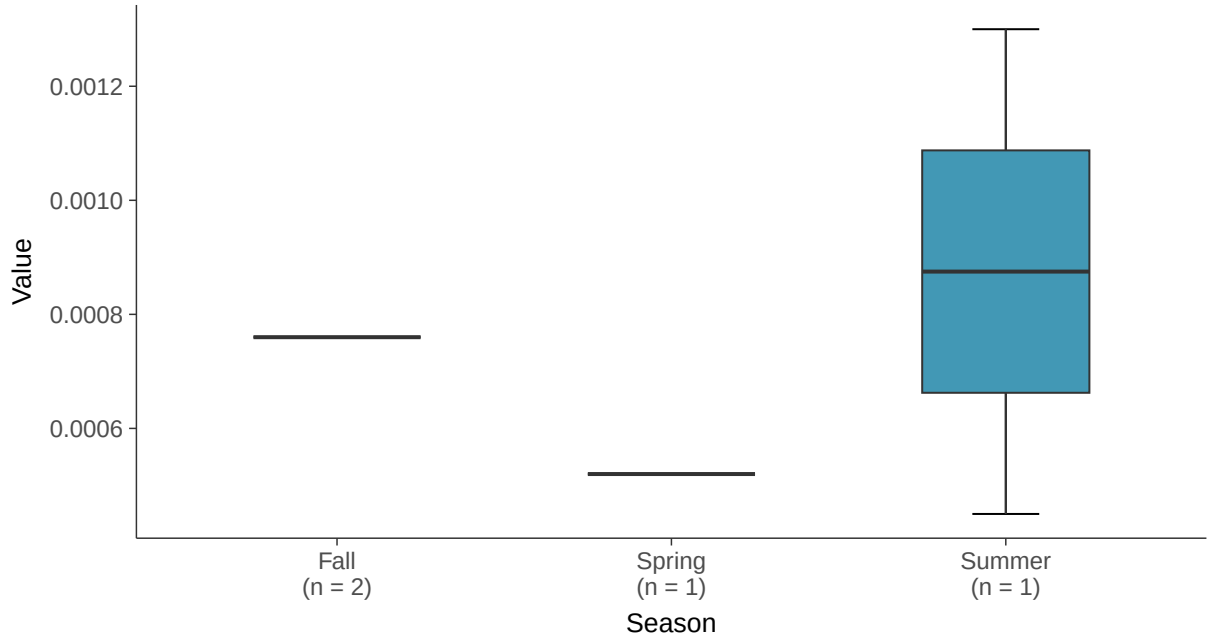
Boxplot

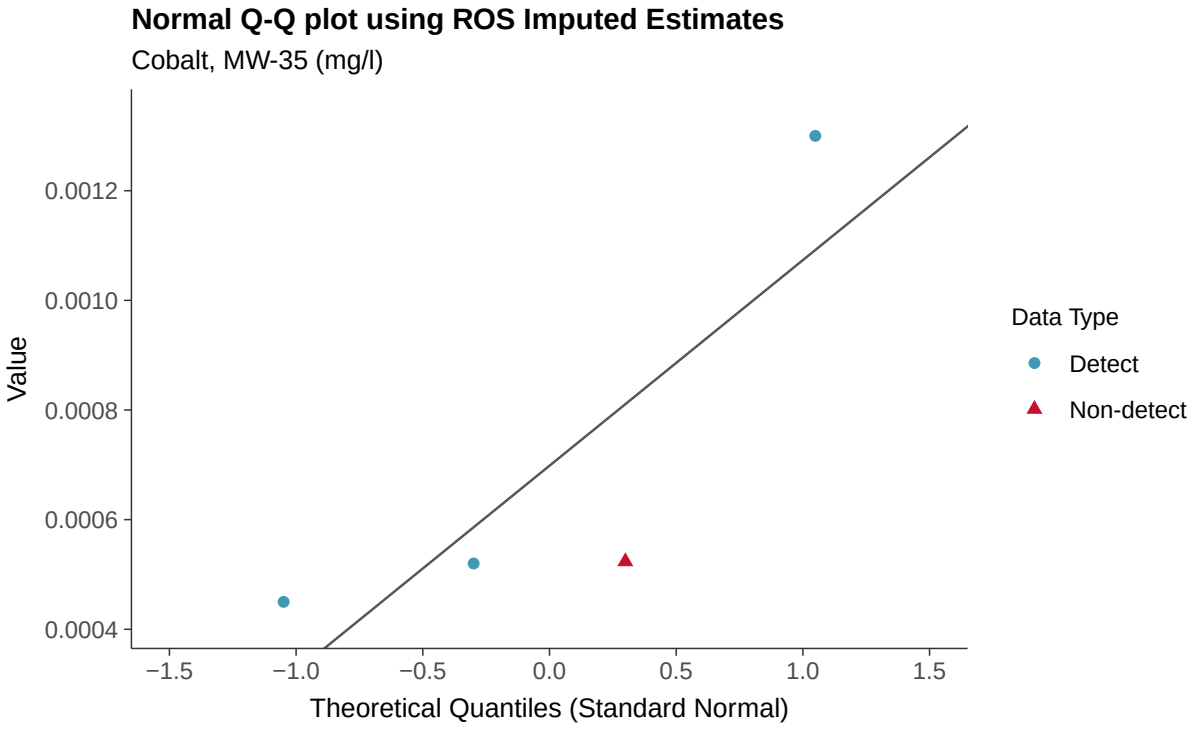
Cobalt, MW-35 (mg/l)



Boxplot by Season

Cobalt, MW-35 (mg/l)



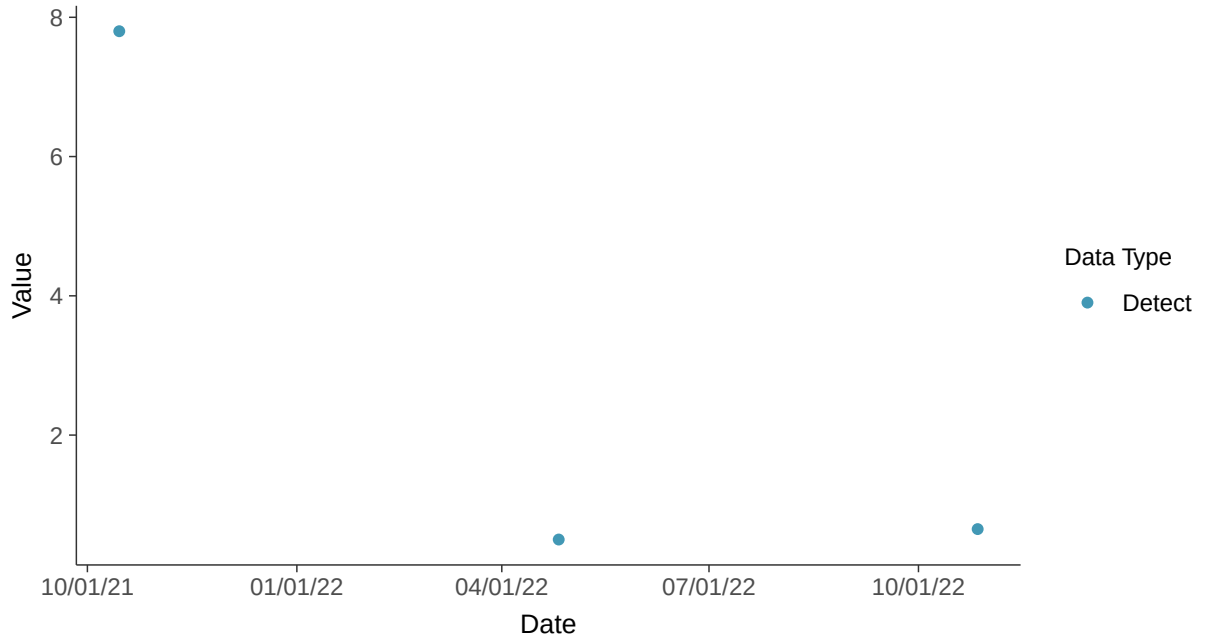

Normal Q-Q plot using ROS Imputed Estimates
Cobalt, MW-35 (mg/l)
Value
0.0012
0.0010
0.0008
0.0006
0.0004
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Fluoride (App IV), MW-35

ID: 29_2_116

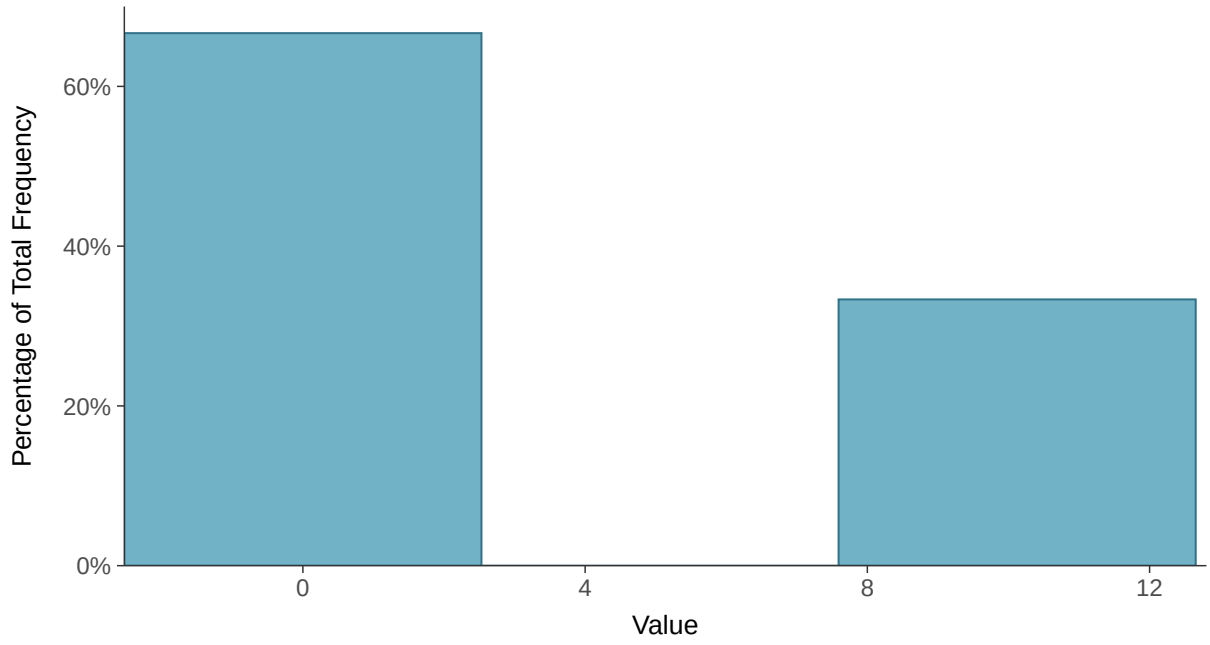
Scatter Plot

Fluoride (App IV), MW-35 (mg/l)



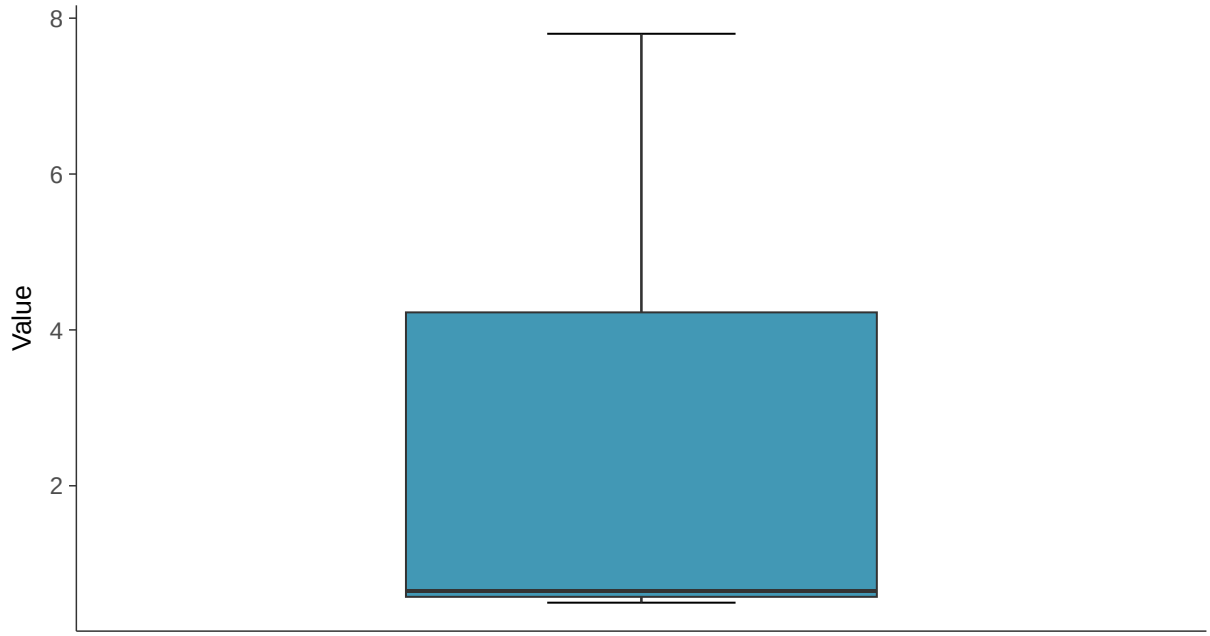
Histogram

Fluoride (App IV), MW-35 (mg/l)



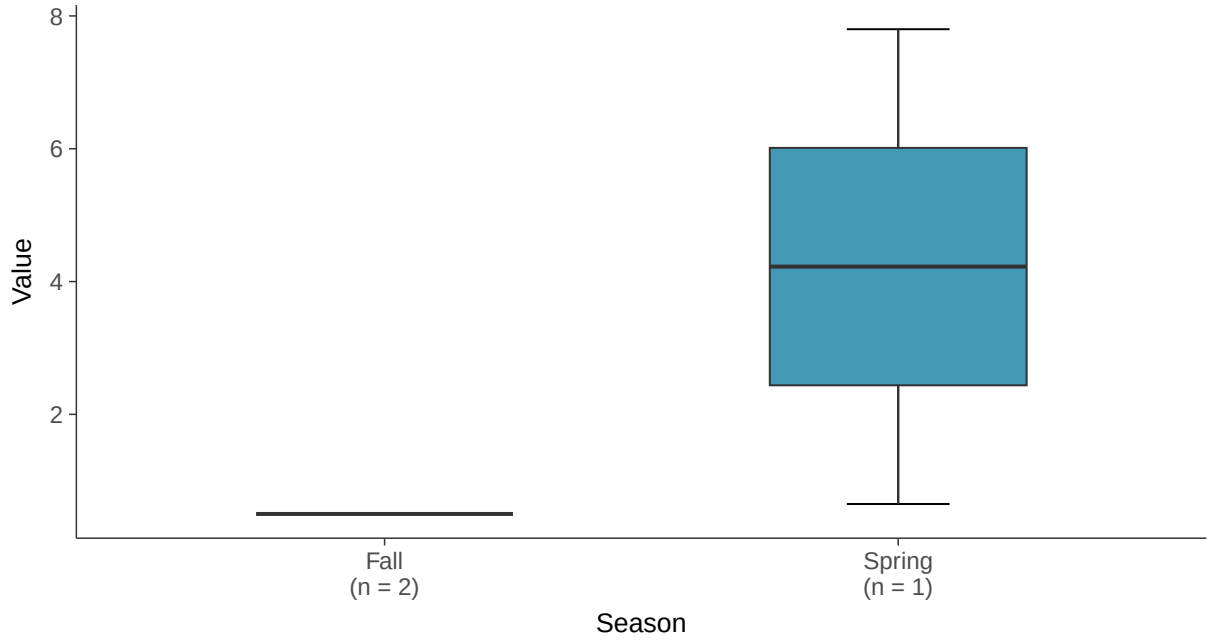
Boxplot

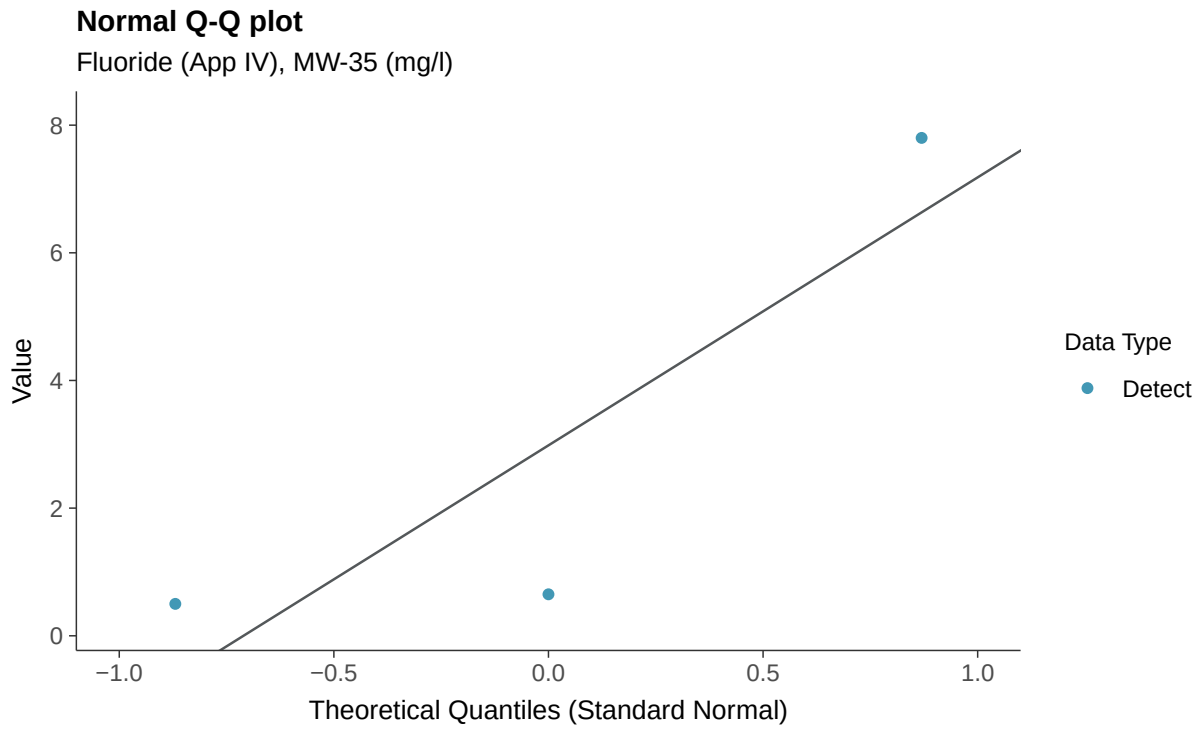
Fluoride (App IV), MW-35 (mg/l)



Boxplot by Season

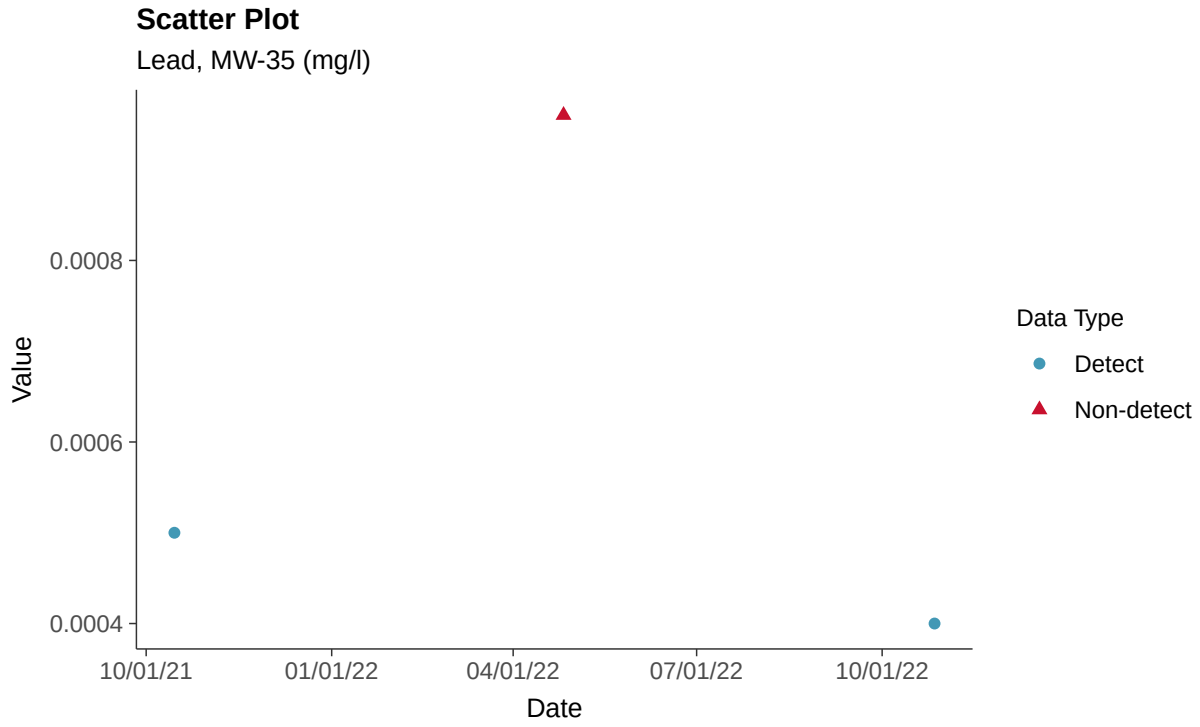
Fluoride (App IV), MW-35 (mg/l)

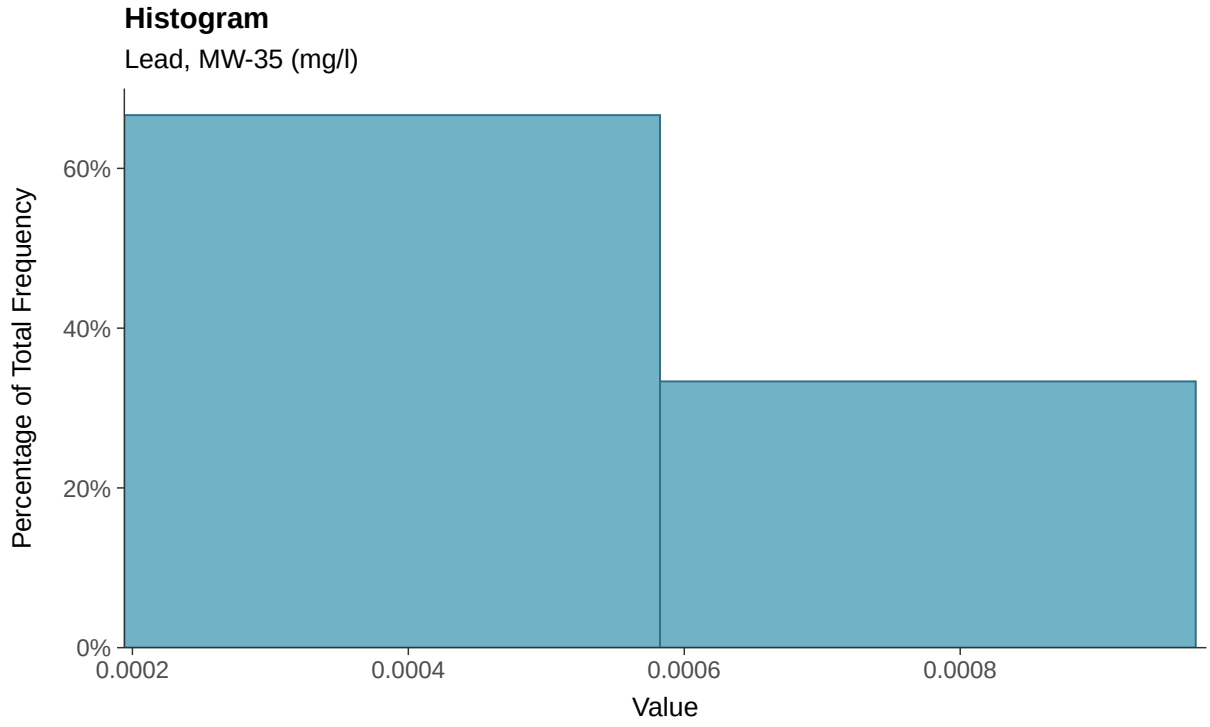



Normal Q-Q plot
Fluoride (App IV), MW-35 (mg/l)
Value
8
6
4
2
0
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Lead, MW-35

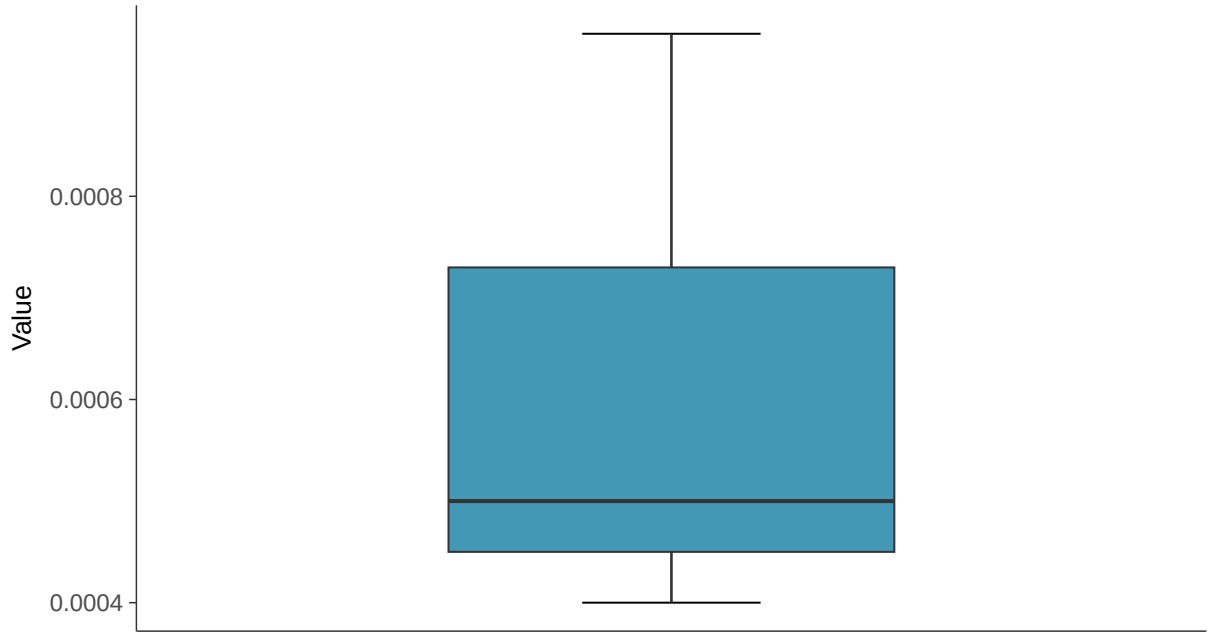
ID: 29_2_117





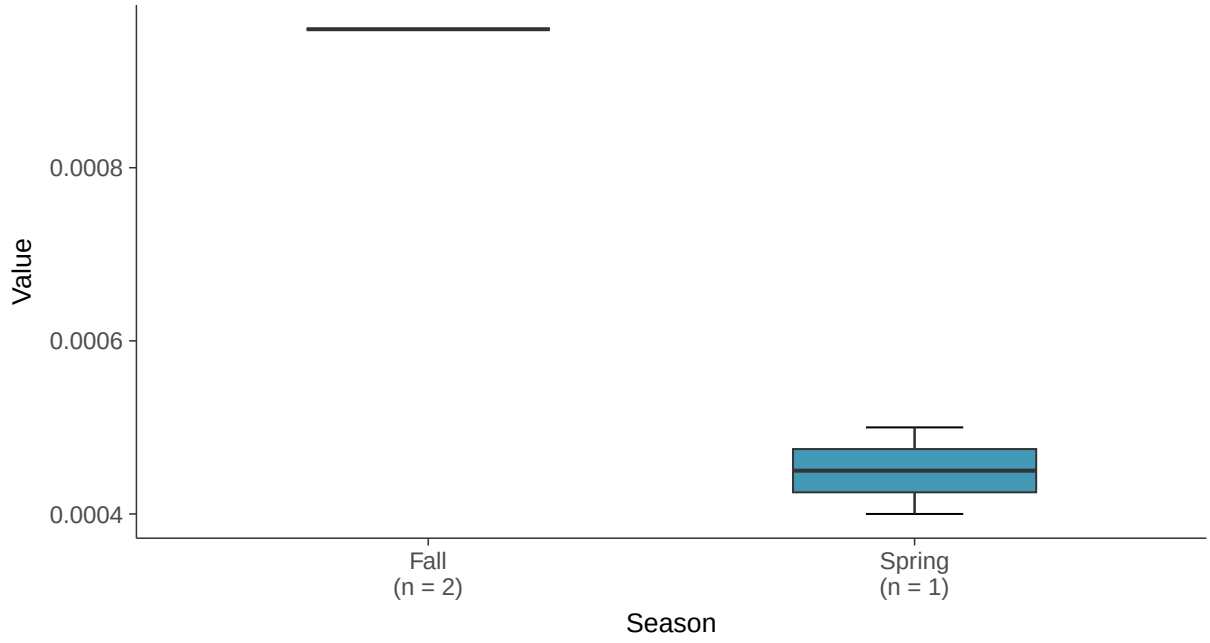
Boxplot

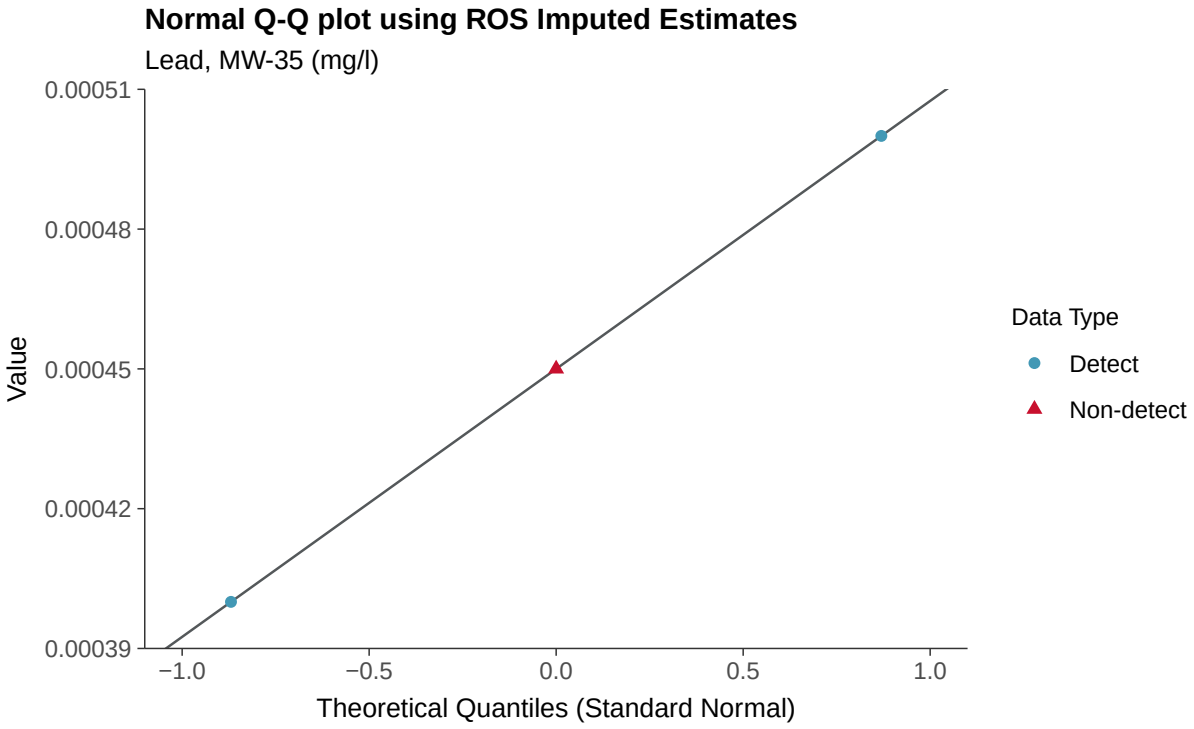
Lead, MW-35 (mg/l)



Boxplot by Season

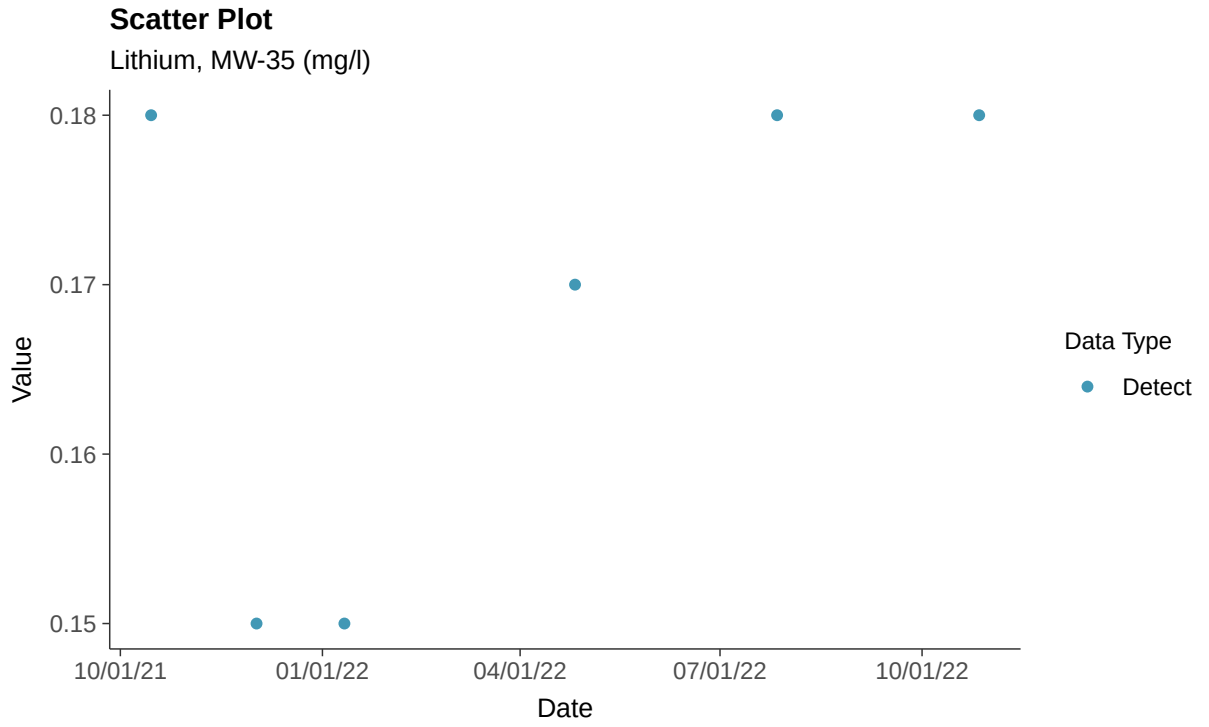
Lead, MW-35 (mg/l)

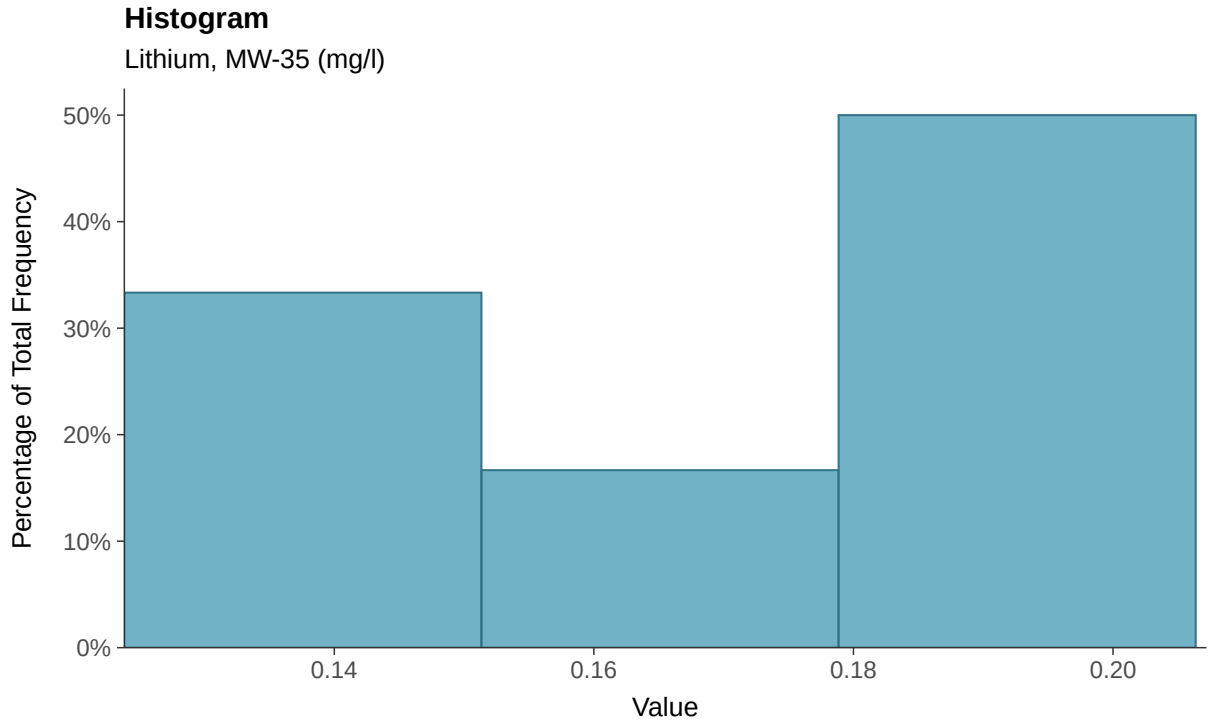



Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-35 (mg/l)
Value
0.00051
0.00048
0.00045
0.00042
0.00039
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-35

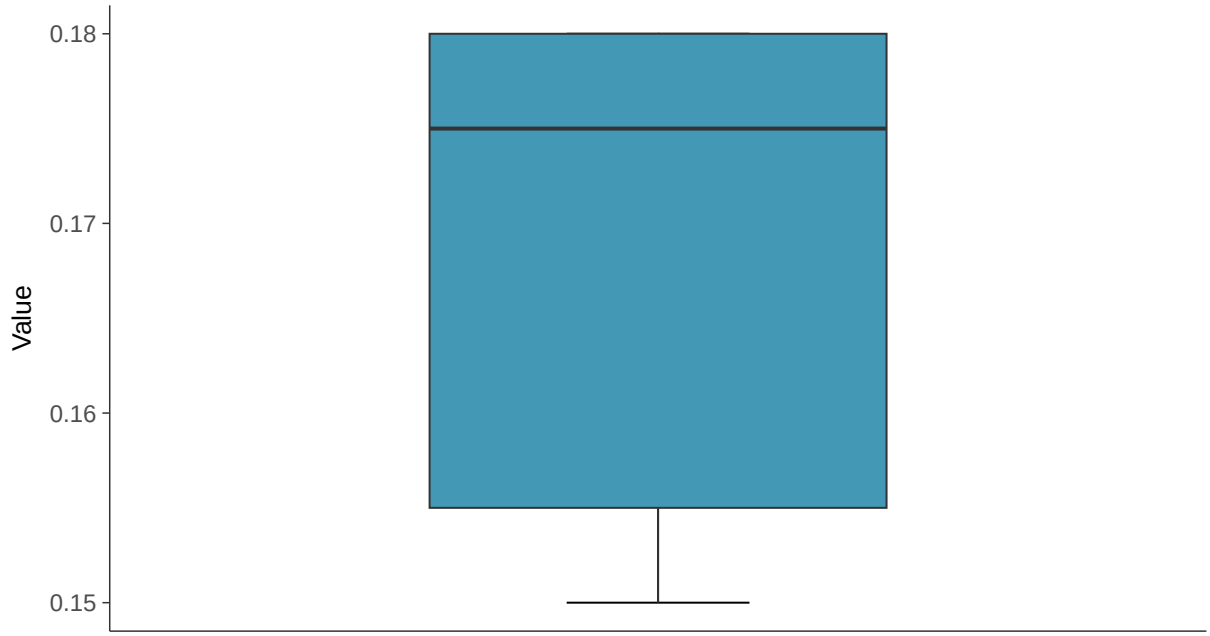
ID: 29_2_118





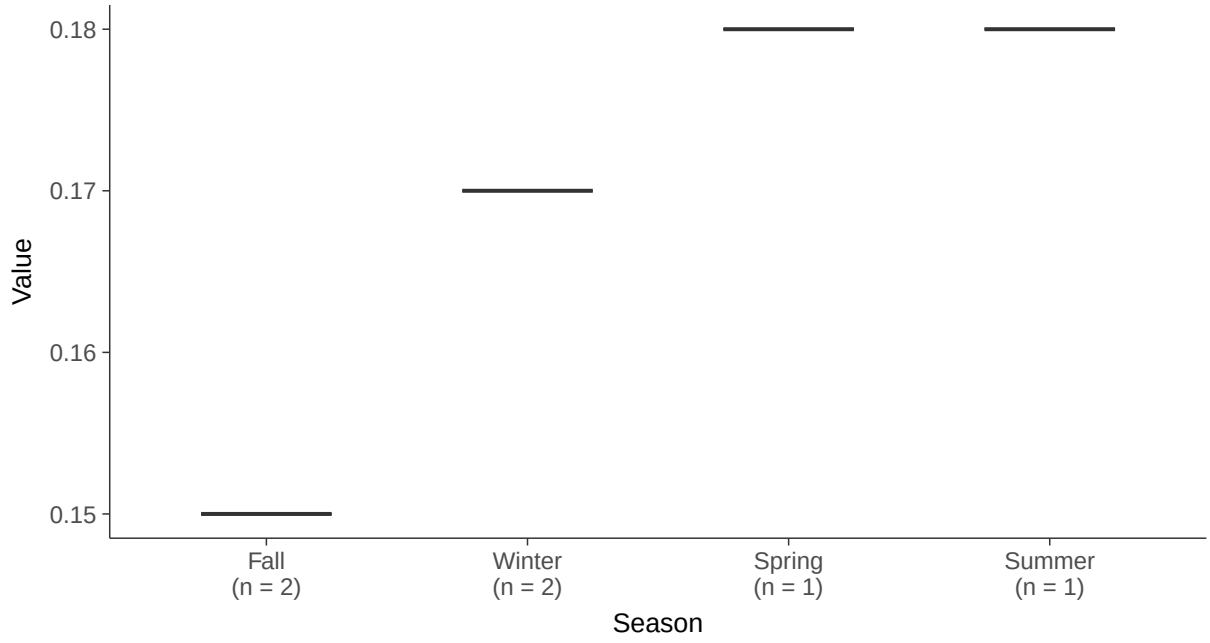
Boxplot

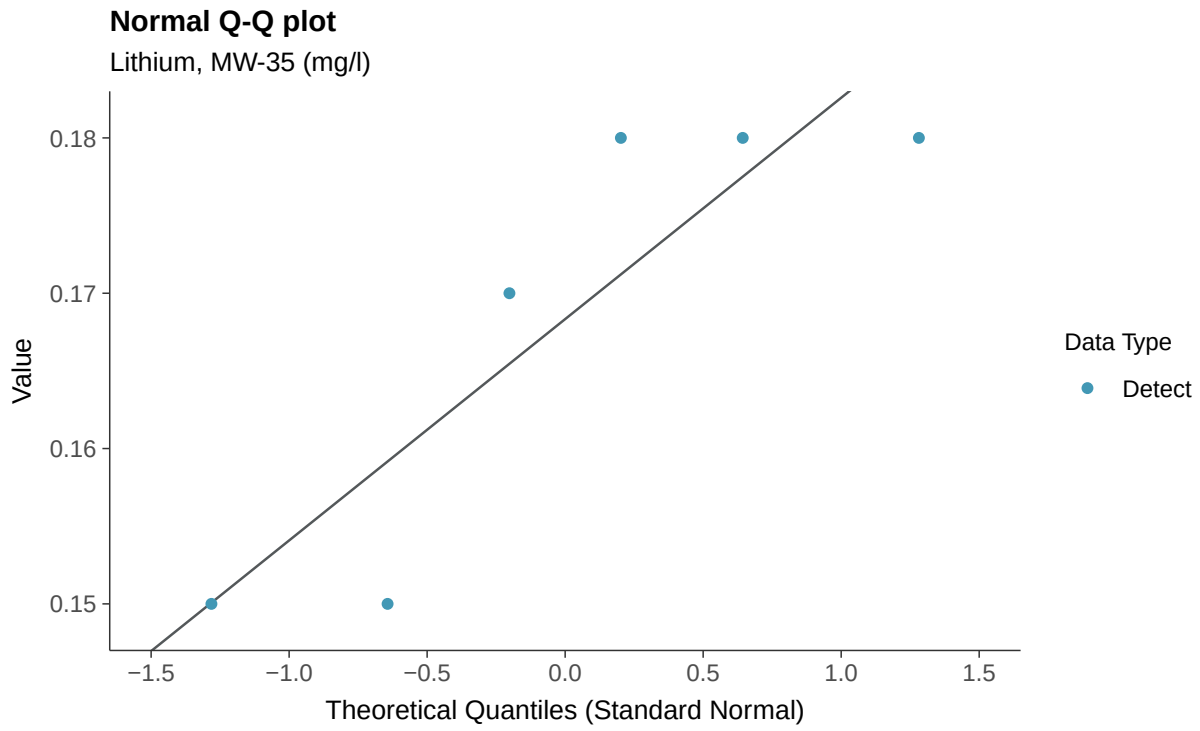
Lithium, MW-35 (mg/l)



Boxplot by Season

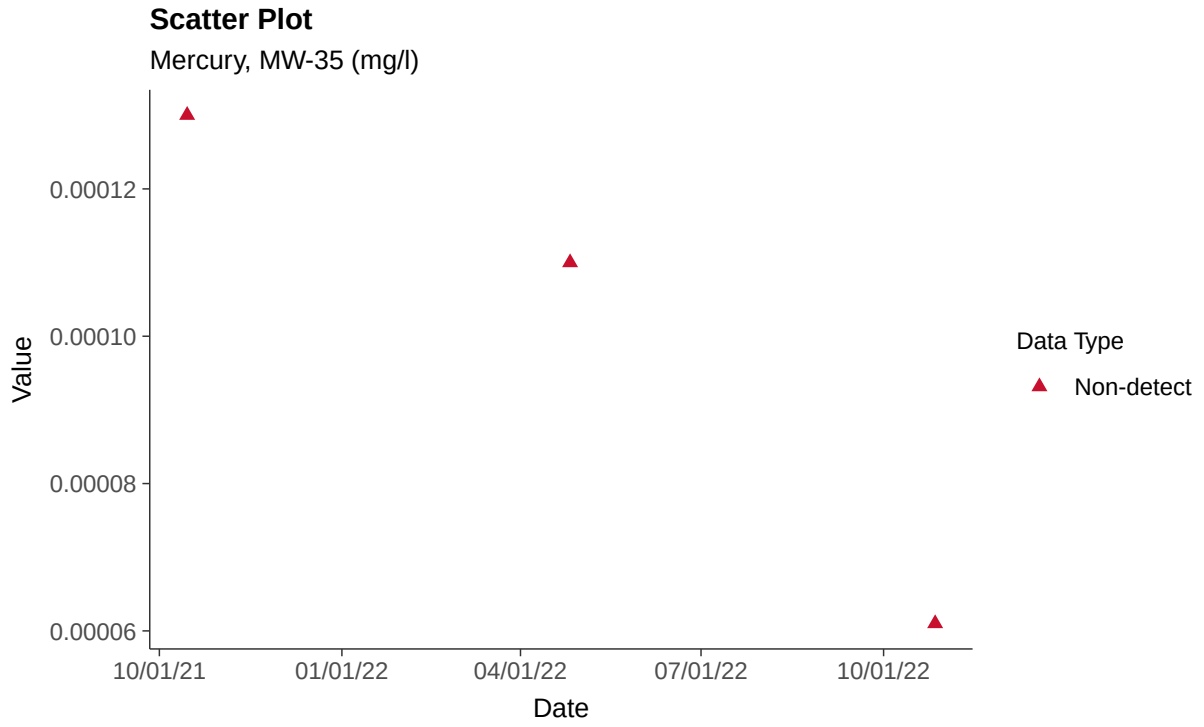
Lithium, MW-35 (mg/l)

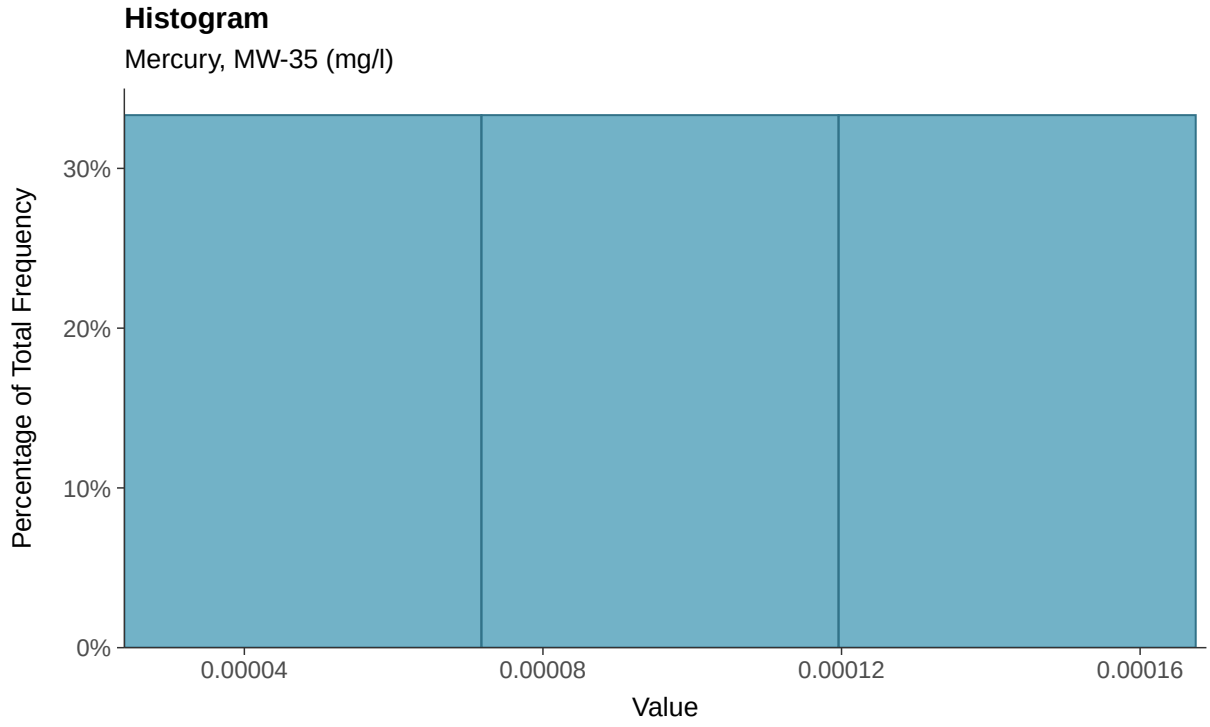



Normal Q-Q plot
Lithium, MW-35 (mg/l)
Value
0.18
0.17
0.16
0.15
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Mercury, MW-35

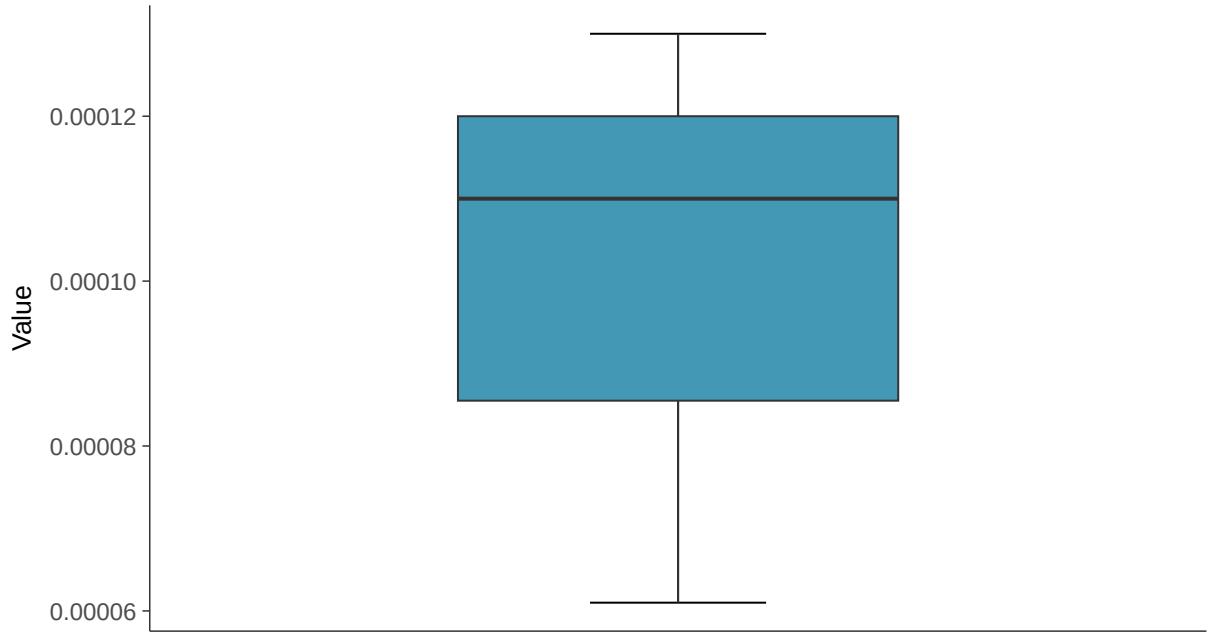
ID: 29_2_120





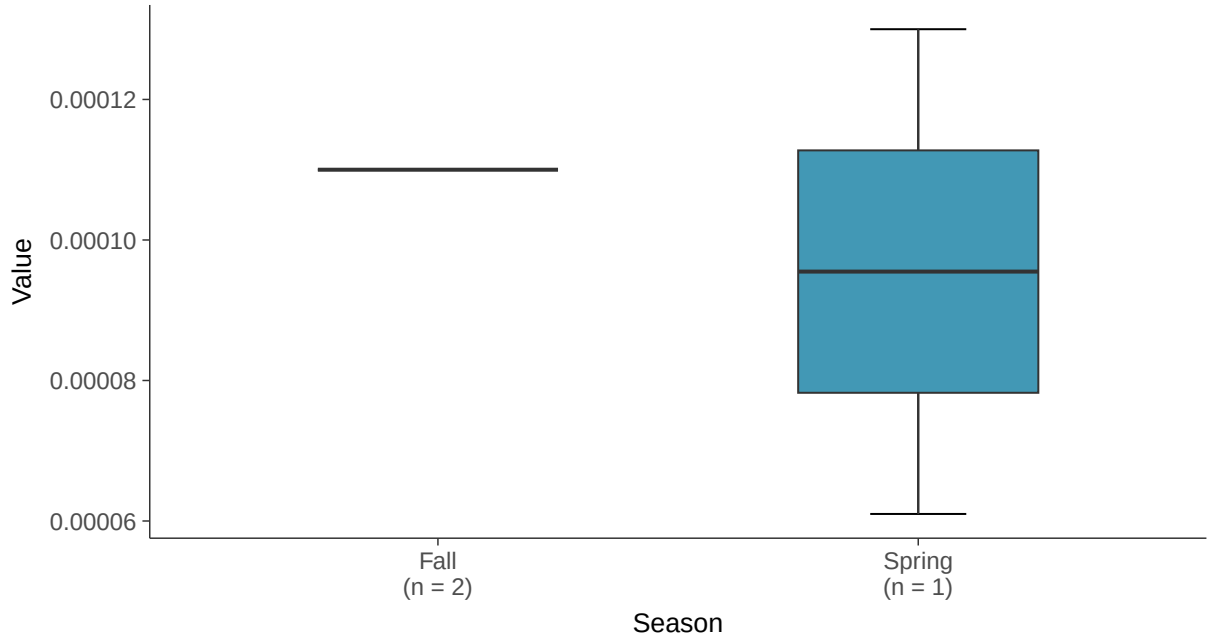
Boxplot

Mercury, MW-35 (mg/l)



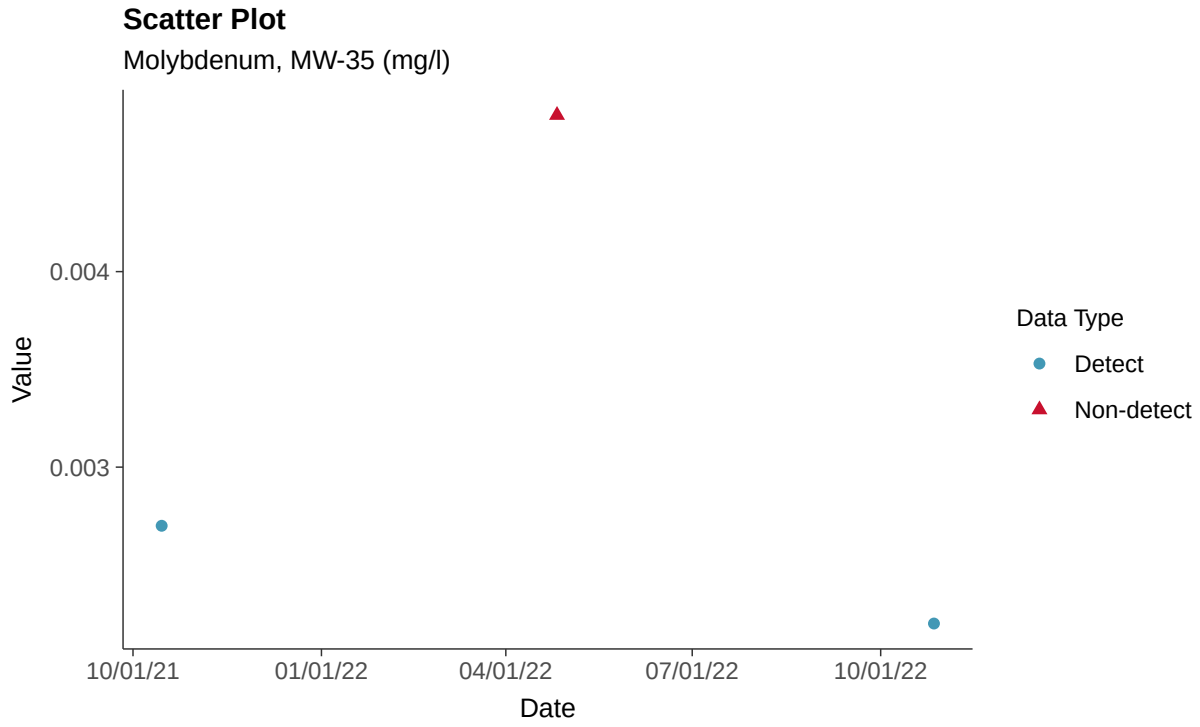
Boxplot by Season

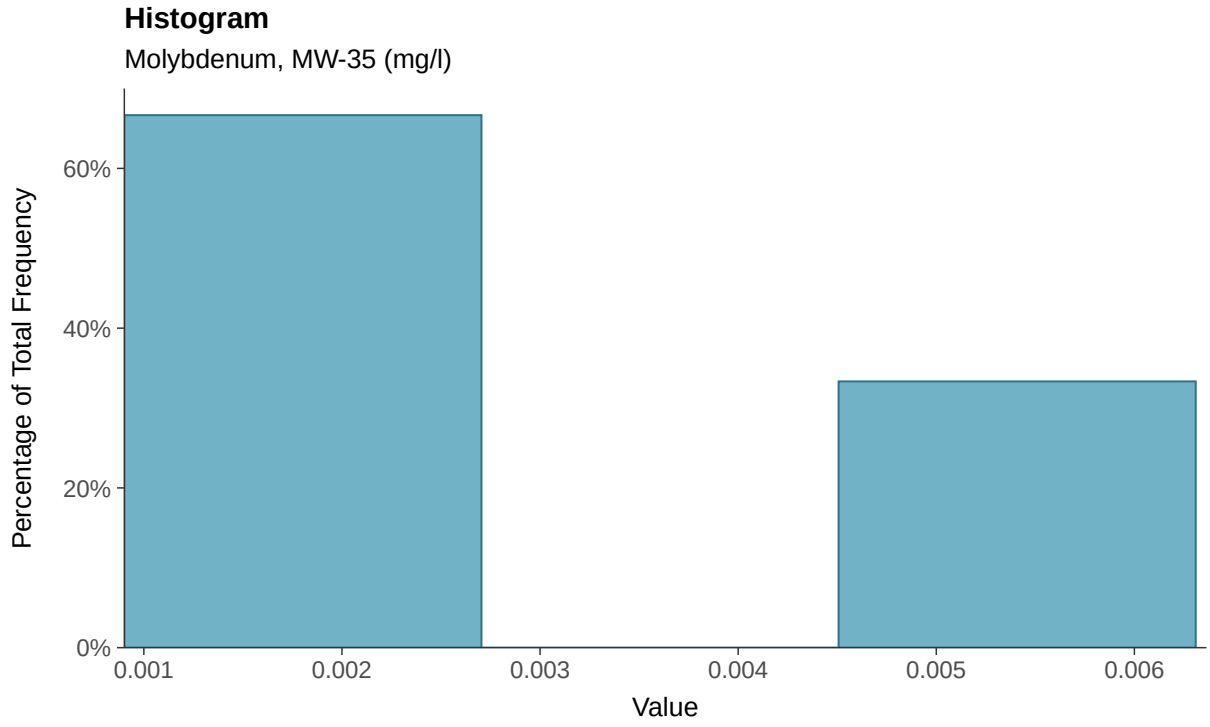
Mercury, MW-35 (mg/l)



Appendix IV: Molybdenum, MW-35

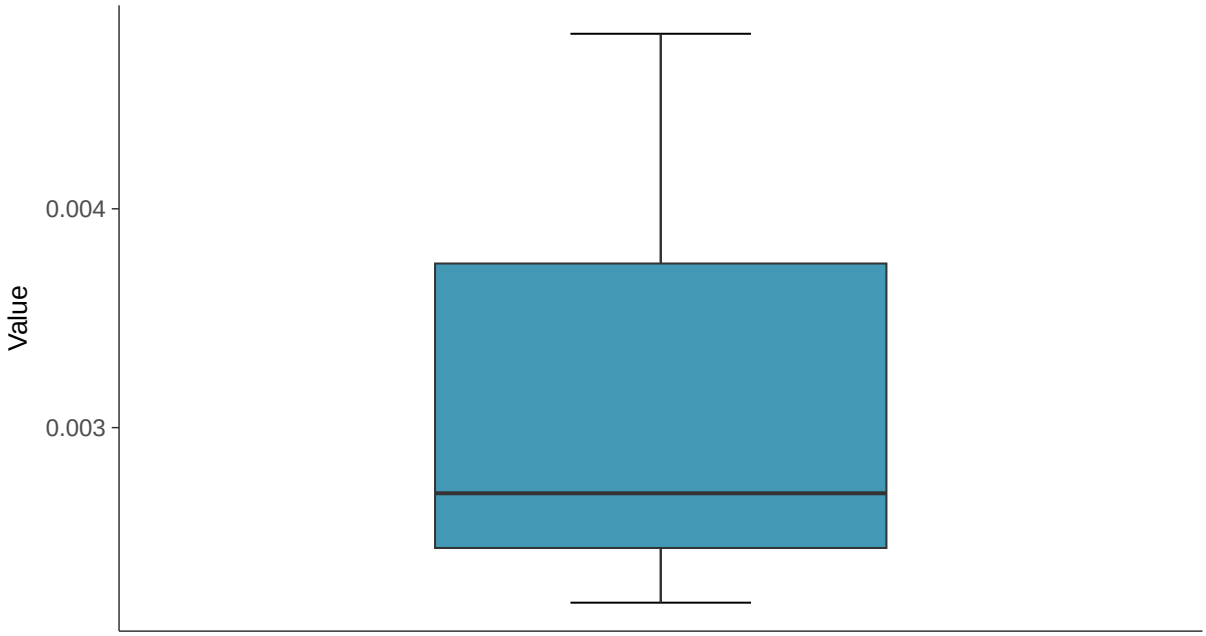
ID: 29_2_121





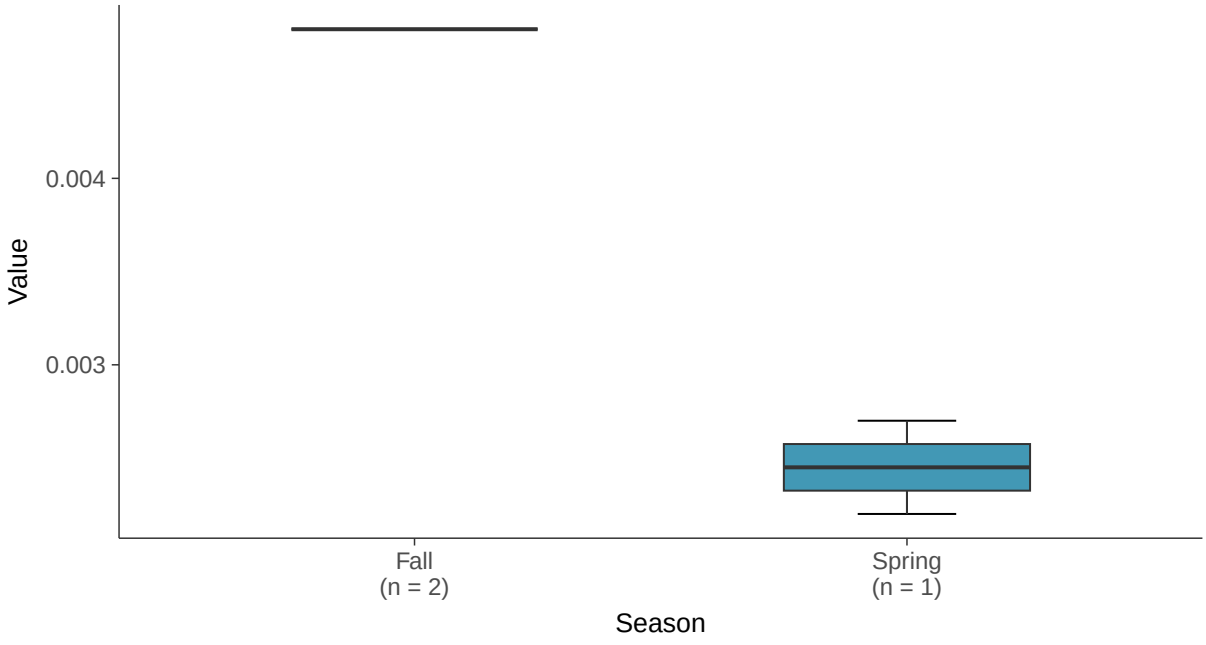
Boxplot

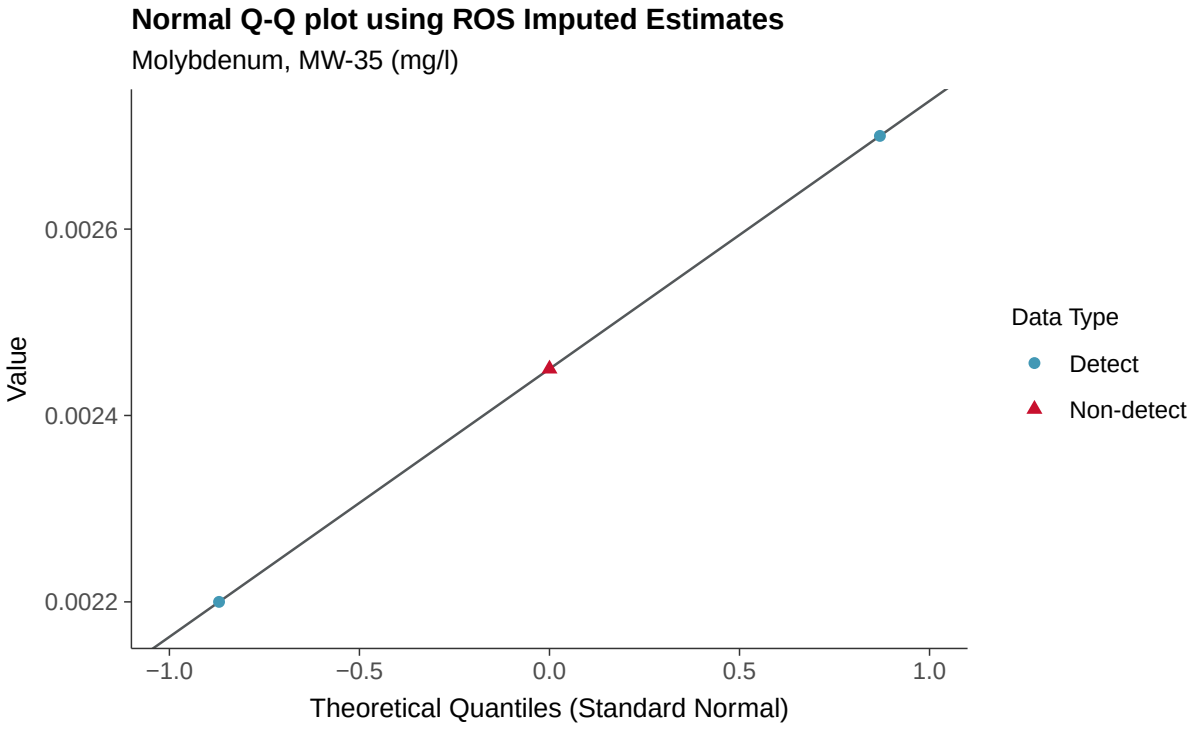
Molybdenum, MW-35 (mg/l)



Boxplot by Season

Molybdenum, MW-35 (mg/l)



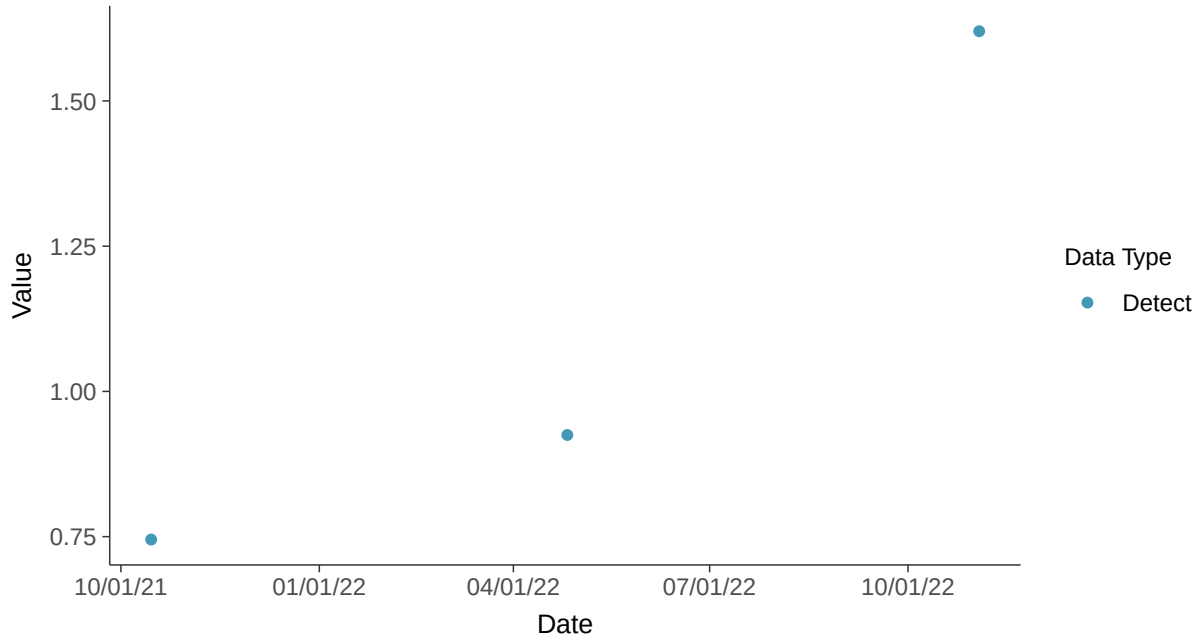

Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-35 (mg/l)
Value
0.0026
0.0024
0.0022
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Radium-226+228, MW-35

ID: 29_2_127

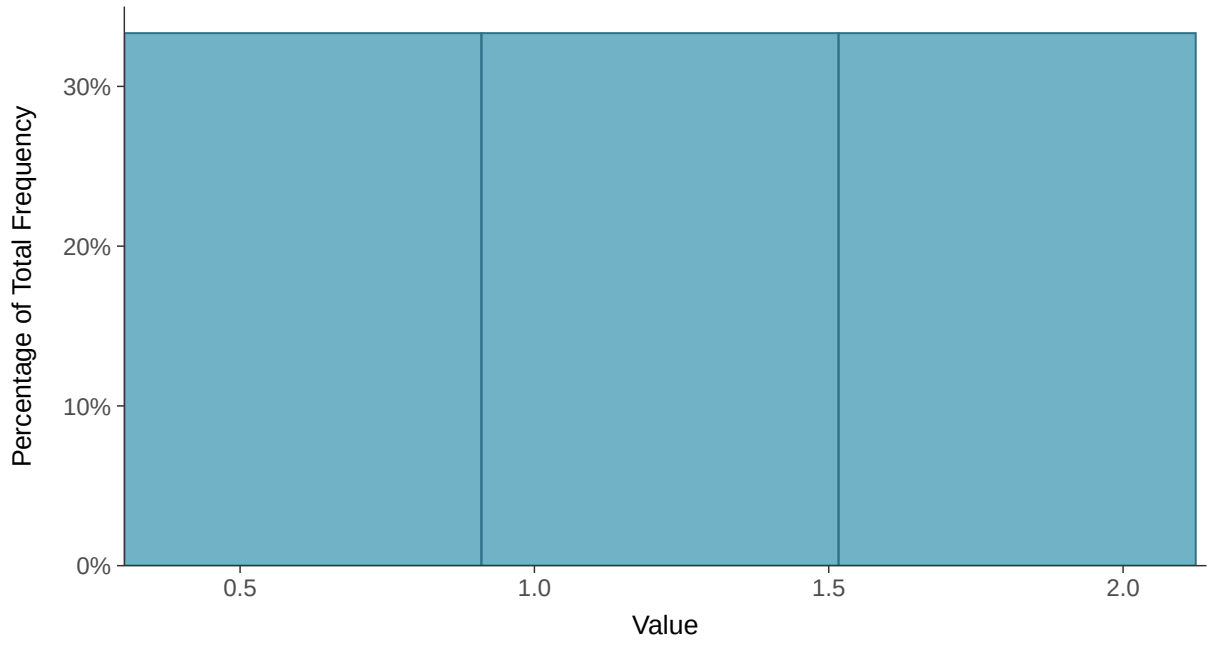
Scatter Plot

Radium-226+228, MW-35 (pci/l)



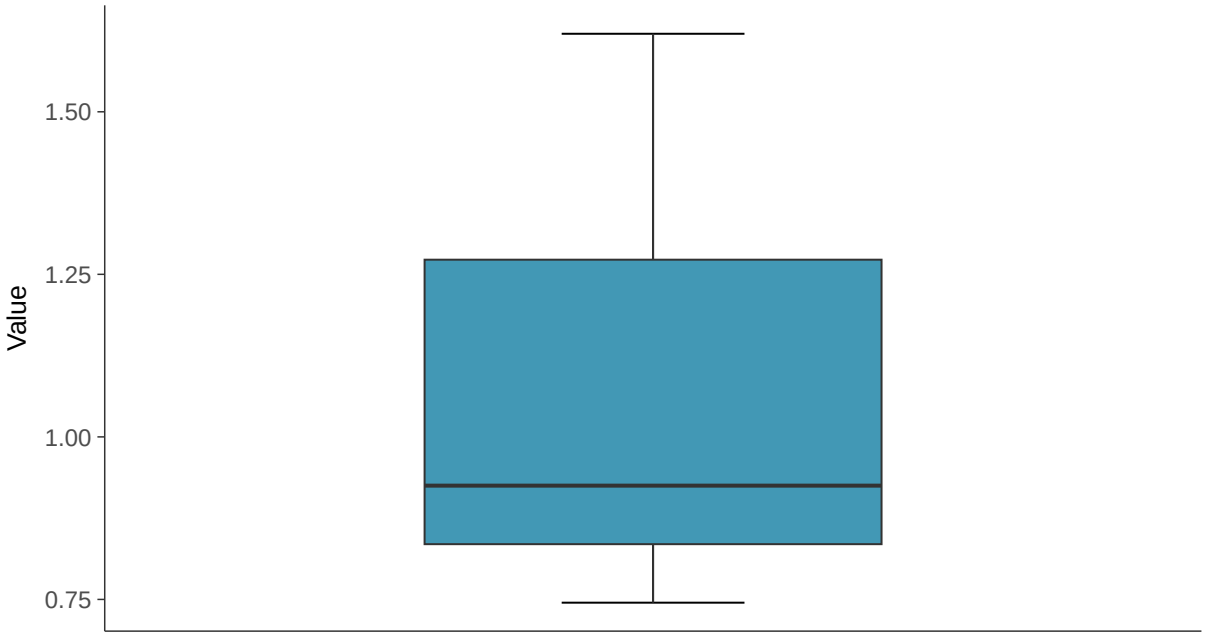
Histogram

Radium-226+228, MW-35 (pci/l)



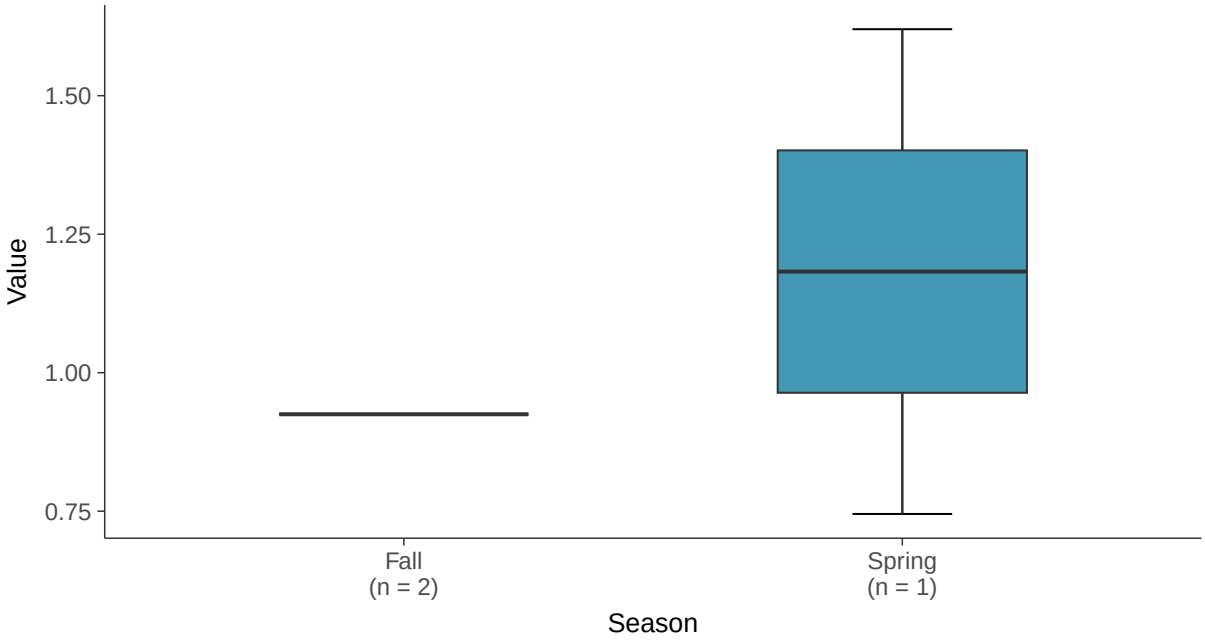
Boxplot

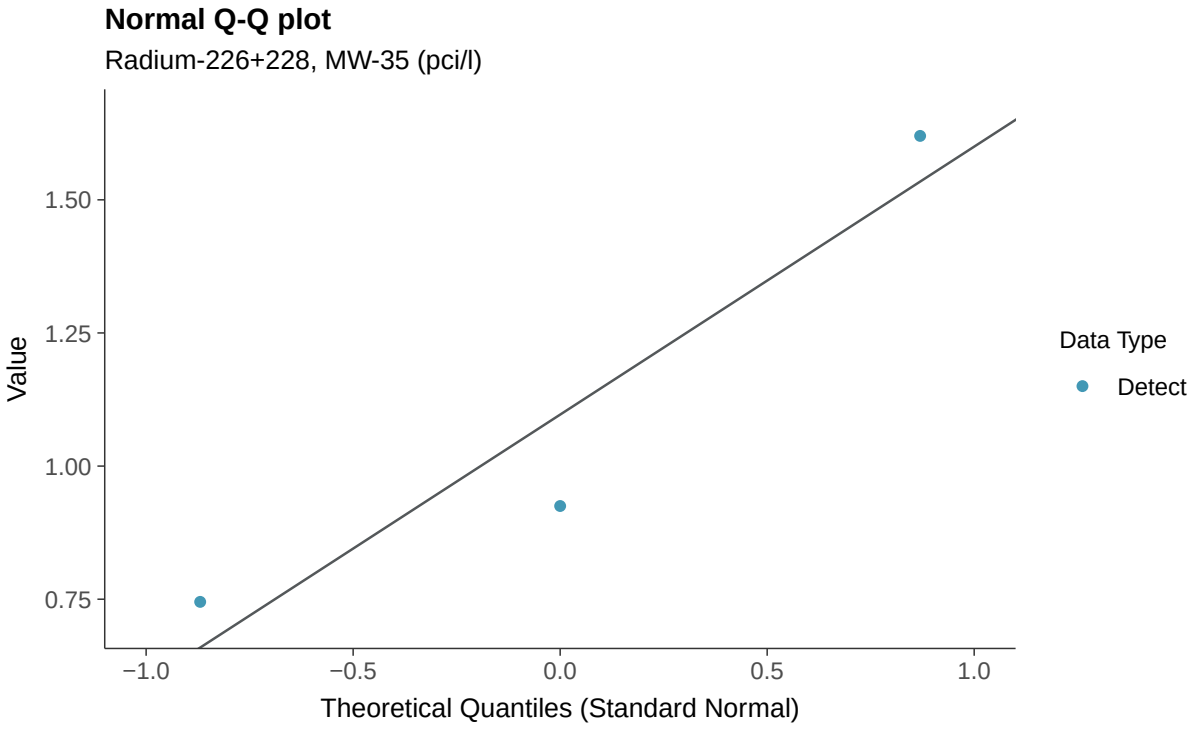
Radium-226+228, MW-35 (pci/l)



Boxplot by Season

Radium-226+228, MW-35 (pci/l)



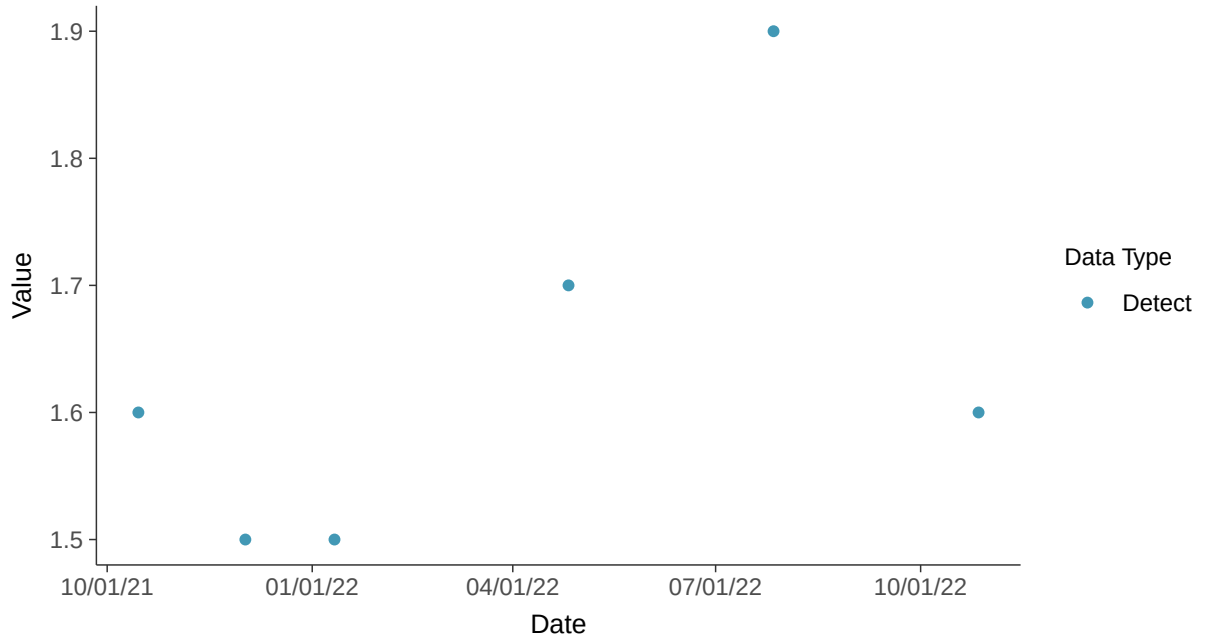

Normal Q-Q plot
Radium-226+228, MW-35 (pci/l)
Value
1.50
1.25
1.00
0.75
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Selenium, MW-35

ID: 29_2_129

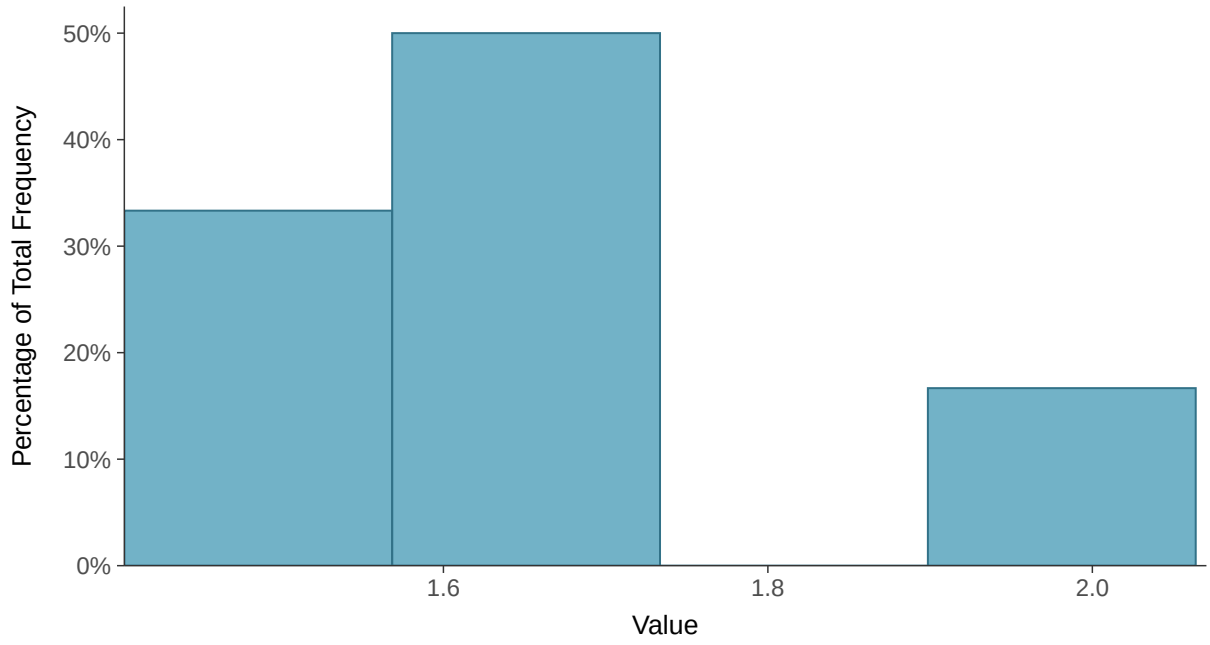
Scatter Plot

Selenium, MW-35 (mg/l)



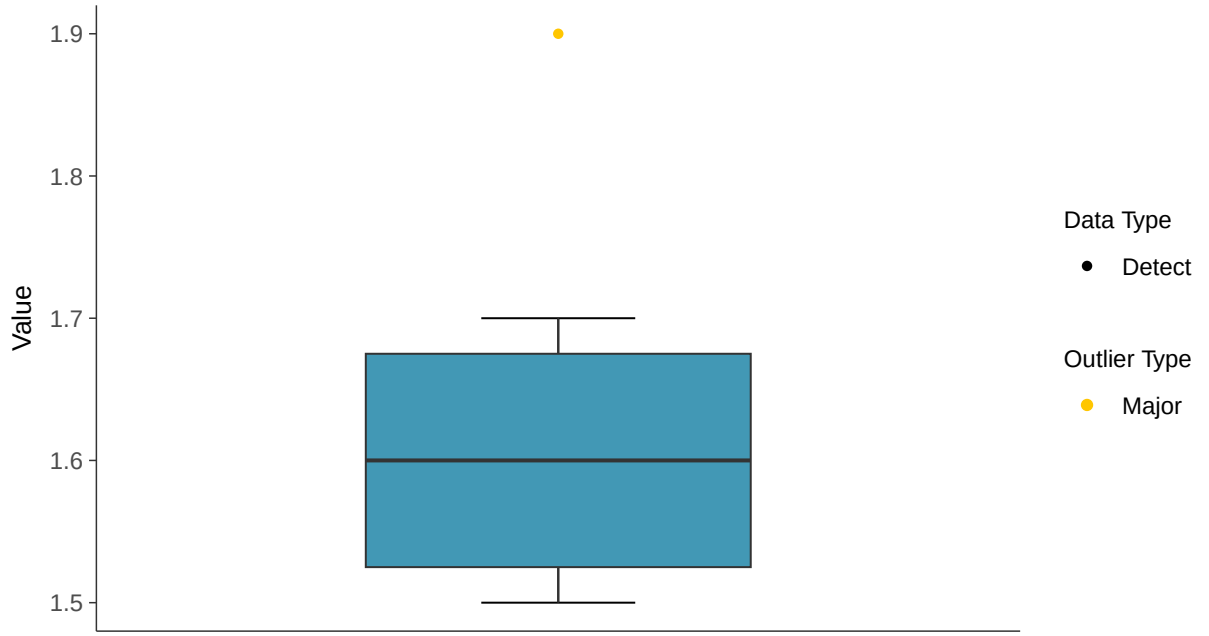
Histogram

Selenium, MW-35 (mg/l)



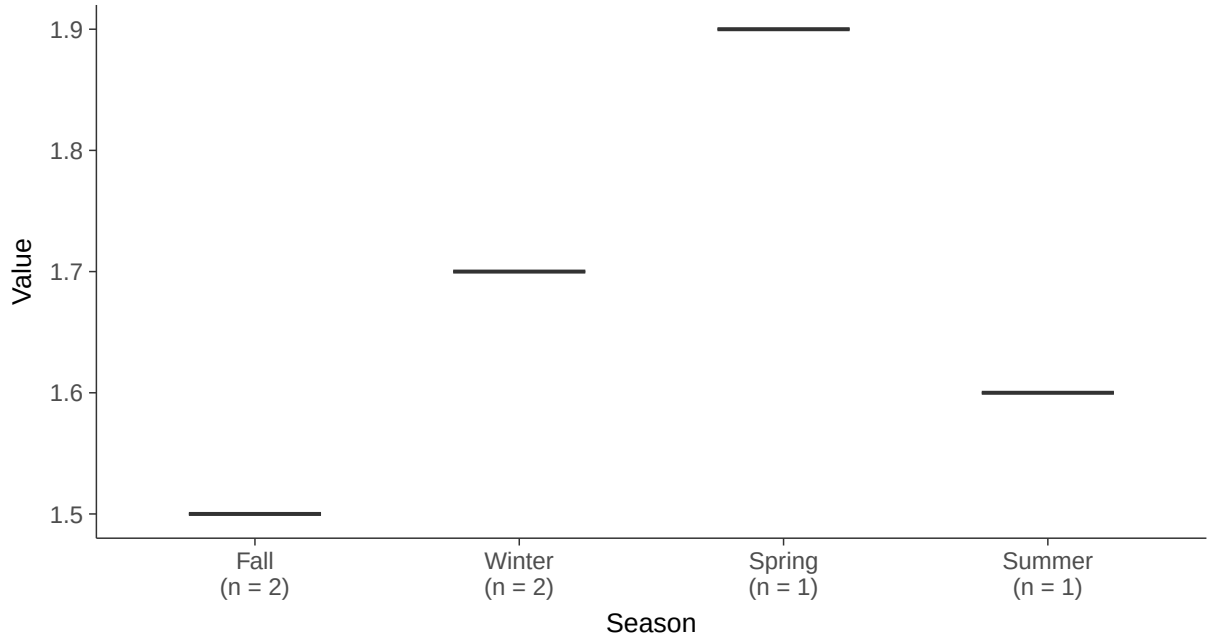
Boxplot

Selenium, MW-35 (mg/l)



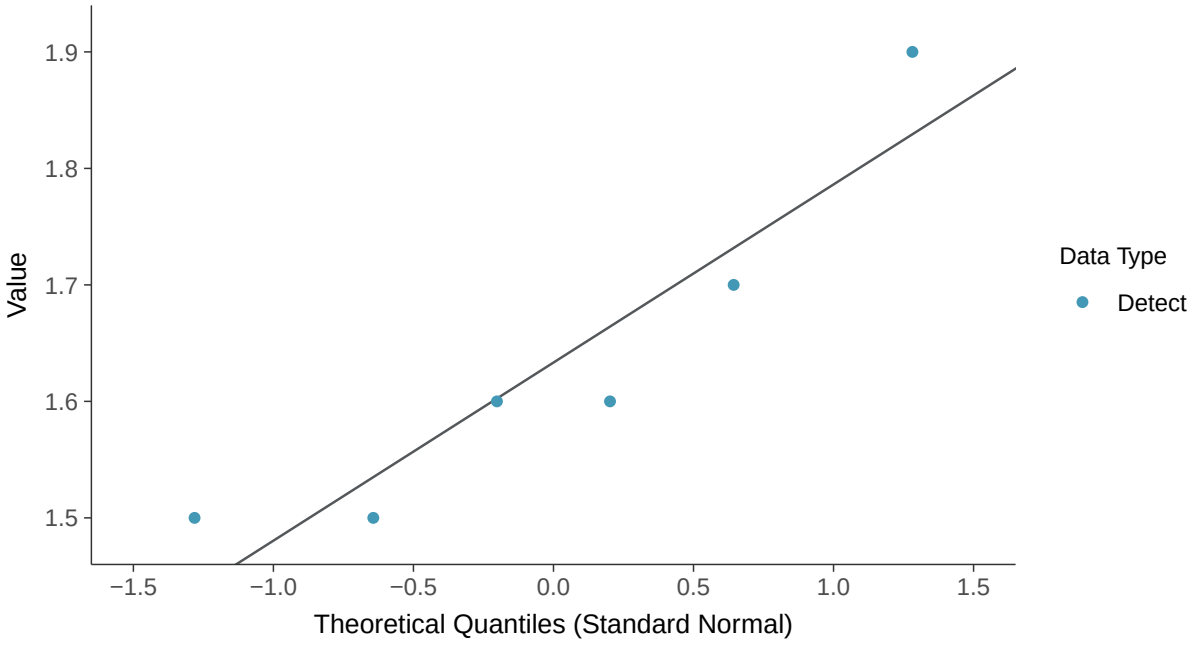
Boxplot by Season

Selenium, MW-35 (mg/l)



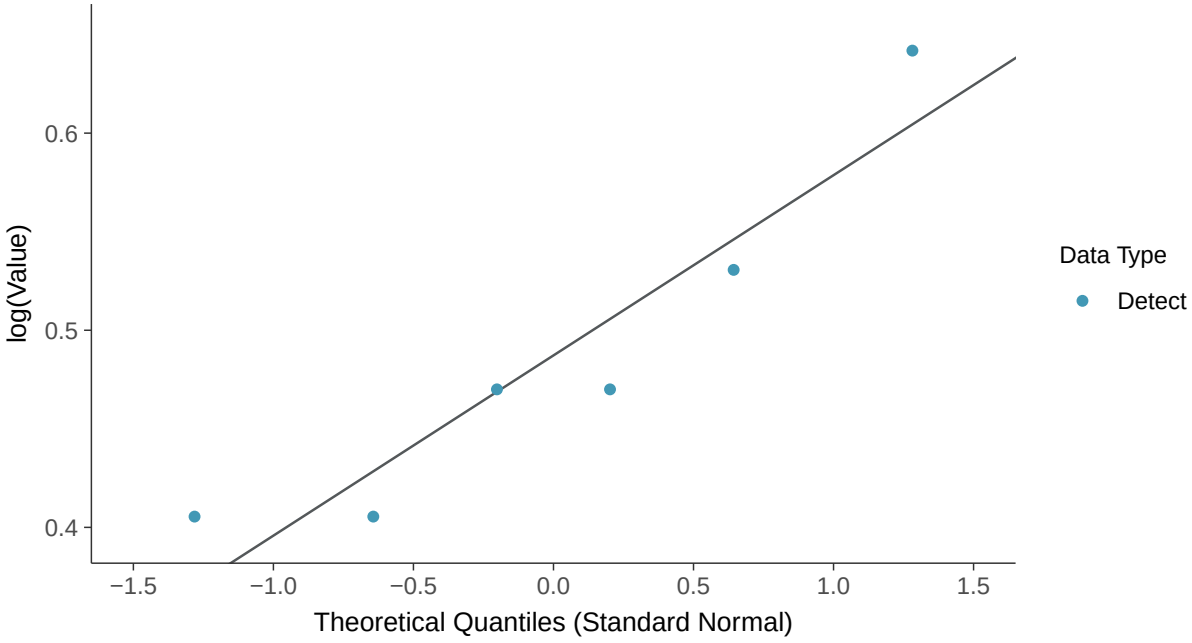
Normal Q-Q plot

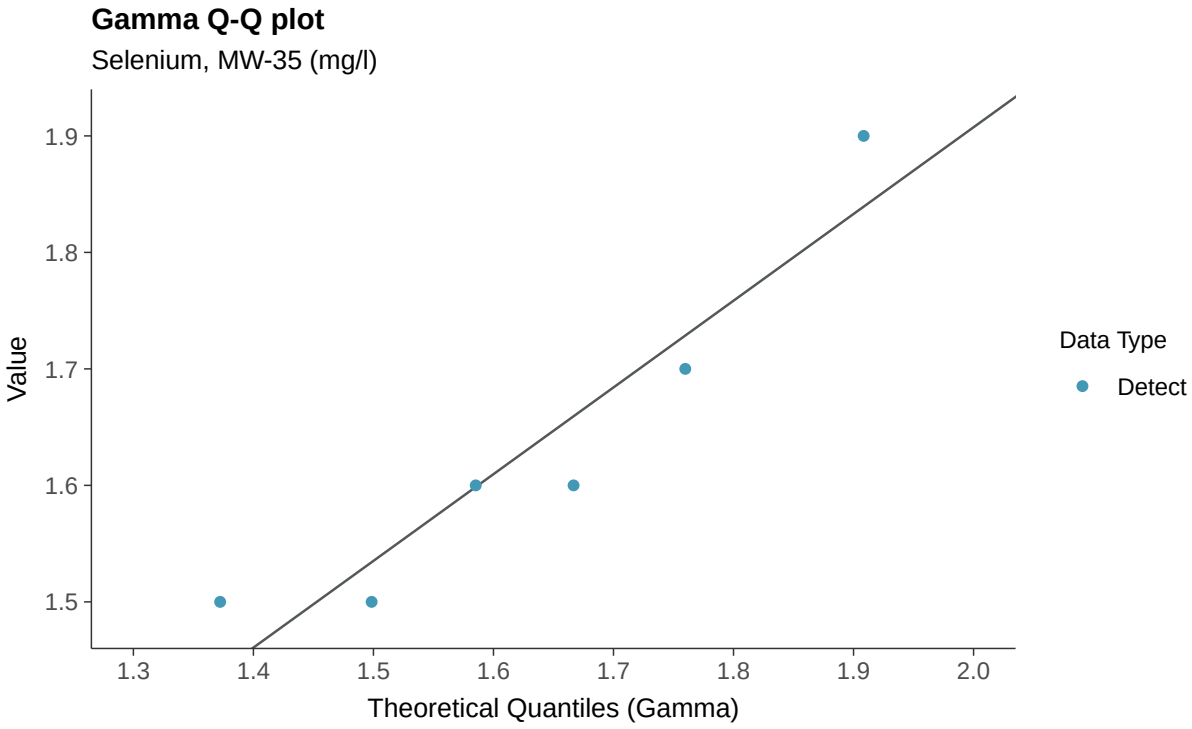
Selenium, MW-35 (mg/l)



Lognormal Q-Q plot

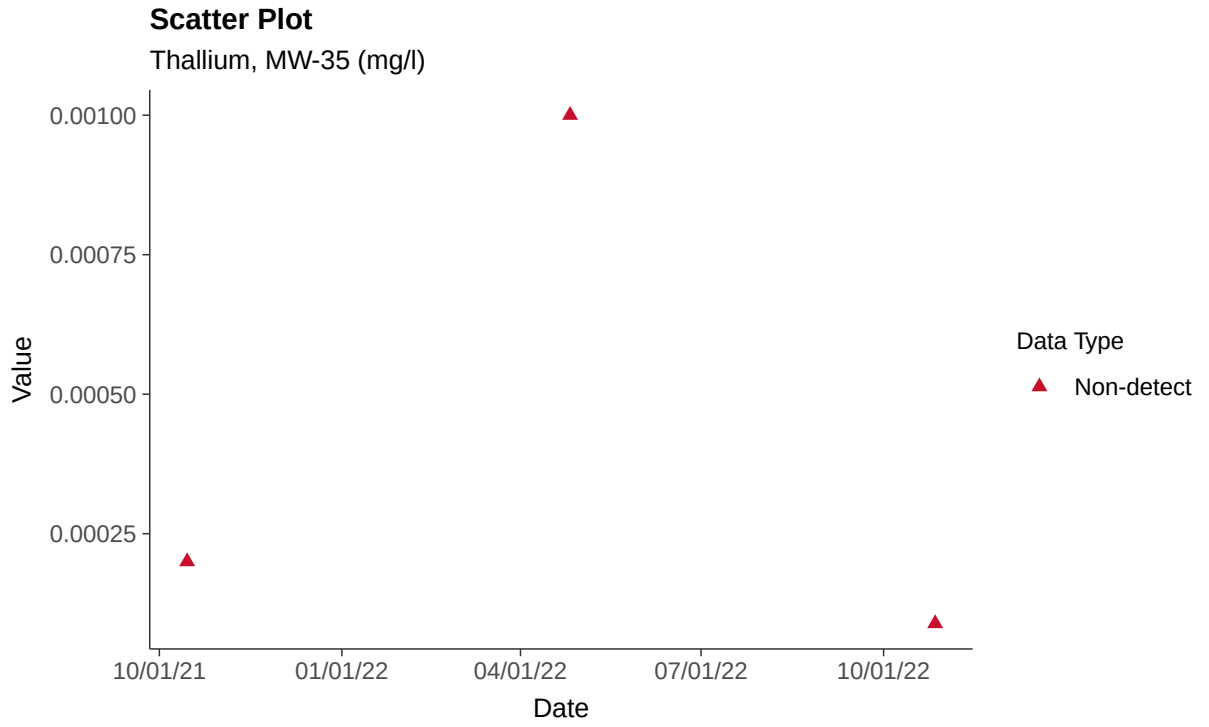
Selenium, MW-35 (mg/l)

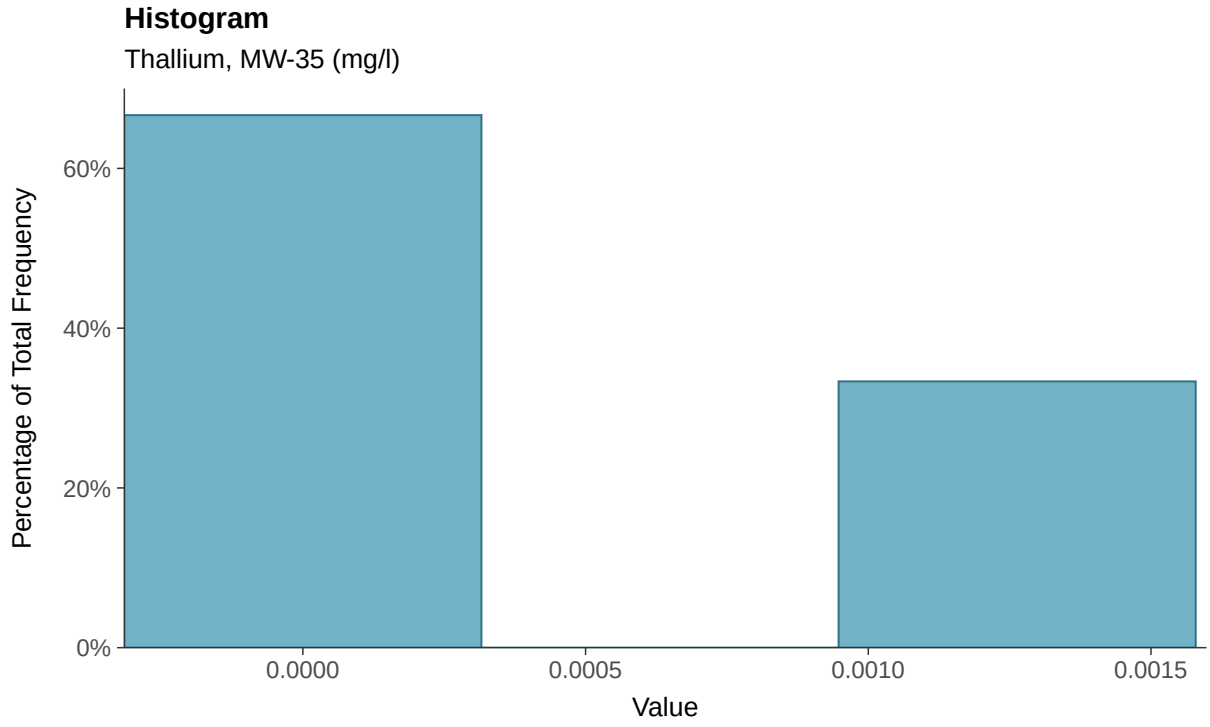



Gamma Q-Q plot
Selenium, MW-35 (mg/l)
Value
1.9
1.8
1.7
1.6
1.5
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Thallium, MW-35

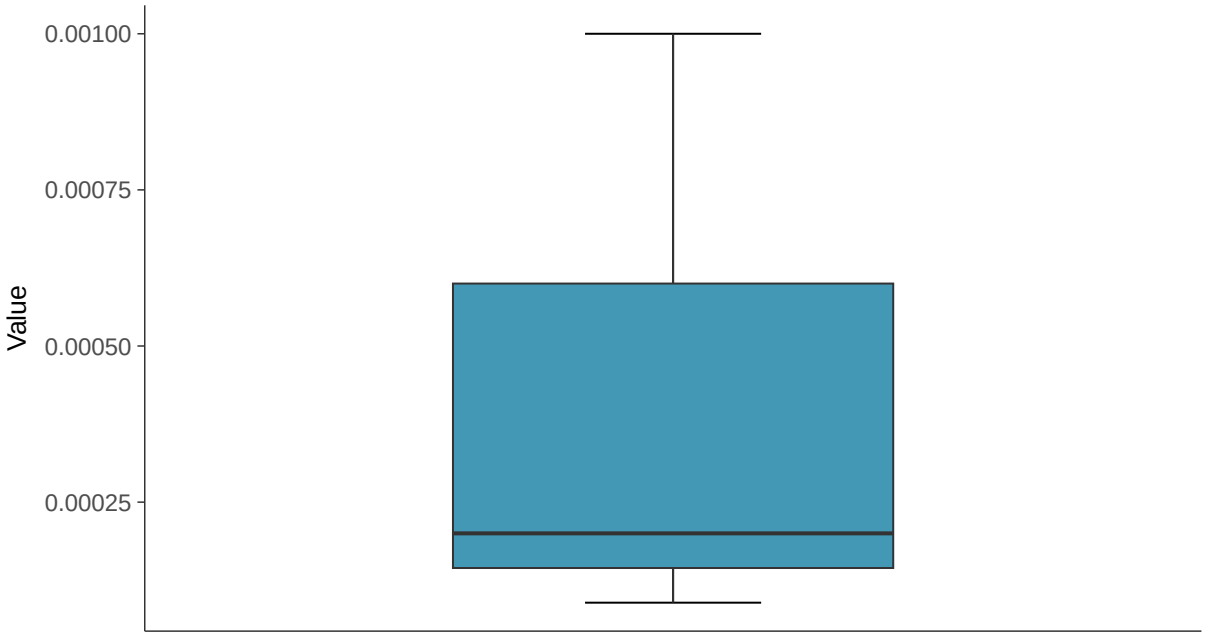
ID: 29_2_134





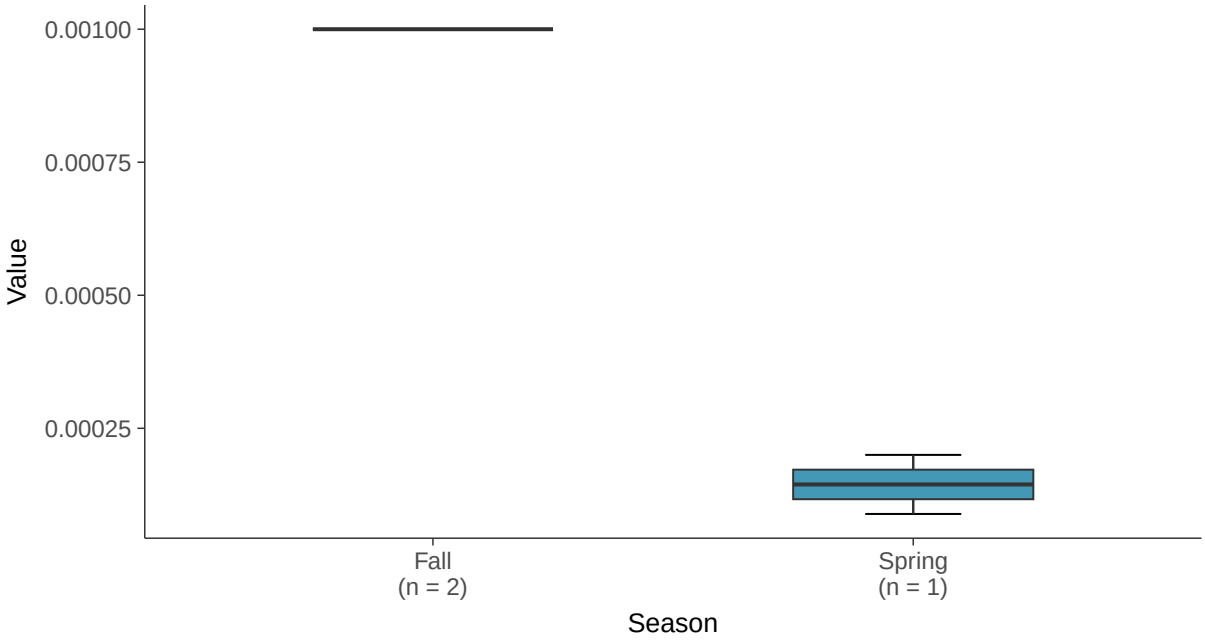
Boxplot

Thallium, MW-35 (mg/l)



Boxplot by Season

Thallium, MW-35 (mg/l)

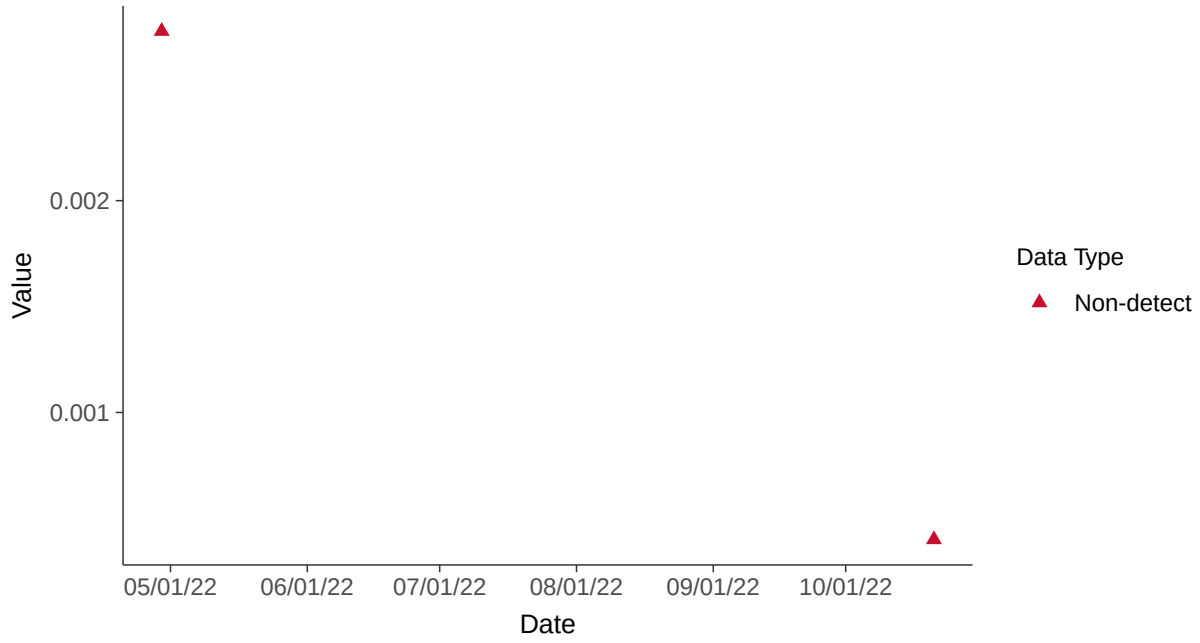


Appendix IV: Antimony, MW-36

ID: 30_2_104

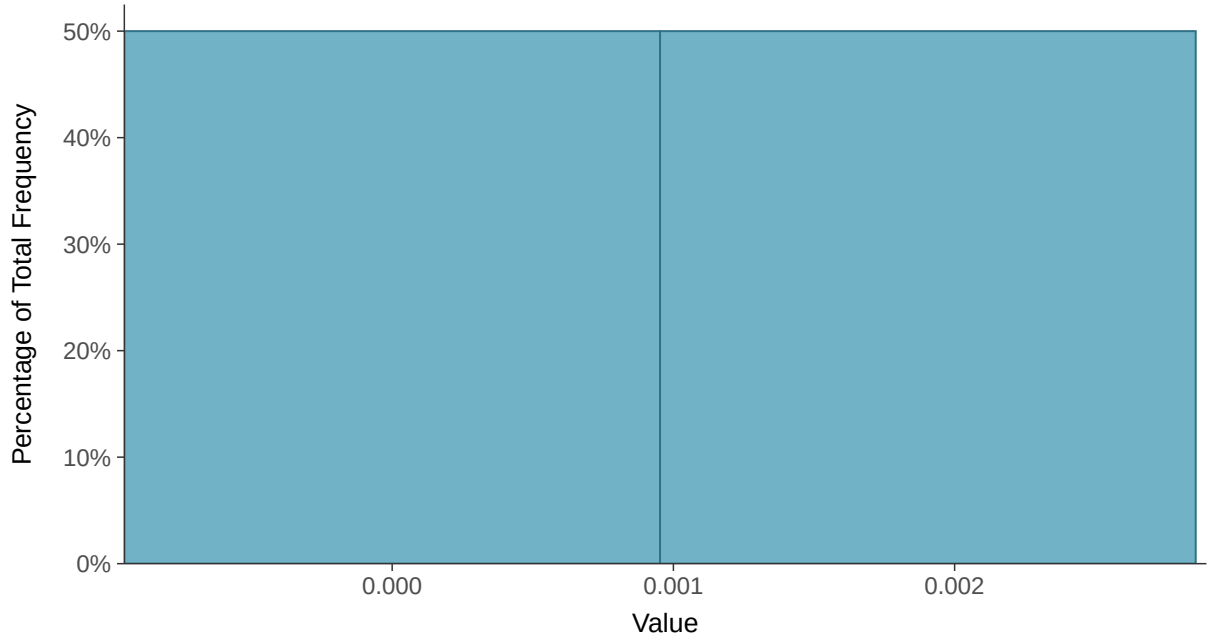
Scatter Plot

Antimony, MW-36 (mg/l)



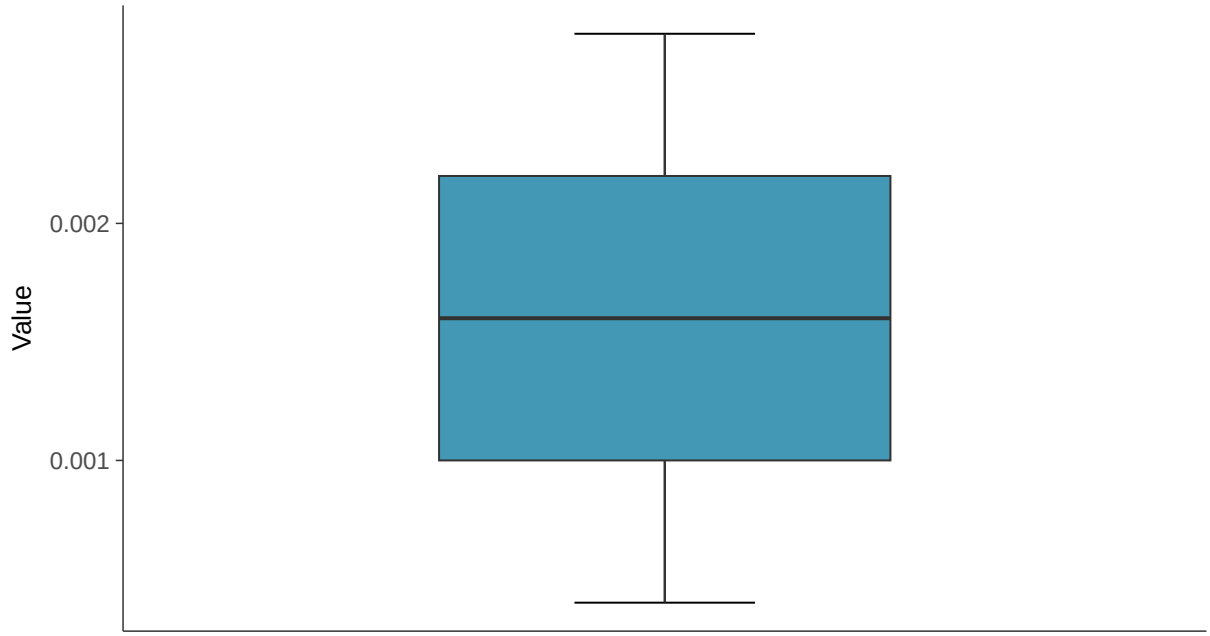
Histogram

Antimony, MW-36 (mg/l)



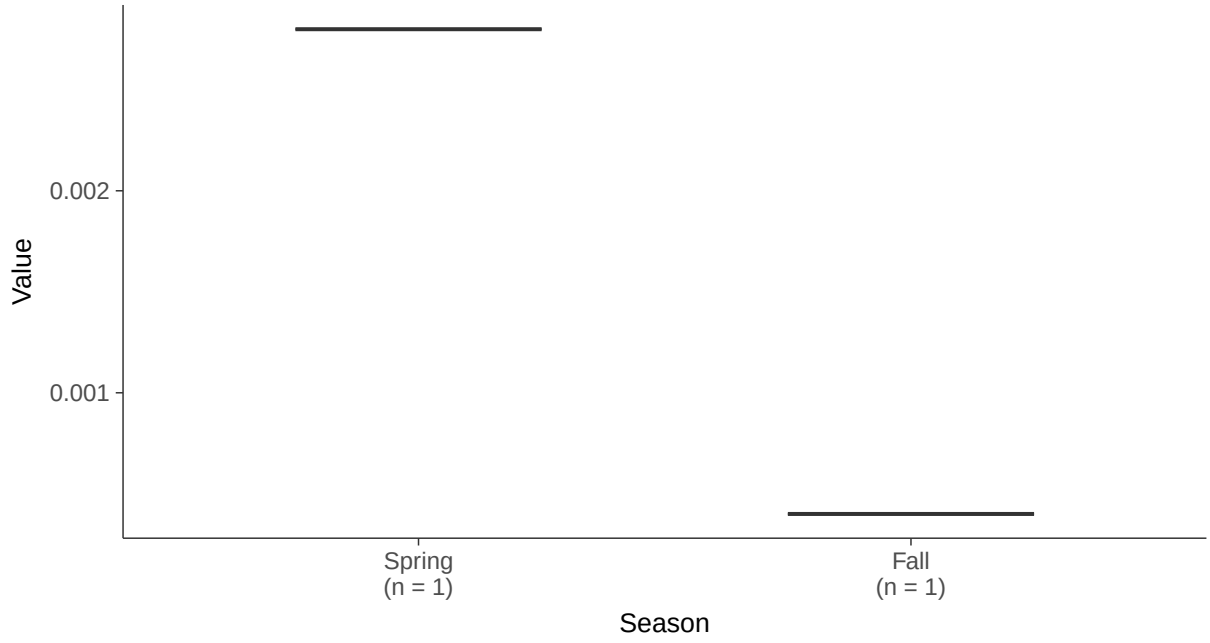
Boxplot

Antimony, MW-36 (mg/l)



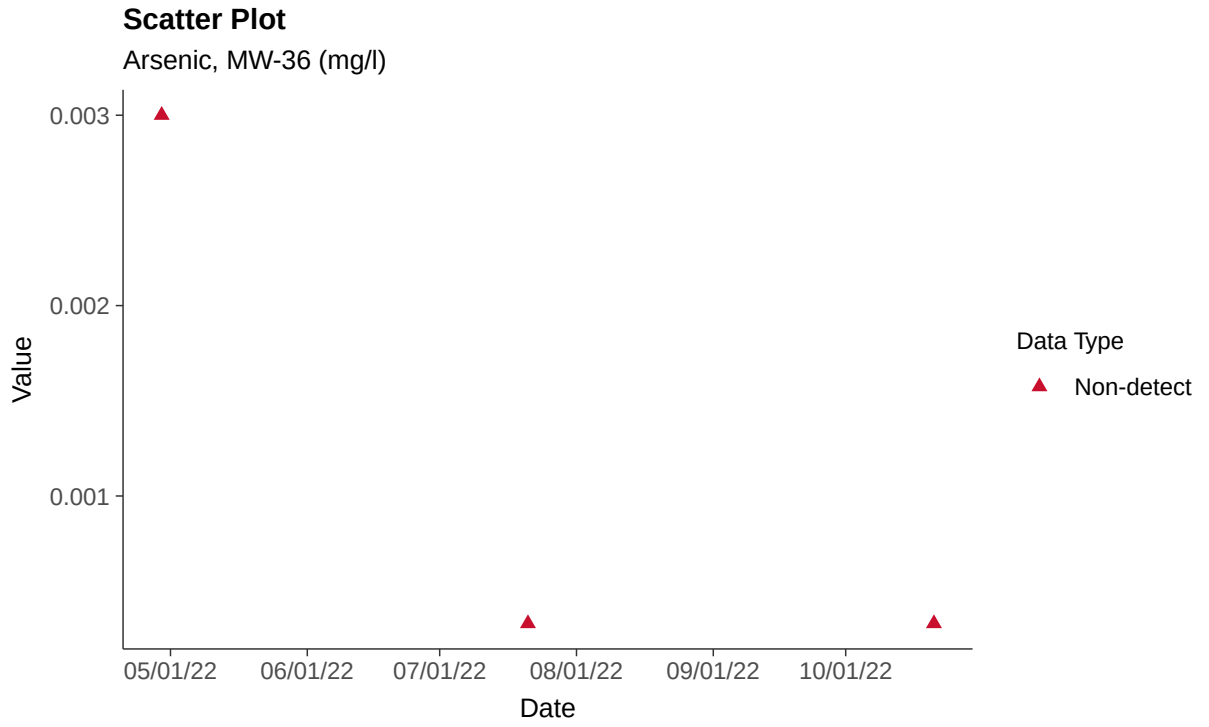
Boxplot by Season

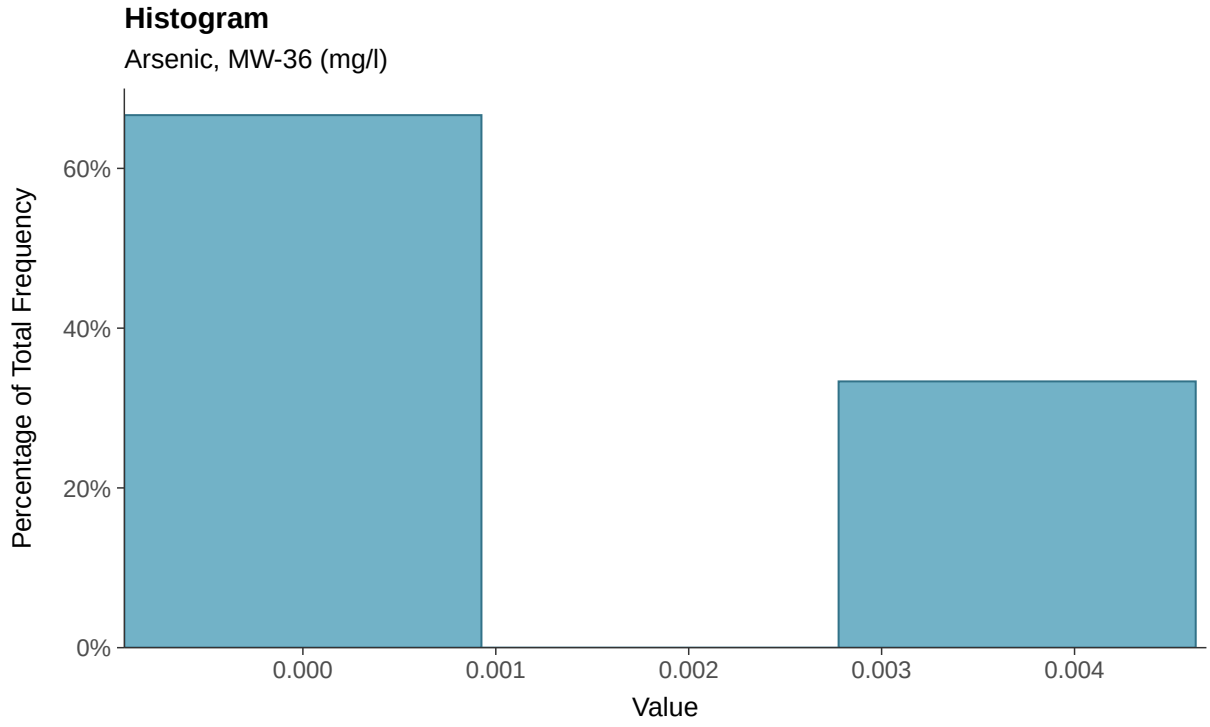
Antimony, MW-36 (mg/l)



Appendix IV: Arsenic, MW-36

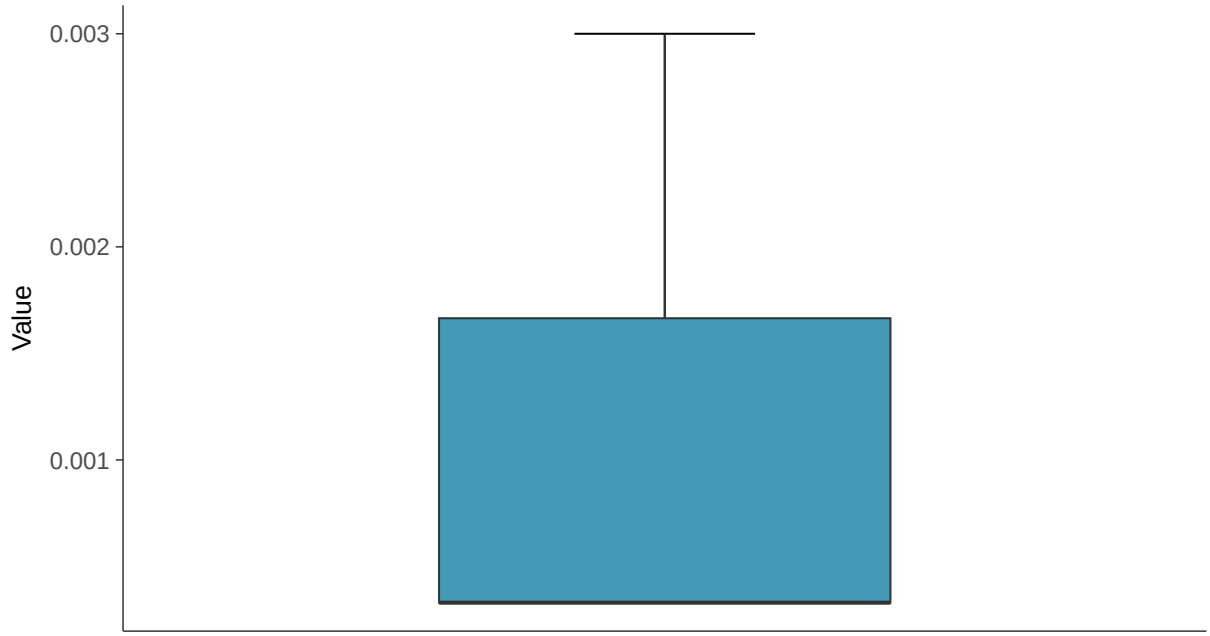
ID: 30_2_105





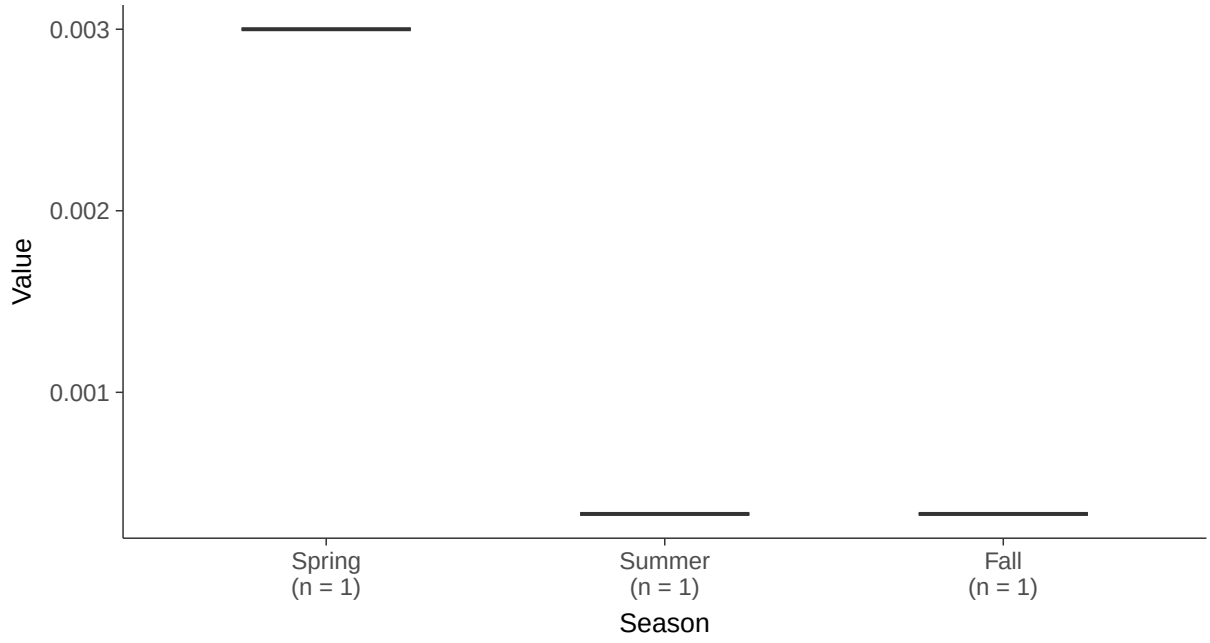
Boxplot

Arsenic, MW-36 (mg/l)



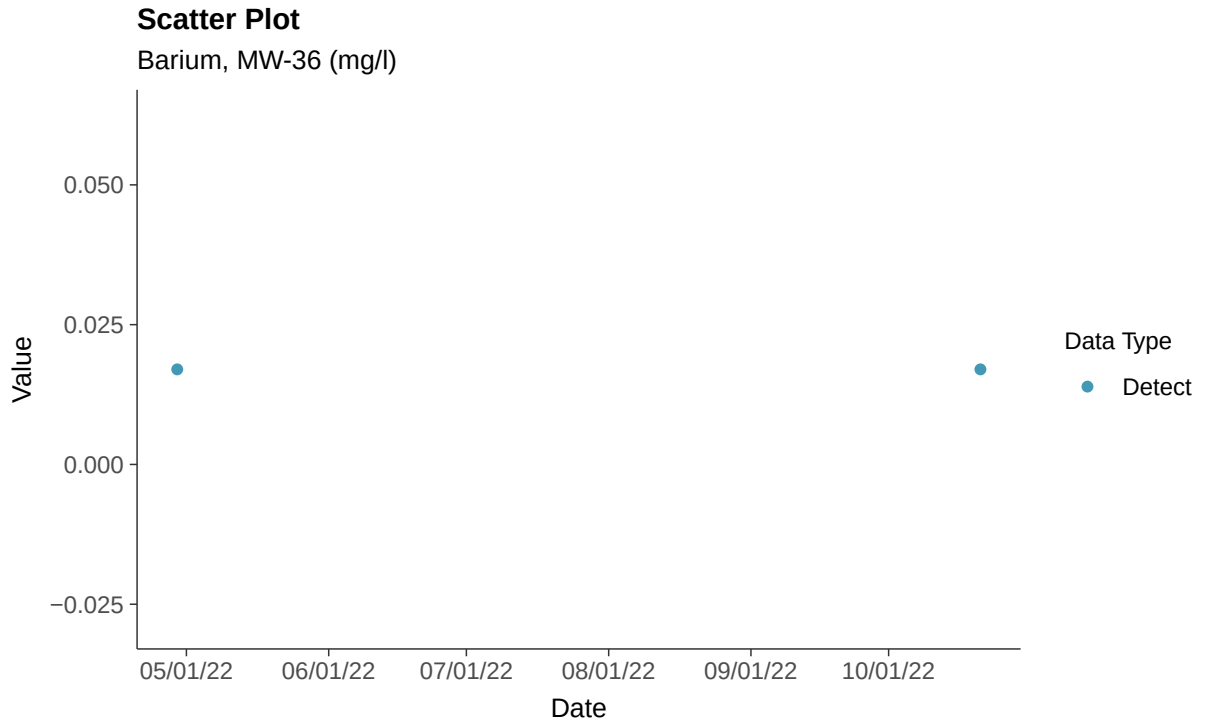
Boxplot by Season

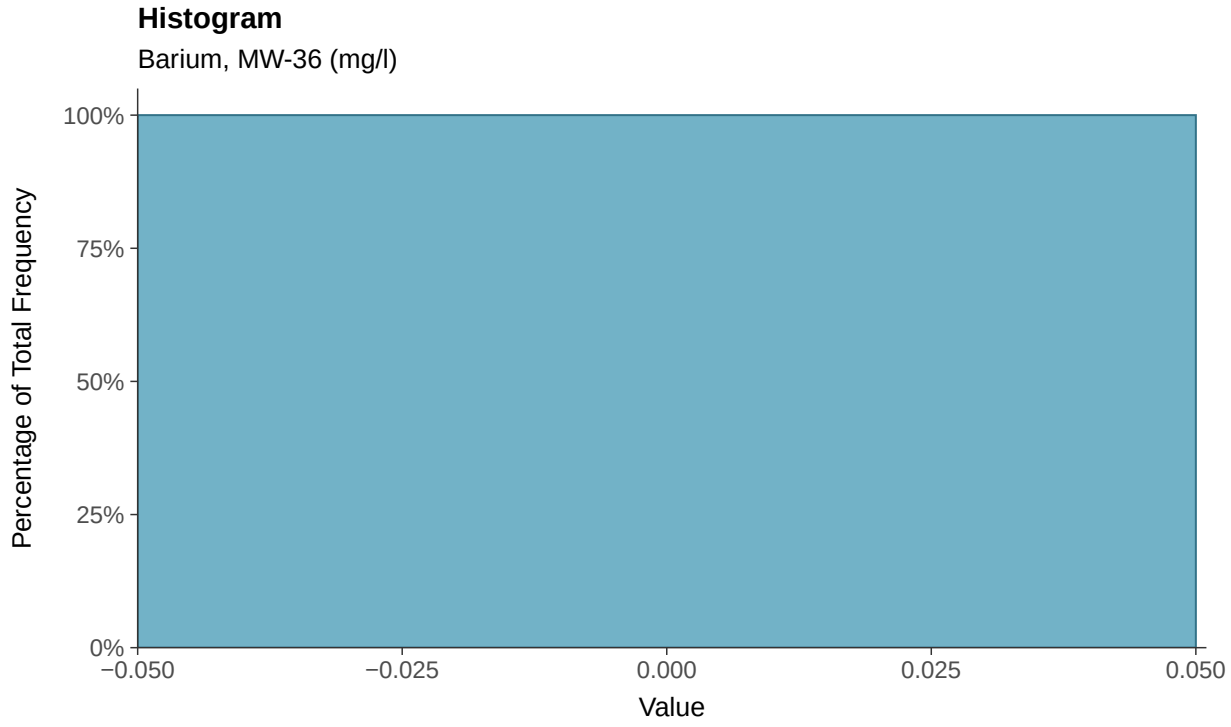
Arsenic, MW-36 (mg/l)



Appendix IV: Barium, MW-36

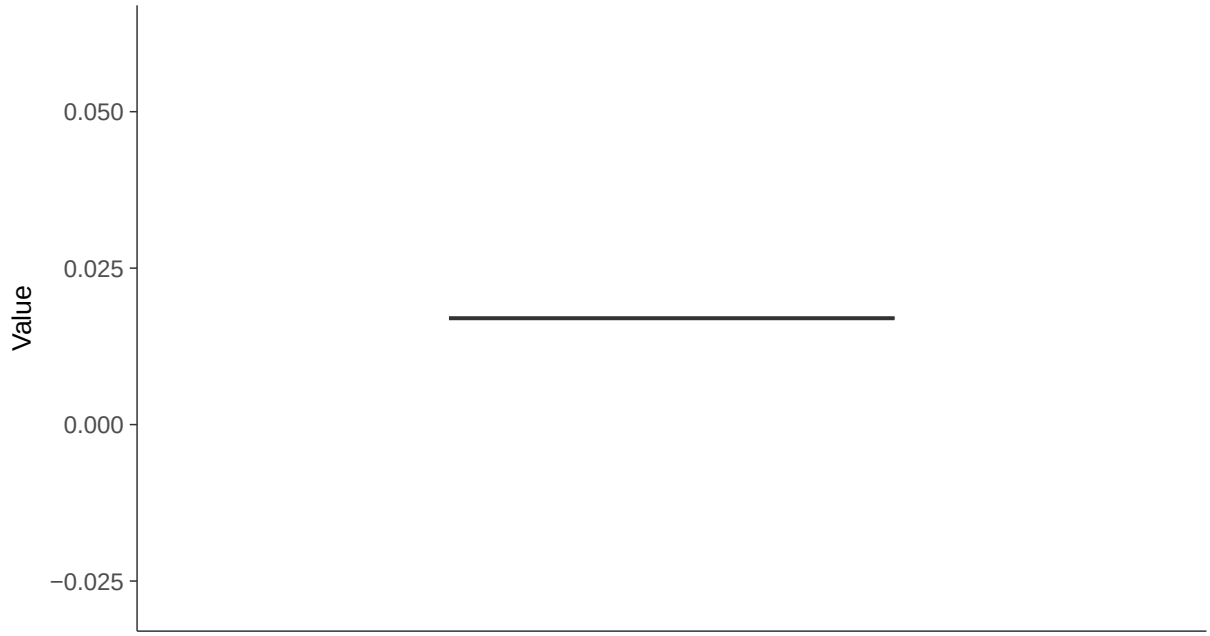
ID: 30_2_106





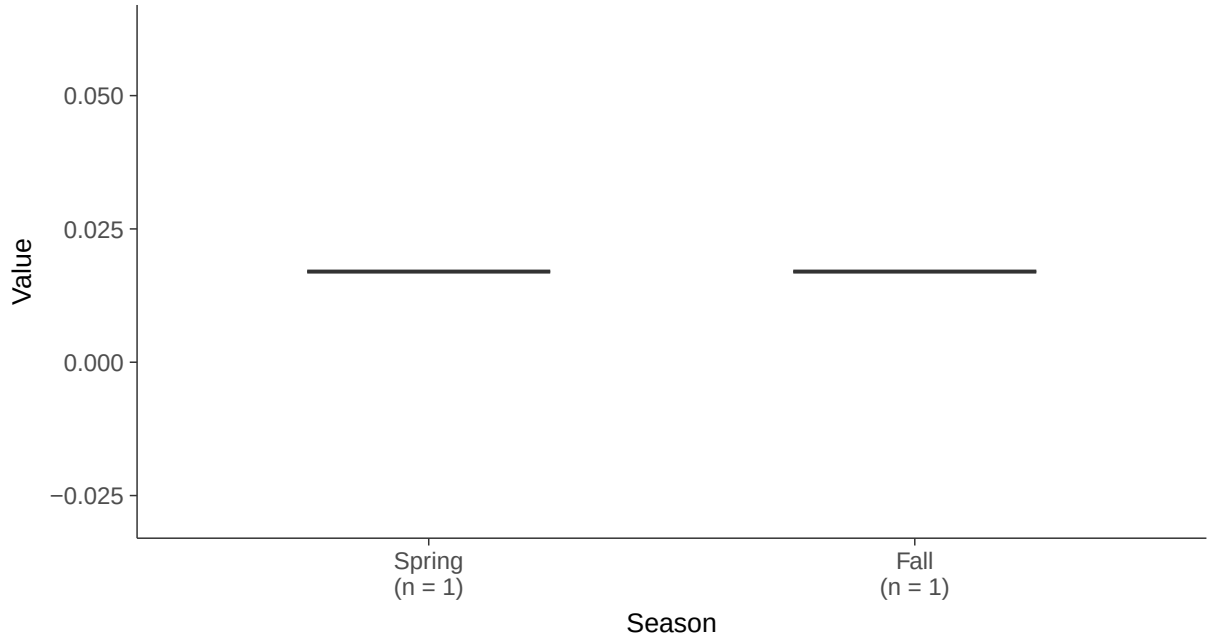
Boxplot

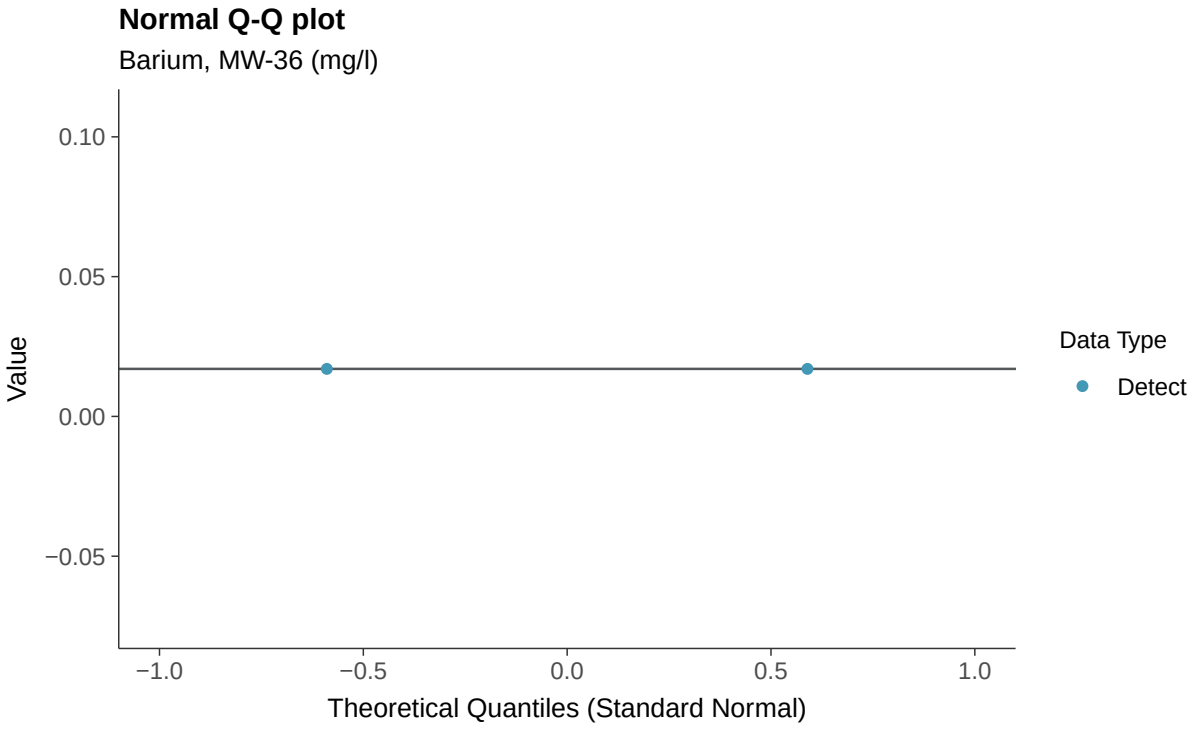
Barium, MW-36 (mg/l)



Boxplot by Season

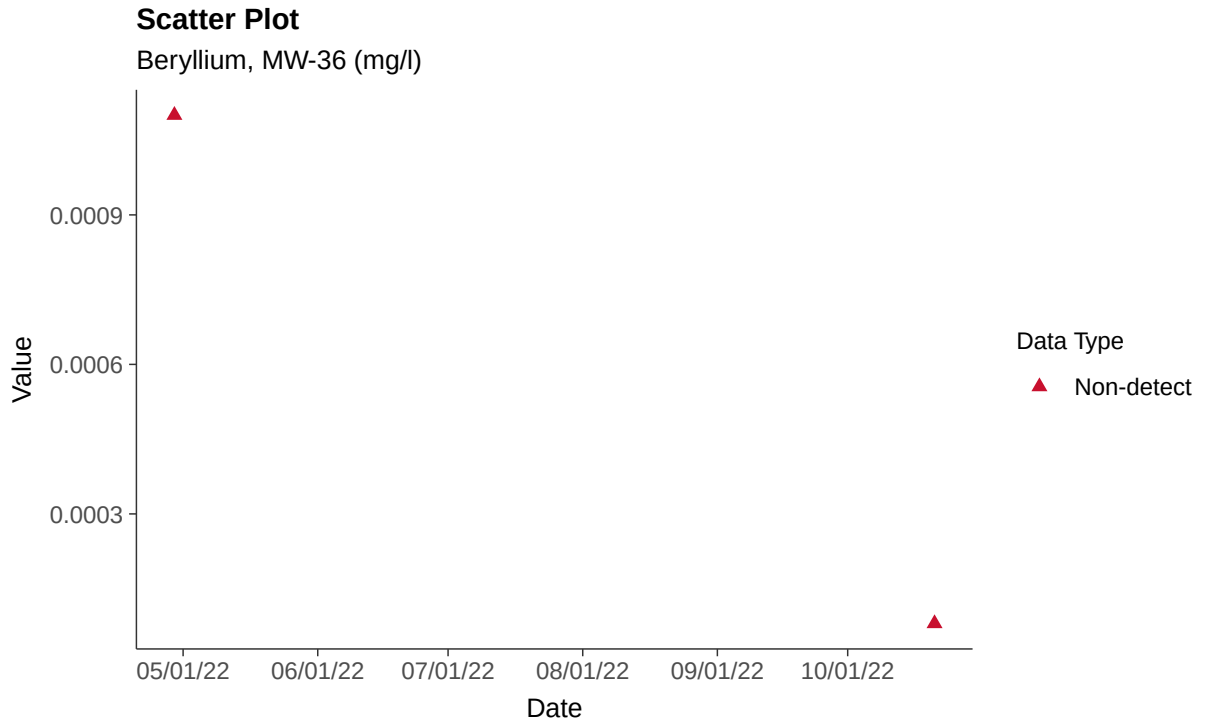
Barium, MW-36 (mg/l)

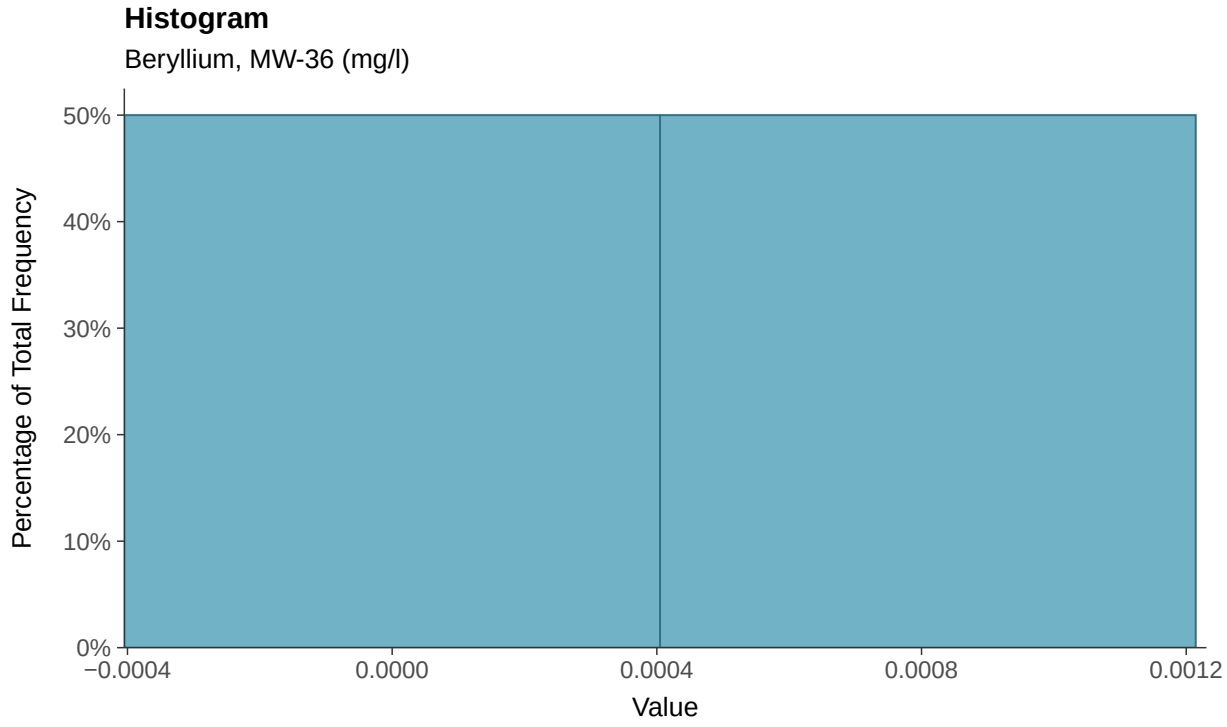



Normal Q-Q plot
Barium, MW-36 (mg/l)
Value
0.10
0.05
0.00
−0.05
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Beryllium, MW-36

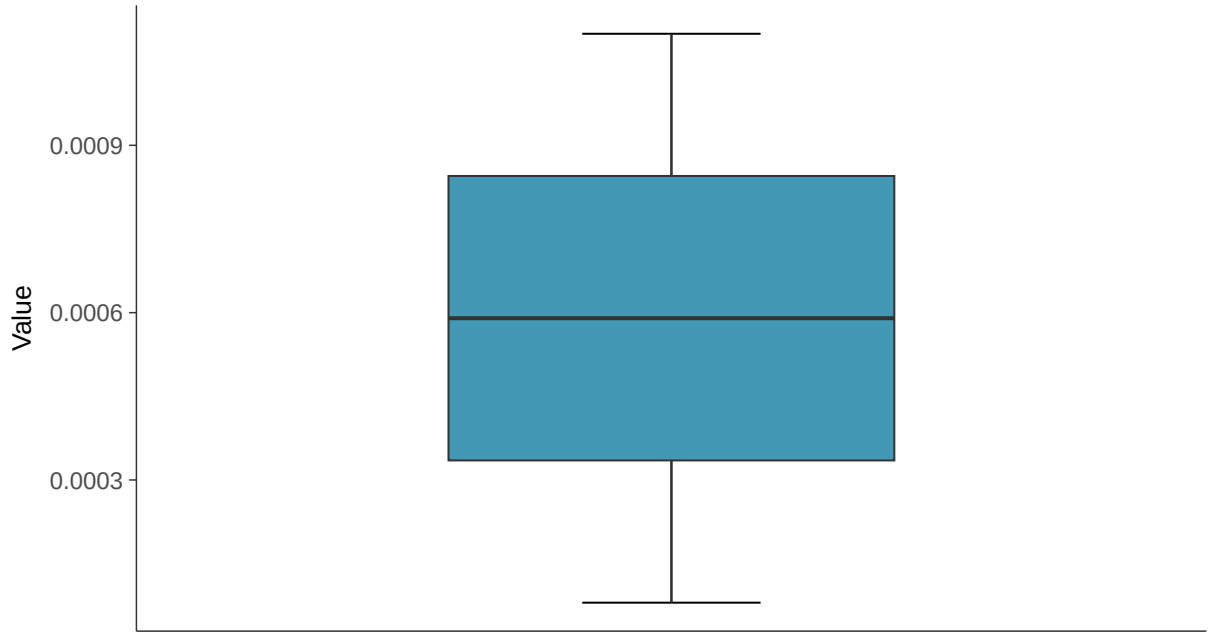
ID: 30_2_107





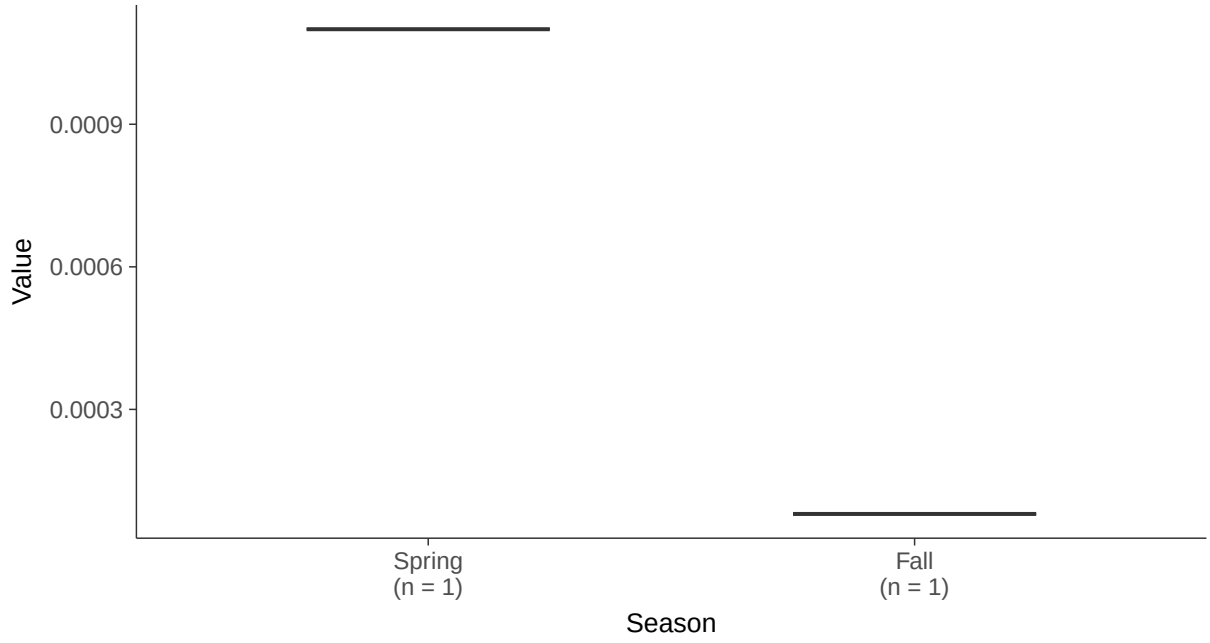
Boxplot

Beryllium, MW-36 (mg/l)



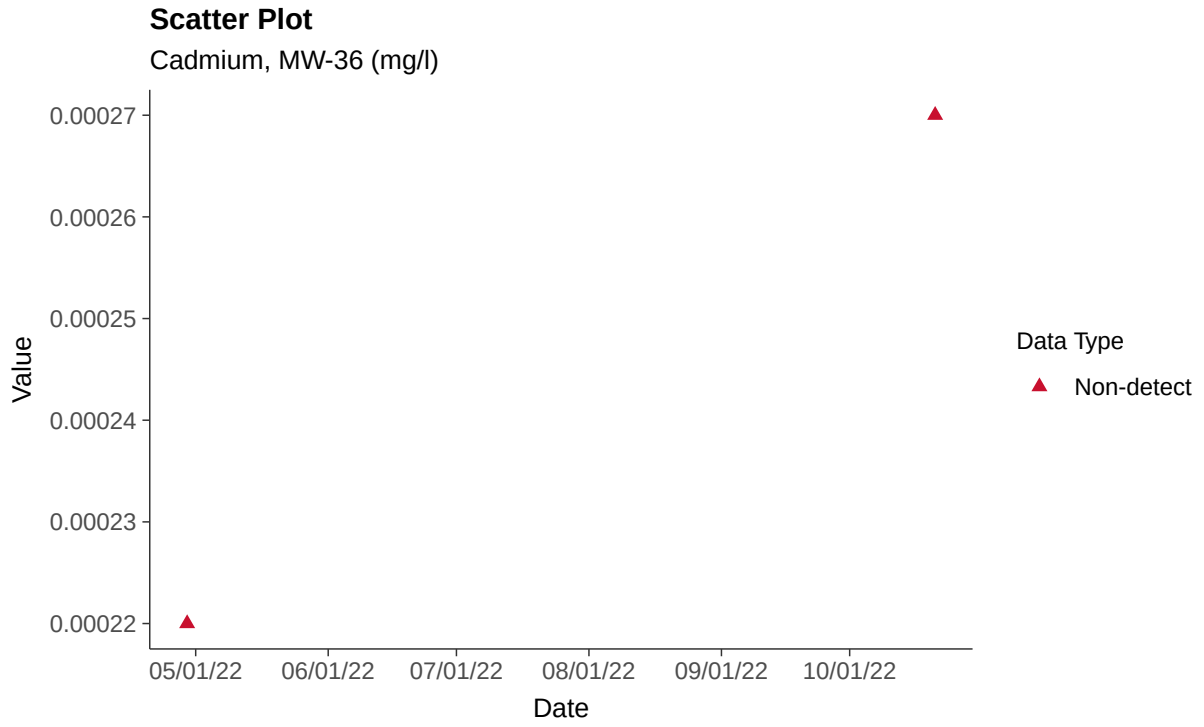
Boxplot by Season

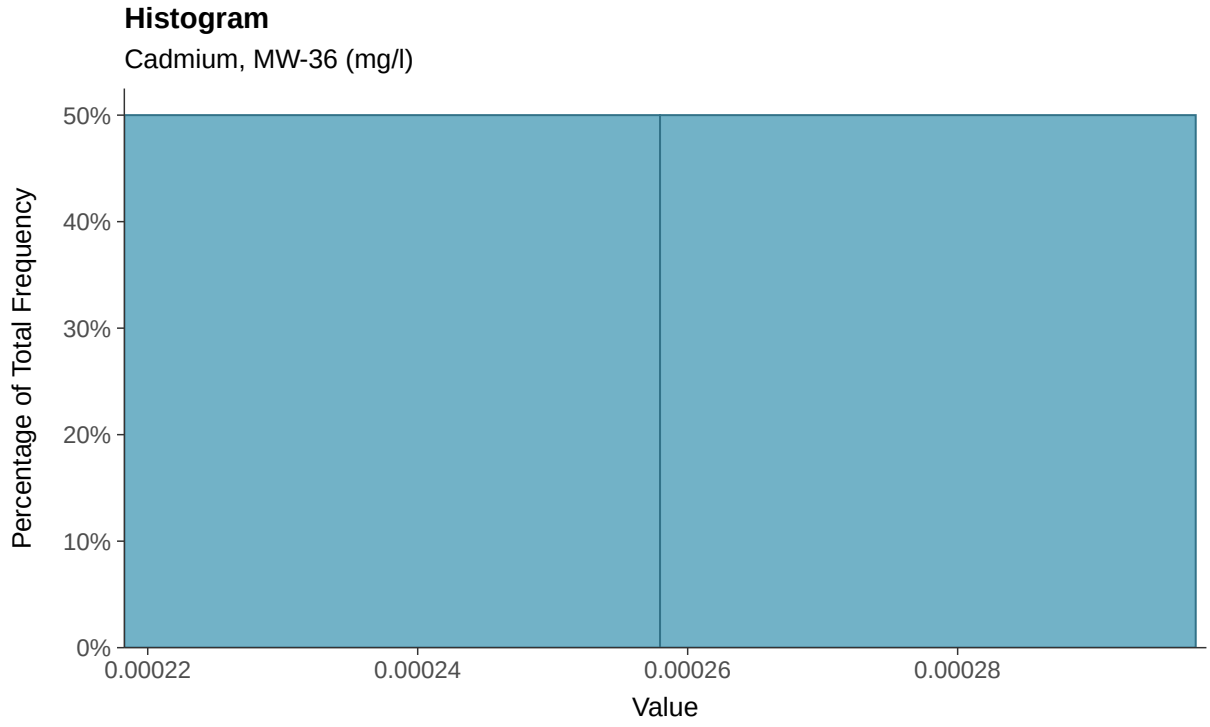
Beryllium, MW-36 (mg/l)



Appendix IV: Cadmium, MW-36

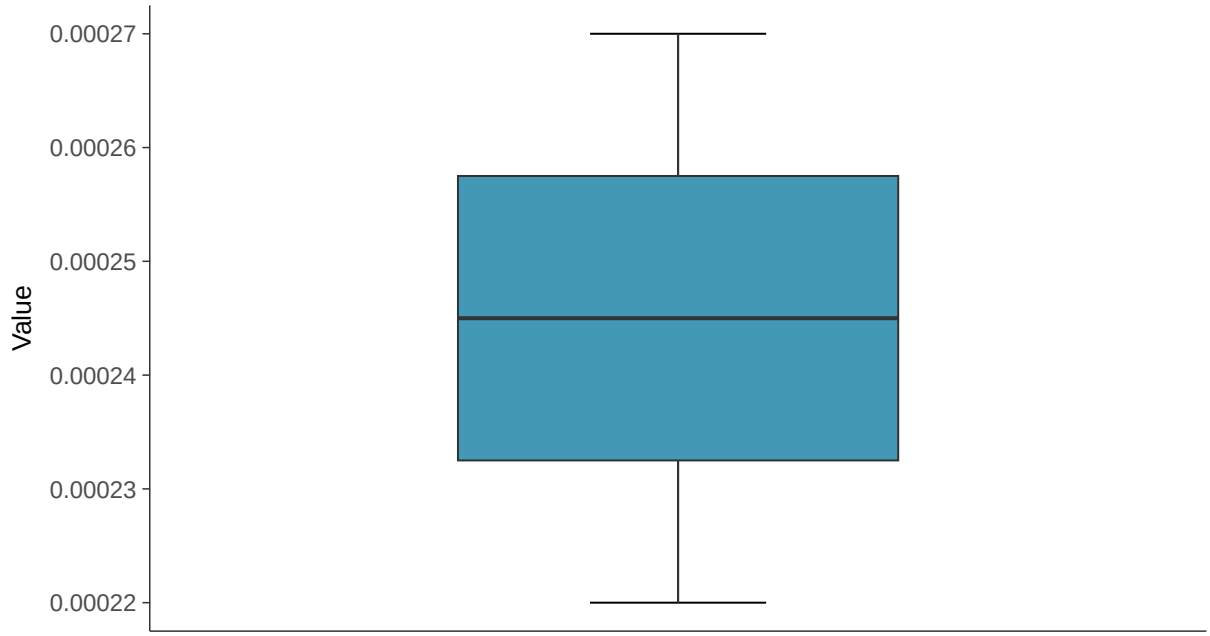
ID: 30_2_109





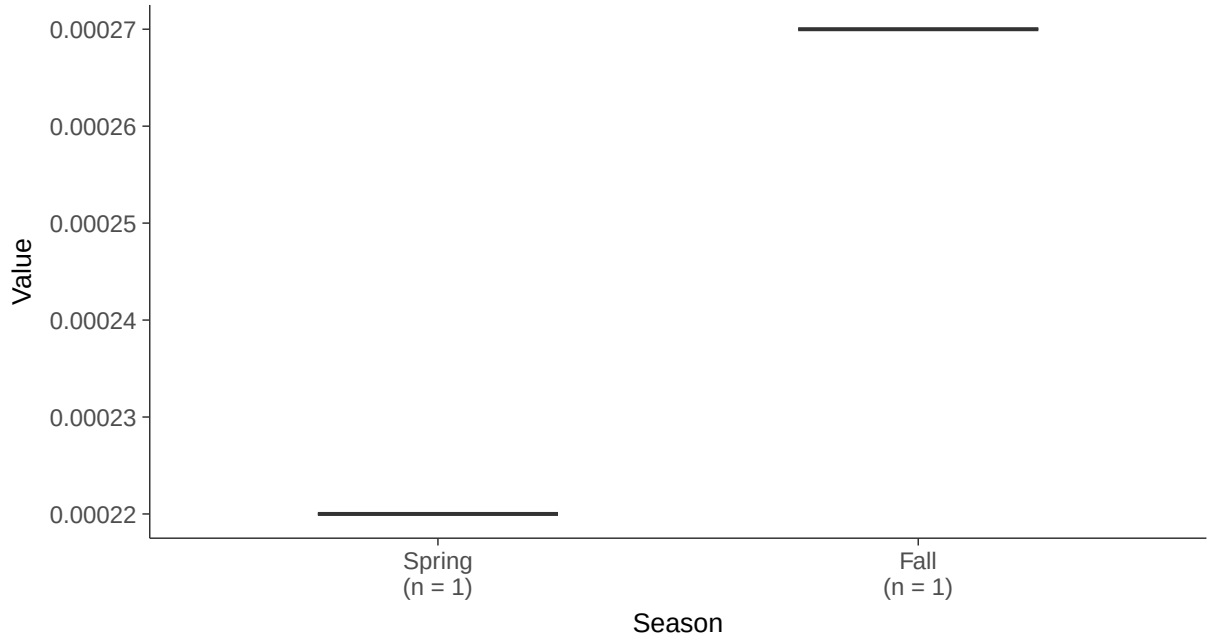
Boxplot

Cadmium, MW-36 (mg/l)



Boxplot by Season

Cadmium, MW-36 (mg/l)

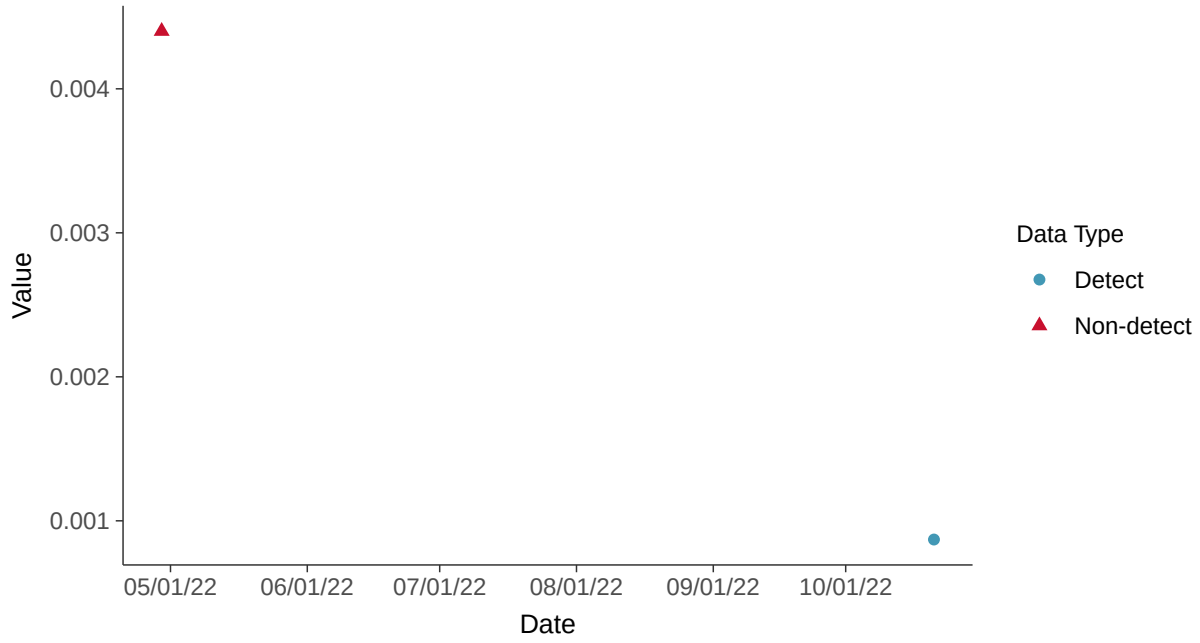


Appendix IV: Chromium, Total, MW-36

ID: 30_2_112

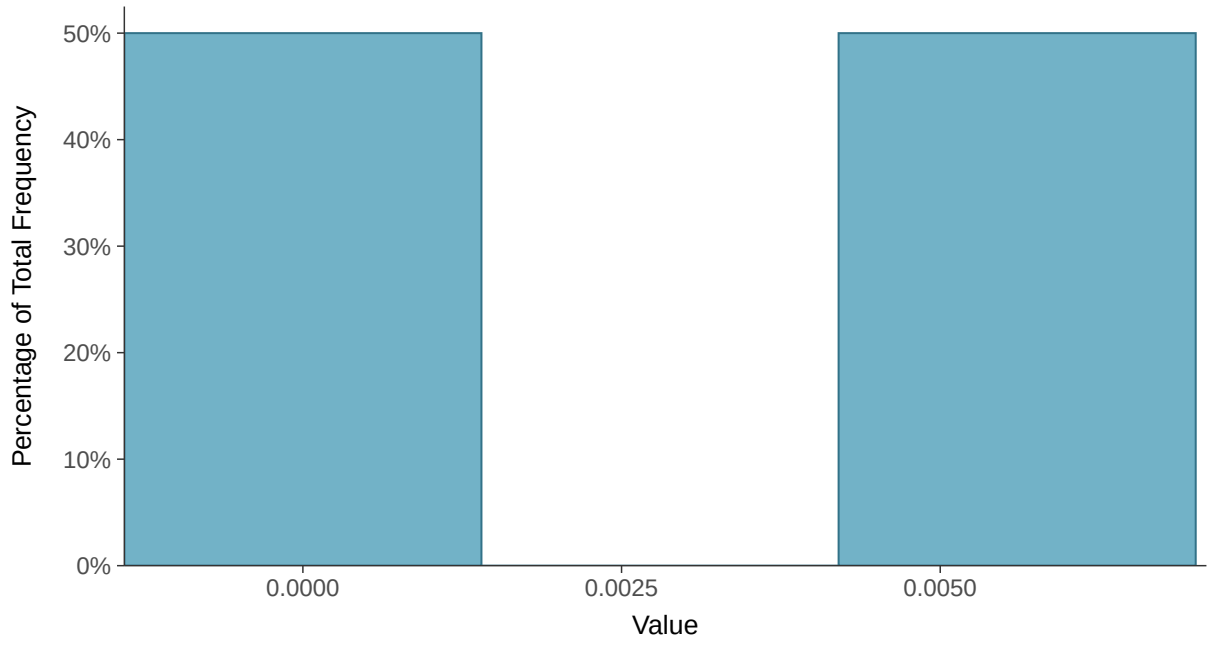
Scatter Plot

Chromium, Total, MW-36 (mg/l)



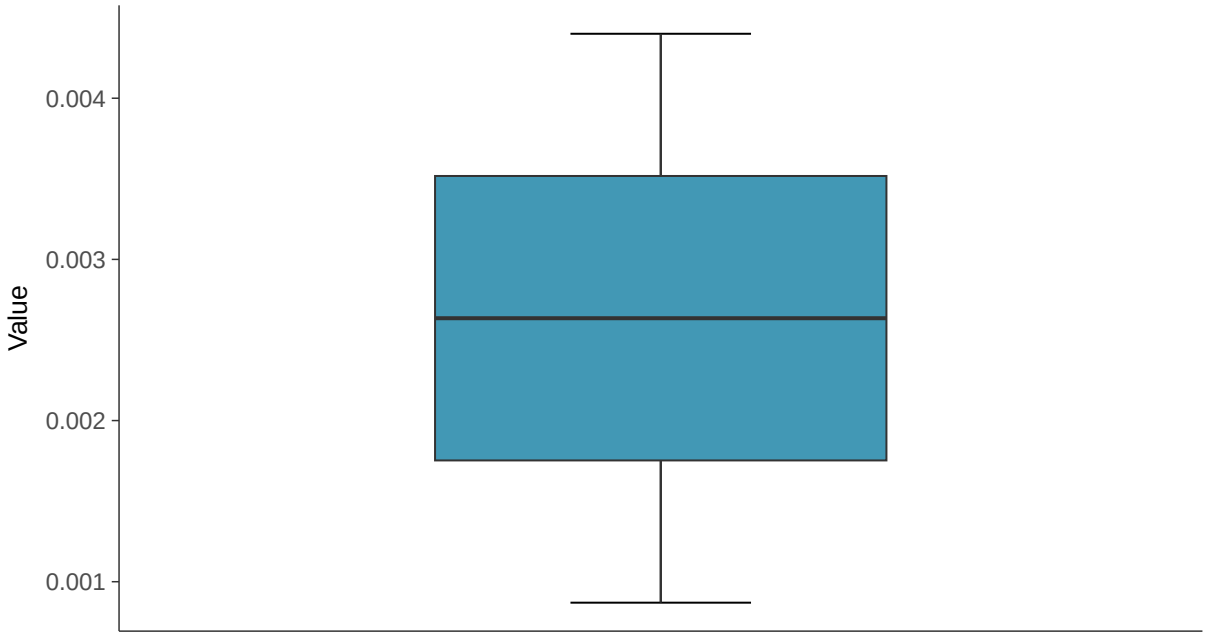
Histogram

Chromium, Total, MW-36 (mg/l)



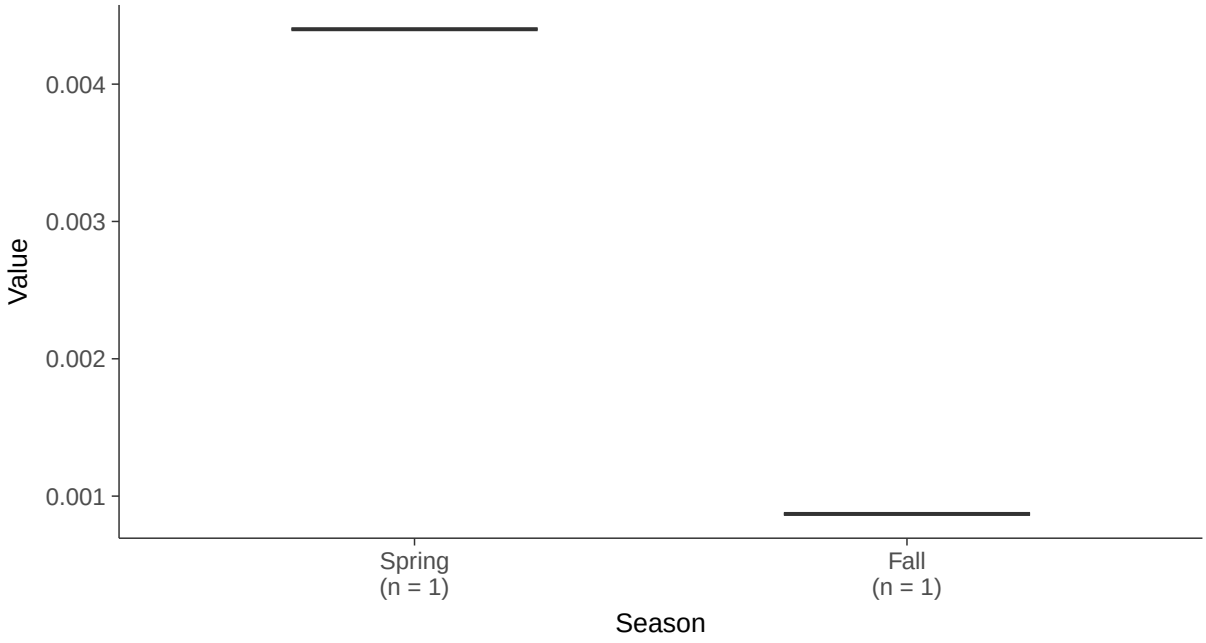
Boxplot

Chromium, Total, MW-36 (mg/l)



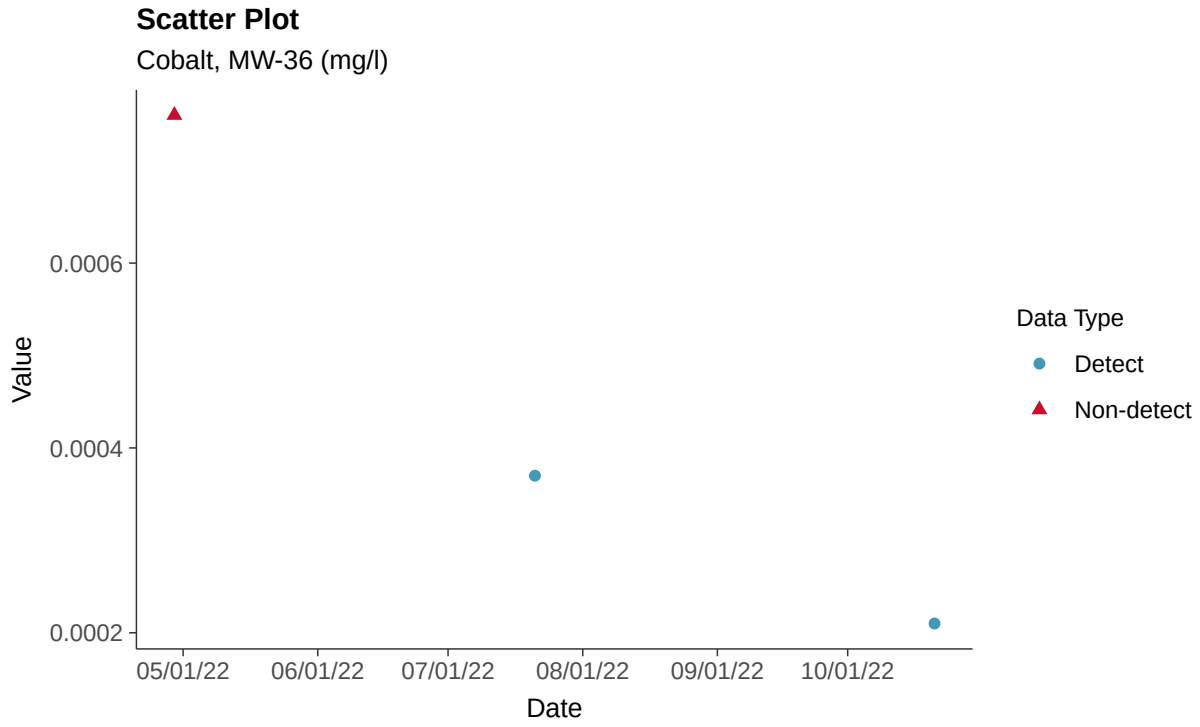
Boxplot by Season

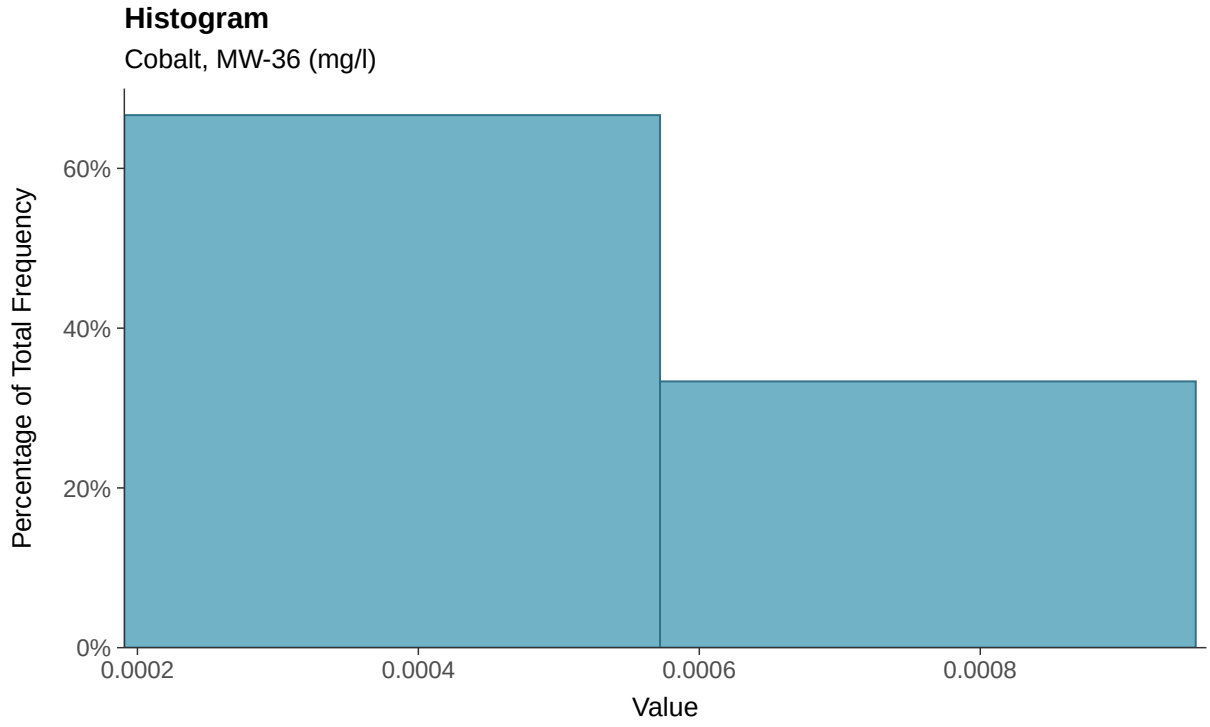
Chromium, Total, MW-36 (mg/l)



Appendix IV: Cobalt, MW-36

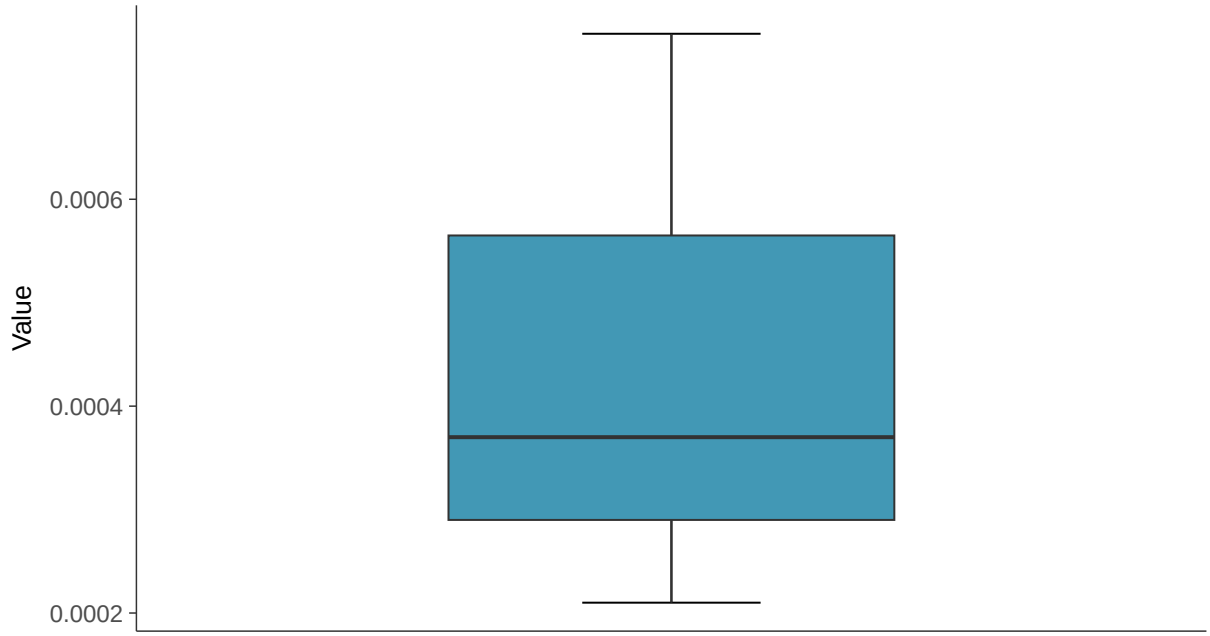
ID: 30_2_113





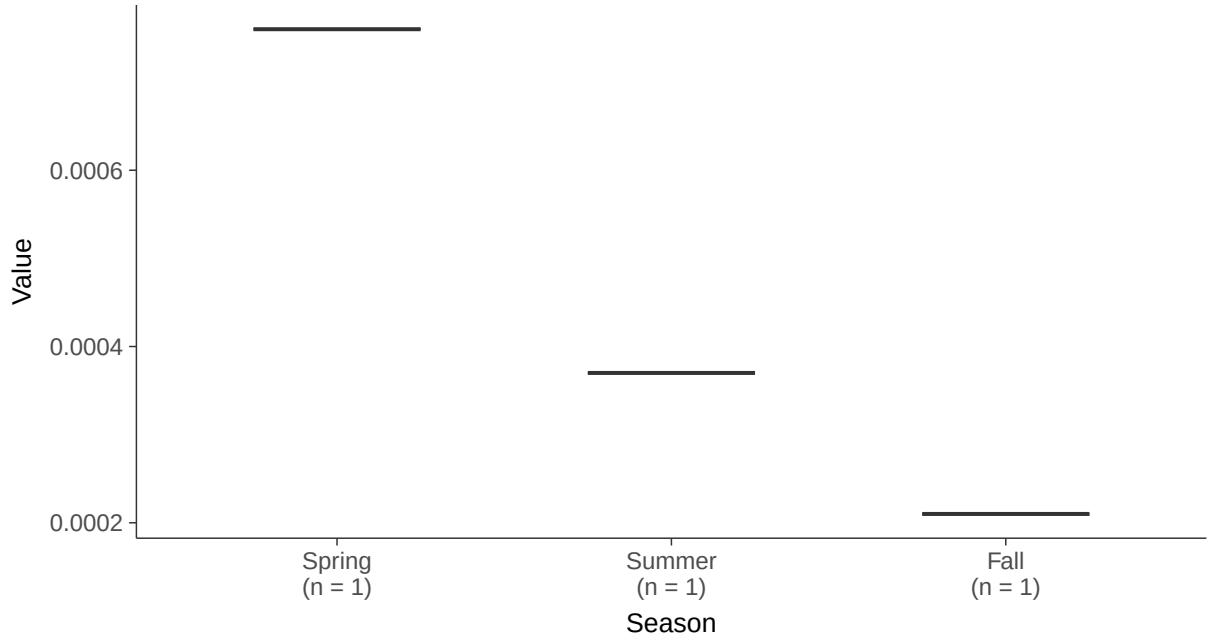
Boxplot

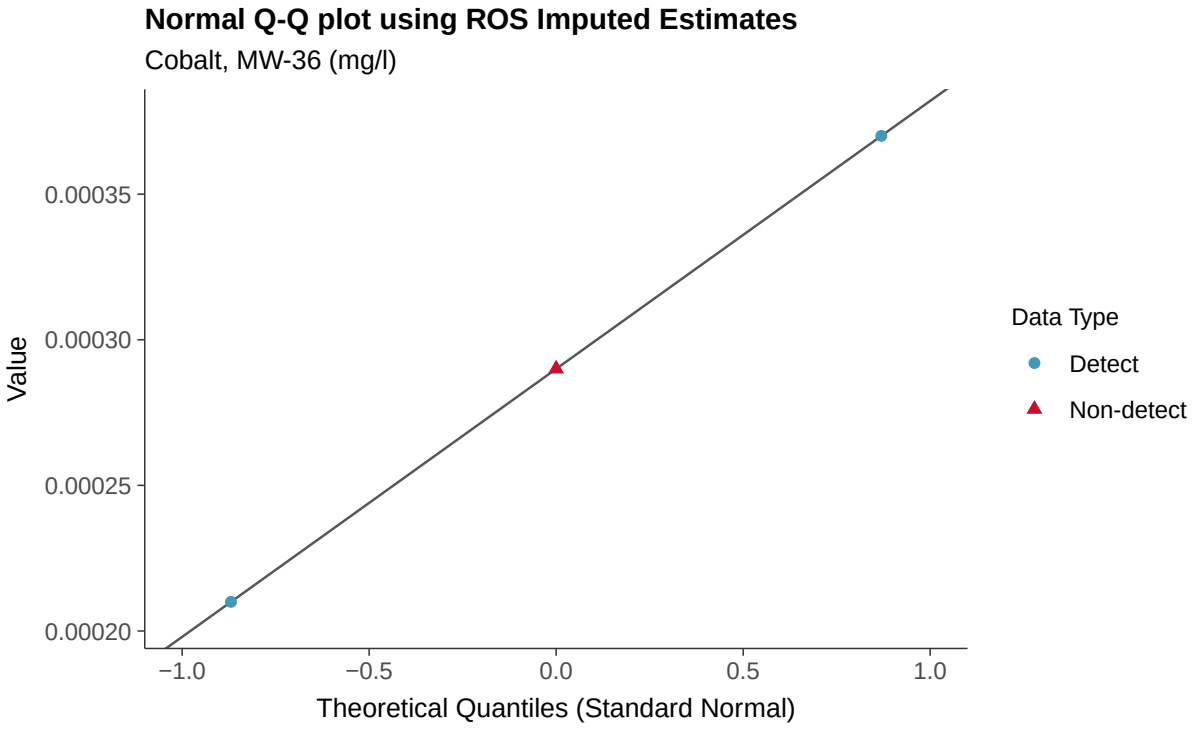
Cobalt, MW-36 (mg/l)



Boxplot by Season

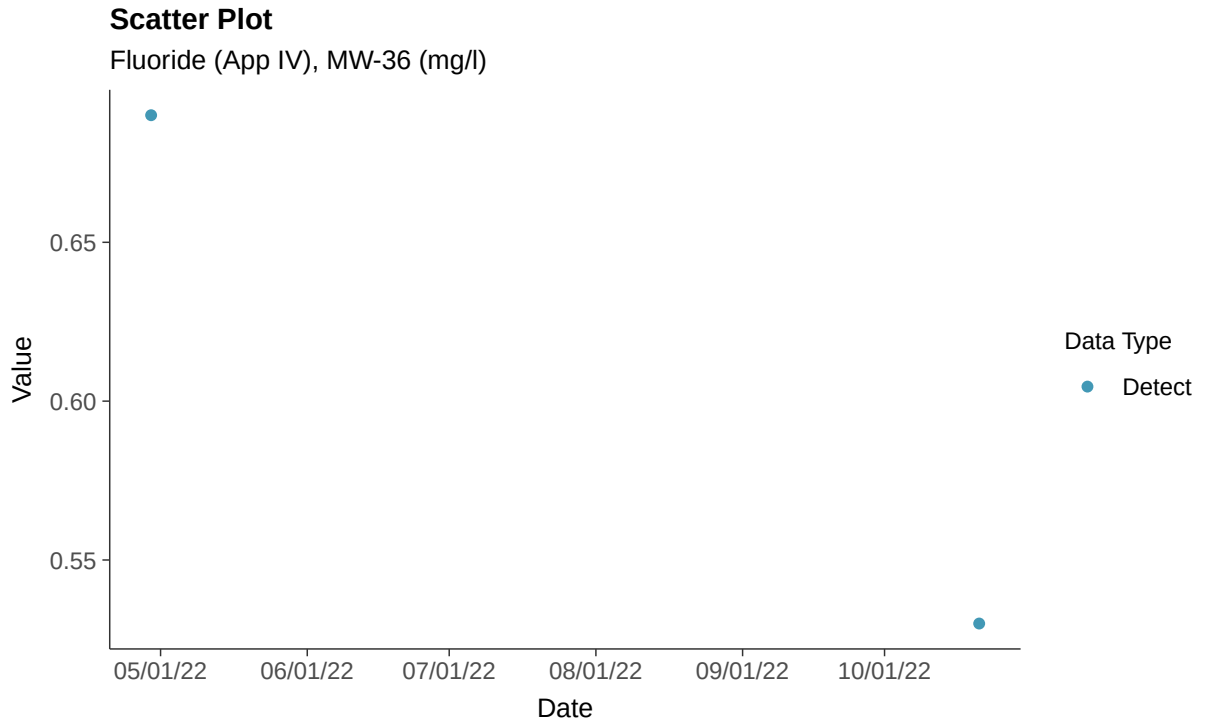
Cobalt, MW-36 (mg/l)

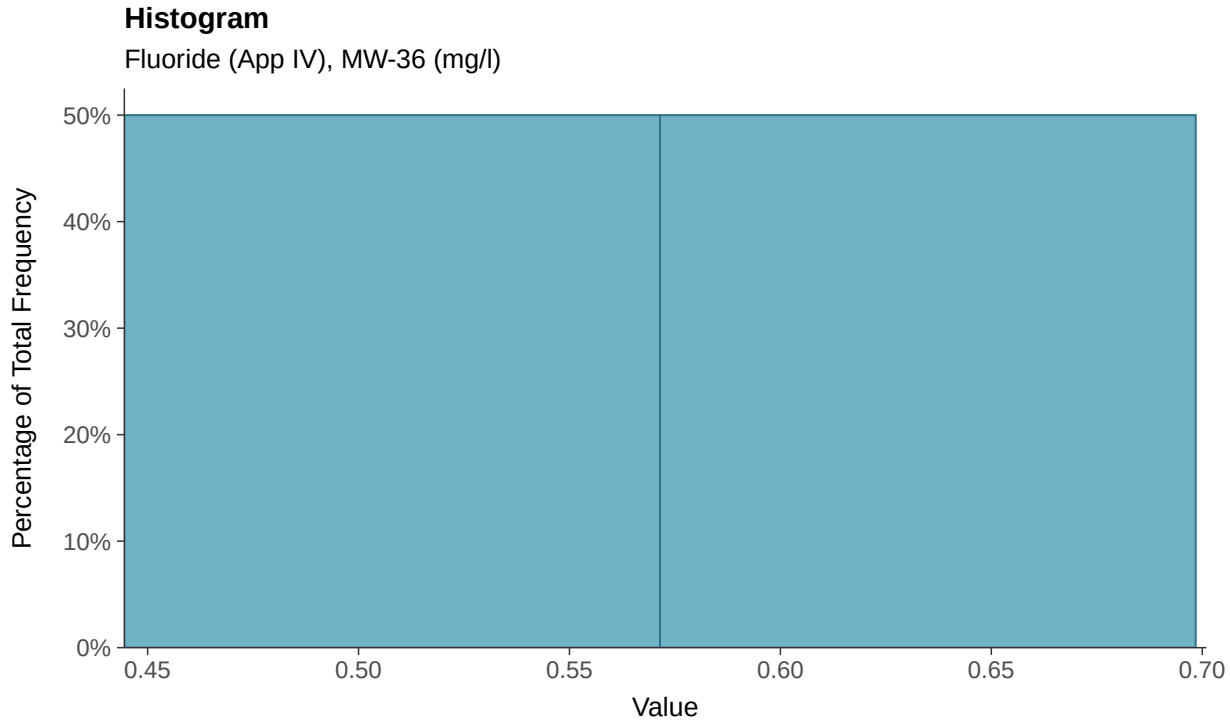



Normal Q-Q plot using ROS Imputed Estimates
Cobalt, MW-36 (mg/l)
Value
0.00035
0.00030
0.00025
0.00020
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Fluoride (App IV), MW-36

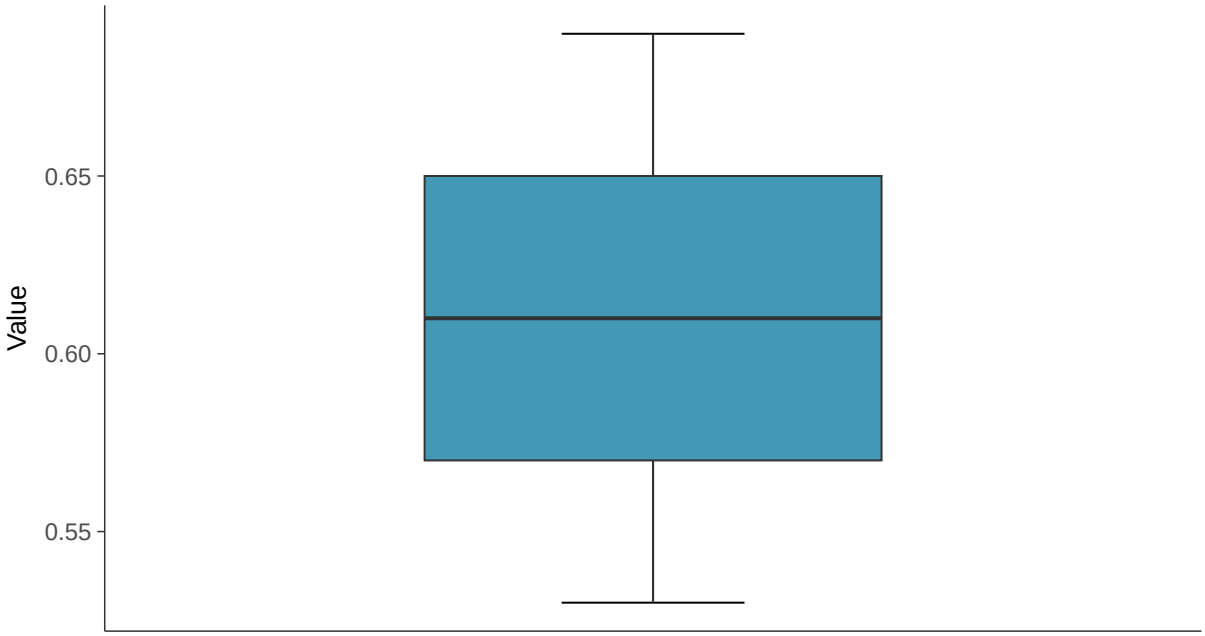
ID: 30_2_116





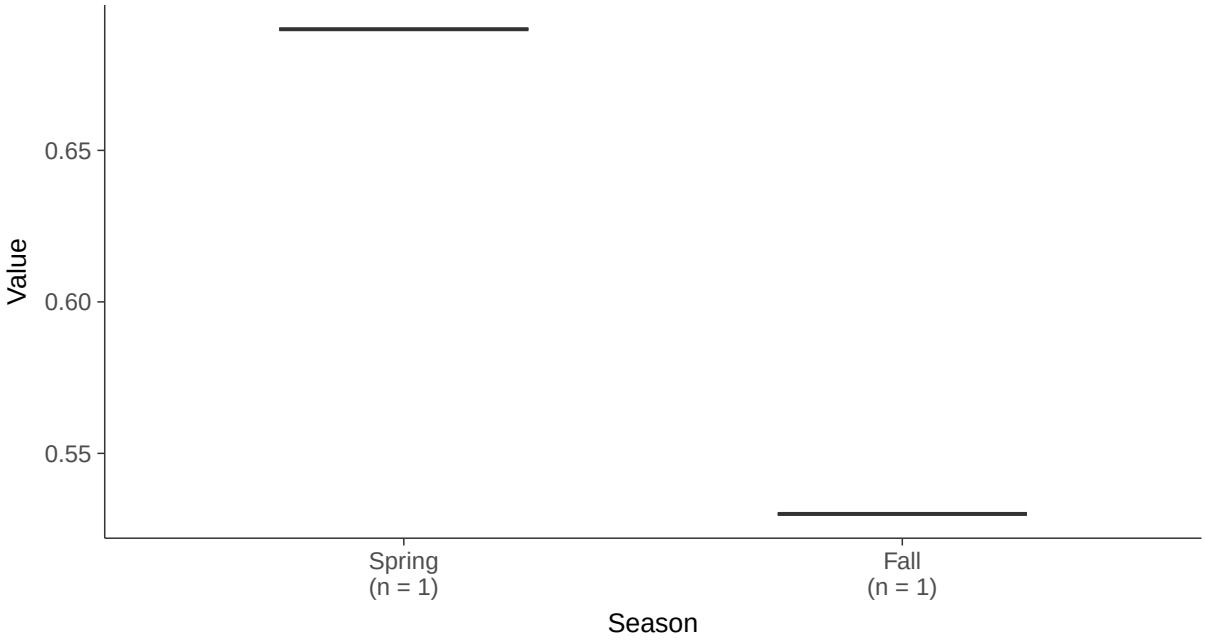
Boxplot

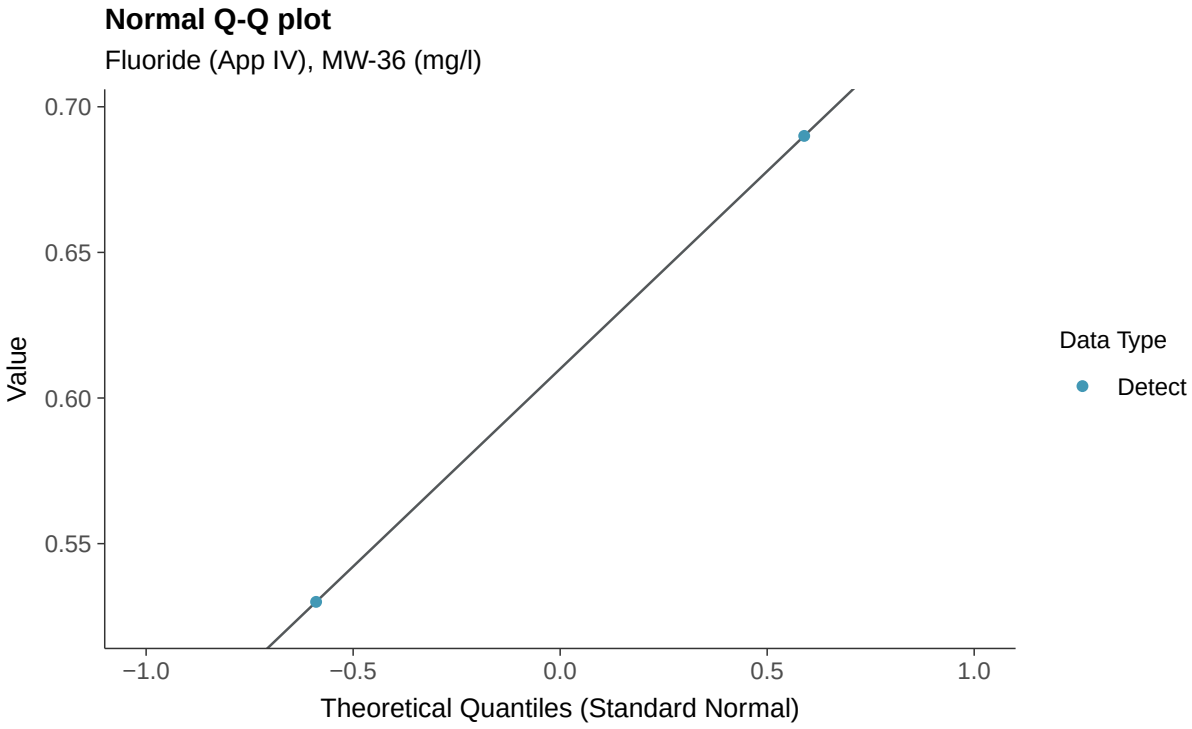
Fluoride (App IV), MW-36 (mg/l)



Boxplot by Season

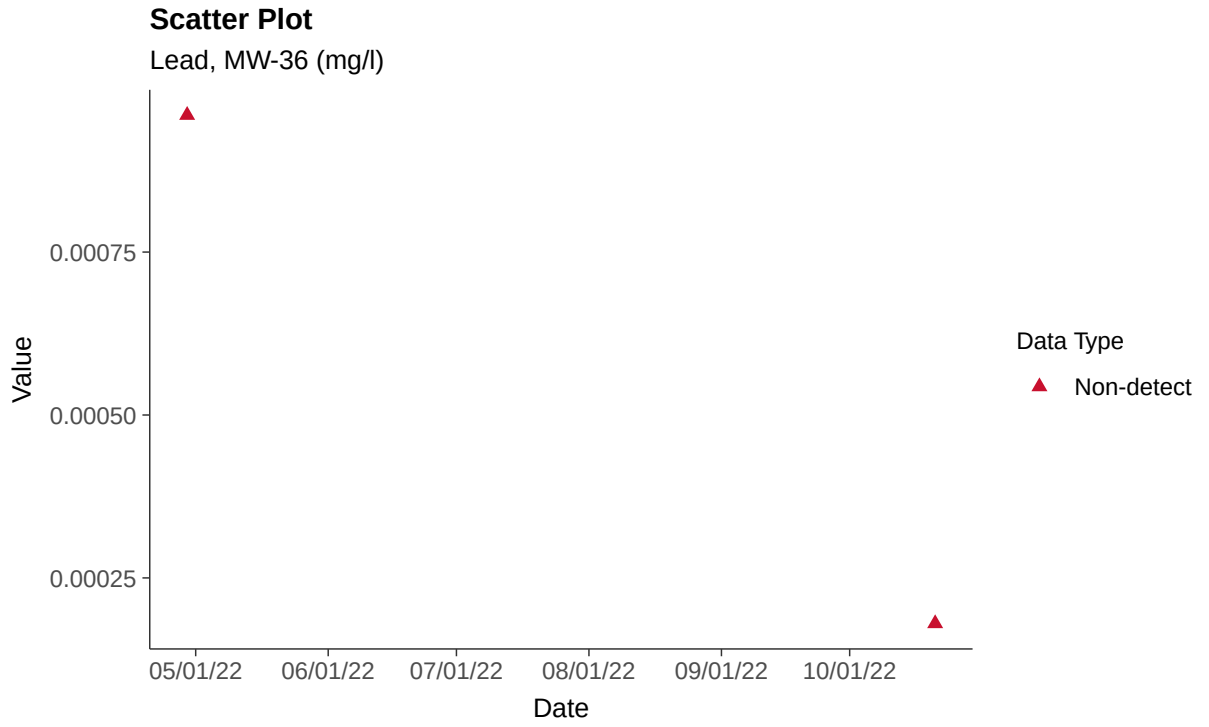
Fluoride (App IV), MW-36 (mg/l)

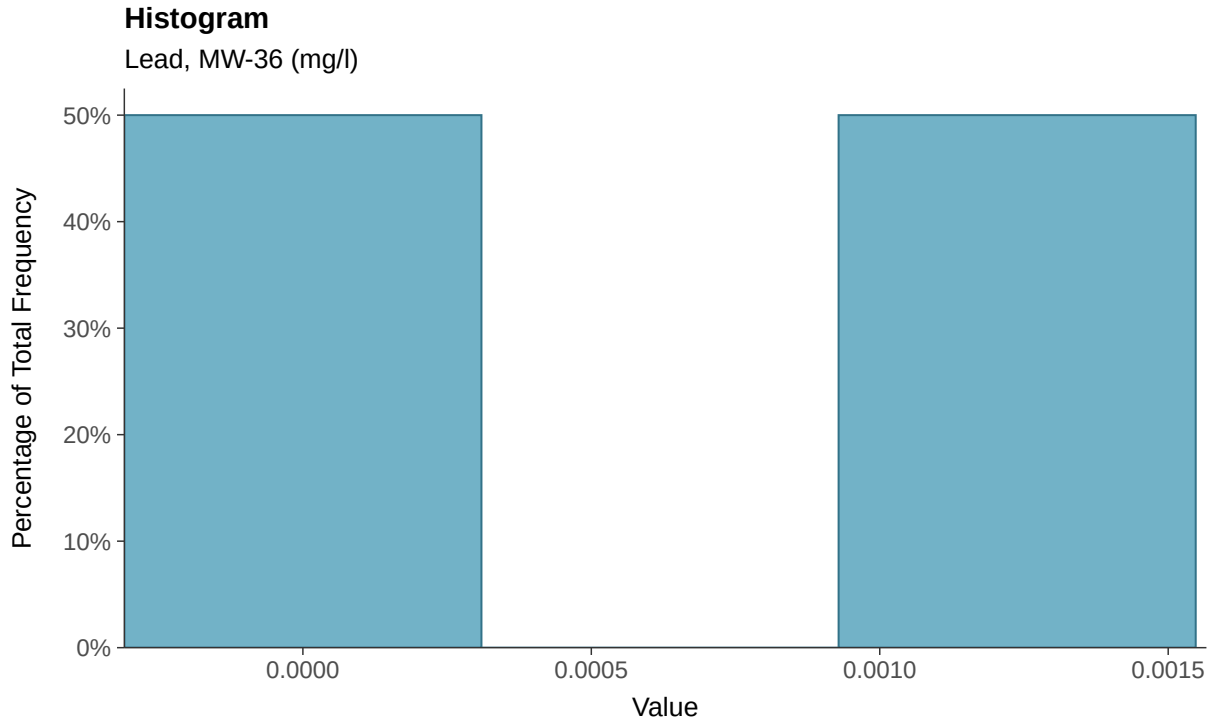



Normal Q-Q plot
Fluoride (App IV), MW-36 (mg/l)
Value
0.70
0.65
0.60
0.55
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Lead, MW-36

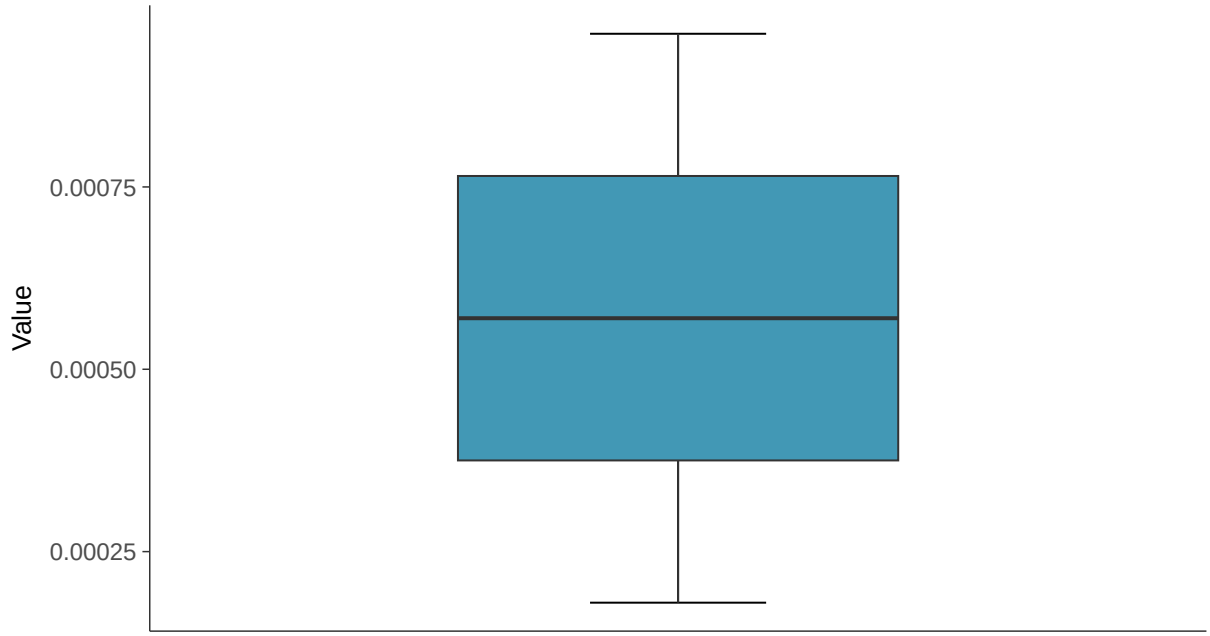
ID: 30_2_117





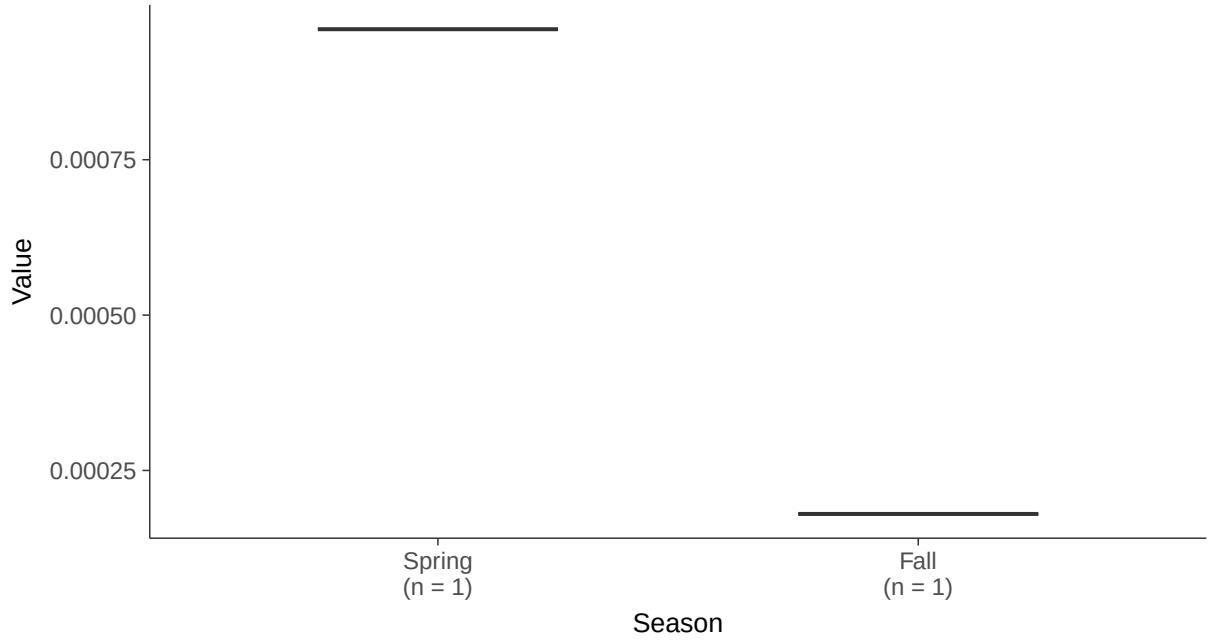
Boxplot

Lead, MW-36 (mg/l)



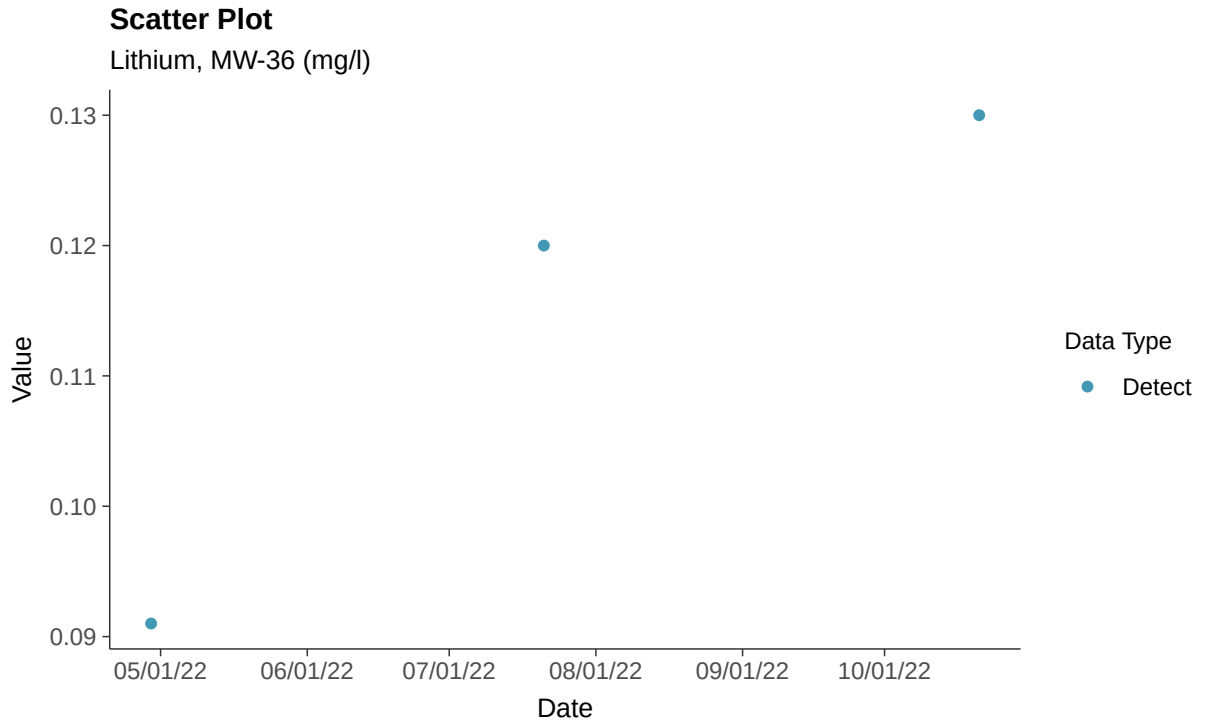
Boxplot by Season

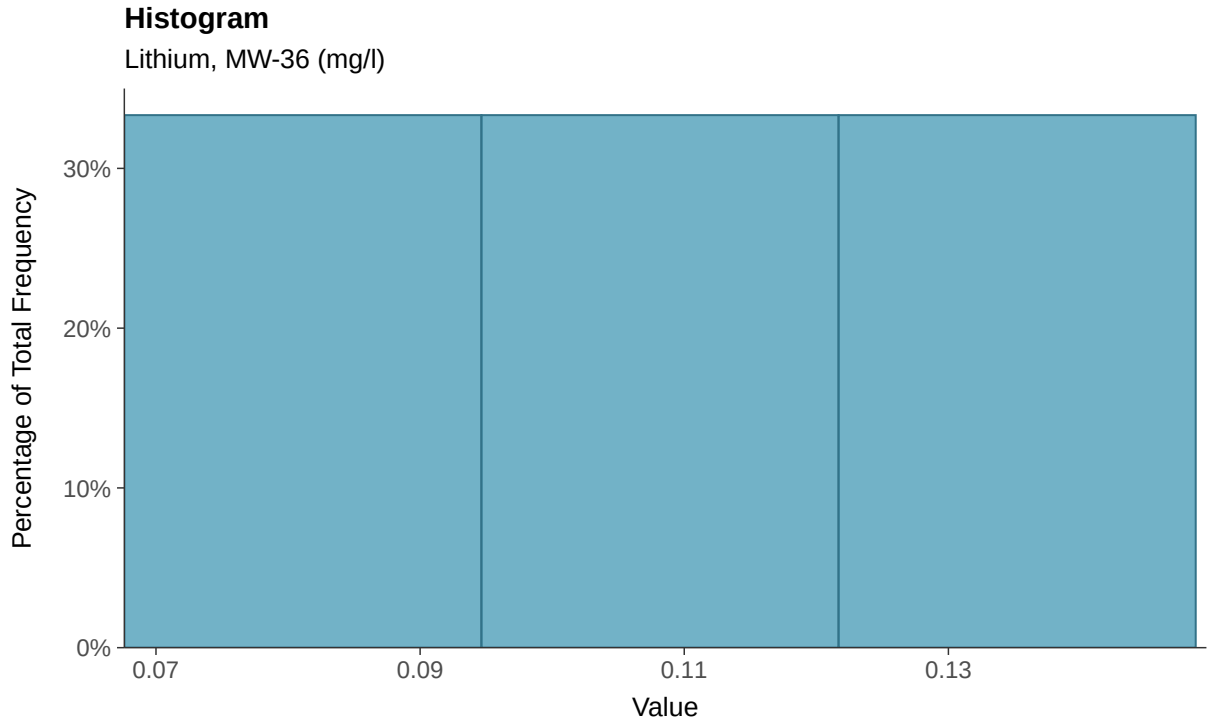
Lead, MW-36 (mg/l)



Appendix IV: Lithium, MW-36

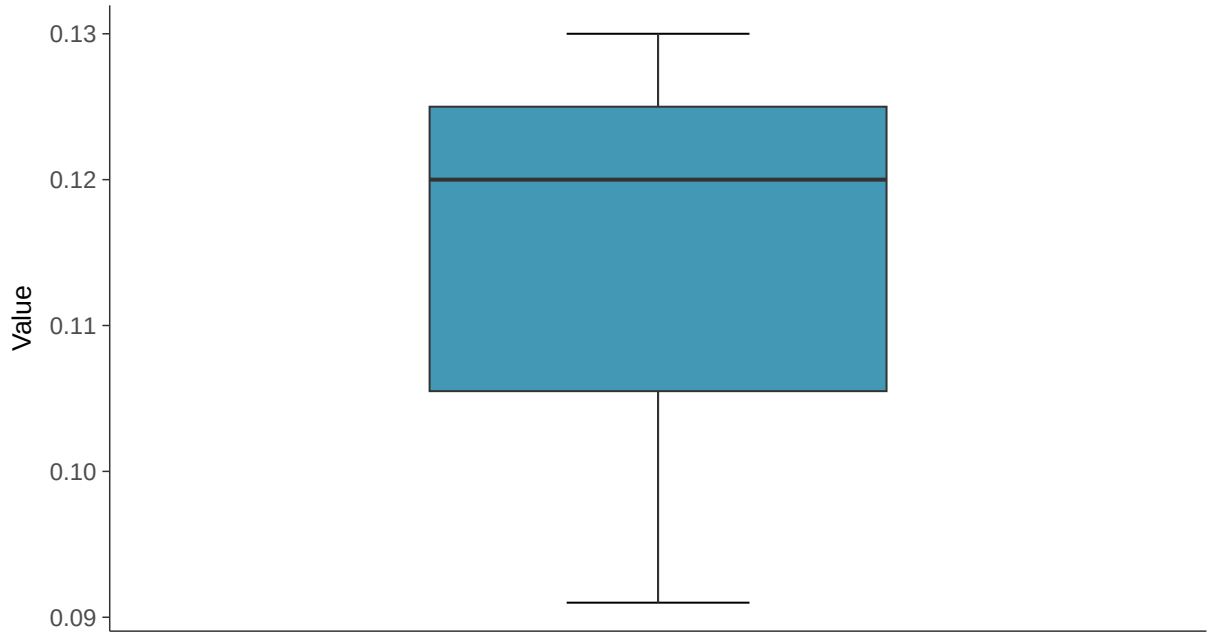
ID: 30_2_118





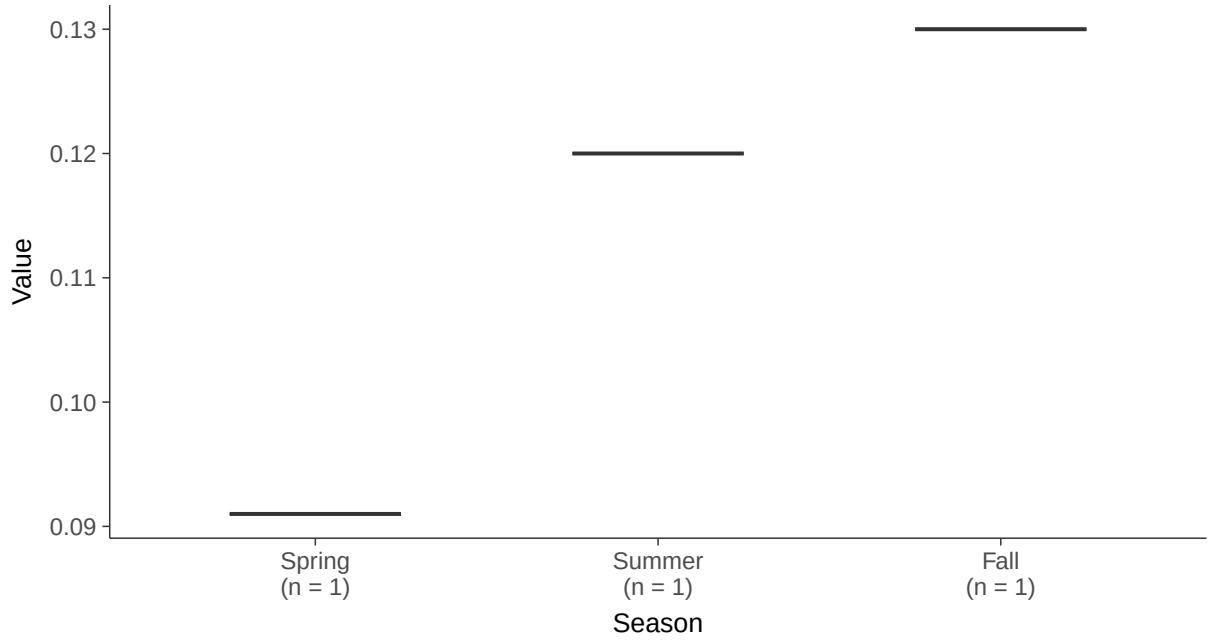
Boxplot

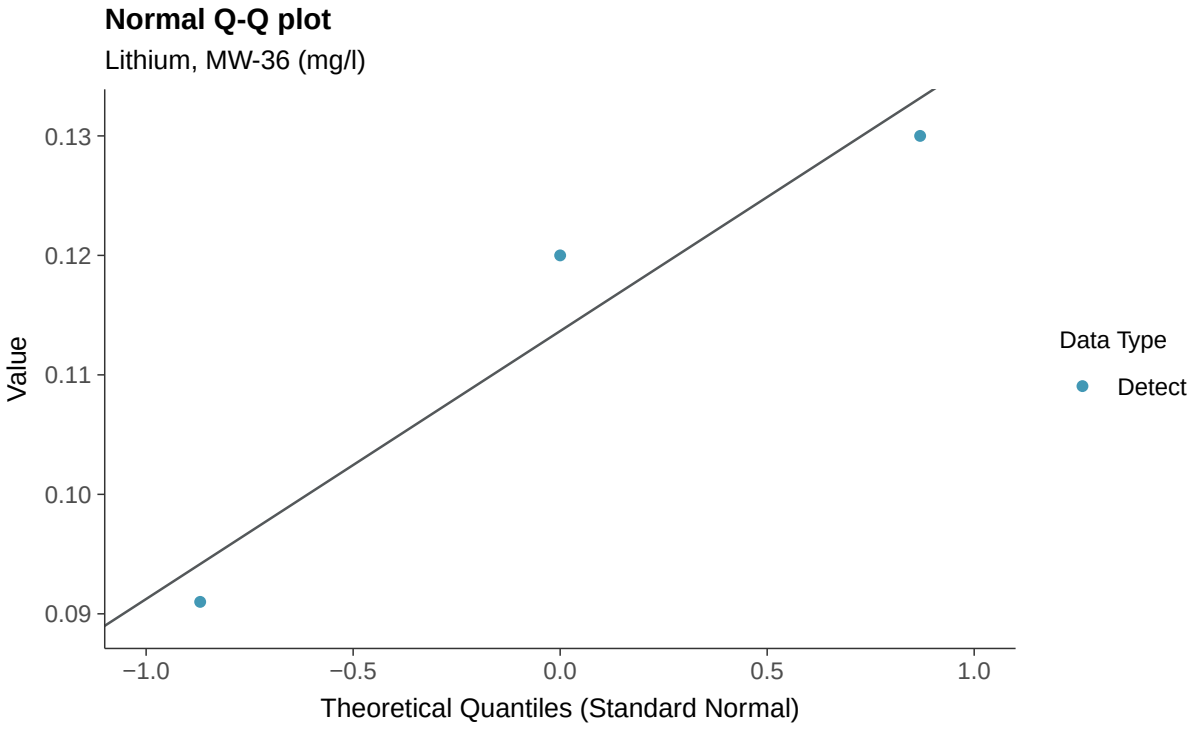
Lithium, MW-36 (mg/l)



Boxplot by Season

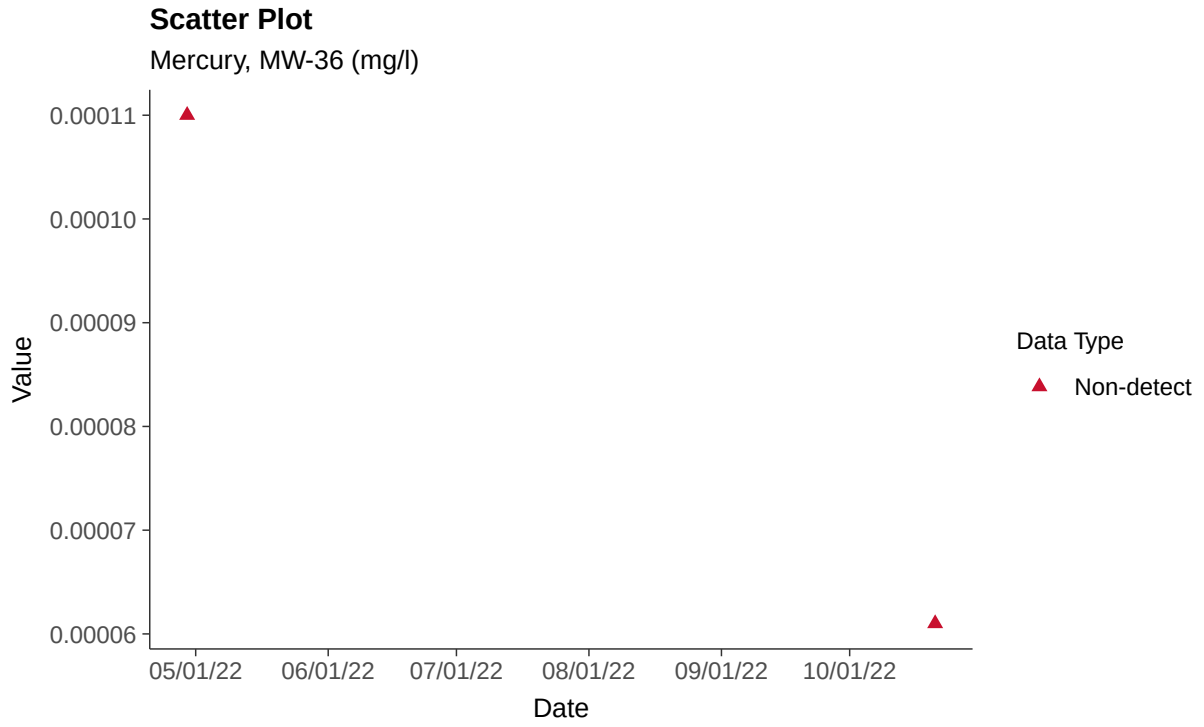
Lithium, MW-36 (mg/l)

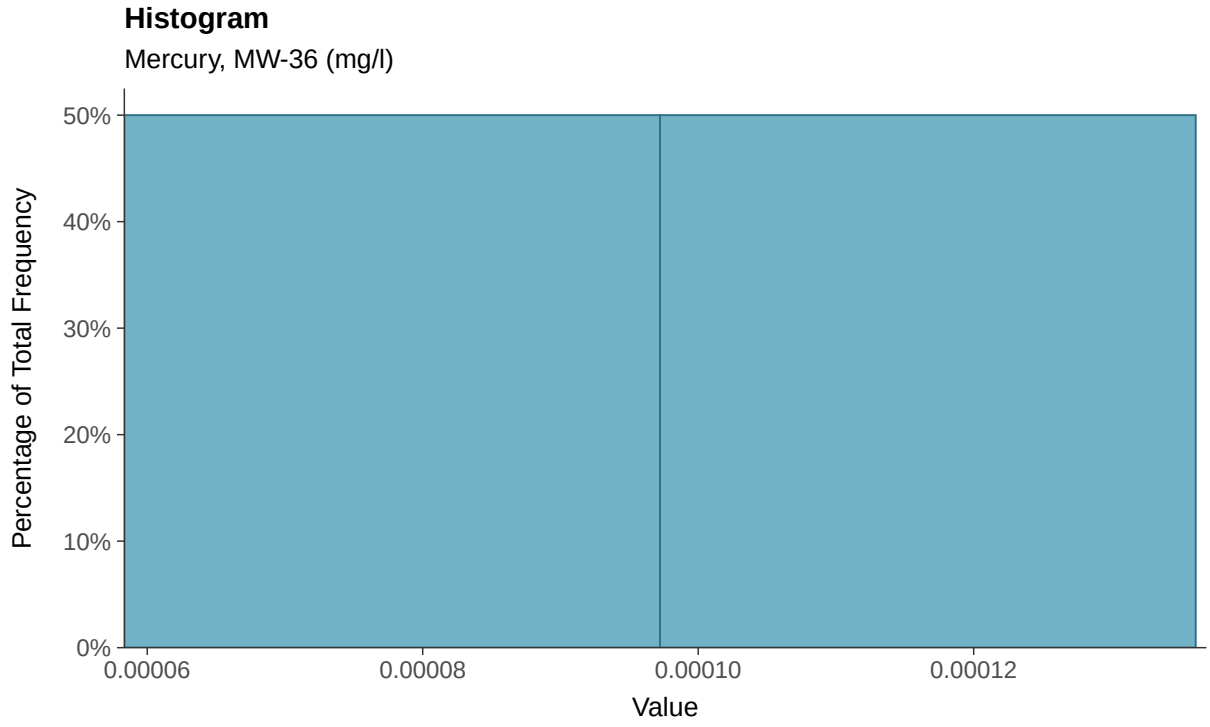



Normal Q-Q plot
Lithium, MW-36 (mg/l)
Value
0.13
0.12
0.11
0.10
0.09
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Mercury, MW-36

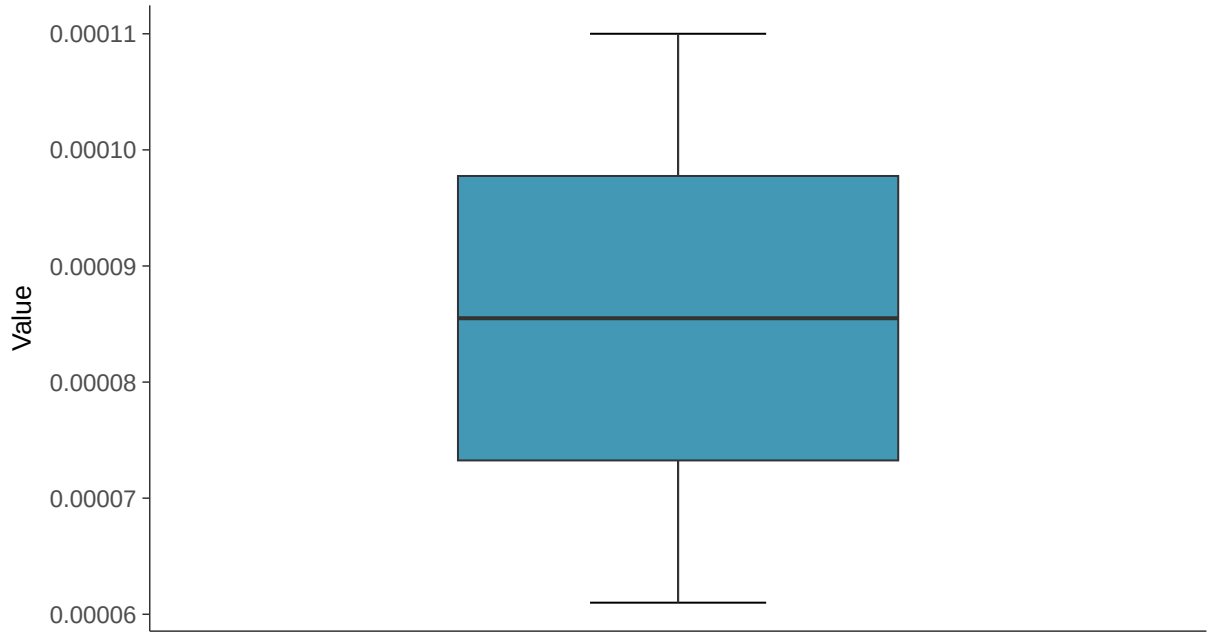
ID: 30_2_120





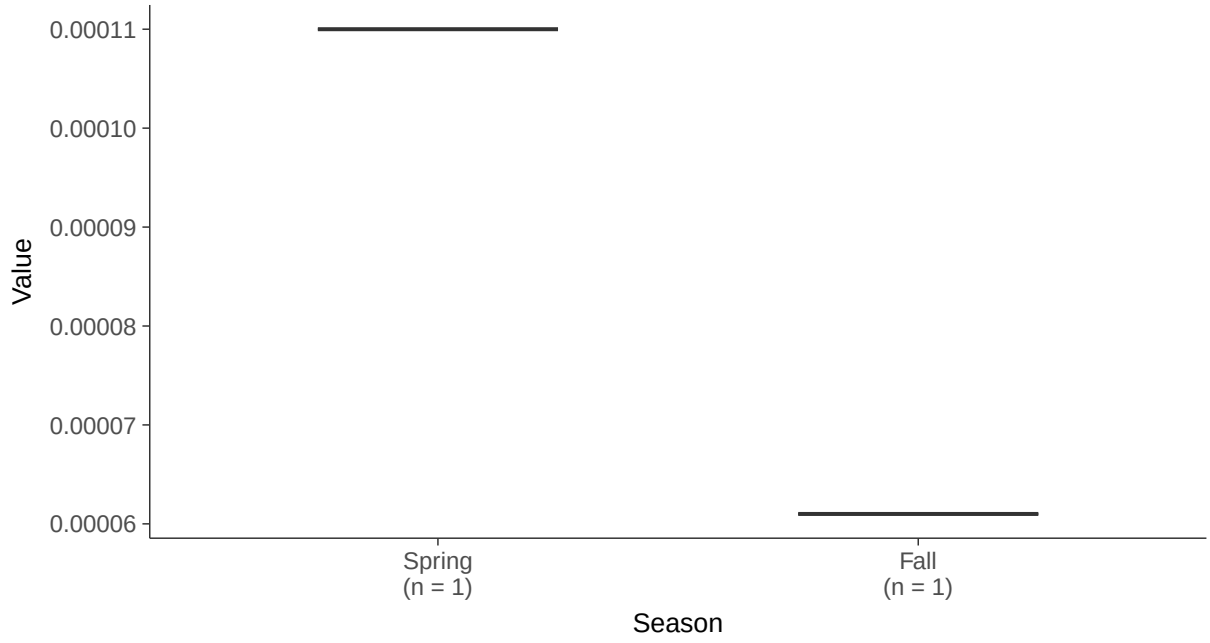
Boxplot

Mercury, MW-36 (mg/l)



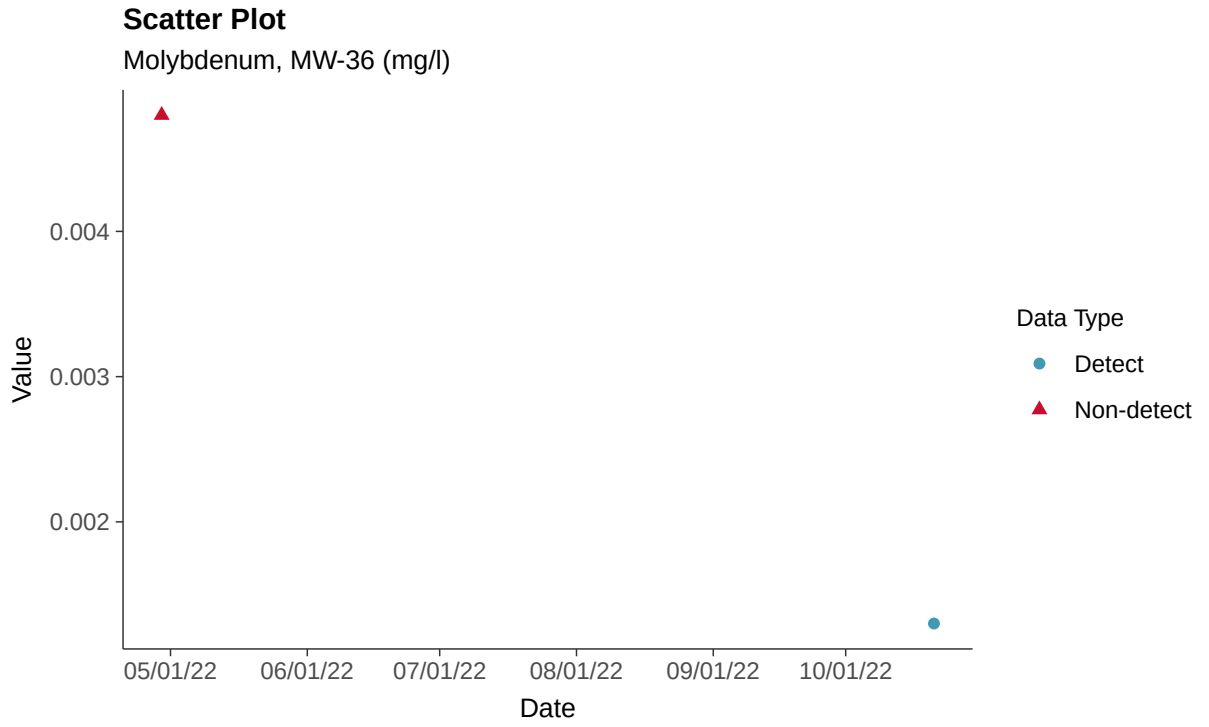
Boxplot by Season

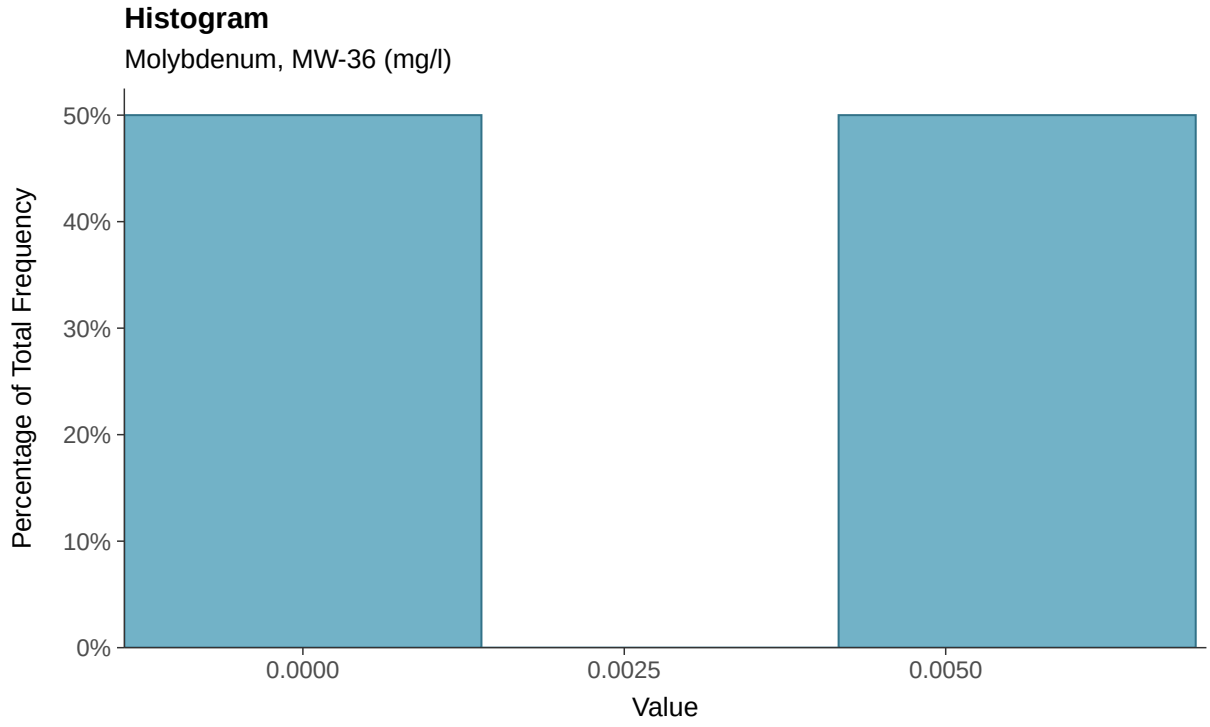
Mercury, MW-36 (mg/l)



Appendix IV: Molybdenum, MW-36

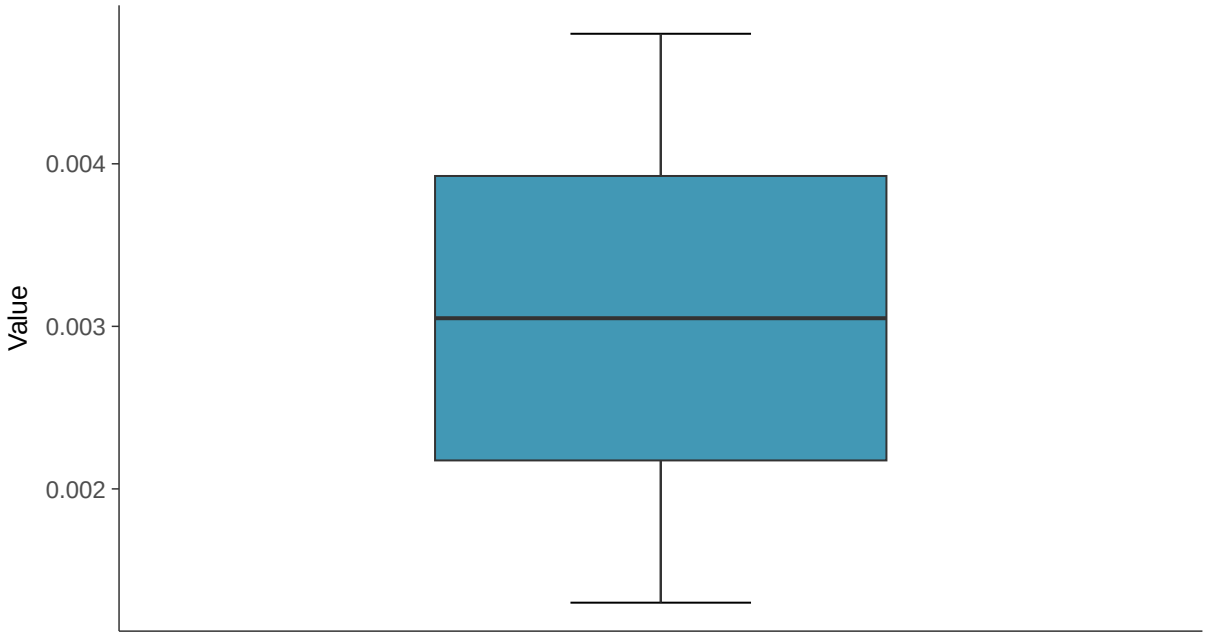
ID: 30_2_121





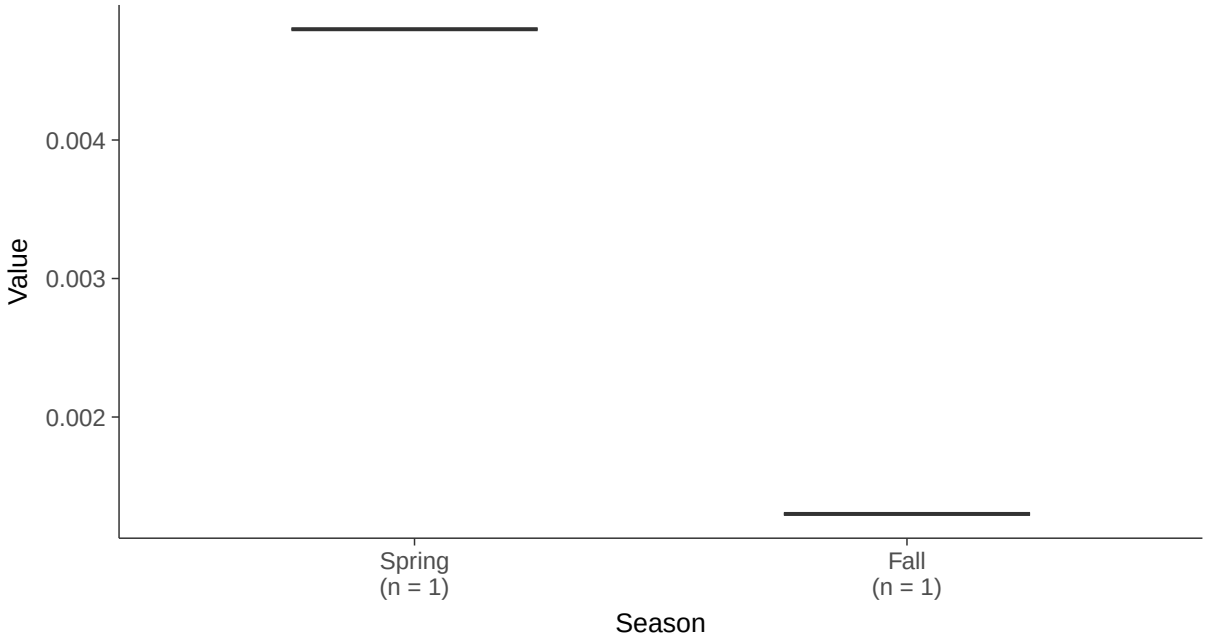
Boxplot

Molybdenum, MW-36 (mg/l)



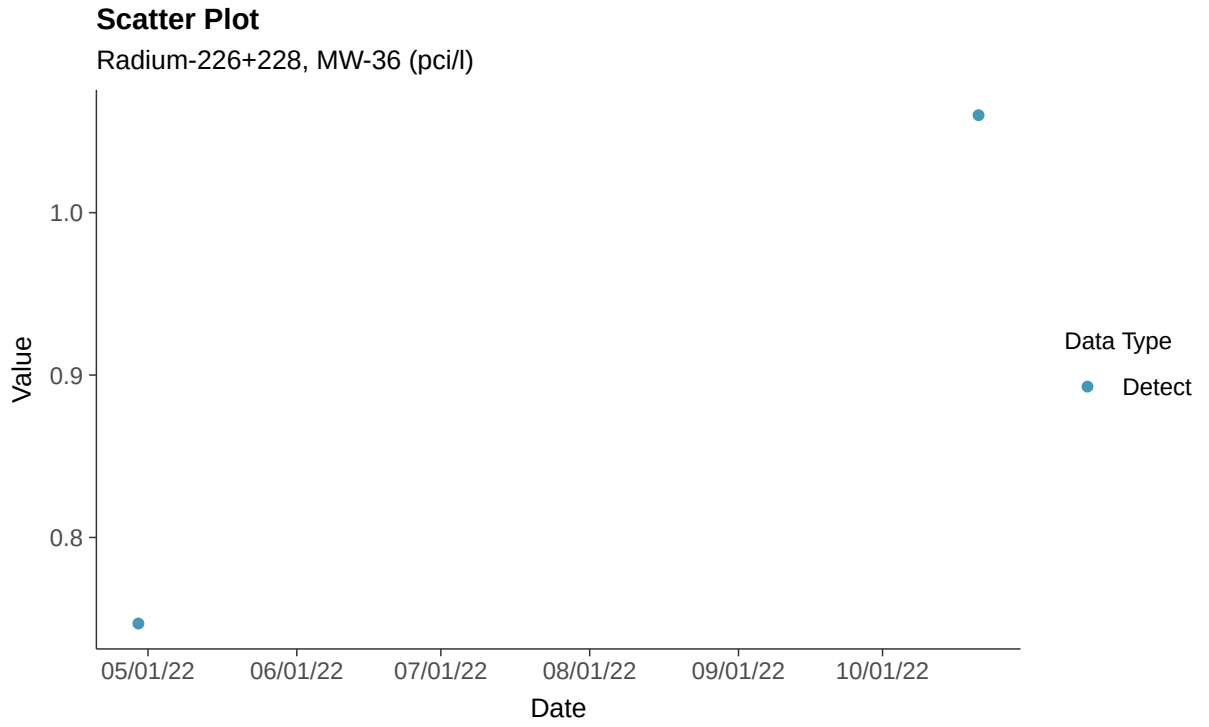
Boxplot by Season

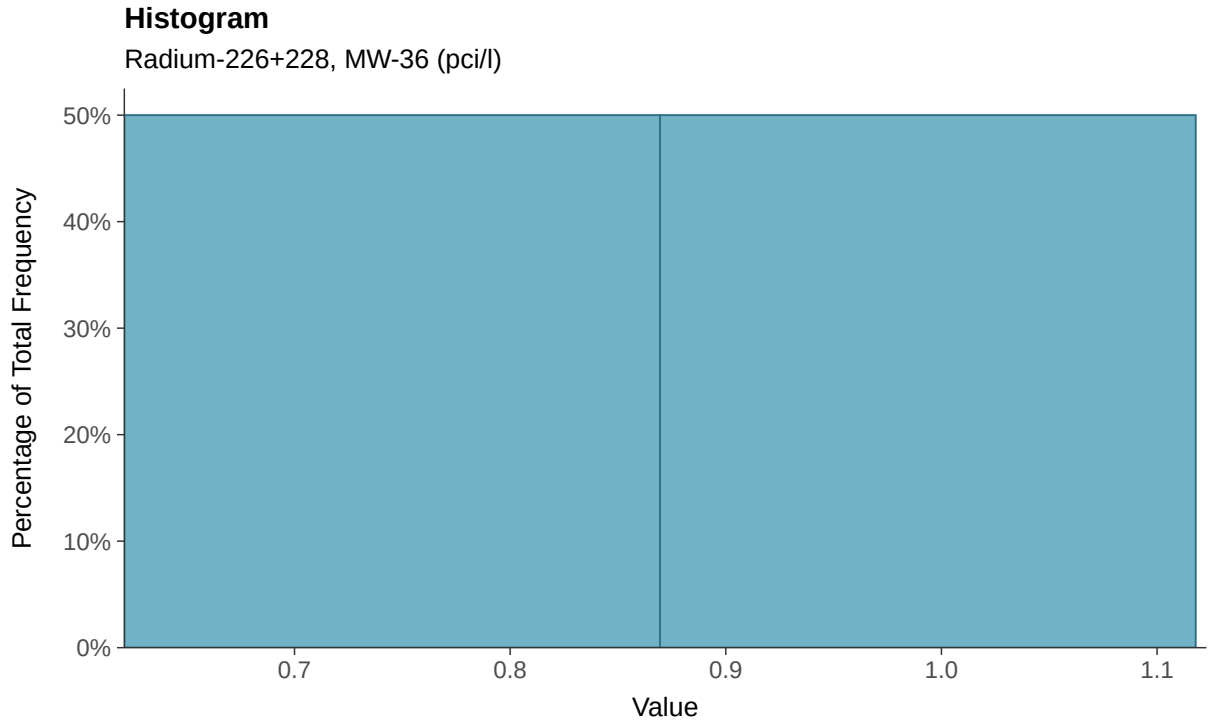
Molybdenum, MW-36 (mg/l)



Appendix IV: Radium-226+228, MW-36

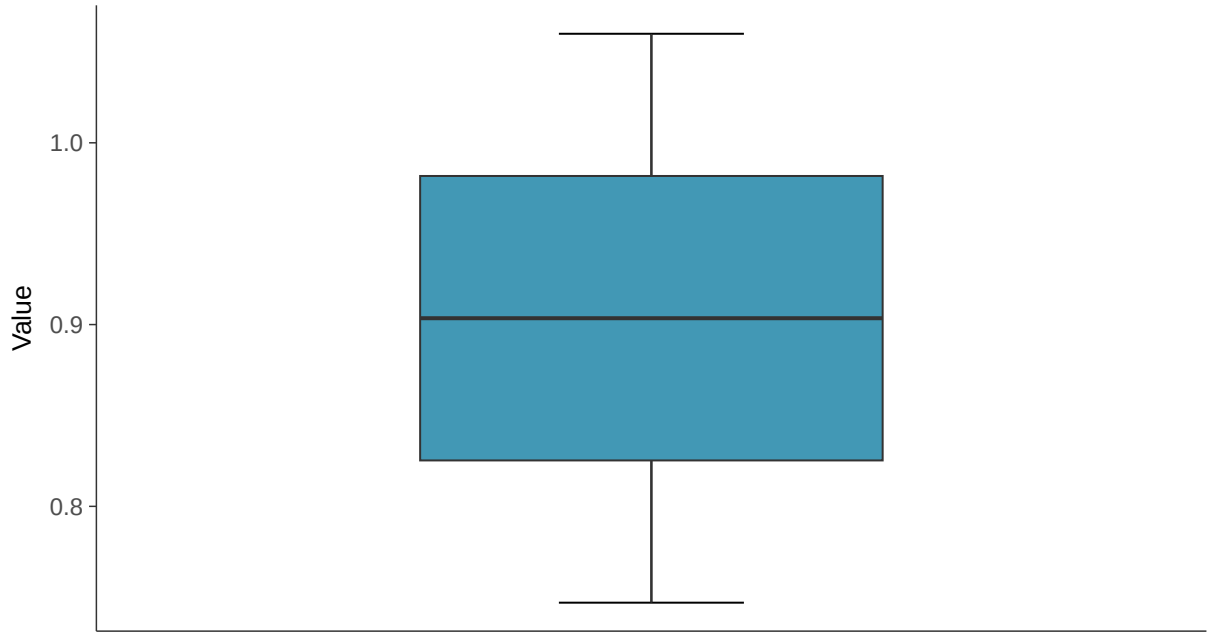
ID: 30_2_127





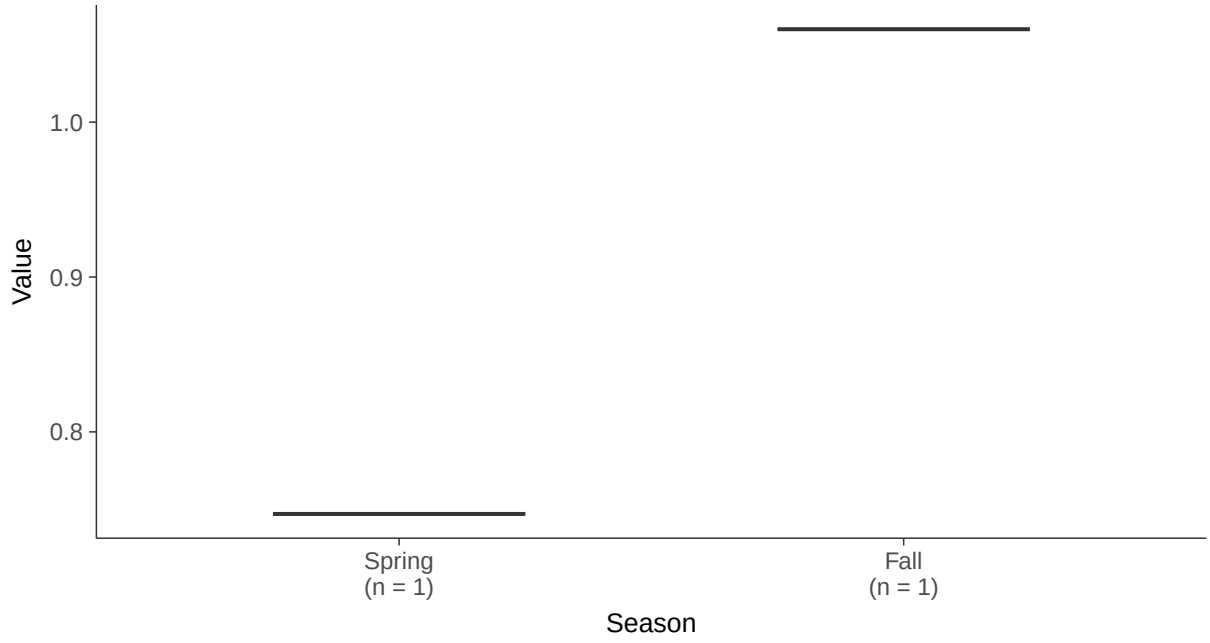
Boxplot

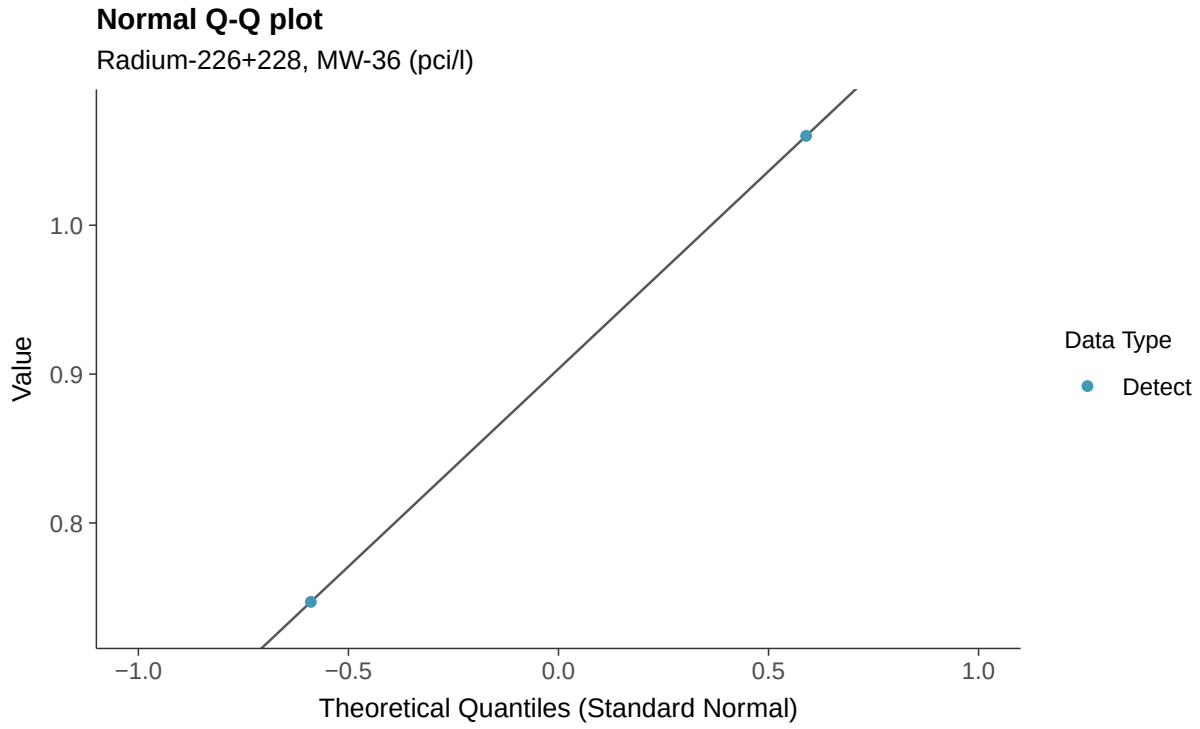
Radium-226+228, MW-36 (pci/l)



Boxplot by Season

Radium-226+228, MW-36 (pci/l)



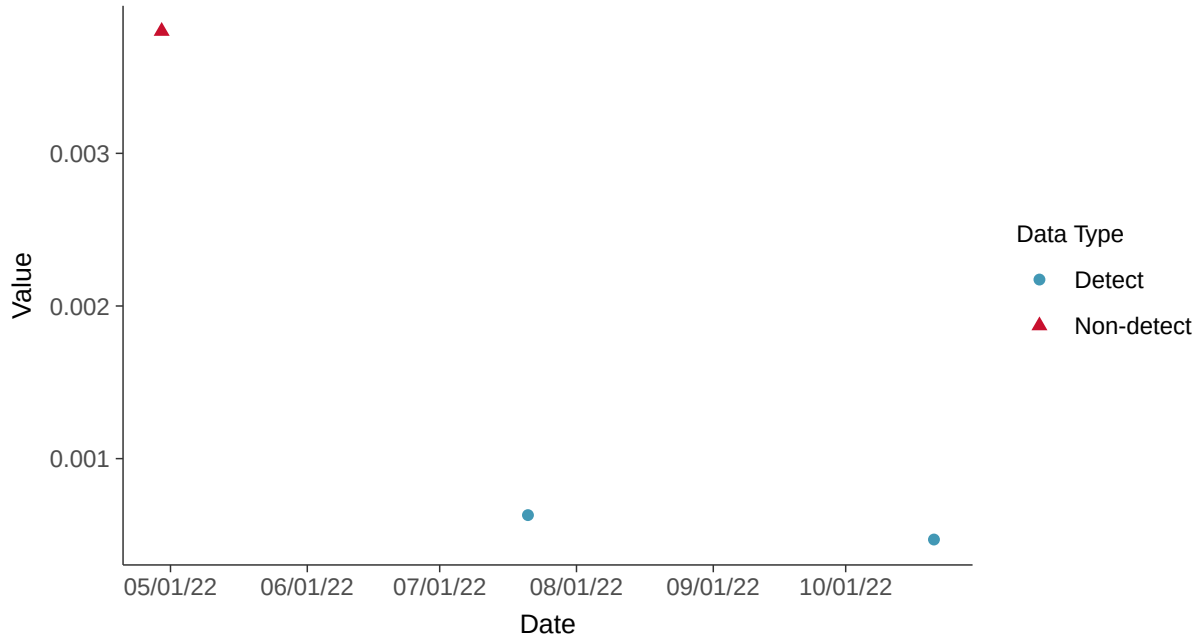

Normal Q-Q plot
Radium-226+228, MW-36 (pci/l)
Value
1.0
0.9
0.8
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Selenium, MW-36

ID: 30_2_129

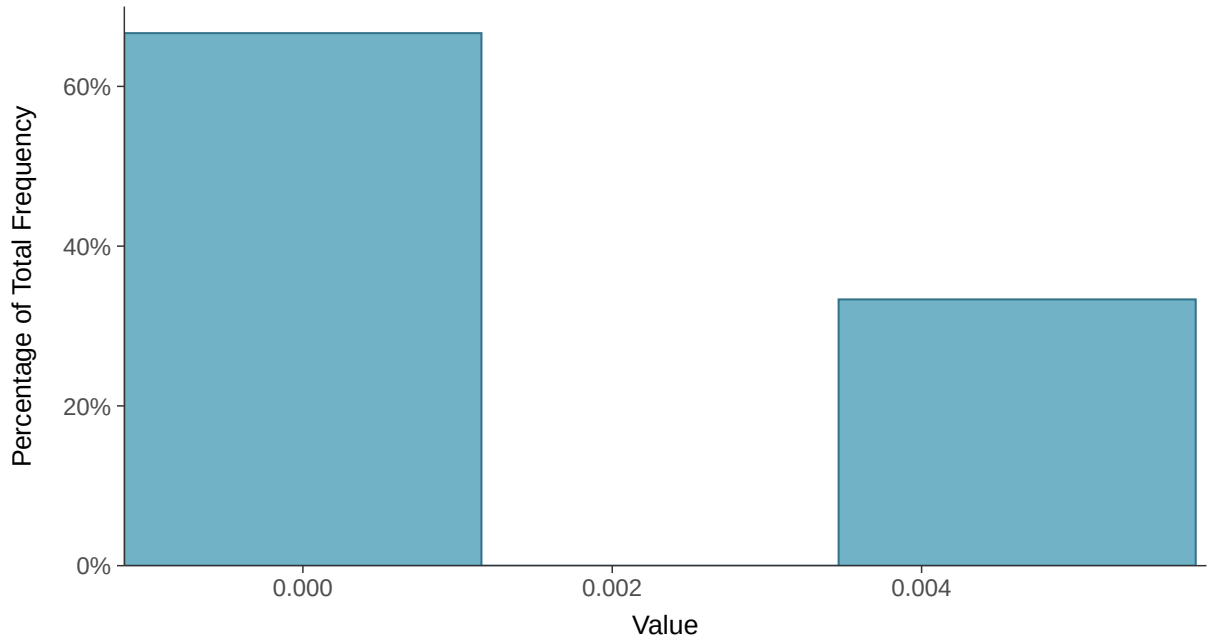
Scatter Plot

Selenium, MW-36 (mg/l)



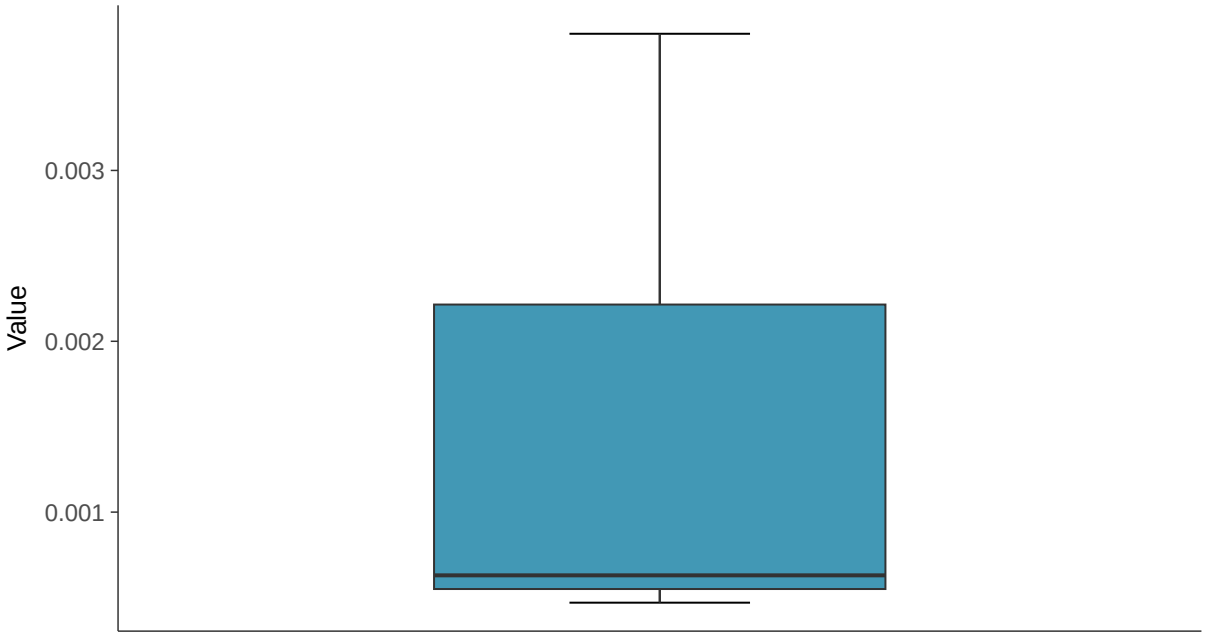
Histogram

Selenium, MW-36 (mg/l)



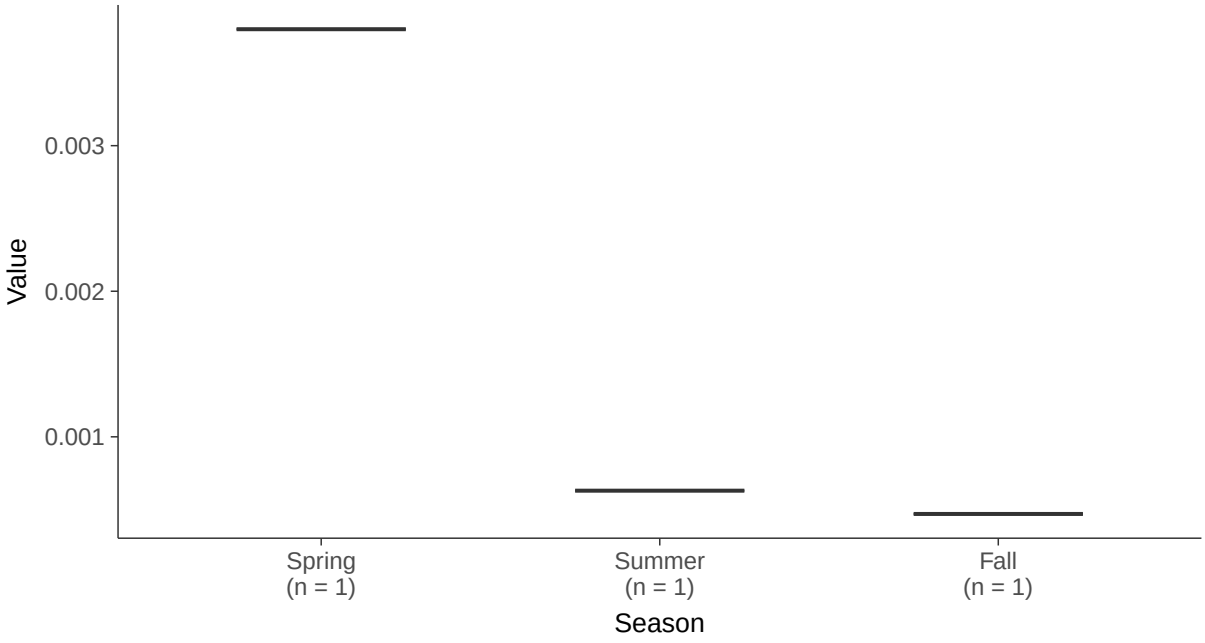
Boxplot

Selenium, MW-36 (mg/l)



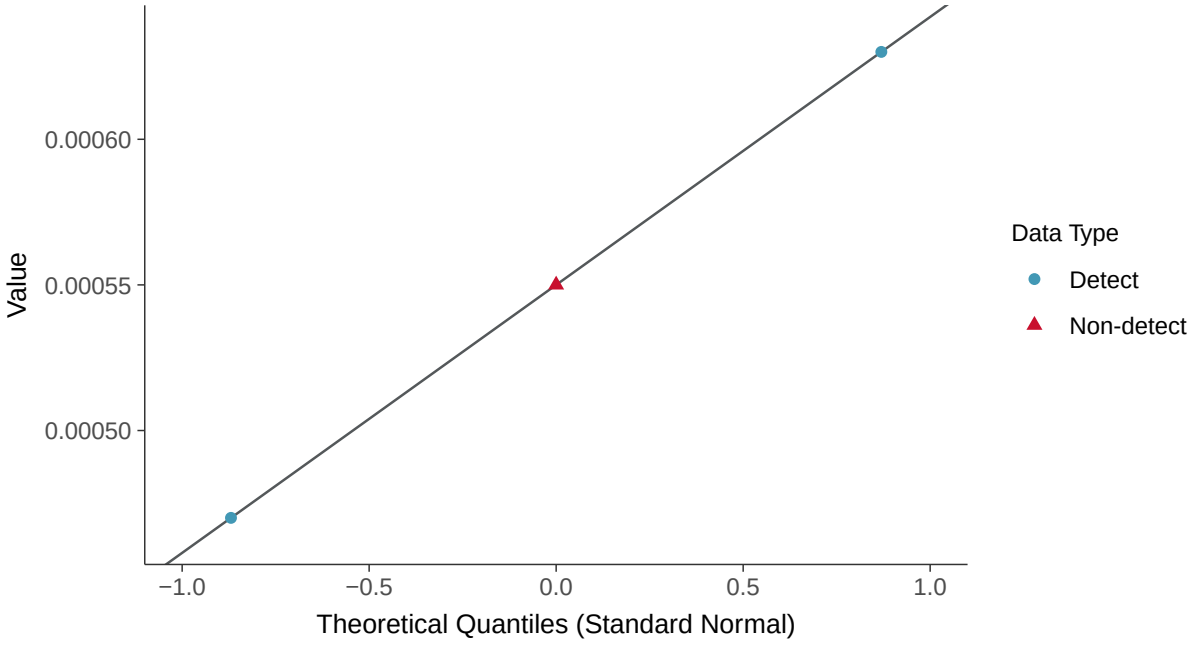
Boxplot by Season

Selenium, MW-36 (mg/l)



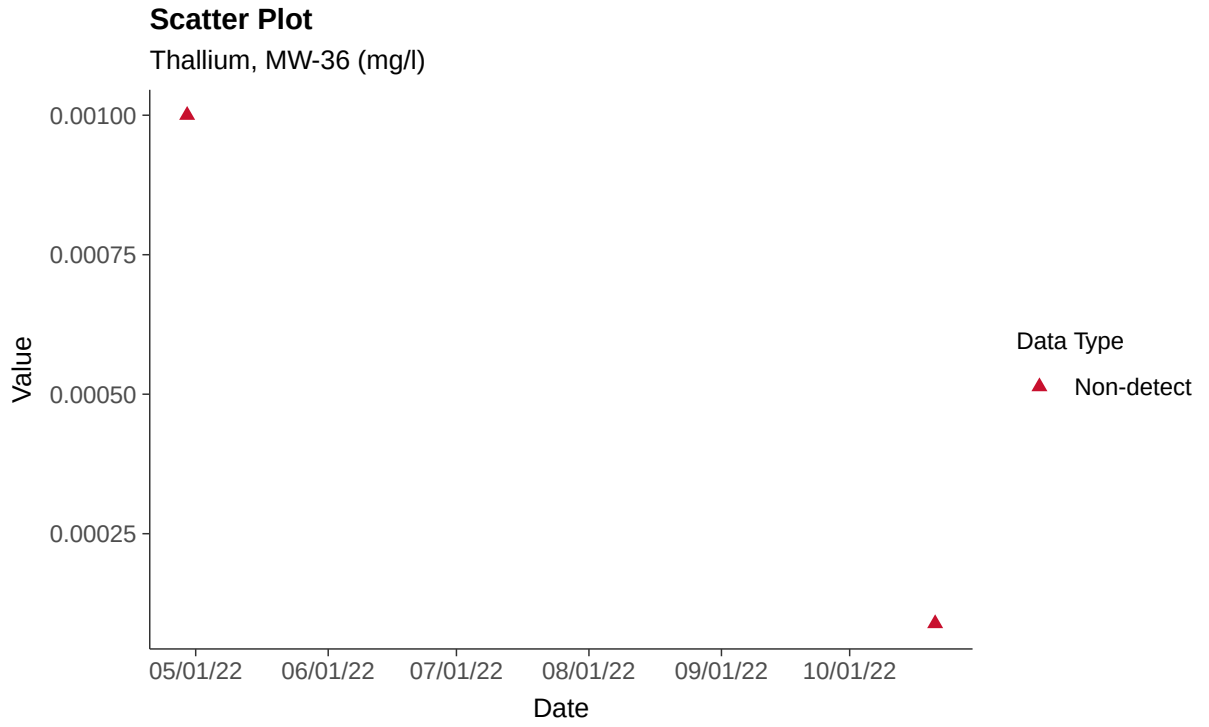
Normal Q-Q plot using ROS Imputed Estimates

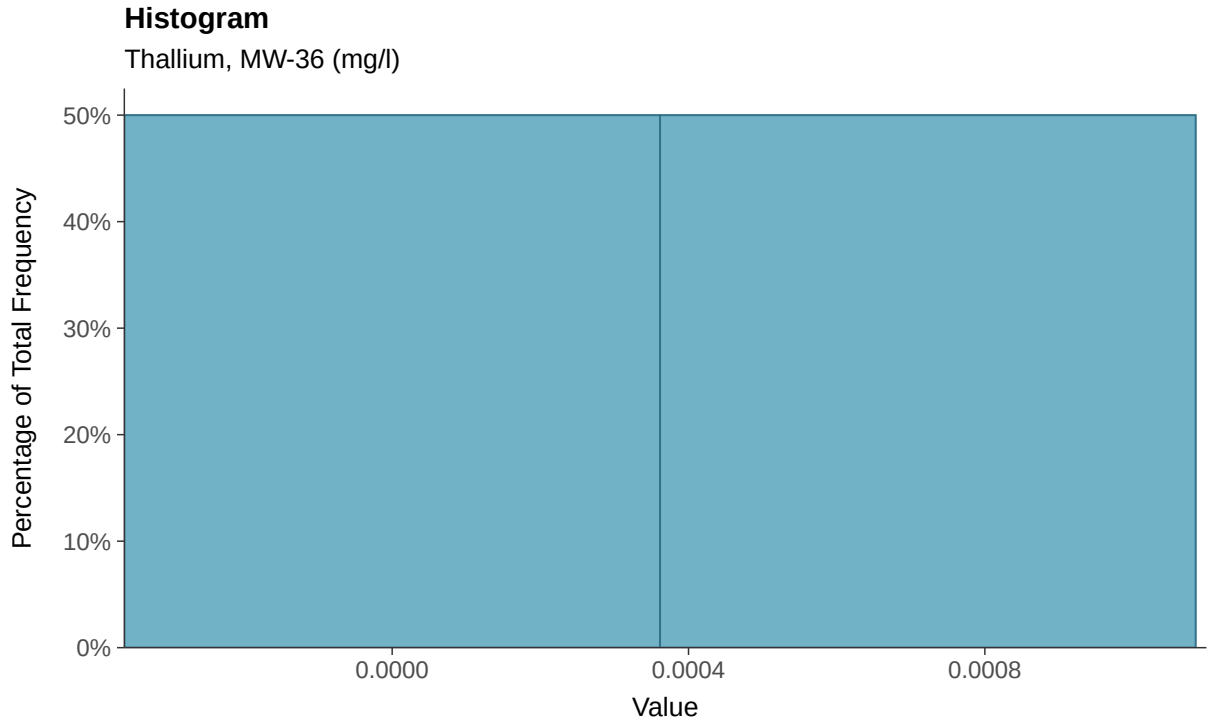
Selenium, MW-36 (mg/l)



Appendix IV: Thallium, MW-36

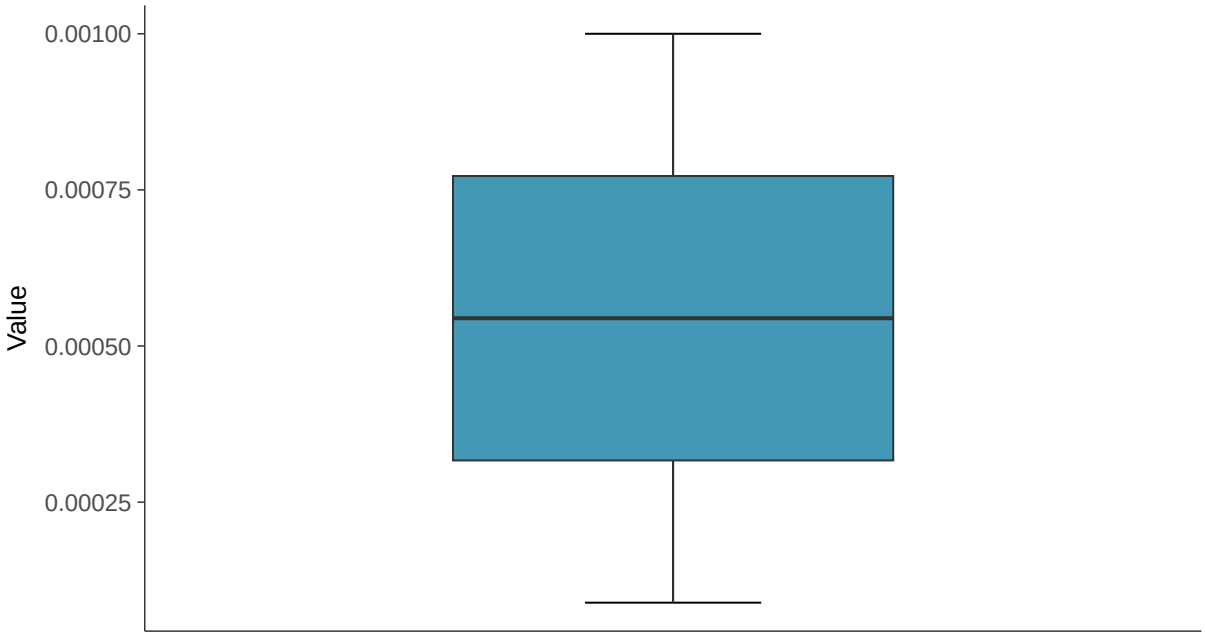
ID: 30_2_134





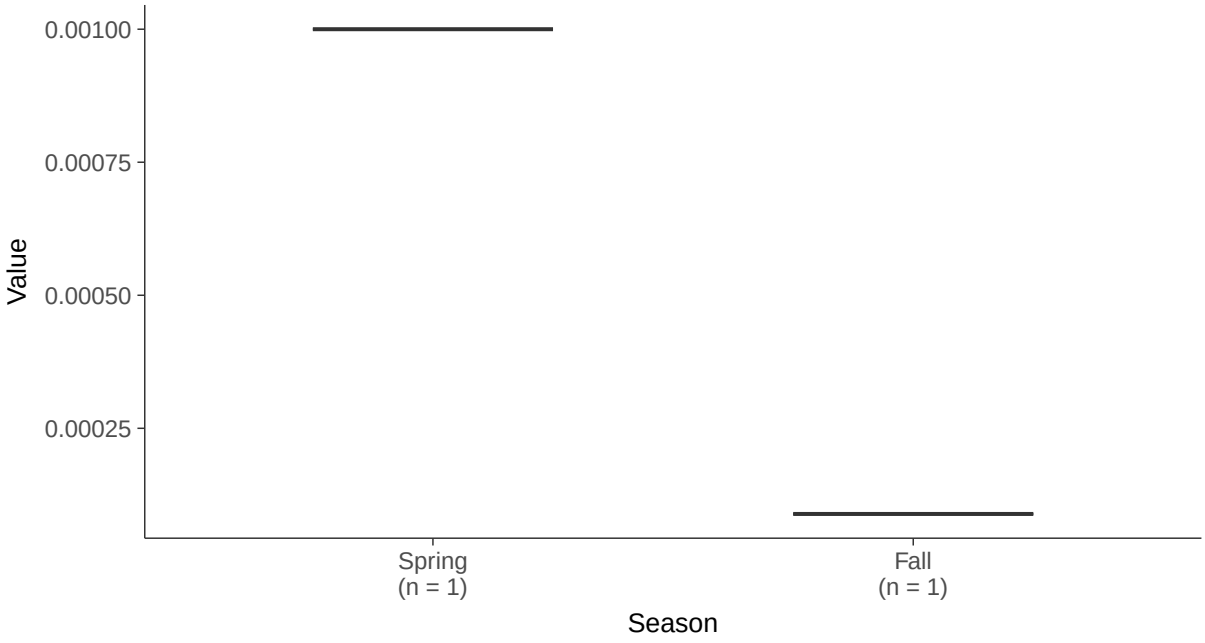
Boxplot

Thallium, MW-36 (mg/l)



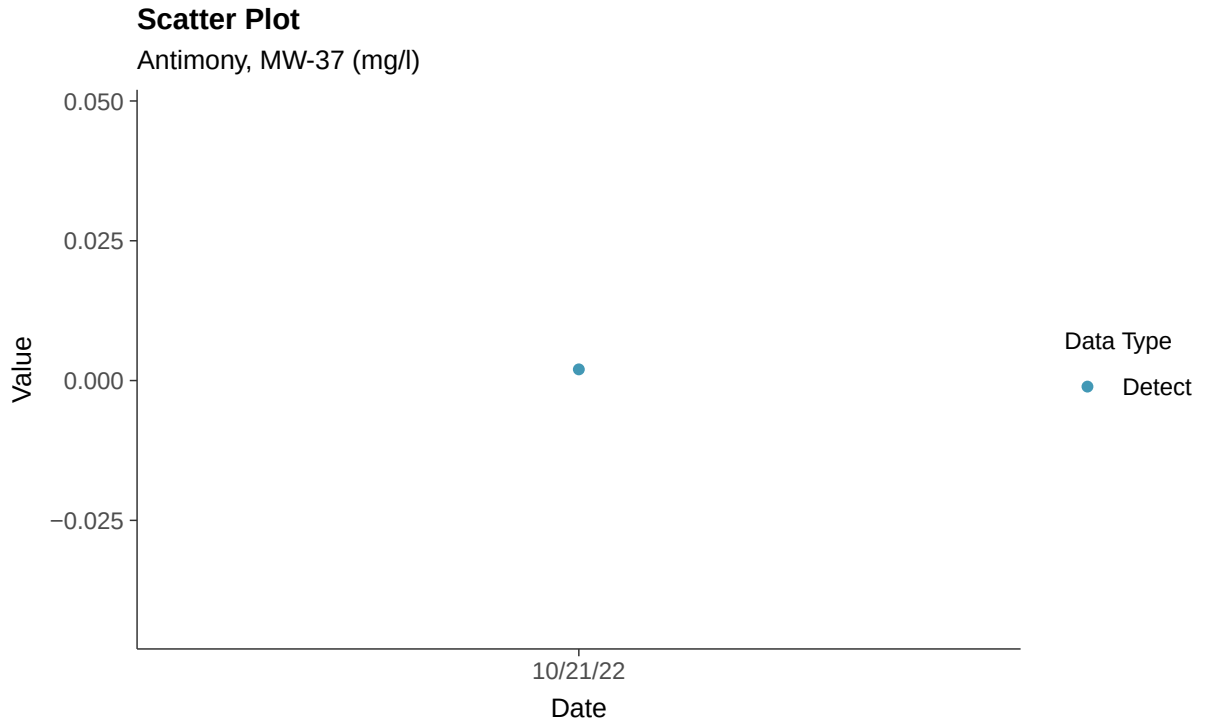
Boxplot by Season

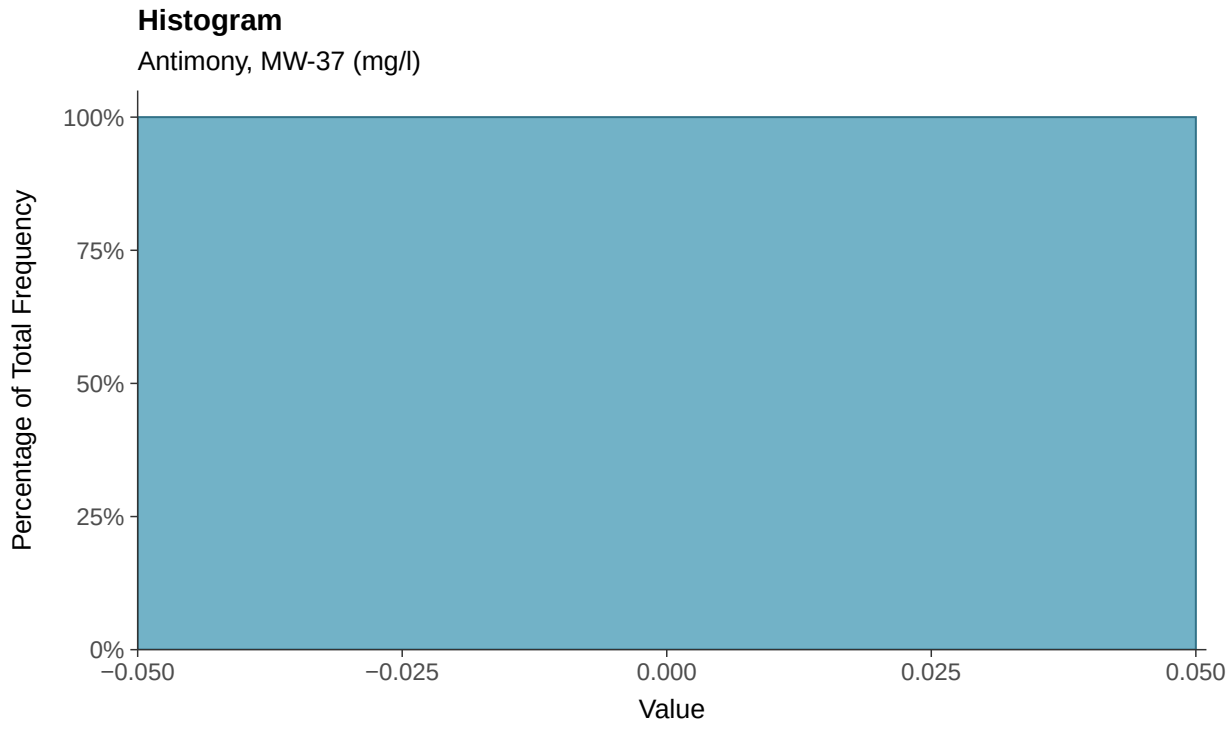
Thallium, MW-36 (mg/l)



Appendix IV: Antimony, MW-37

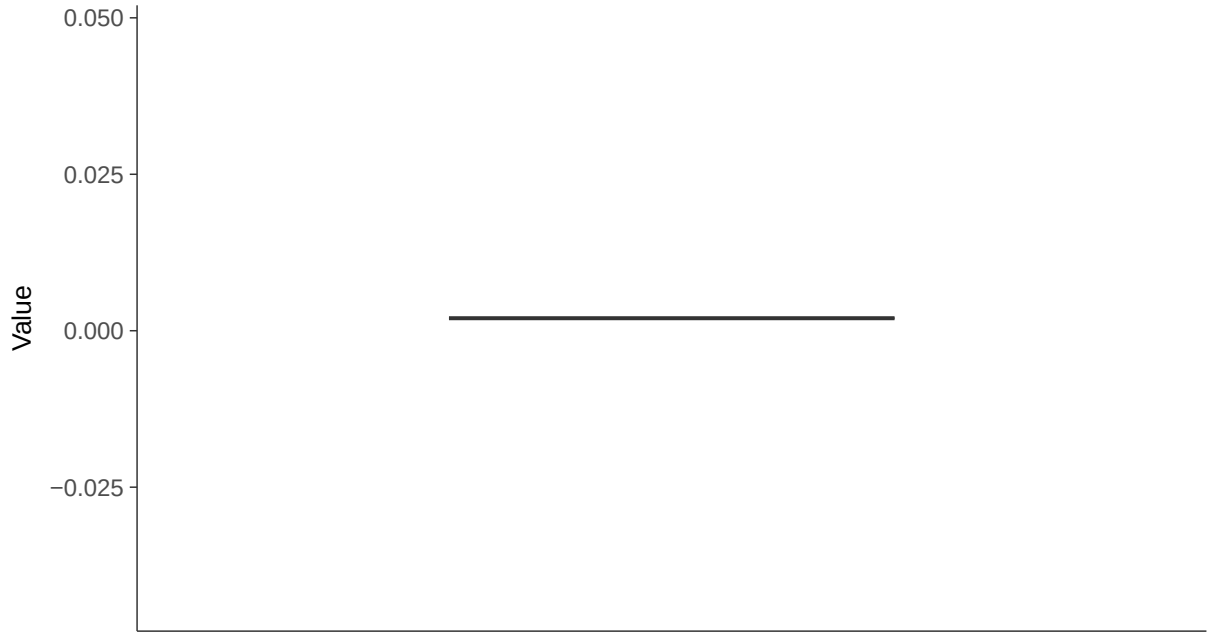
ID: 31_2_104





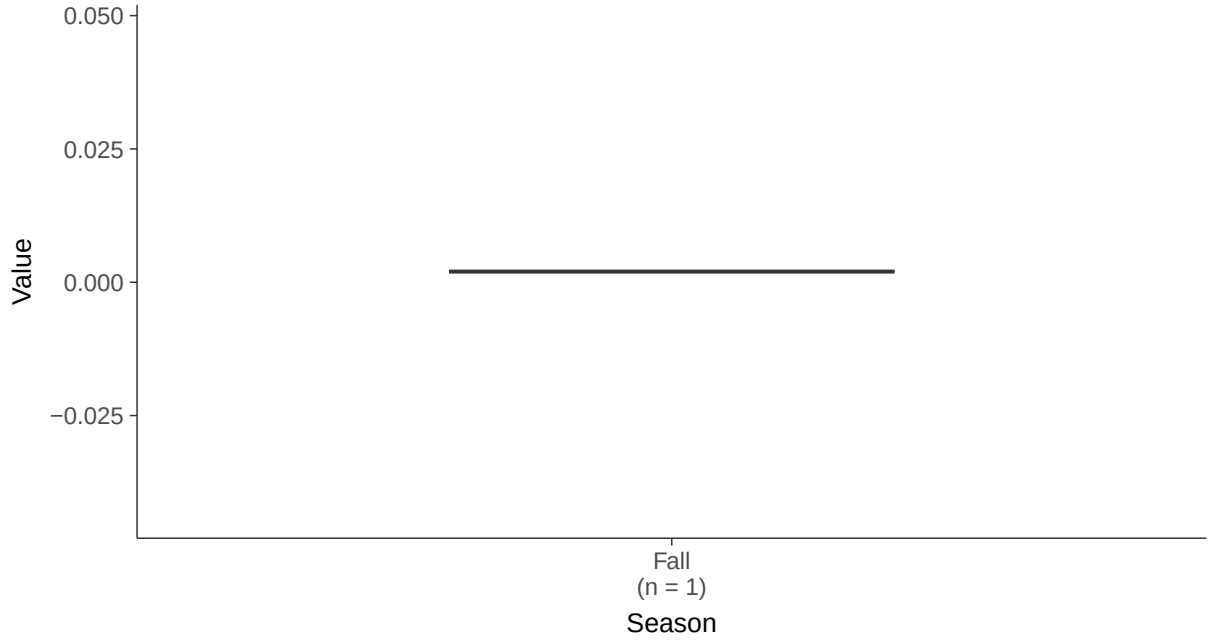
Boxplot

Antimony, MW-37 (mg/l)



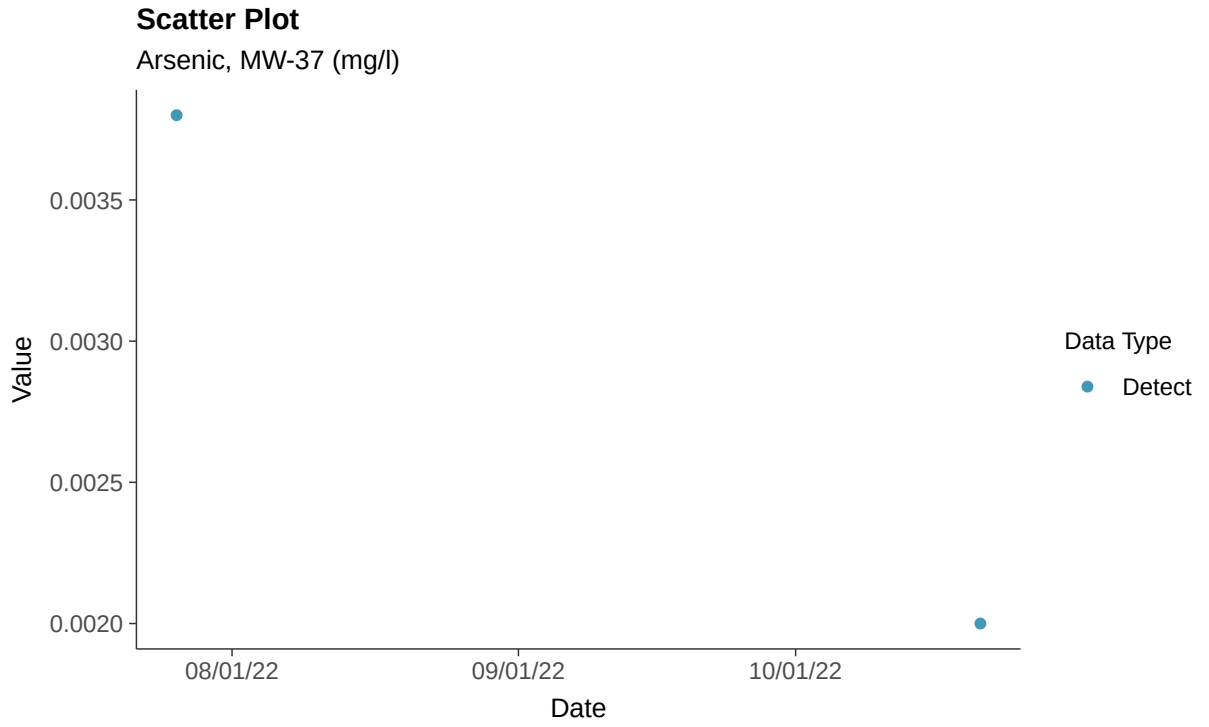
Boxplot by Season

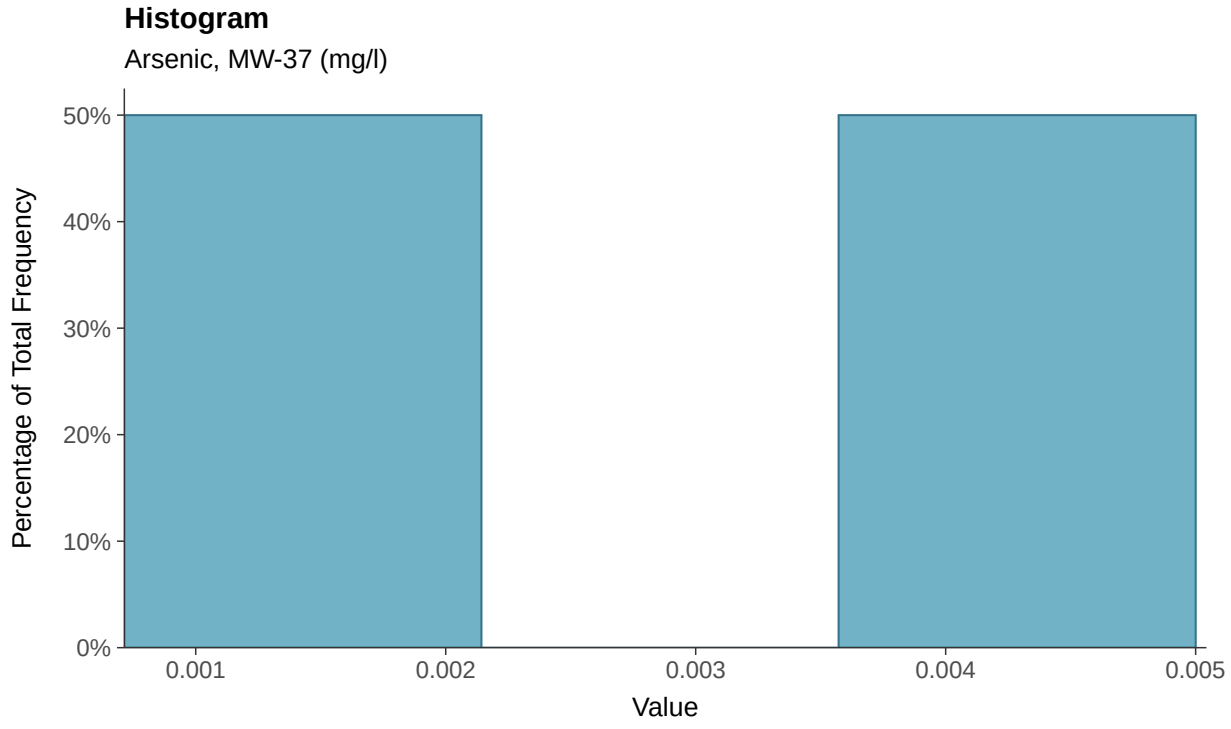
Antimony, MW-37 (mg/l)



Appendix IV: Arsenic, MW-37

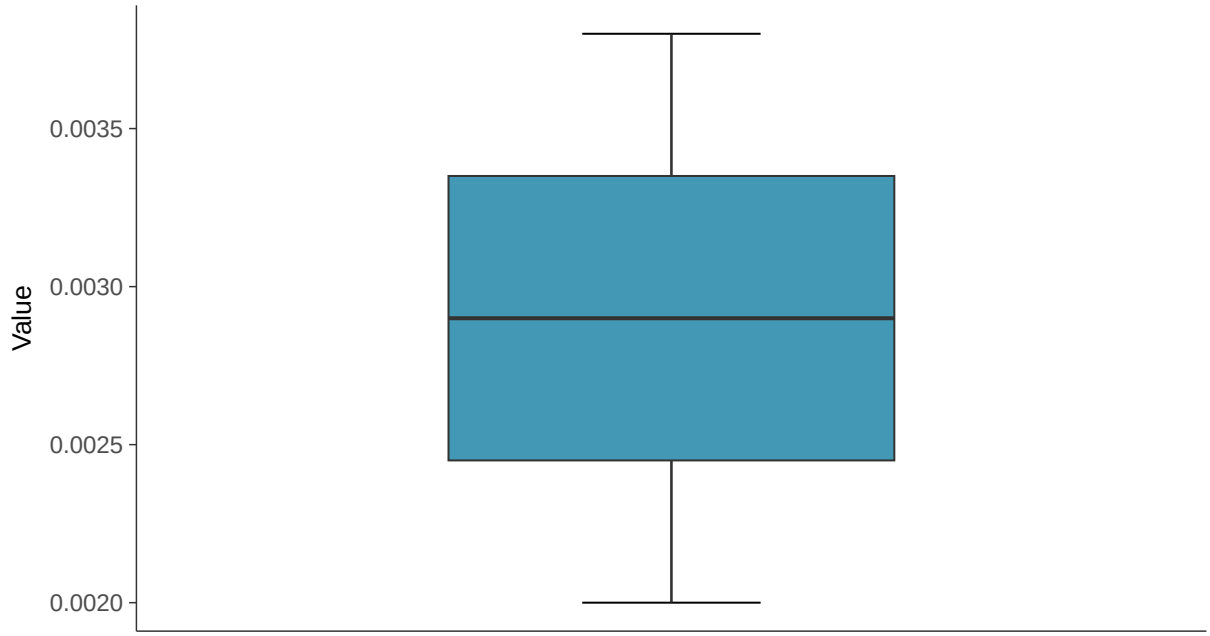
ID: 31_2_105





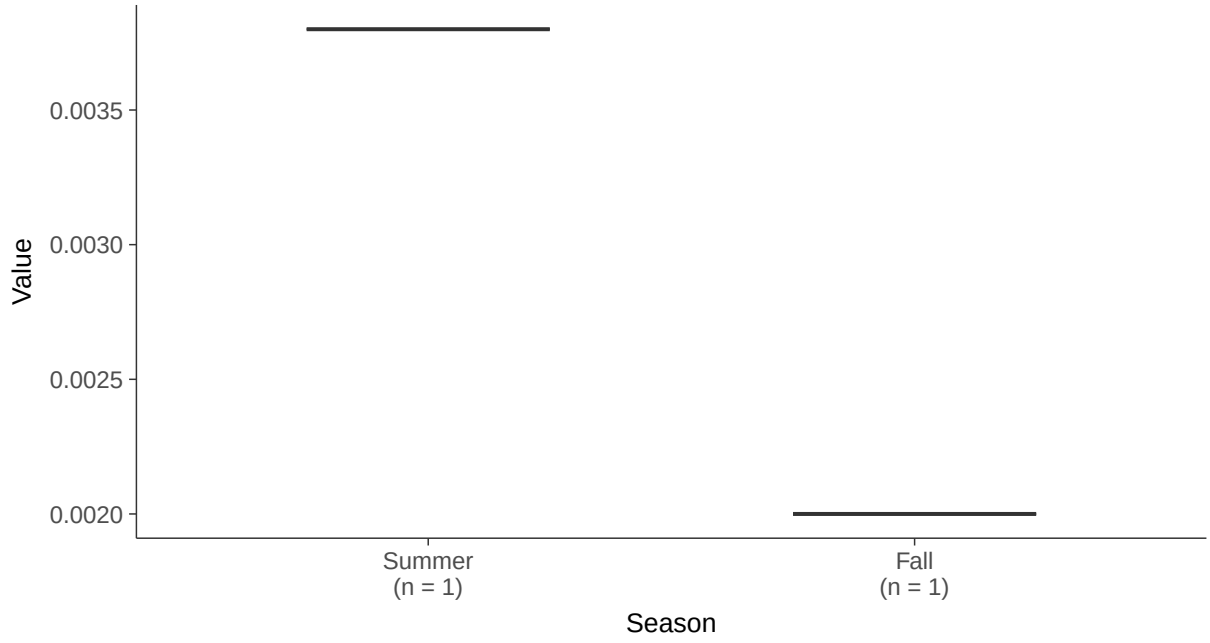
Boxplot

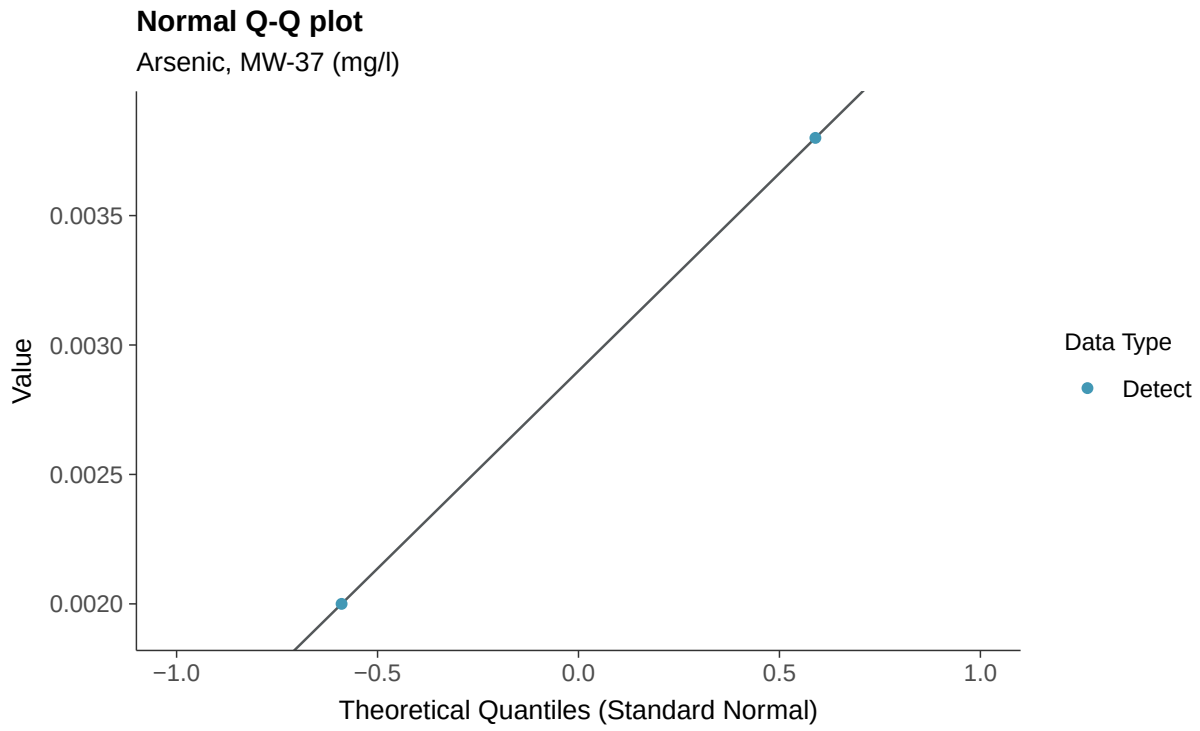
Arsenic, MW-37 (mg/l)



Boxplot by Season

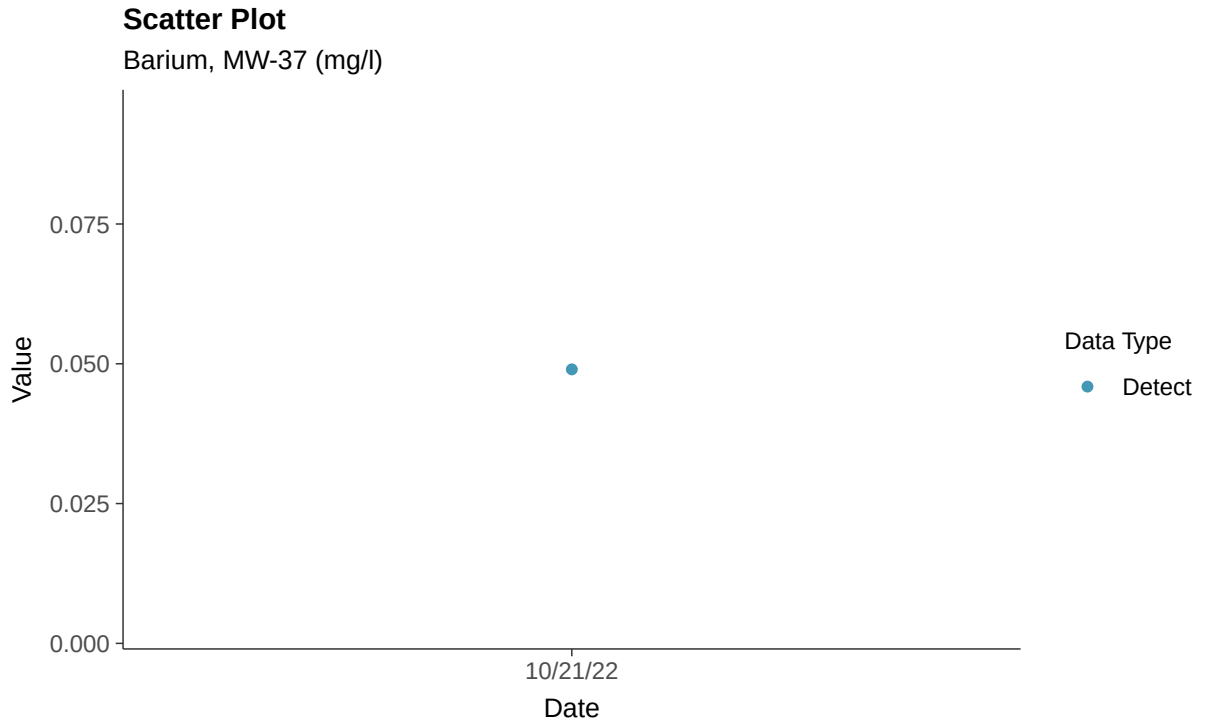
Arsenic, MW-37 (mg/l)

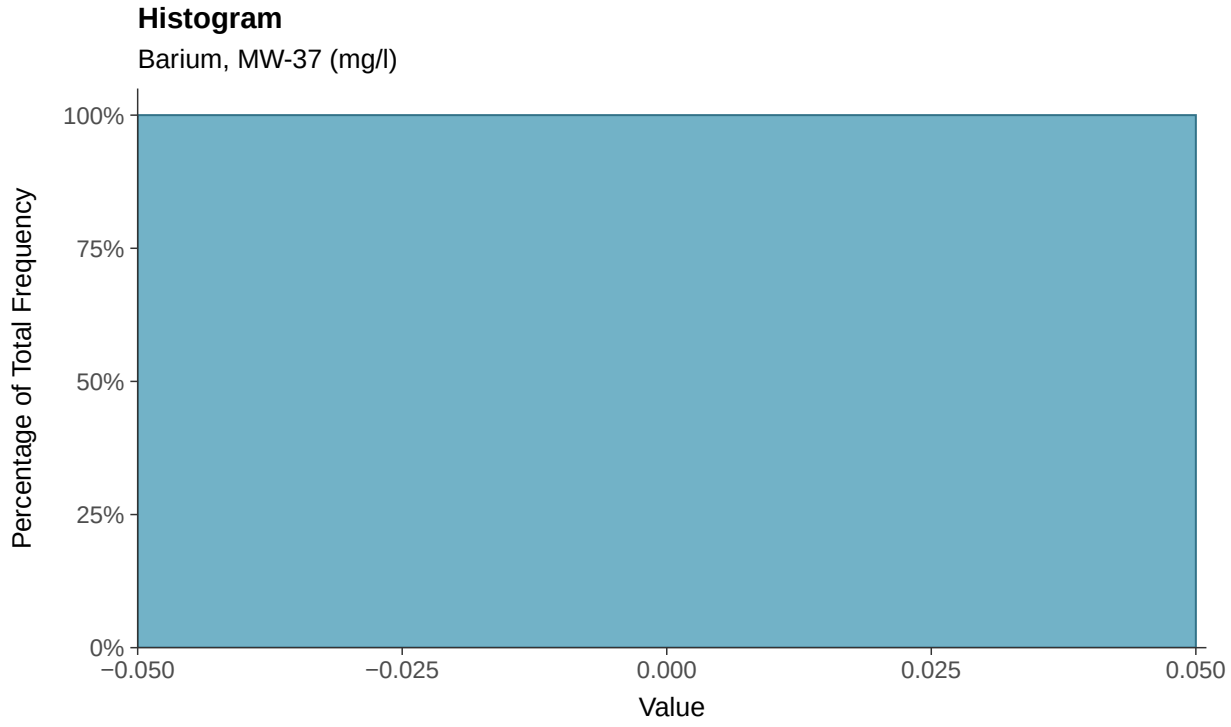



Normal Q-Q plot
Arsenic, MW-37 (mg/l)
Value
0.0035
0.0030
0.0025
0.0020
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Barium, MW-37

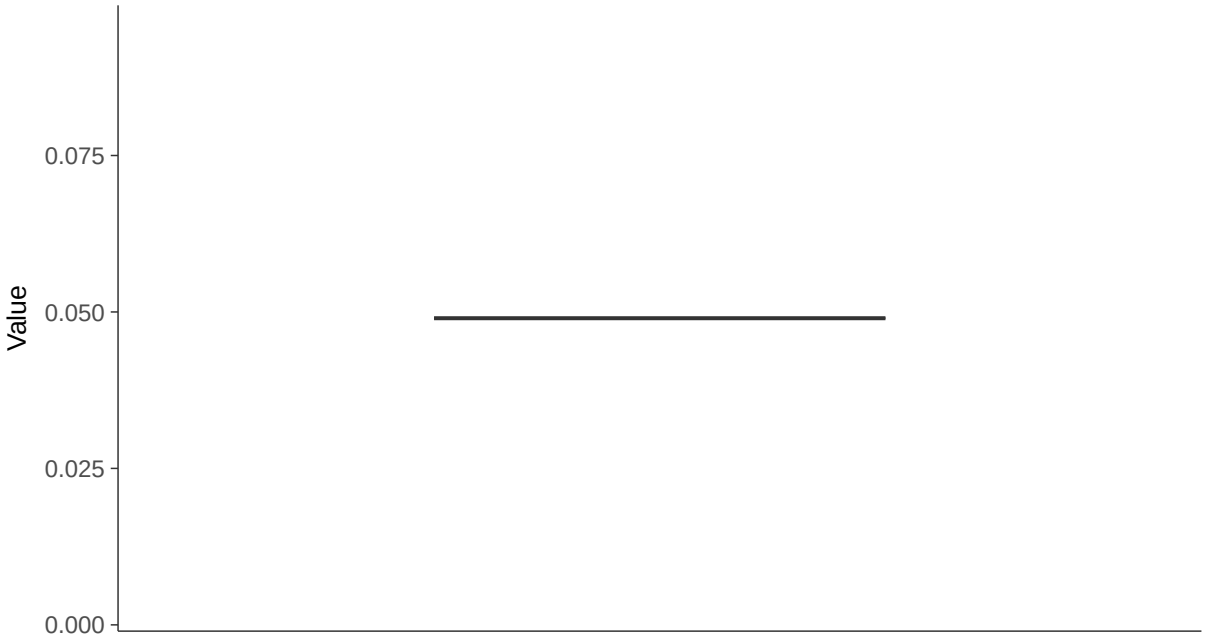
ID: 31_2_106





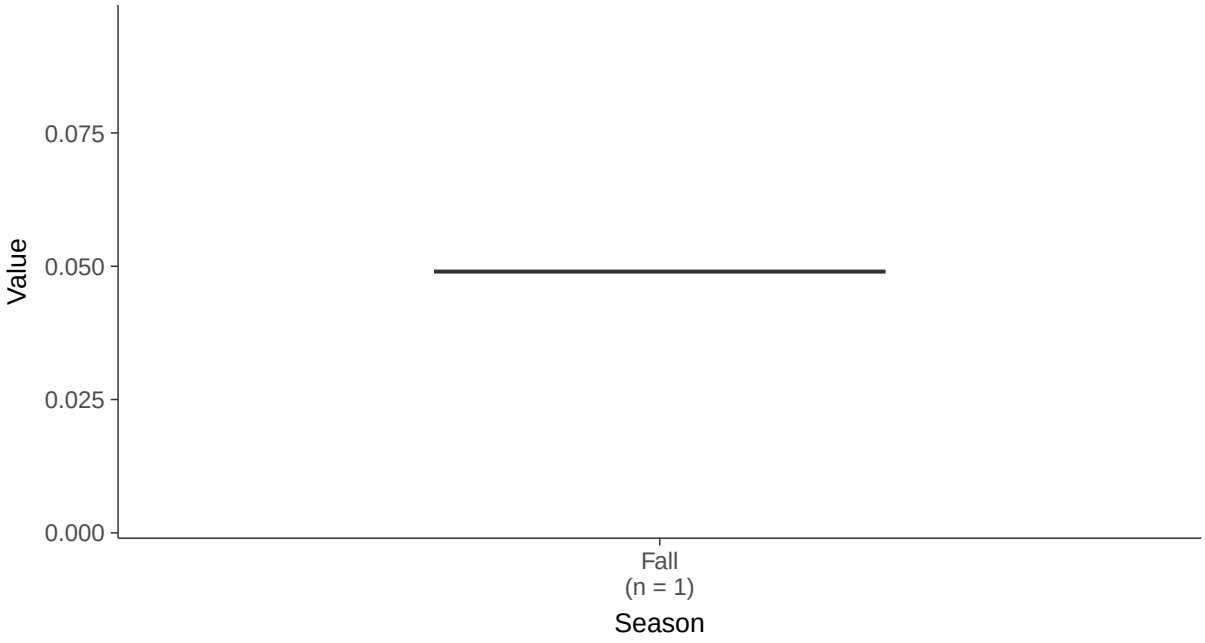
Boxplot

Barium, MW-37 (mg/l)



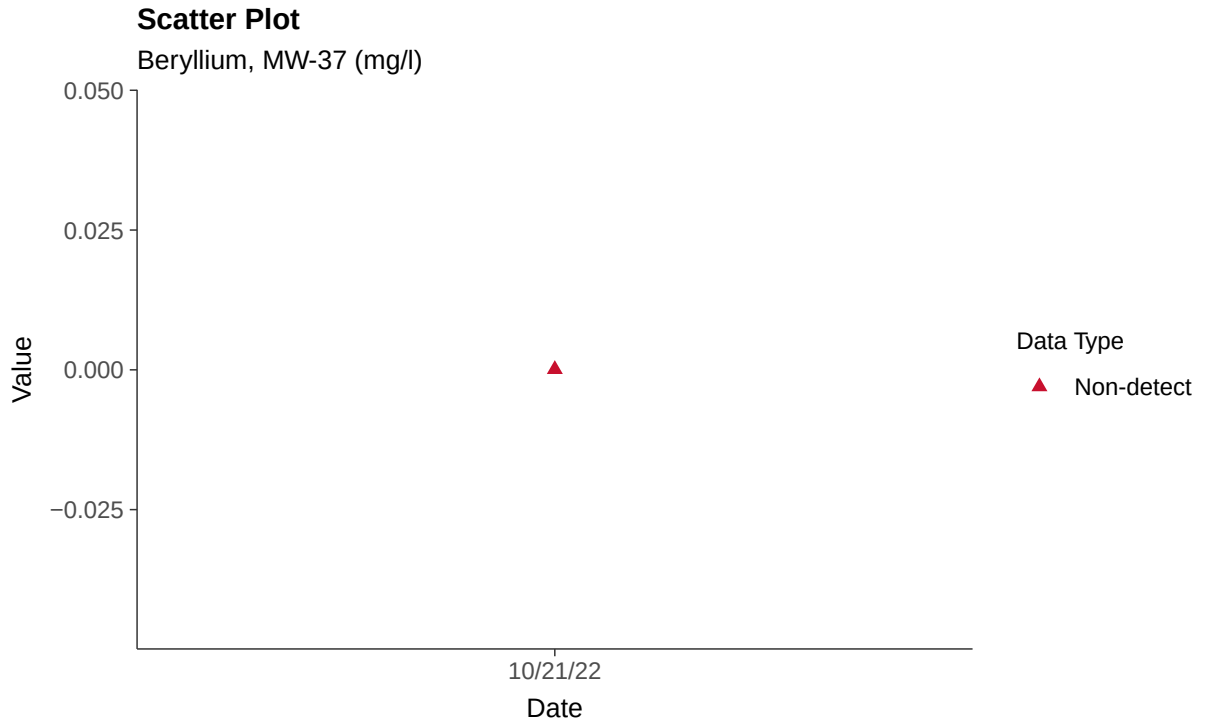
Boxplot by Season

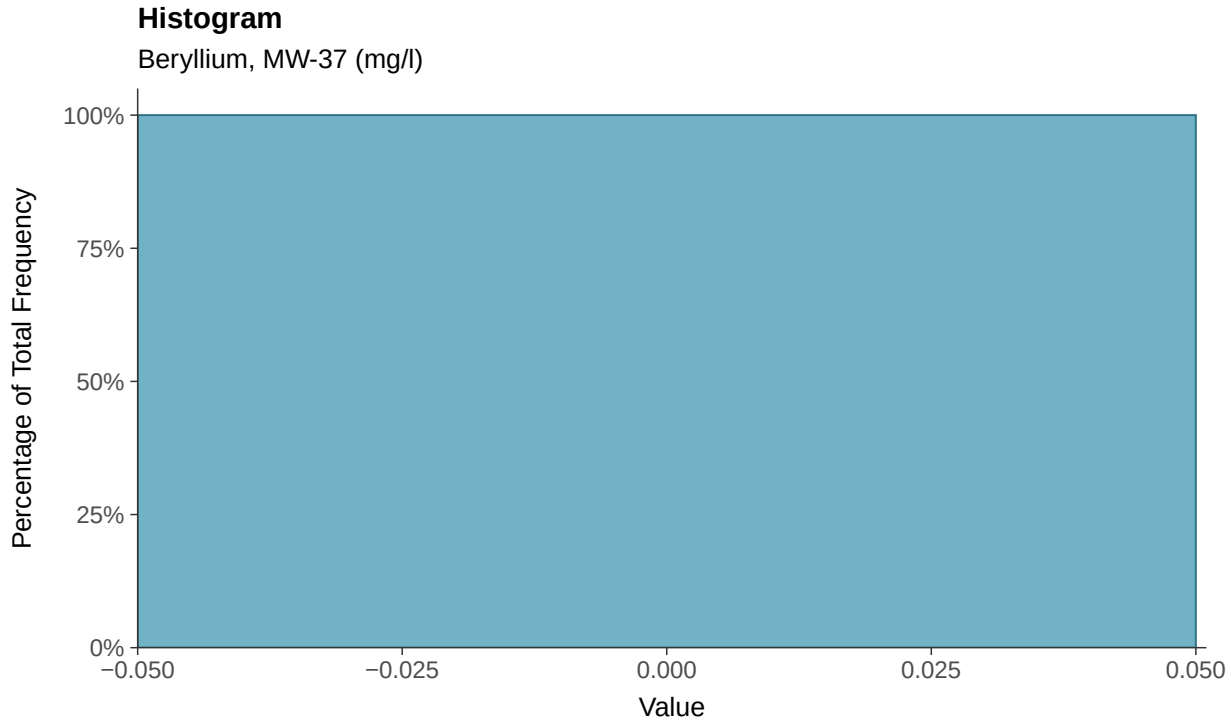
Barium, MW-37 (mg/l)



Appendix IV: Beryllium, MW-37

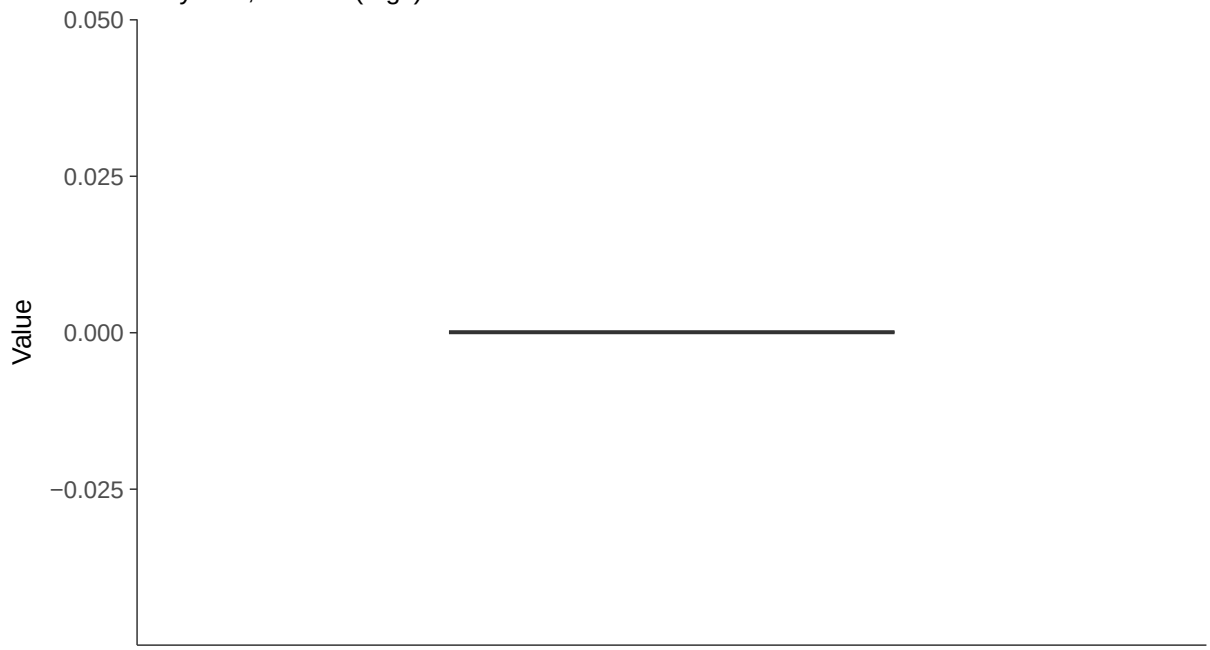
ID: 31_2_107





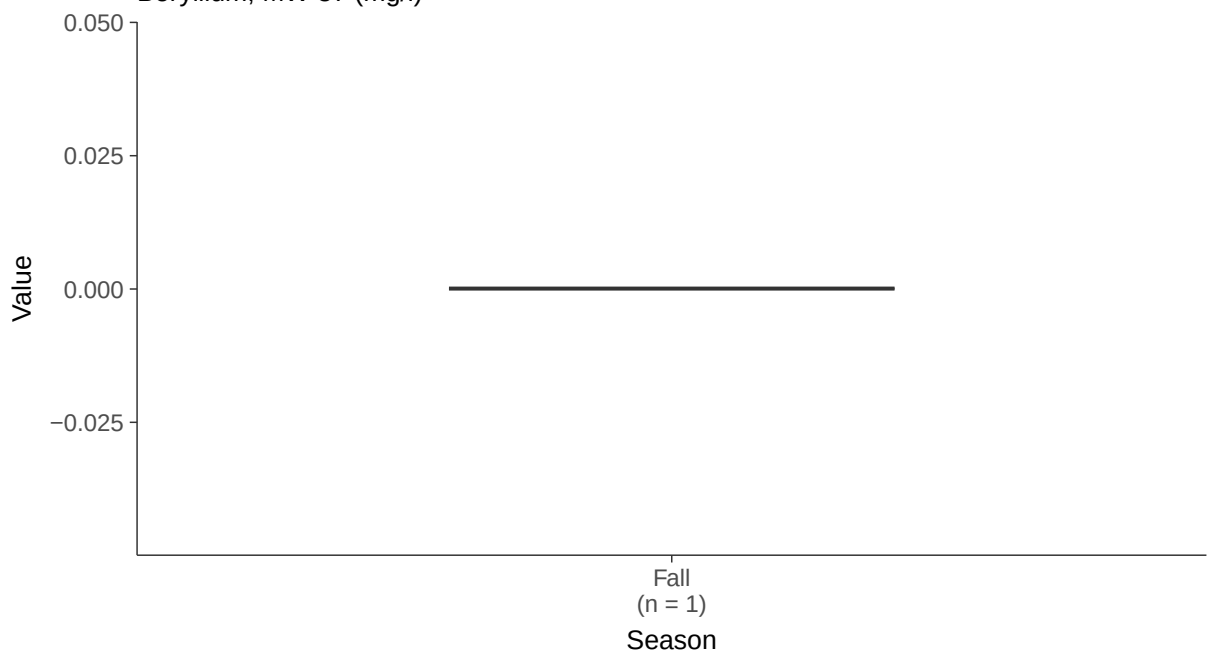
Boxplot

Beryllium, MW-37 (mg/l)



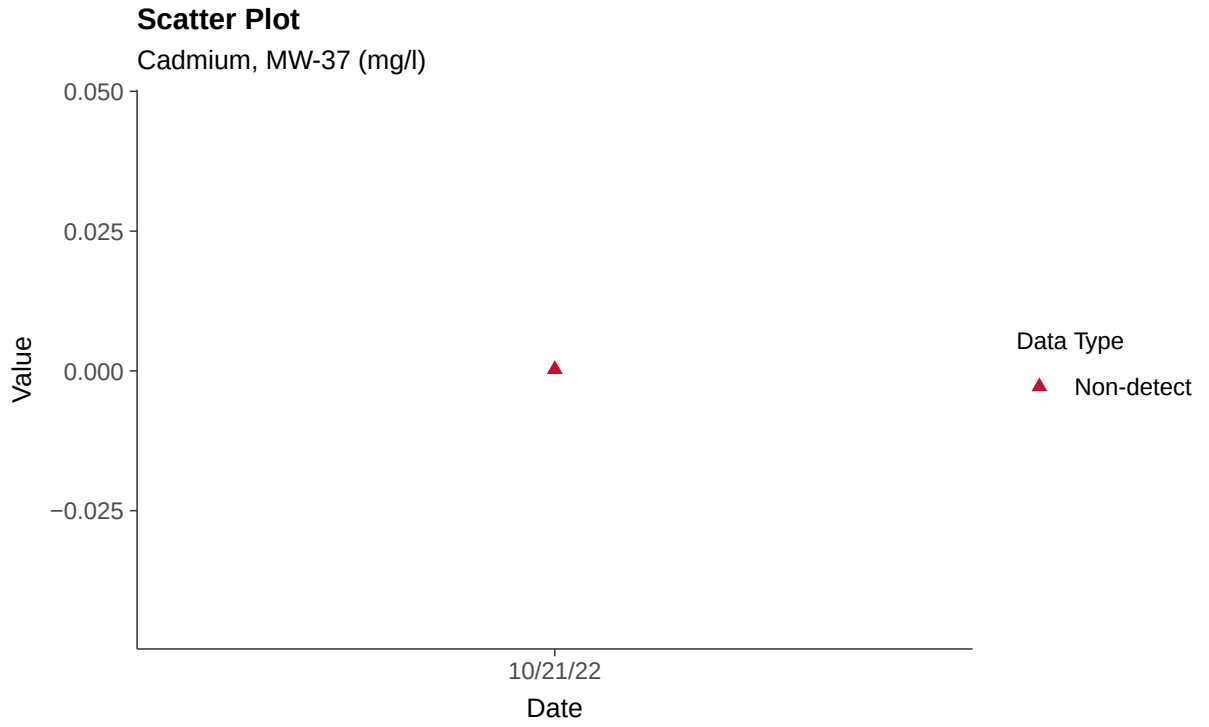
Boxplot by Season

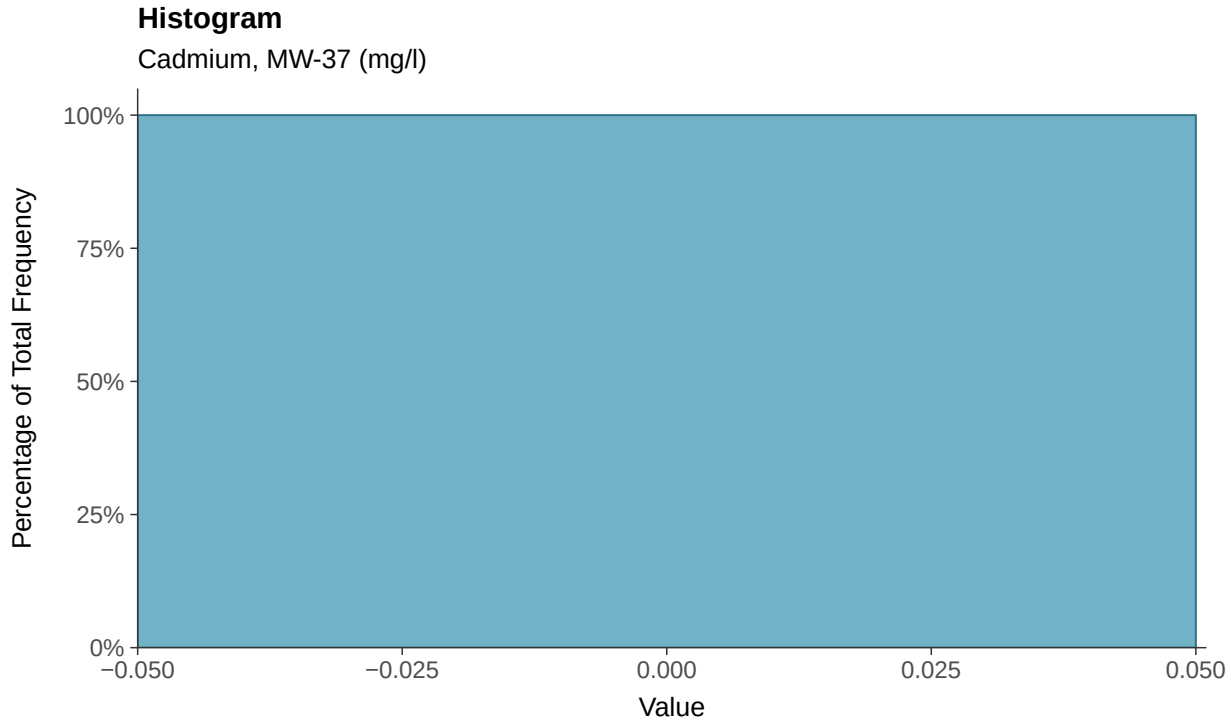
Beryllium, MW-37 (mg/l)



Appendix IV: Cadmium, MW-37

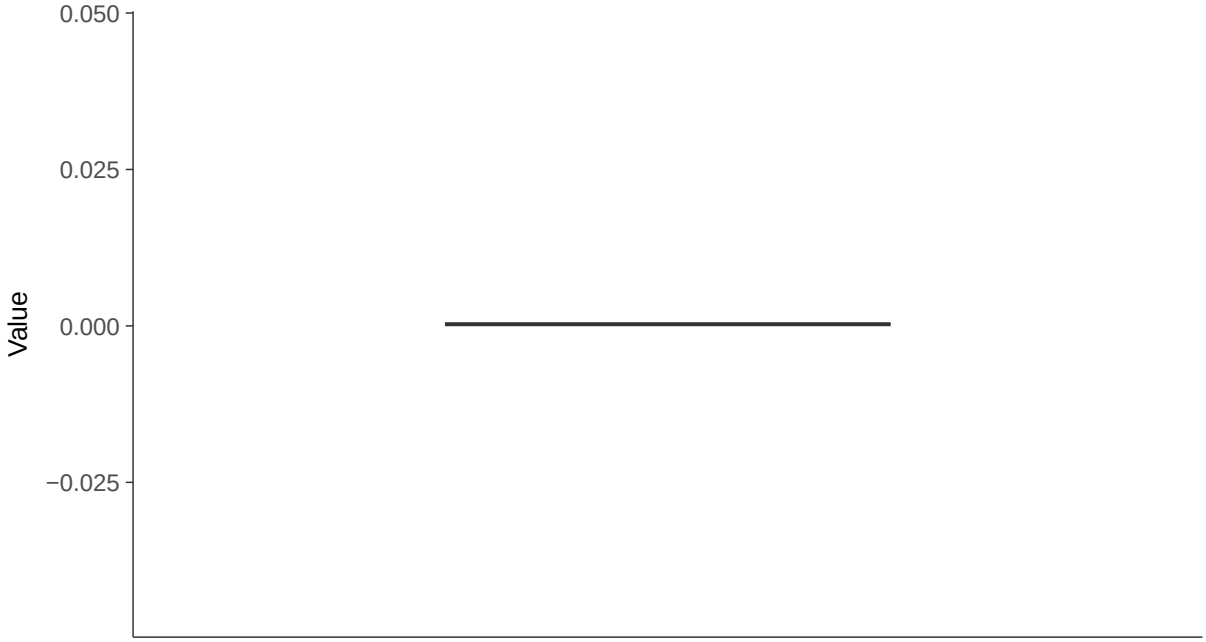
ID: 31_2_109





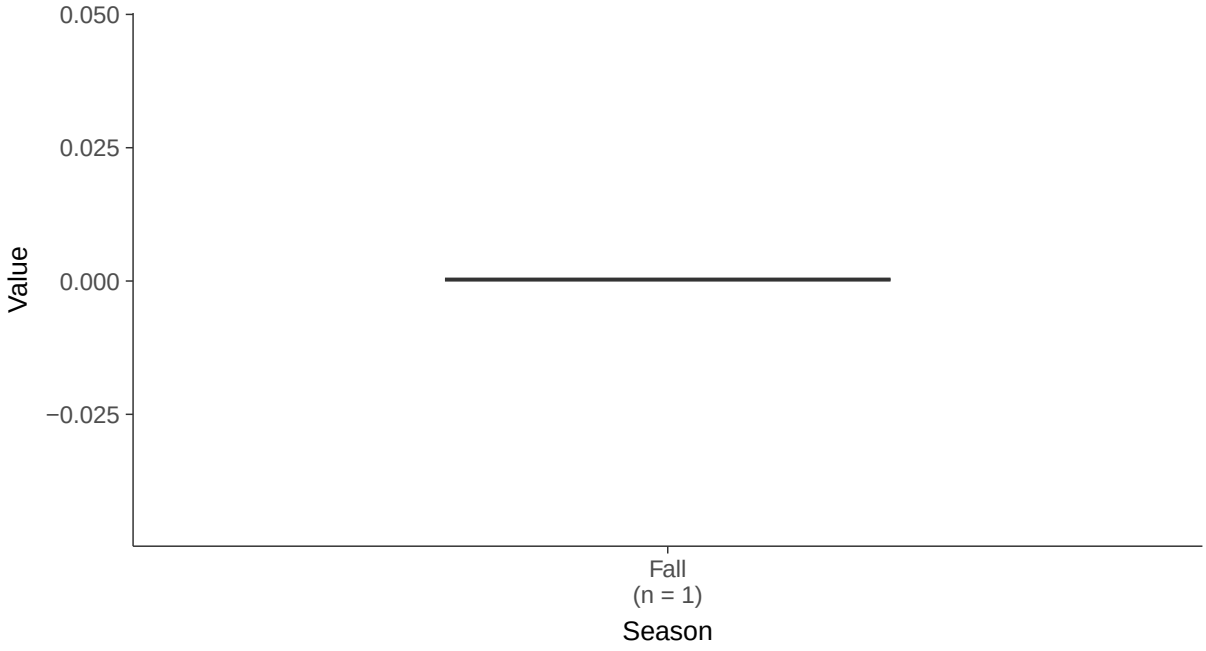
Boxplot

Cadmium, MW-37 (mg/l)



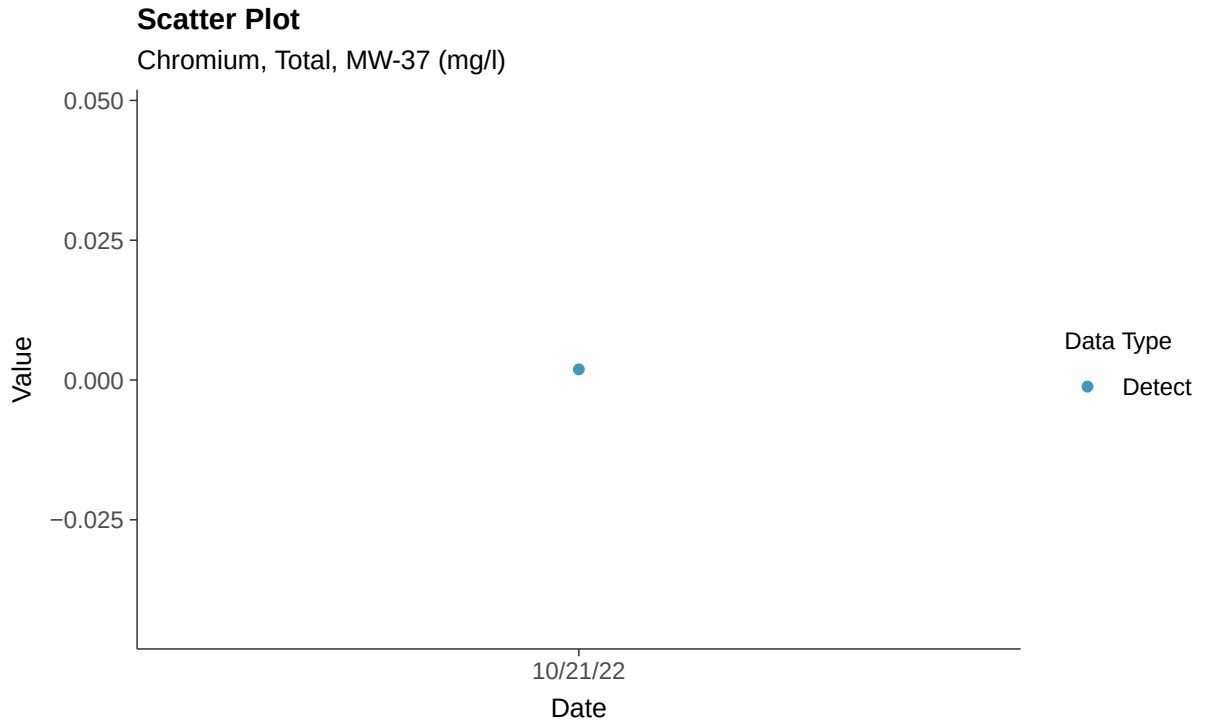
Boxplot by Season

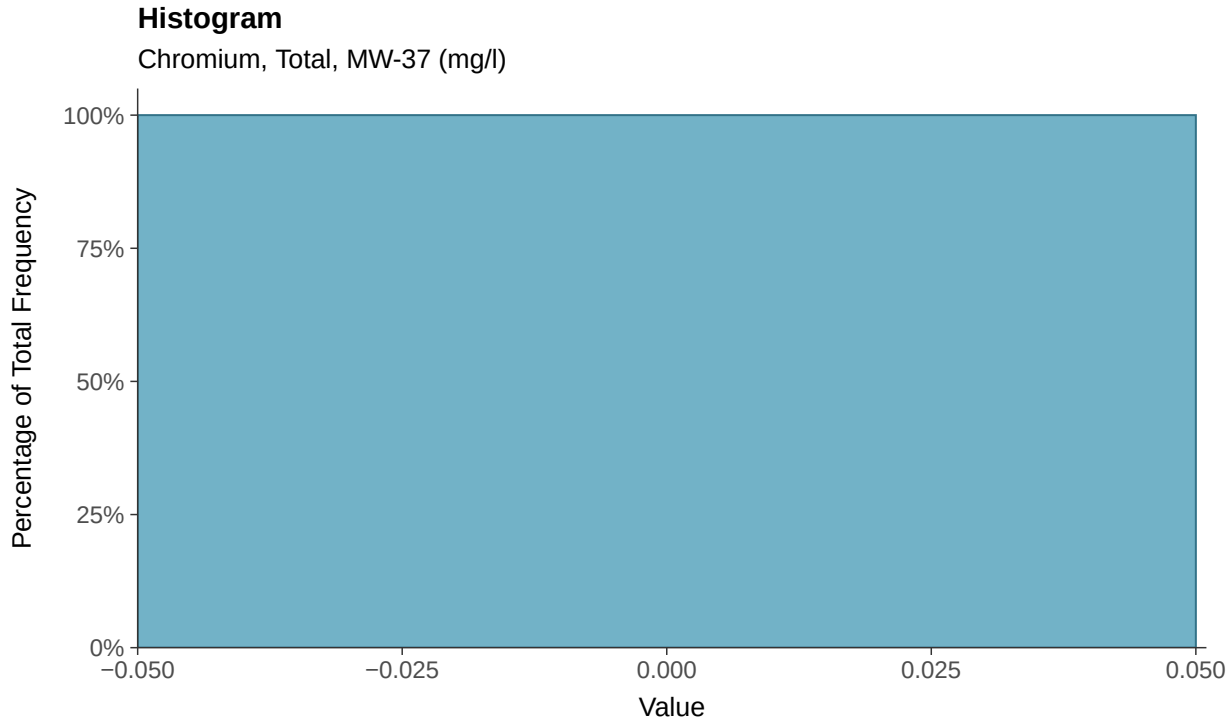
Cadmium, MW-37 (mg/l)



Appendix IV: Chromium, Total, MW-37

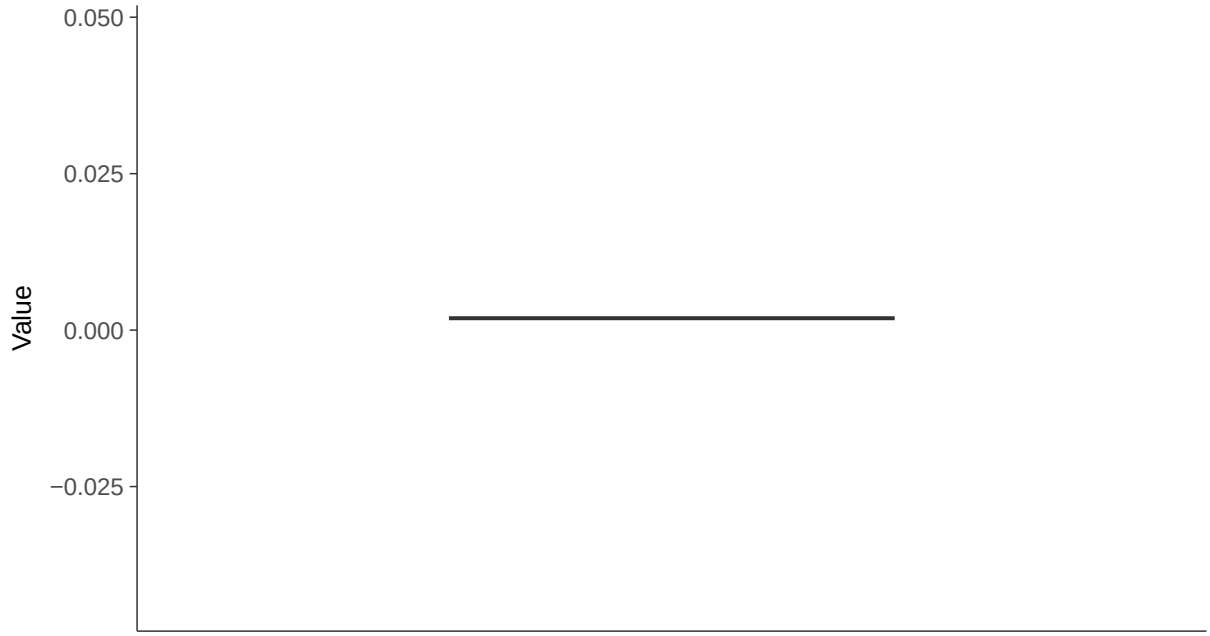
ID: 31_2_112





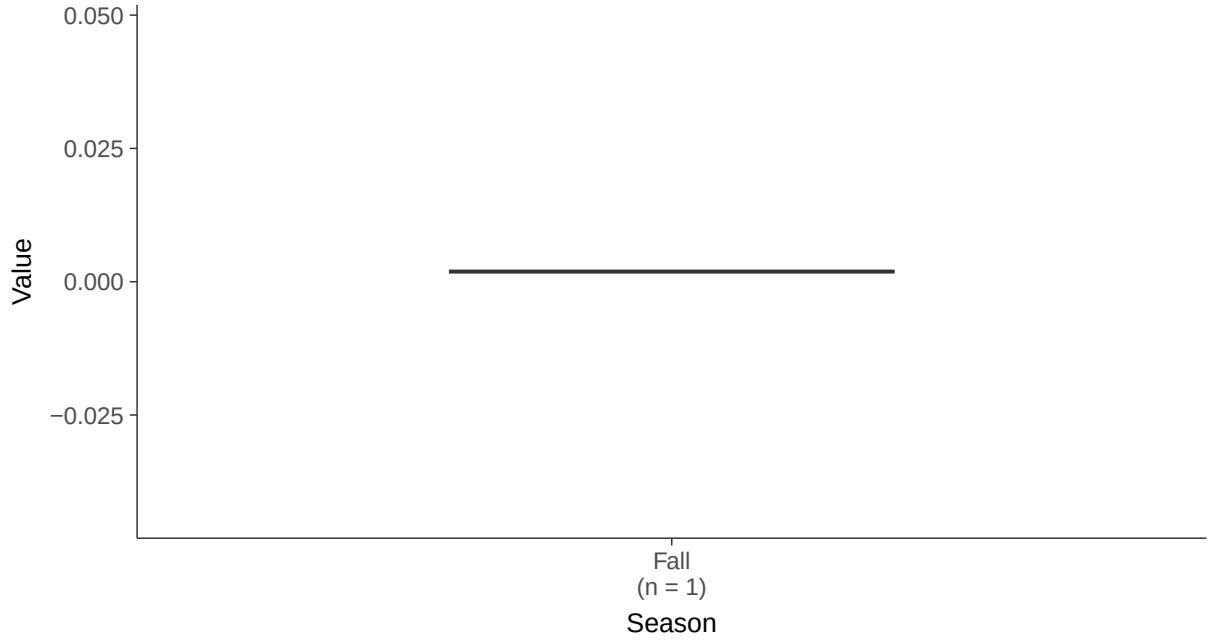
Boxplot

Chromium, Total, MW-37 (mg/l)



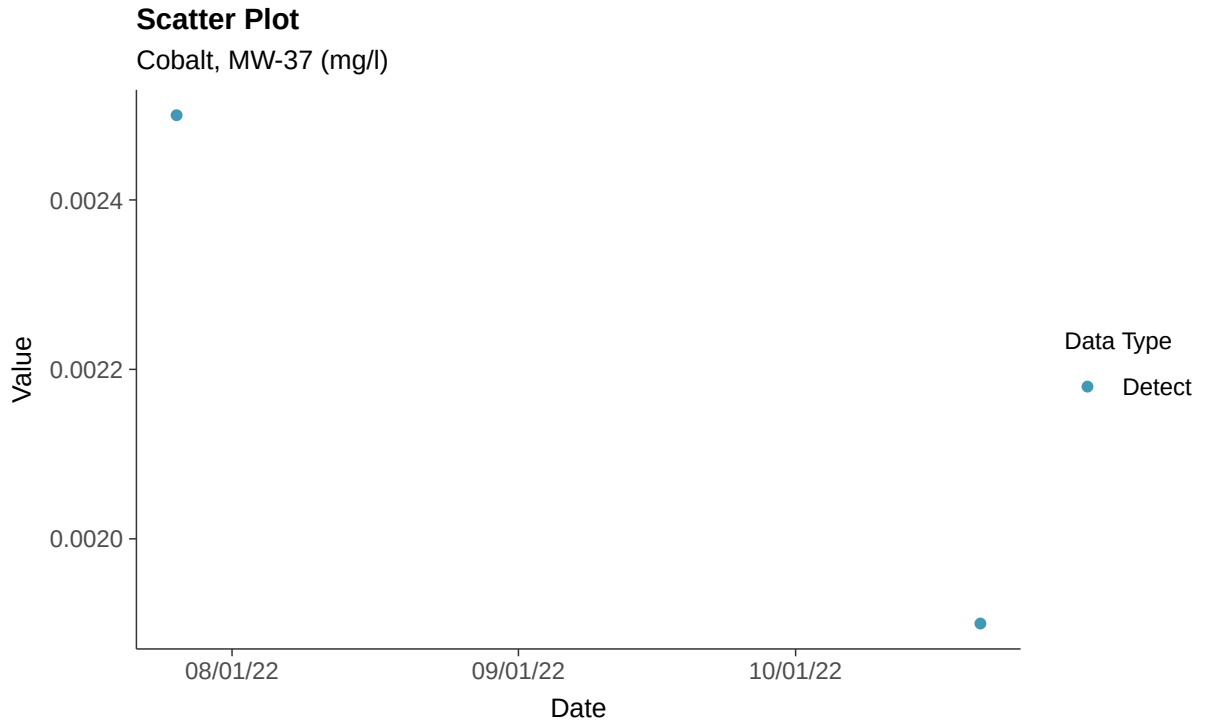
Boxplot by Season

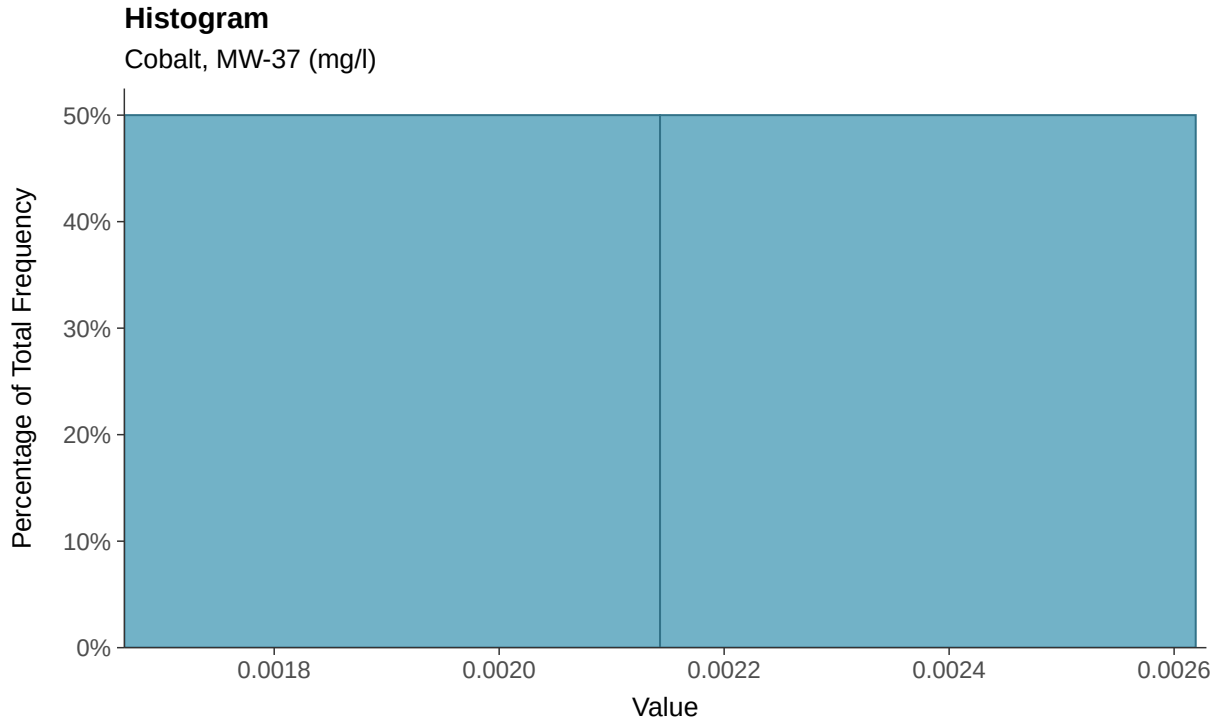
Chromium, Total, MW-37 (mg/l)



Appendix IV: Cobalt, MW-37

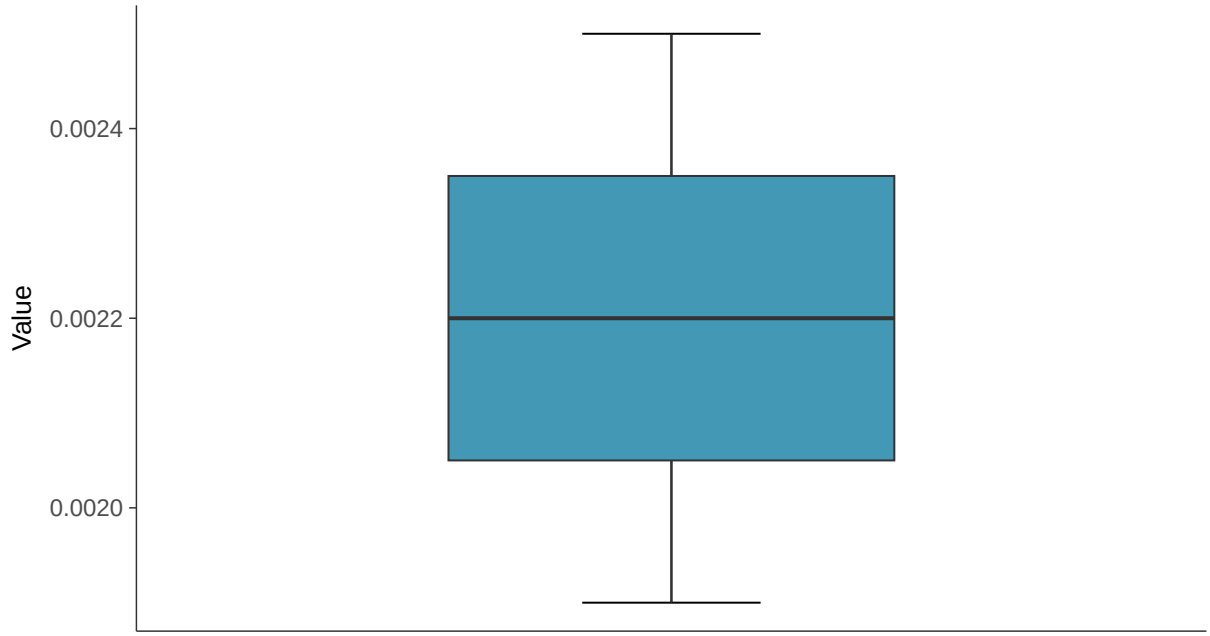
ID: 31_2_113





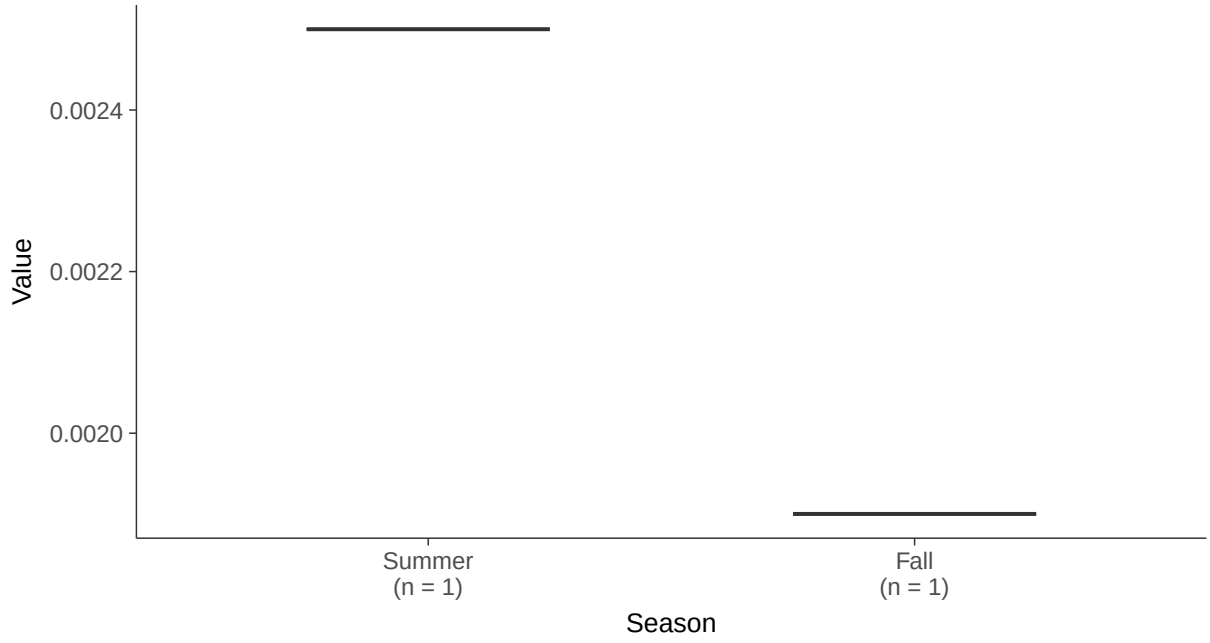
Boxplot

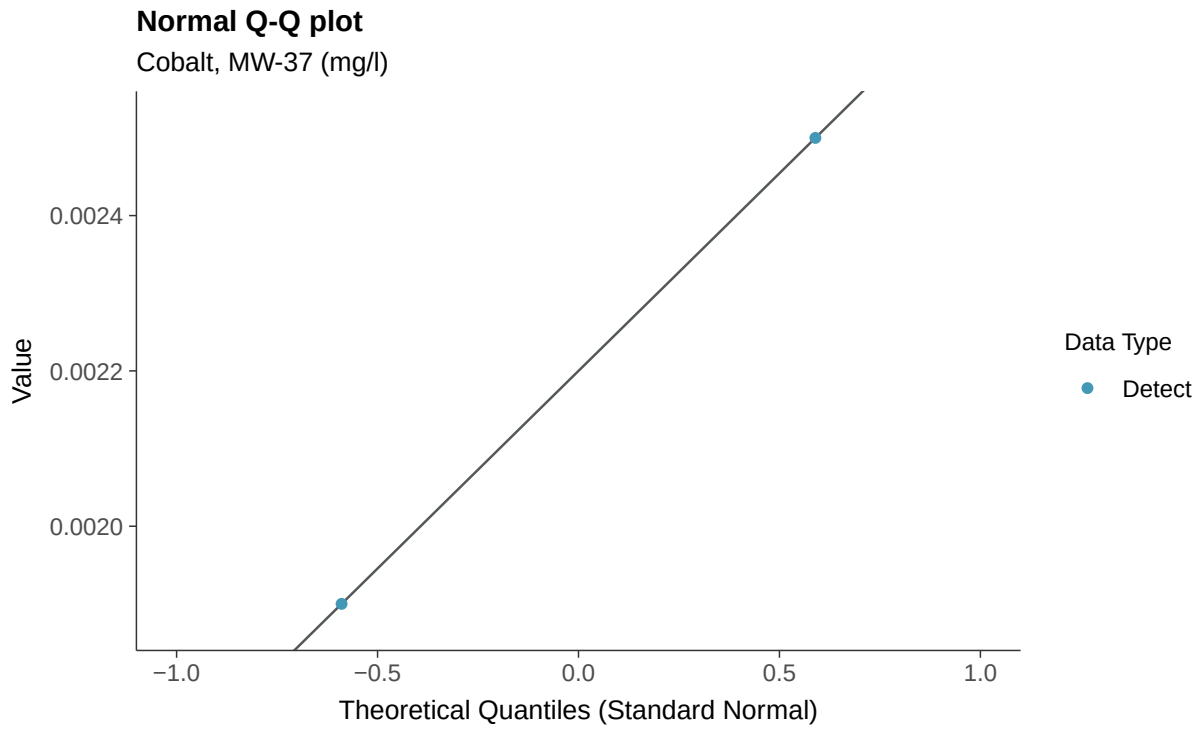
Cobalt, MW-37 (mg/l)



Boxplot by Season

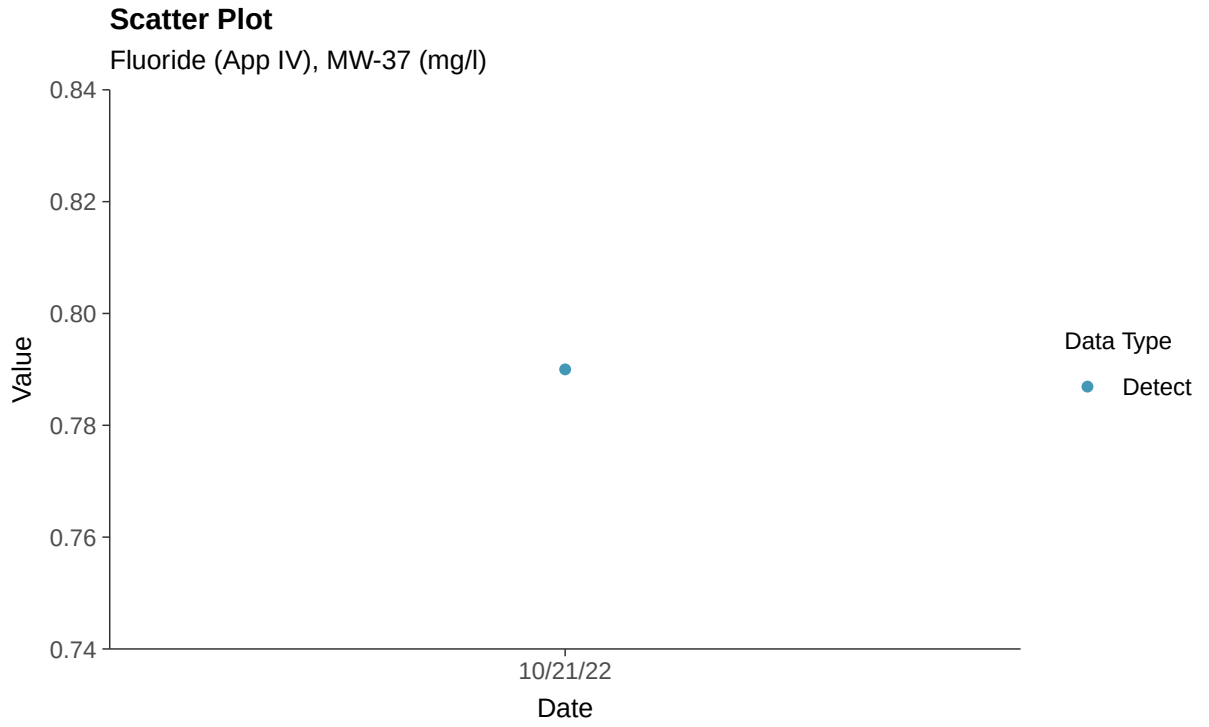
Cobalt, MW-37 (mg/l)

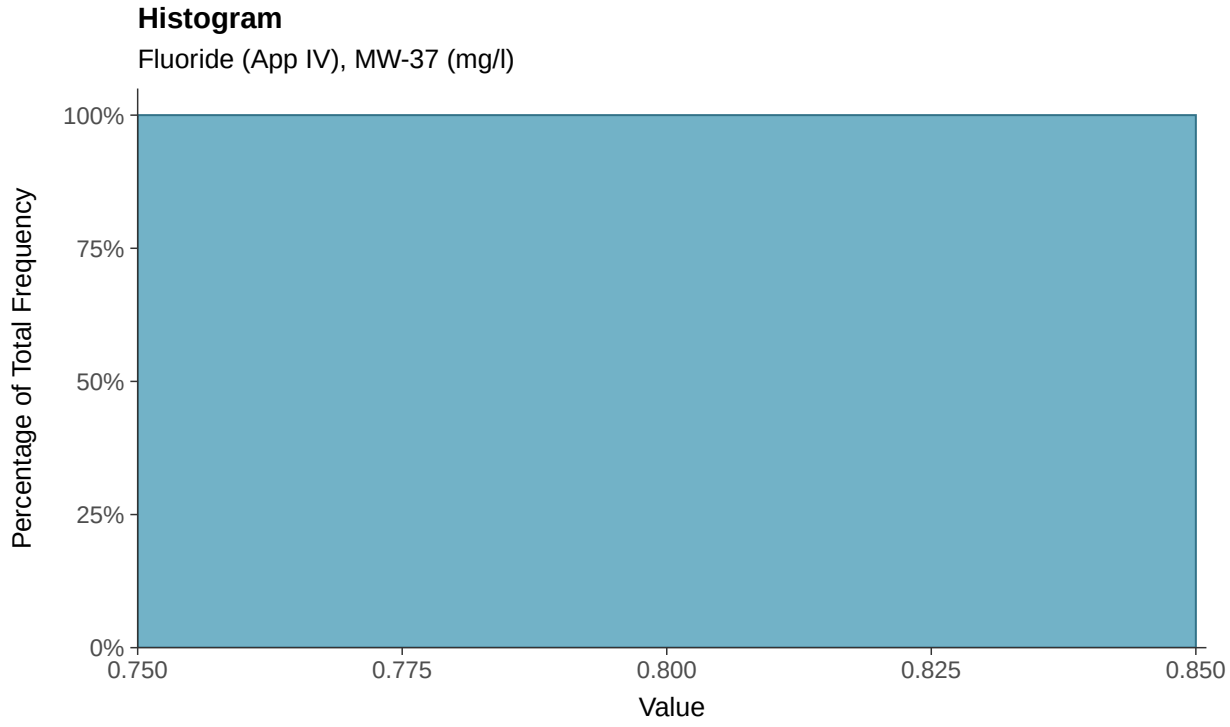



Normal Q-Q plot
Cobalt, MW-37 (mg/l)
Value
0.0024
0.0022
0.0020
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-37

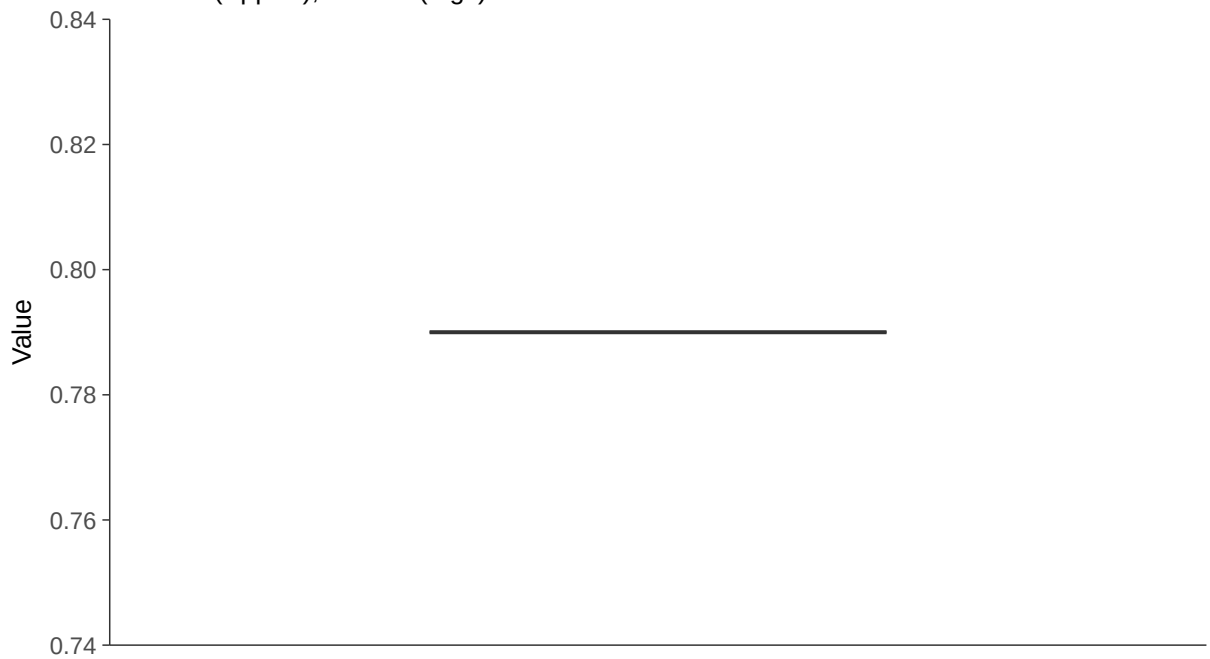
ID: 31_2_116





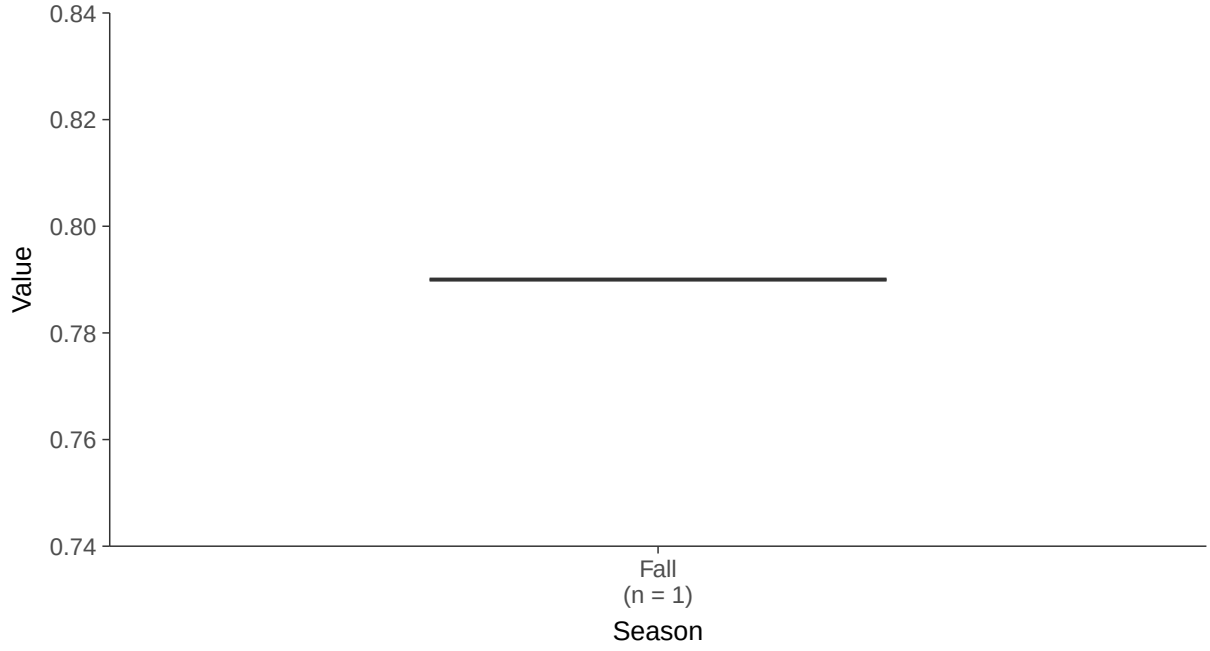
Boxplot

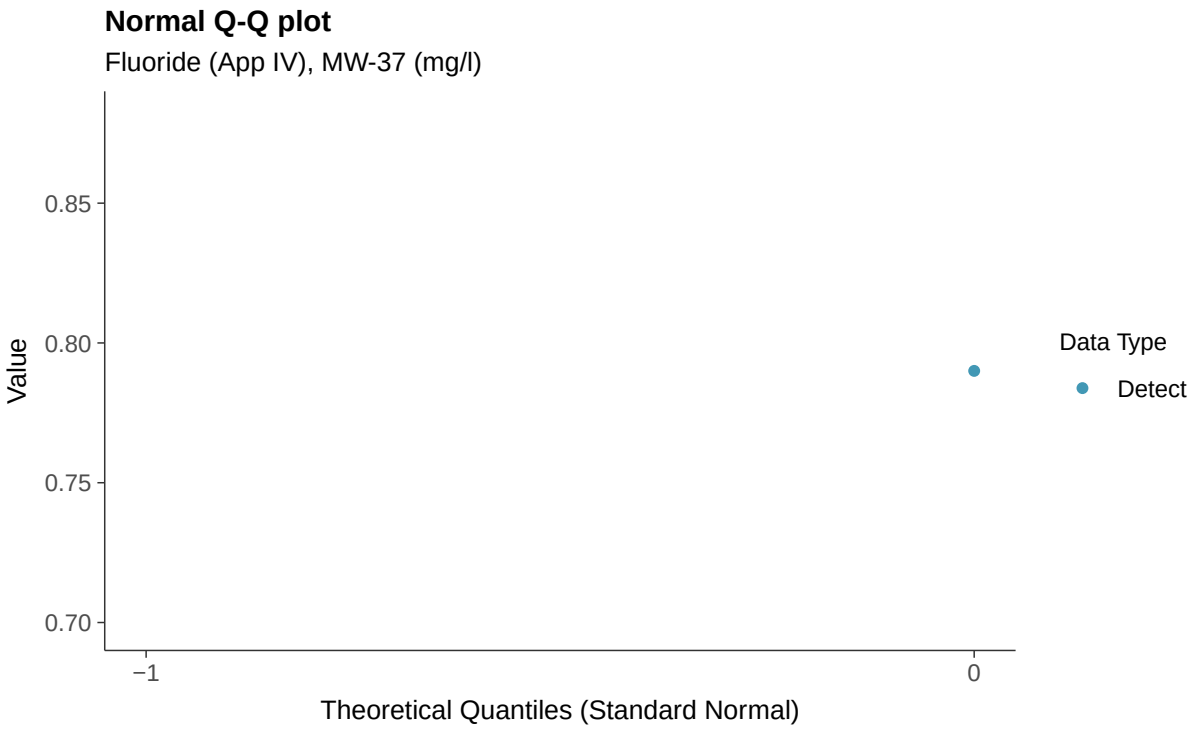
Fluoride (App IV), MW-37 (mg/l)



Boxplot by Season

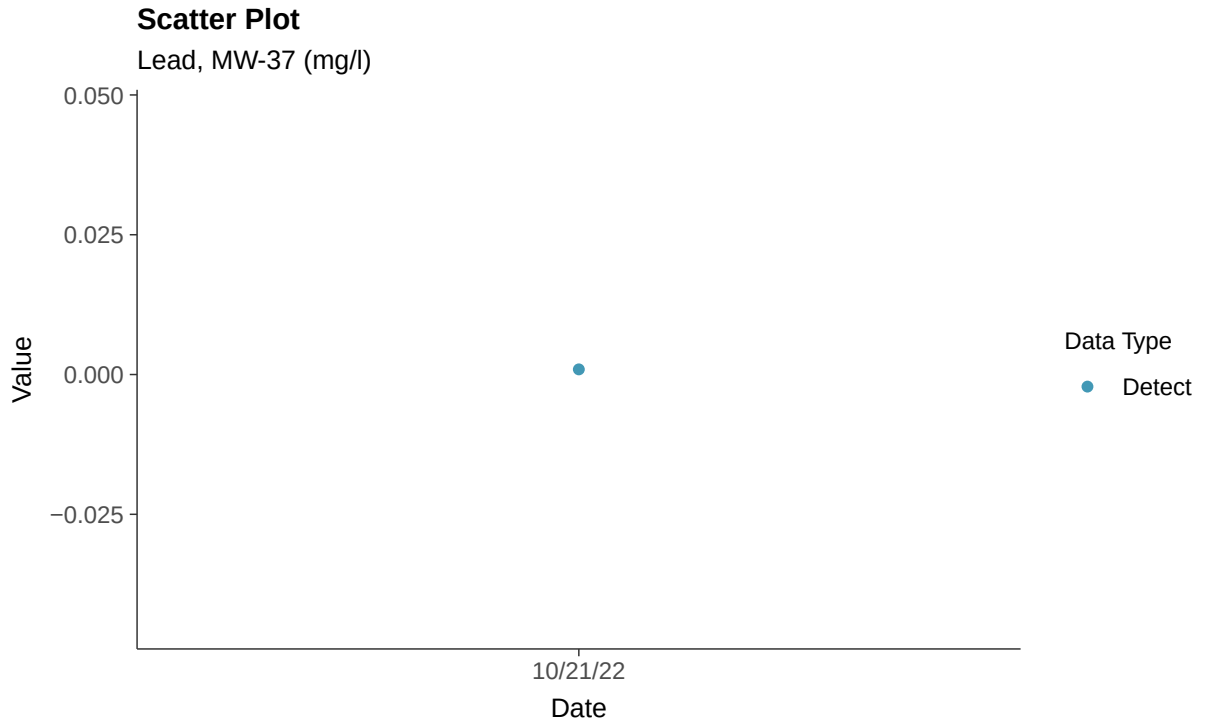
Fluoride (App IV), MW-37 (mg/l)

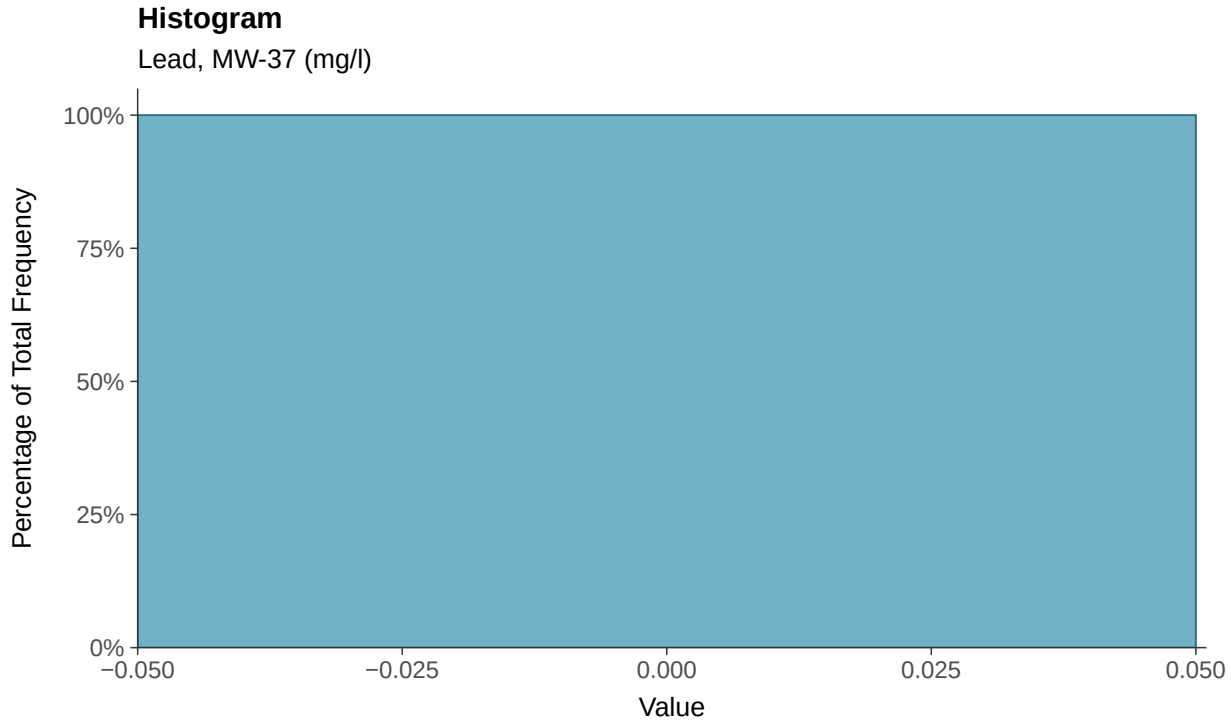



Normal Q-Q plot
Fluoride (App IV), MW-37 (mg/l)
Value
0.85
0.80
0.75
0.70
−1
0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Lead, MW-37

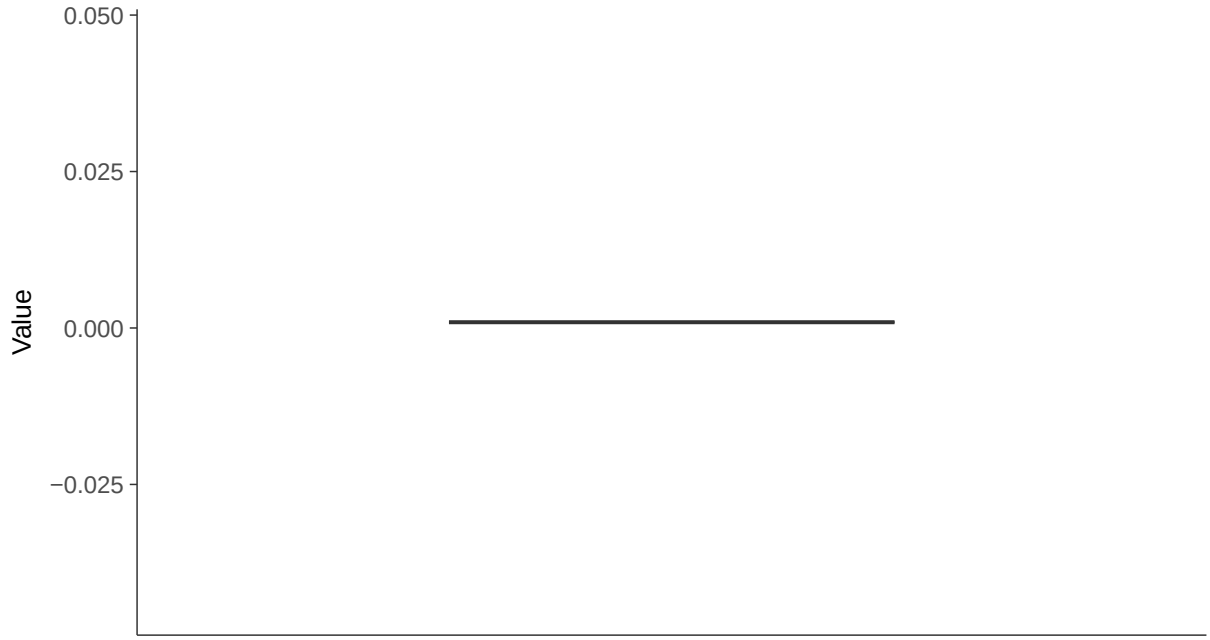
ID: 31_2_117





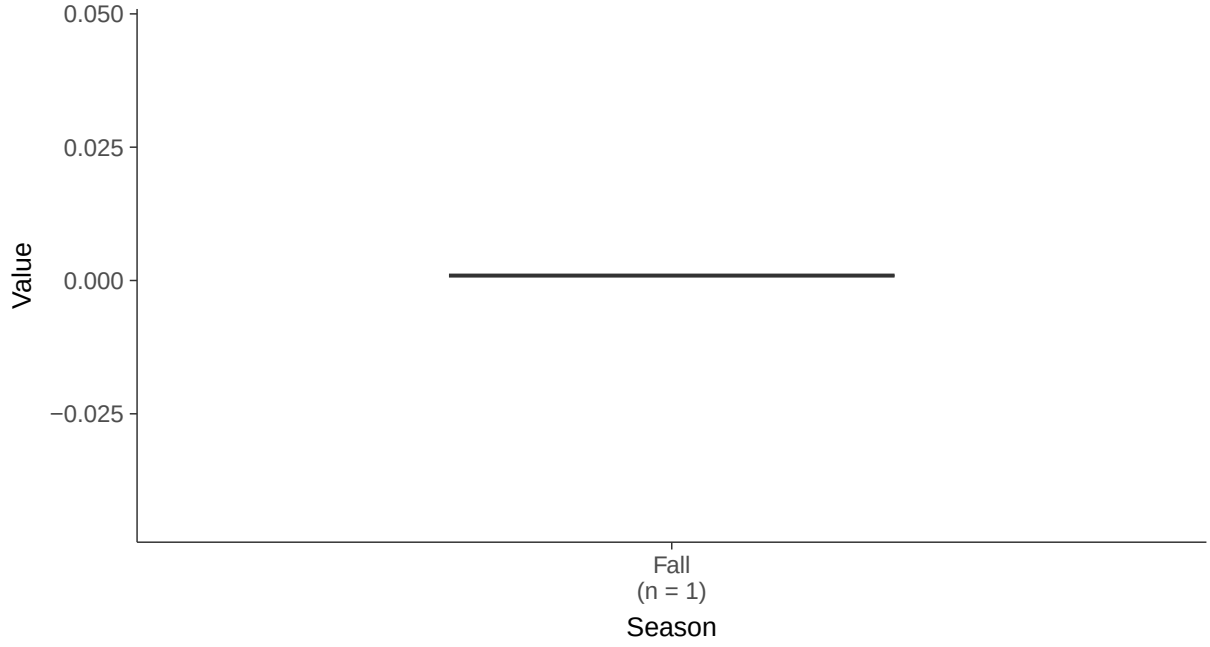
Boxplot

Lead, MW-37 (mg/l)



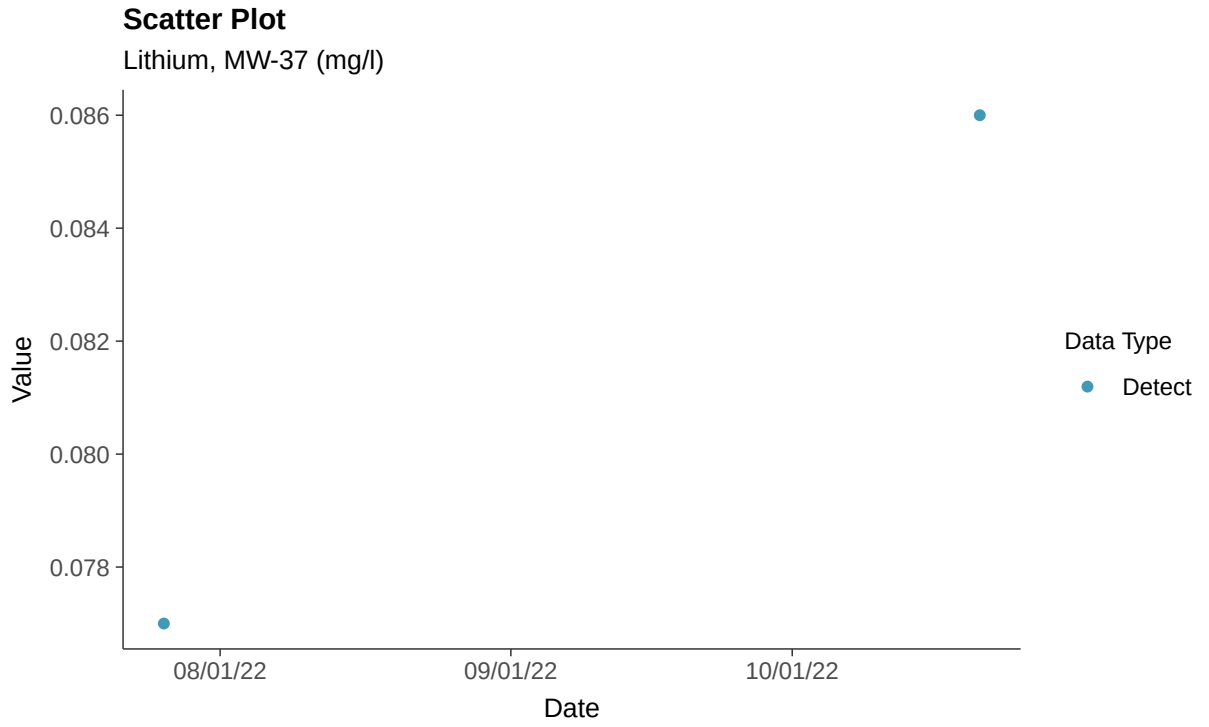
Boxplot by Season

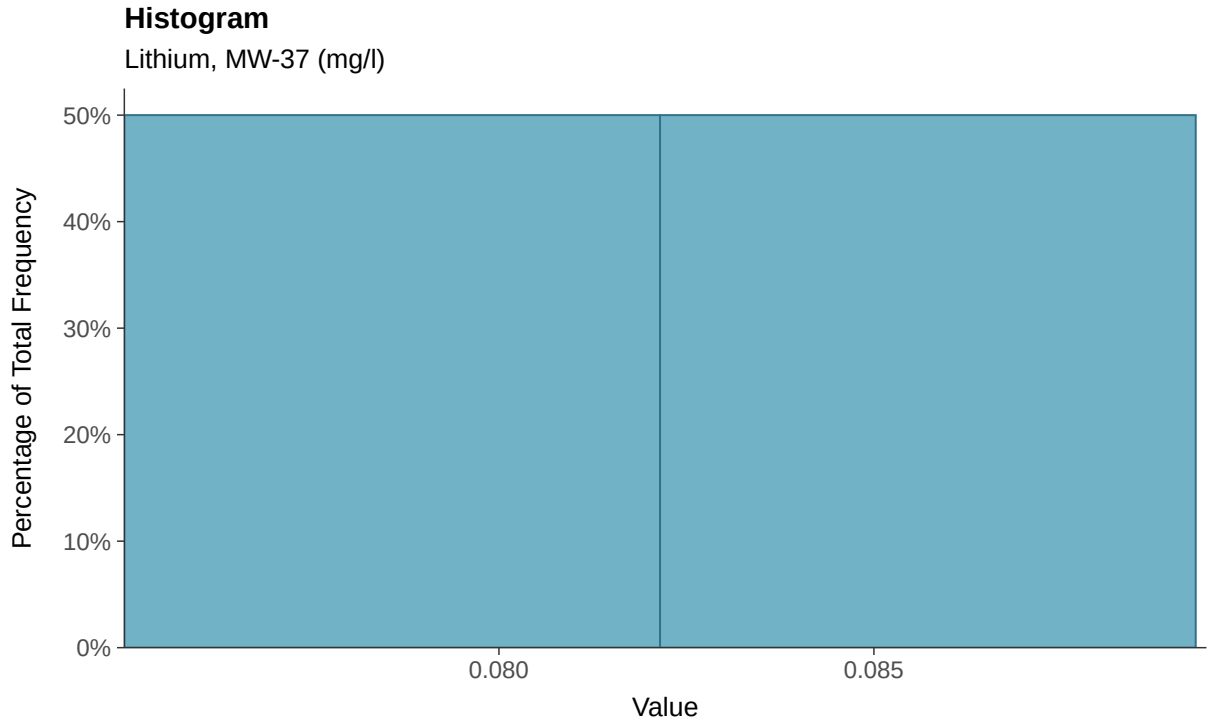
Lead, MW-37 (mg/l)



Appendix IV: Lithium, MW-37

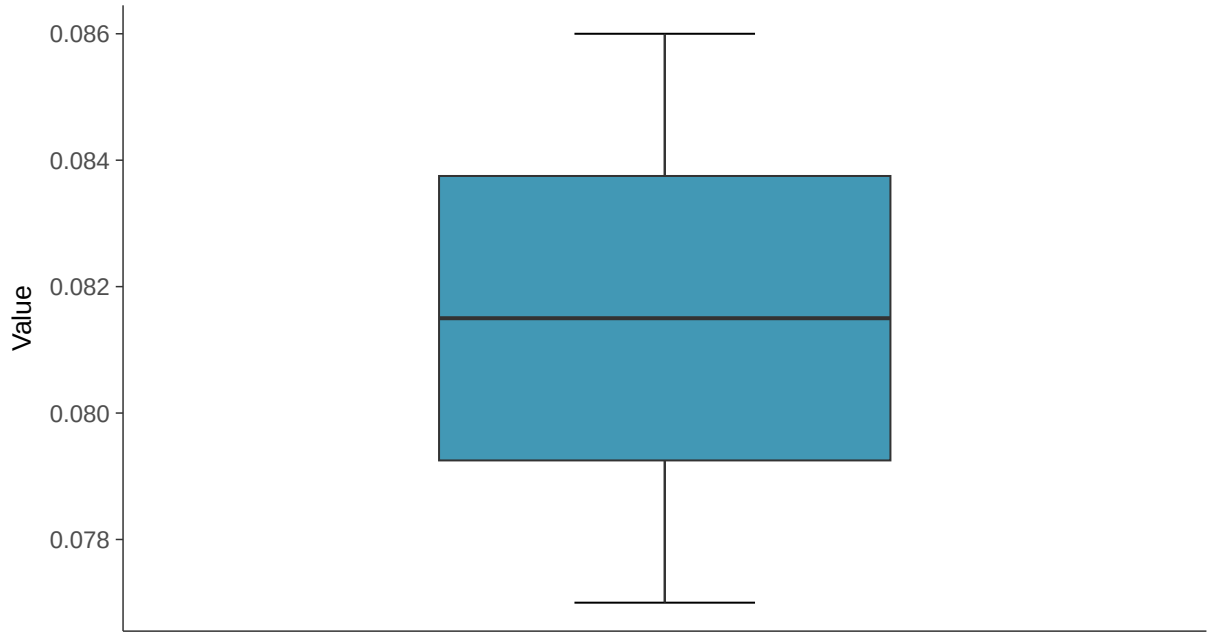
ID: 31_2_118





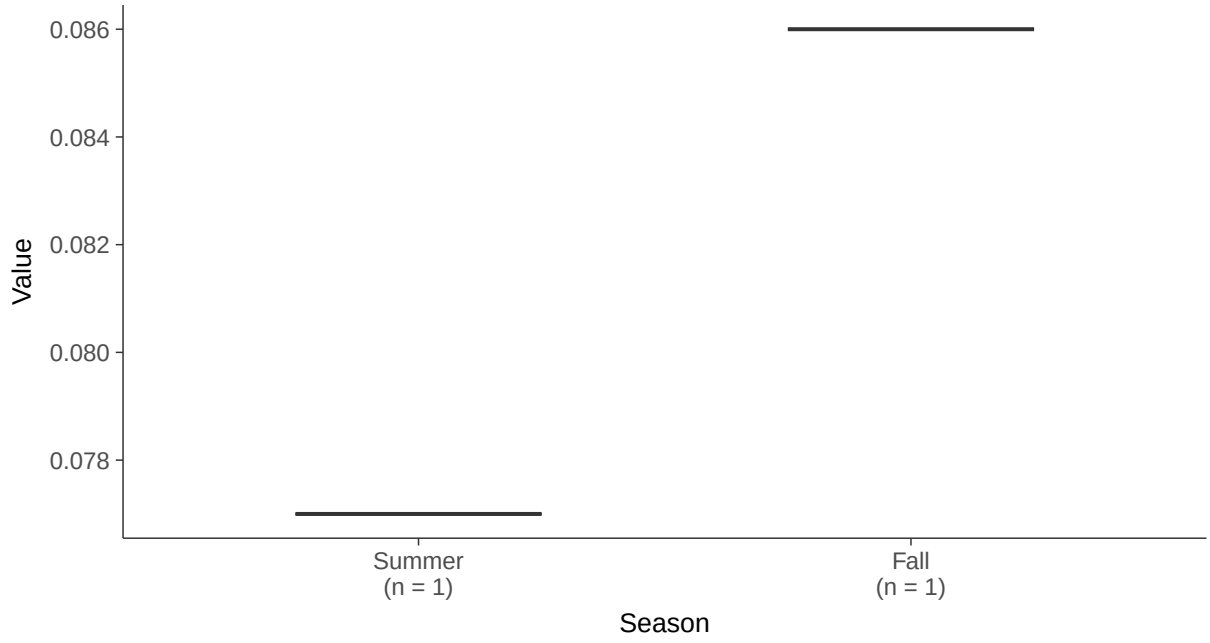
Boxplot

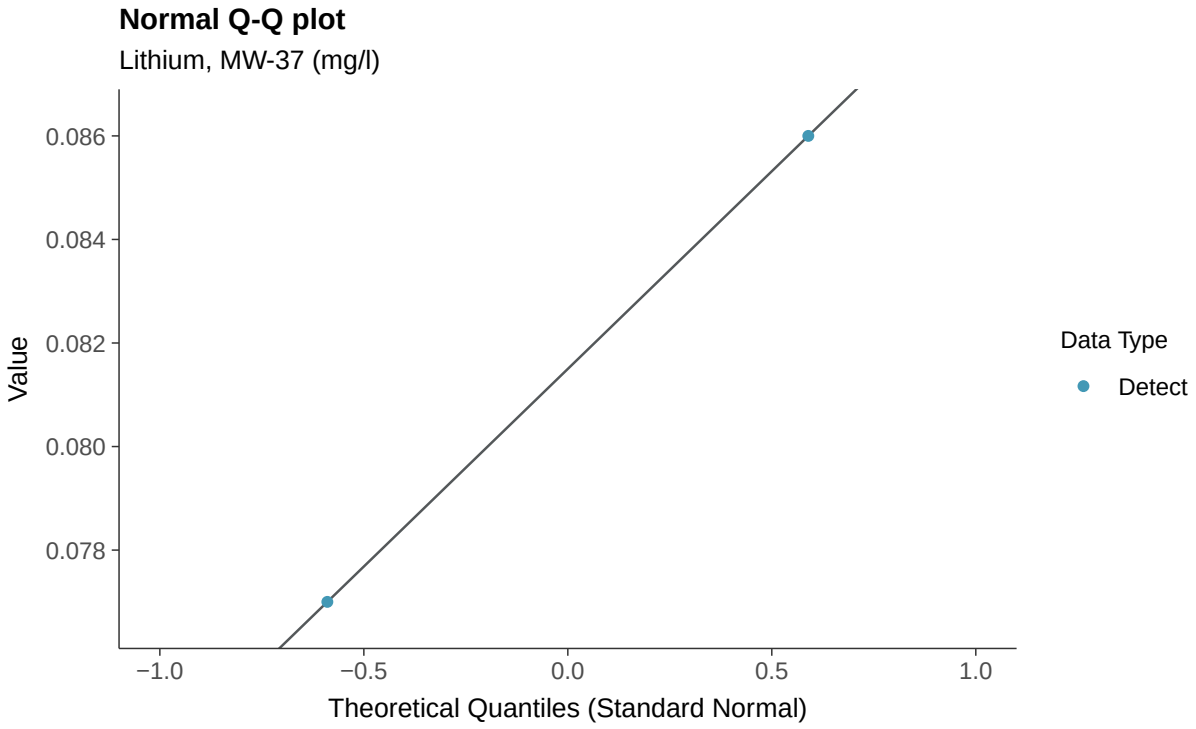
Lithium, MW-37 (mg/l)



Boxplot by Season

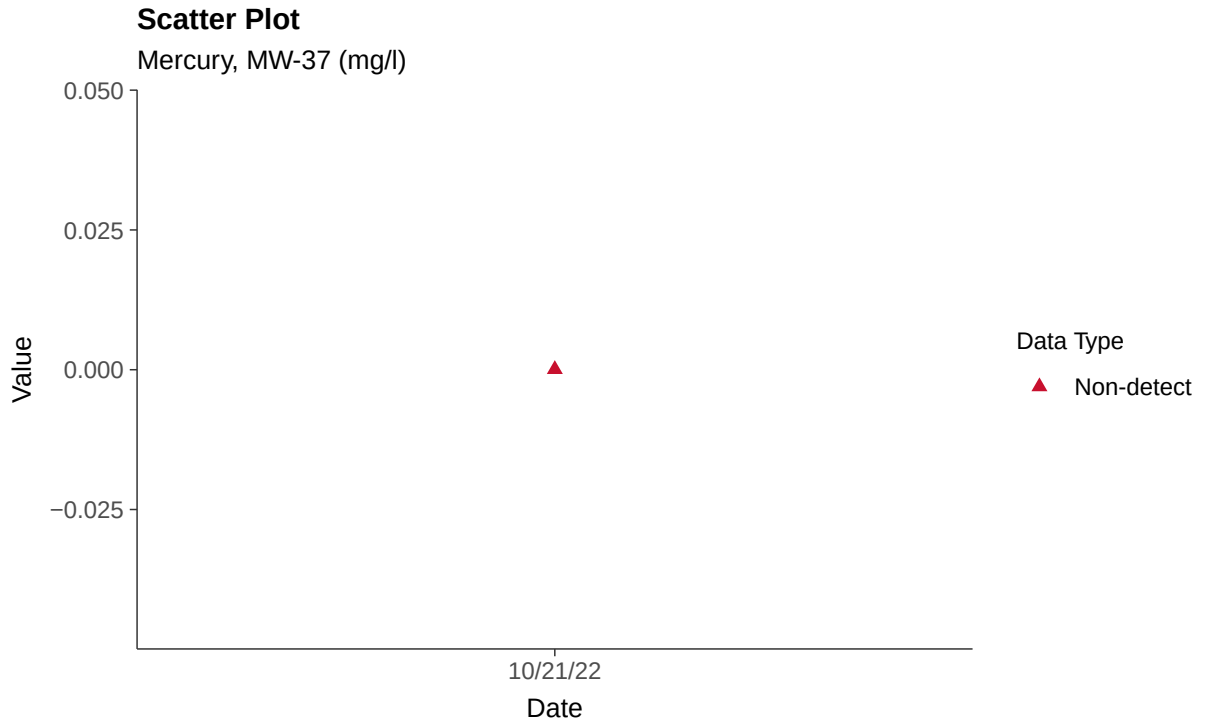
Lithium, MW-37 (mg/l)

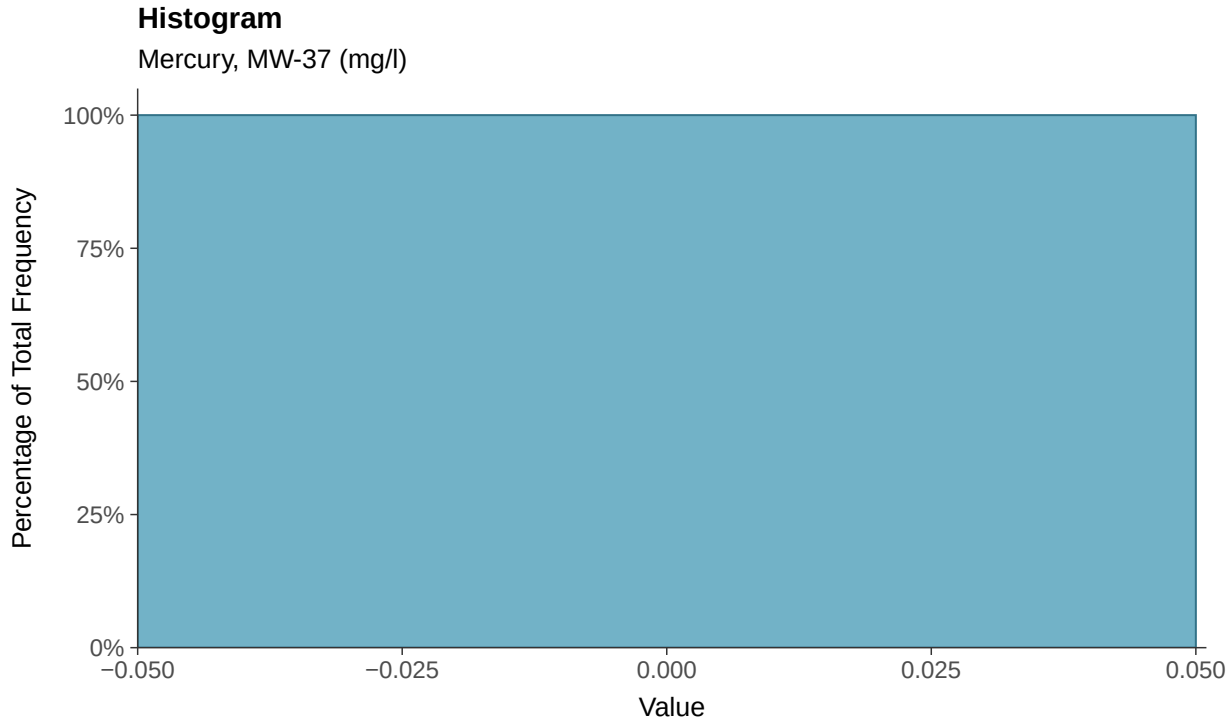



Normal Q-Q plot
Lithium, MW-37 (mg/l)
Value
0.086
0.084
0.082
0.080
0.078
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Mercury, MW-37

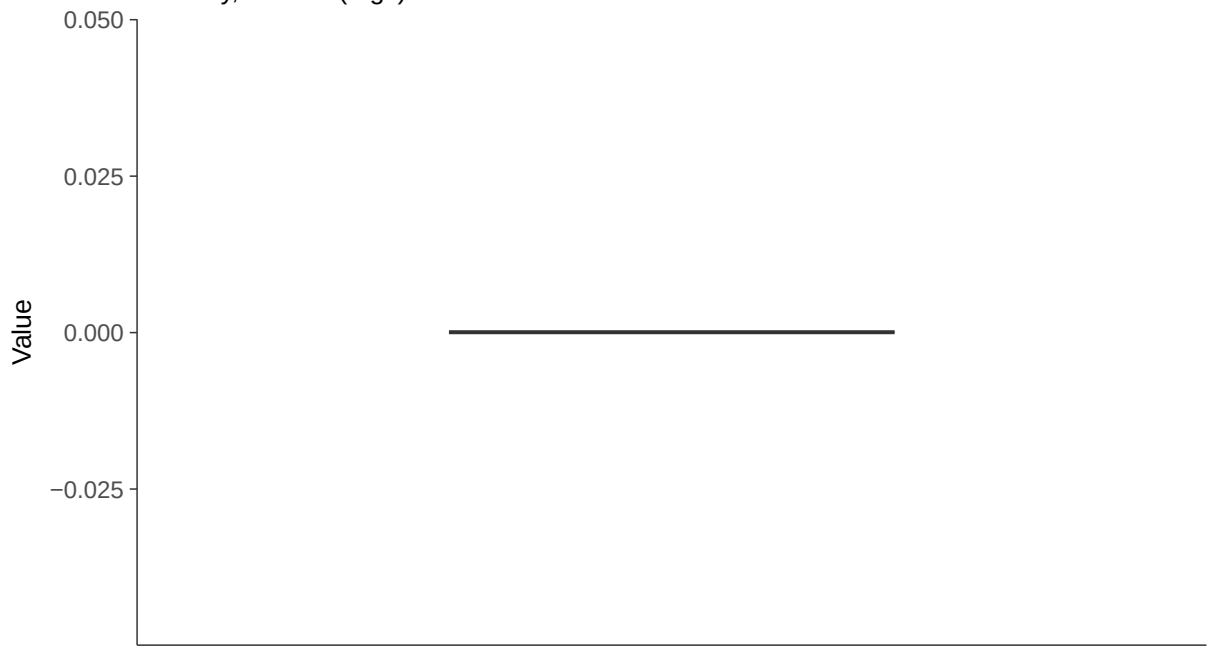
ID: 31_2_120





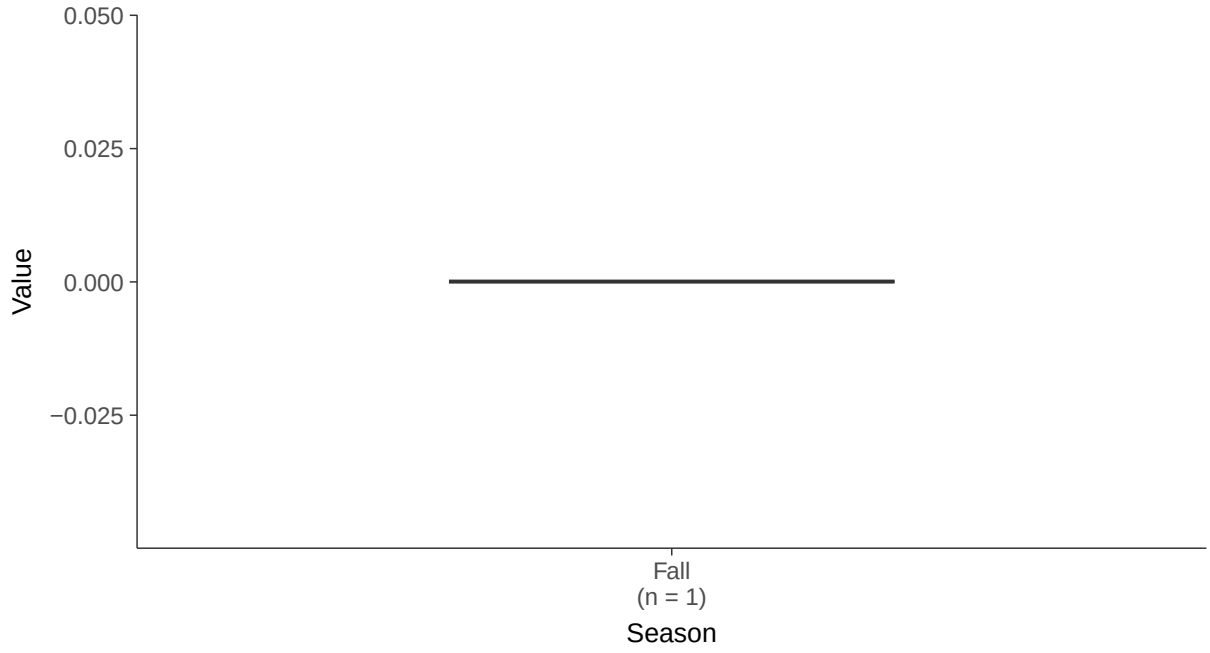
Boxplot

Mercury, MW-37 (mg/l)



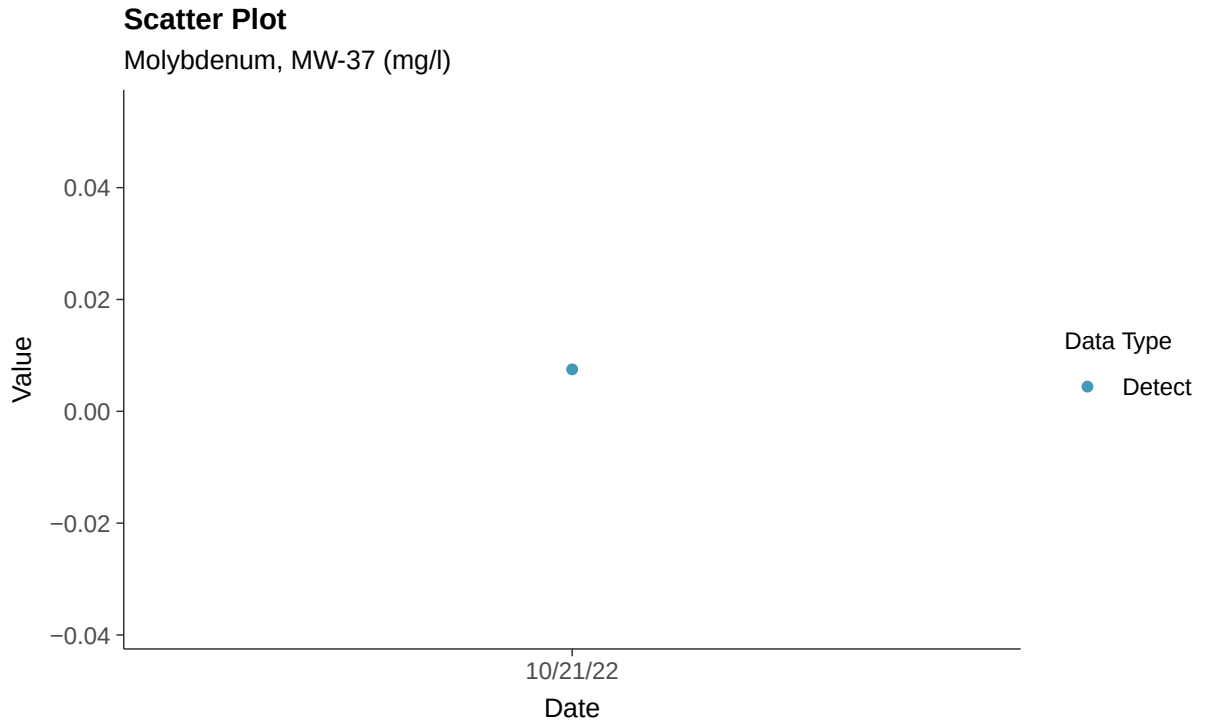
Boxplot by Season

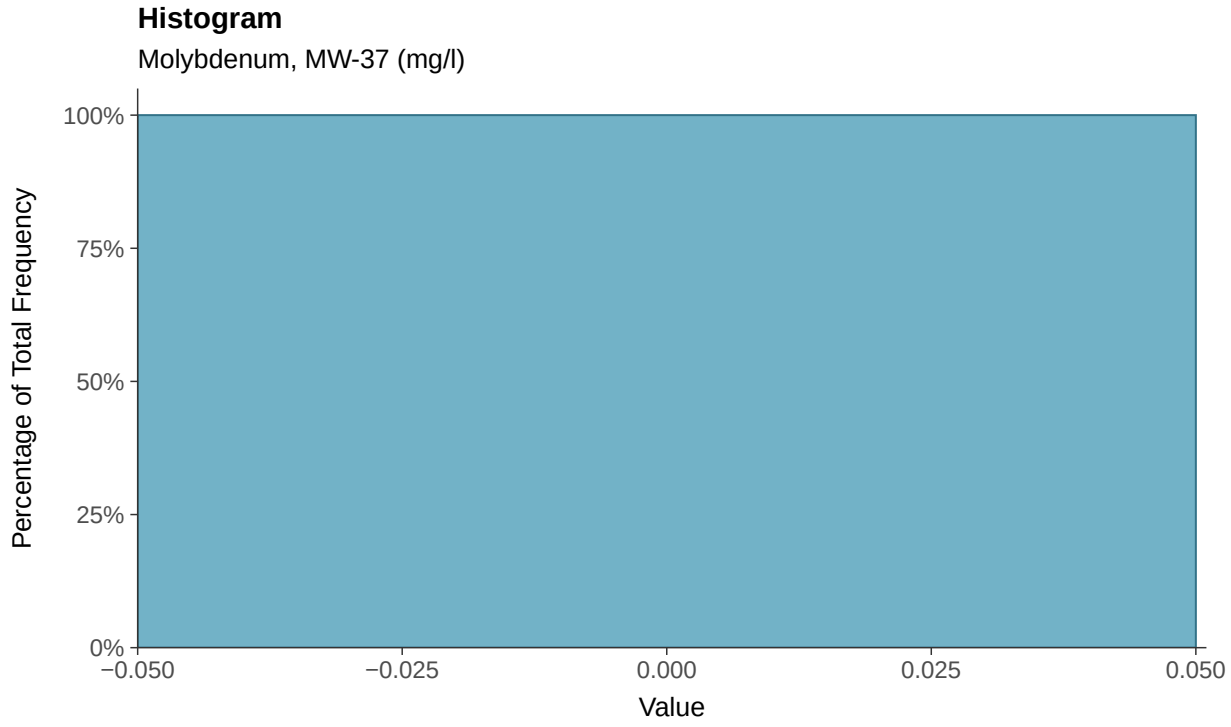
Mercury, MW-37 (mg/l)



Appendix IV: Molybdenum, MW-37

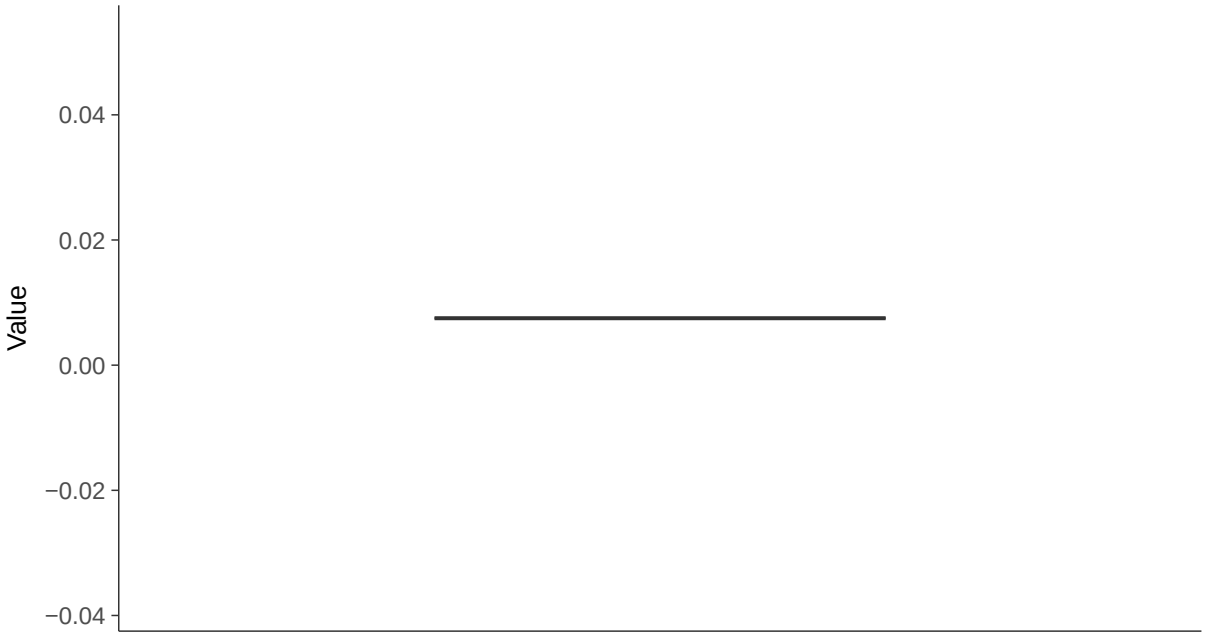
ID: 31_2_121





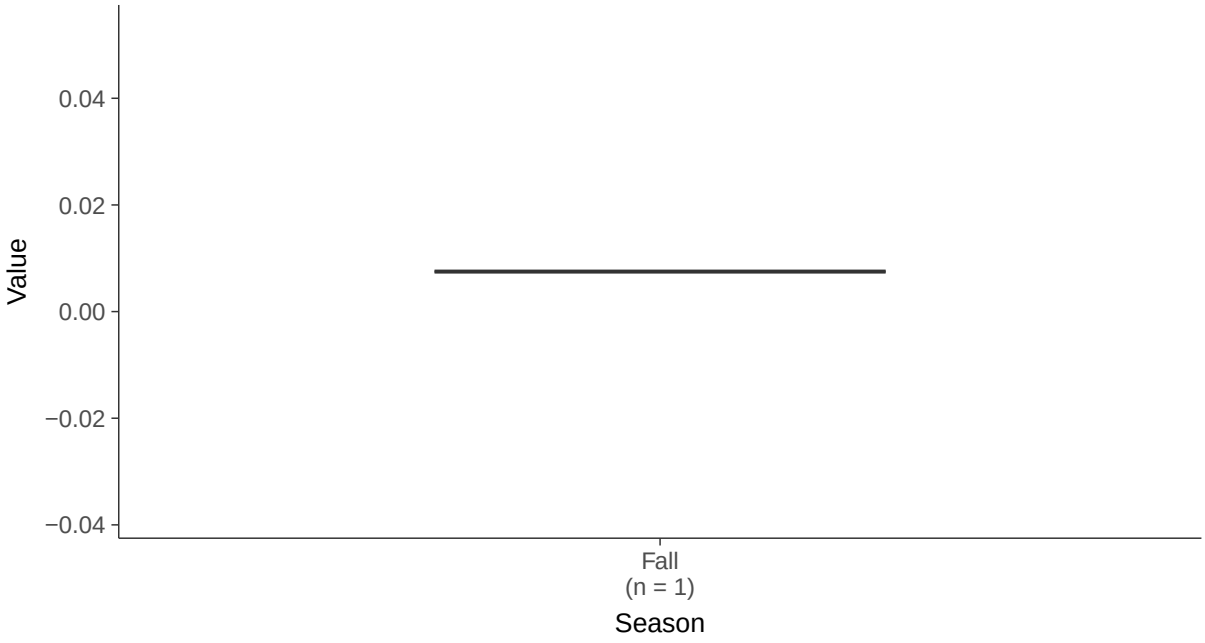
Boxplot

Molybdenum, MW-37 (mg/l)



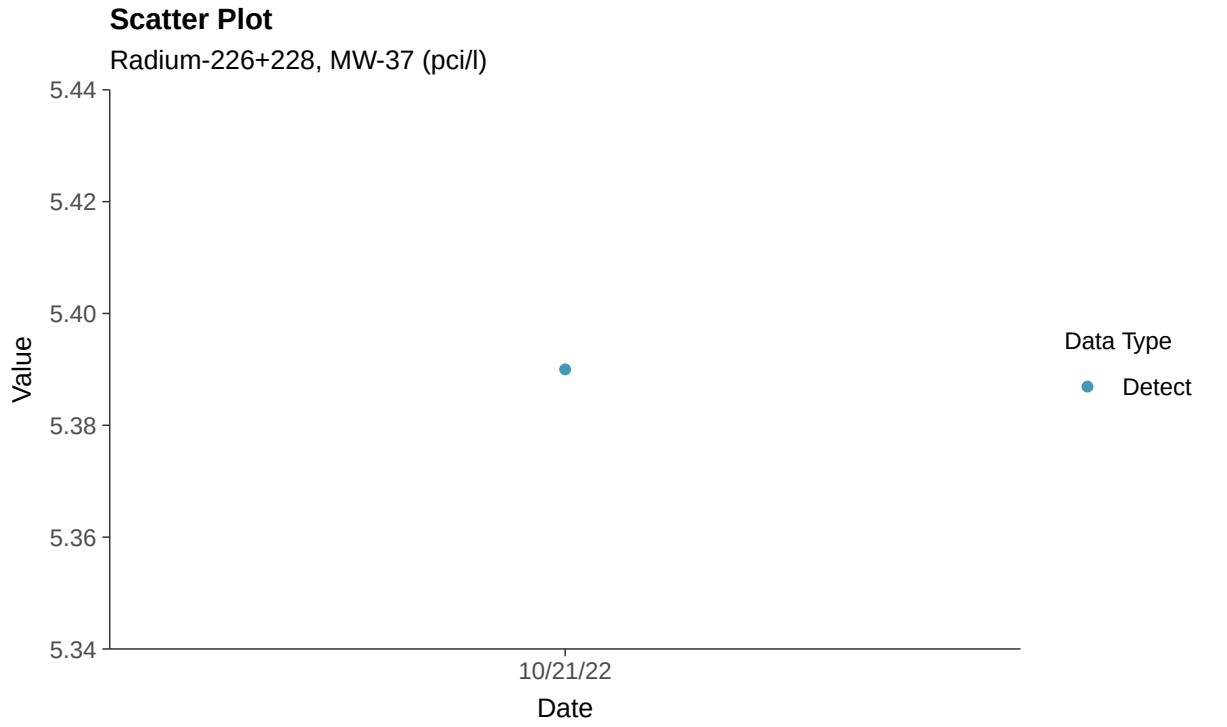
Boxplot by Season

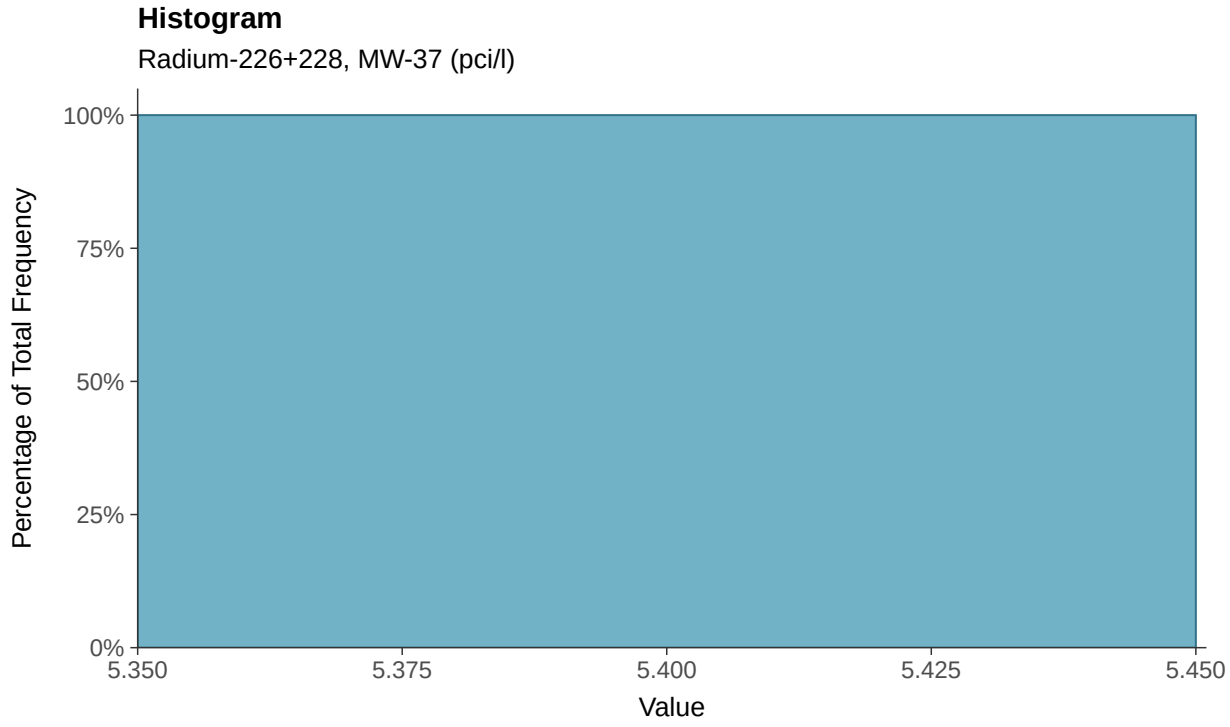
Molybdenum, MW-37 (mg/l)



Appendix IV: Radium-226+228, MW-37

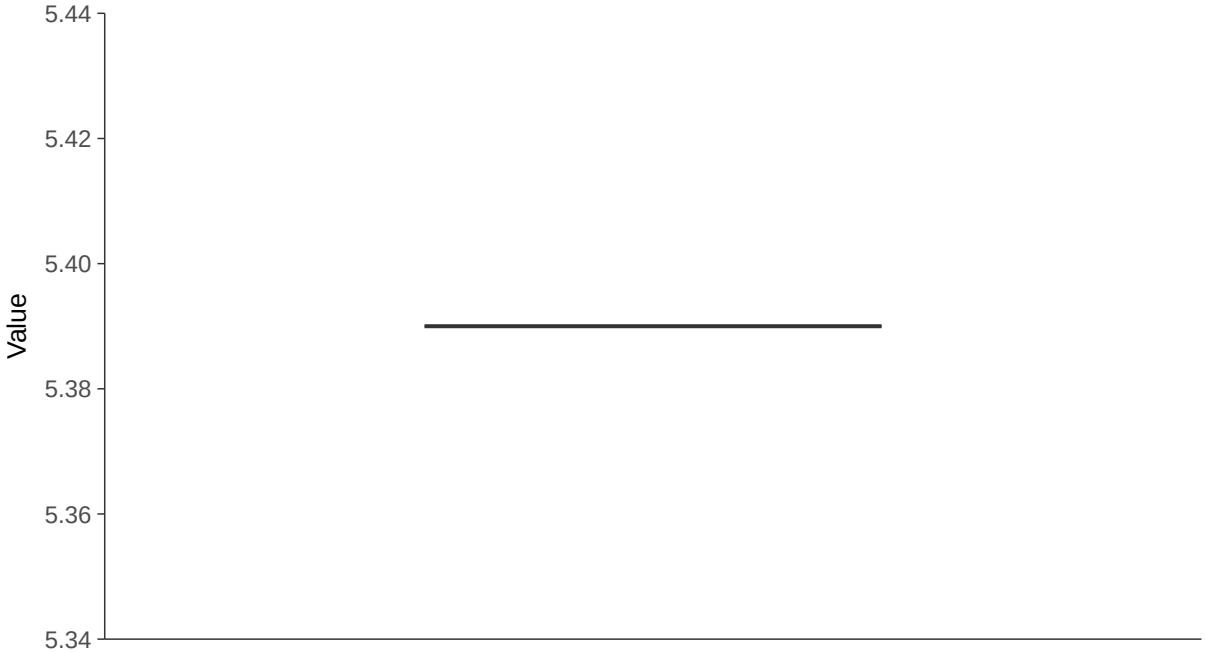
ID: 31_2_127





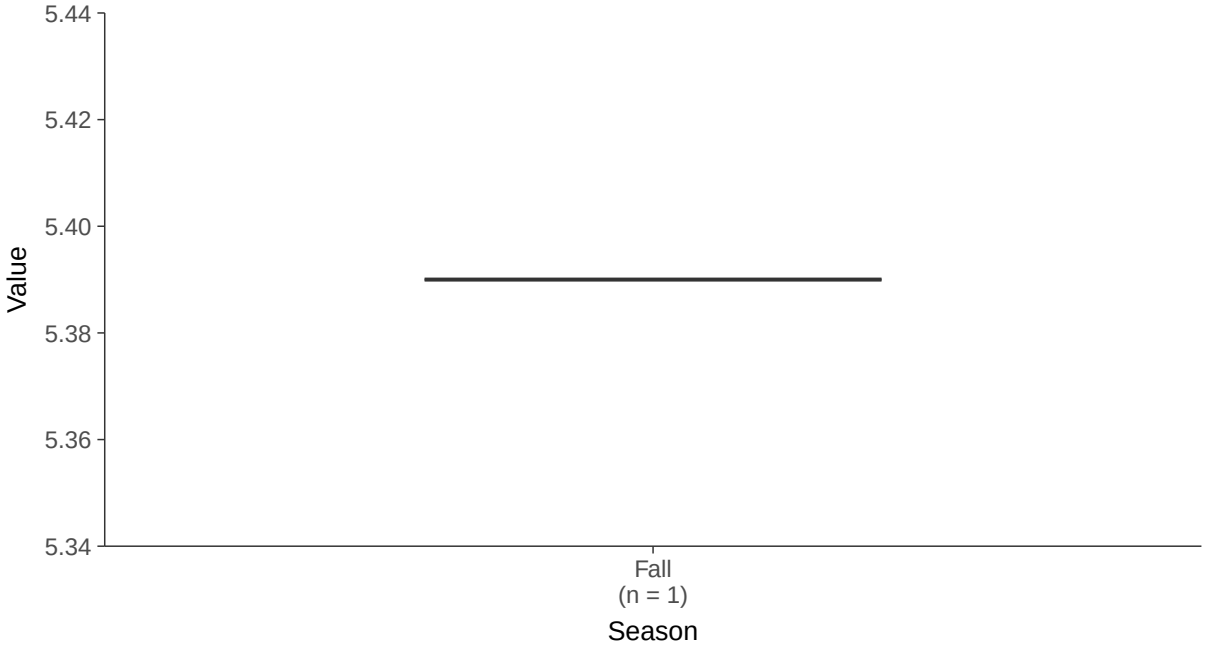
Boxplot

Radium-226+228, MW-37 (pci/l)



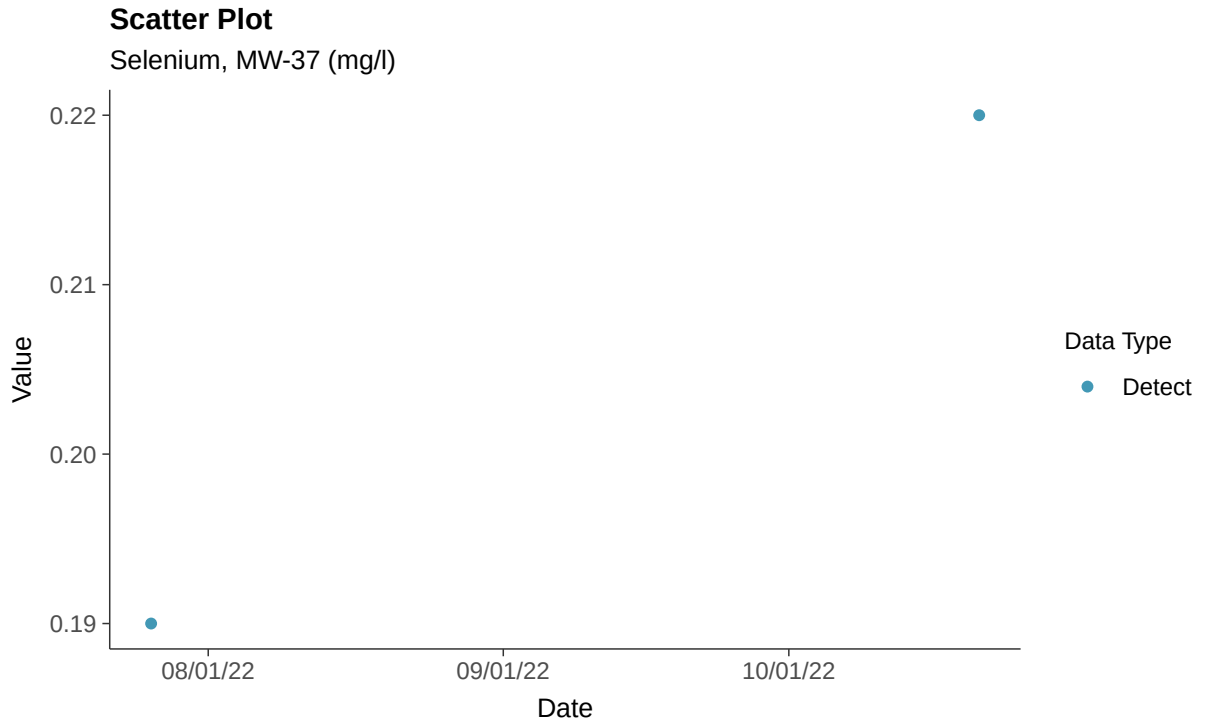
Boxplot by Season

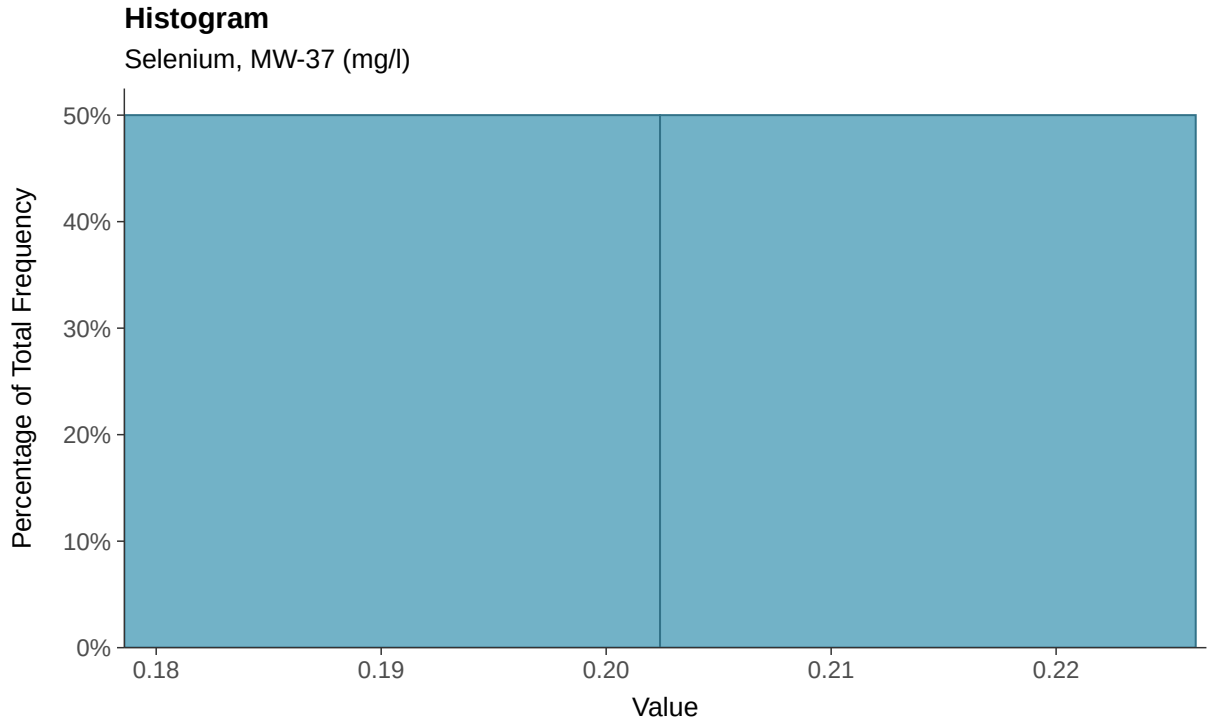
Radium-226+228, MW-37 (pci/l)



Appendix IV: Selenium, MW-37

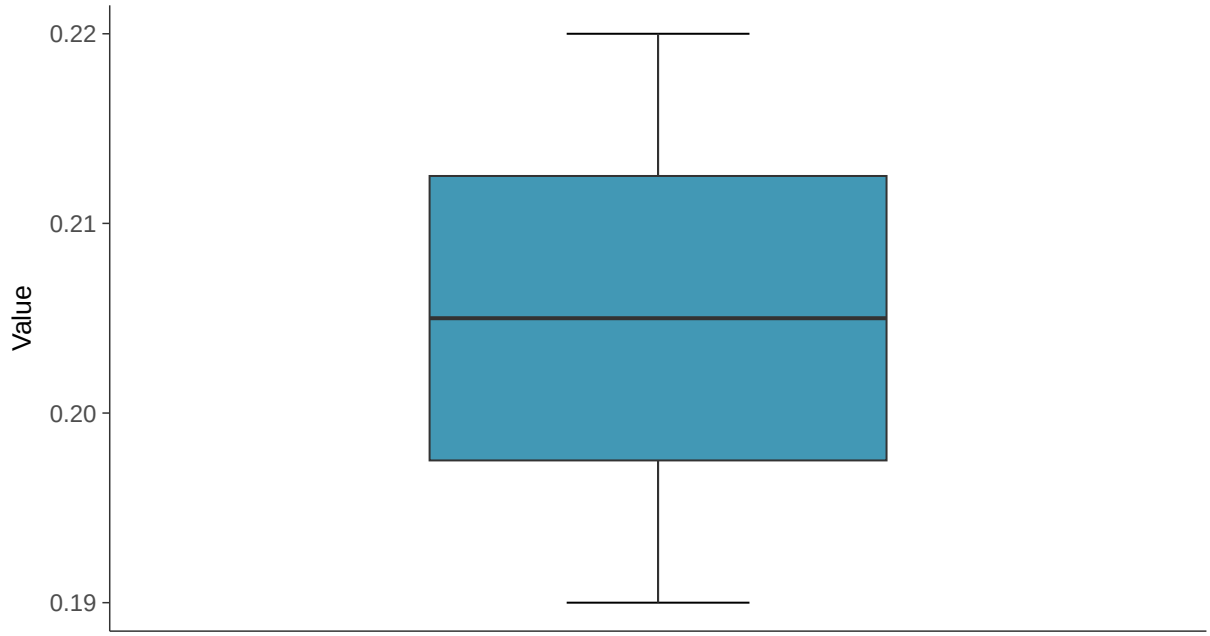
ID: 31_2_129





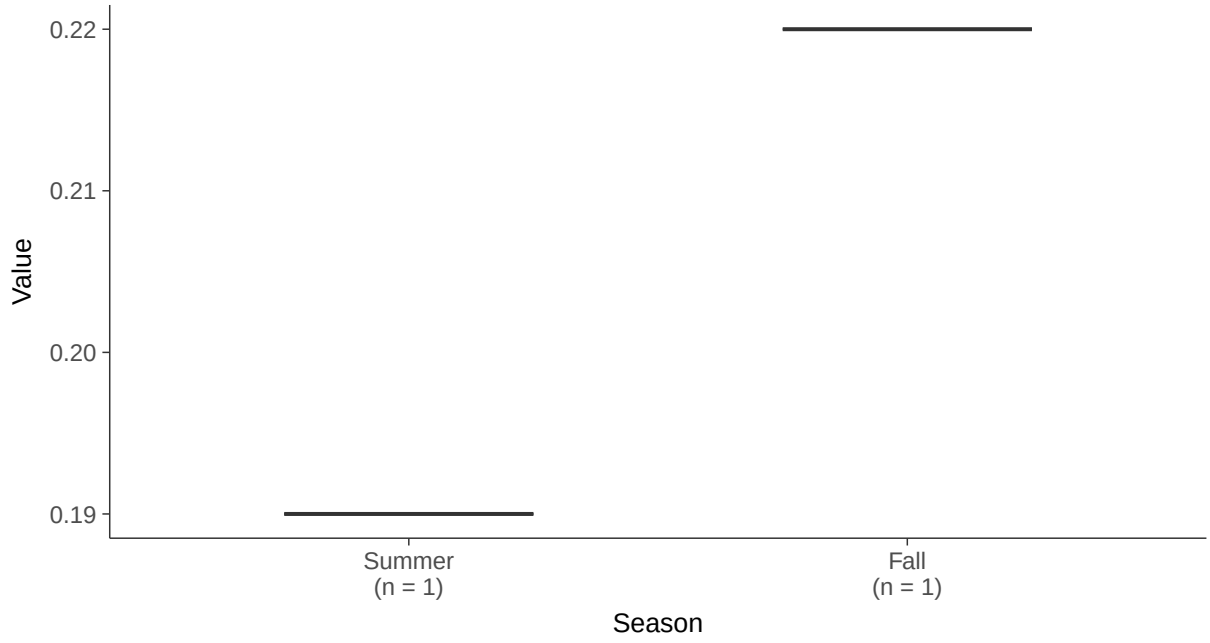
Boxplot

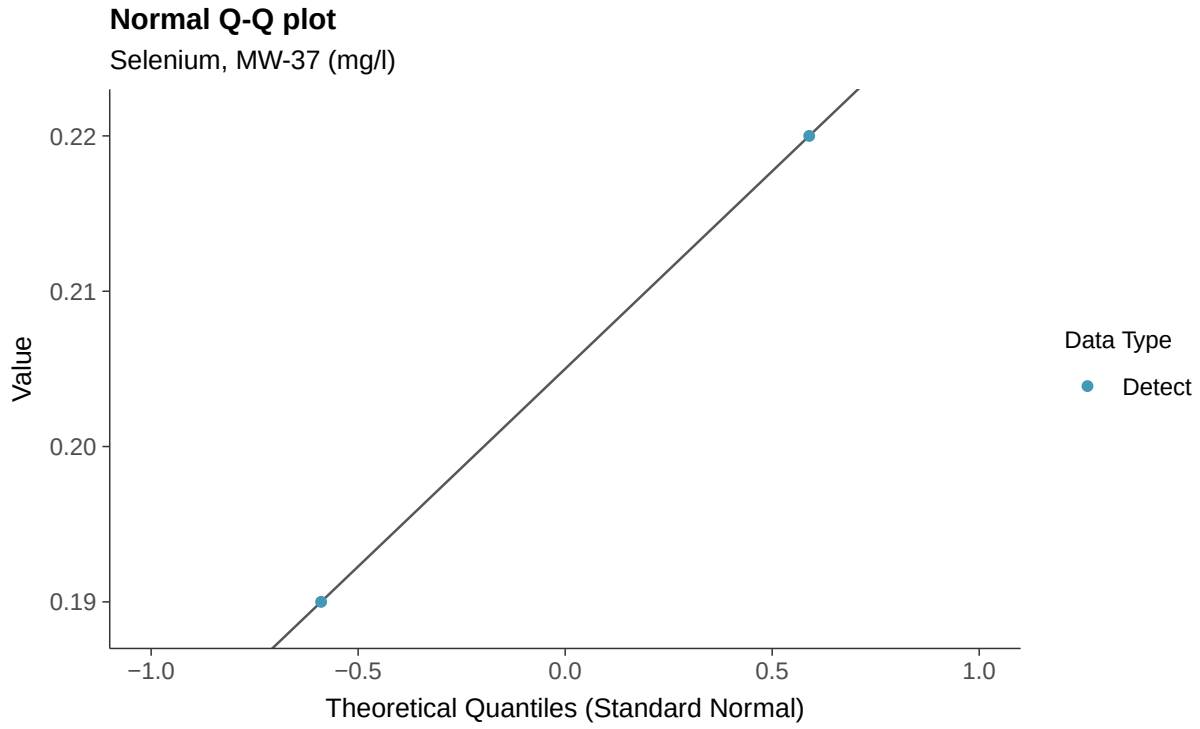
Selenium, MW-37 (mg/l)



Boxplot by Season

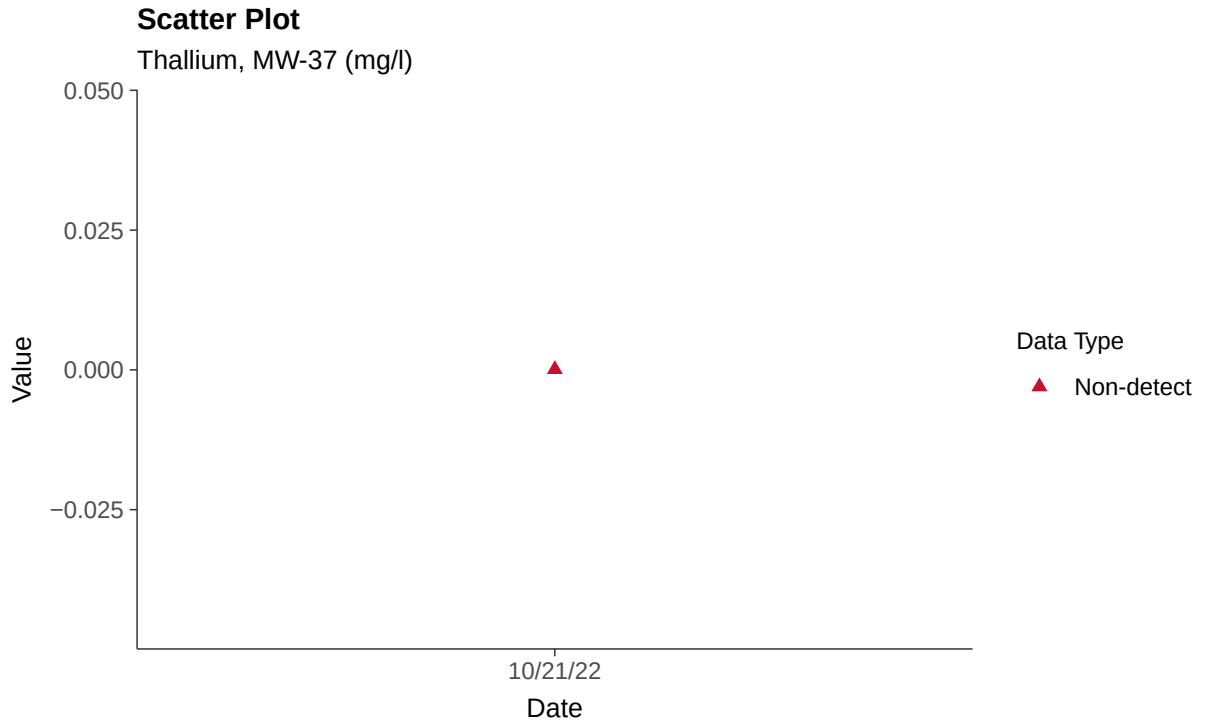
Selenium, MW-37 (mg/l)

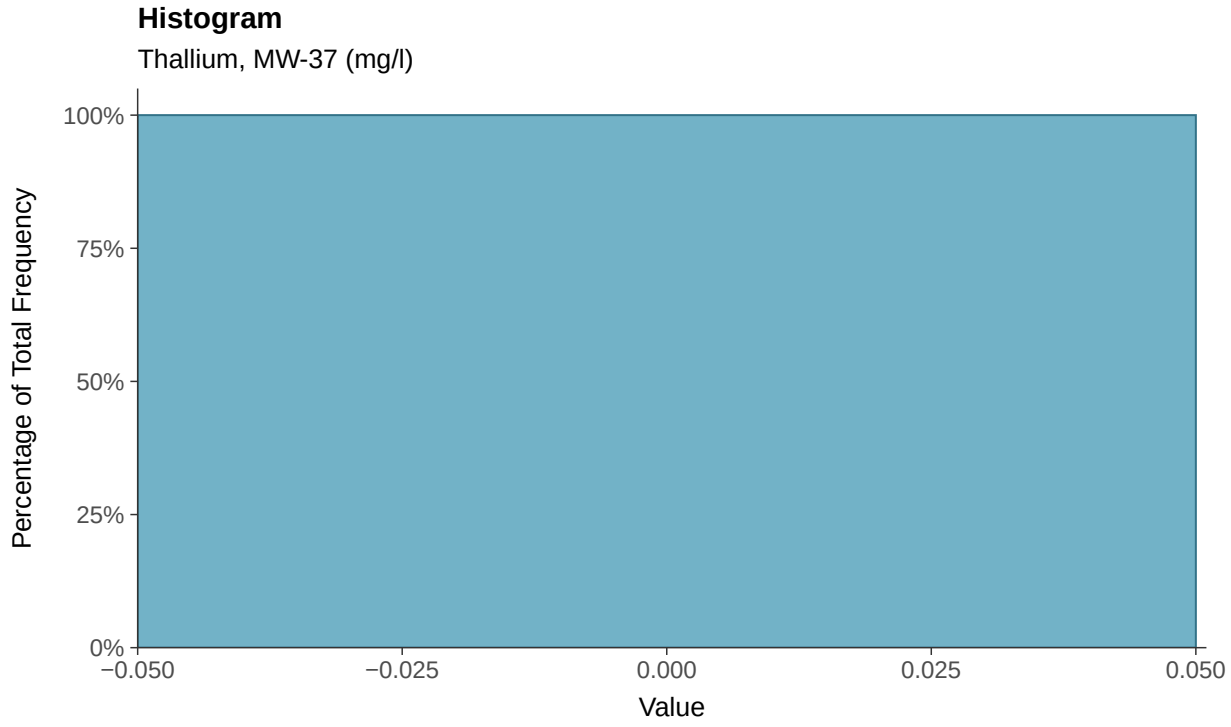



Normal Q-Q plot
Selenium, MW-37 (mg/l)
Value
0.22
0.21
0.20
0.19
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Thallium, MW-37

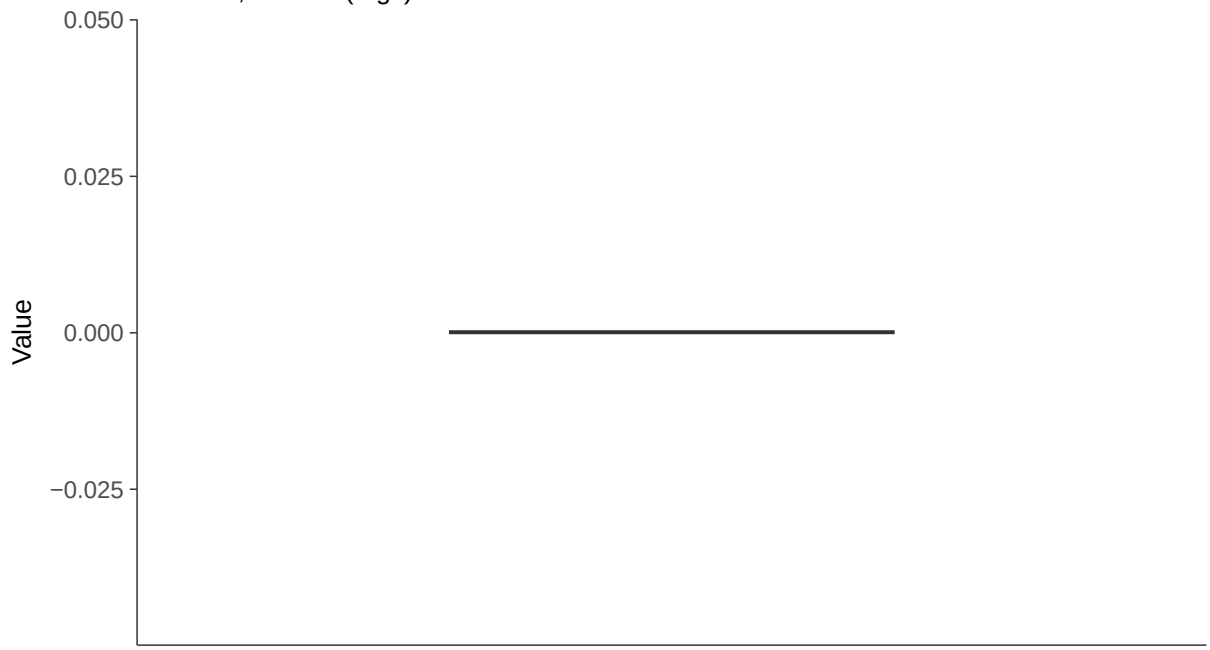
ID: 31_2_134





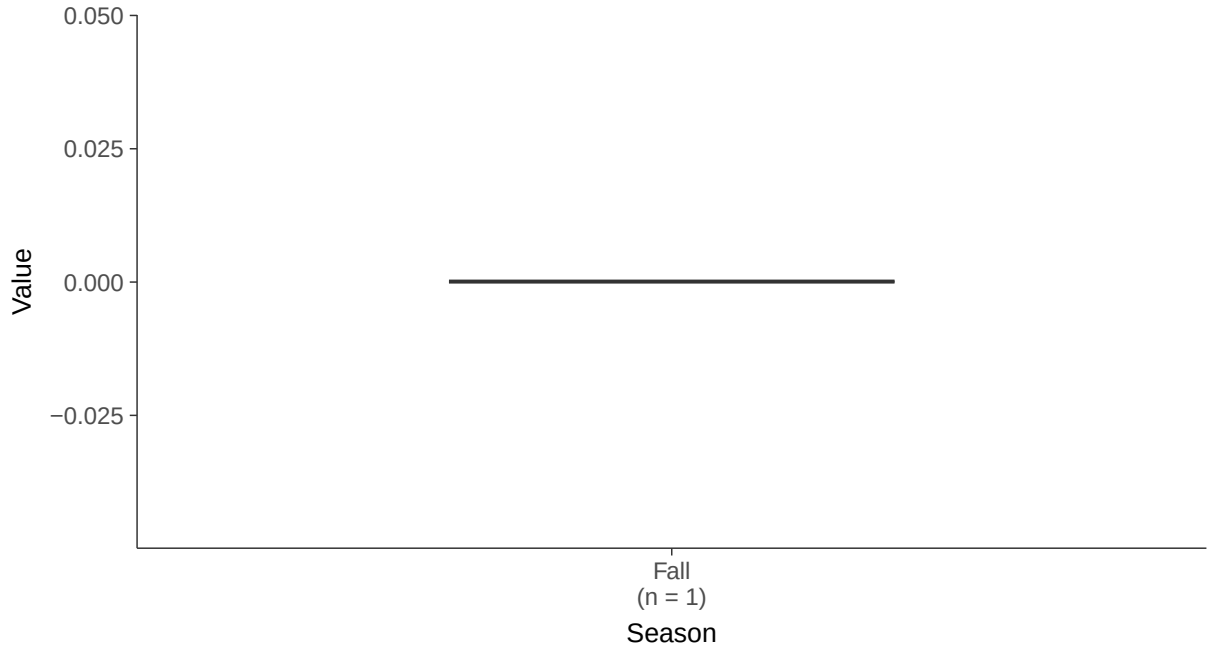
Boxplot

Thallium, MW-37 (mg/l)



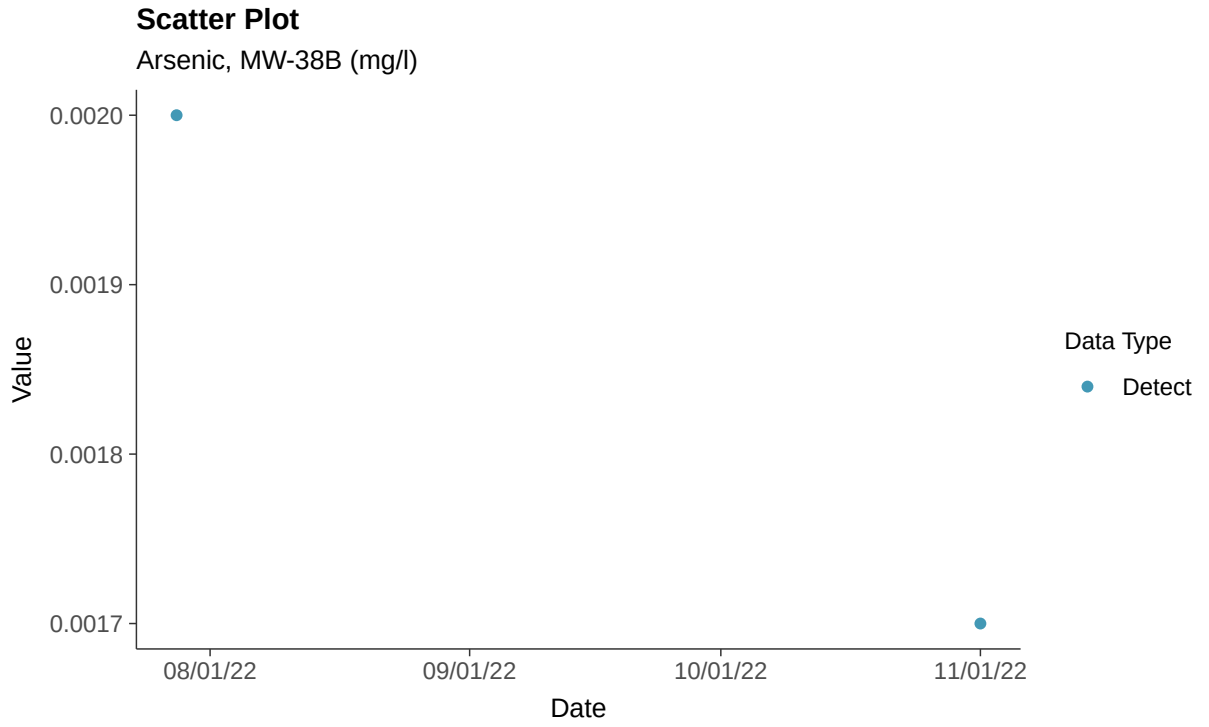
Boxplot by Season

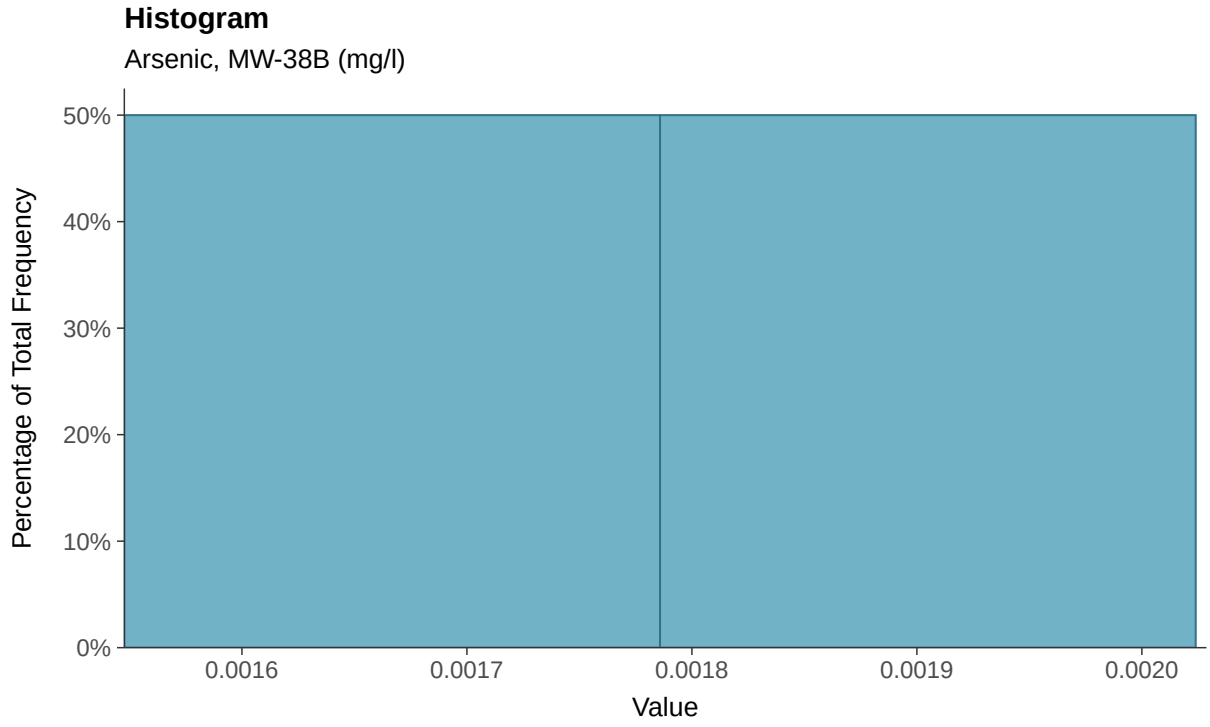
Thallium, MW-37 (mg/l)



Appendix IV: Arsenic, MW-38B

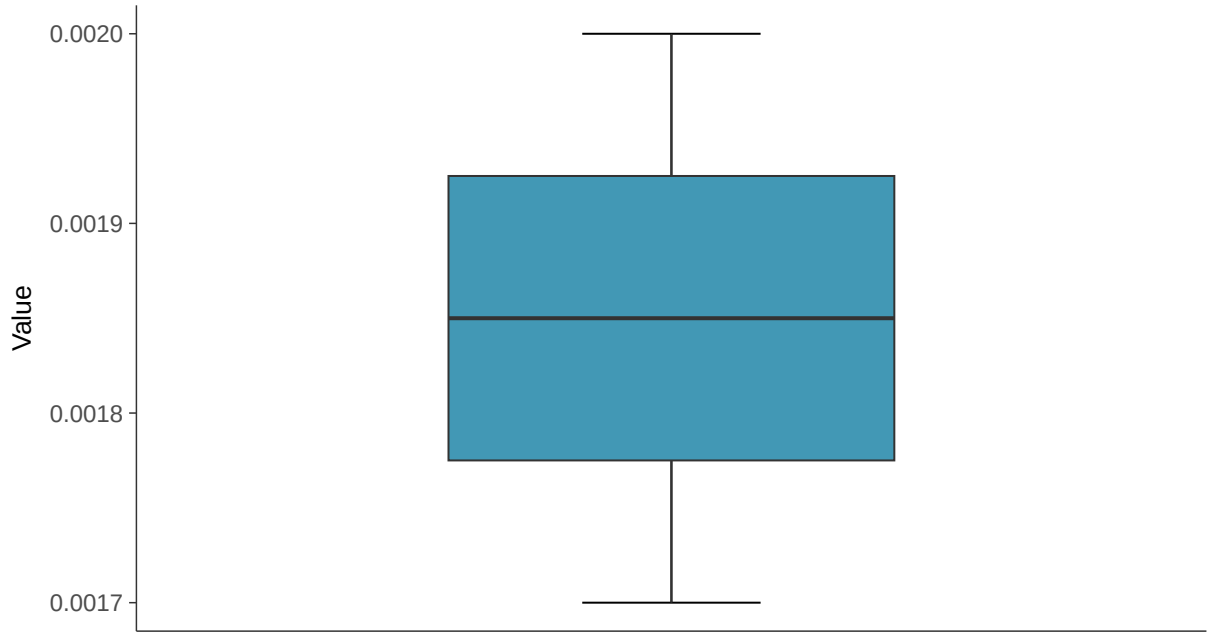
ID: 32_2_105





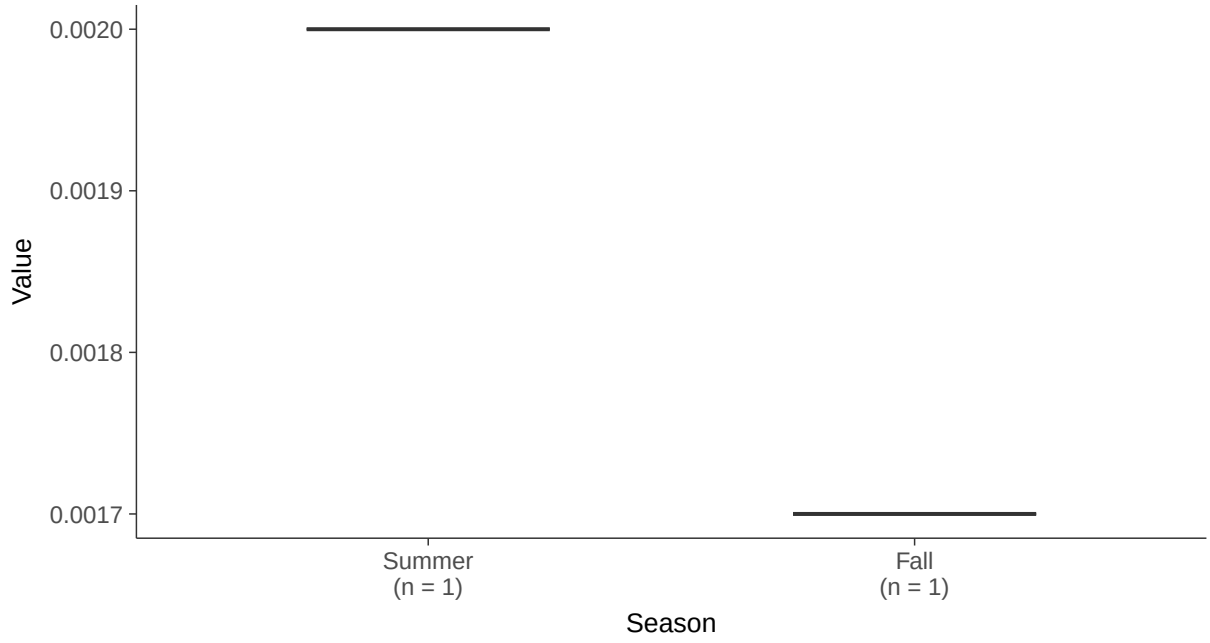
Boxplot

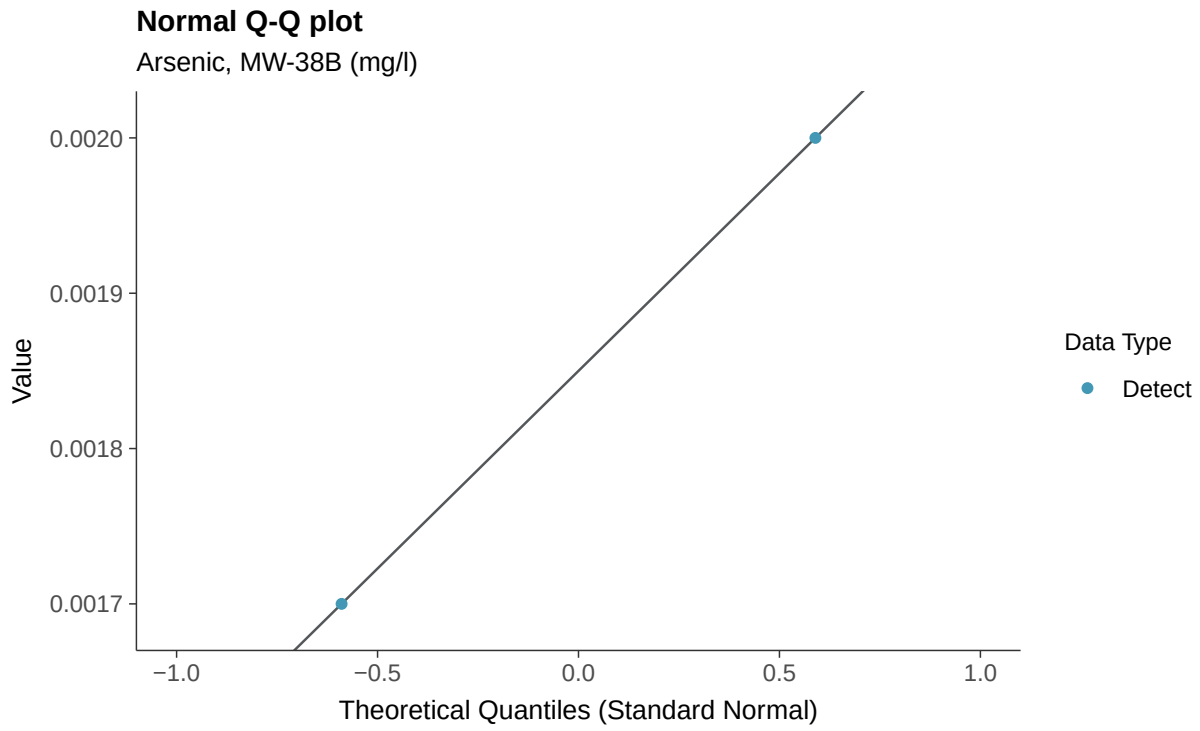
Arsenic, MW-38B (mg/l)



Boxplot by Season

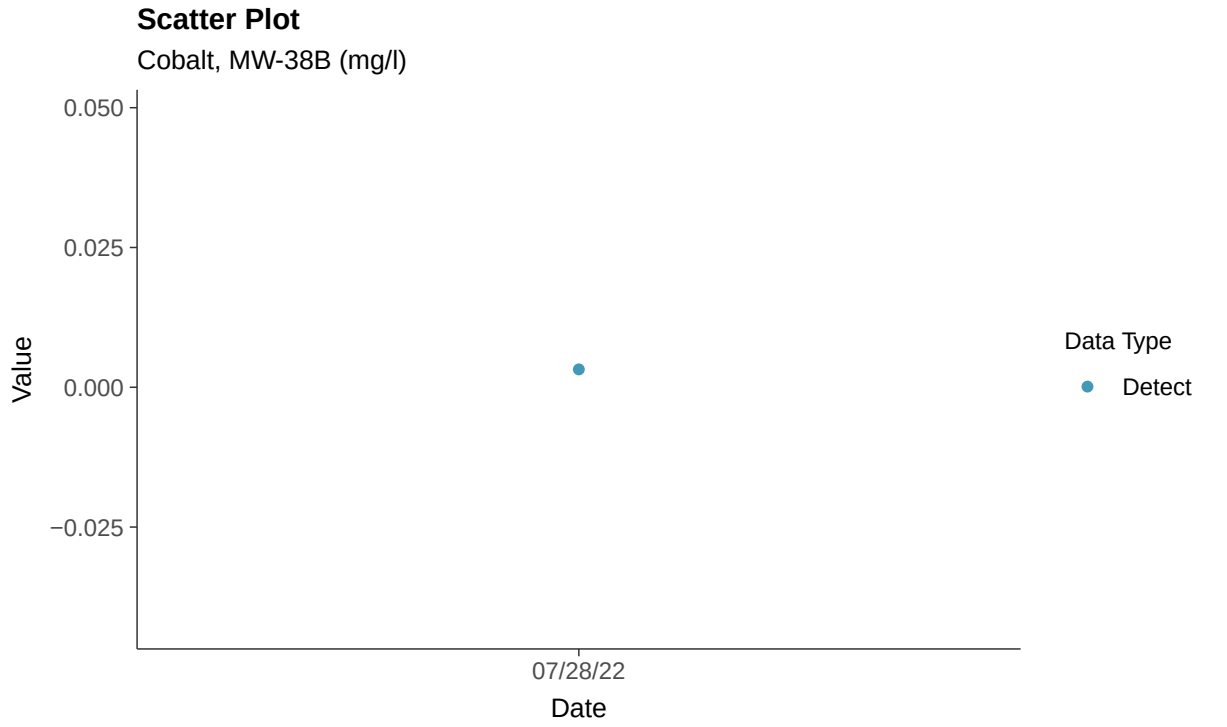
Arsenic, MW-38B (mg/l)

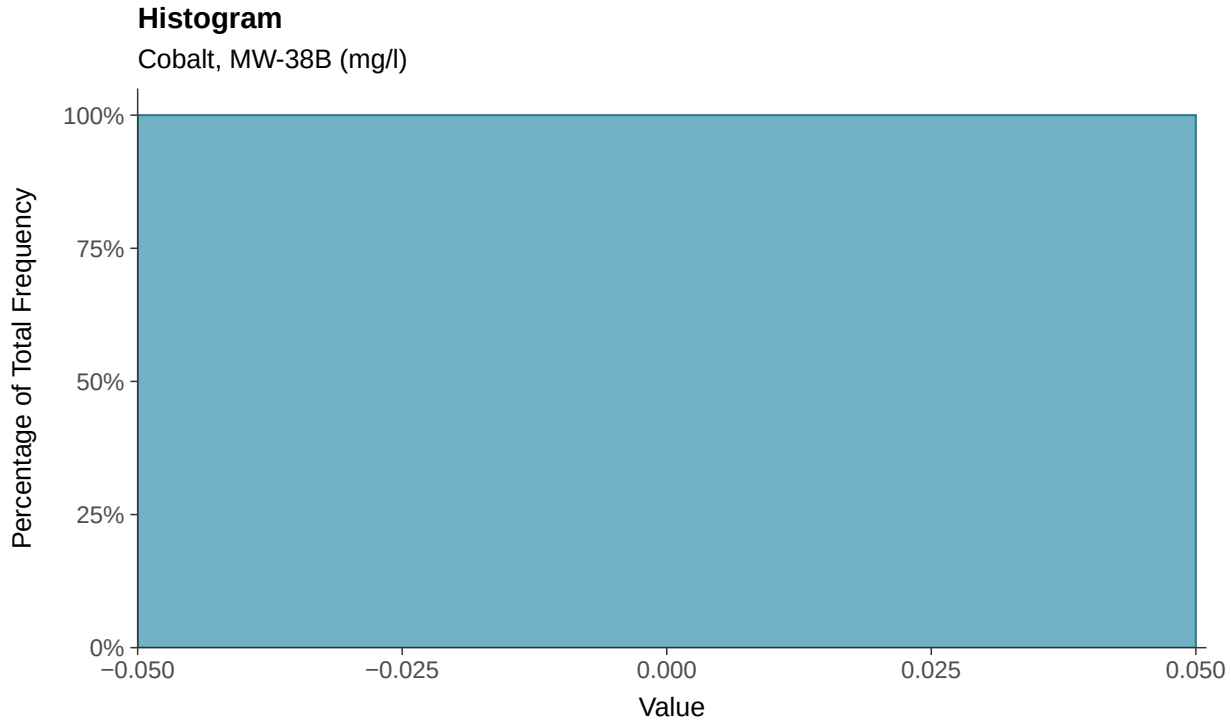



Normal Q-Q plot
Arsenic, MW-38B (mg/l)
Value
0.0020
0.0019
0.0018
0.0017
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Cobalt, MW-38B

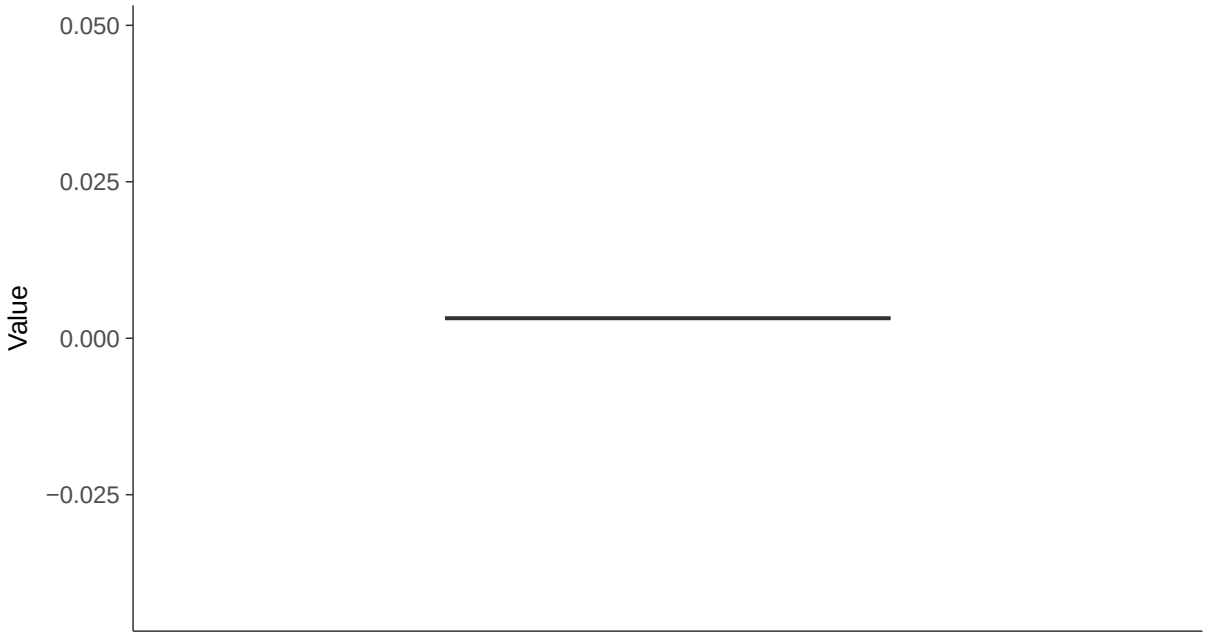
ID: 32_2_113





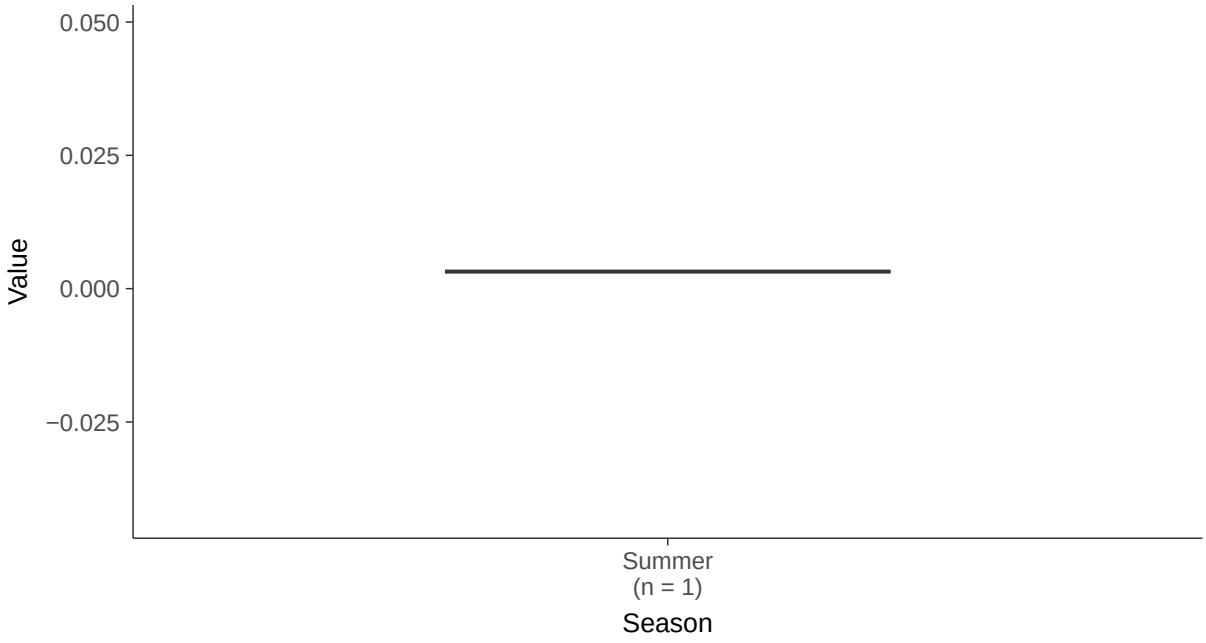
Boxplot

Cobalt, MW-38B (mg/l)



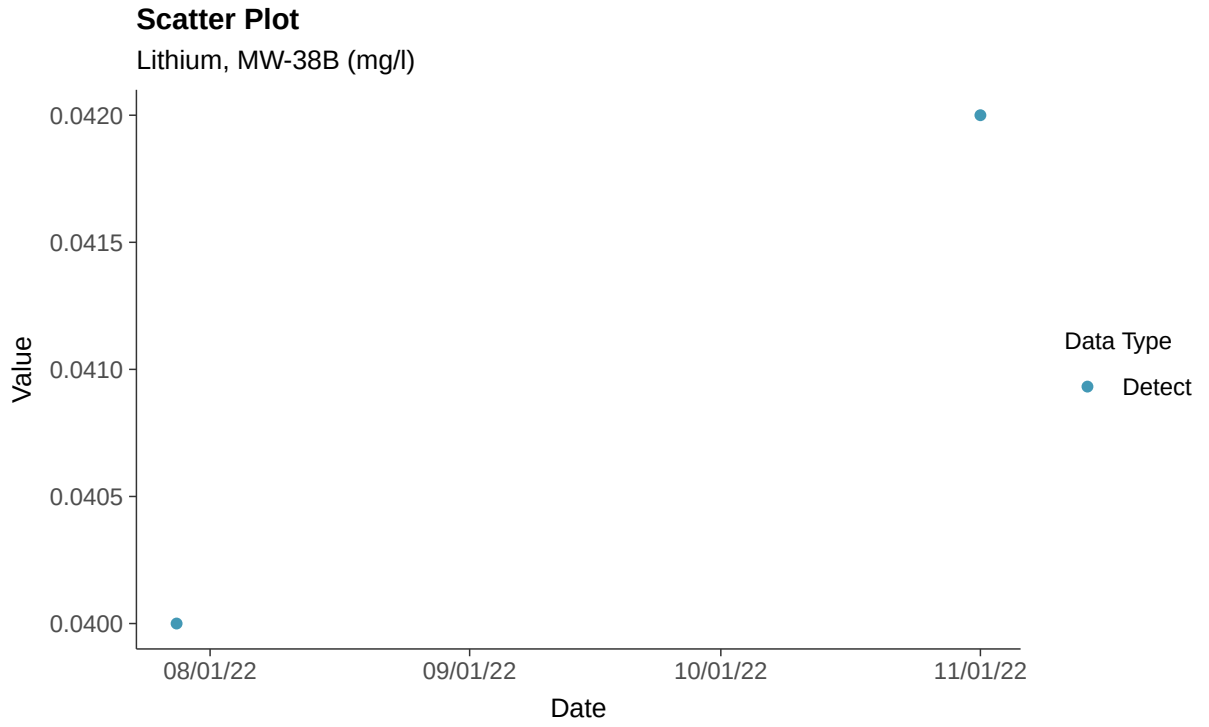
Boxplot by Season

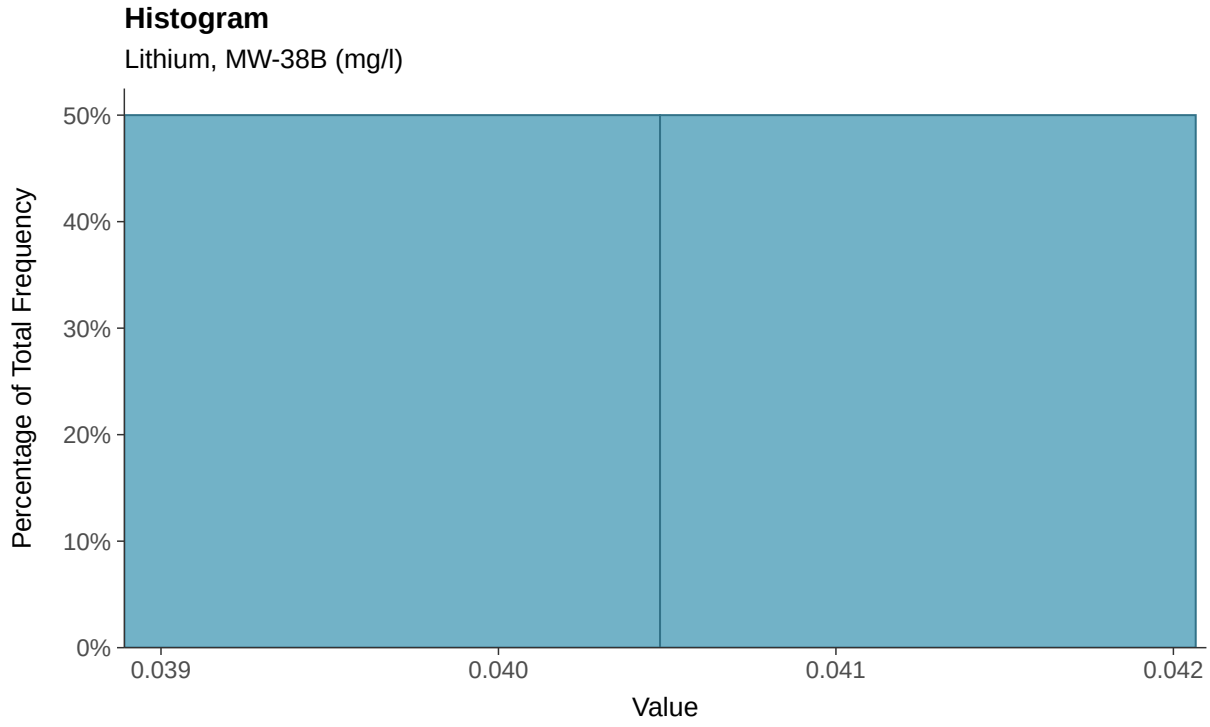
Cobalt, MW-38B (mg/l)



Appendix IV: Lithium, MW-38B

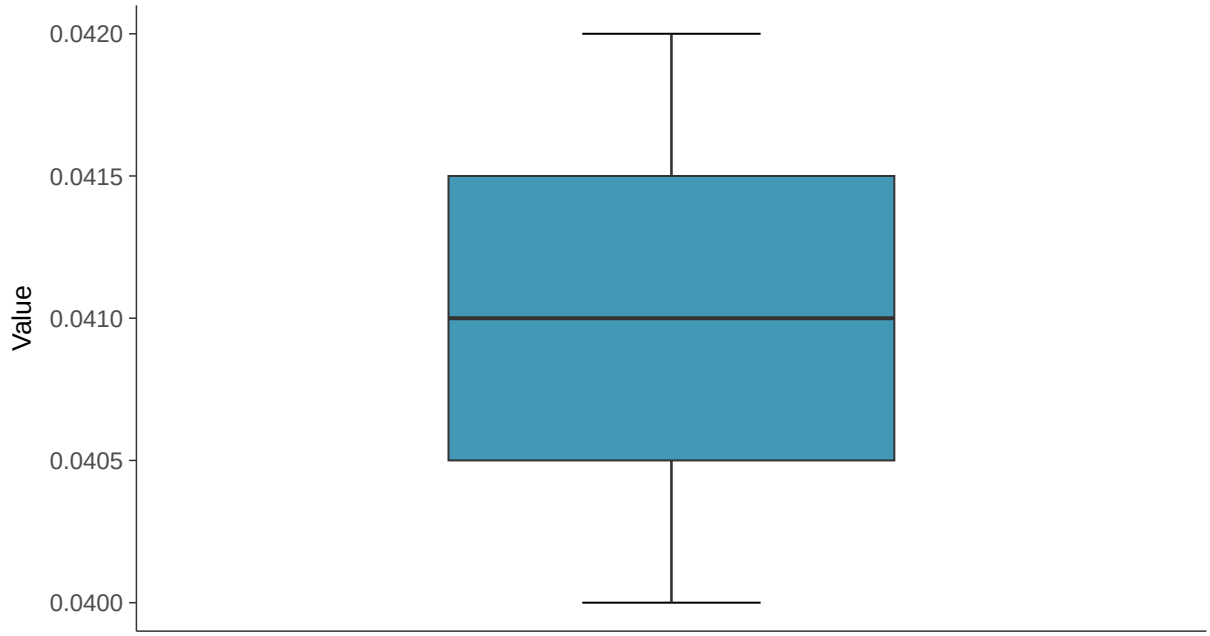
ID: 32_2_118





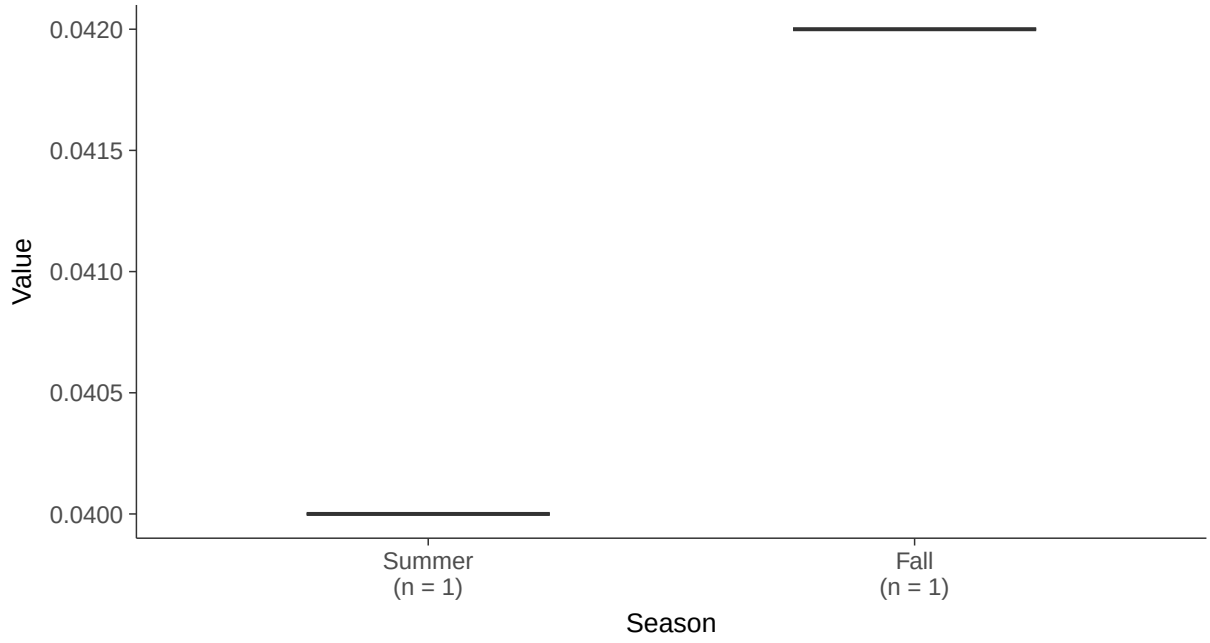
Boxplot

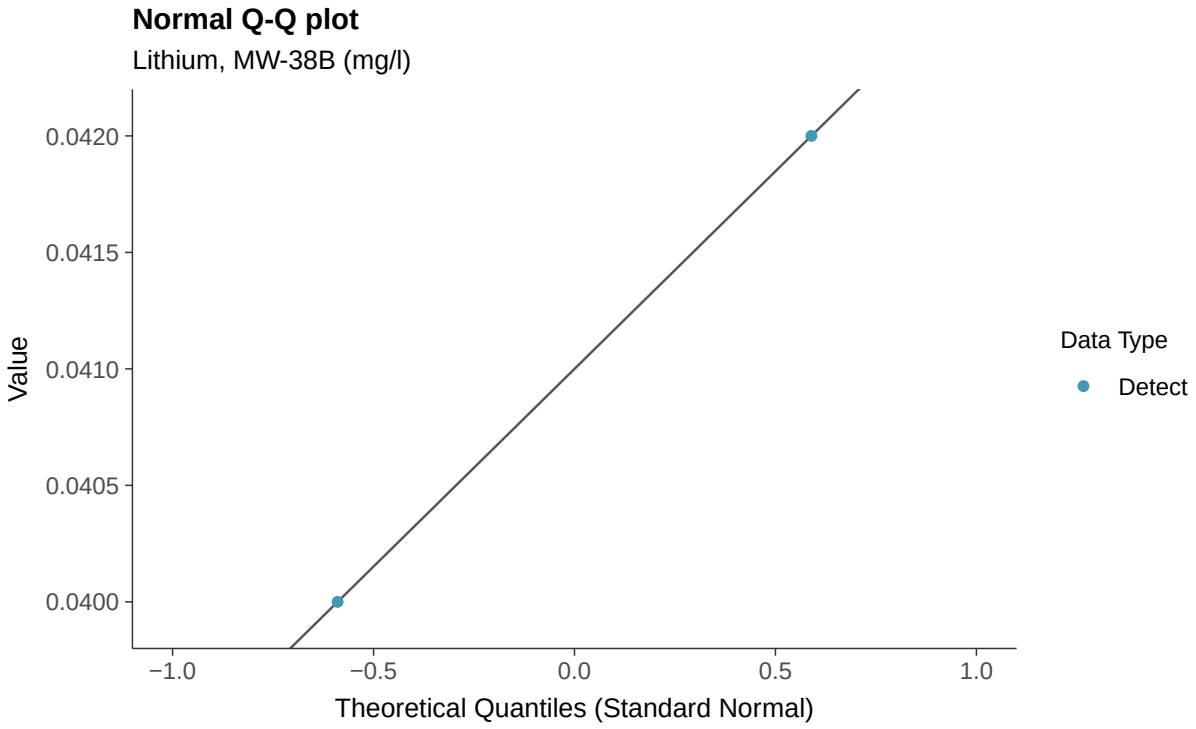
Lithium, MW-38B (mg/l)



Boxplot by Season

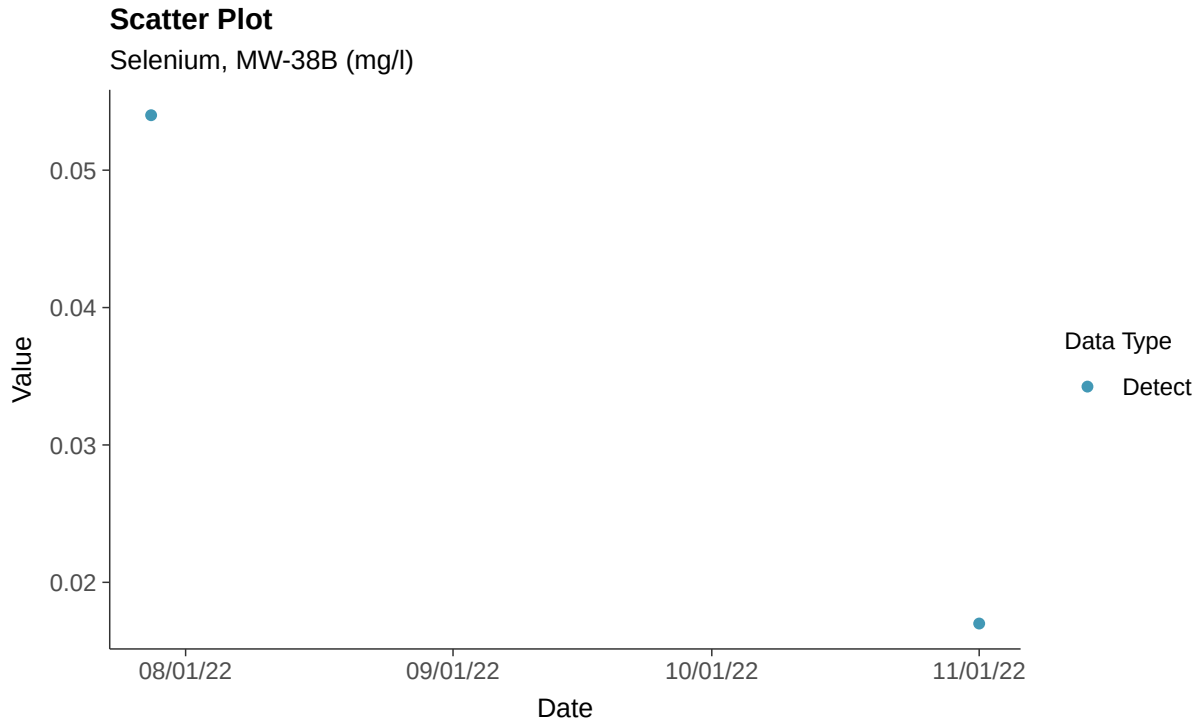
Lithium, MW-38B (mg/l)

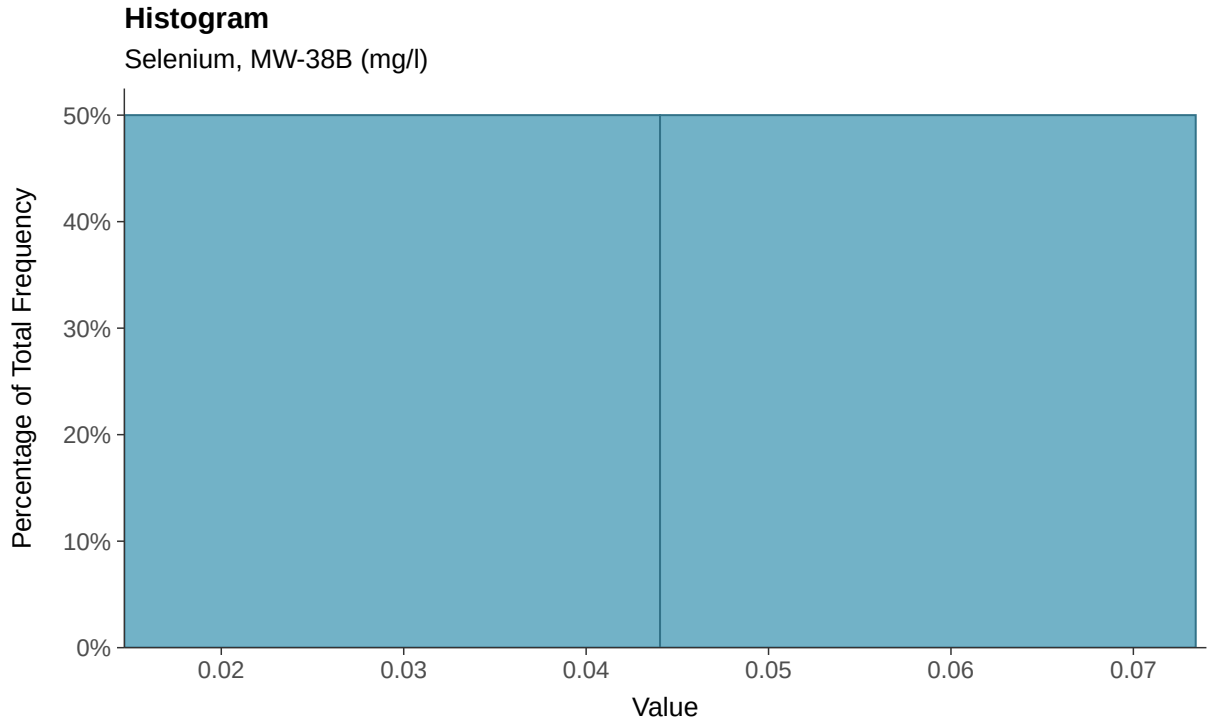



Normal Q-Q plot
Lithium, MW-38B (mg/l)
Value
0.0420
0.0415
0.0410
0.0405
0.0400
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Selenium, MW-38B

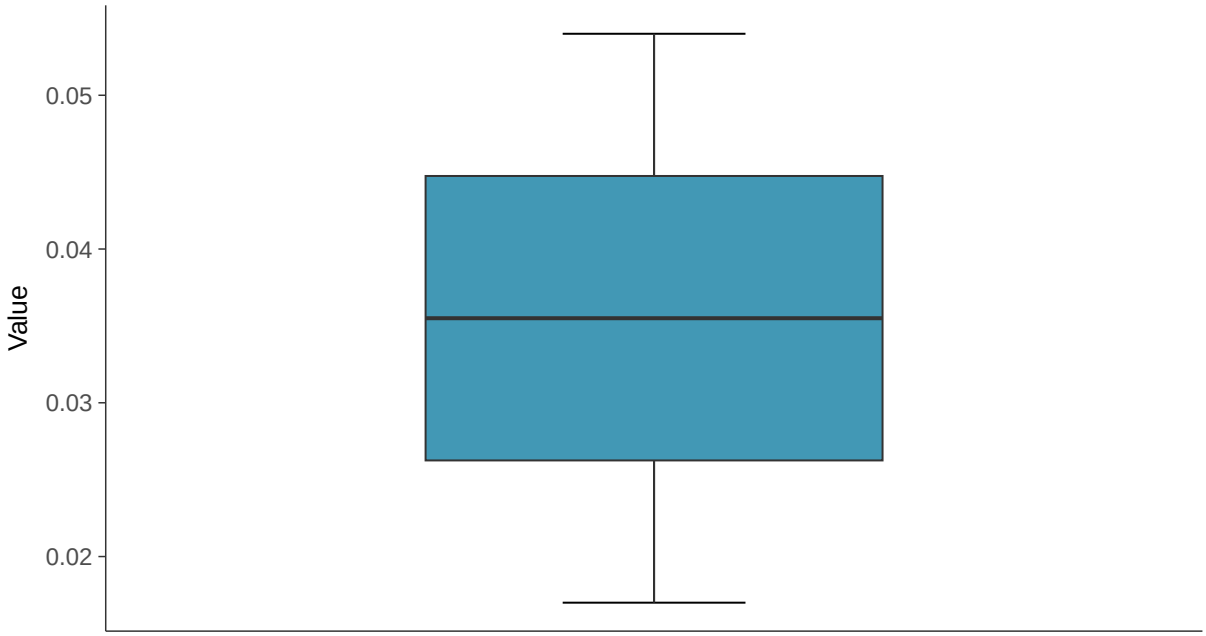
ID: 32_2_129





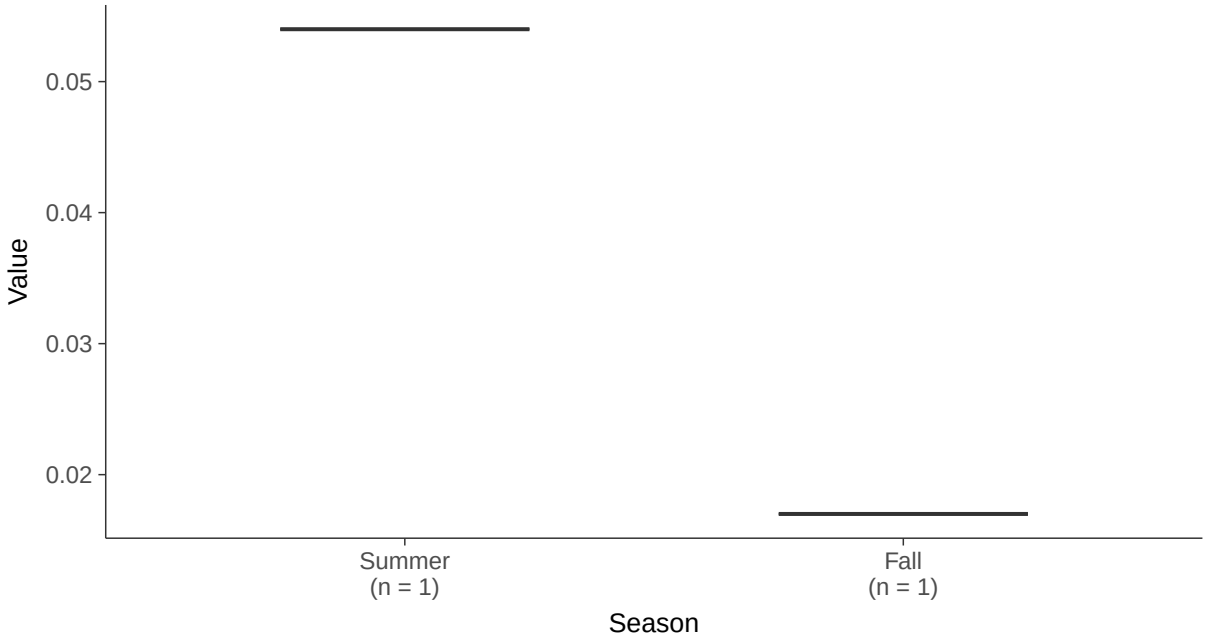
Boxplot

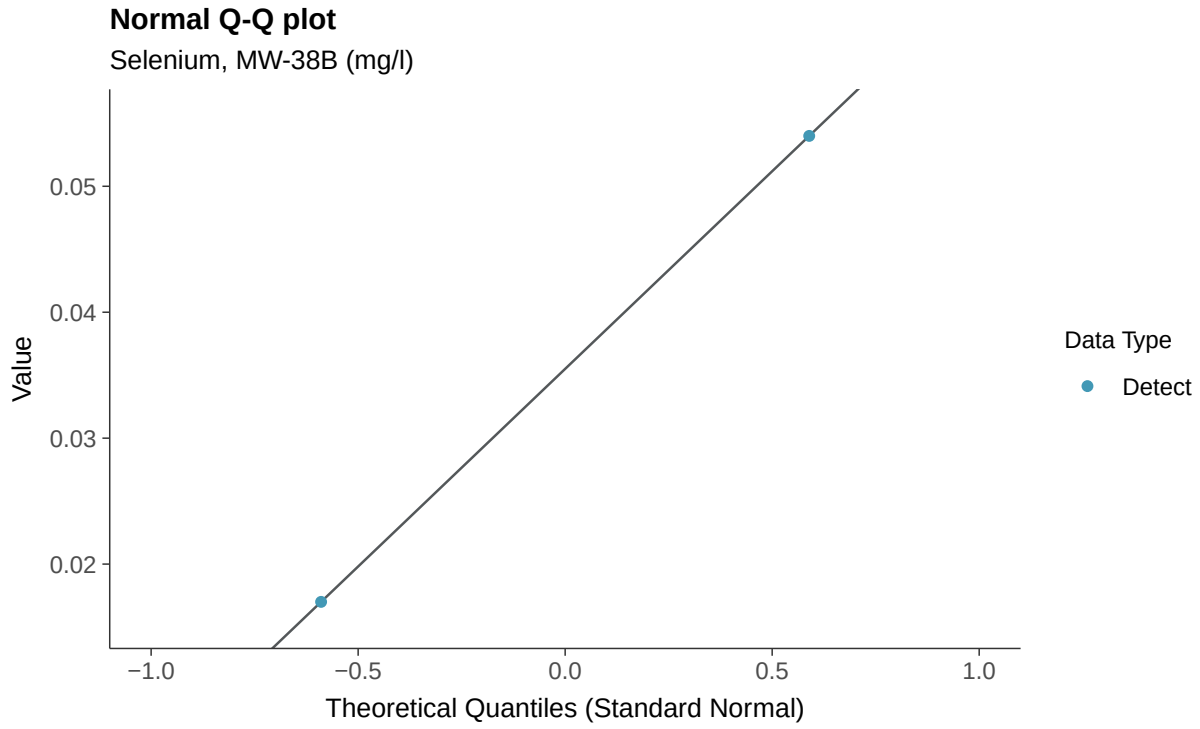
Selenium, MW-38B (mg/l)



Boxplot by Season

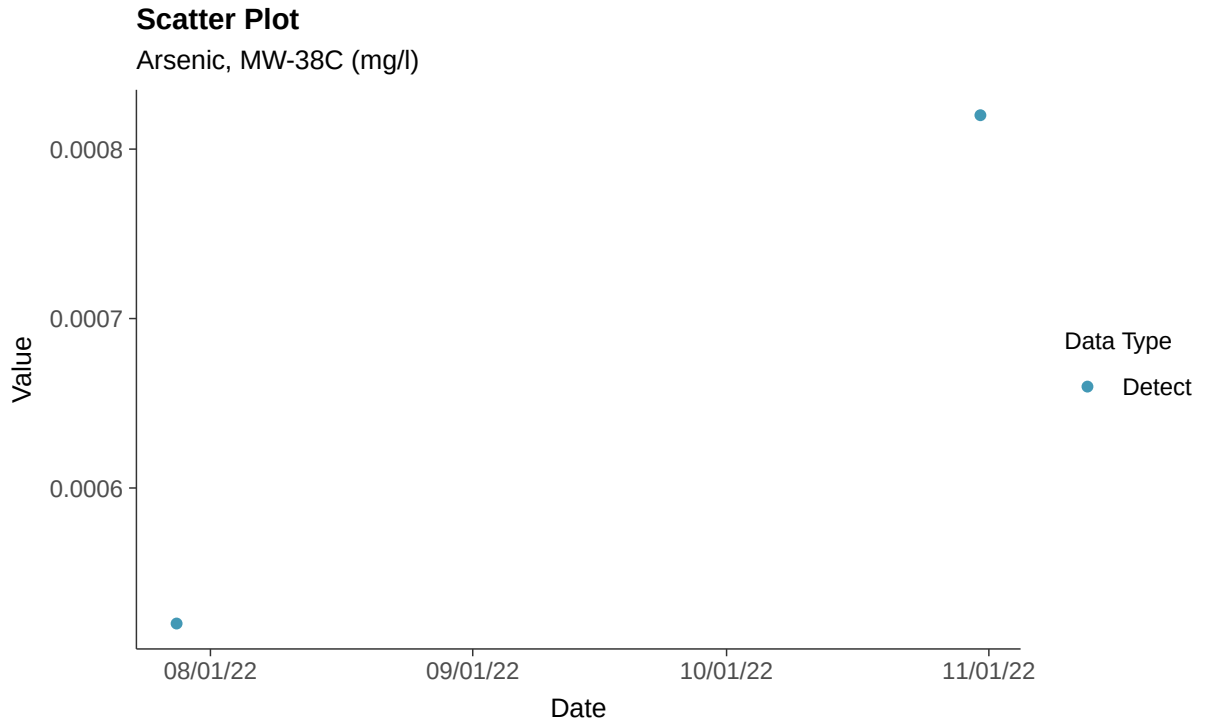
Selenium, MW-38B (mg/l)

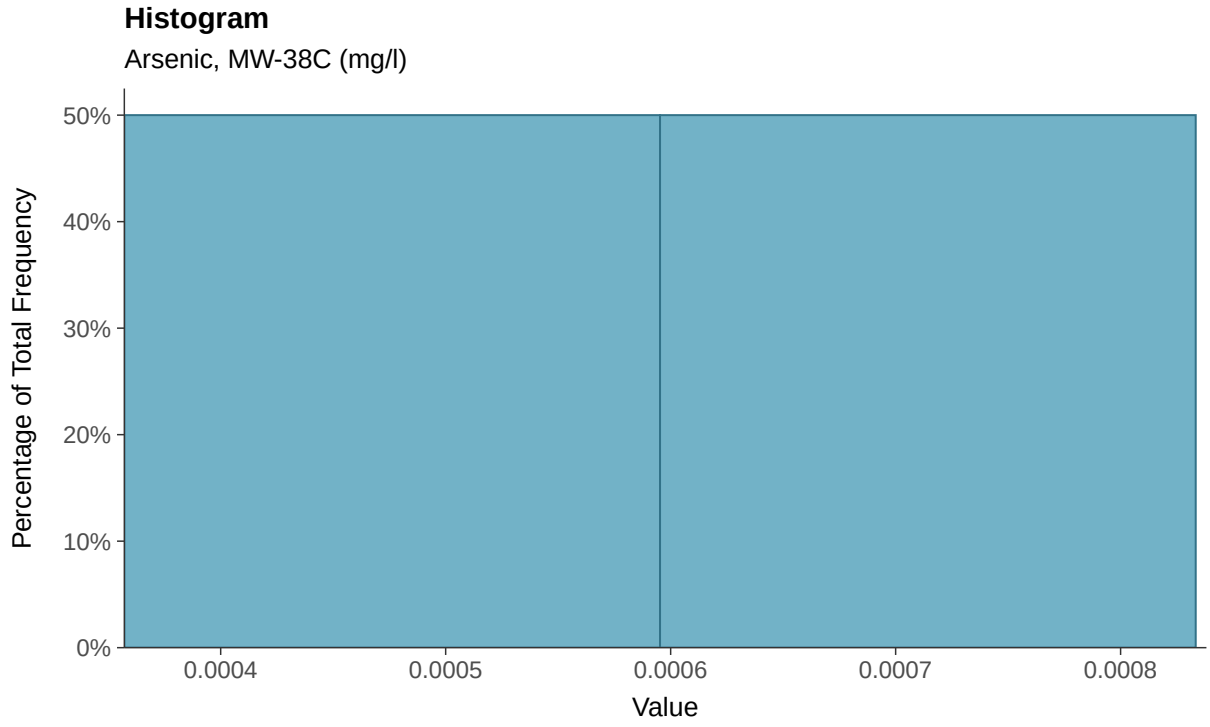



Normal Q-Q plot
Selenium, MW-38B (mg/l)
Value
0.05
0.04
0.03
0.02
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Arsenic, MW-38C

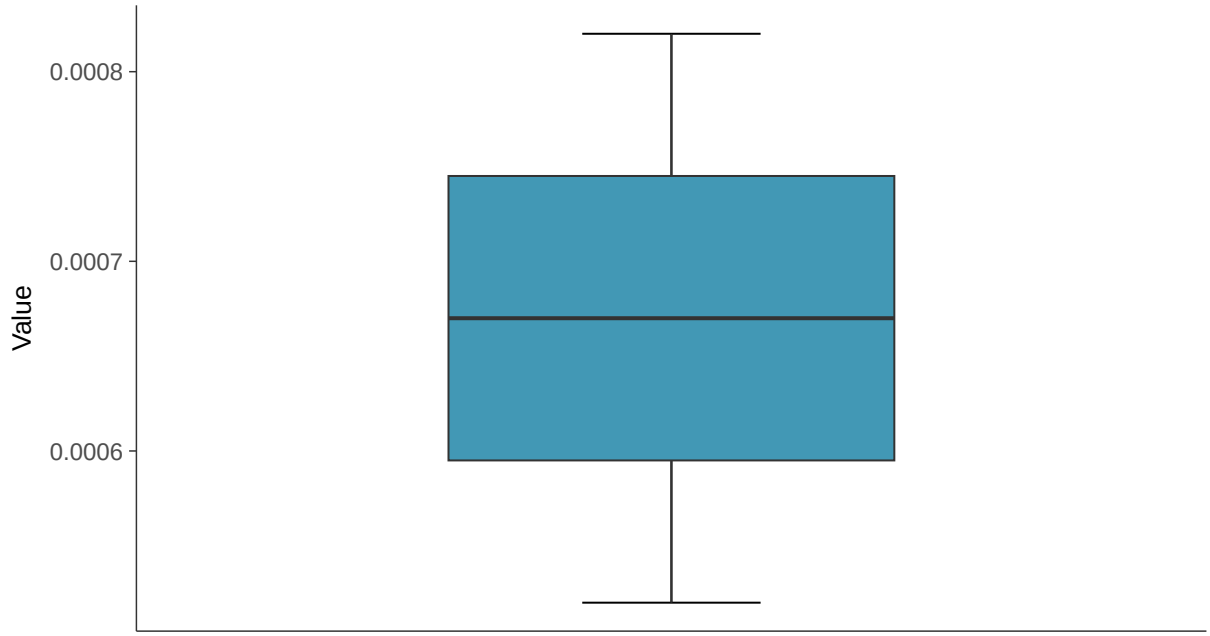
ID: 33_2_105





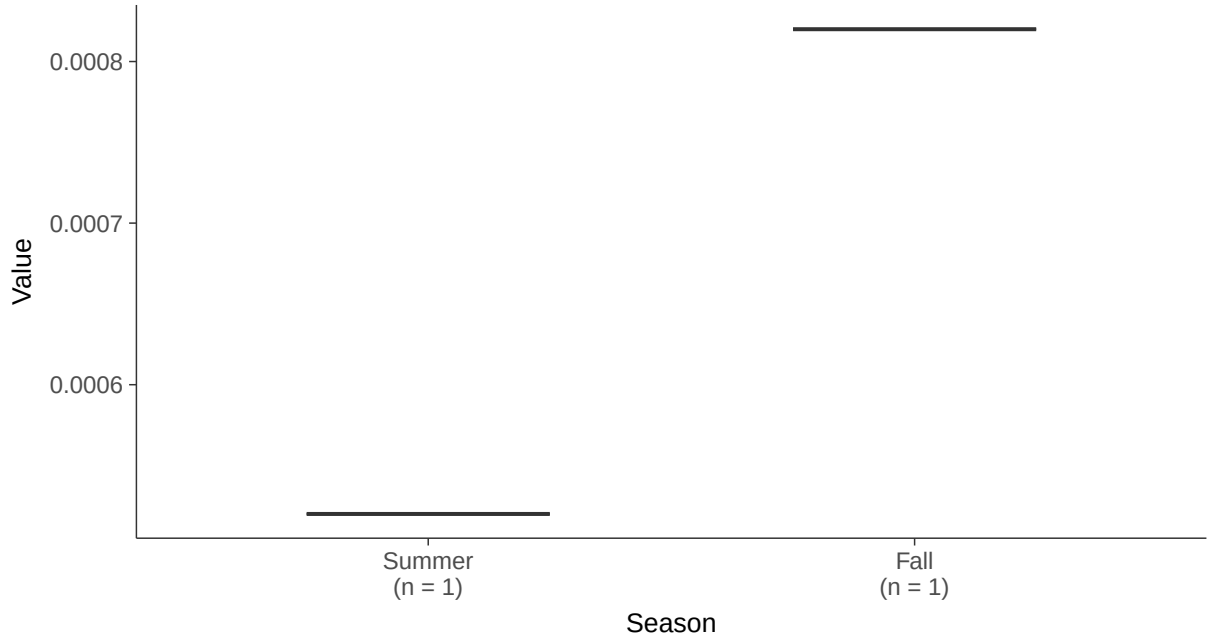
Boxplot

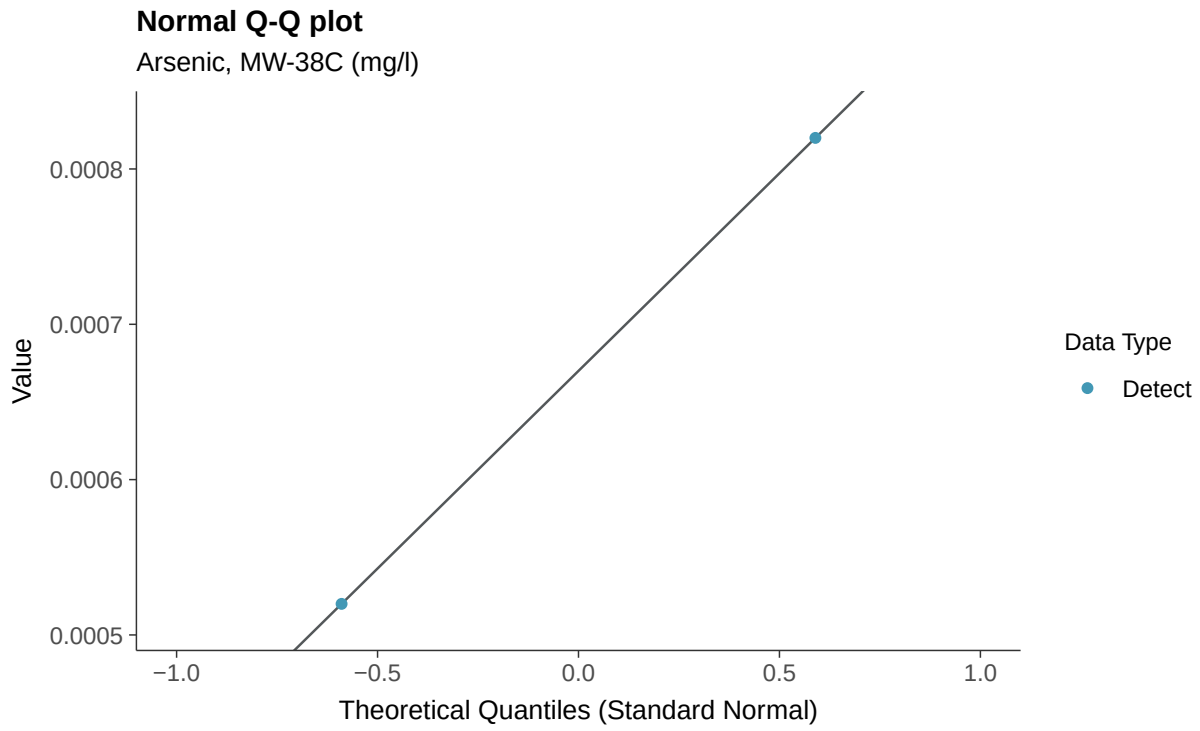
Arsenic, MW-38C (mg/l)



Boxplot by Season

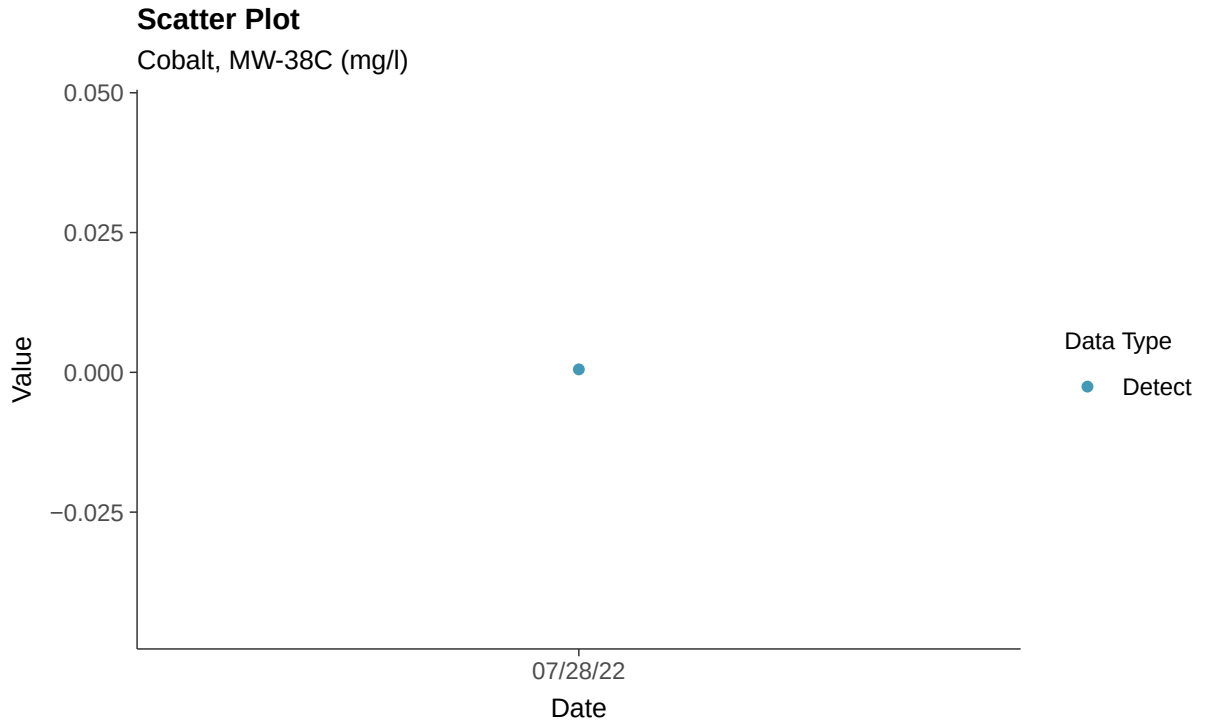
Arsenic, MW-38C (mg/l)

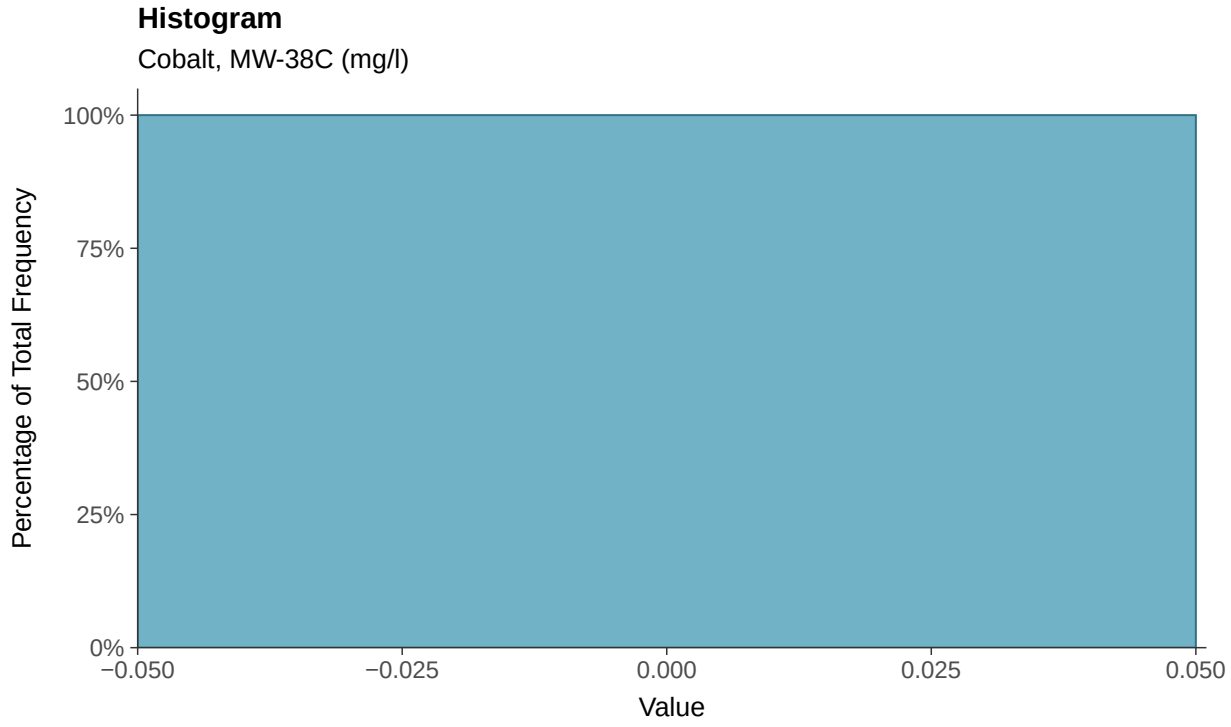



Normal Q-Q plot
Arsenic, MW-38C (mg/l)
Value
0.0008
0.0007
0.0006
0.0005
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Cobalt, MW-38C

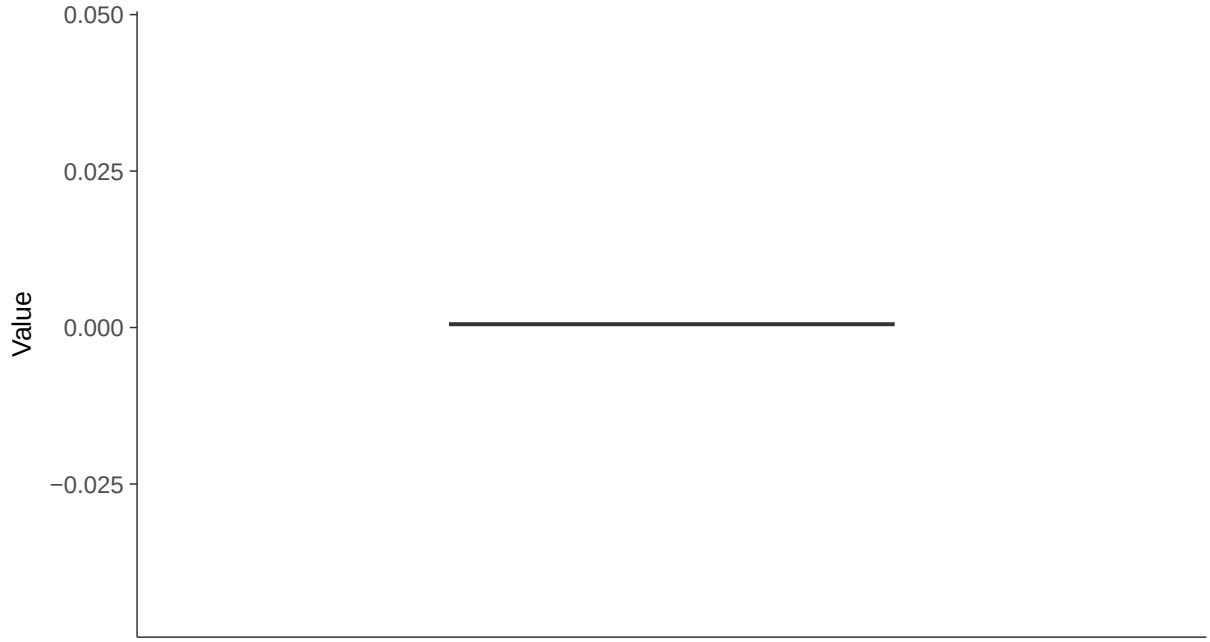
ID: 33_2_113





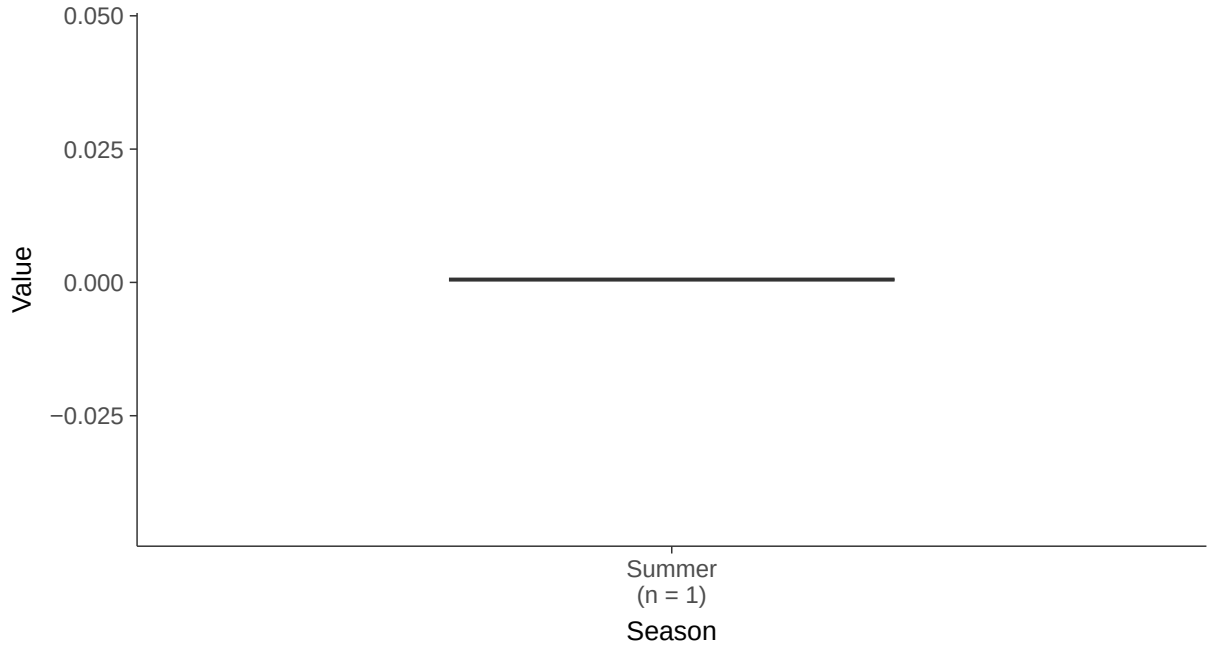
Boxplot

Cobalt, MW-38C (mg/l)



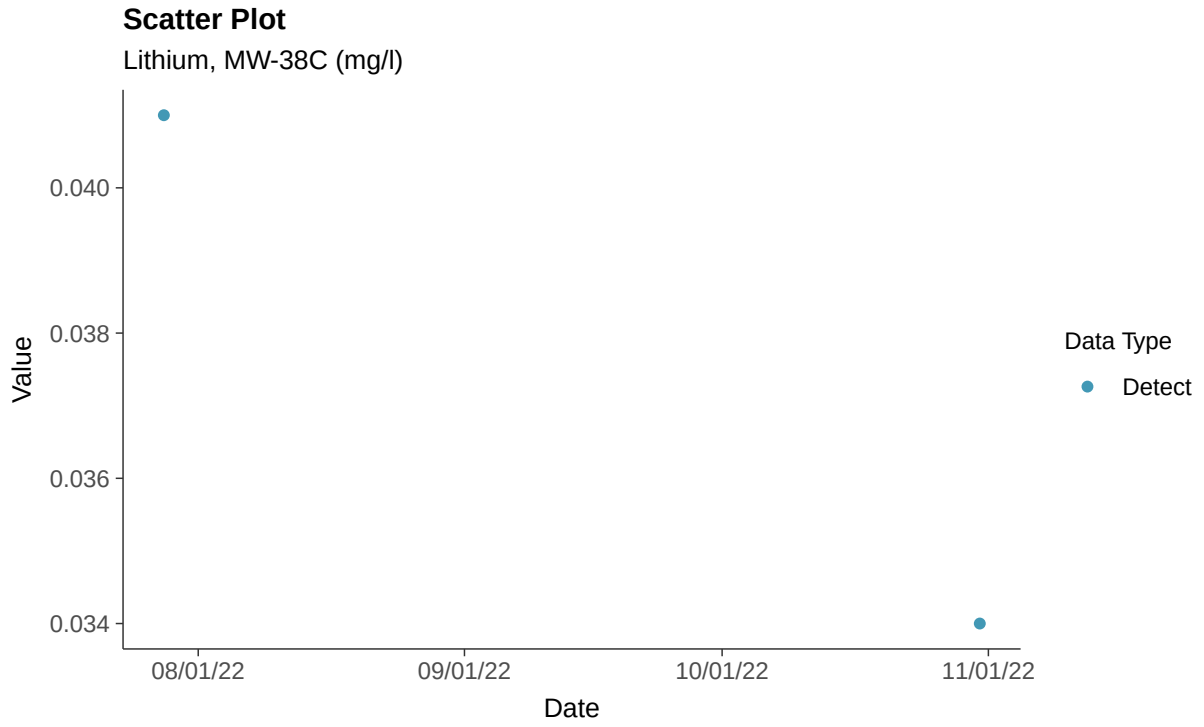
Boxplot by Season

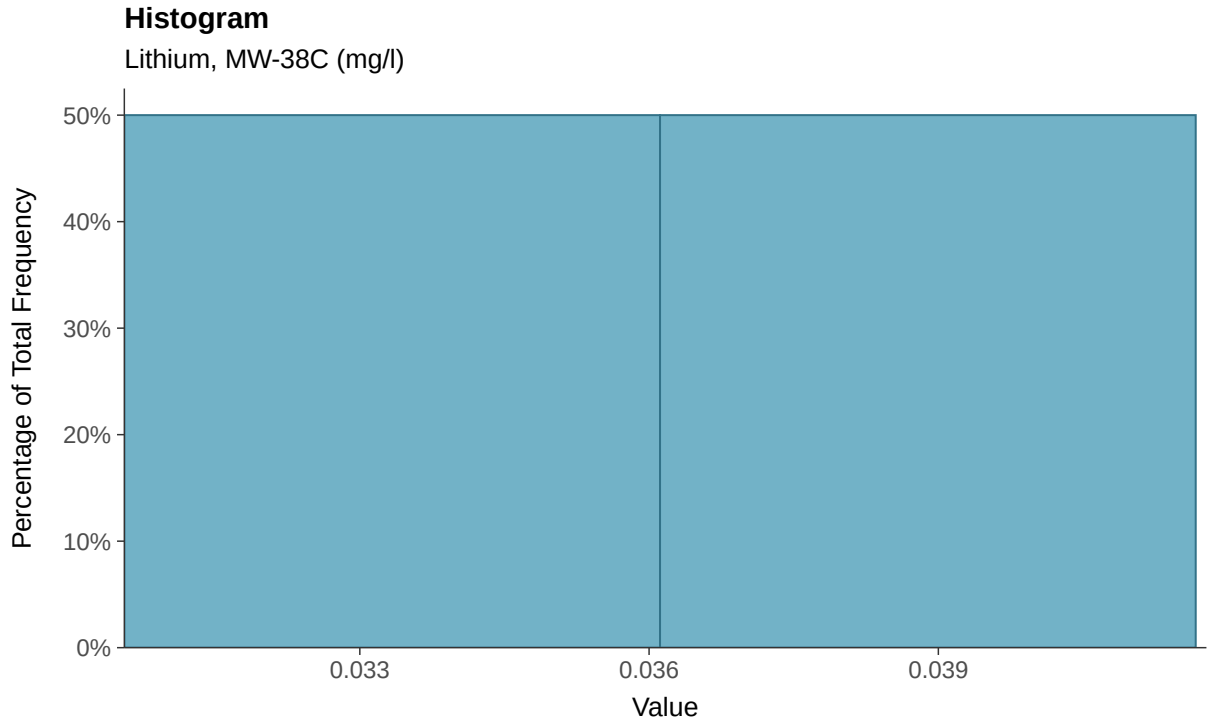
Cobalt, MW-38C (mg/l)



Appendix IV: Lithium, MW-38C

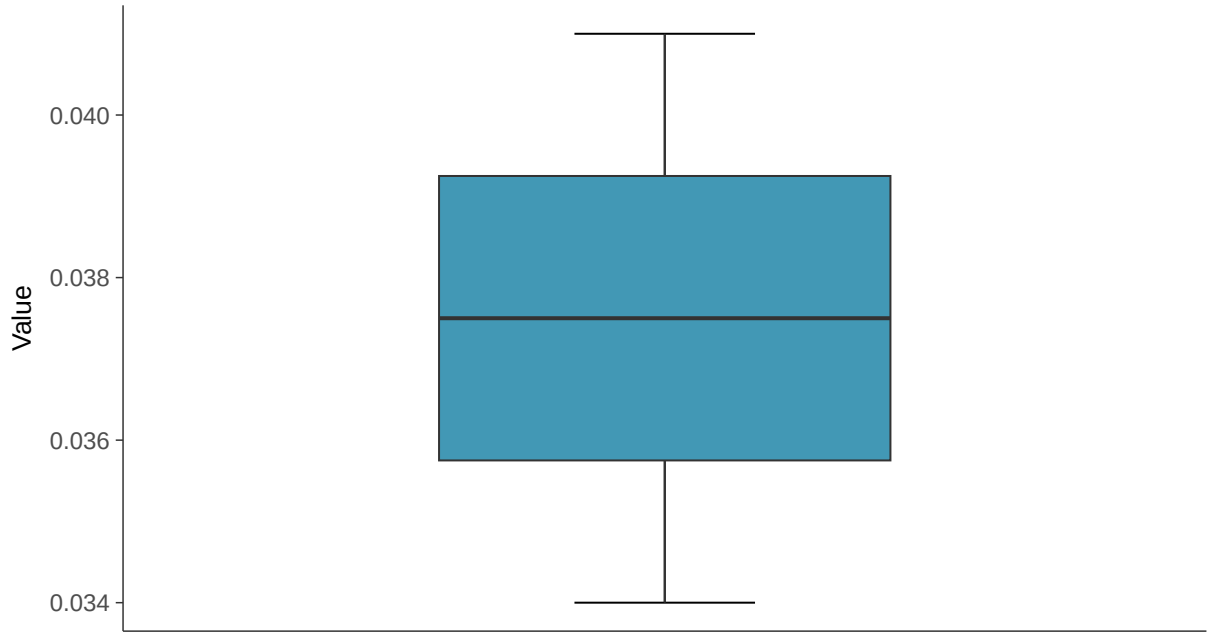
ID: 33_2_118





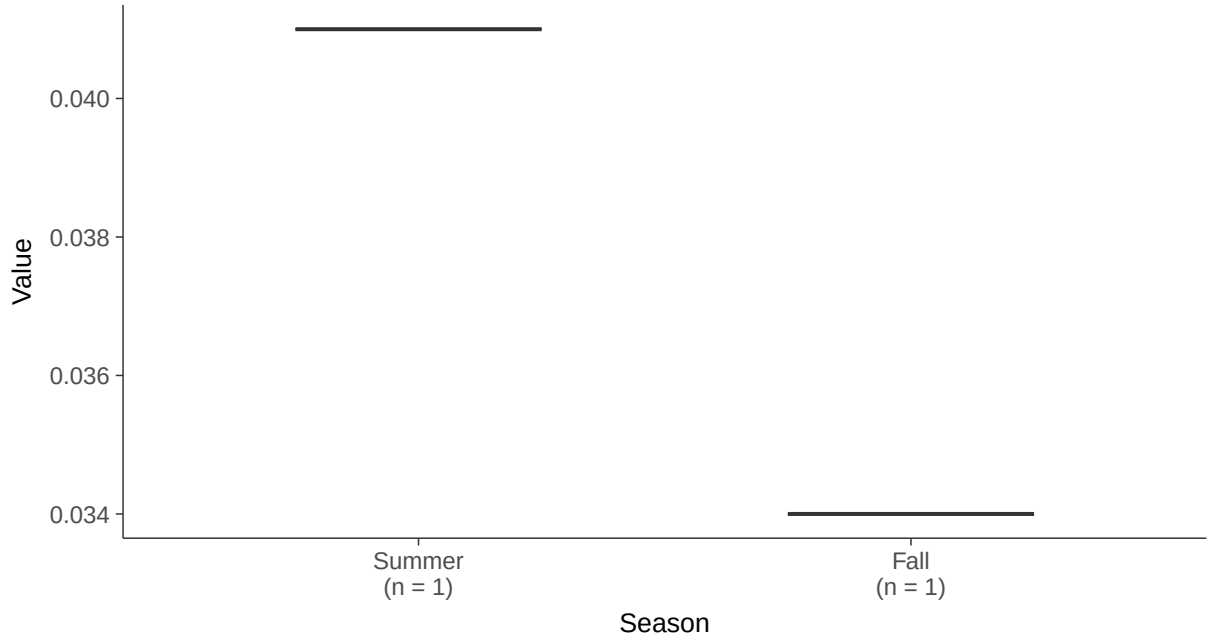
Boxplot

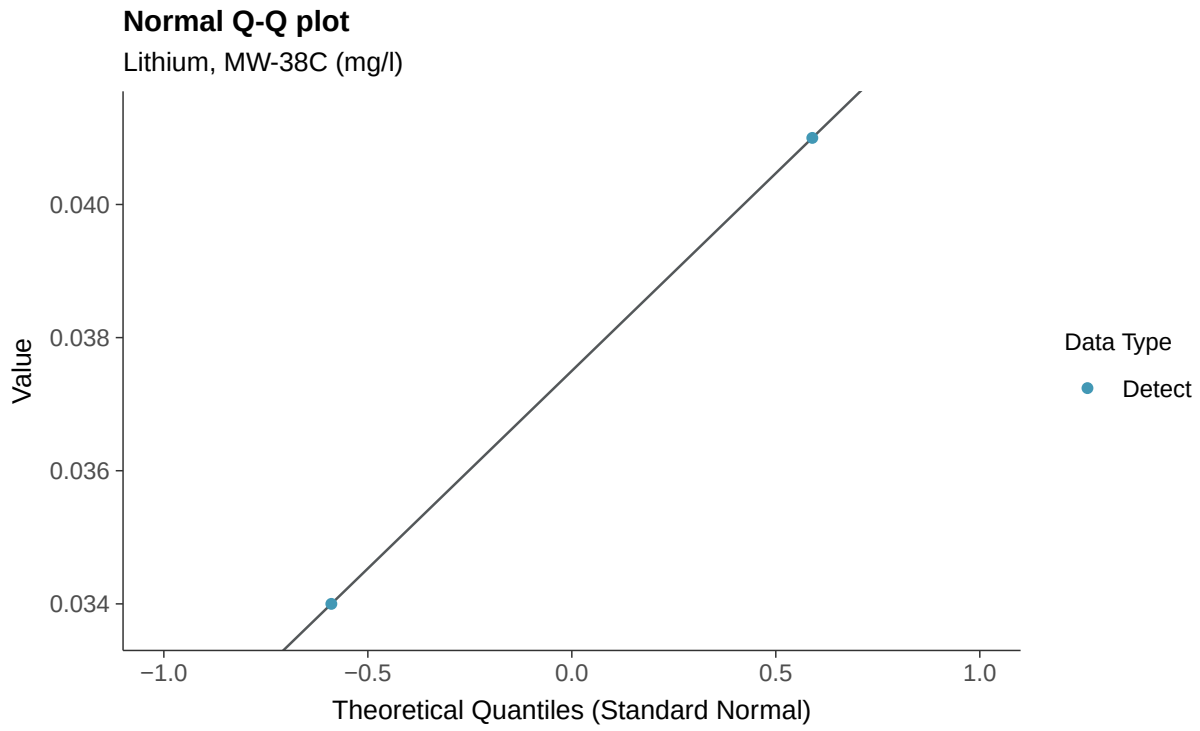
Lithium, MW-38C (mg/l)



Boxplot by Season

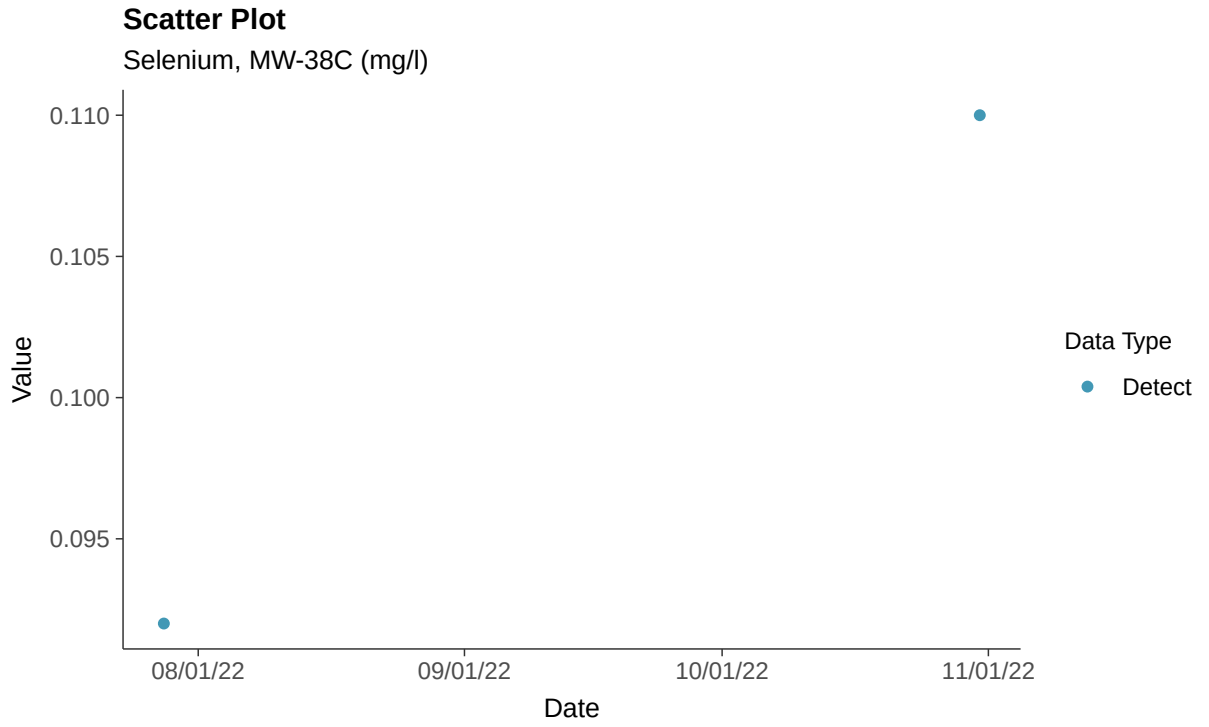
Lithium, MW-38C (mg/l)

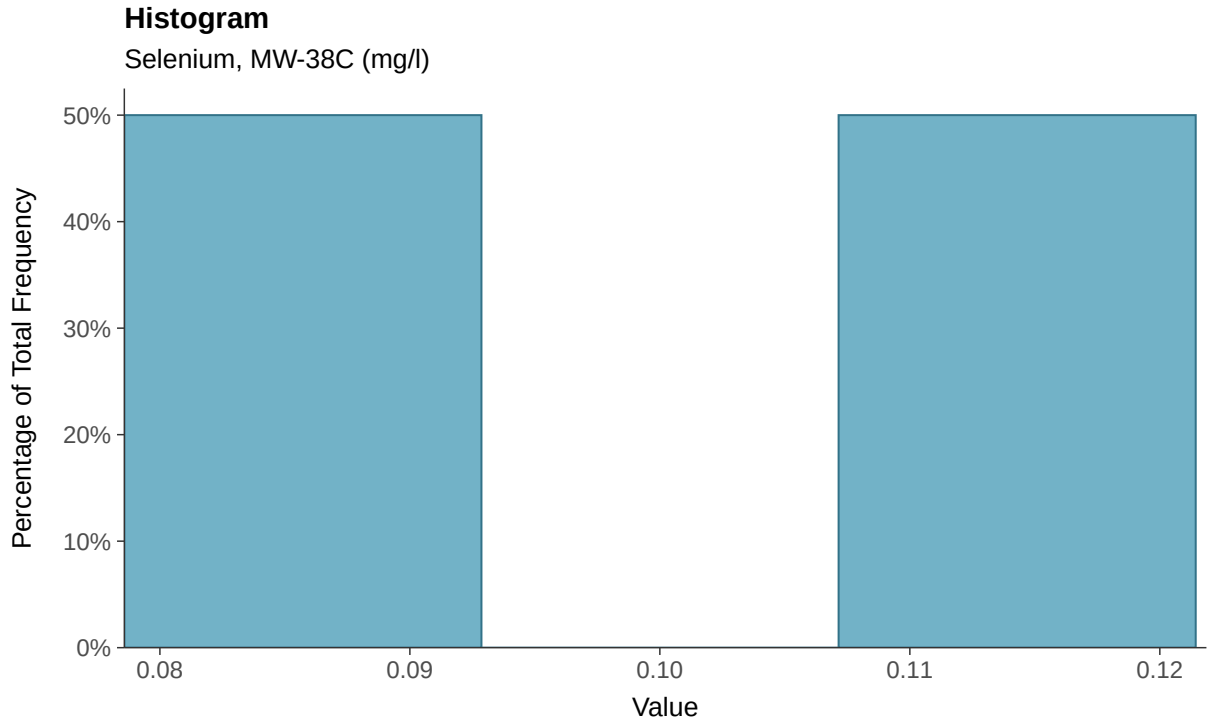



Normal Q-Q plot
Lithium, MW-38C (mg/l)
Value
0.040
0.038
0.036
0.034
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Selenium, MW-38C

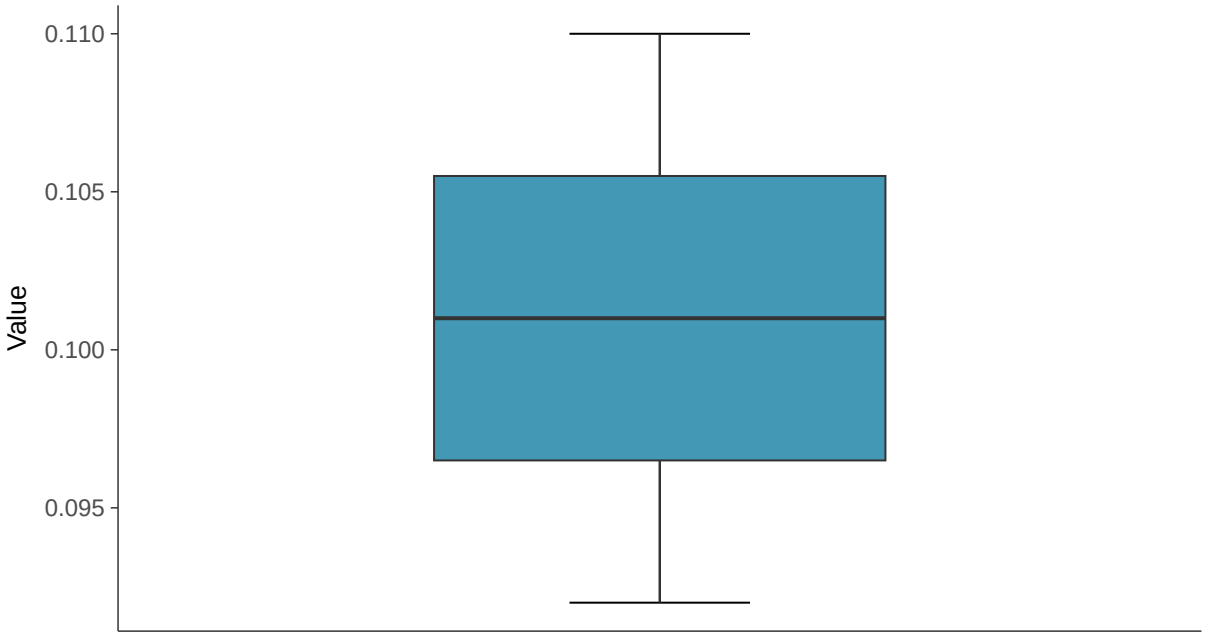
ID: 33_2_129





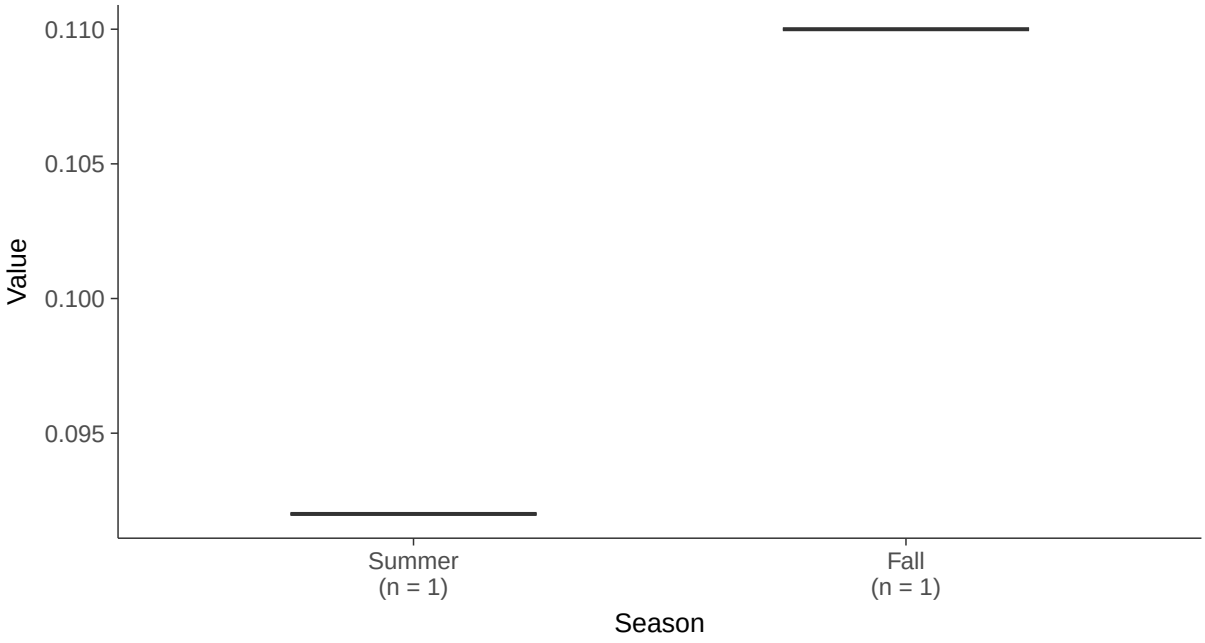
Boxplot

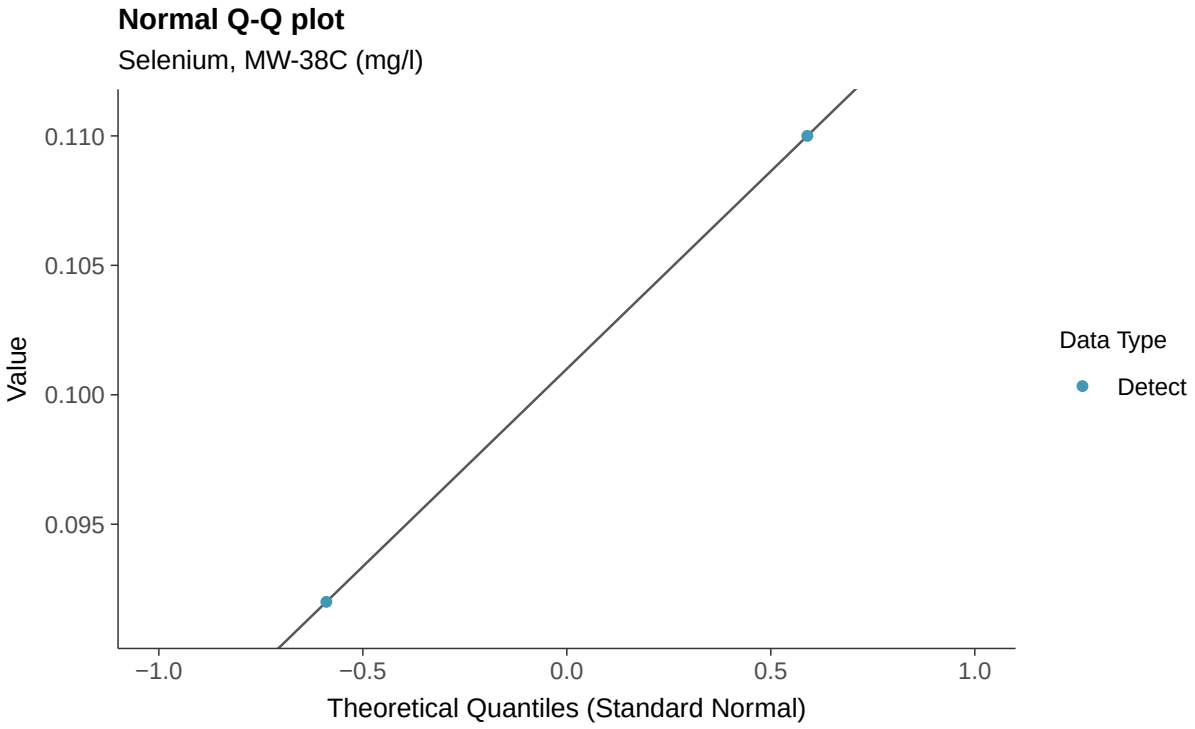
Selenium, MW-38C (mg/l)



Boxplot by Season

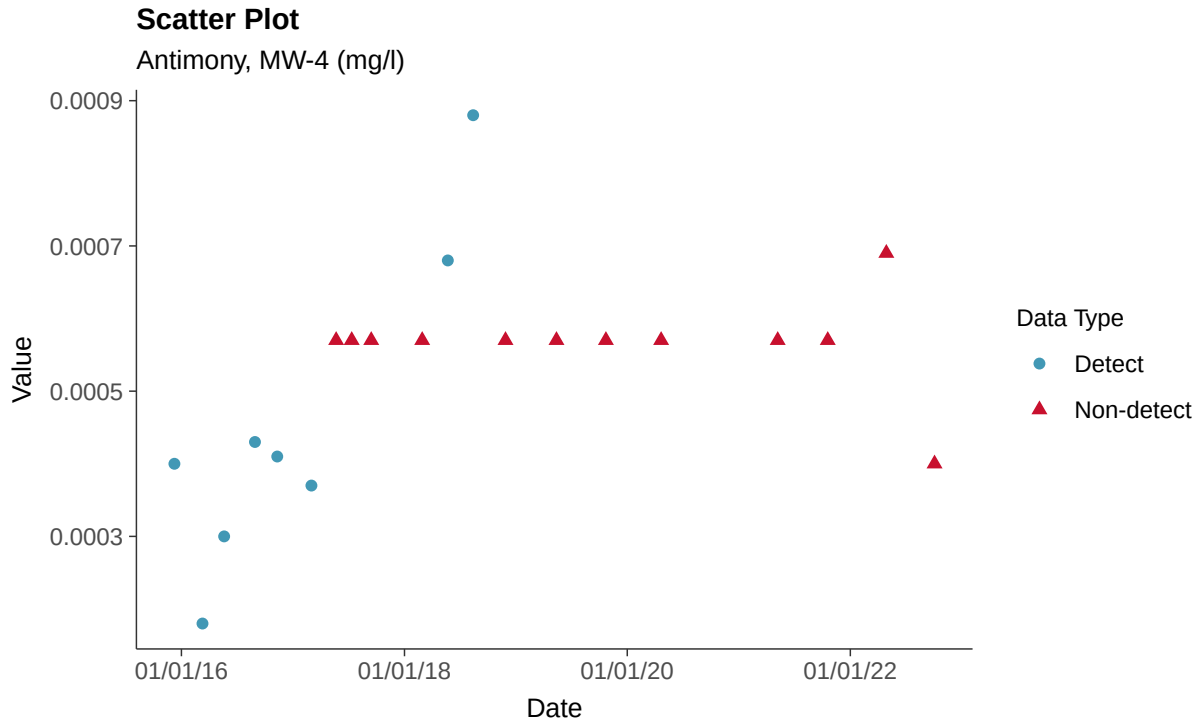
Selenium, MW-38C (mg/l)

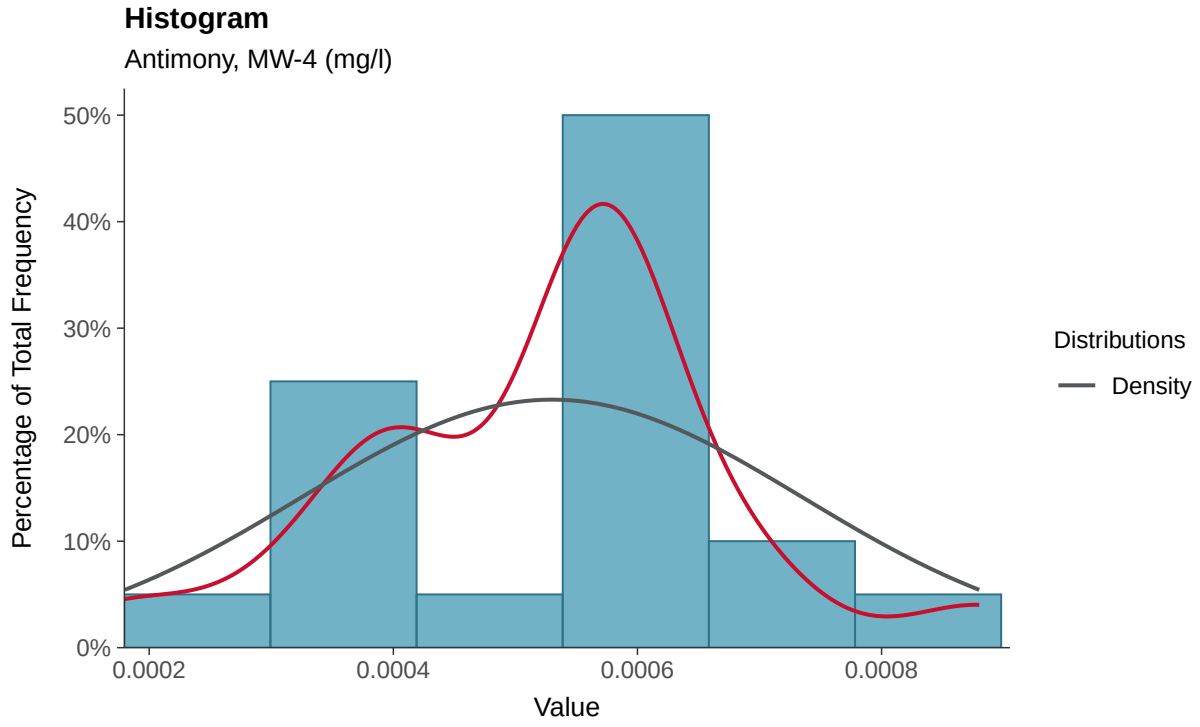



Normal Q-Q plot
Selenium, MW-38C (mg/l)
Value
0.110
0.105
0.100
0.095
−1.0
−0.5
0.0
0.5
1.0
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Appendix IV: Antimony, MW-4

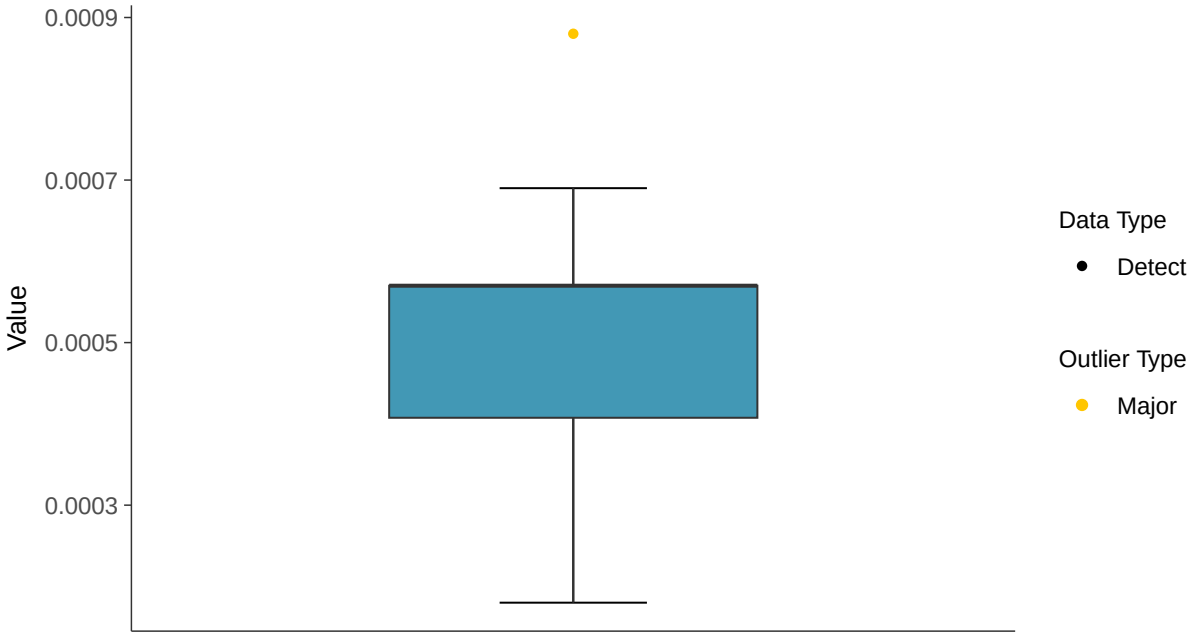
ID: 34_2_104





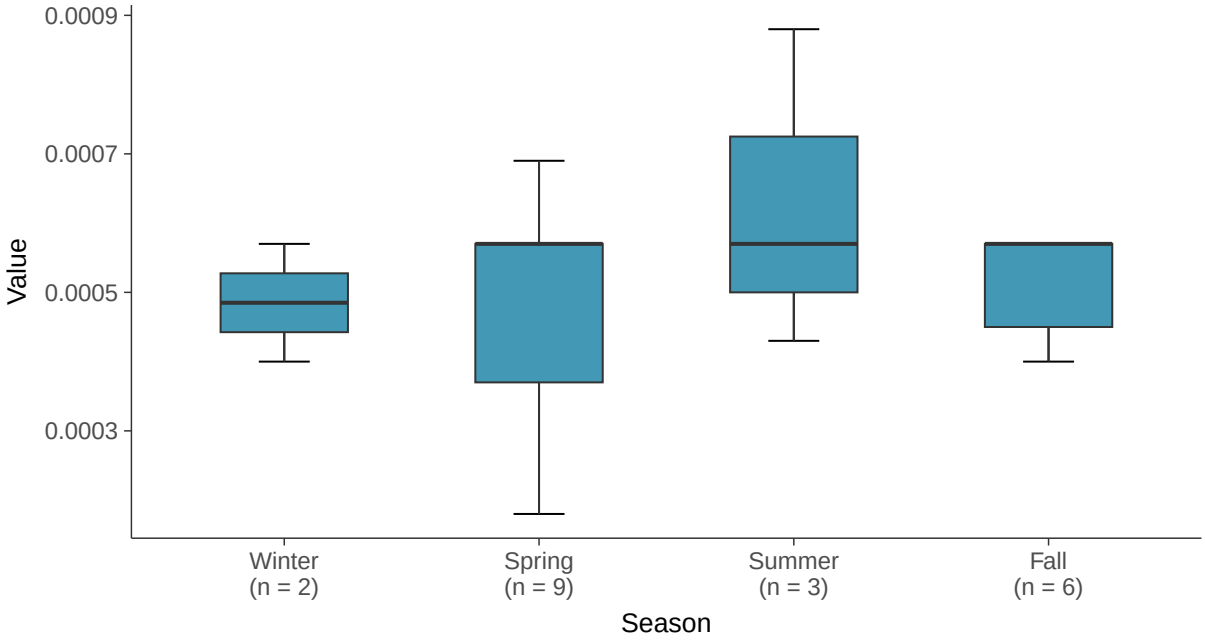
Boxplot

Antimony, MW-4 (mg/l)



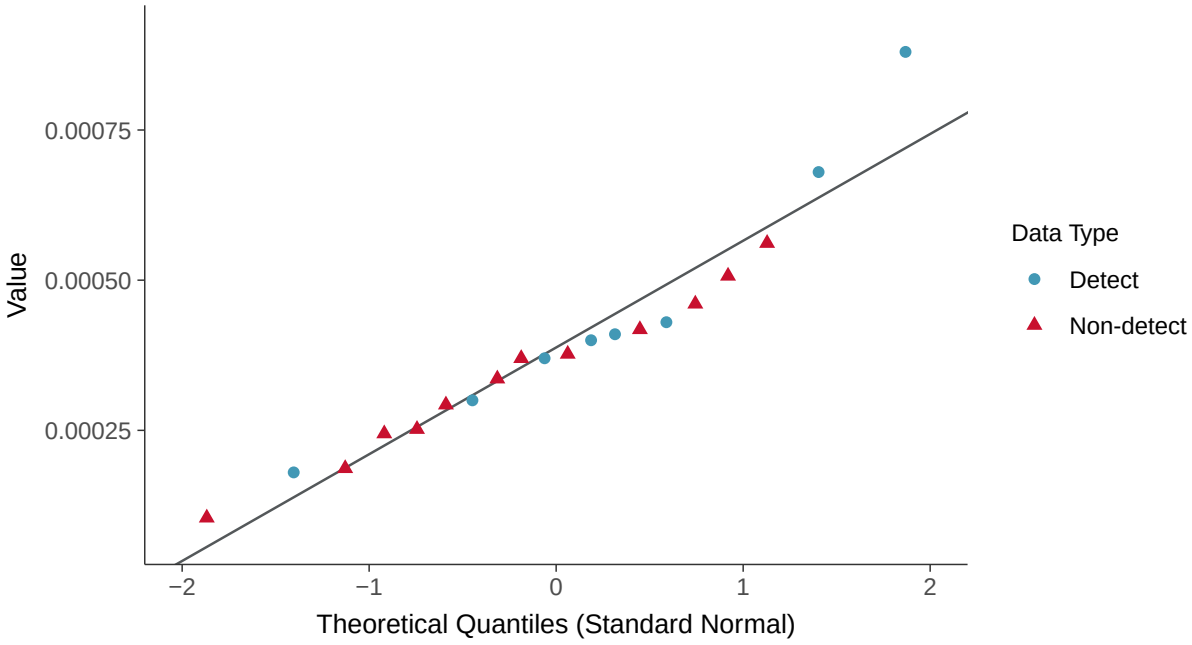
Boxplot by Season

Antimony, MW-4 (mg/l)



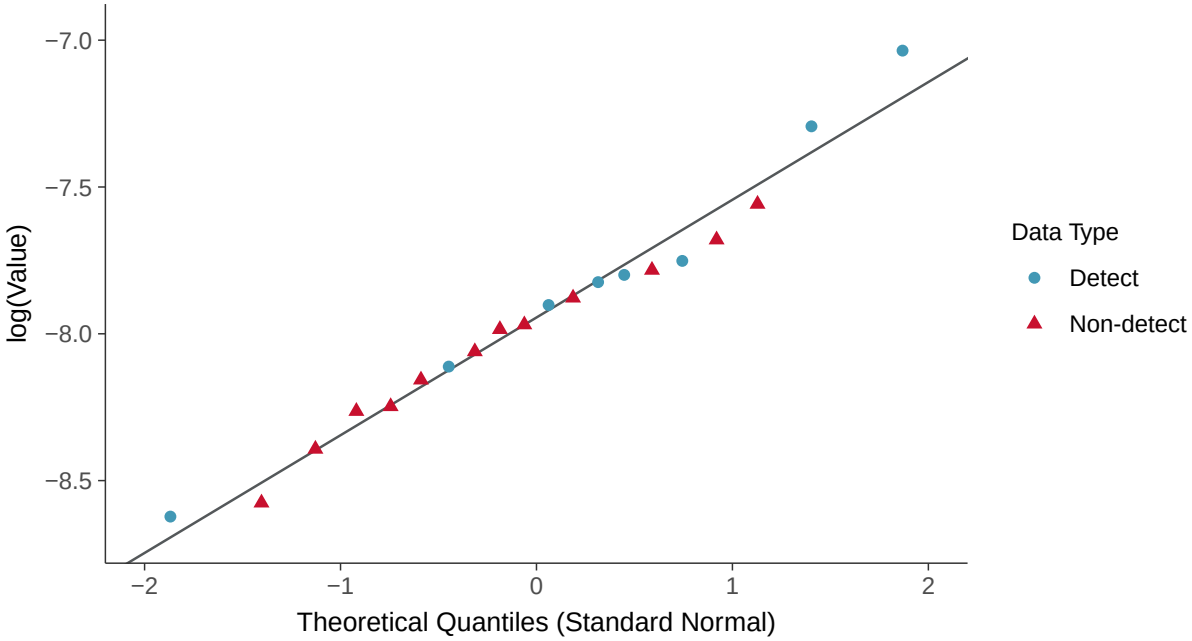
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-4 (mg/l)



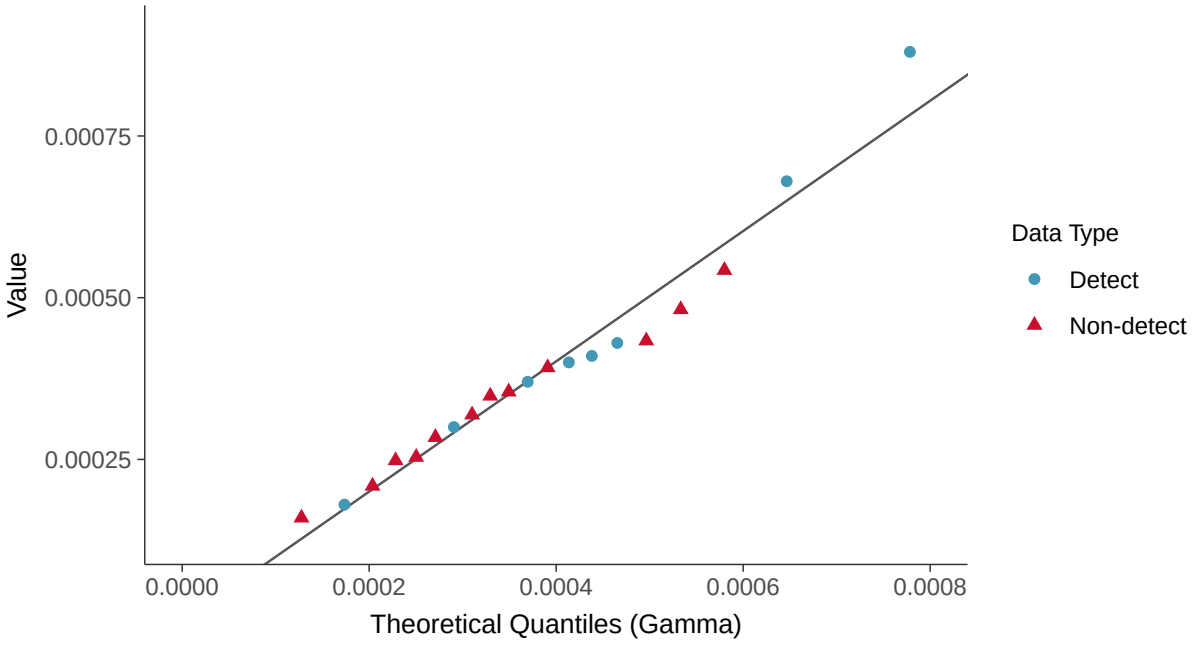
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-4 (mg/l)



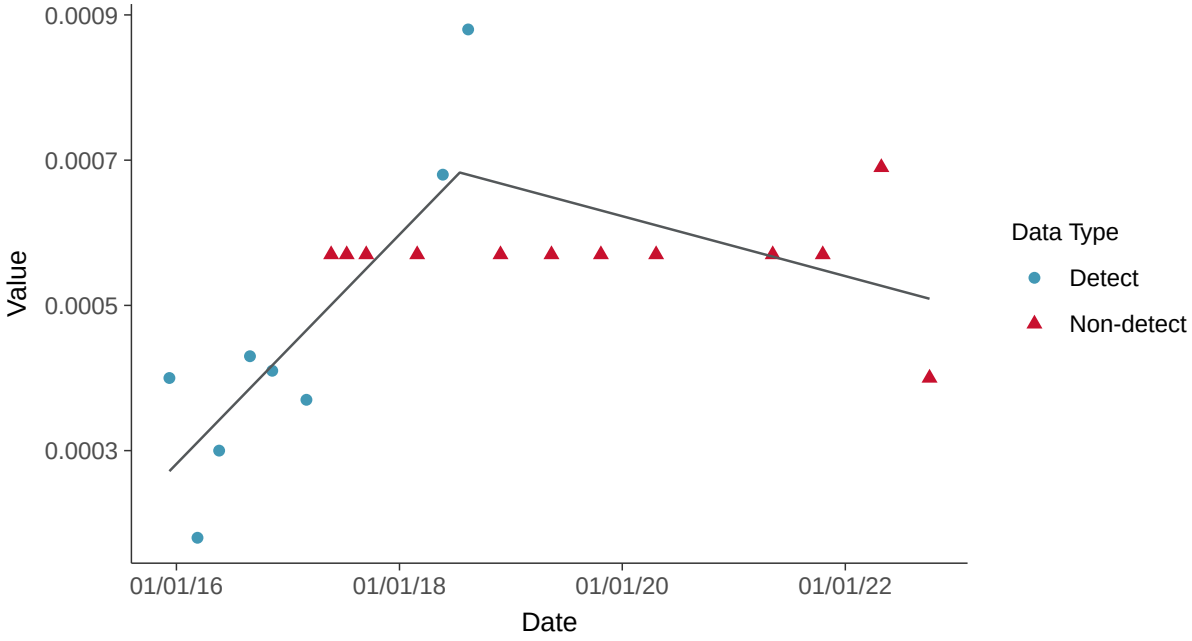
Gamma Q-Q plot using ROS Imputed Estimates

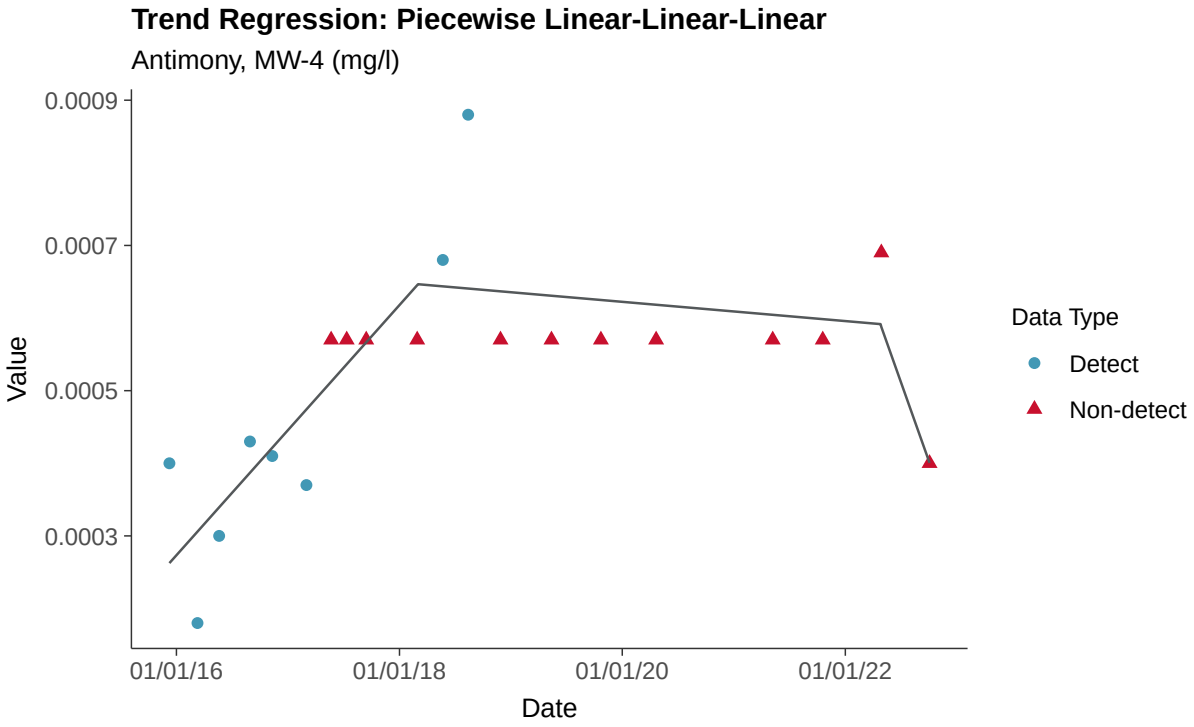
Antimony, MW-4 (mg/l)



Trend Regression: Piecewise Linear-Linear

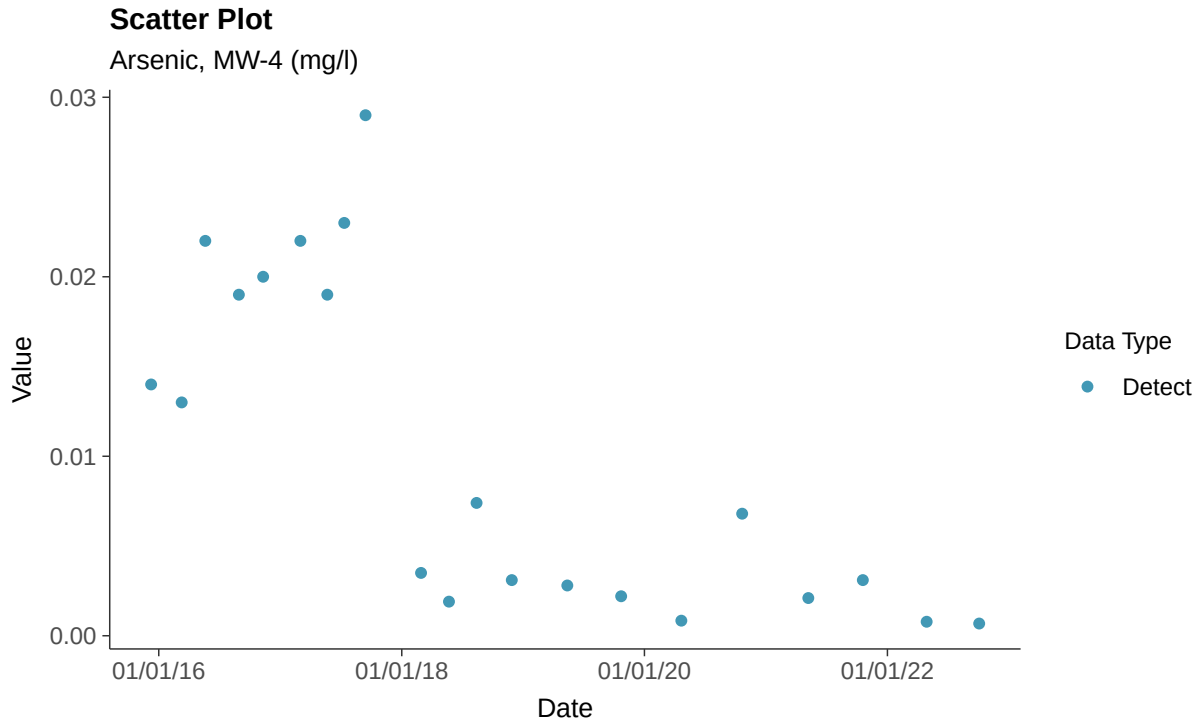
Antimony, MW-4 (mg/l)

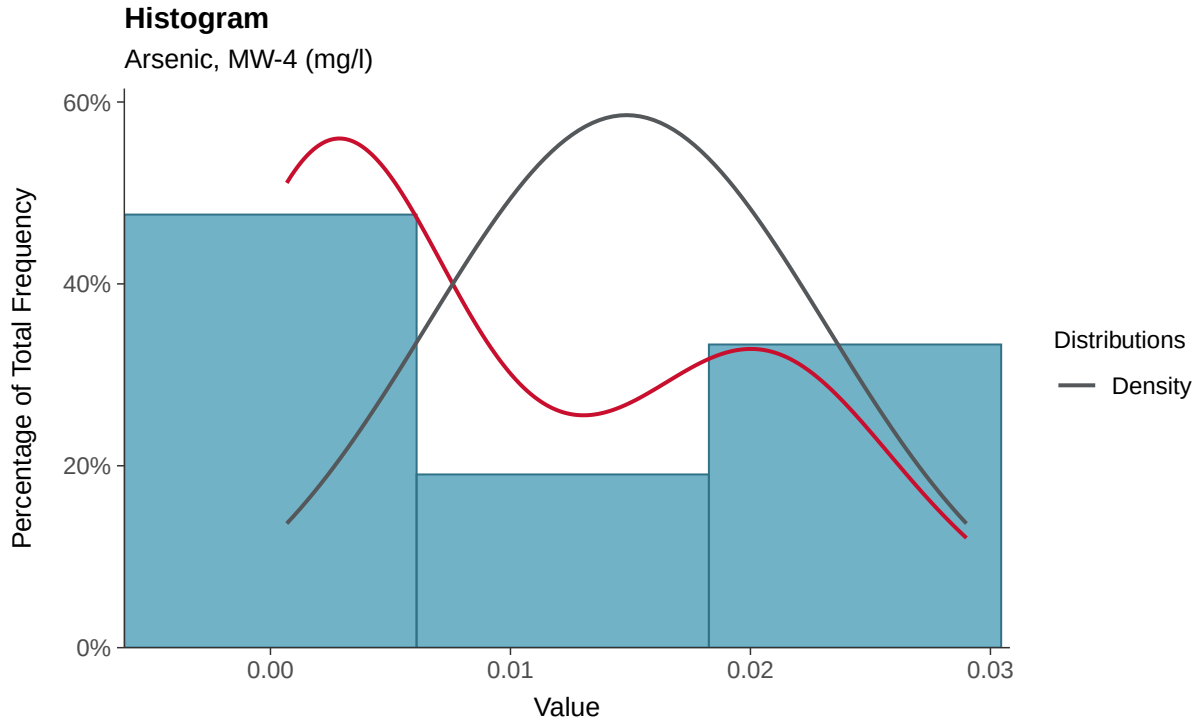



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-4 (mg/l)
0.0009
0.0007
0.0005
0.0003
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-4

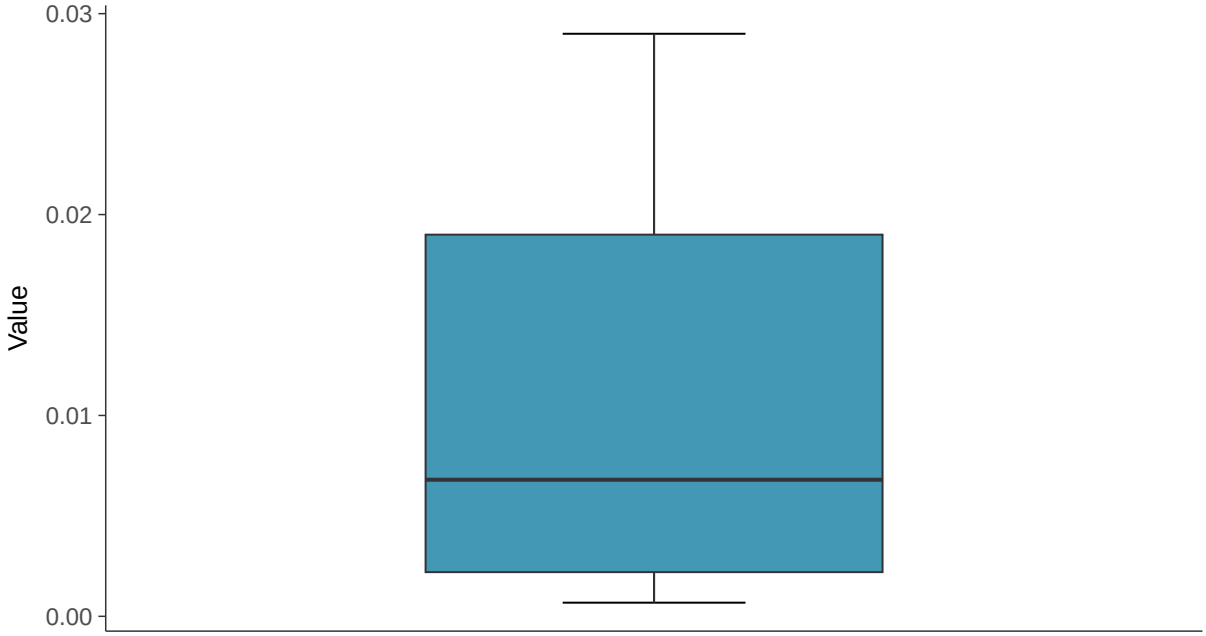
ID: 34_2_105





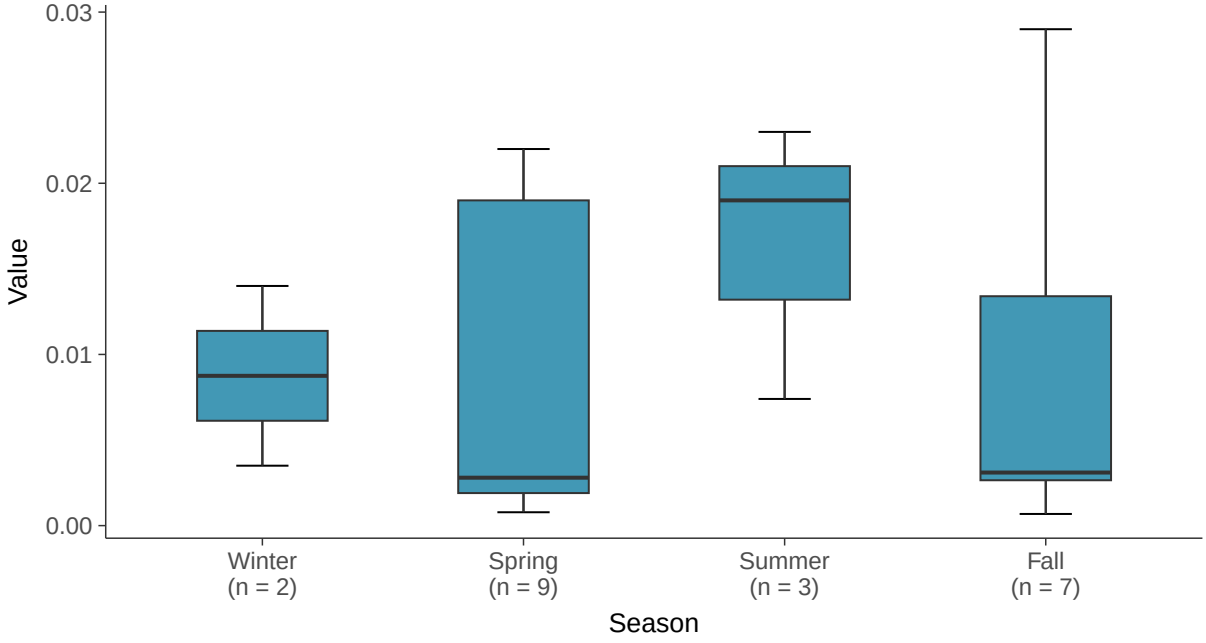
Boxplot

Arsenic, MW-4 (mg/l)



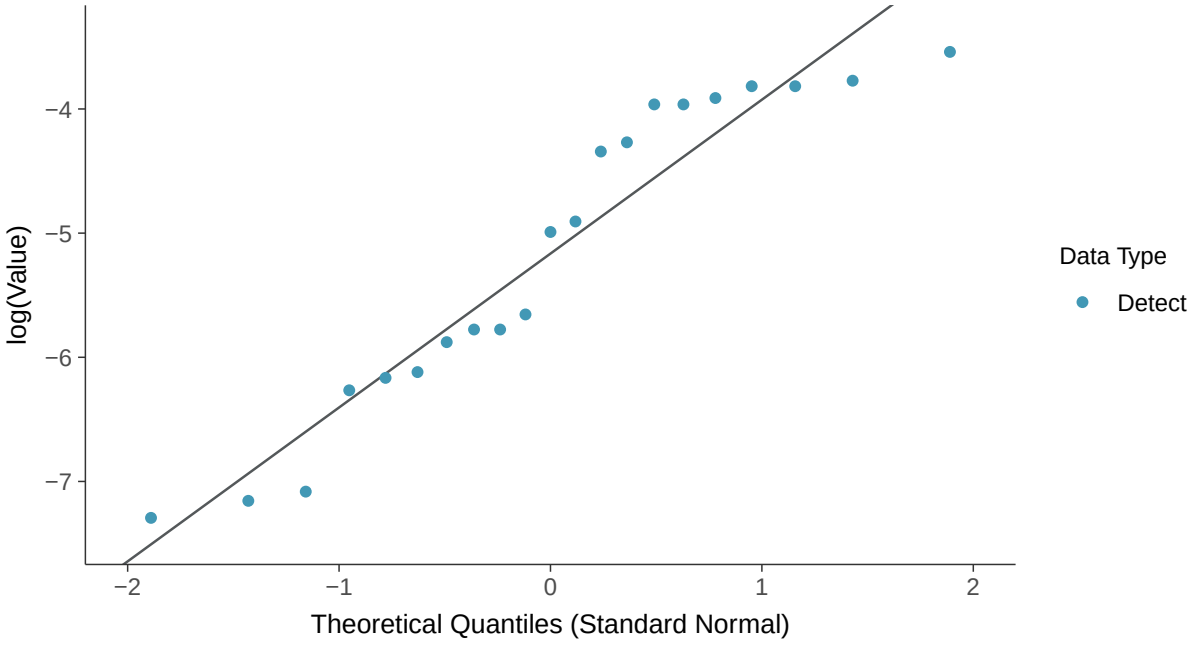
Boxplot by Season

Arsenic, MW-4 (mg/l)



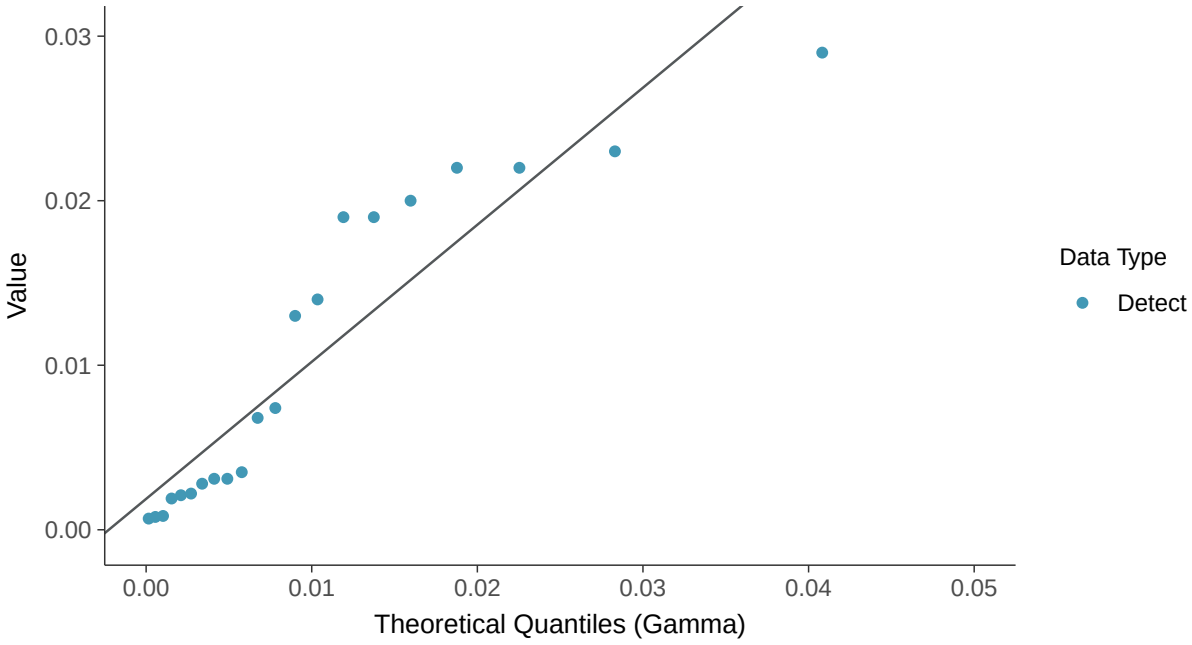
Lognormal Q-Q plot

Arsenic, MW-4 (mg/l)



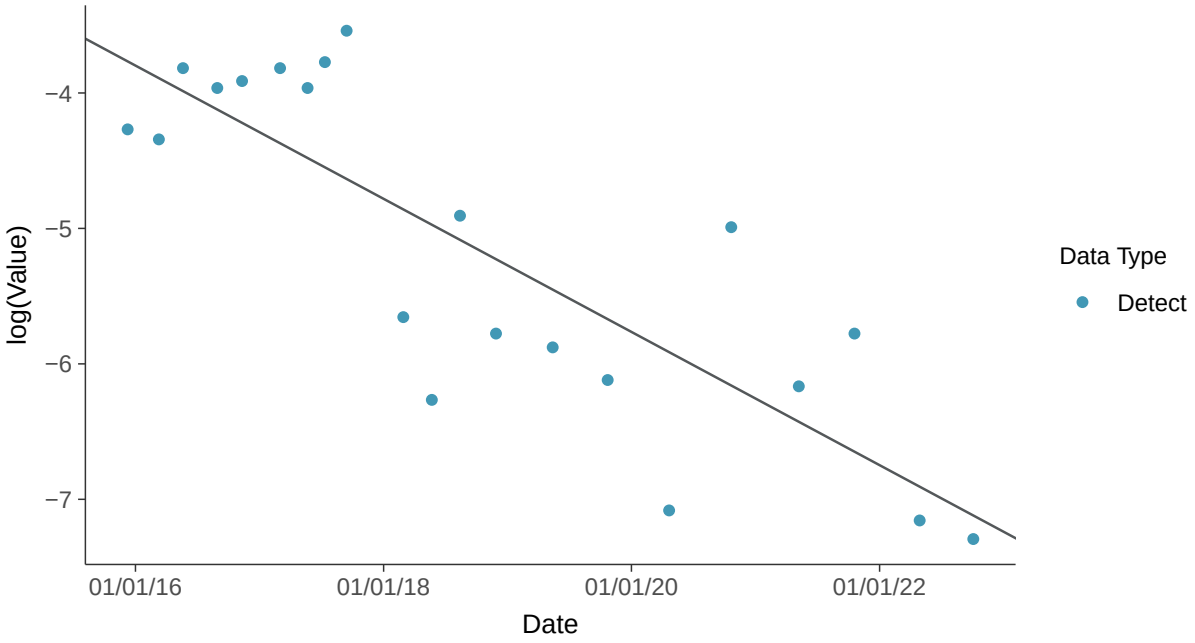
Gamma Q-Q plot

Arsenic, MW-4 (mg/l)



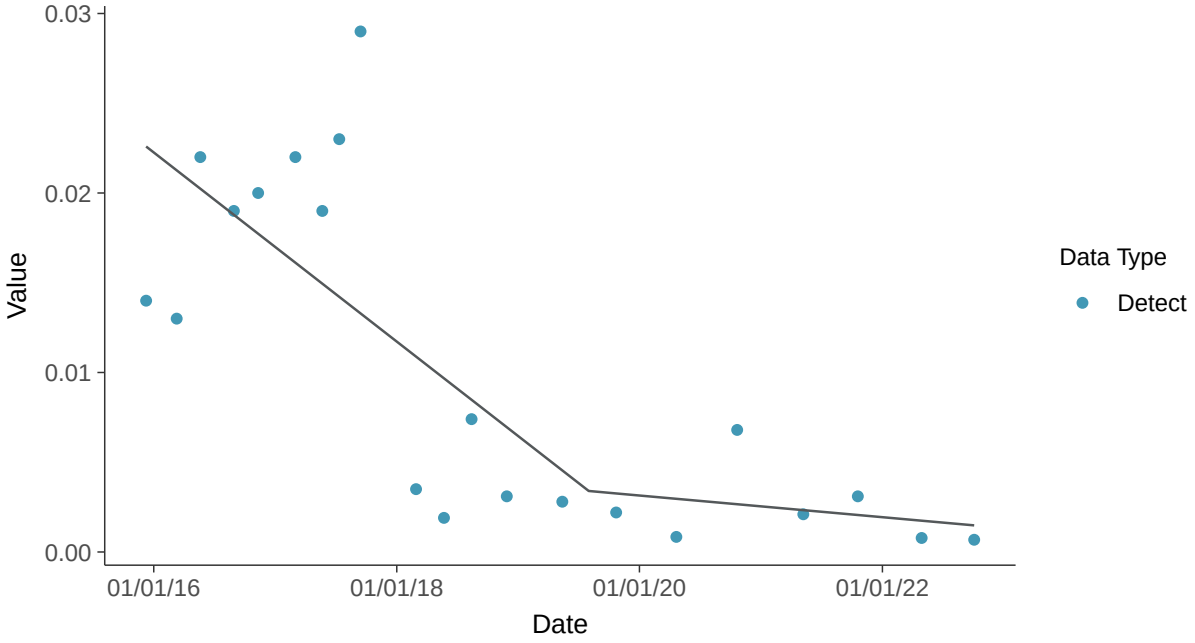
Trend Regression: Lognormal MLE

Arsenic, MW-4 (mg/l)



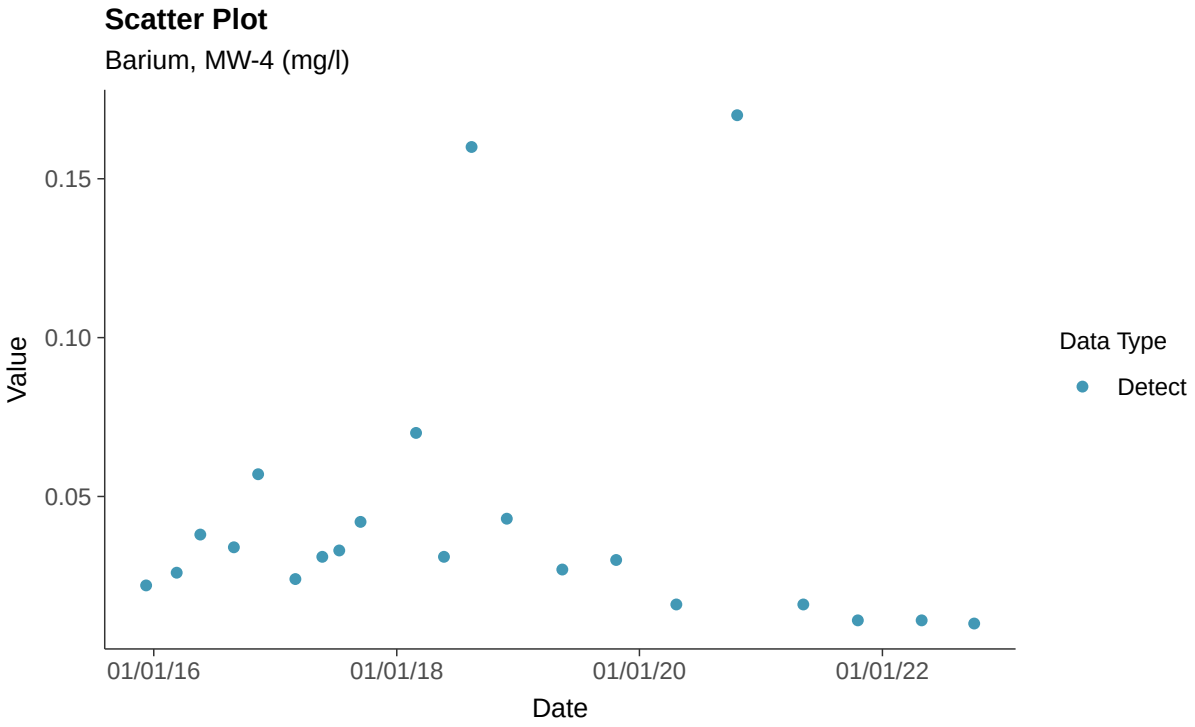
Trend Regression: Piecewise Linear-Linear

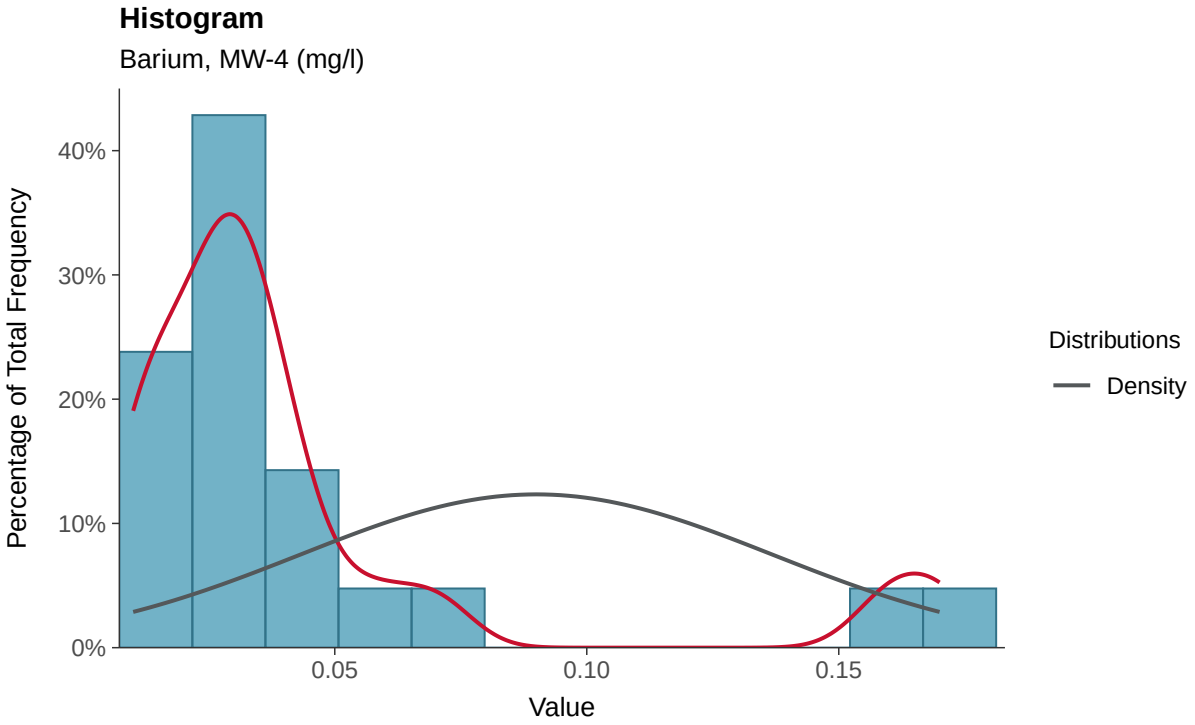
Arsenic, MW-4 (mg/l)



Appendix IV: Barium, MW-4

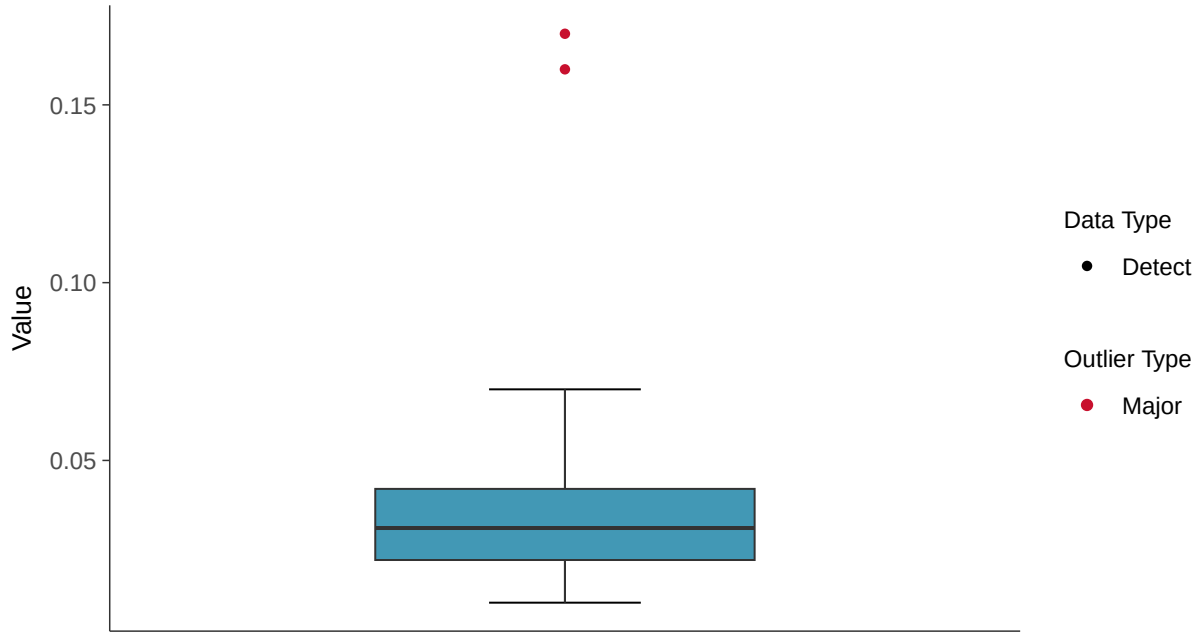
ID: 34_2_106





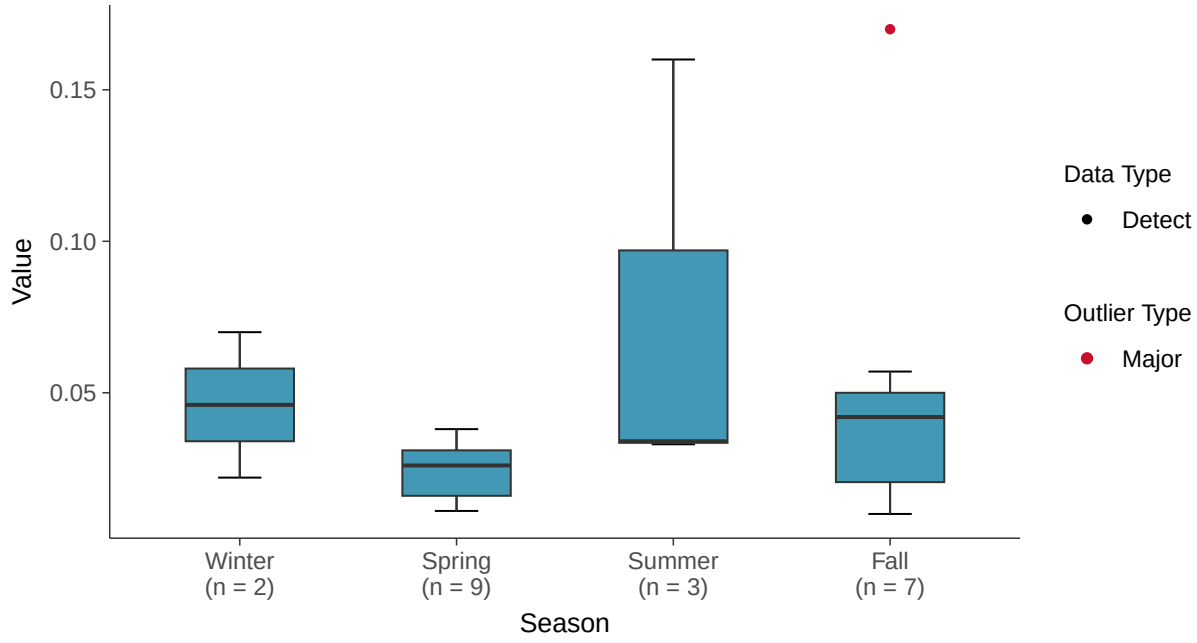
Boxplot

Barium, MW-4 (mg/l)



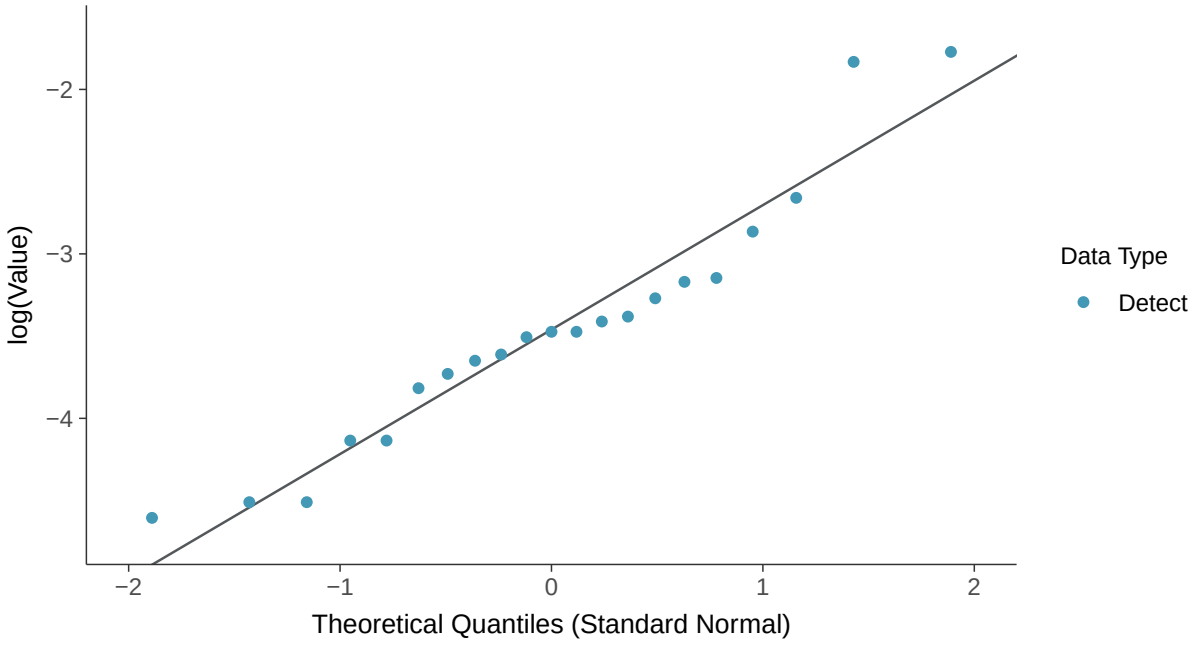
Boxplot by Season

Barium, MW-4 (mg/l)



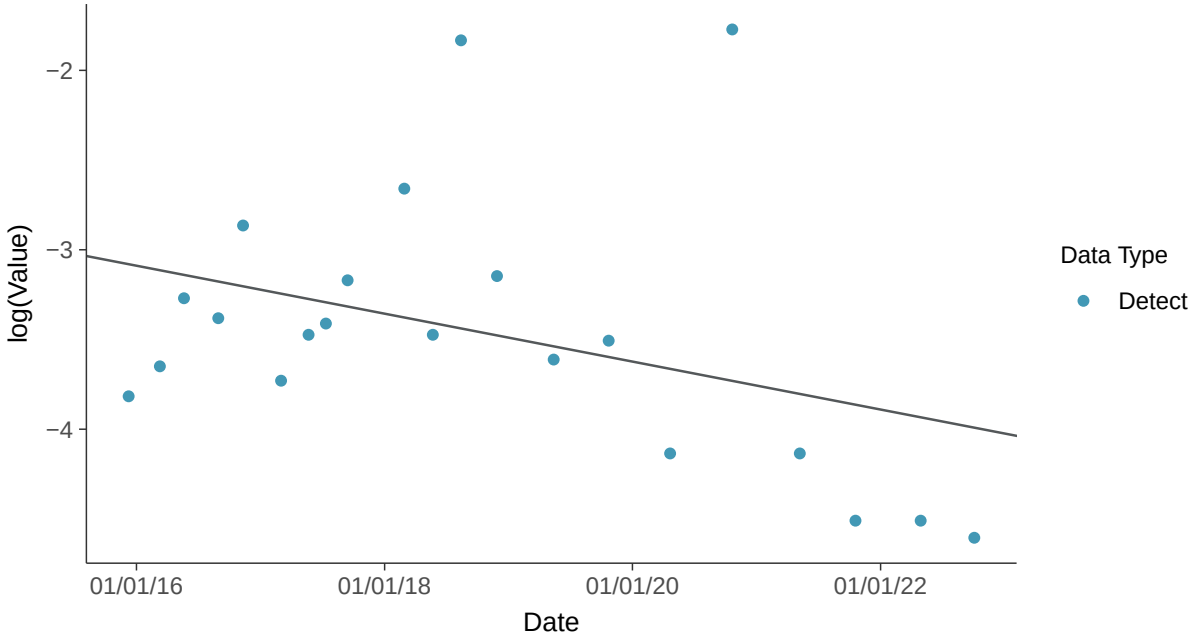
Lognormal Q-Q plot

Barium, MW-4 (mg/l)



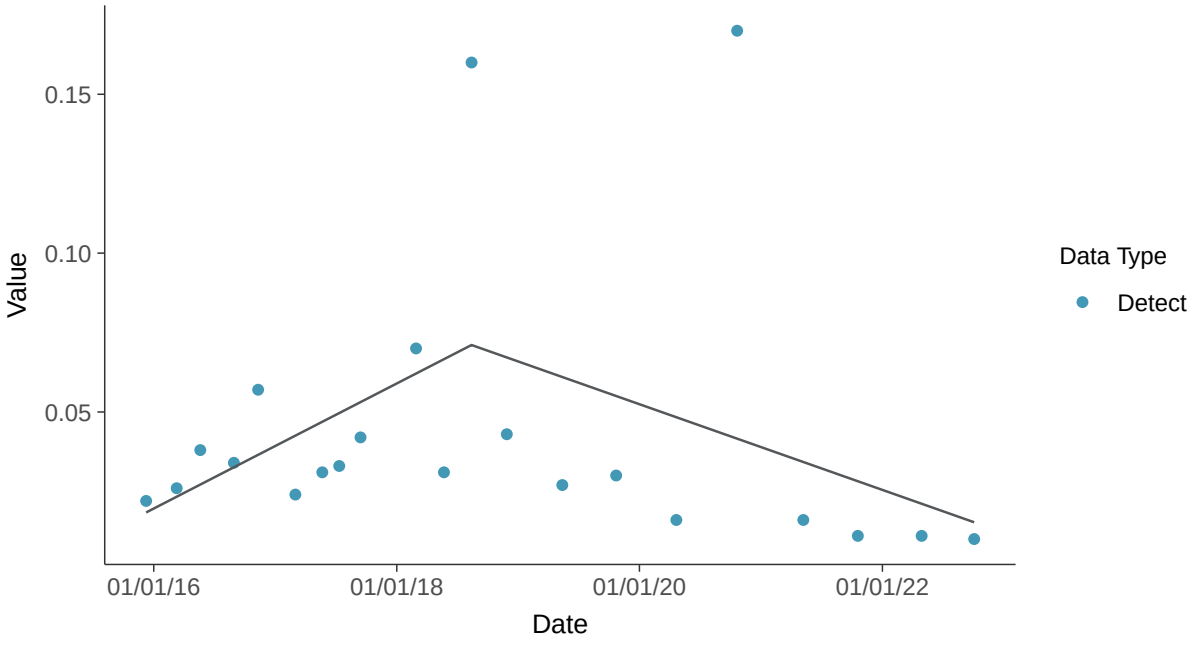
Trend Regression: Lognormal MLE

Barium, MW-4 (mg/l)



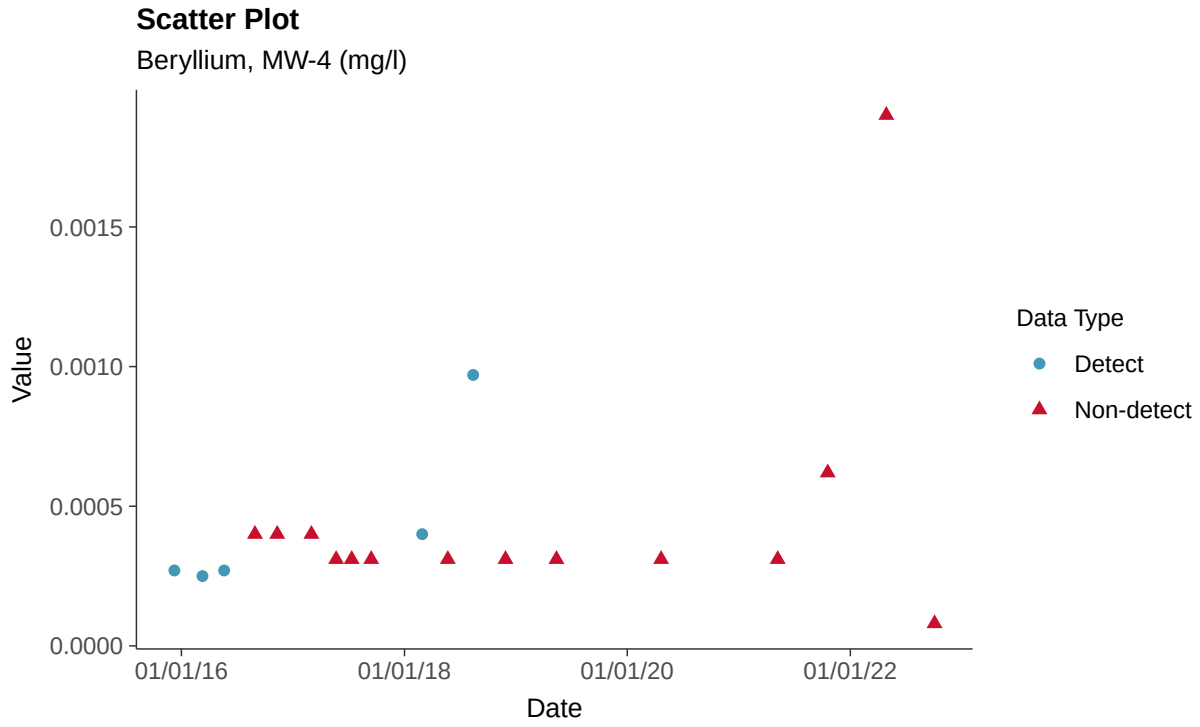
Trend Regression: Piecewise Linear-Linear

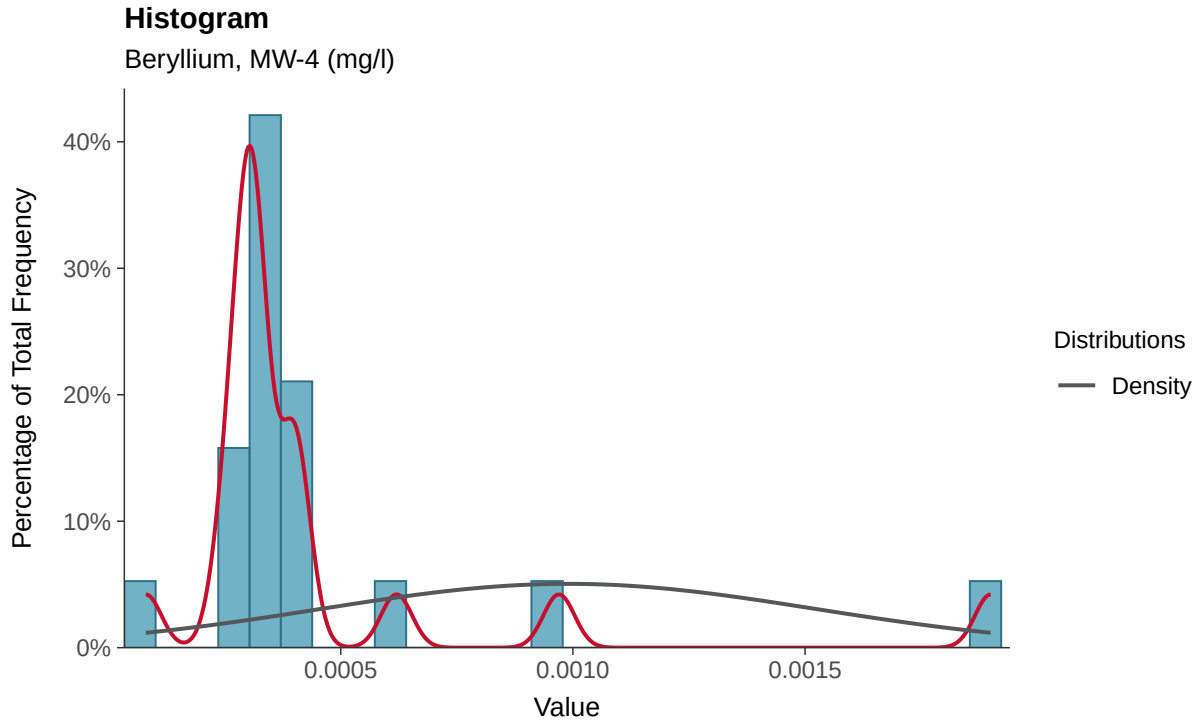
Barium, MW-4 (mg/l)



Appendix IV: Beryllium, MW-4

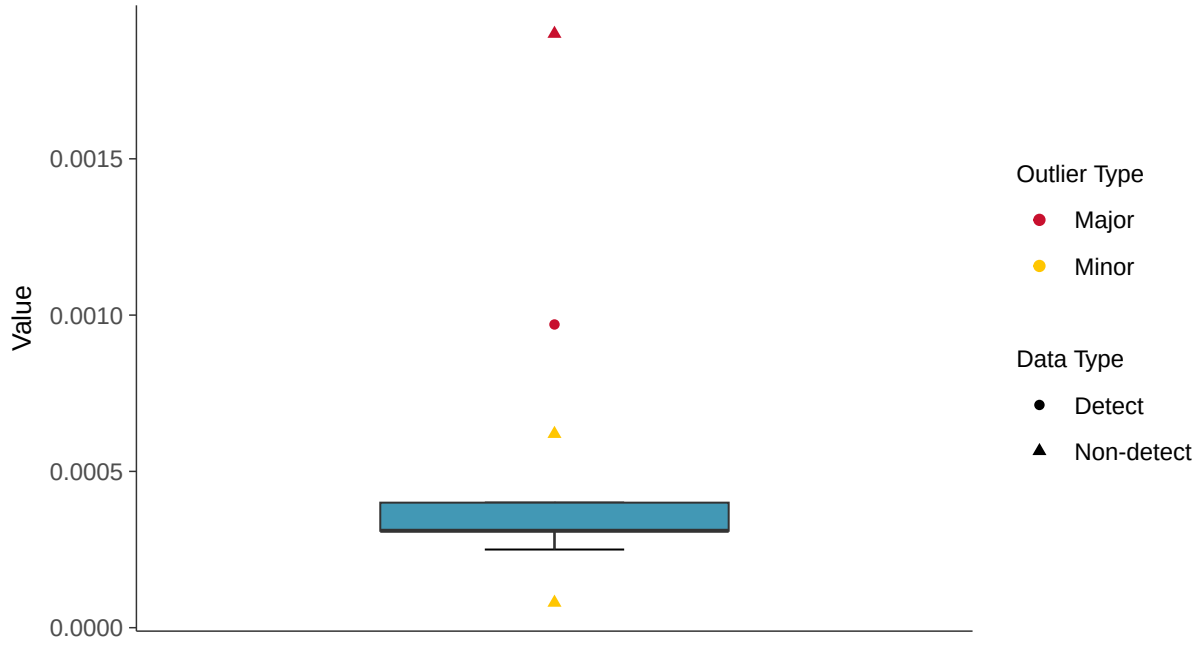
ID: 34_2_107





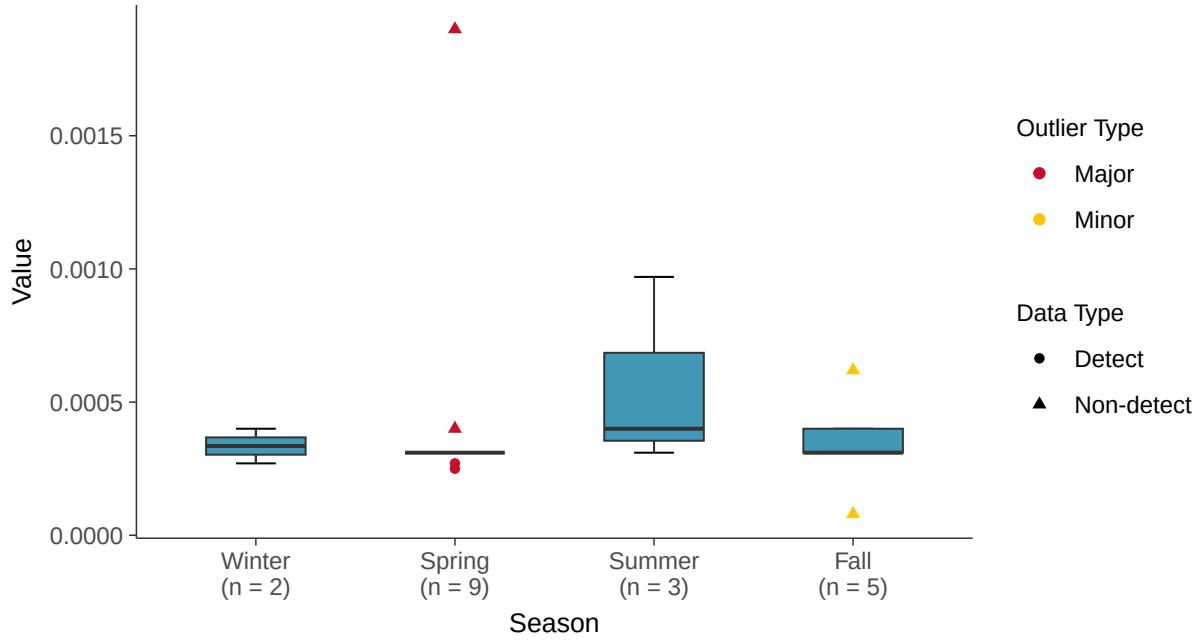
Boxplot

Beryllium, MW-4 (mg/l)



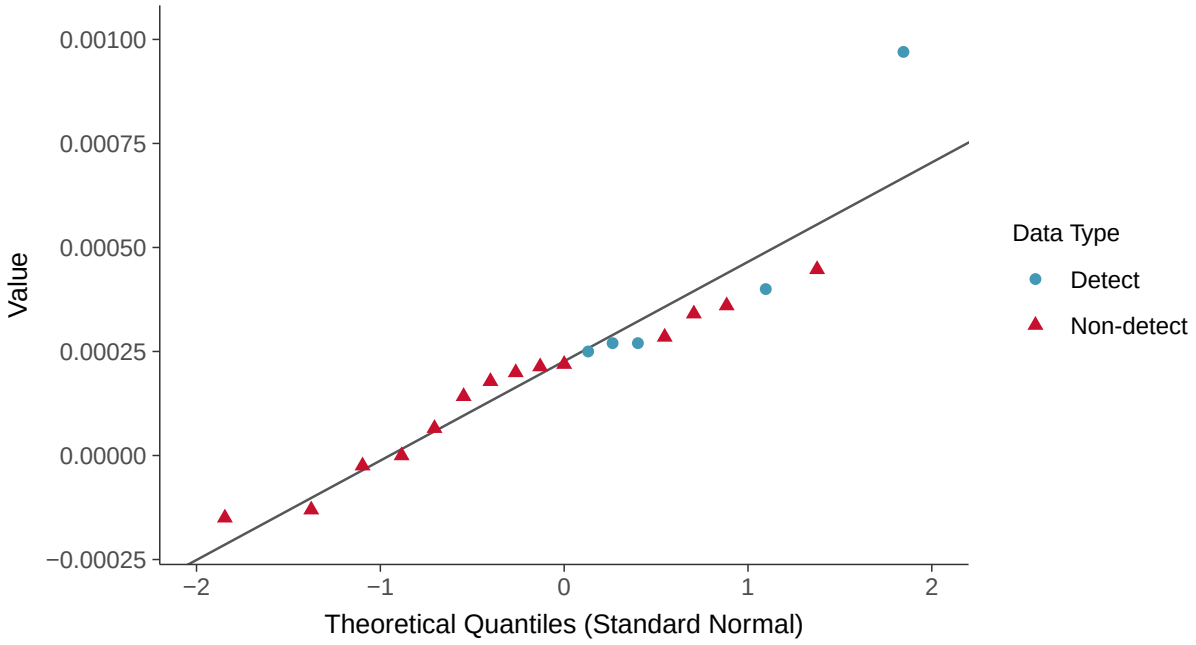
Boxplot by Season

Beryllium, MW-4 (mg/l)



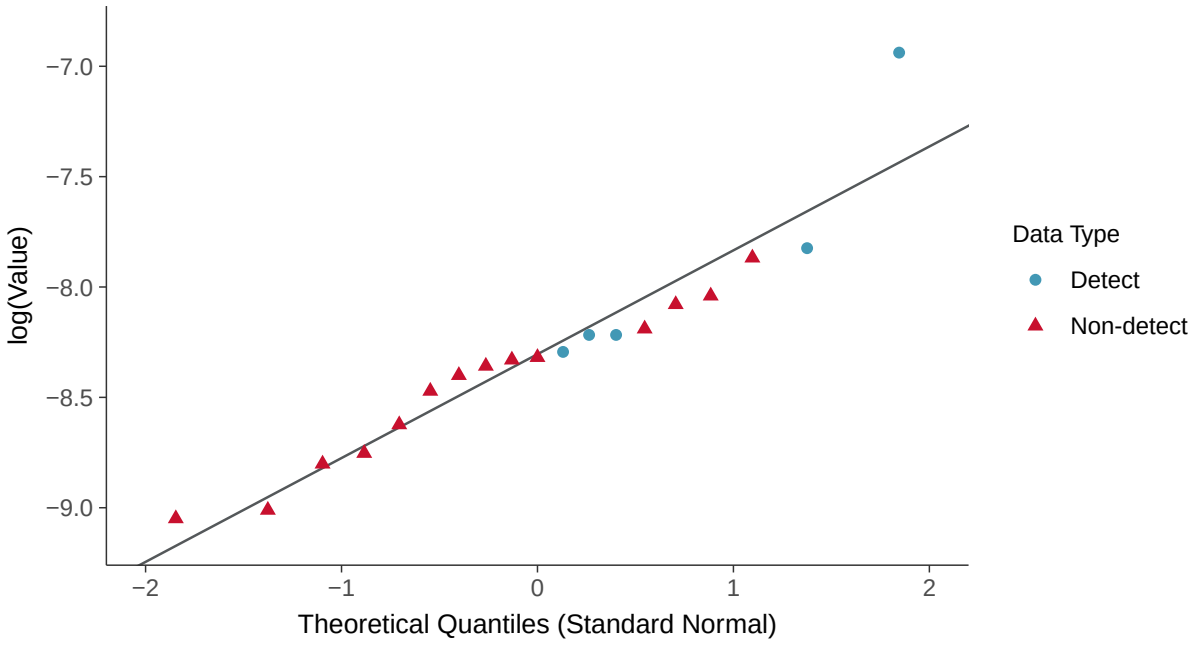
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-4 (mg/l)



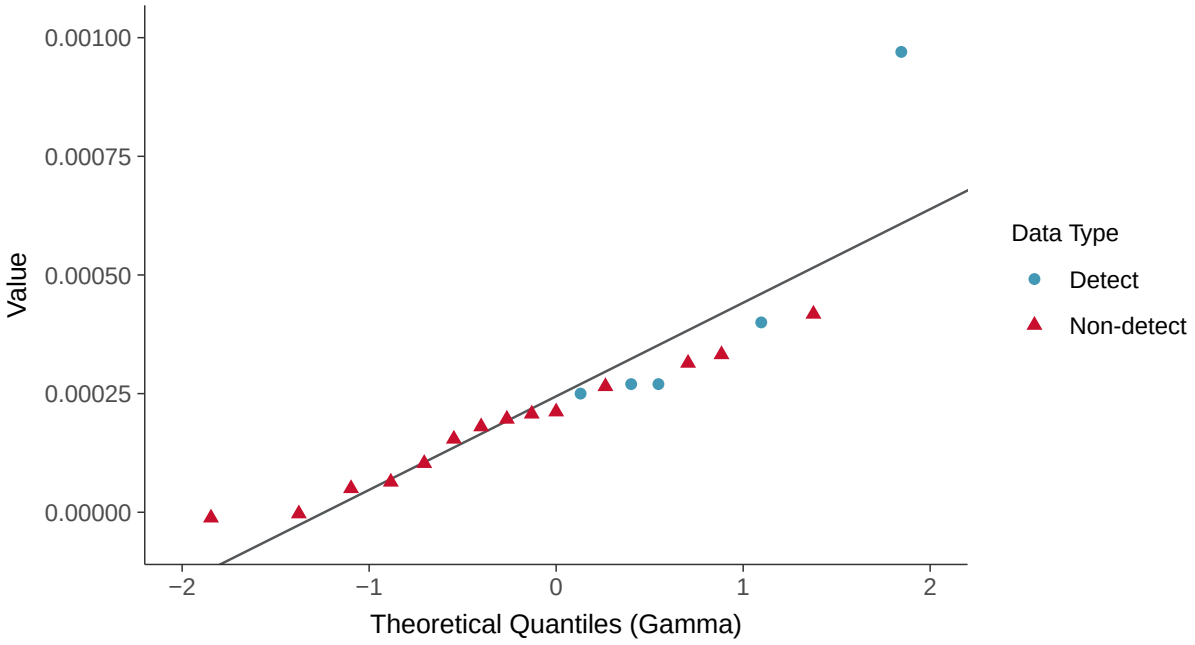
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-4 (mg/l)



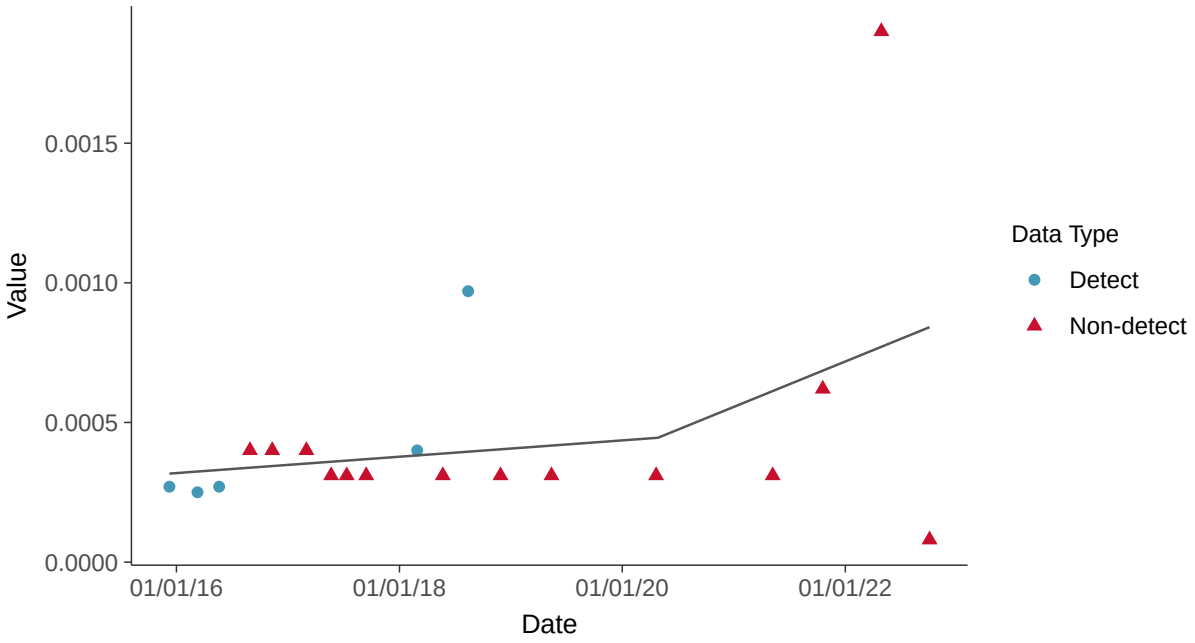
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-4 (mg/l)



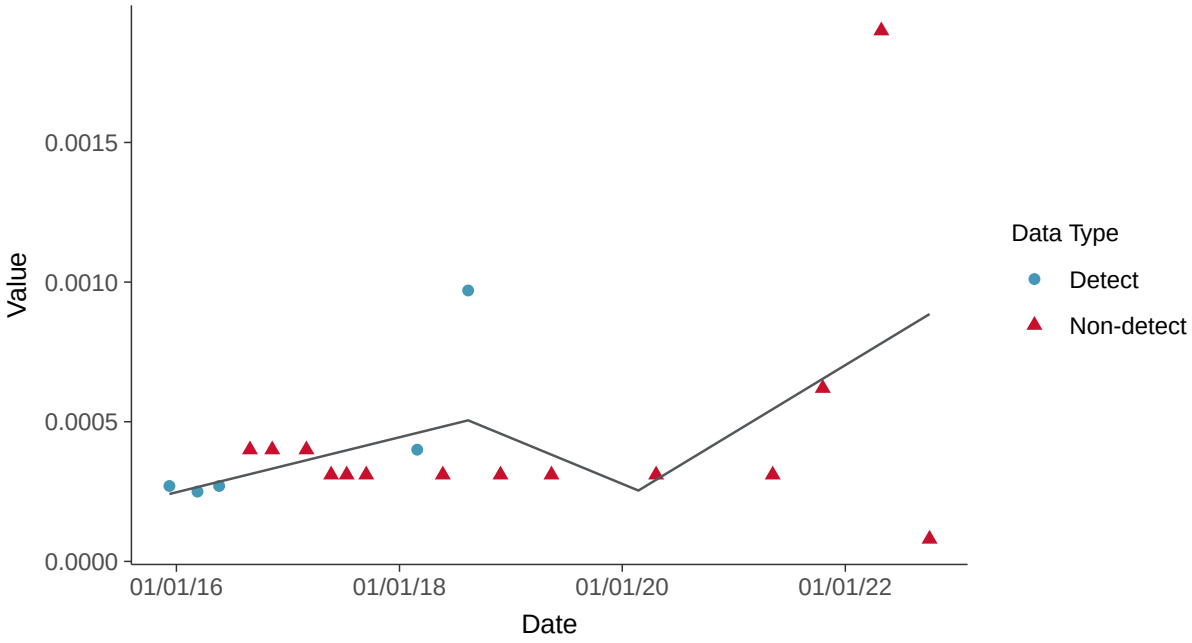
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-4 (mg/l)



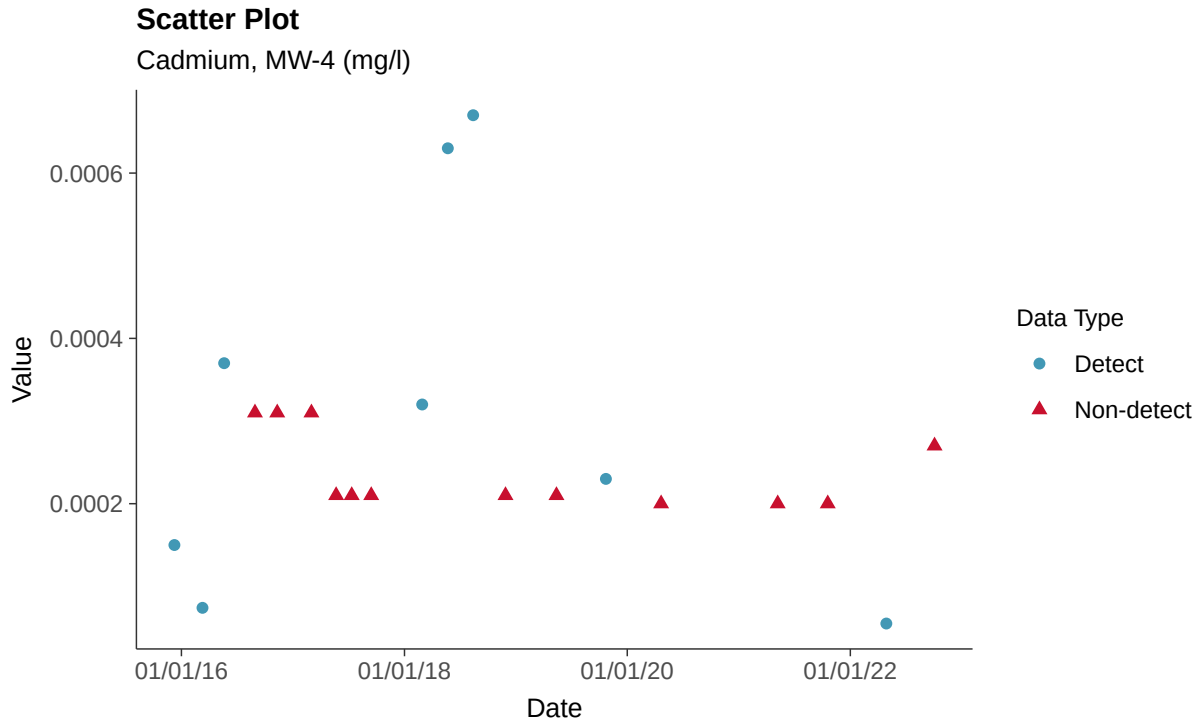
Trend Regression: Piecewise Linear-Linear-Linear

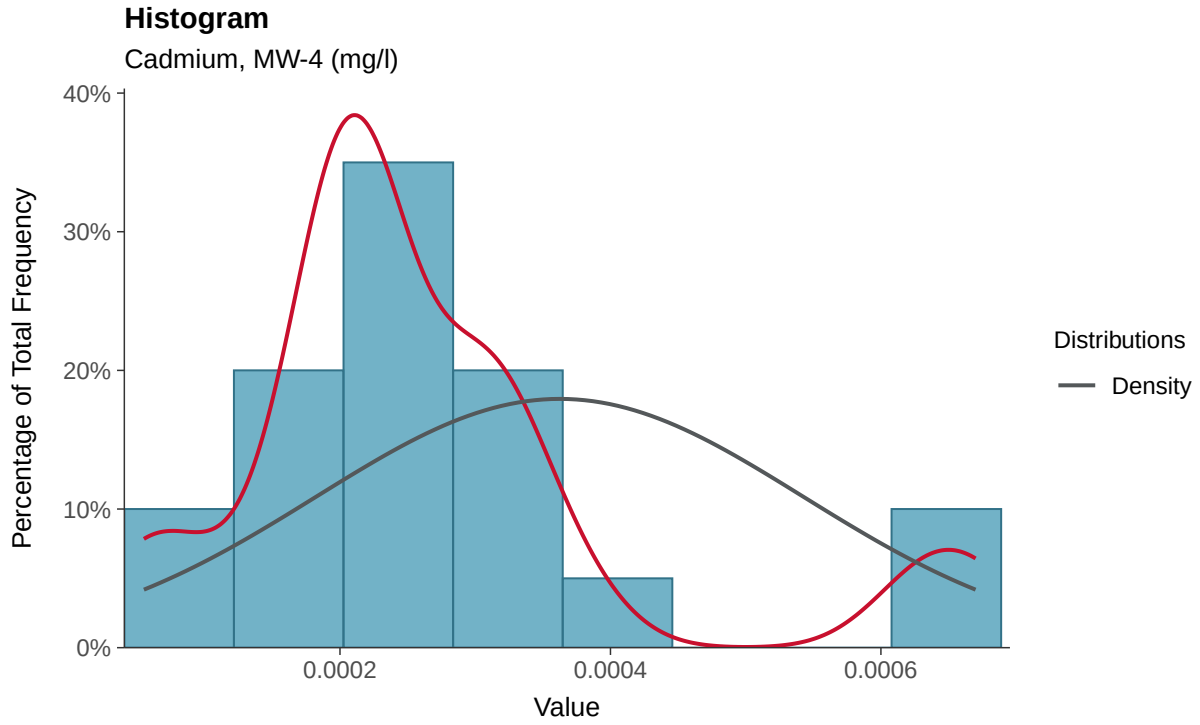
Beryllium, MW-4 (mg/l)



Appendix IV: Cadmium, MW-4

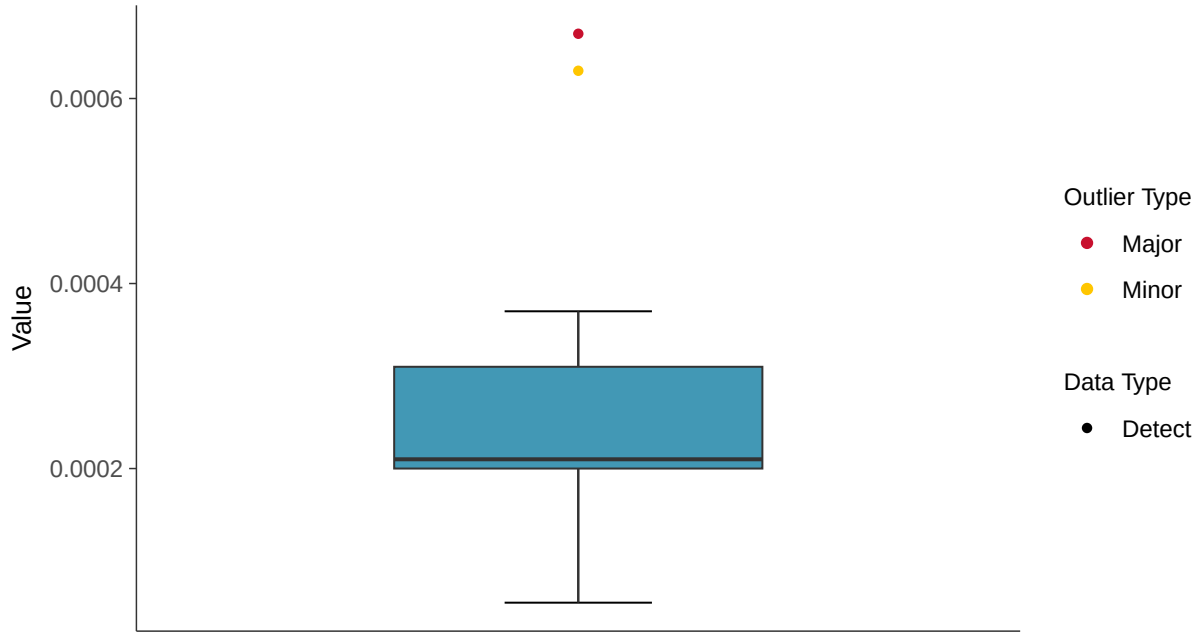
ID: 34_2_109





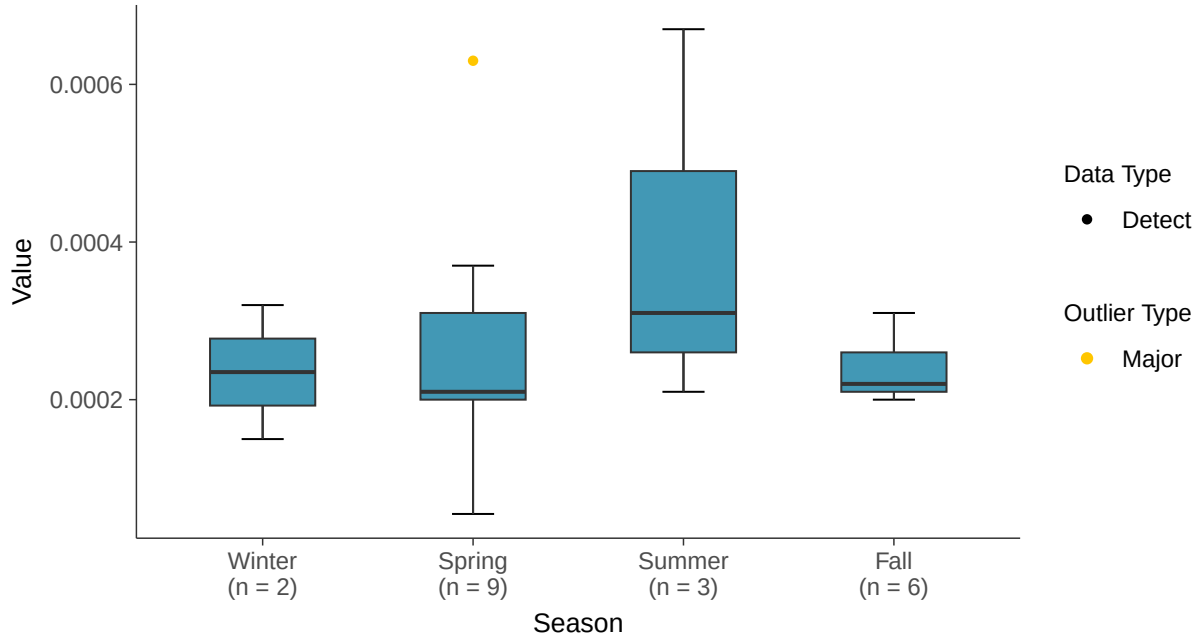
Boxplot

Cadmium, MW-4 (mg/l)



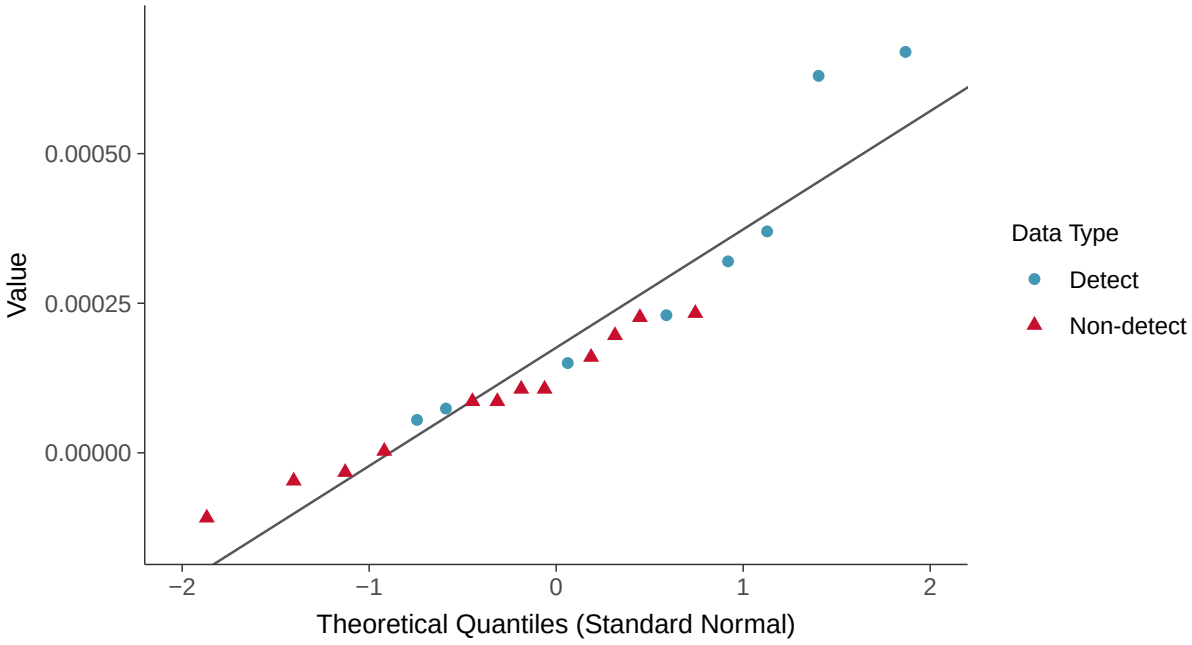
Boxplot by Season

Cadmium, MW-4 (mg/l)



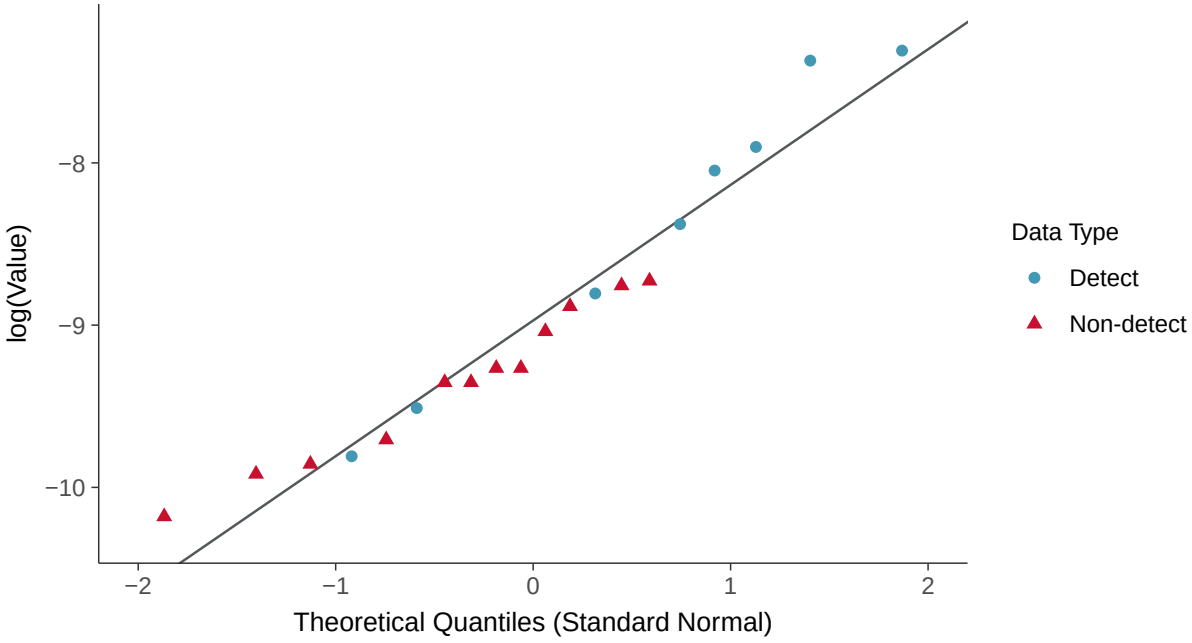
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-4 (mg/l)



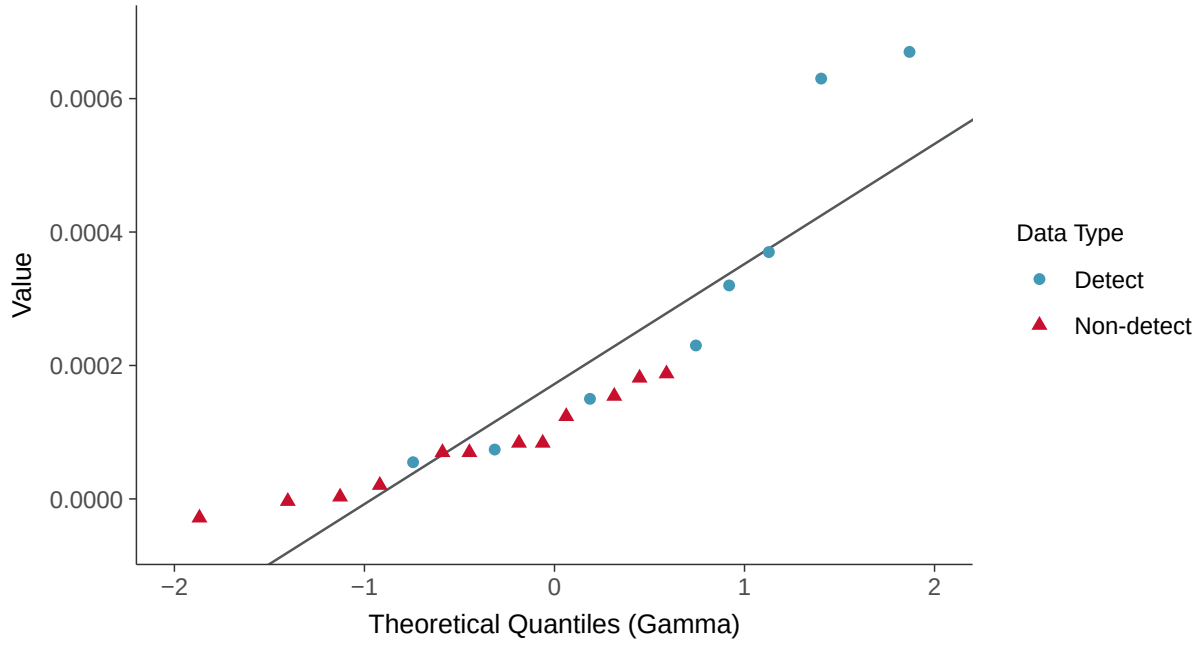
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-4 (mg/l)



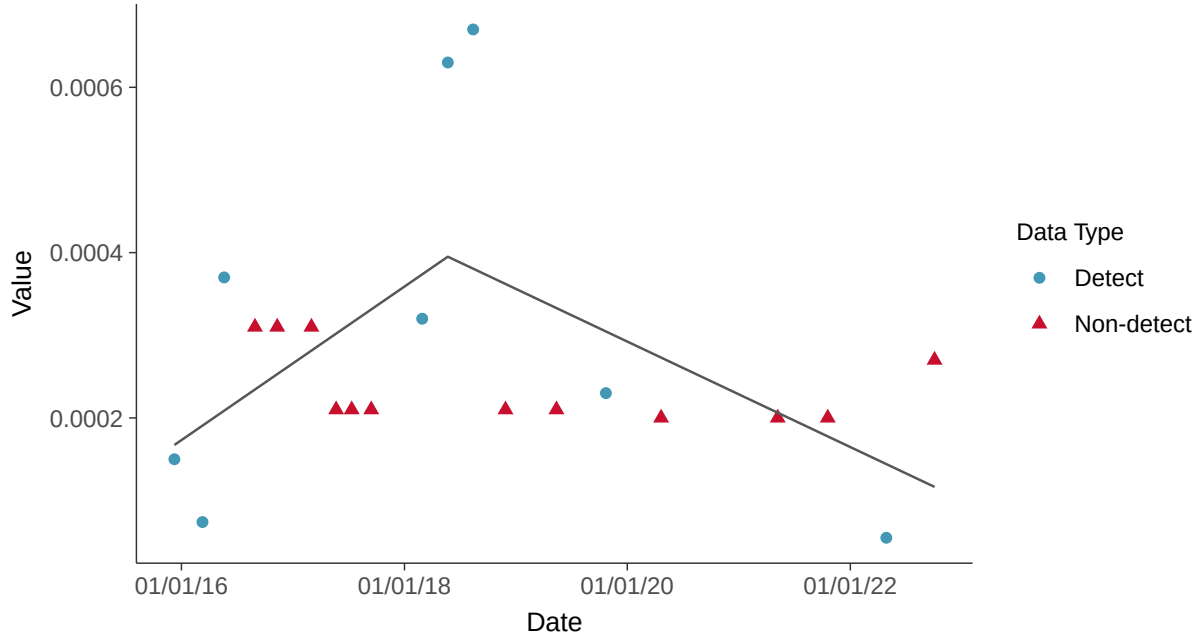
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-4 (mg/l)



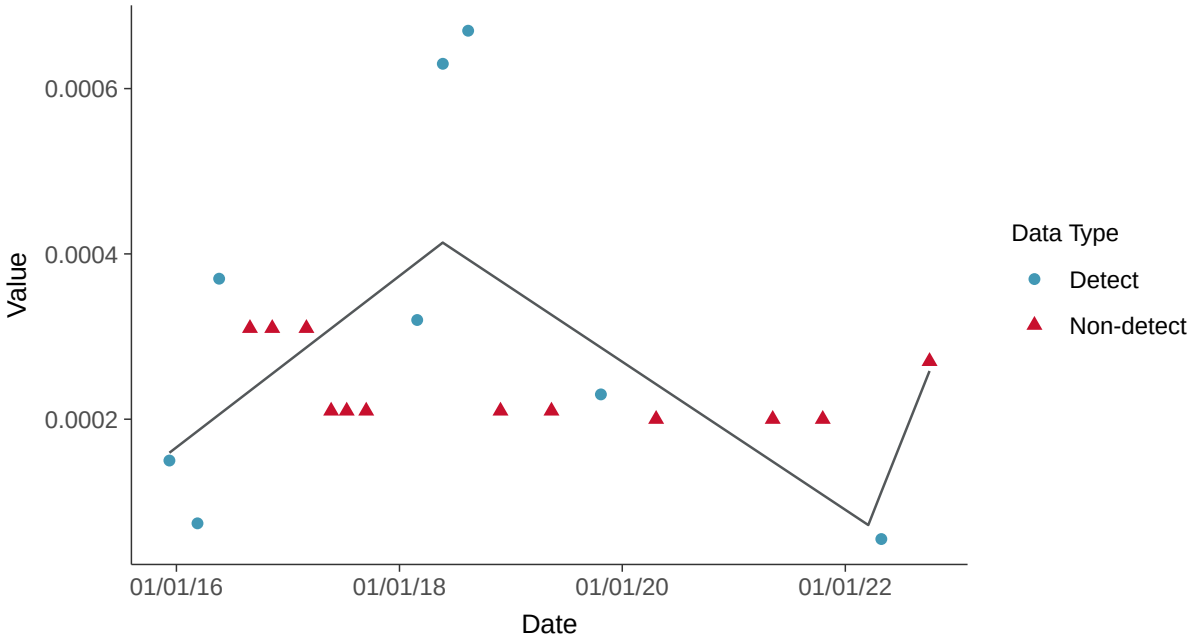
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-4 (mg/l)



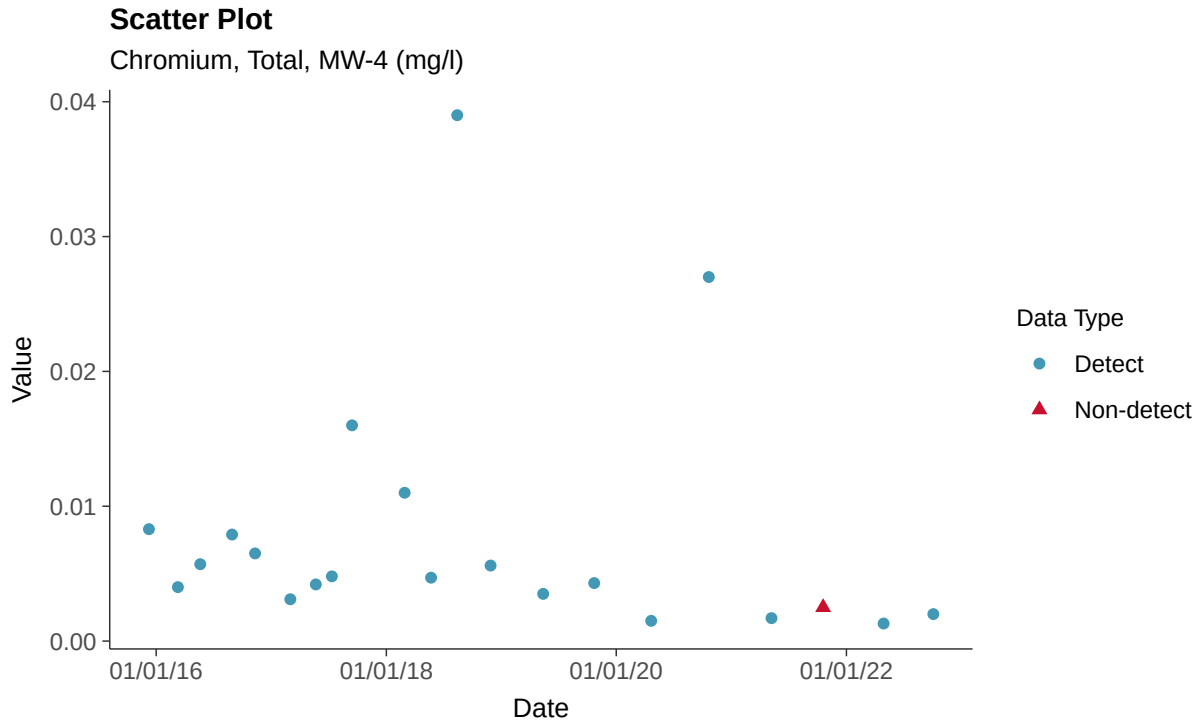
Trend Regression: Piecewise Linear-Linear-Linear

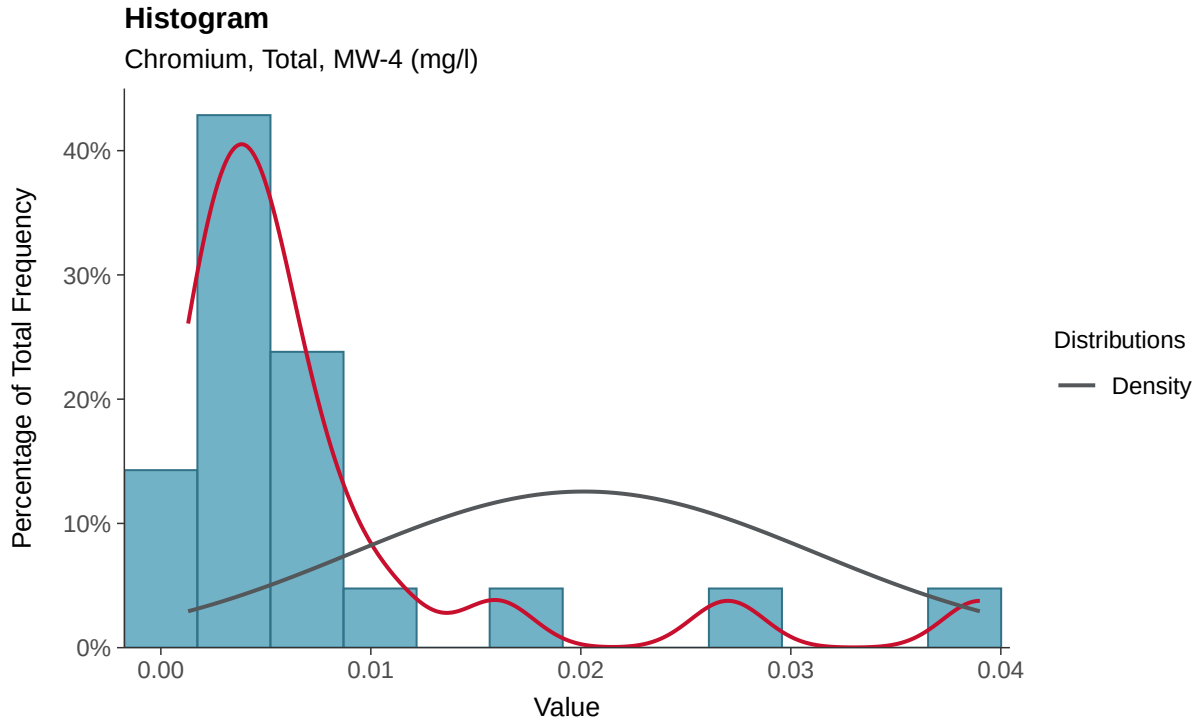
Cadmium, MW-4 (mg/l)



Appendix IV: Chromium, Total, MW-4

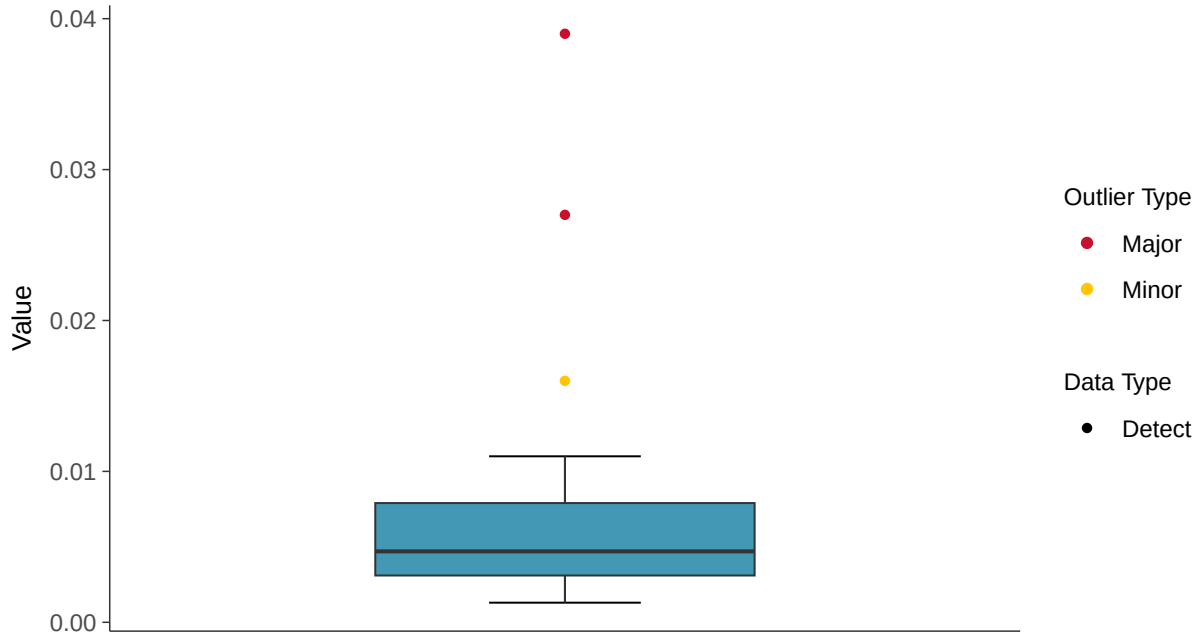
ID: 34_2_112





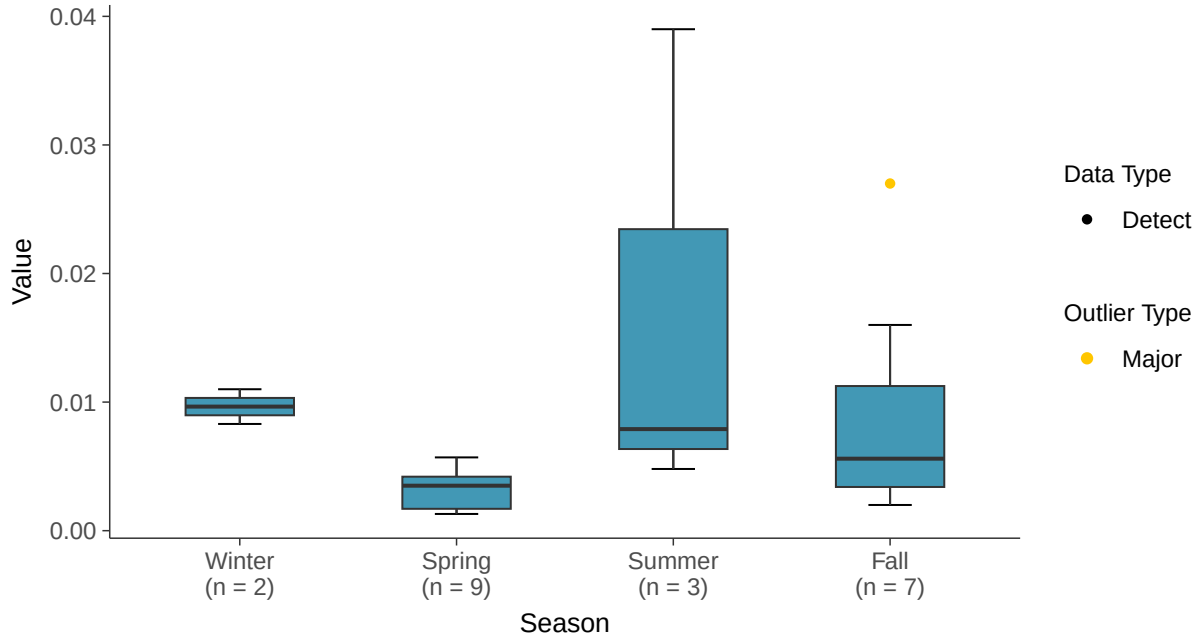
Boxplot

Chromium, Total, MW-4 (mg/l)



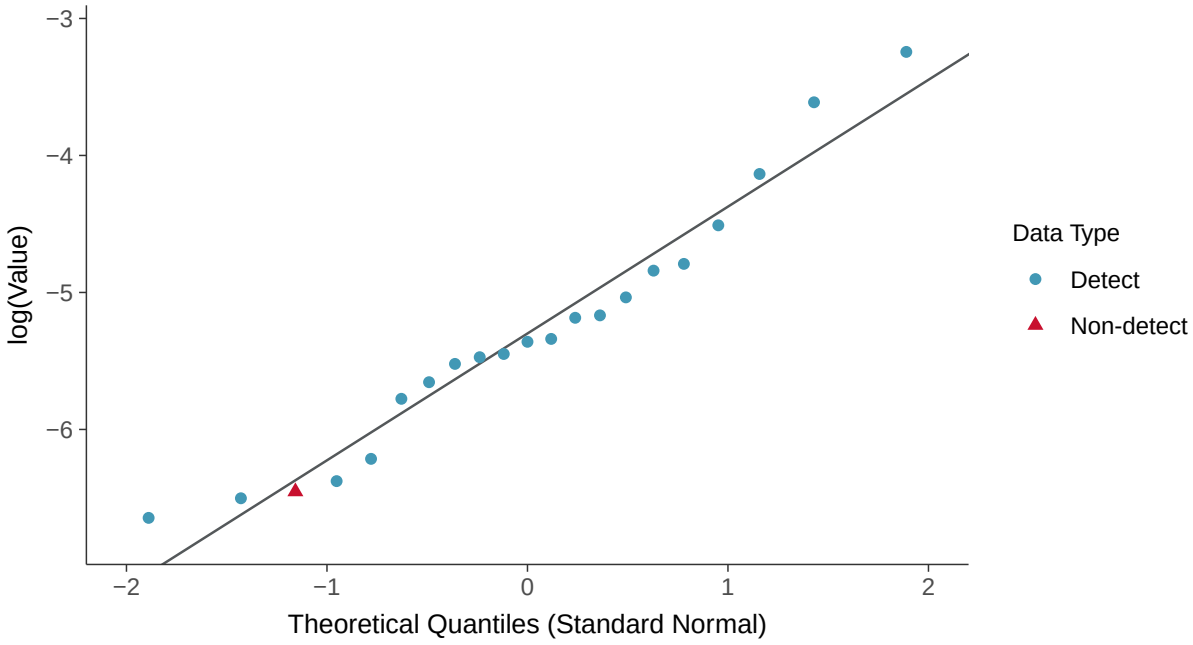
Boxplot by Season

Chromium, Total, MW-4 (mg/l)



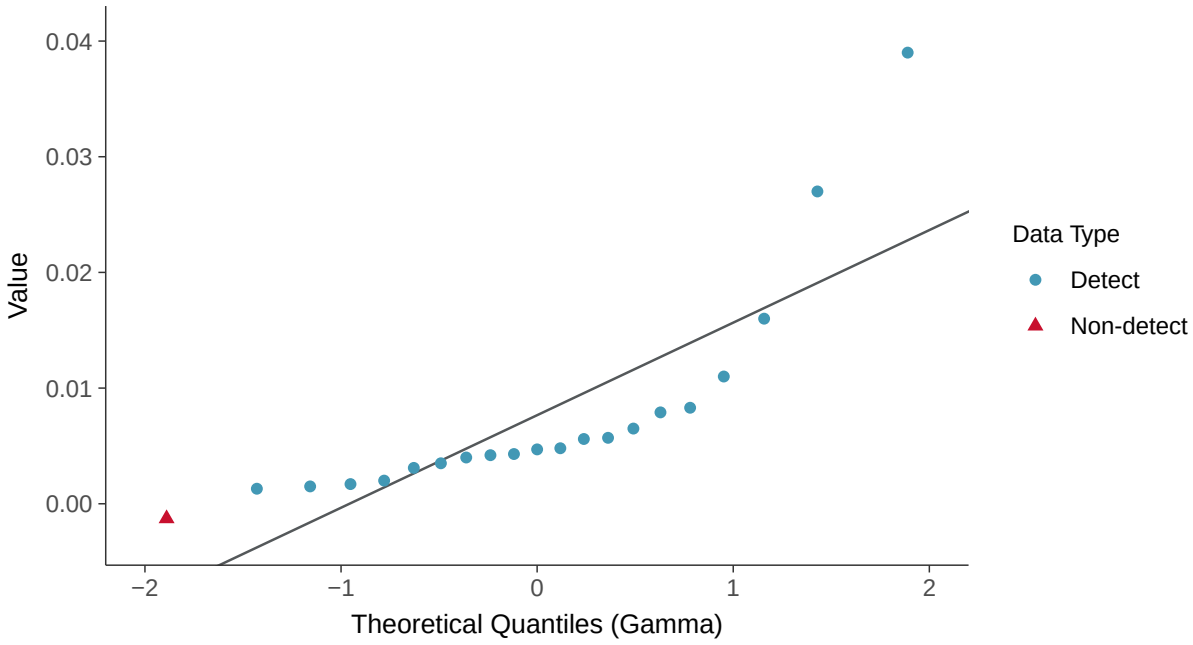
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-4 (mg/l)



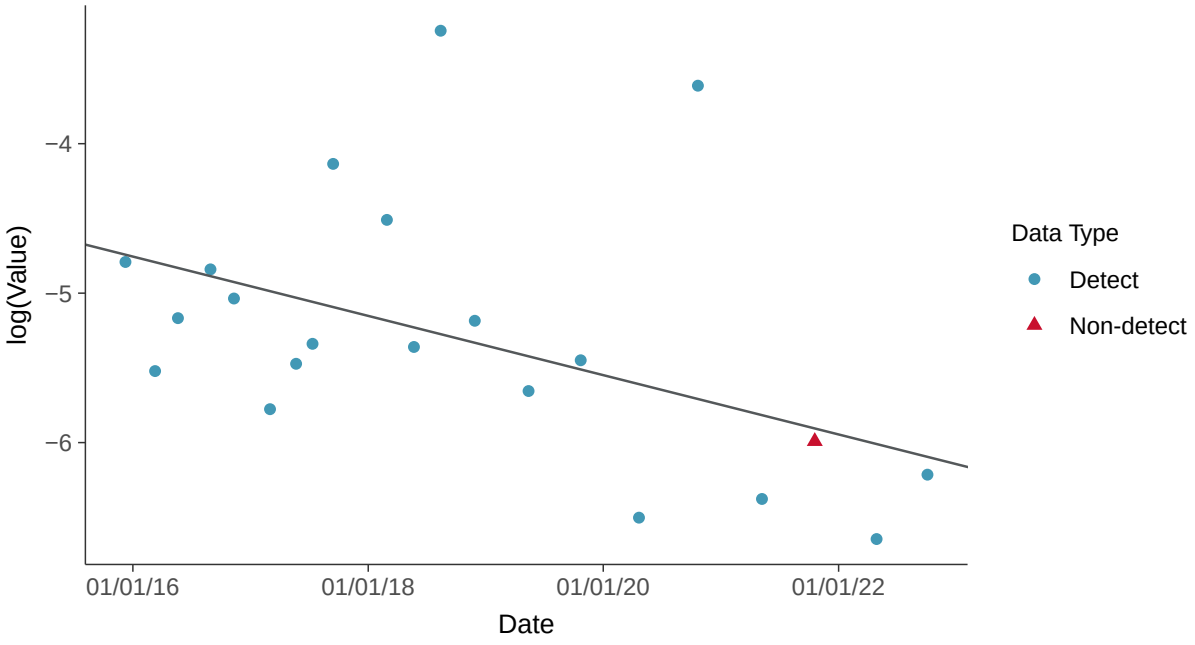
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-4 (mg/l)



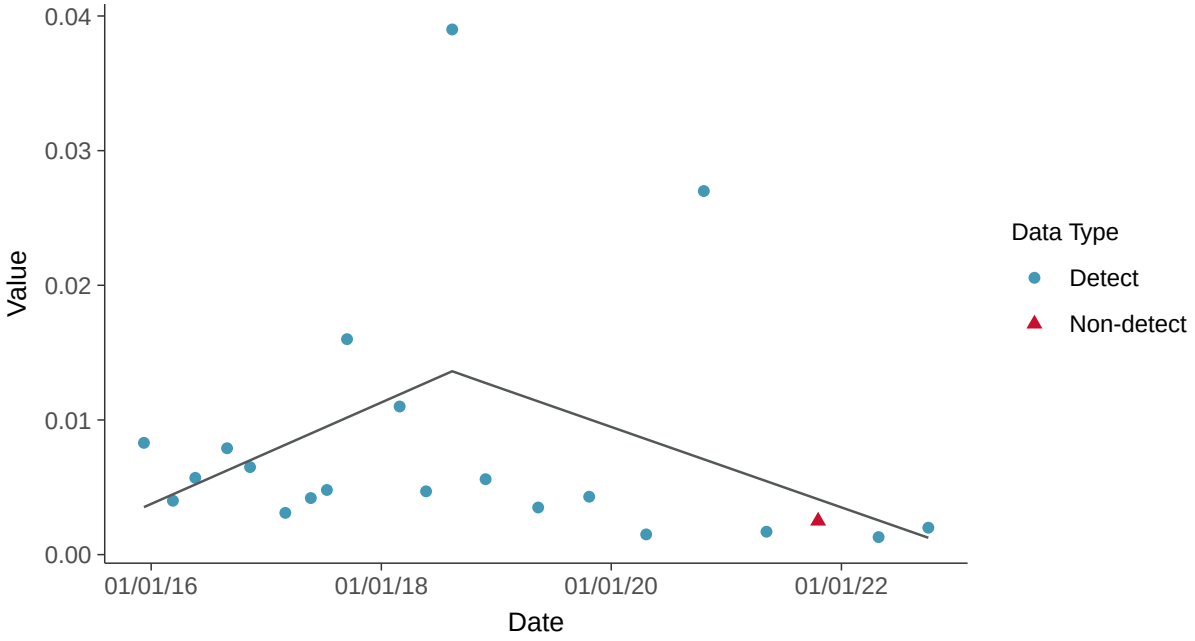
Trend Regression: Lognormal MLE

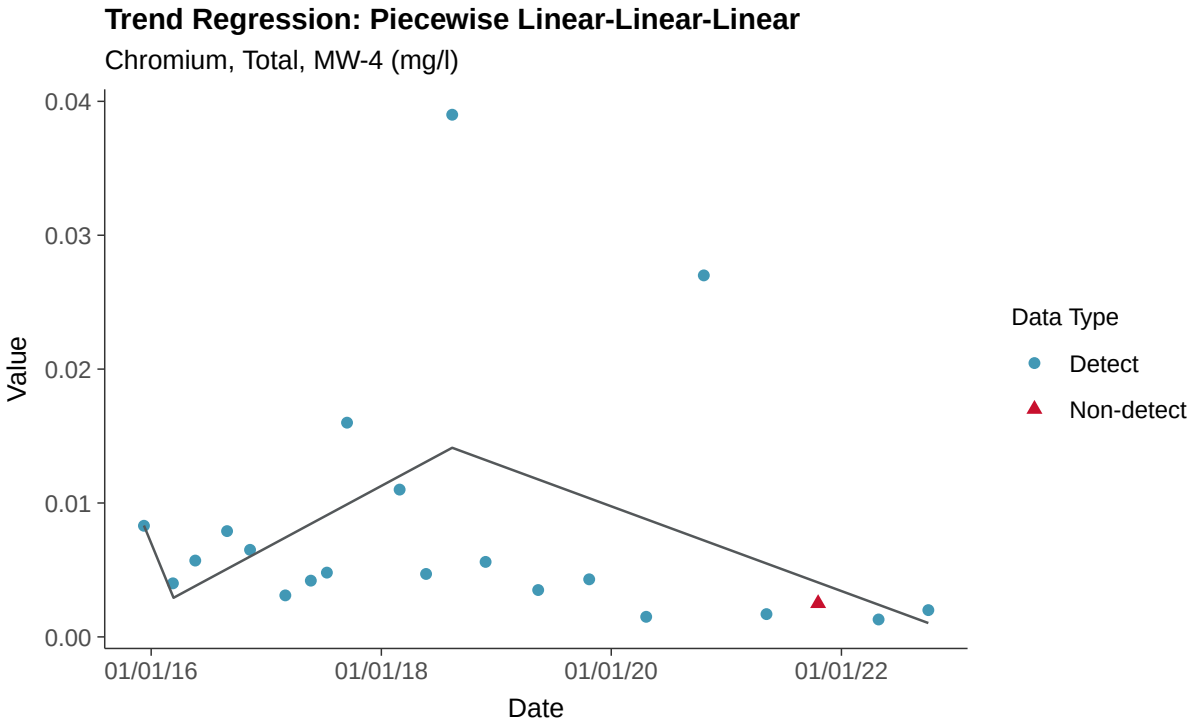
Chromium, Total, MW-4 (mg/l)



Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-4 (mg/l)



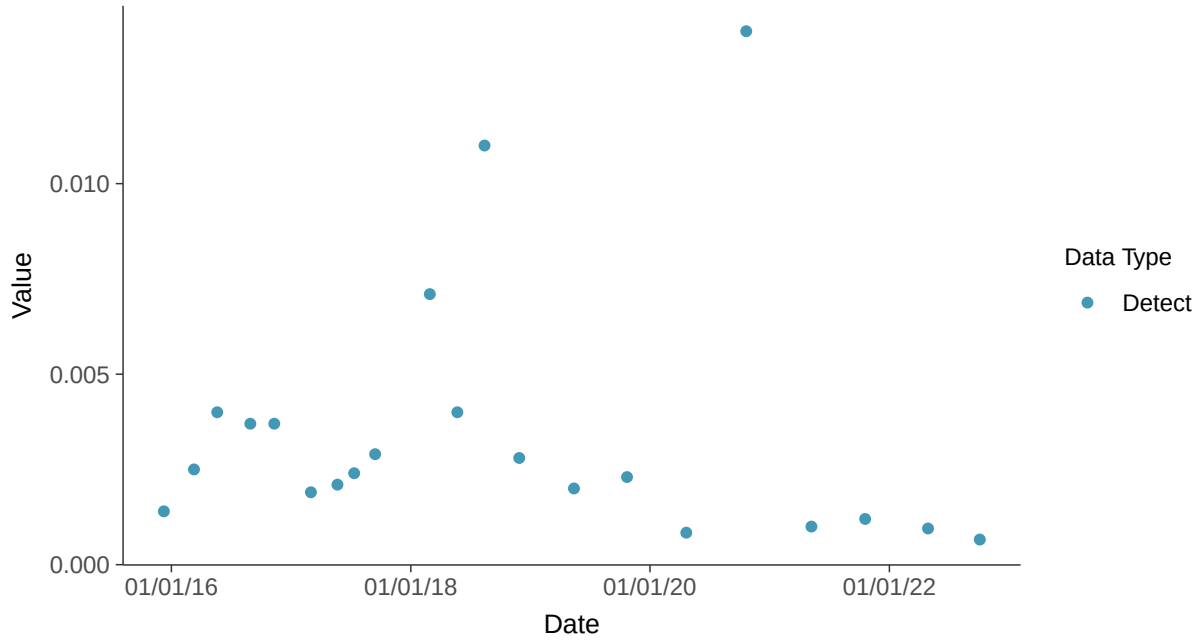

Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-4 (mg/l)
Value
0.04
0.03
0.02
0.01
0.00
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-4

ID: 34_2_113

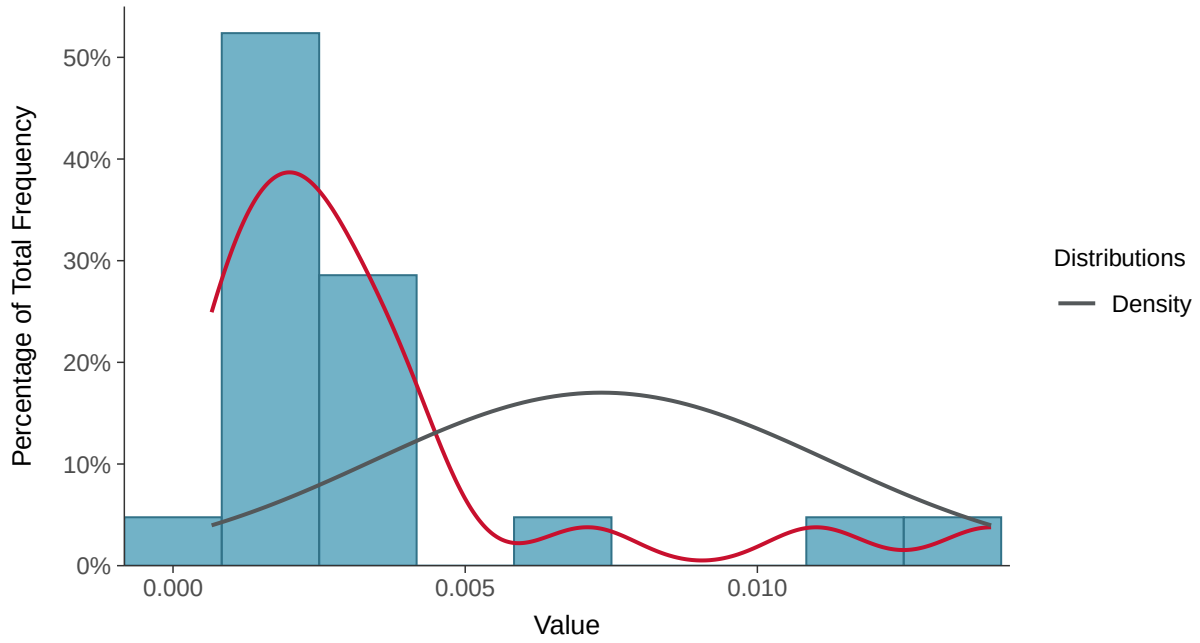
Scatter Plot

Cobalt, MW-4 (mg/l)



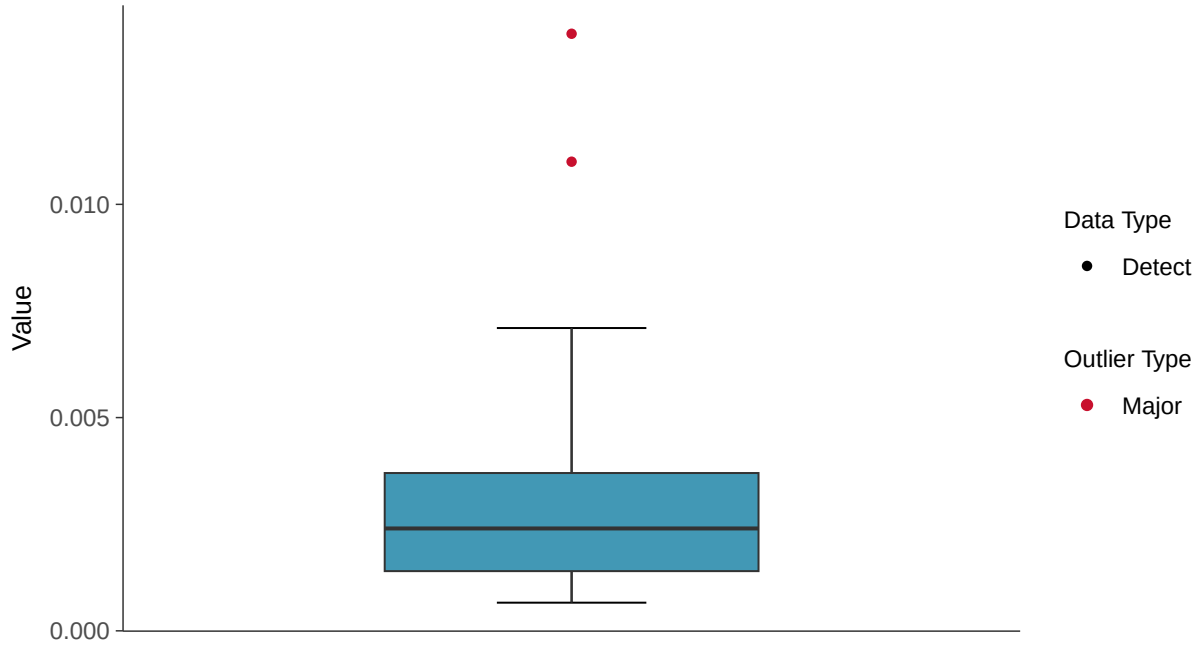
Histogram

Cobalt, MW-4 (mg/l)



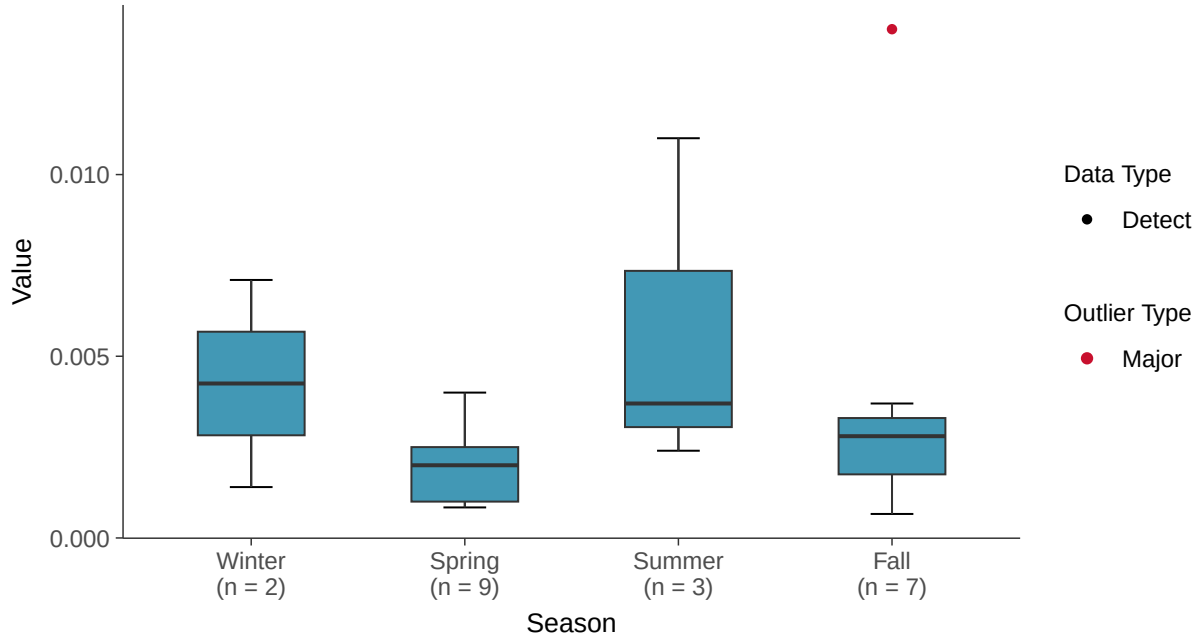
Boxplot

Cobalt, MW-4 (mg/l)



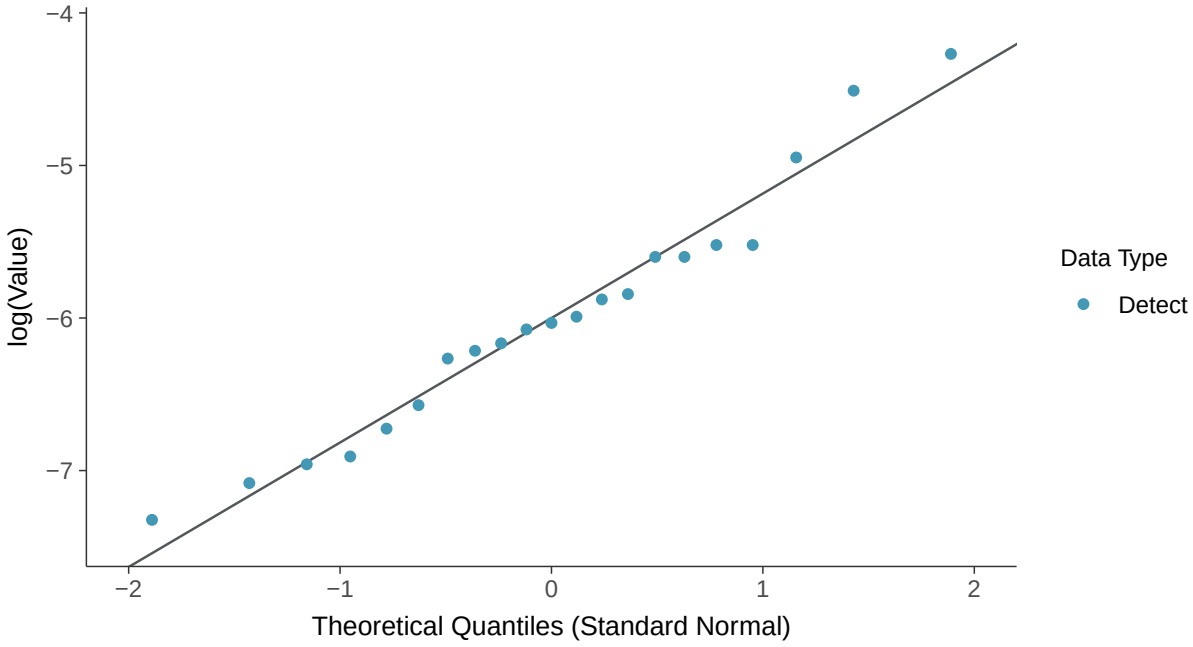
Boxplot by Season

Cobalt, MW-4 (mg/l)



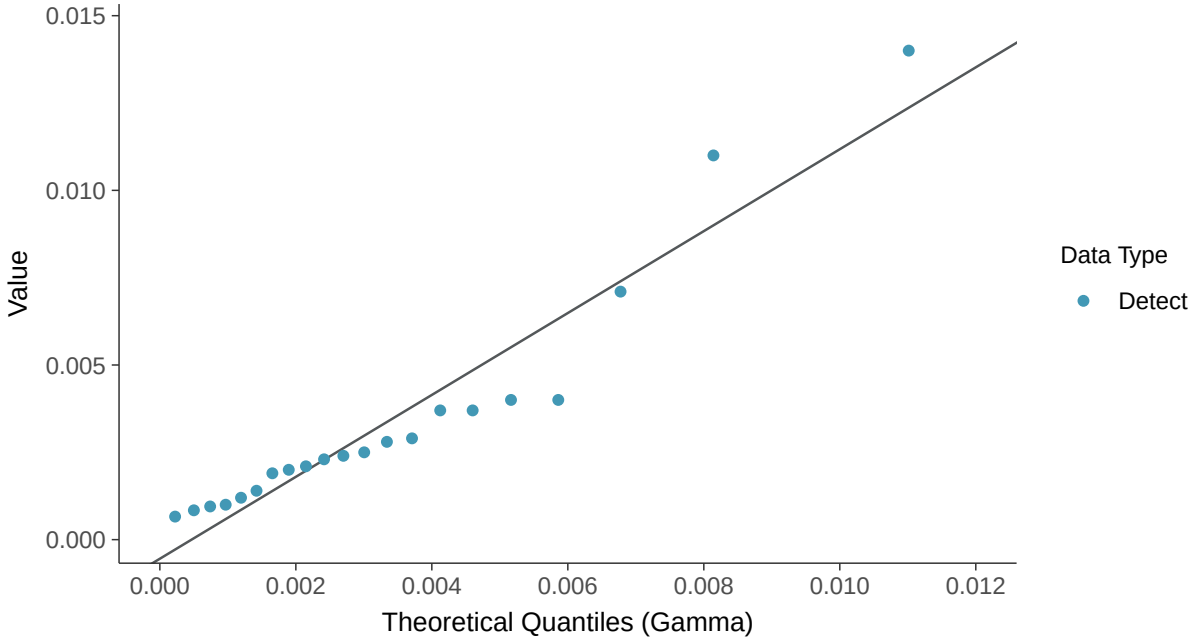
Lognormal Q-Q plot

Cobalt, MW-4 (mg/l)



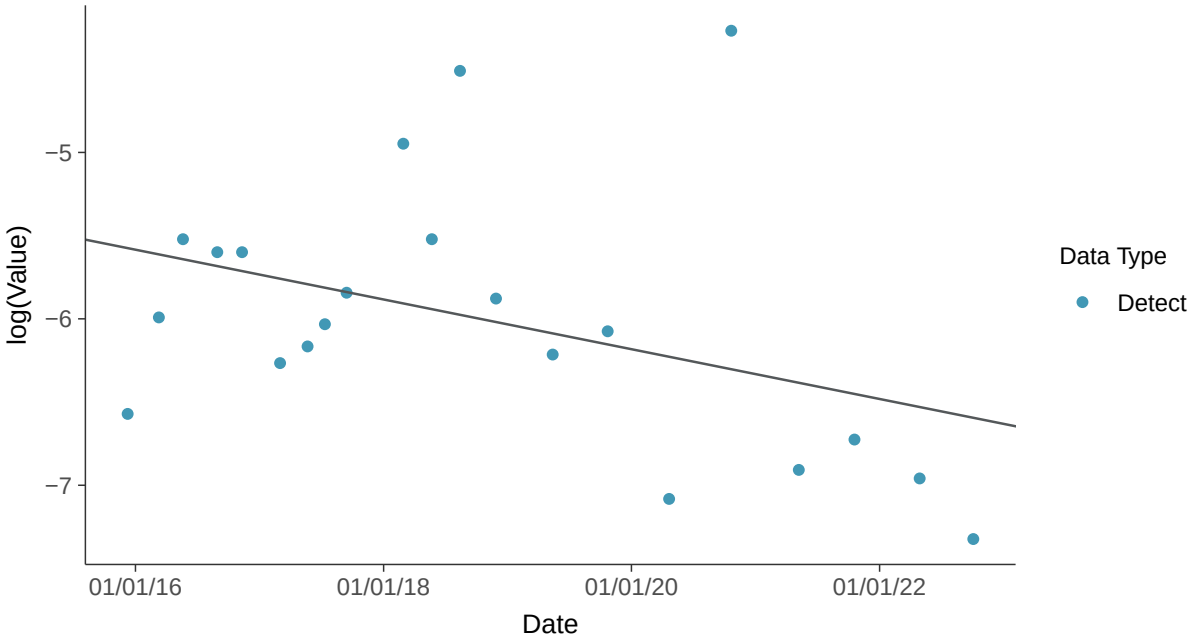
Gamma Q-Q plot

Cobalt, MW-4 (mg/l)



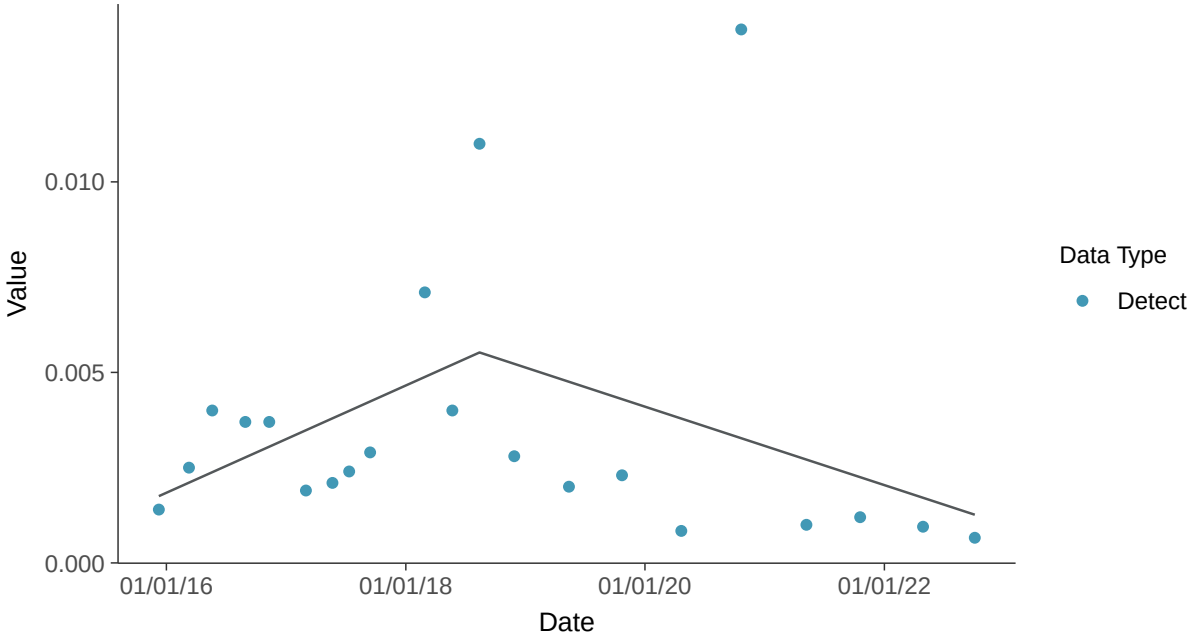
Trend Regression: Lognormal MLE

Cobalt, MW-4 (mg/l)



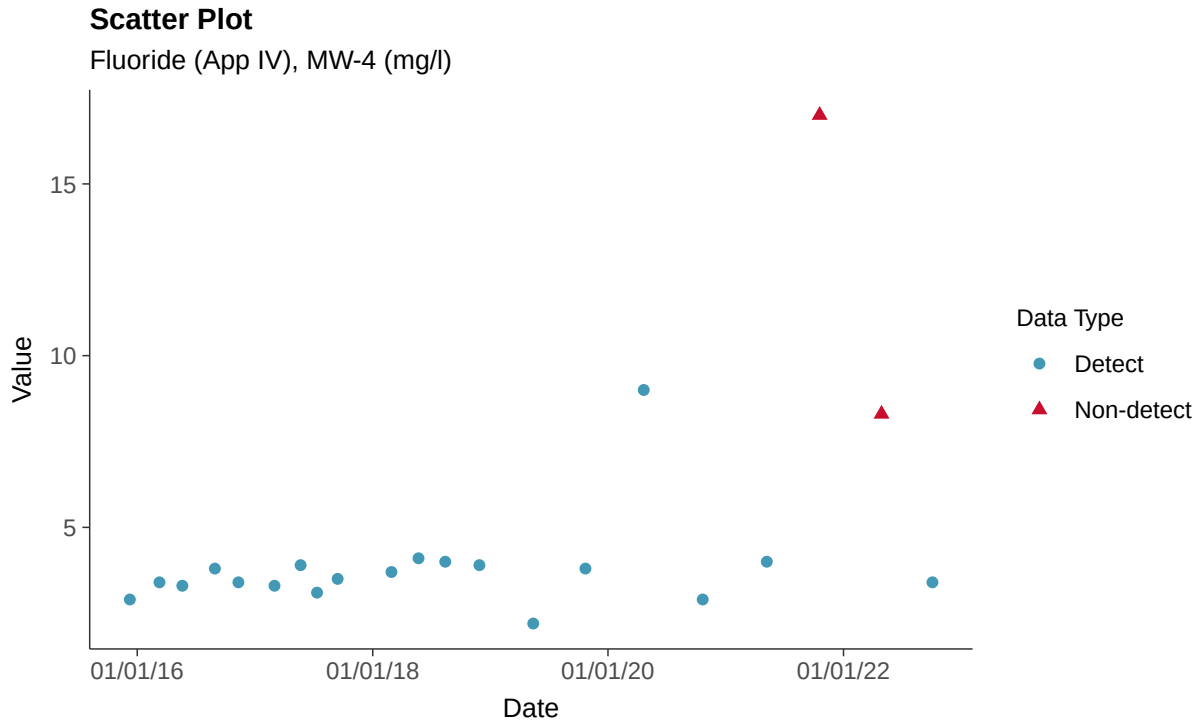
Trend Regression: Piecewise Linear-Linear

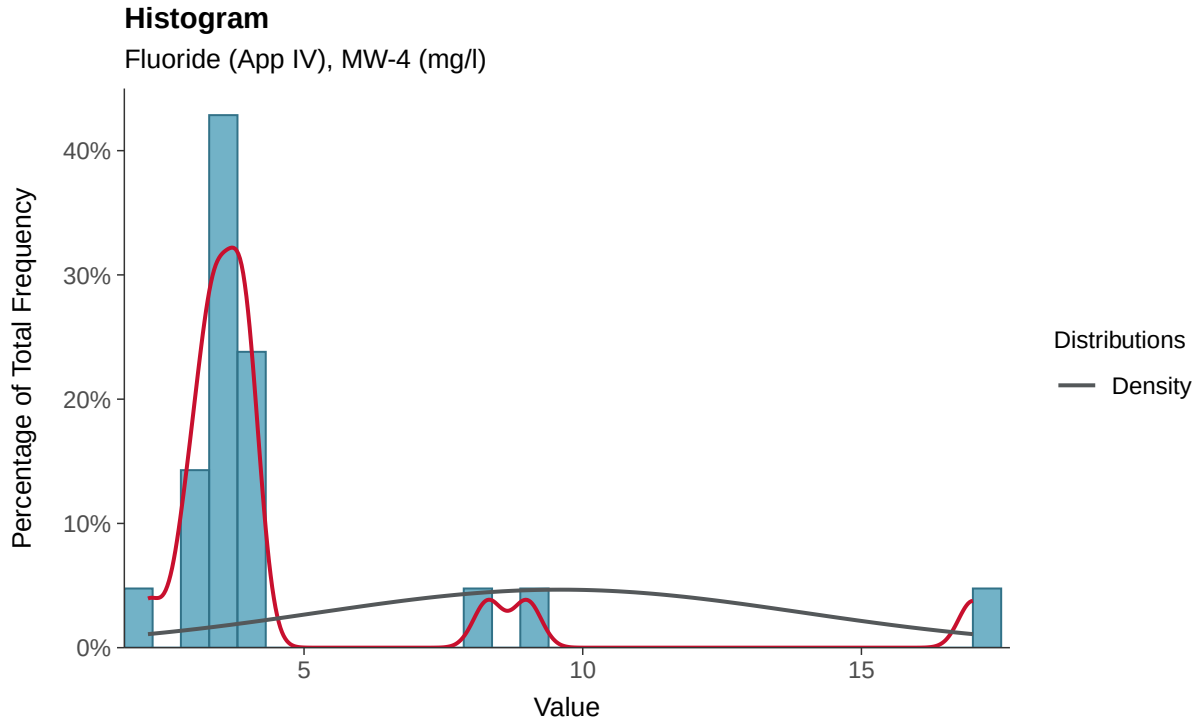
Cobalt, MW-4 (mg/l)



Appendix IV: Fluoride (App IV), MW-4

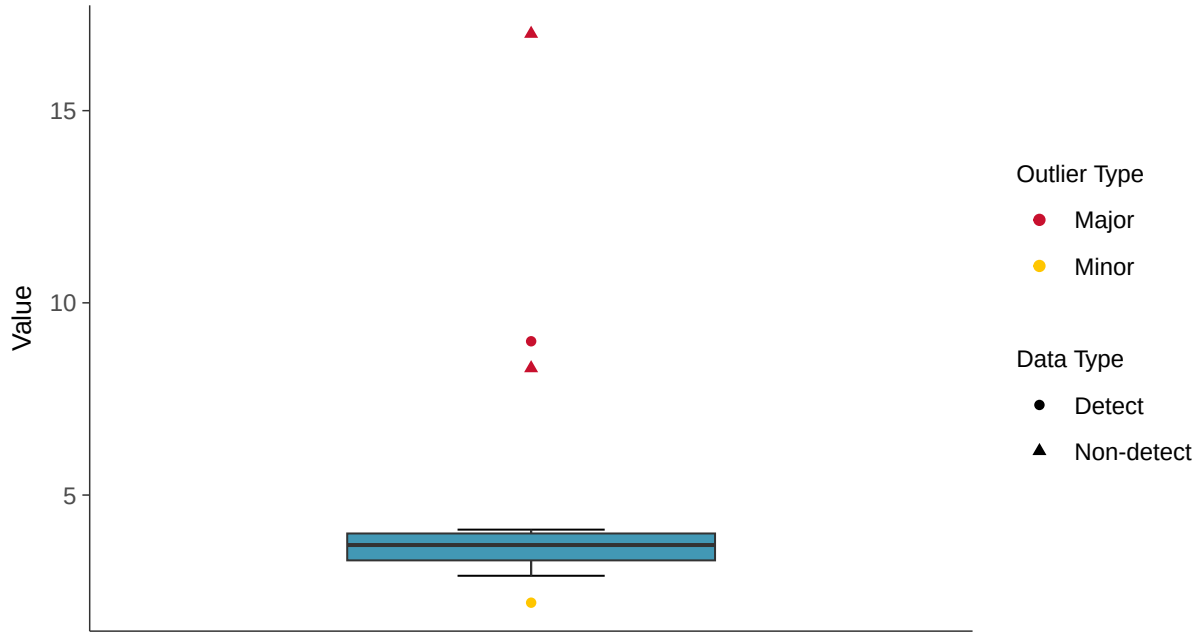
ID: 34_2_116





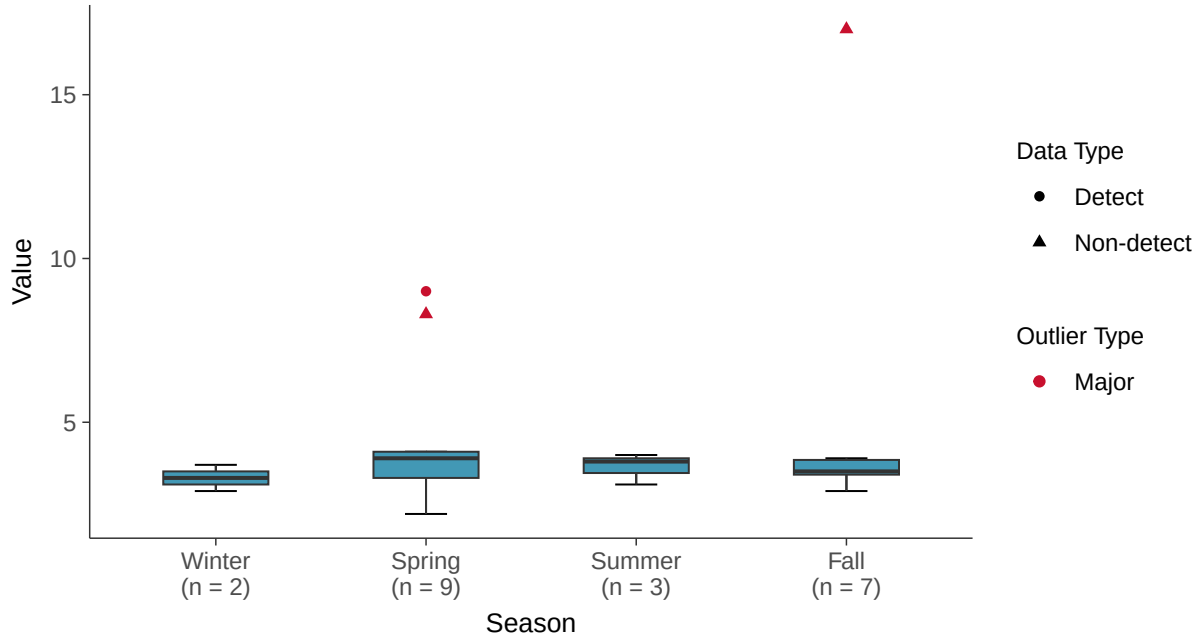
Boxplot

Fluoride (App IV), MW-4 (mg/l)



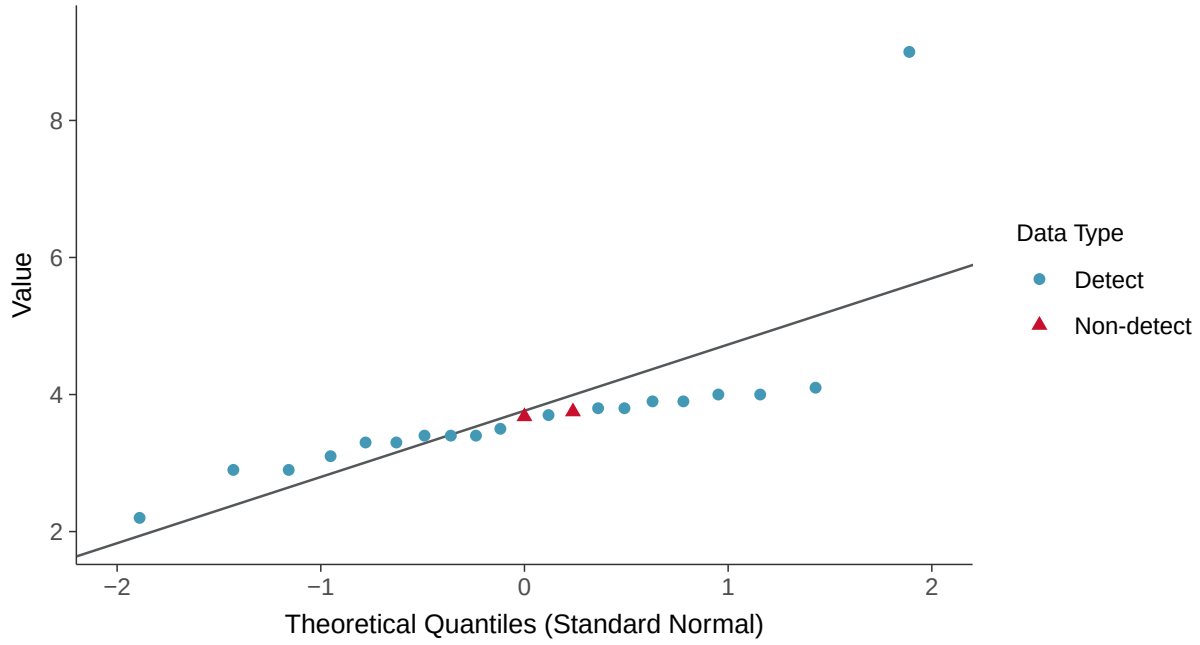
Boxplot by Season

Fluoride (App IV), MW-4 (mg/l)



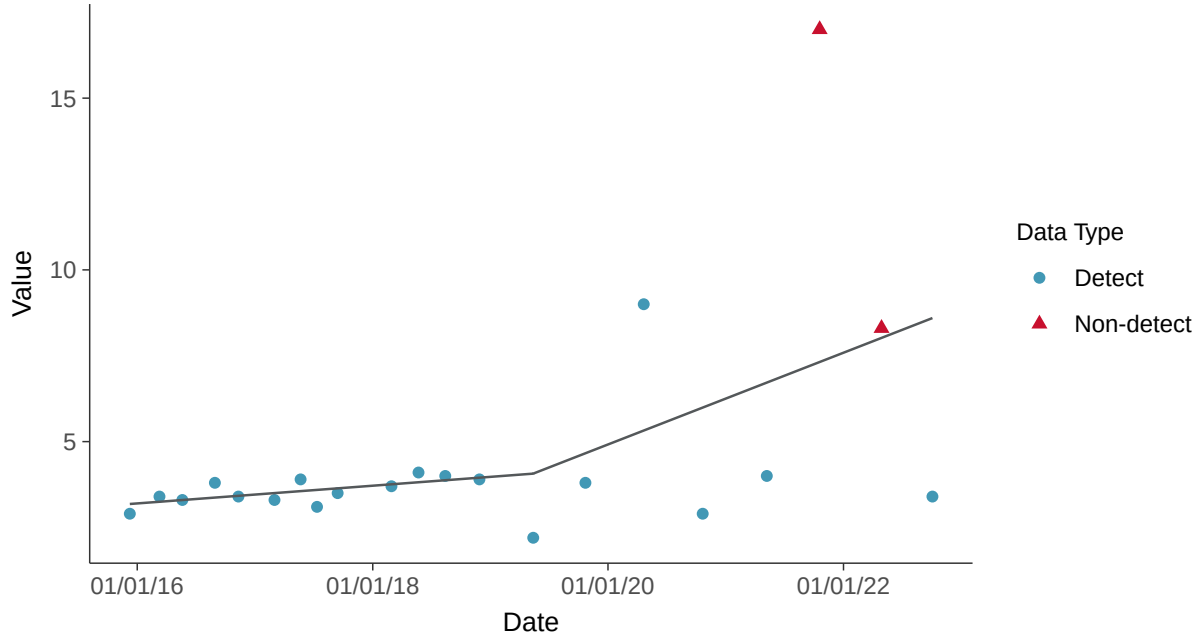
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-4 (mg/l)



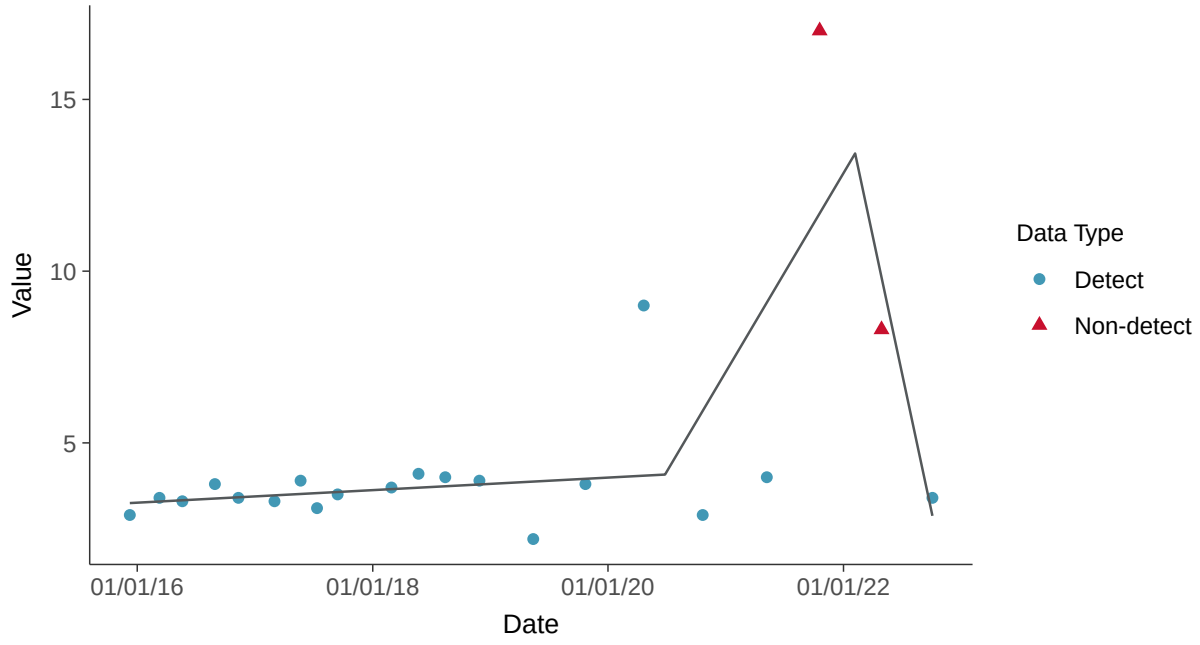
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-4 (mg/l)



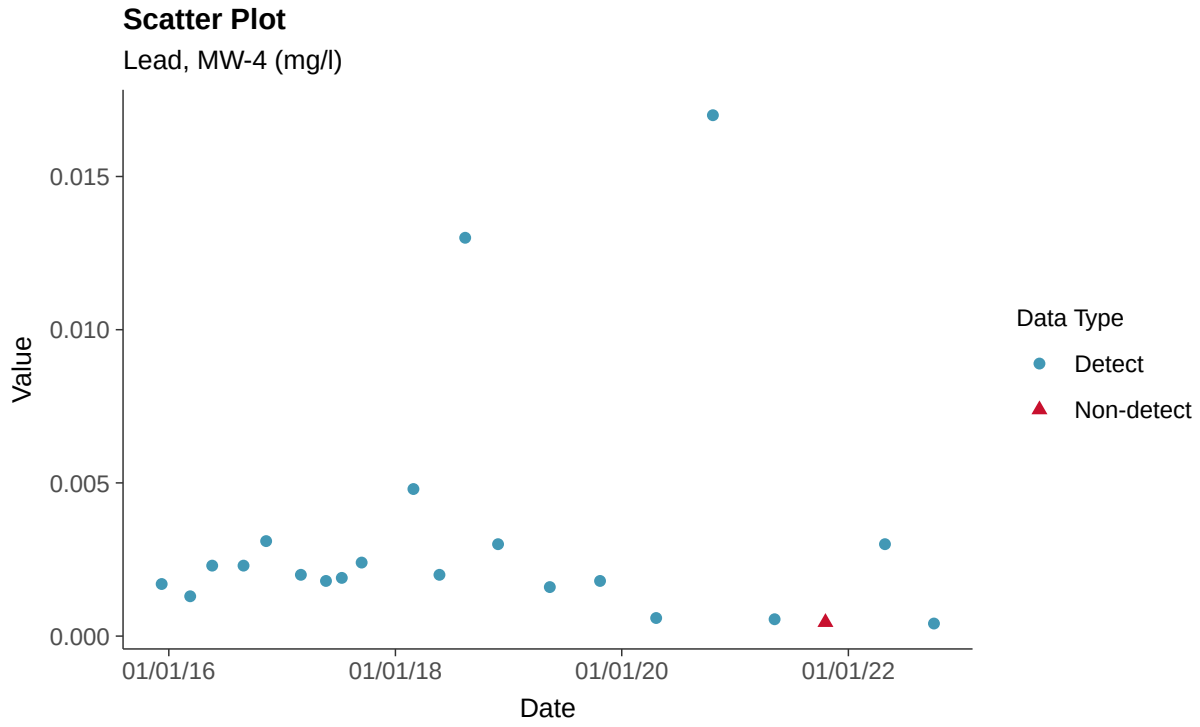
Trend Regression: Piecewise Linear-Linear-Linear

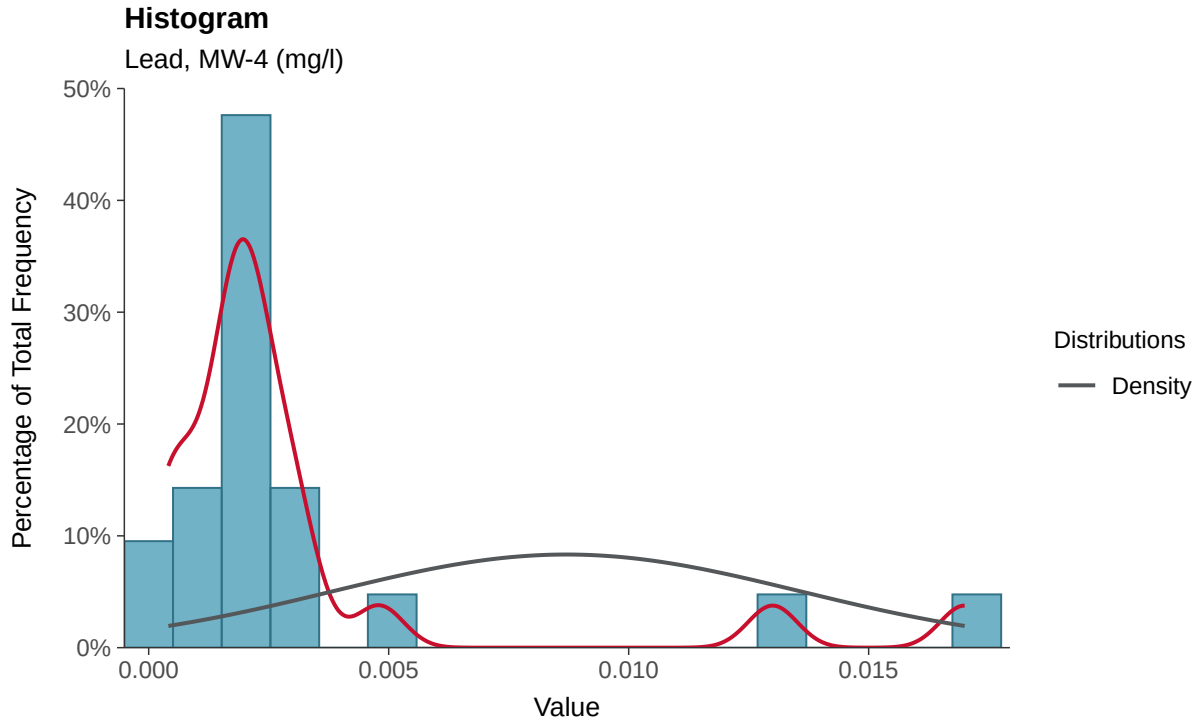
Fluoride (App IV), MW-4 (mg/l)



Appendix IV: Lead, MW-4

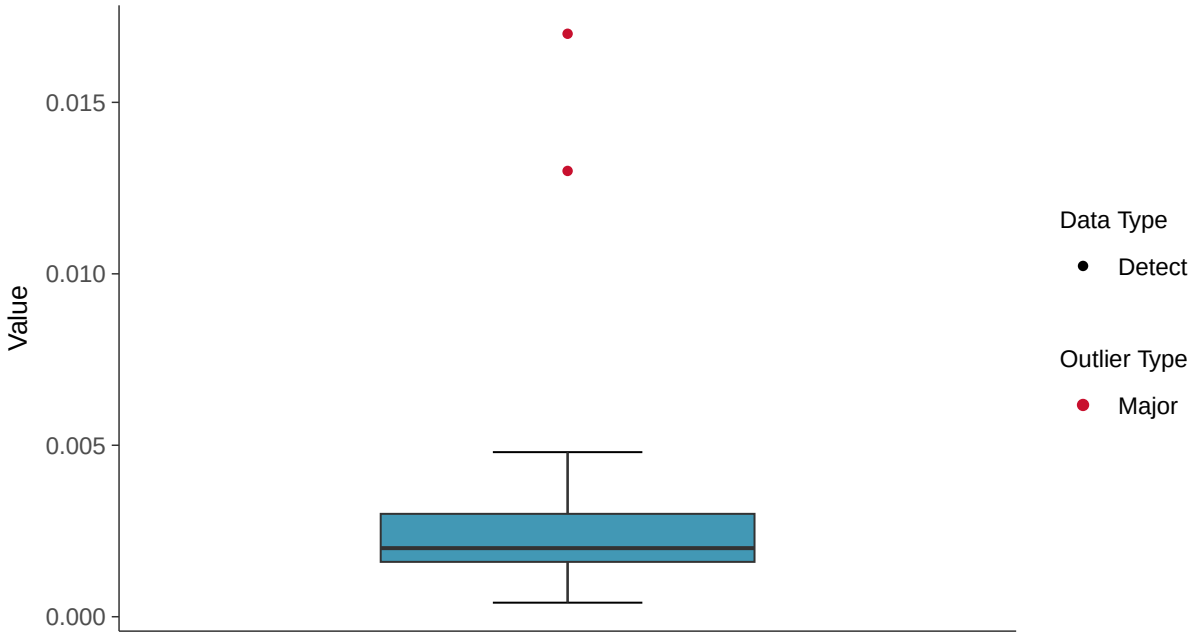
ID: 34_2_117





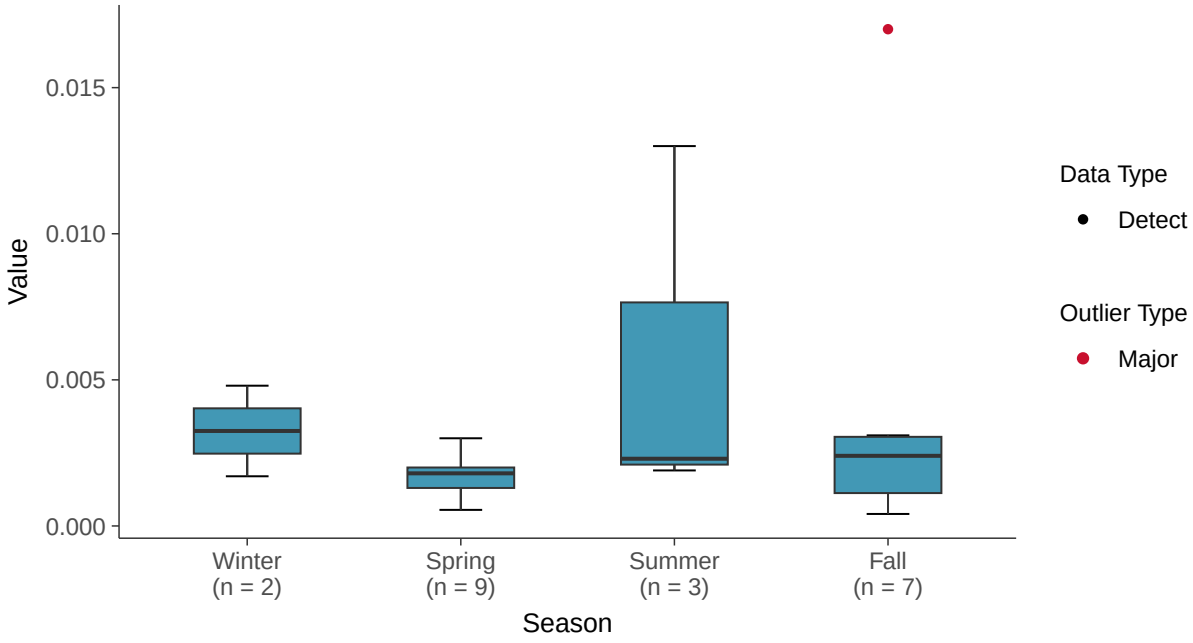
Boxplot

Lead, MW-4 (mg/l)



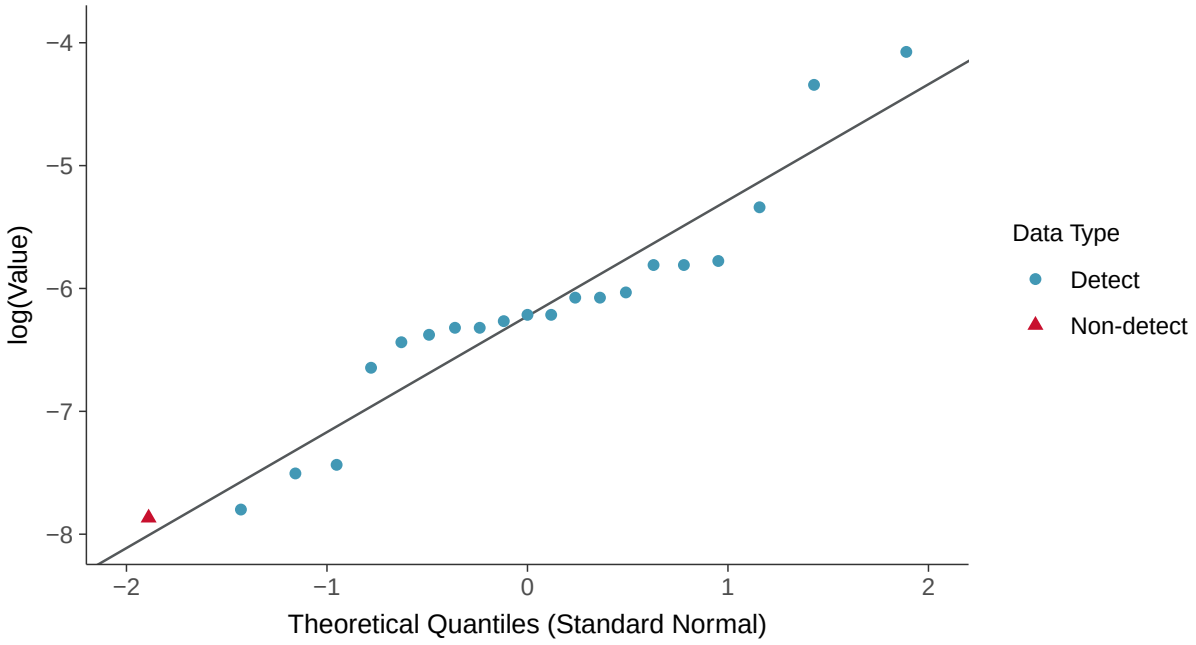
Boxplot by Season

Lead, MW-4 (mg/l)



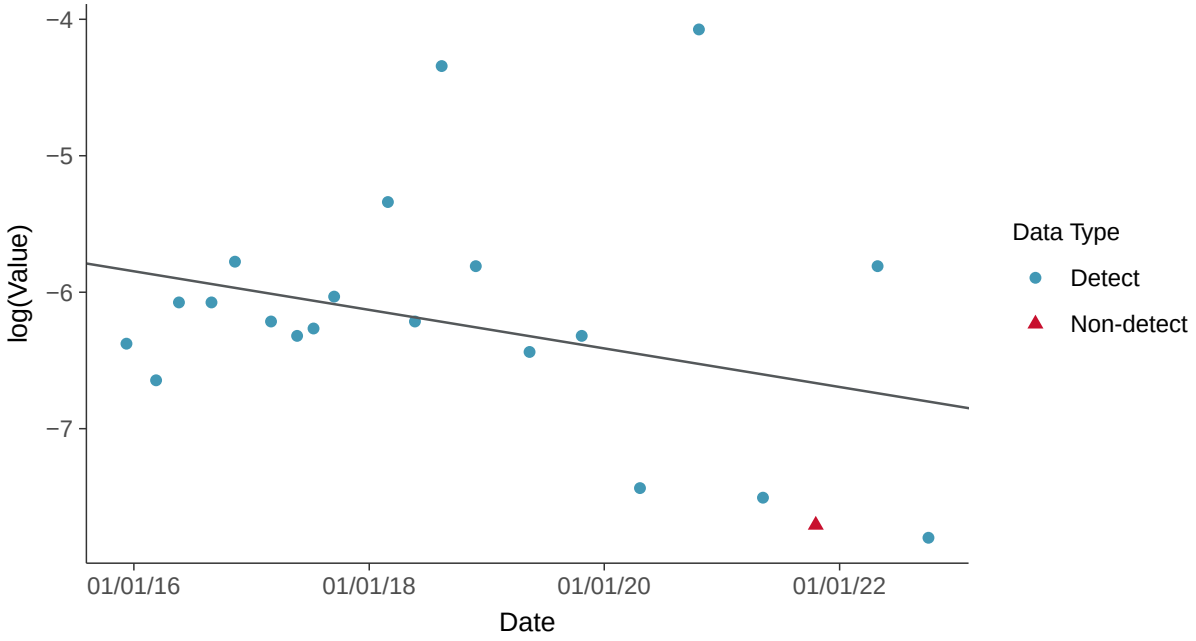
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-4 (mg/l)



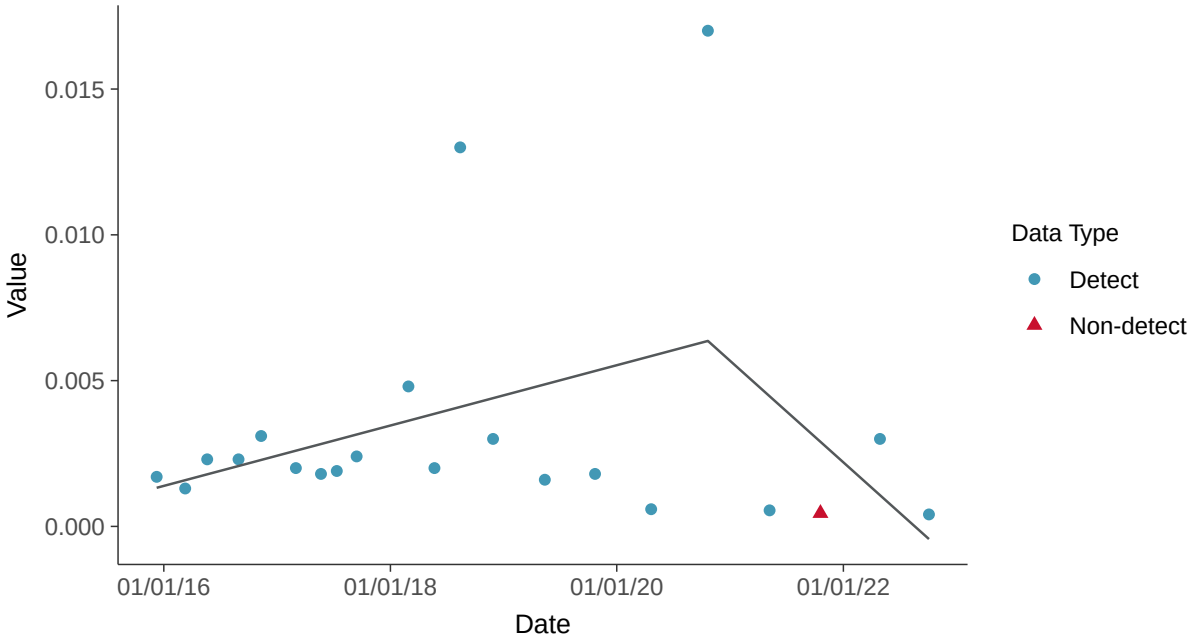
Trend Regression: Lognormal MLE

Lead, MW-4 (mg/l)



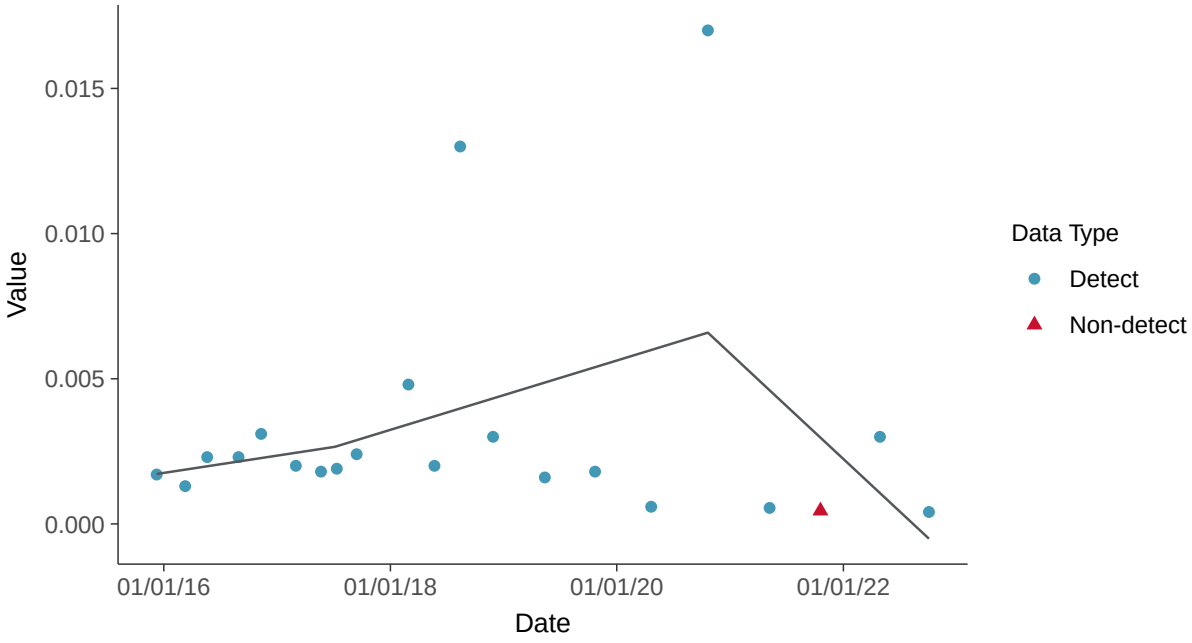
Trend Regression: Piecewise Linear-Linear

Lead, MW-4 (mg/l)



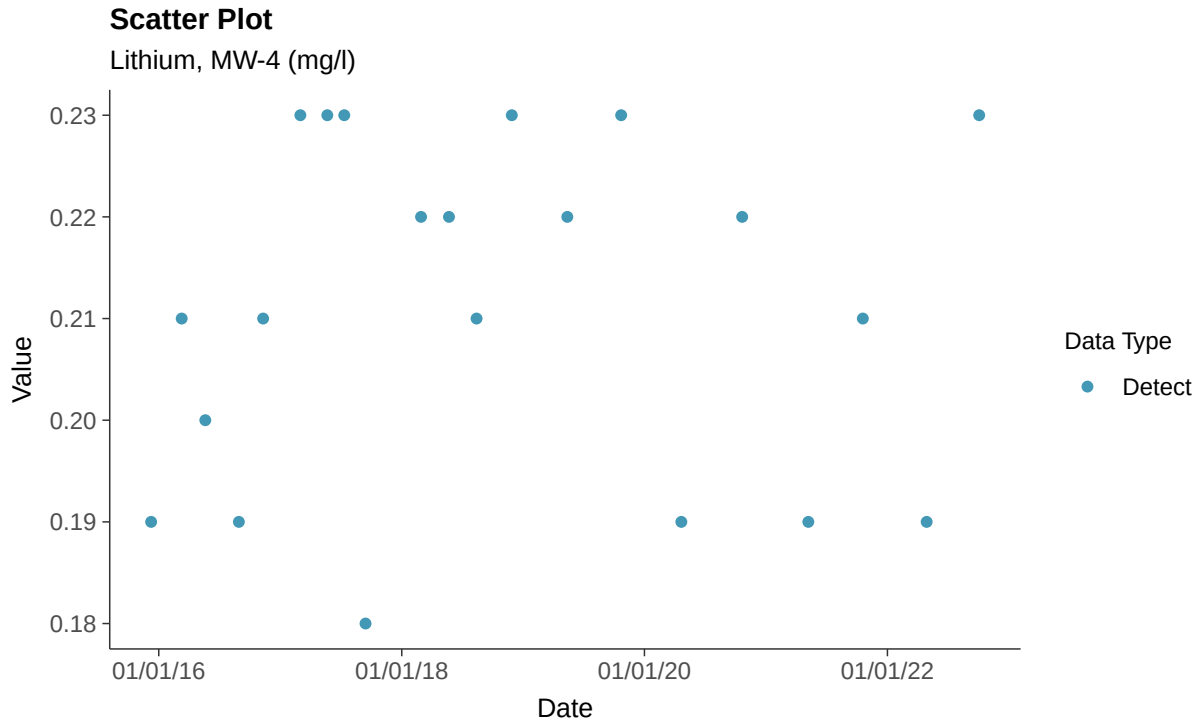
Trend Regression: Piecewise Linear-Linear-Linear

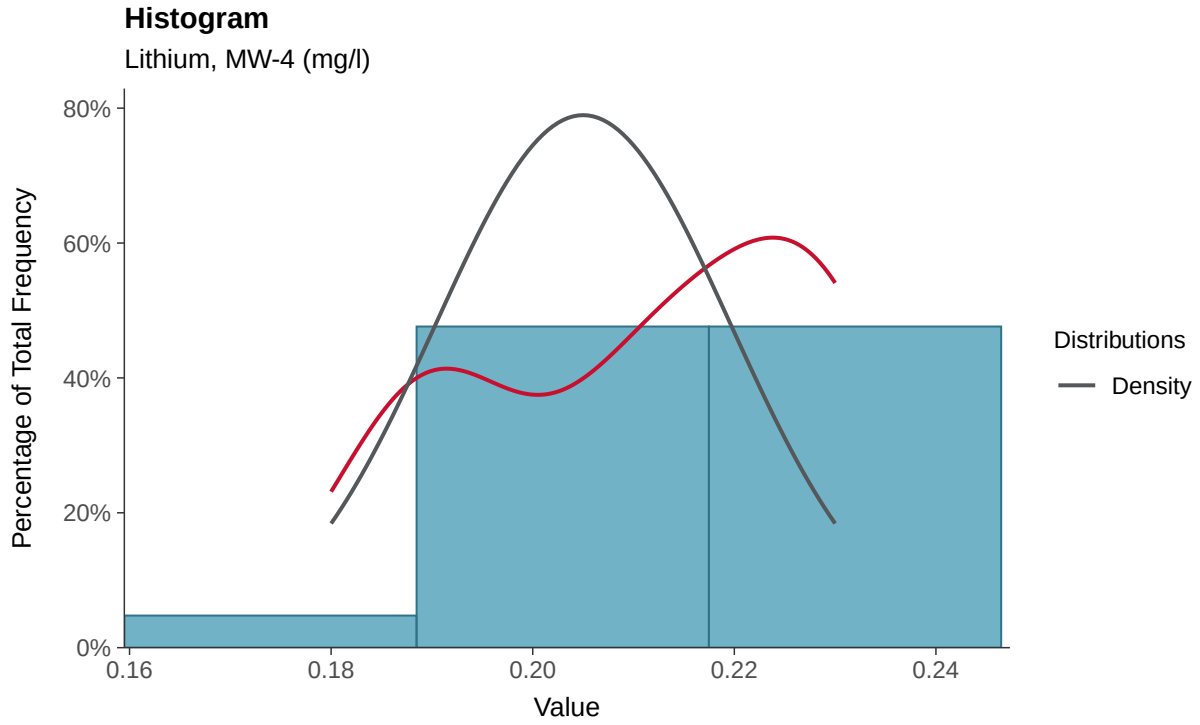
Lead, MW-4 (mg/l)



Appendix IV: Lithium, MW-4

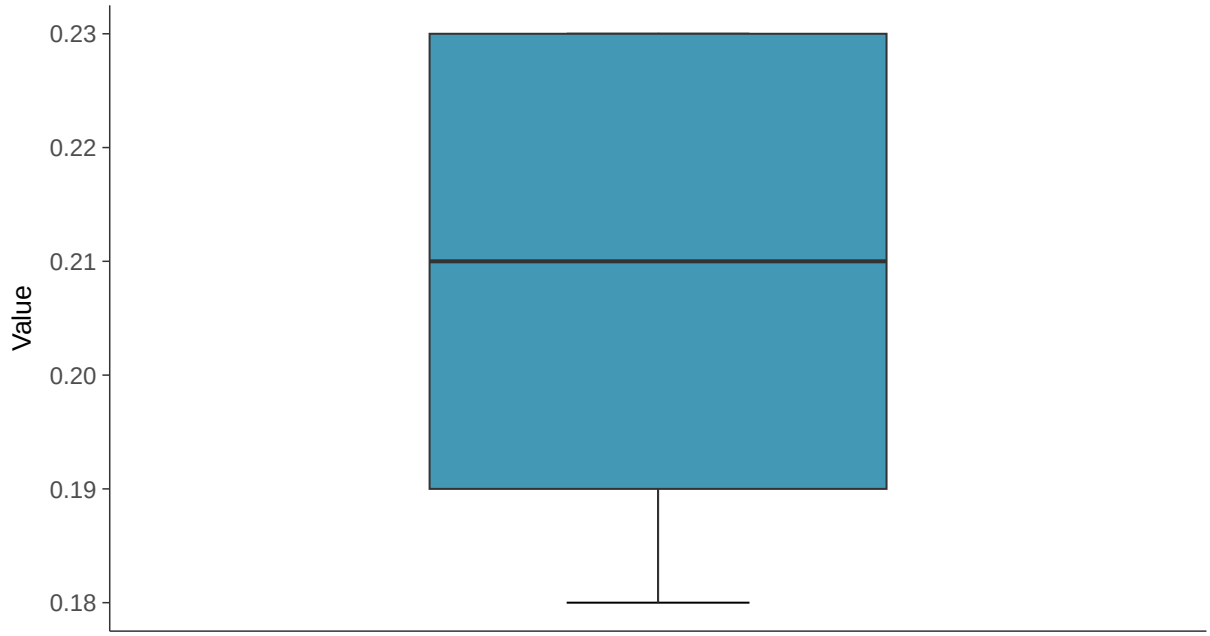
ID: 34_2_118





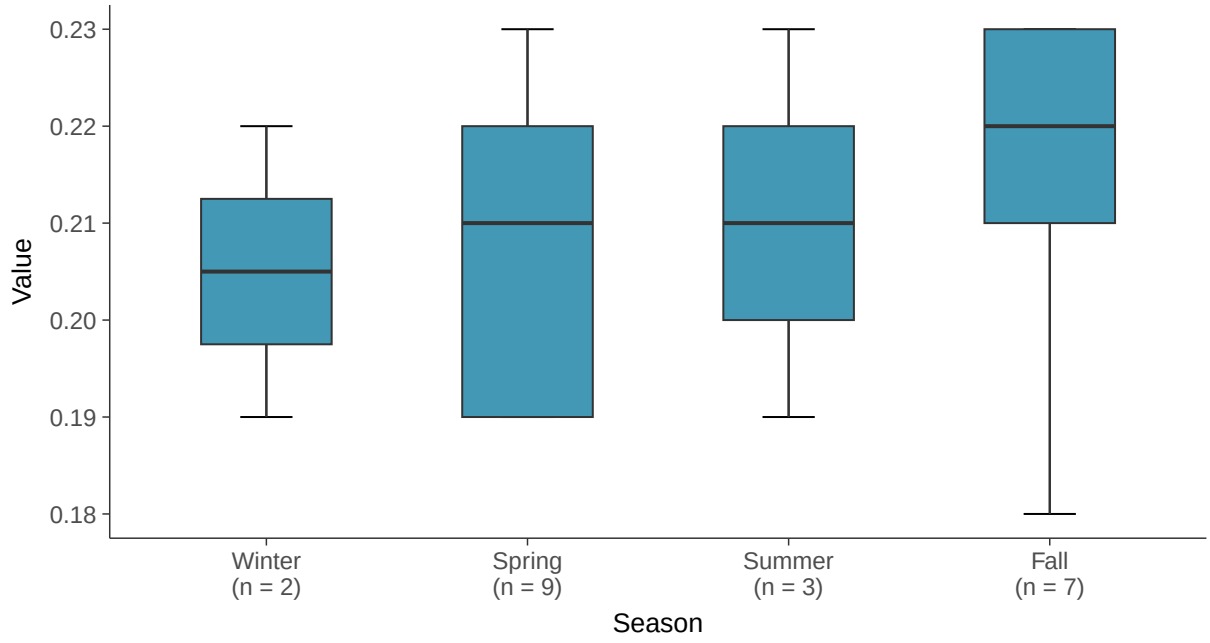
Boxplot

Lithium, MW-4 (mg/l)



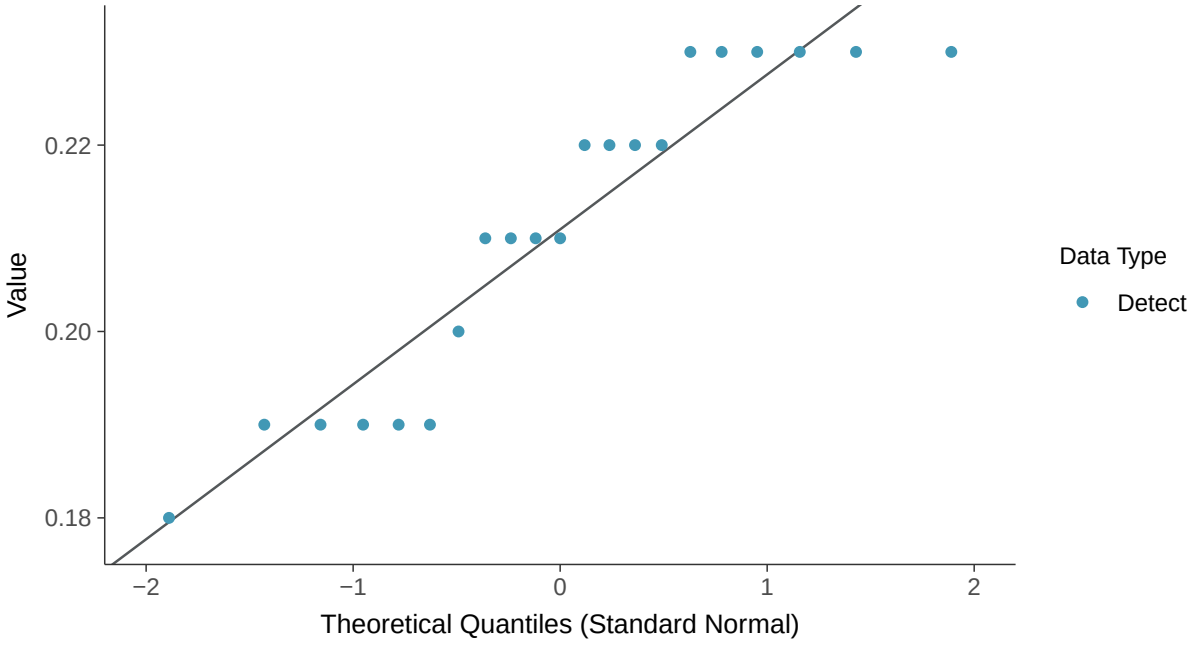
Boxplot by Season

Lithium, MW-4 (mg/l)



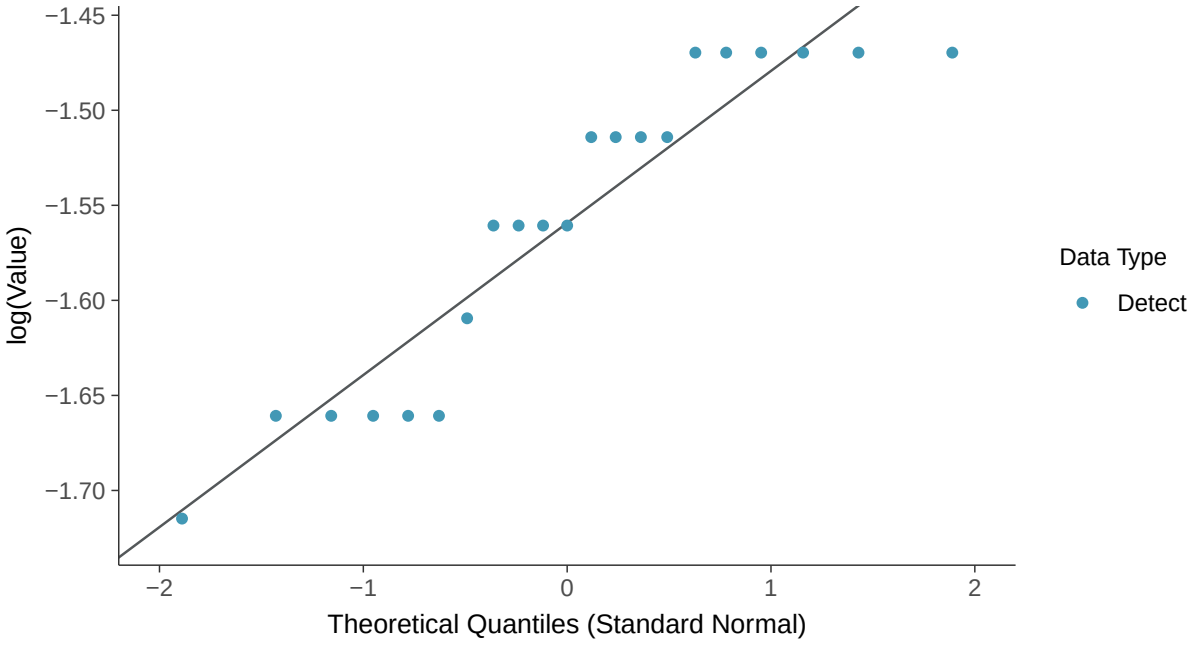
Normal Q-Q plot

Lithium, MW-4 (mg/l)



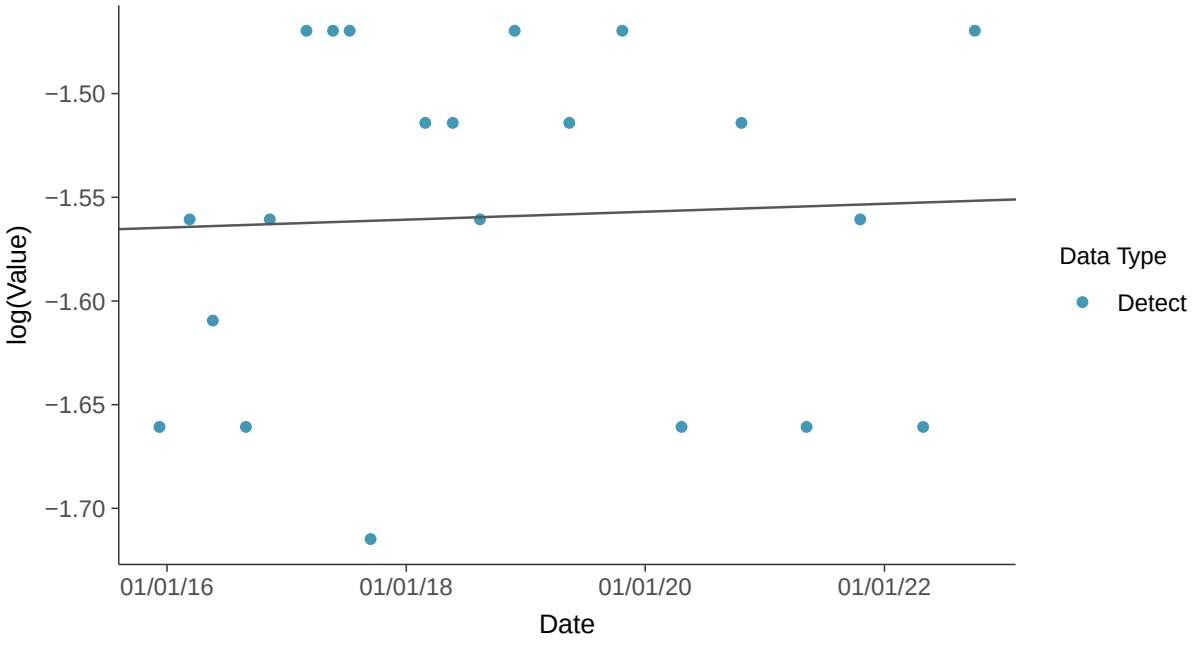
Lognormal Q-Q plot

Lithium, MW-4 (mg/l)



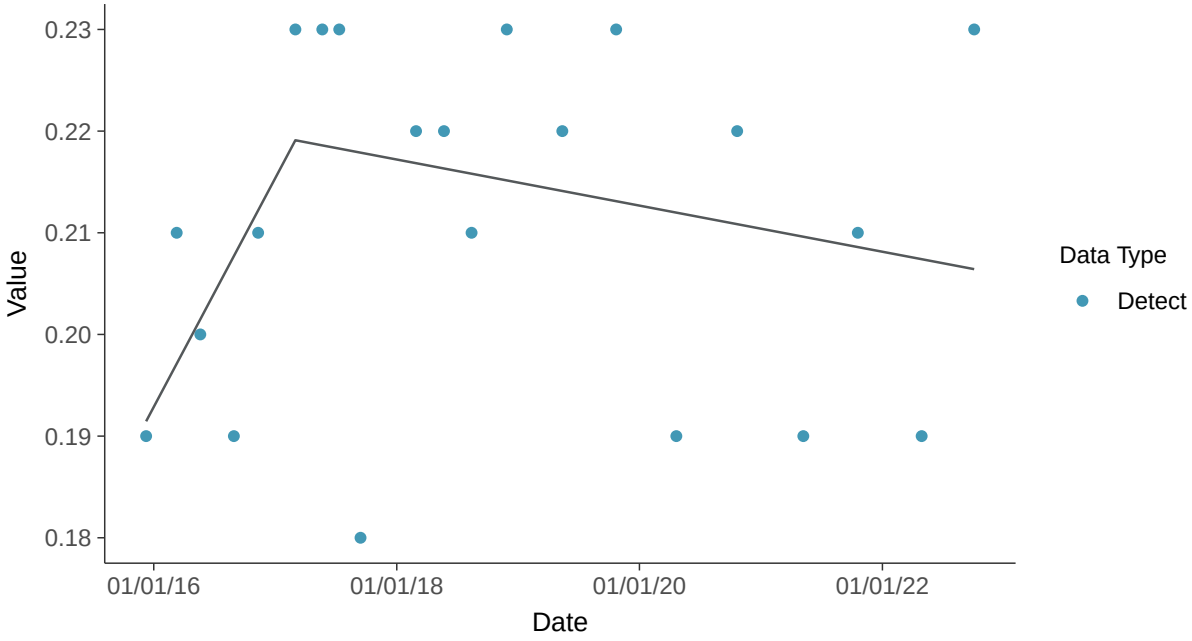
Trend Regression: Lognormal MLE

Lithium, MW-4 (mg/l)



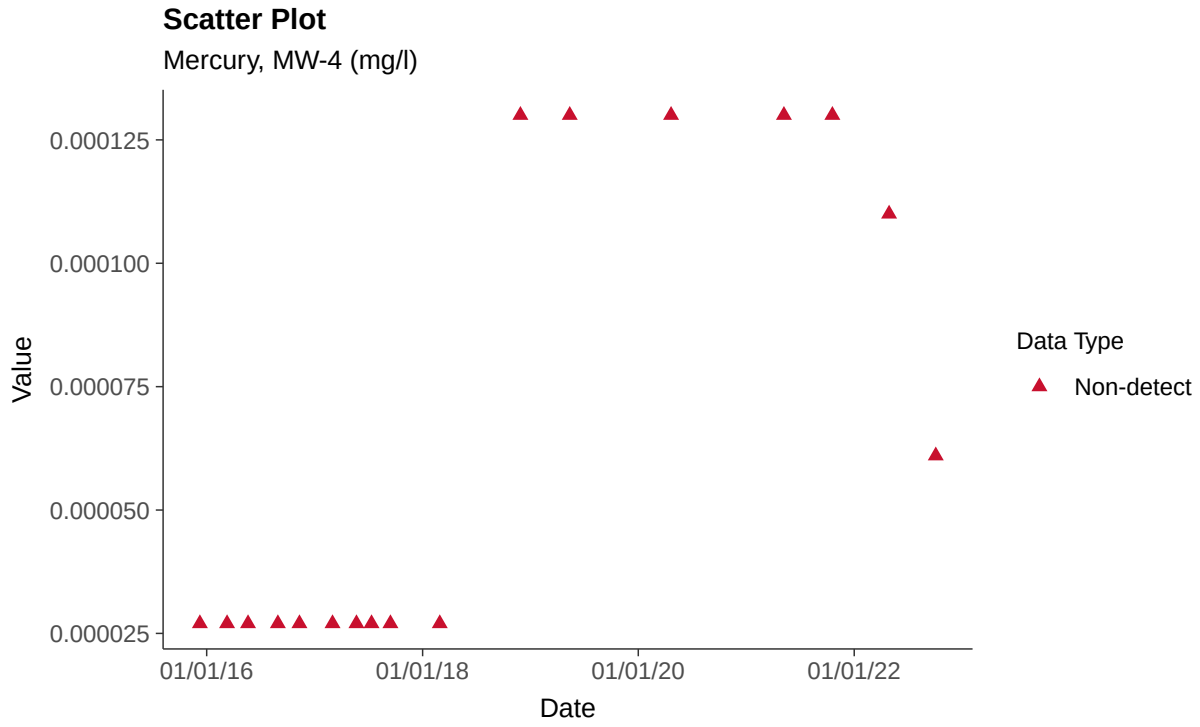
Trend Regression: Piecewise Linear-Linear

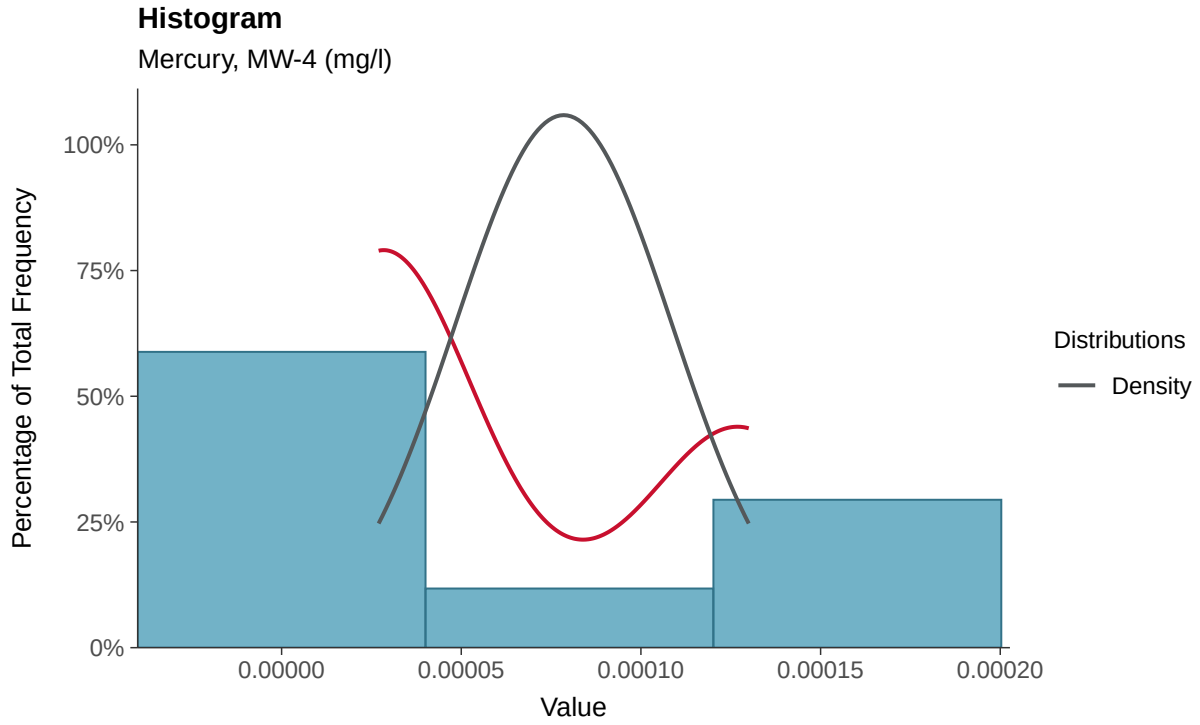
Lithium, MW-4 (mg/l)



Appendix IV: Mercury, MW-4

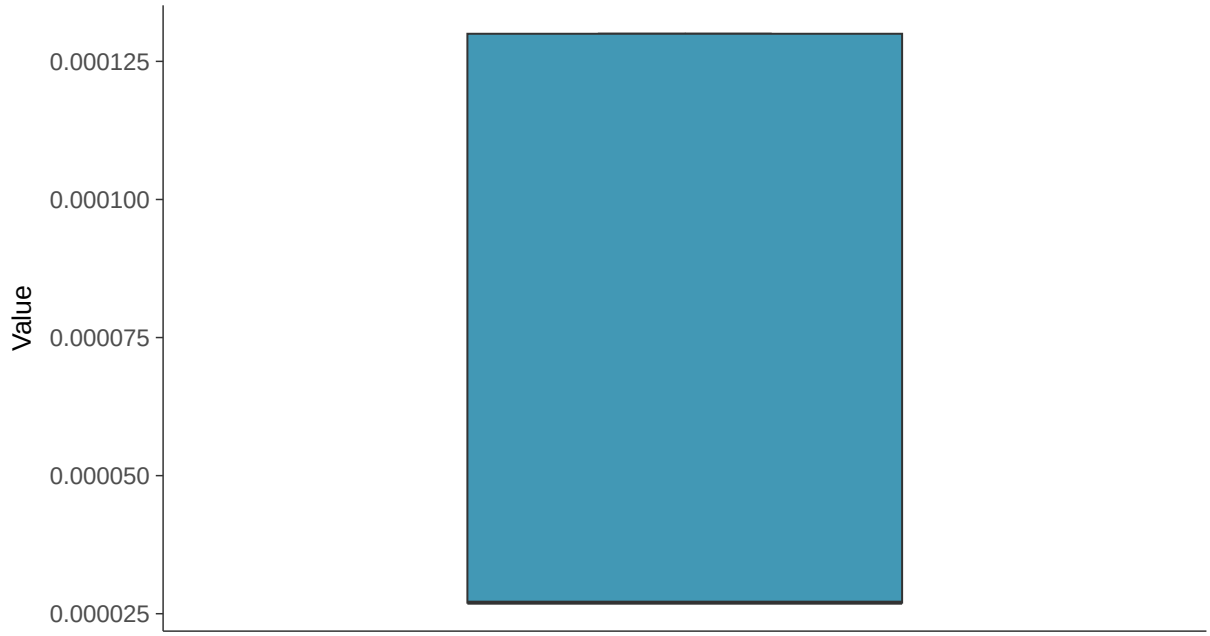
ID: 34_2_120





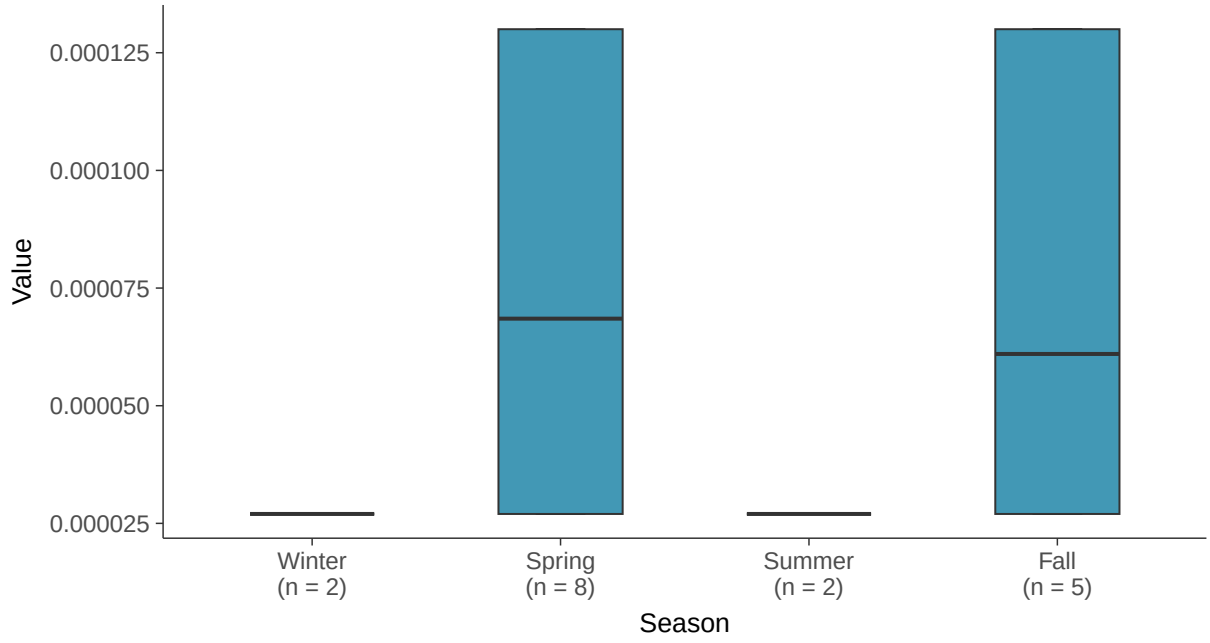
Boxplot

Mercury, MW-4 (mg/l)



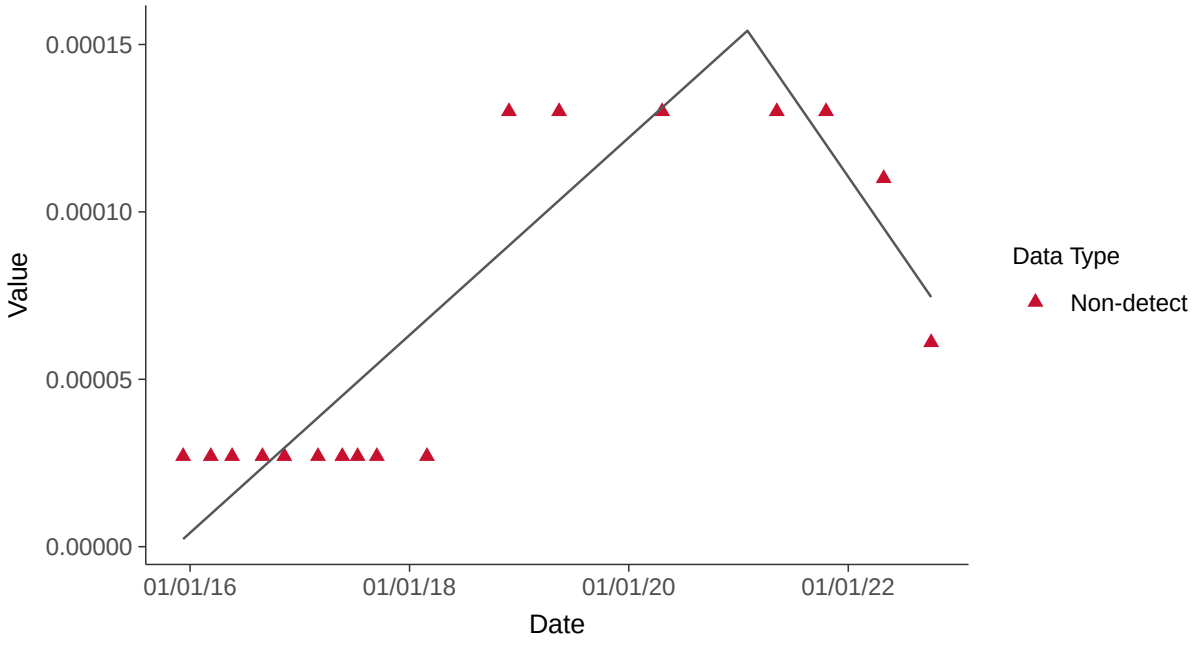
Boxplot by Season

Mercury, MW-4 (mg/l)



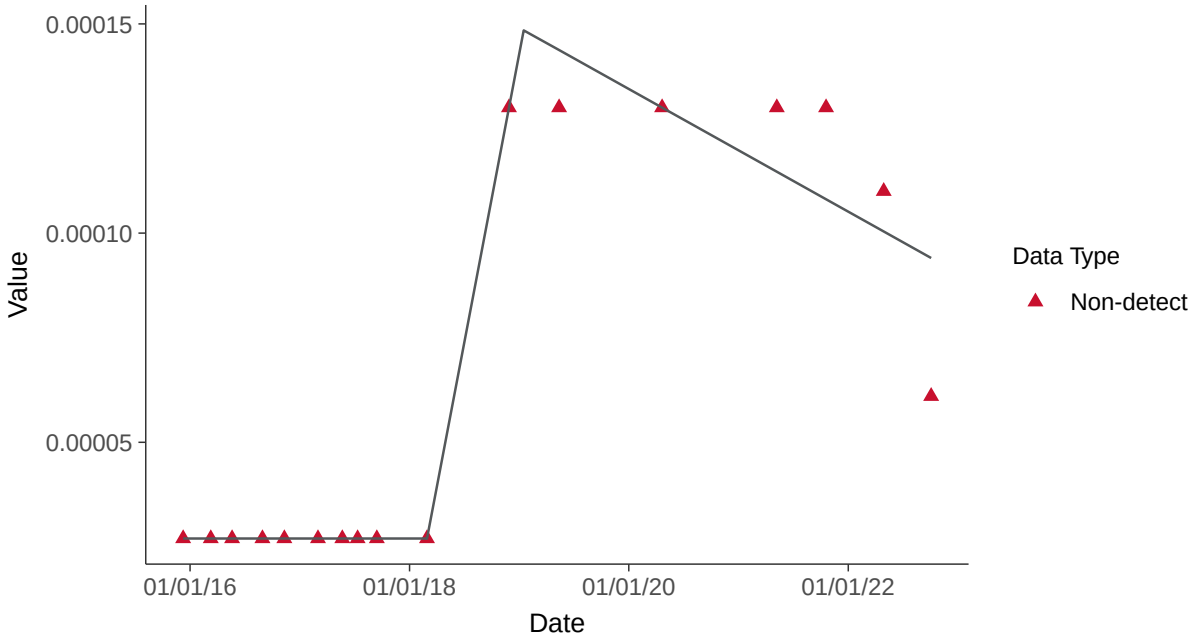
Trend Regression: Piecewise Linear-Linear

Mercury, MW-4 (mg/l)



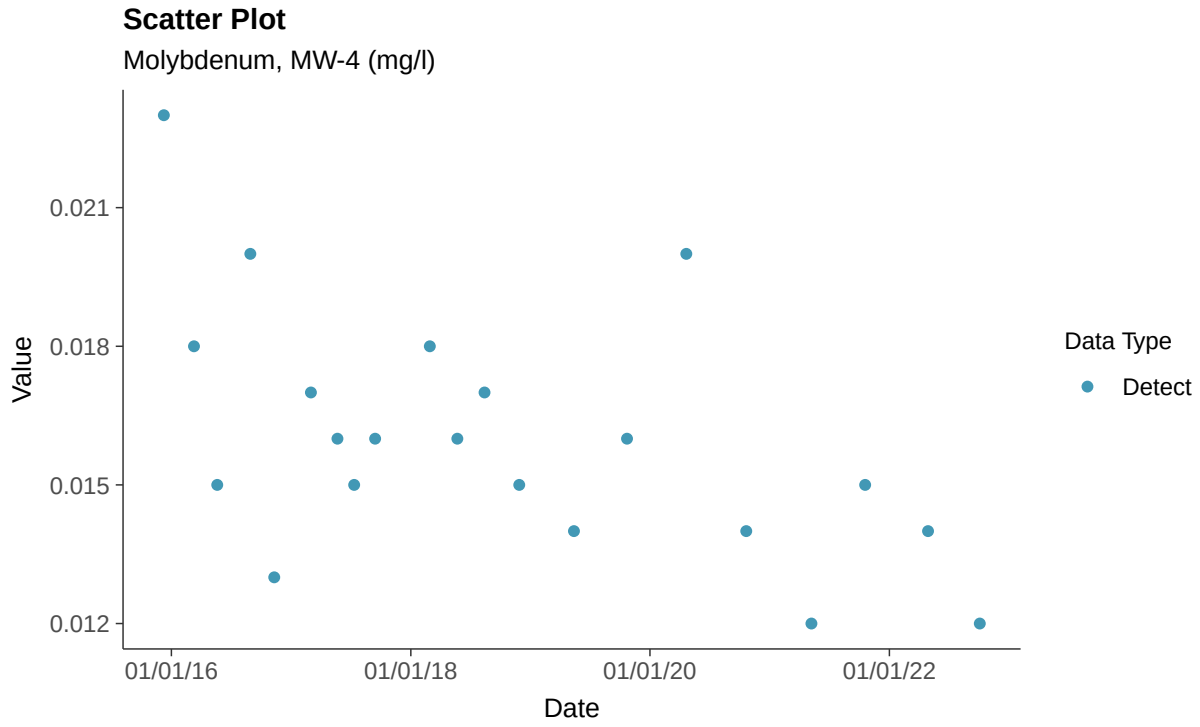
Trend Regression: Piecewise Linear-Linear-Linear

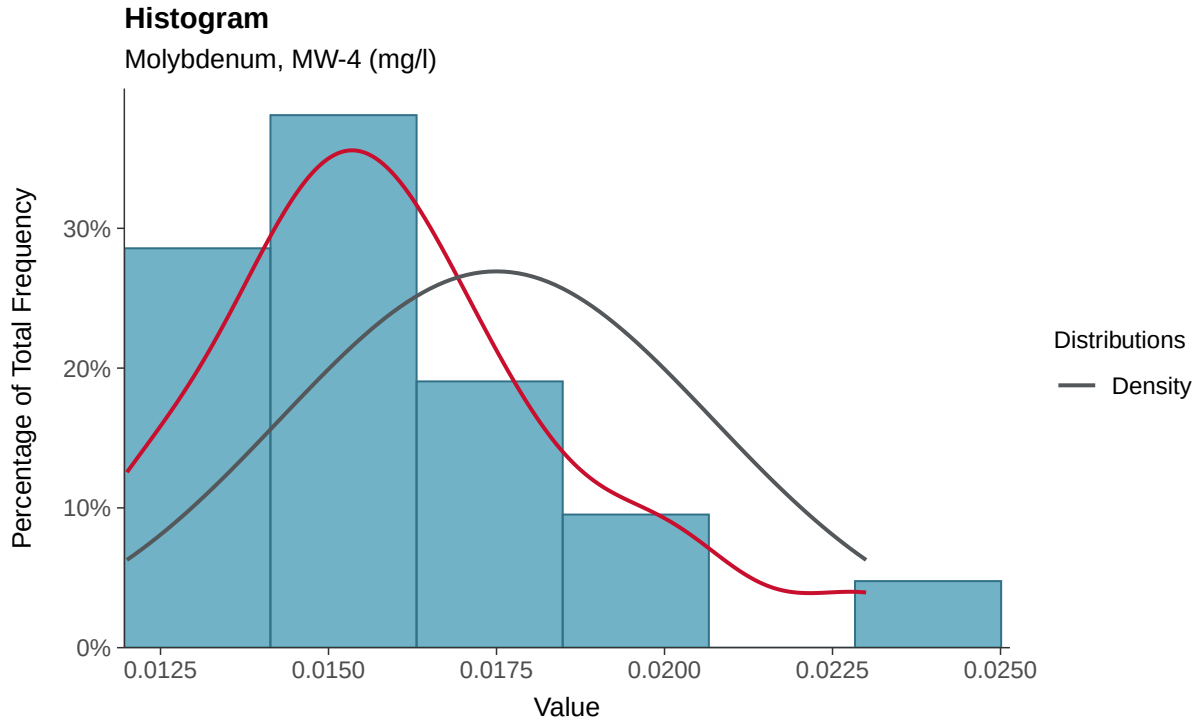
Mercury, MW-4 (mg/l)



Appendix IV: Molybdenum, MW-4

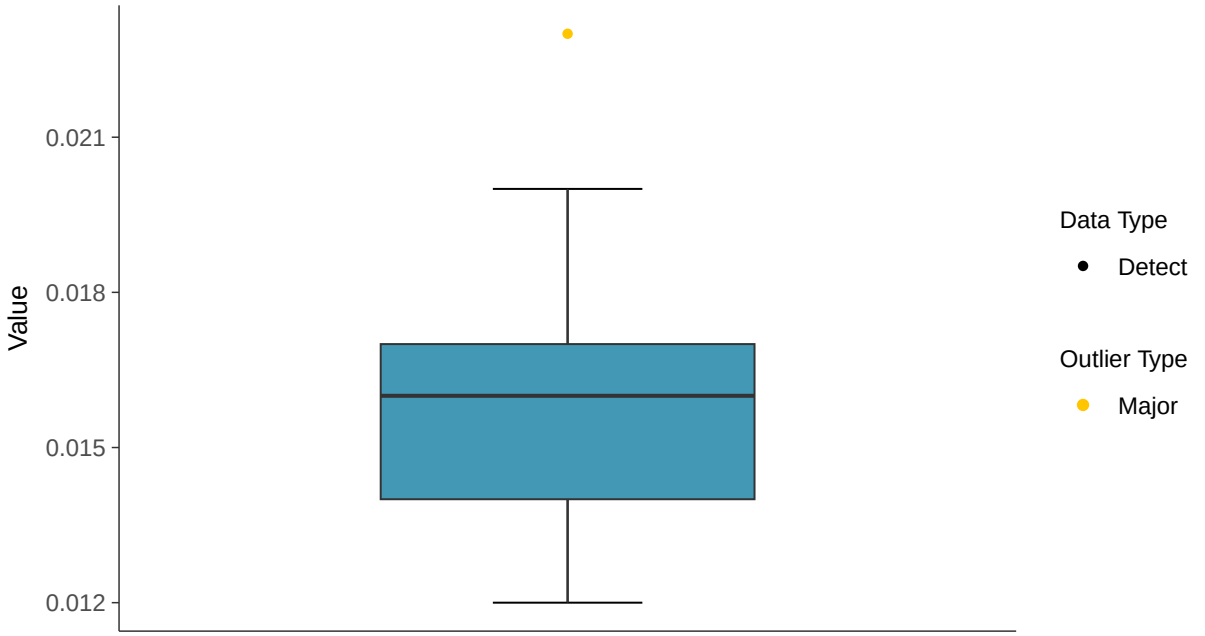
ID: 34_2_121





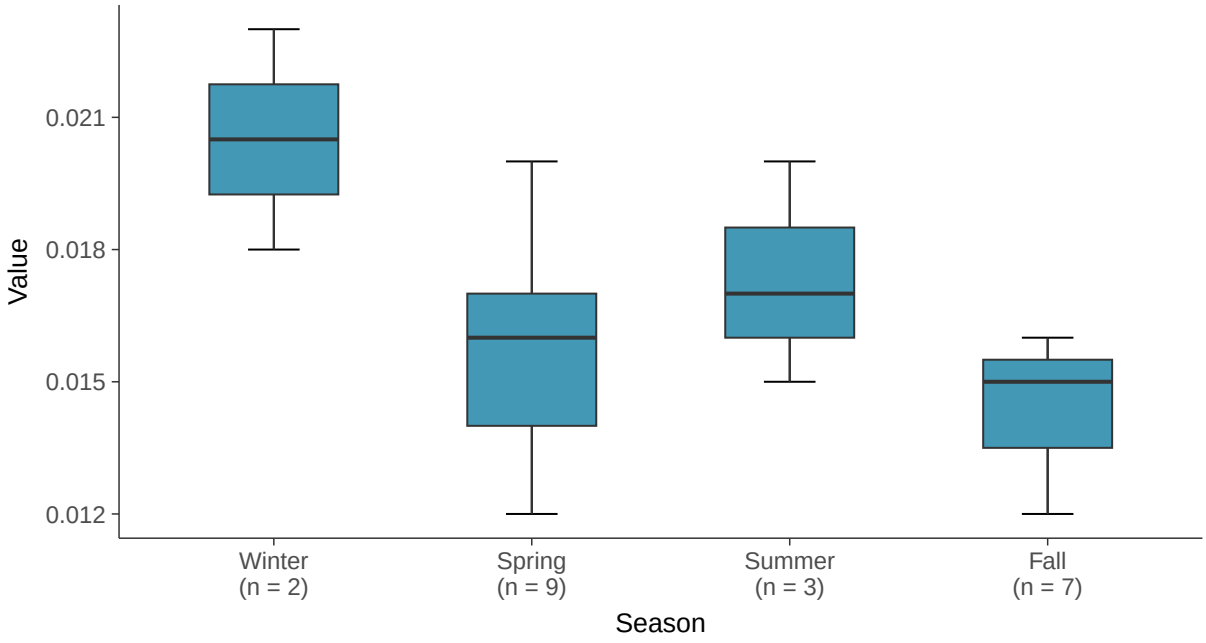
Boxplot

Molybdenum, MW-4 (mg/l)



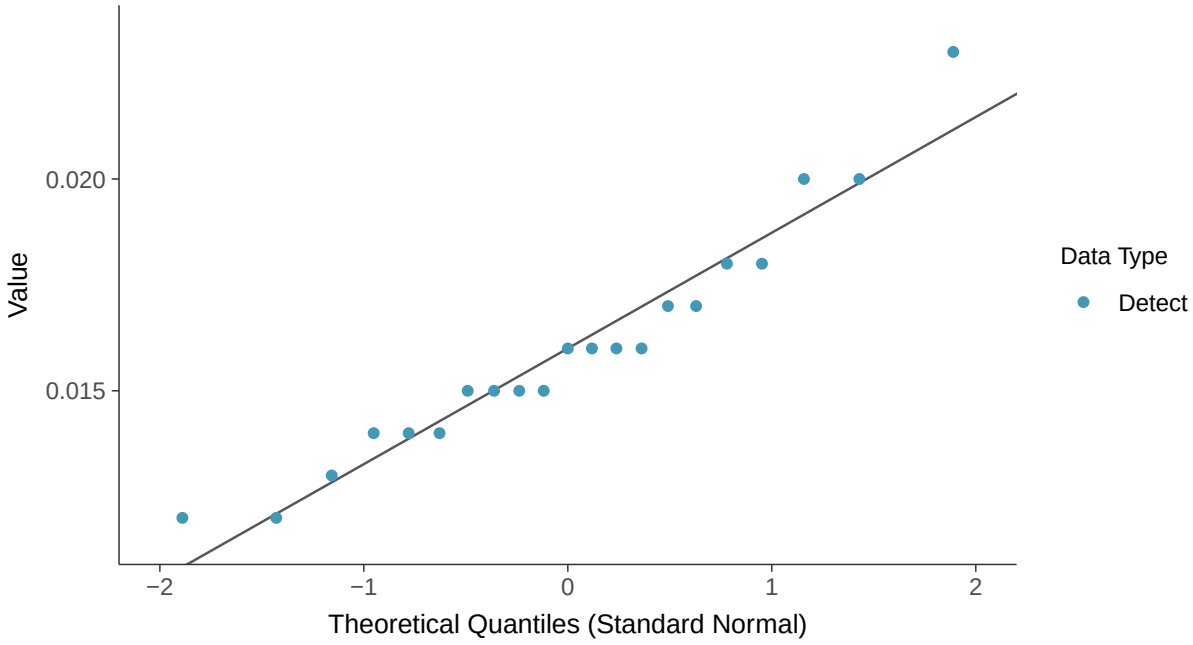
Boxplot by Season

Molybdenum, MW-4 (mg/l)



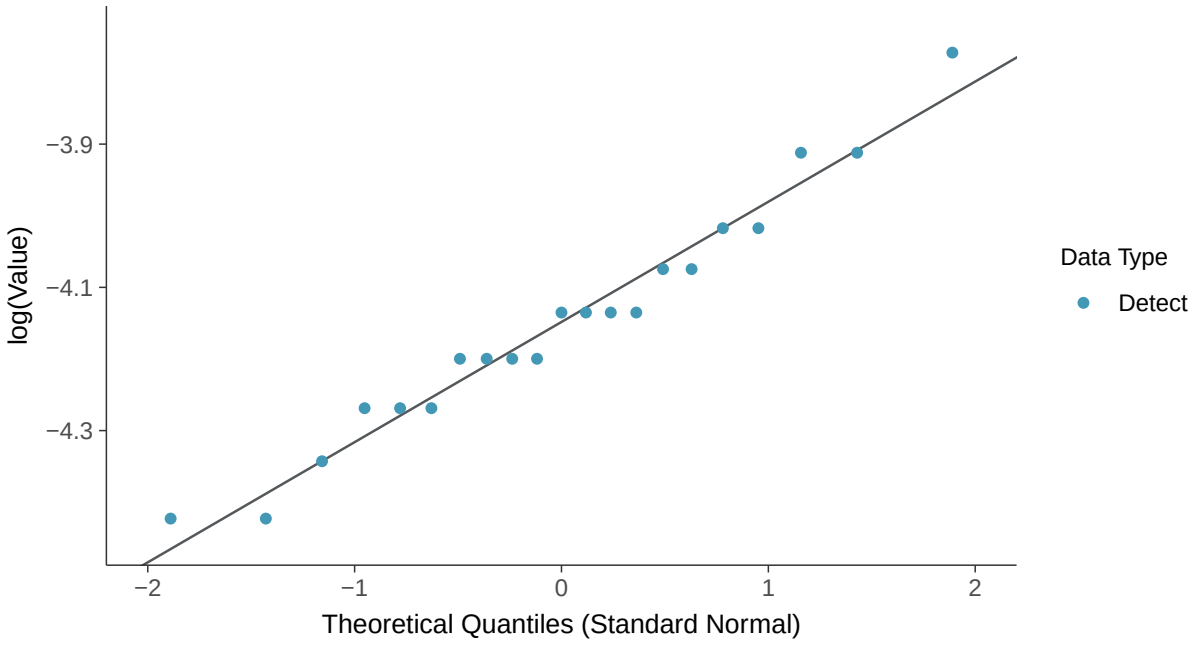
Normal Q-Q plot

Molybdenum, MW-4 (mg/l)



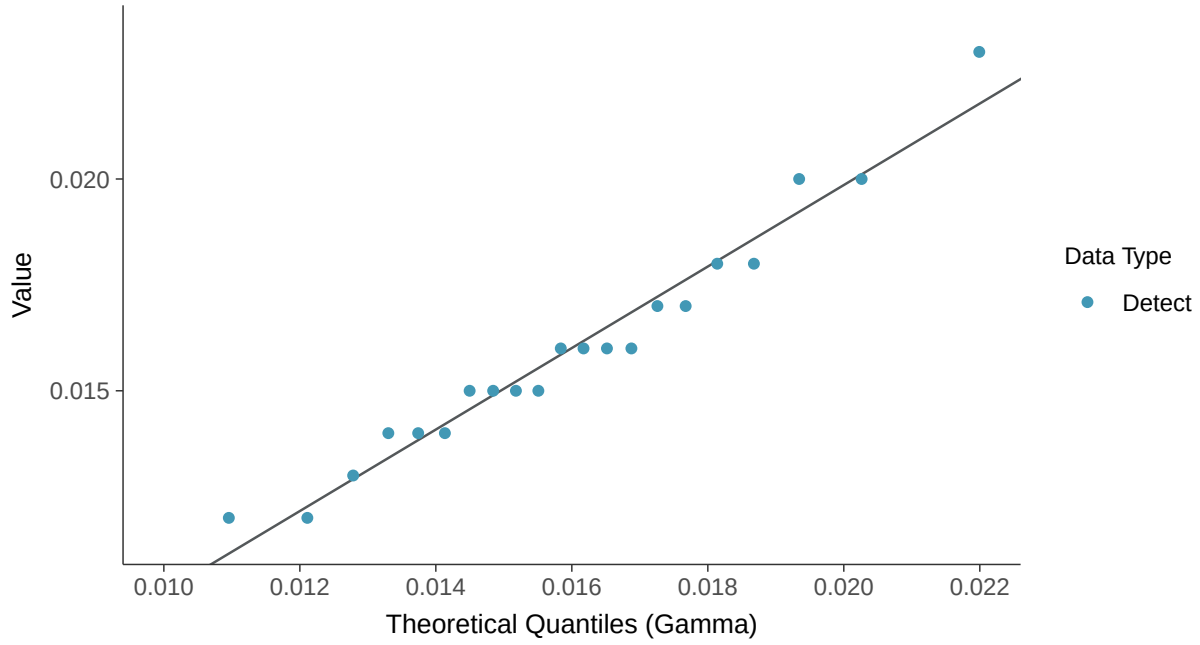
Lognormal Q-Q plot

Molybdenum, MW-4 (mg/l)



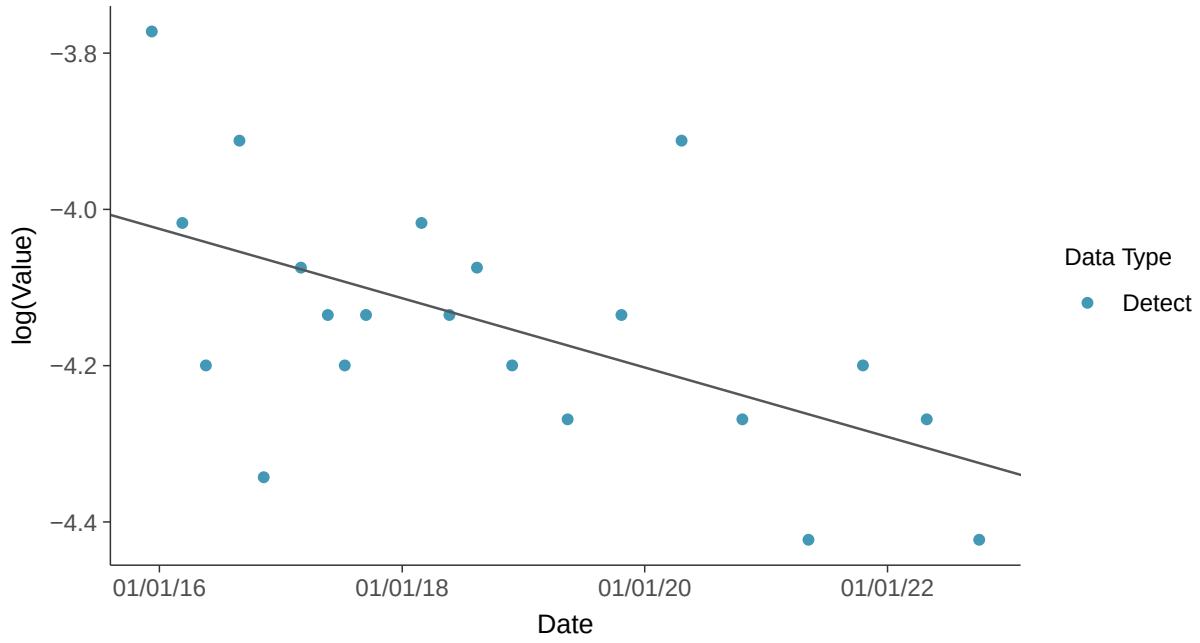
Gamma Q-Q plot

Molybdenum, MW-4 (mg/l)



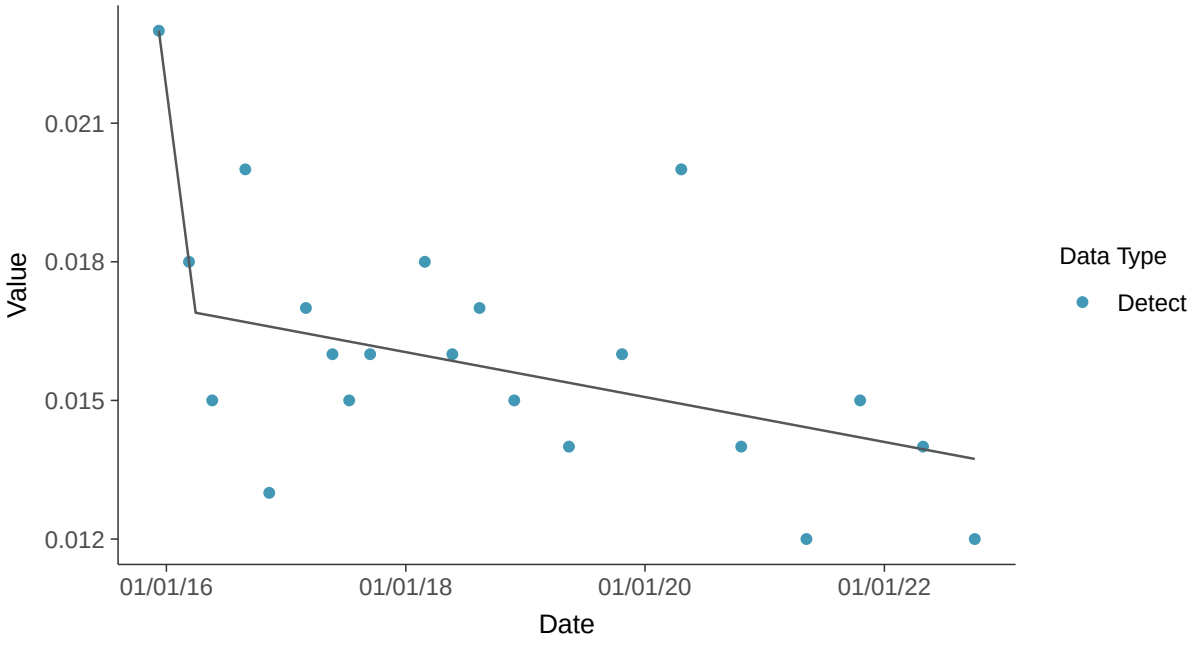
Trend Regression: Lognormal MLE

Molybdenum, MW-4 (mg/l)



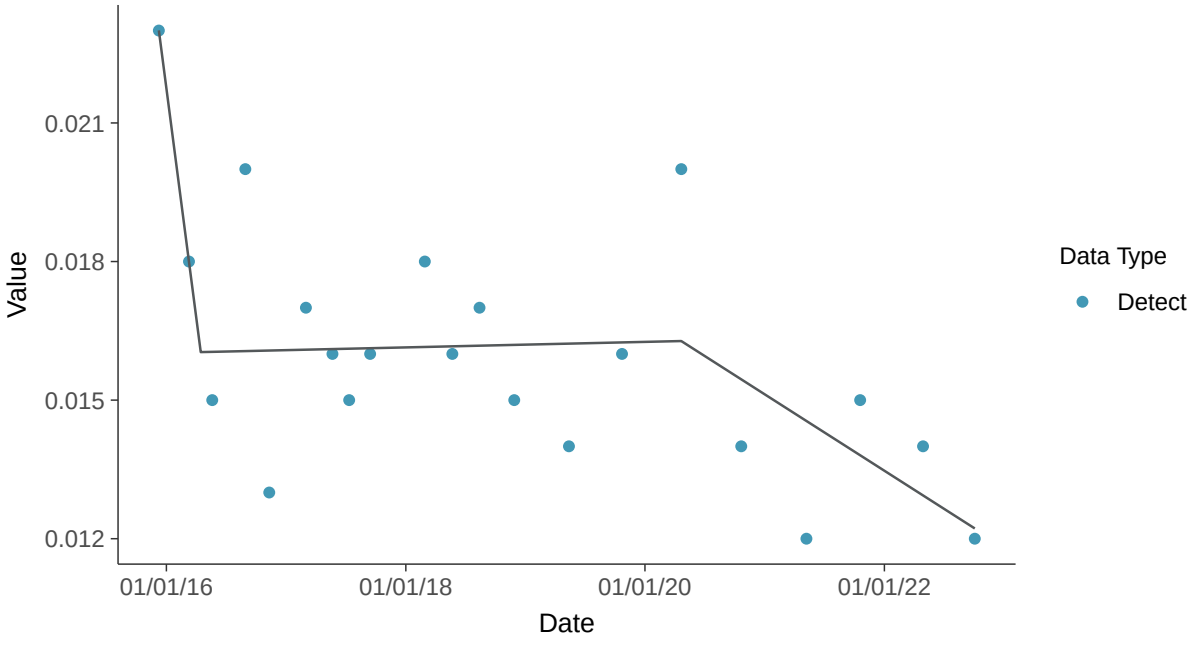
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-4 (mg/l)



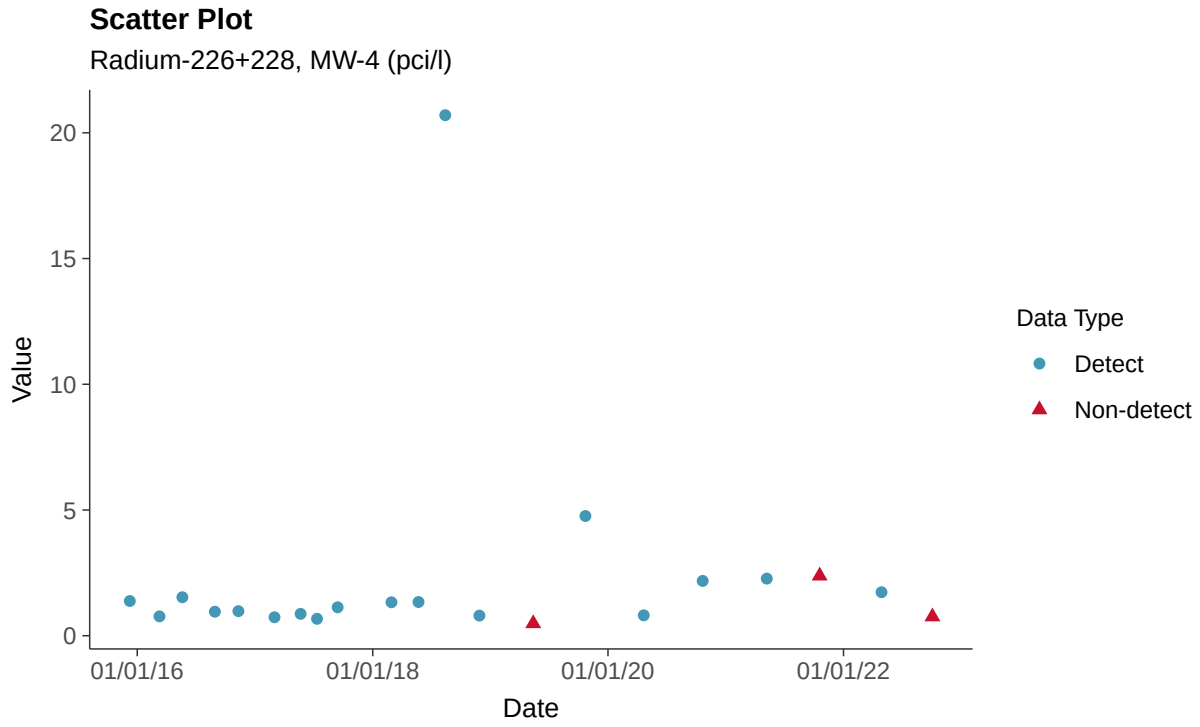
Trend Regression: Piecewise Linear-Linear-Linear

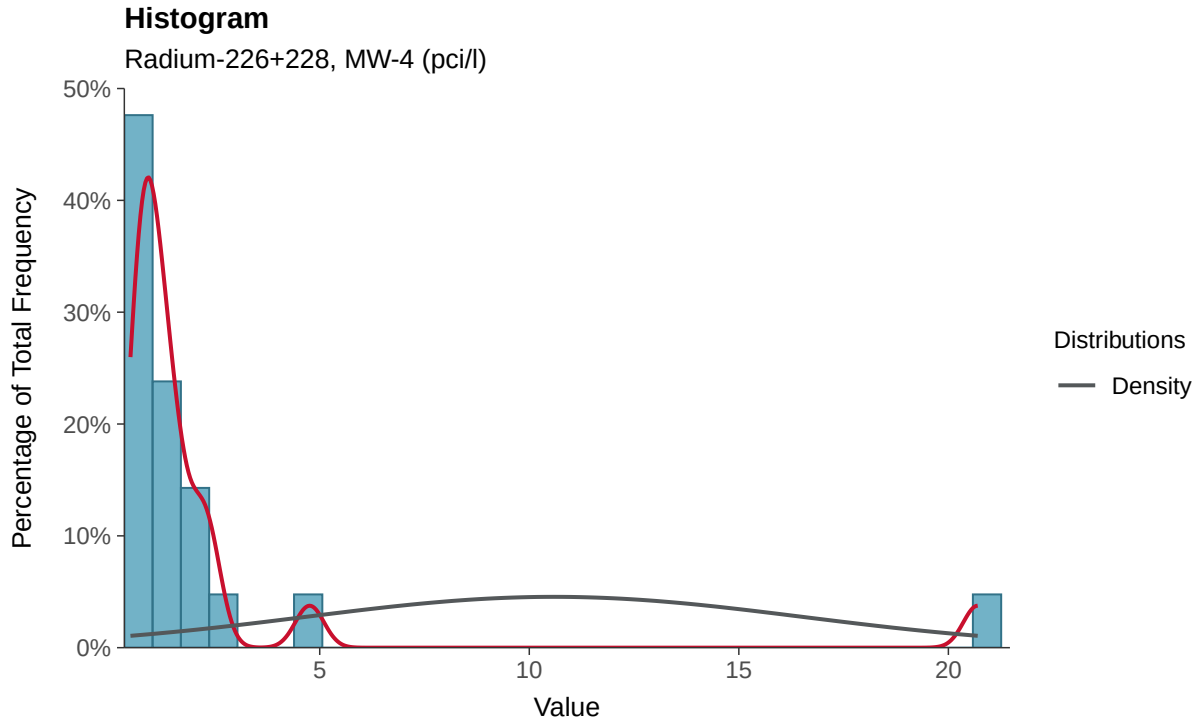
Molybdenum, MW-4 (mg/l)



Appendix IV: Radium-226+228, MW-4

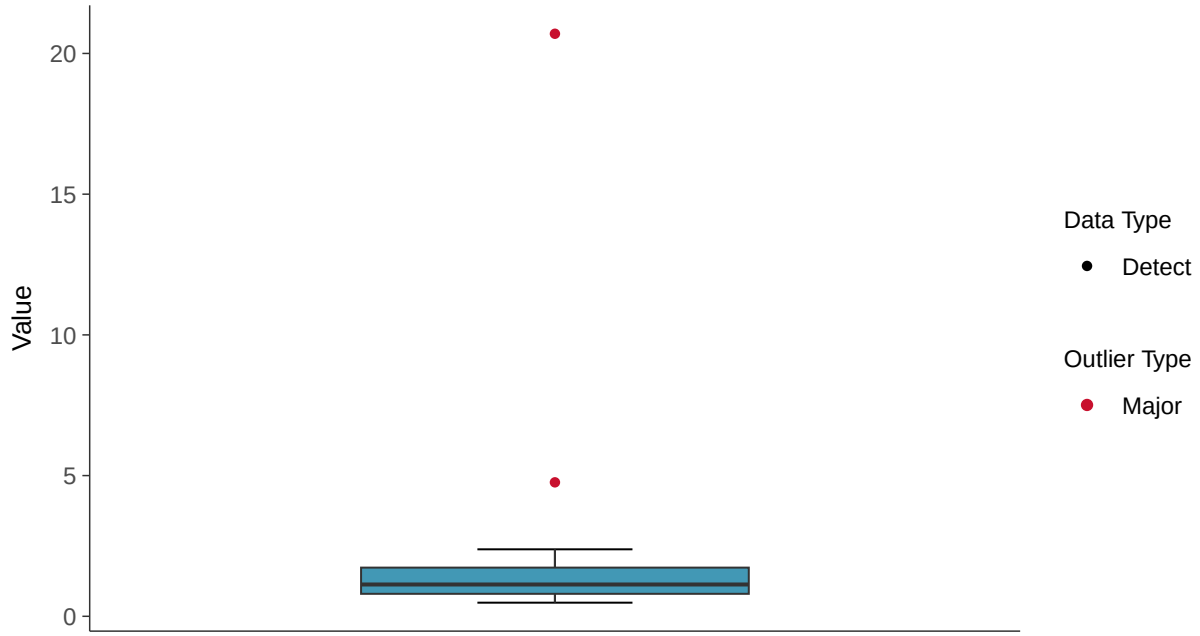
ID: 34_2_127





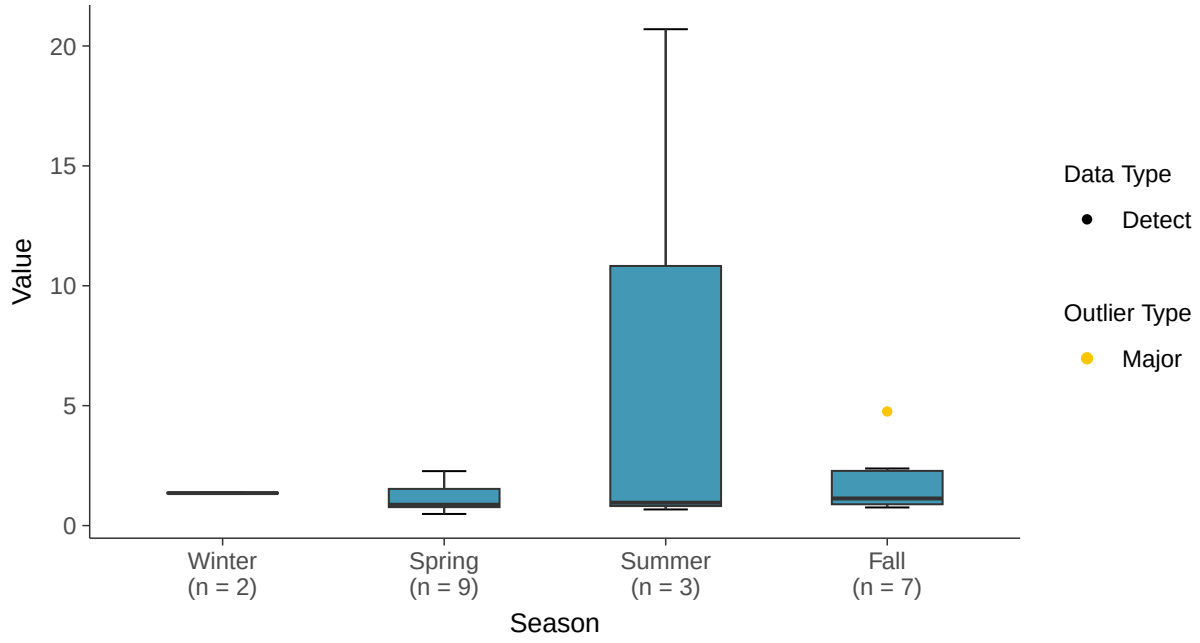
Boxplot

Radium-226+228, MW-4 (pci/l)



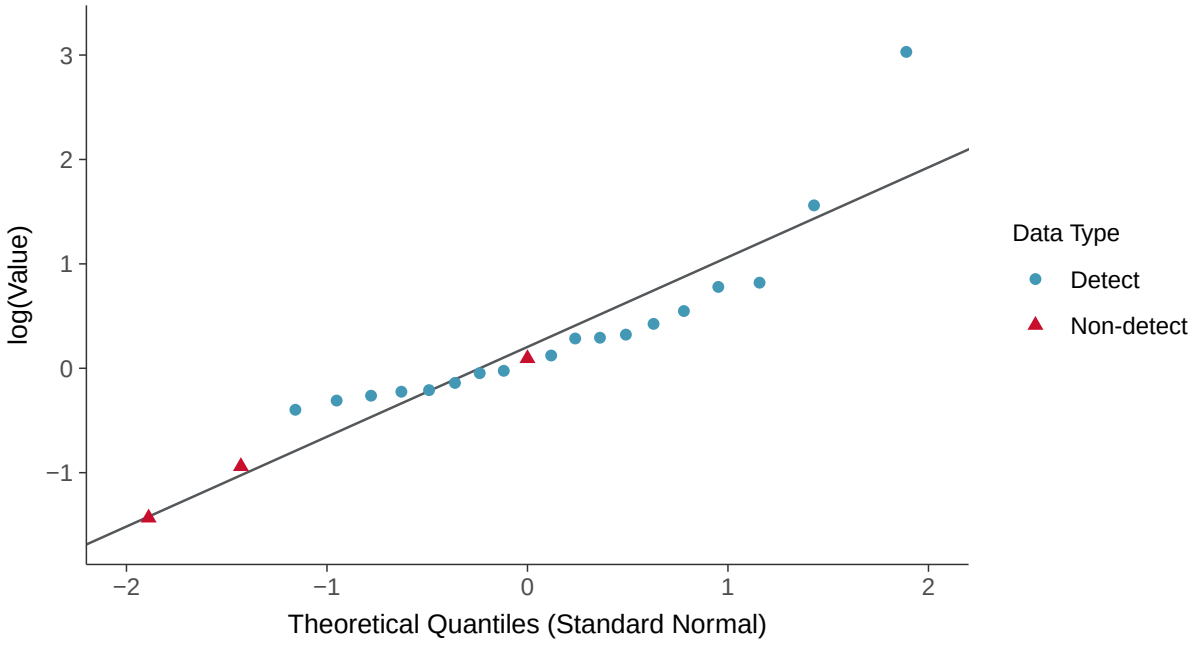
Boxplot by Season

Radium-226+228, MW-4 (pci/l)



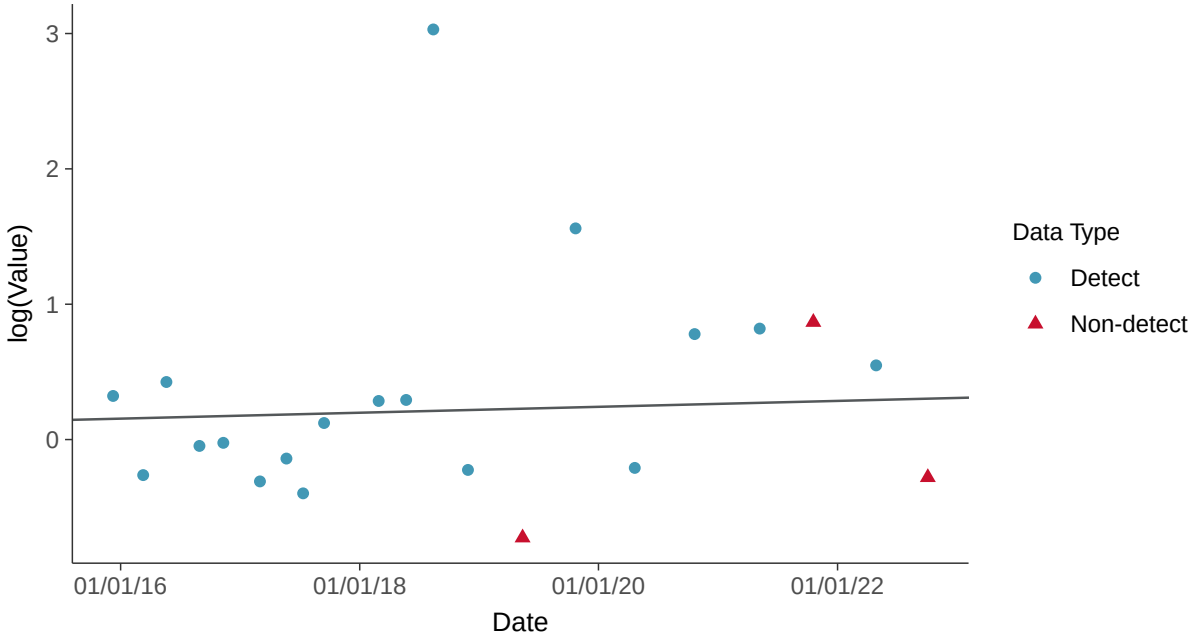
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-4 (pci/l)



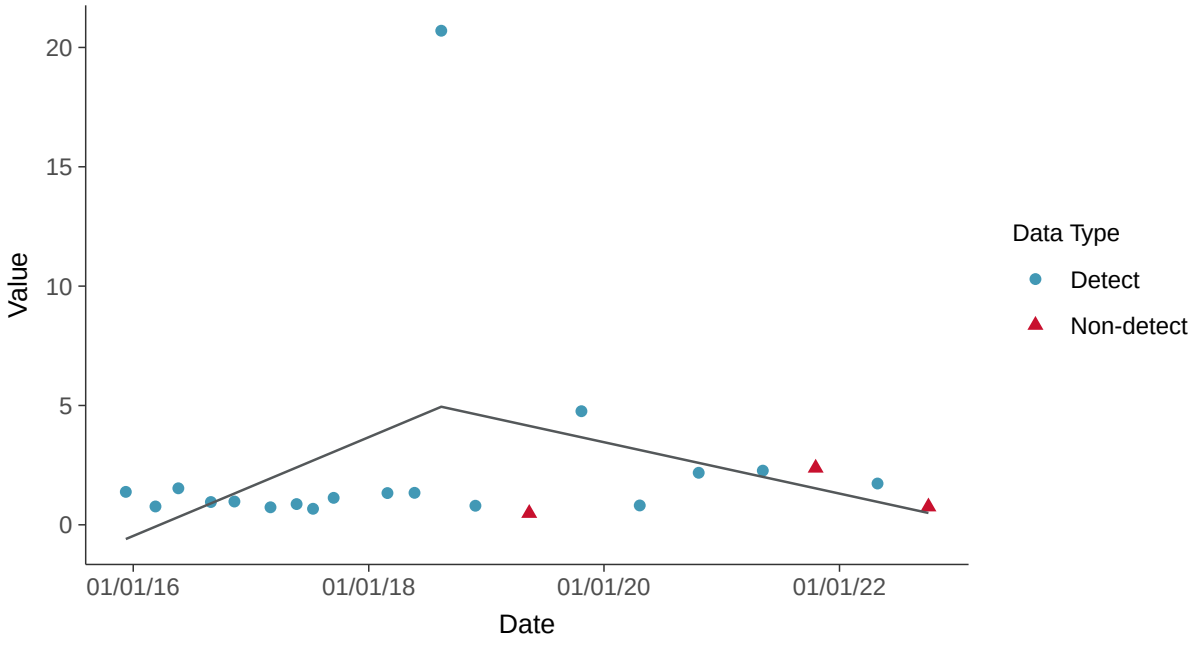
Trend Regression: Lognormal MLE

Radium-226+228, MW-4 (pci/l)



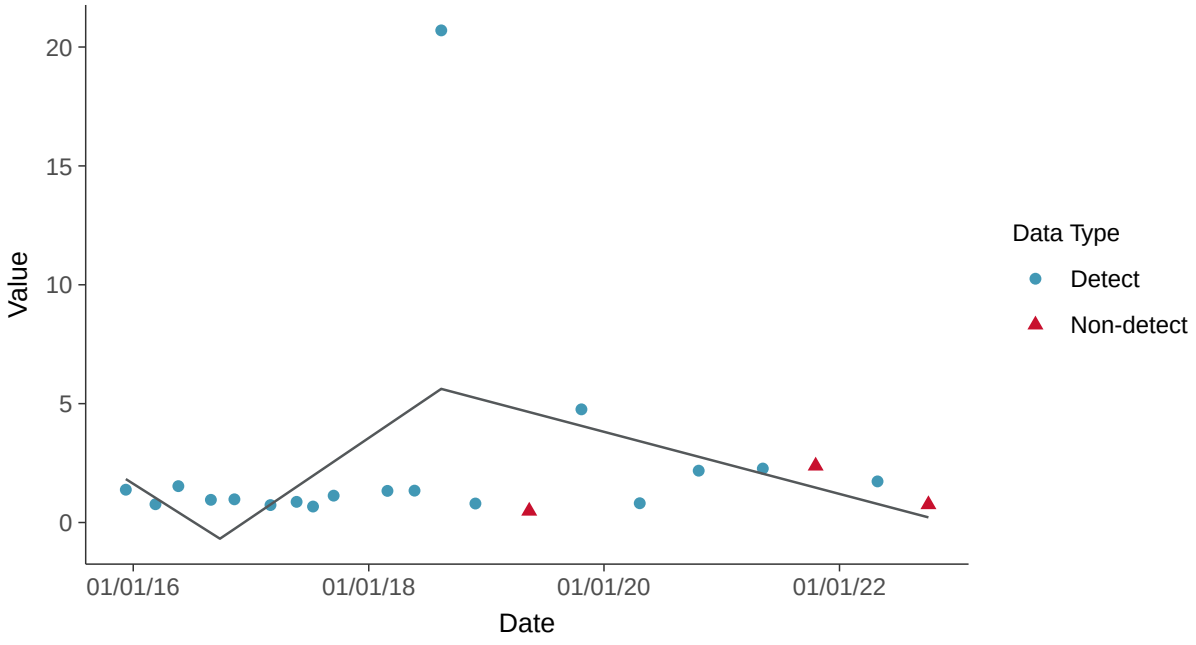
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-4 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-4 (pci/l)

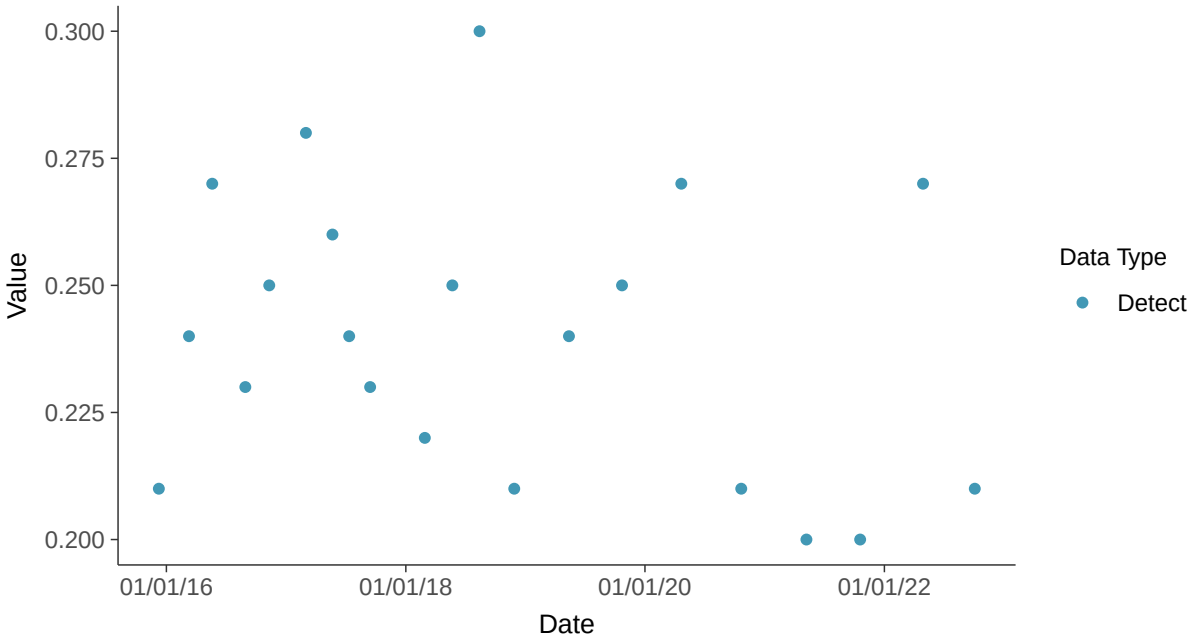


Appendix IV: Selenium, MW-4

ID: 34_2_129

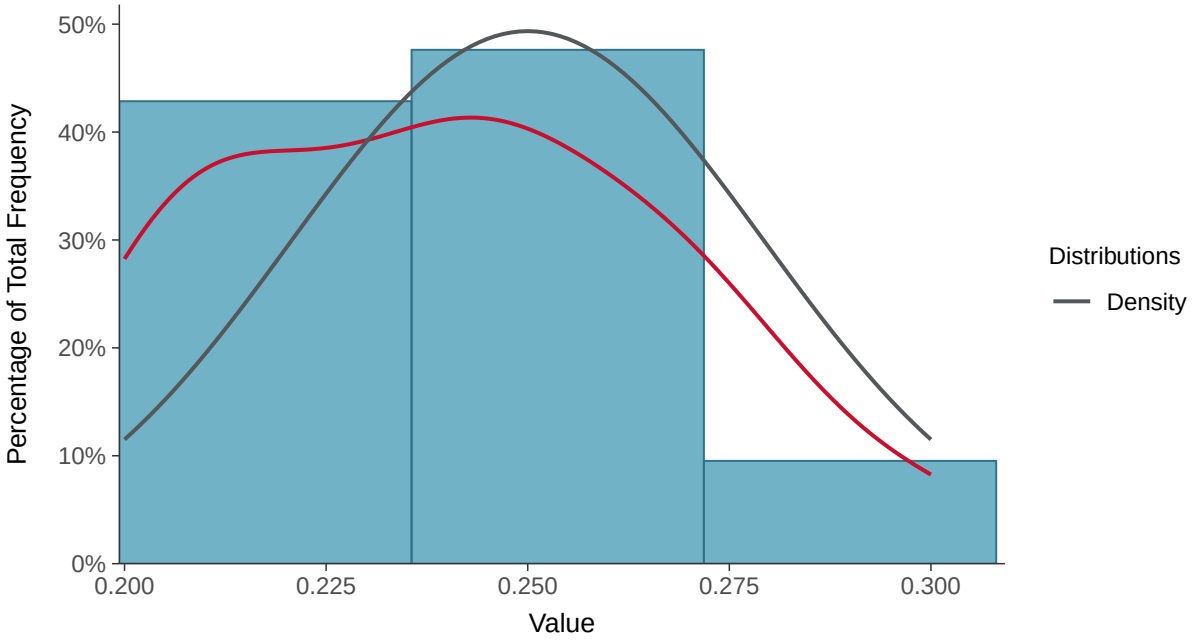
Scatter Plot

Selenium, MW-4 (mg/l)



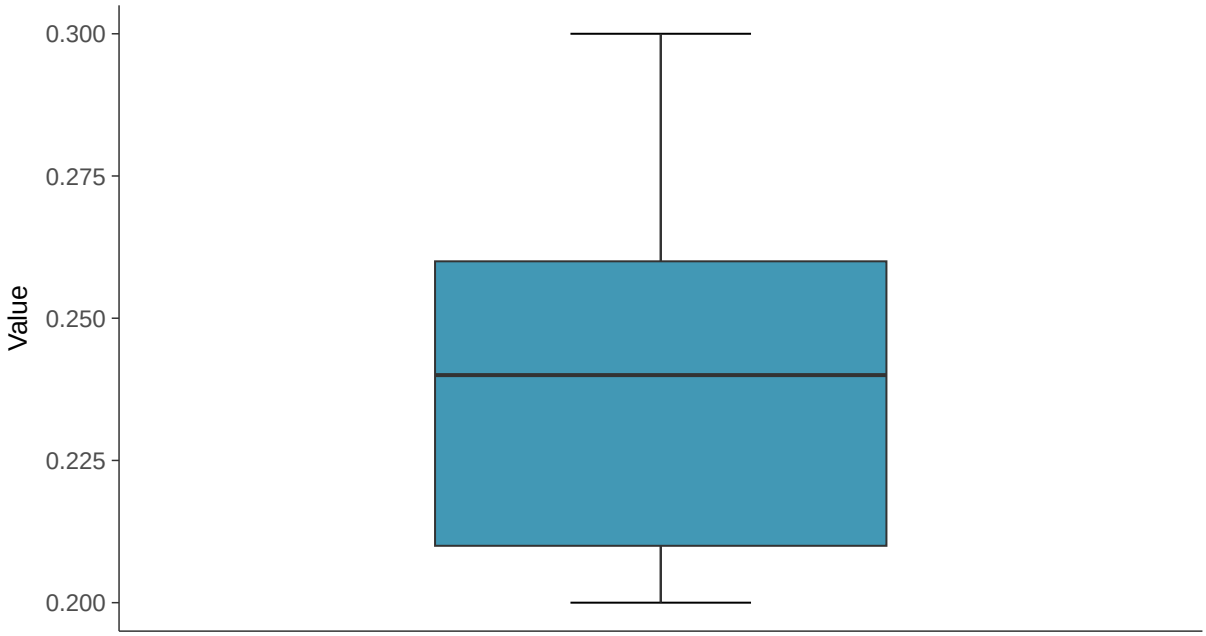
Histogram

Selenium, MW-4 (mg/l)



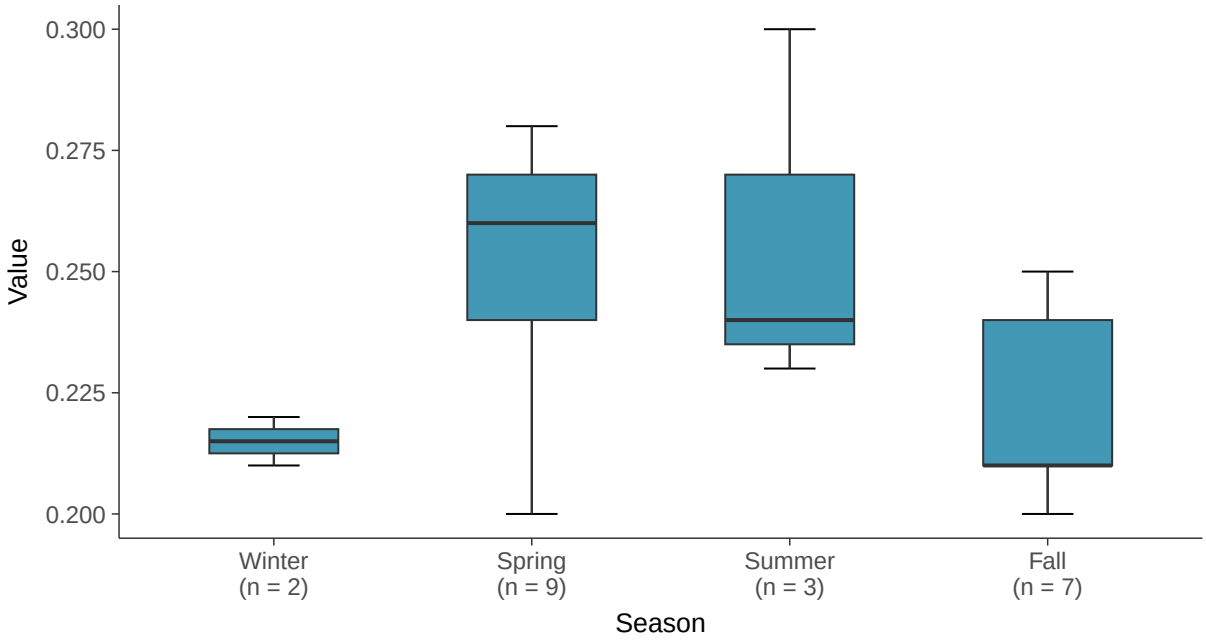
Boxplot

Selenium, MW-4 (mg/l)



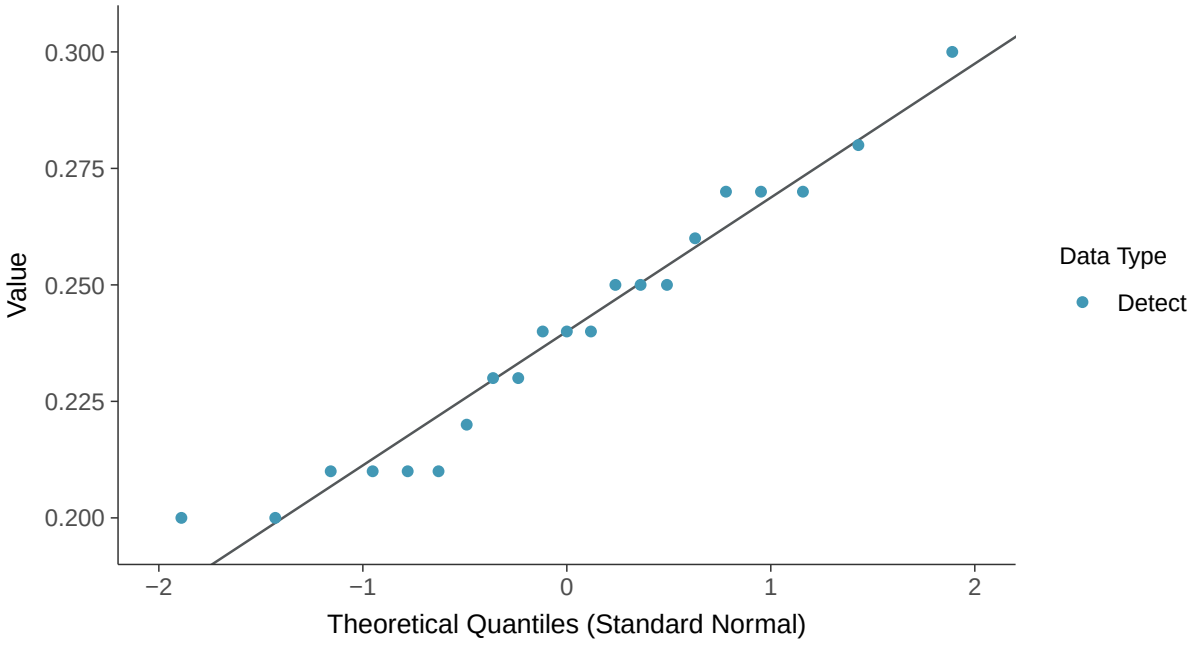
Boxplot by Season

Selenium, MW-4 (mg/l)



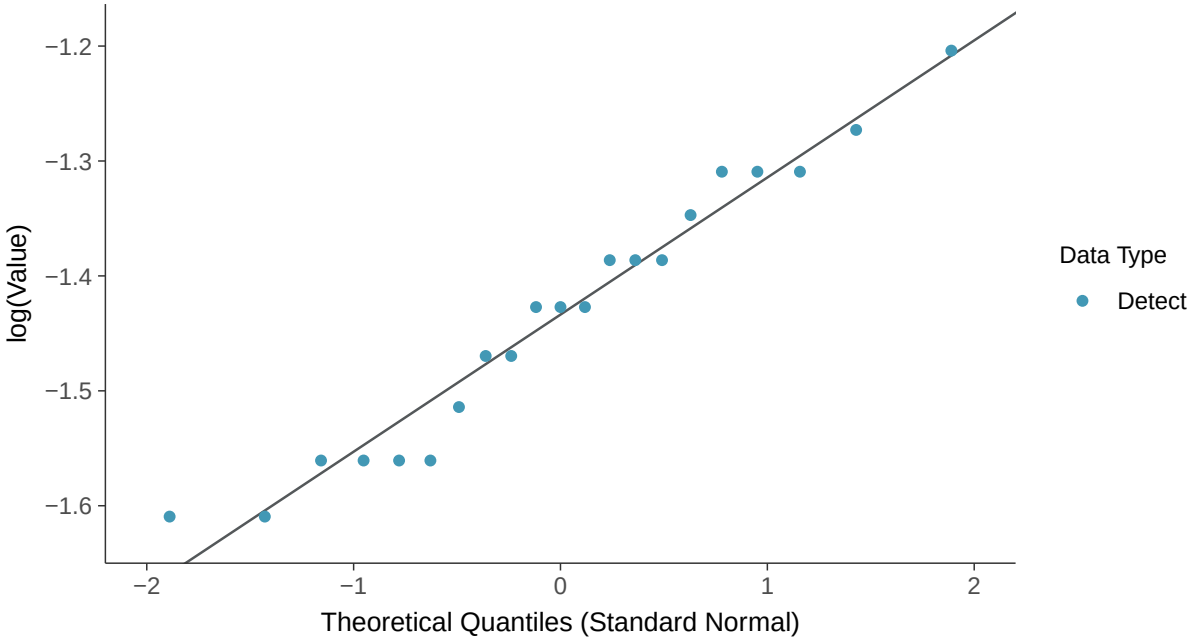
Normal Q-Q plot

Selenium, MW-4 (mg/l)



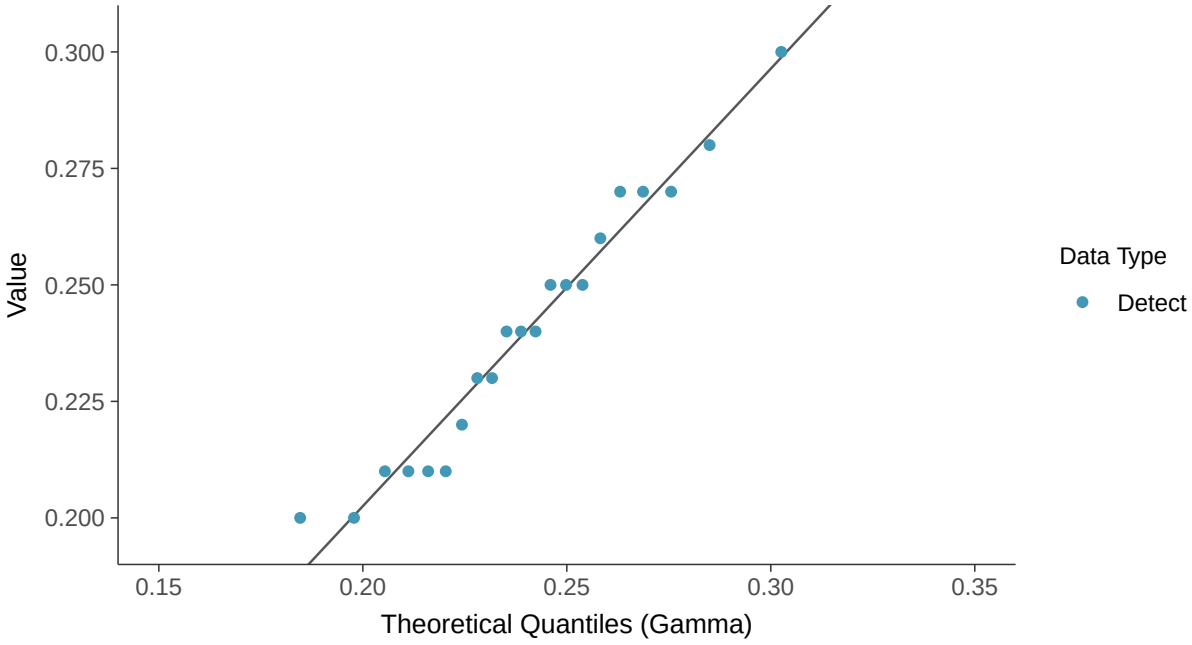
Lognormal Q-Q plot

Selenium, MW-4 (mg/l)



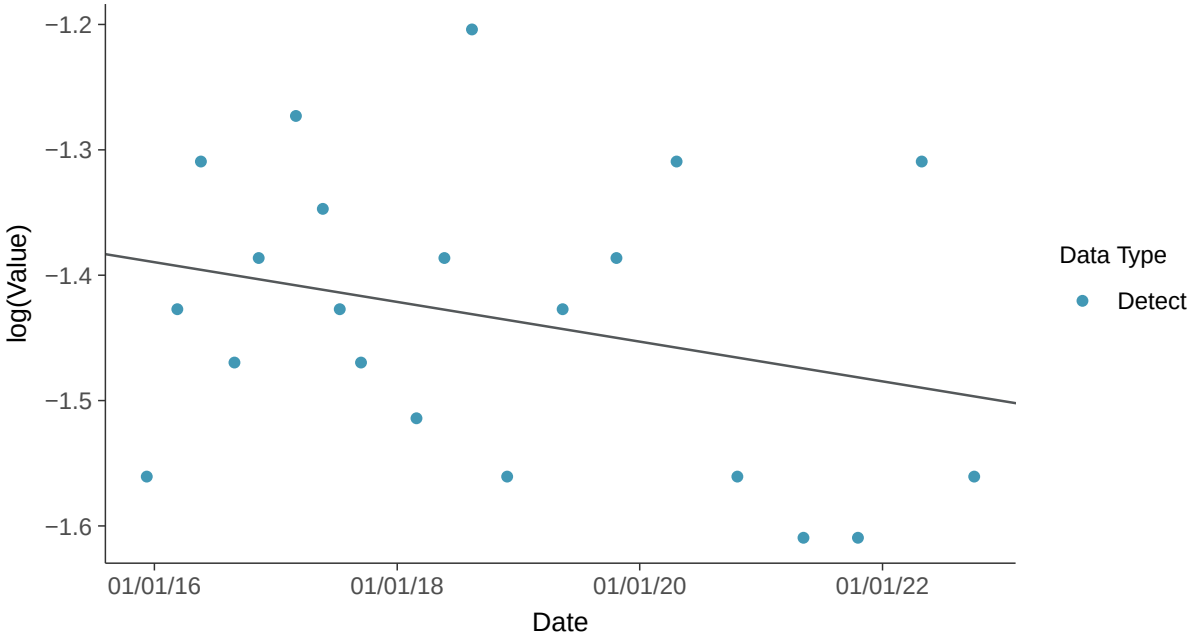
Gamma Q-Q plot

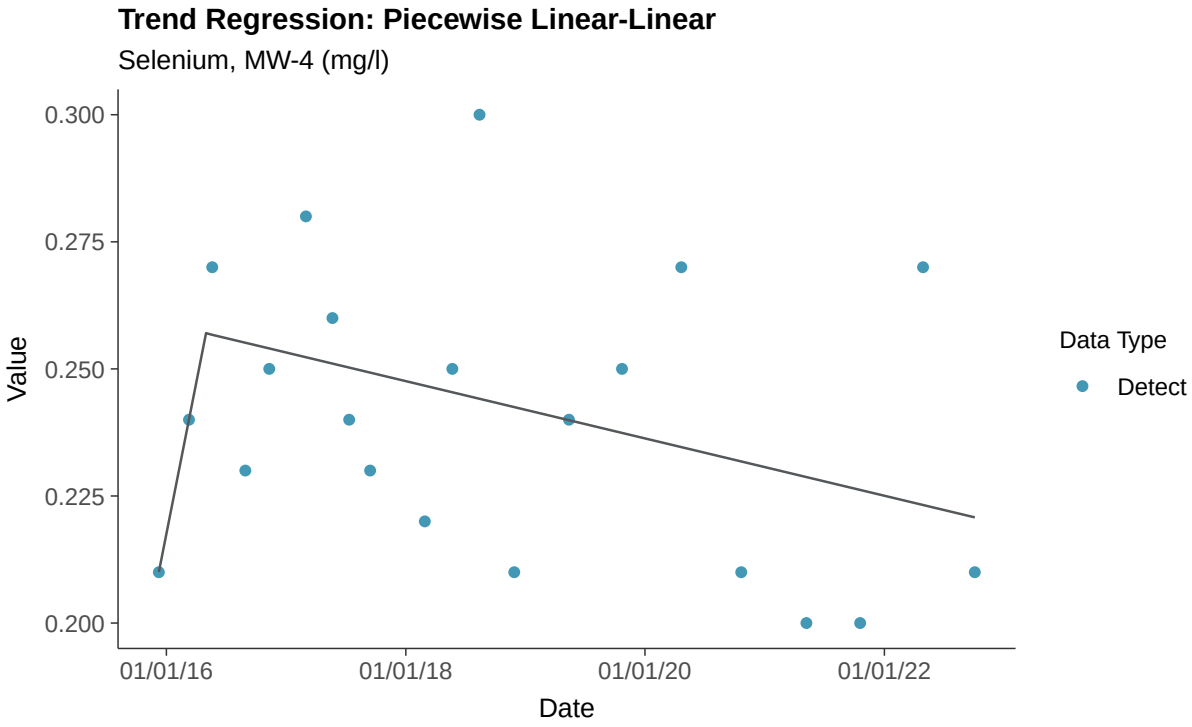
Selenium, MW-4 (mg/l)



Trend Regression: Lognormal MLE

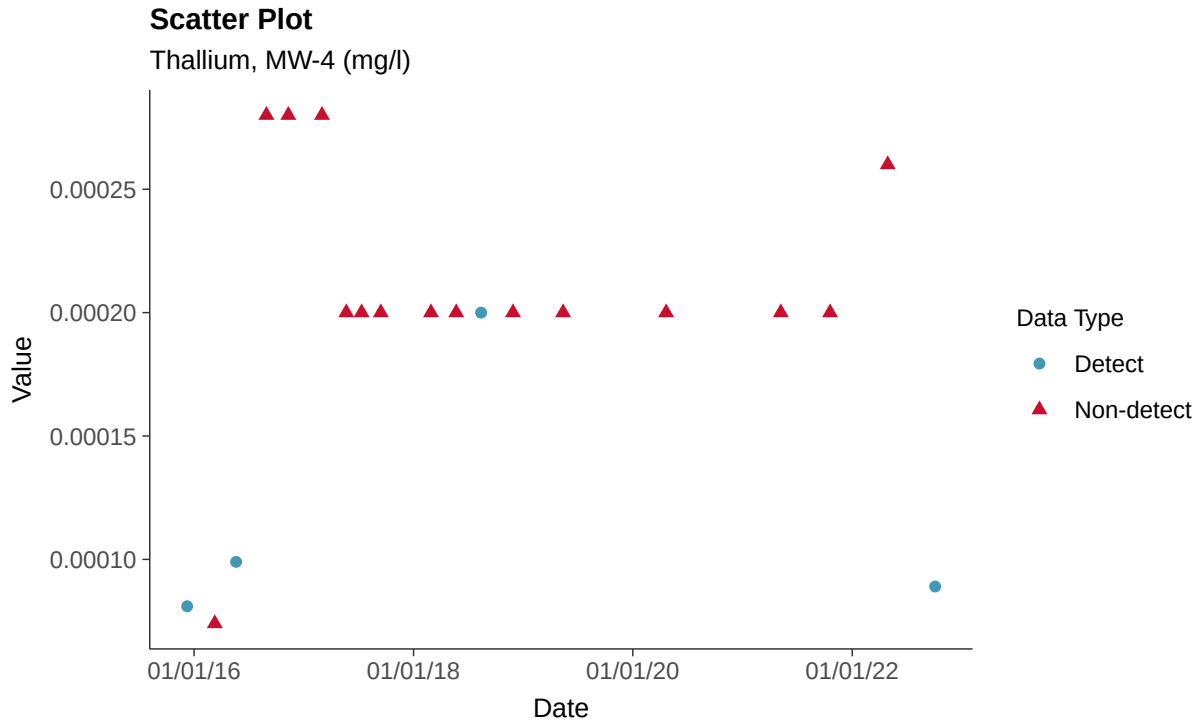
Selenium, MW-4 (mg/l)

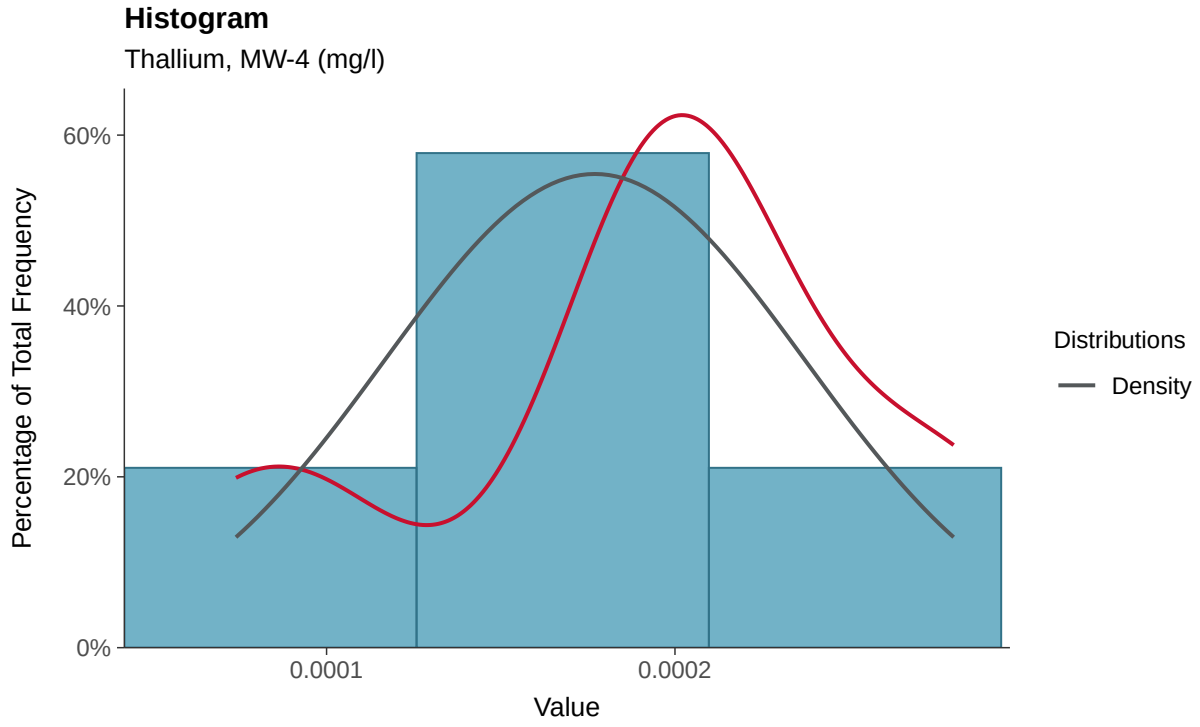



Trend Regression: Piecewise Linear-Linear
Selenium, MW-4 (mg/l)
Value
0.300
0.275
0.250
0.225
0.200
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect

Appendix IV: Thallium, MW-4

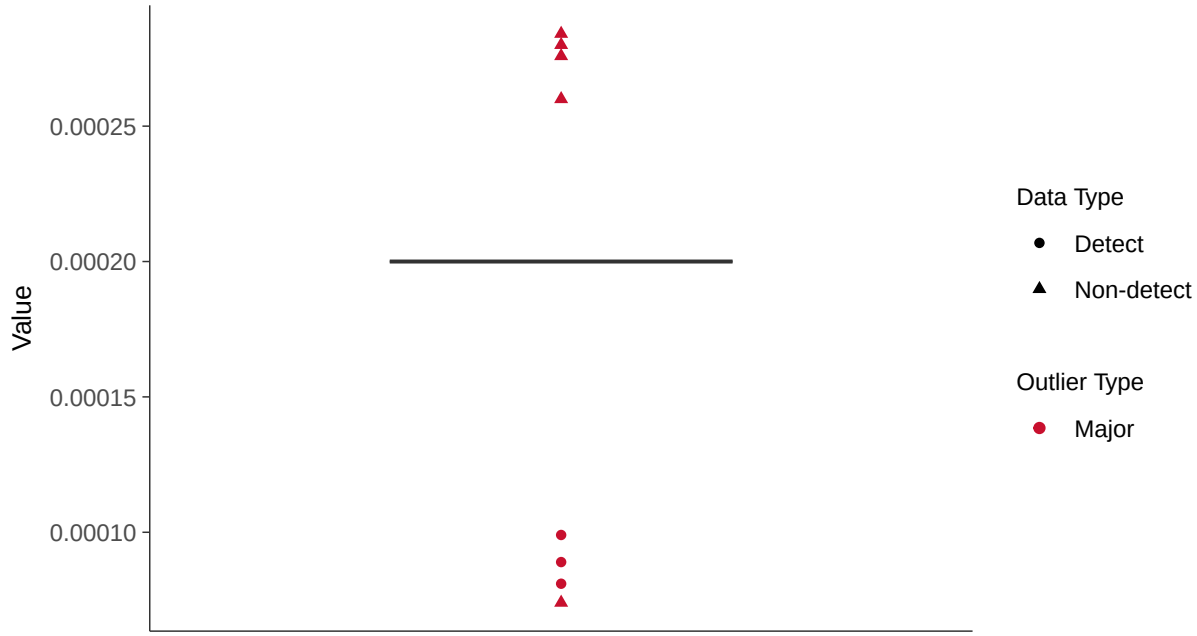
ID: 34_2_134





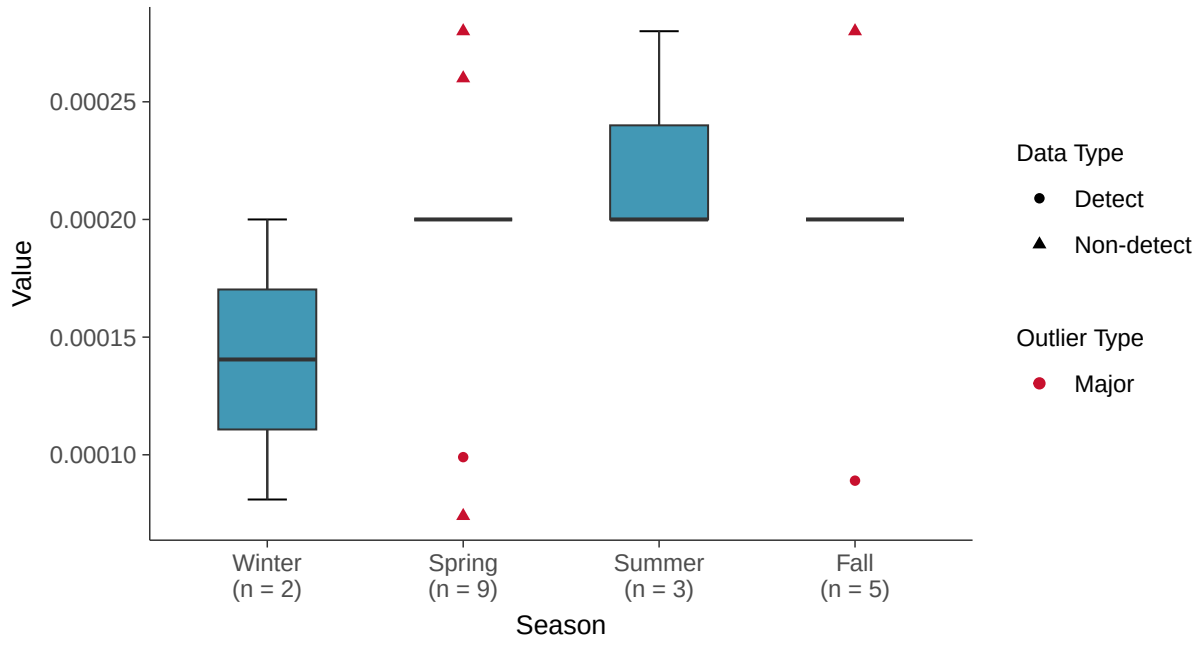
Boxplot

Thallium, MW-4 (mg/l)



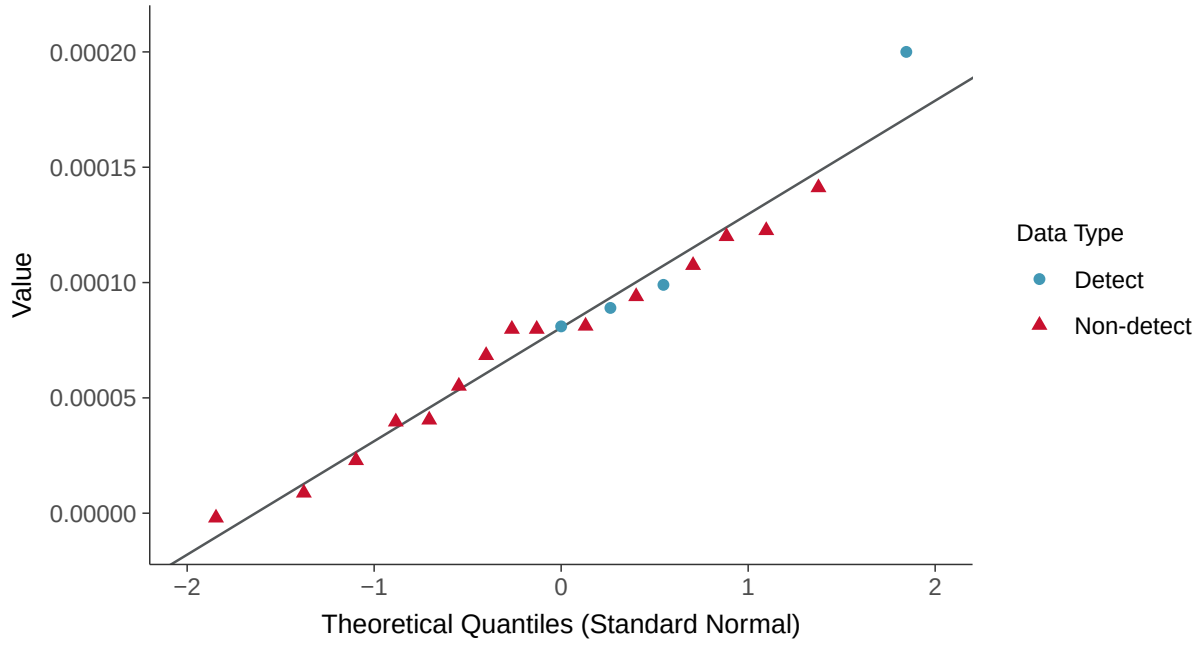
Boxplot by Season

Thallium, MW-4 (mg/l)



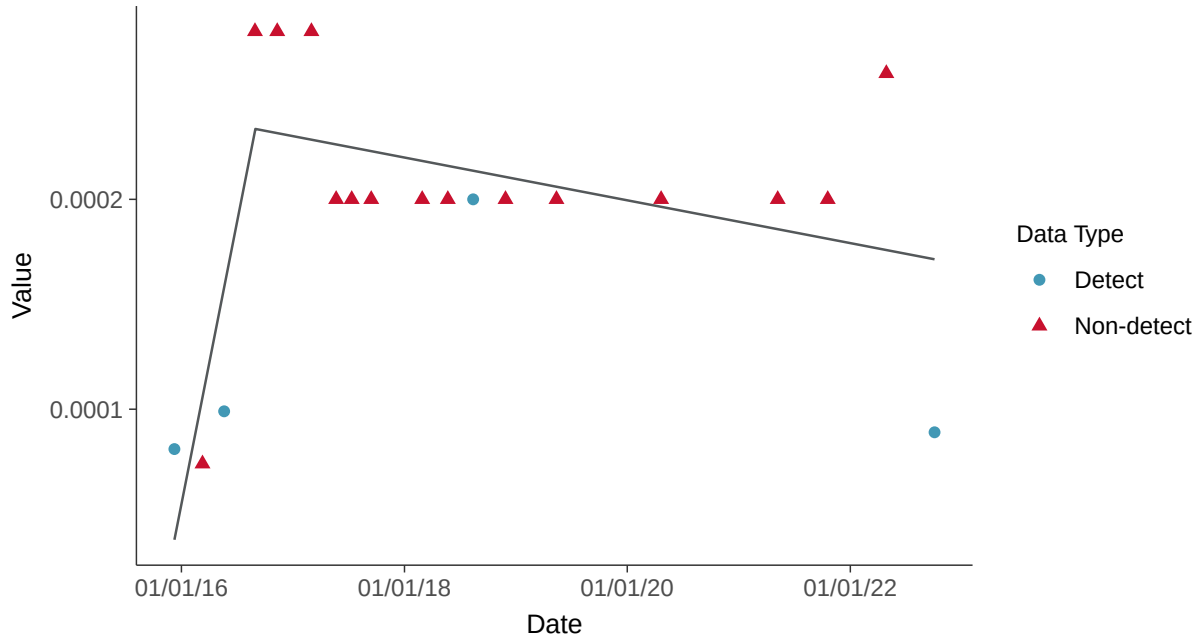
Normal Q-Q plot using ROS Imputed Estimates

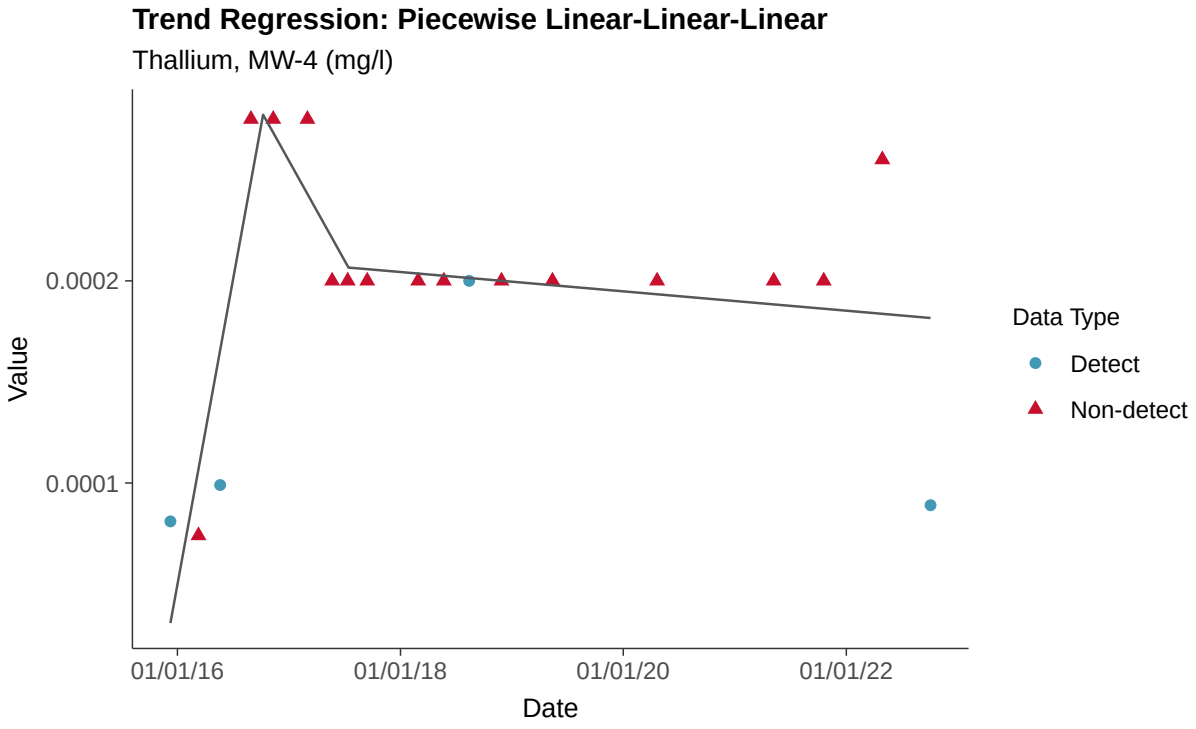
Thallium, MW-4 (mg/l)



Trend Regression: Piecewise Linear-Linear

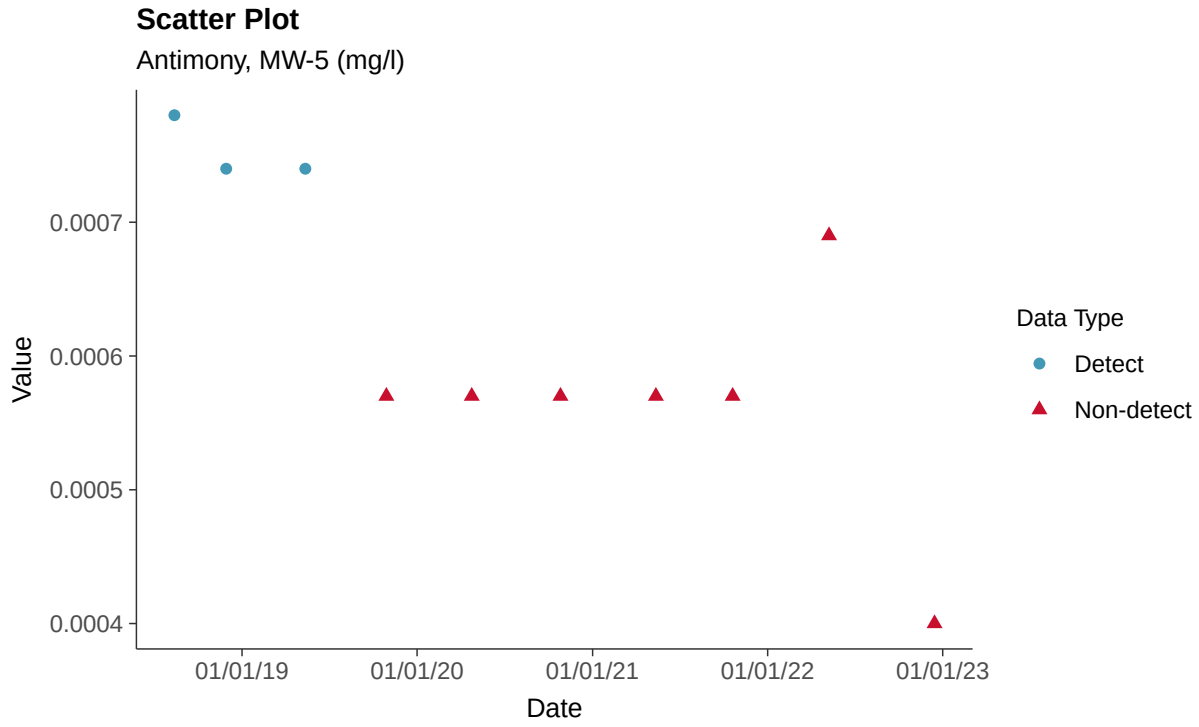
Thallium, MW-4 (mg/l)

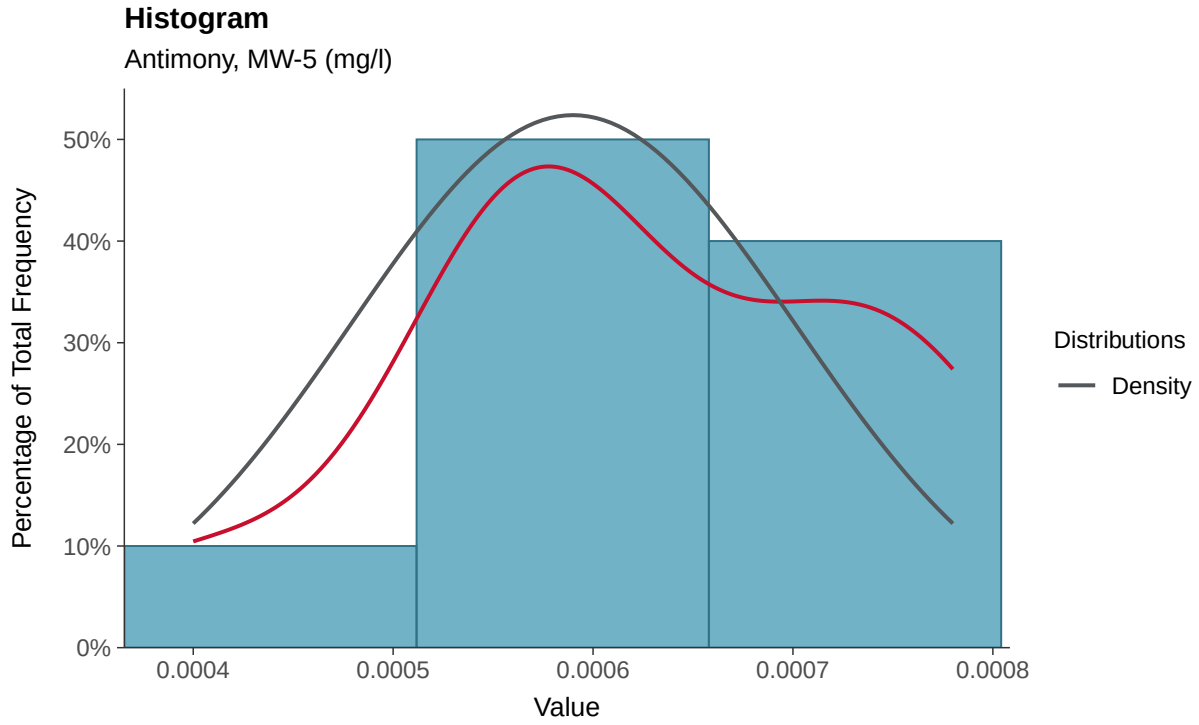



Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-4 (mg/l)
Value
0.0002
0.0001
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-5

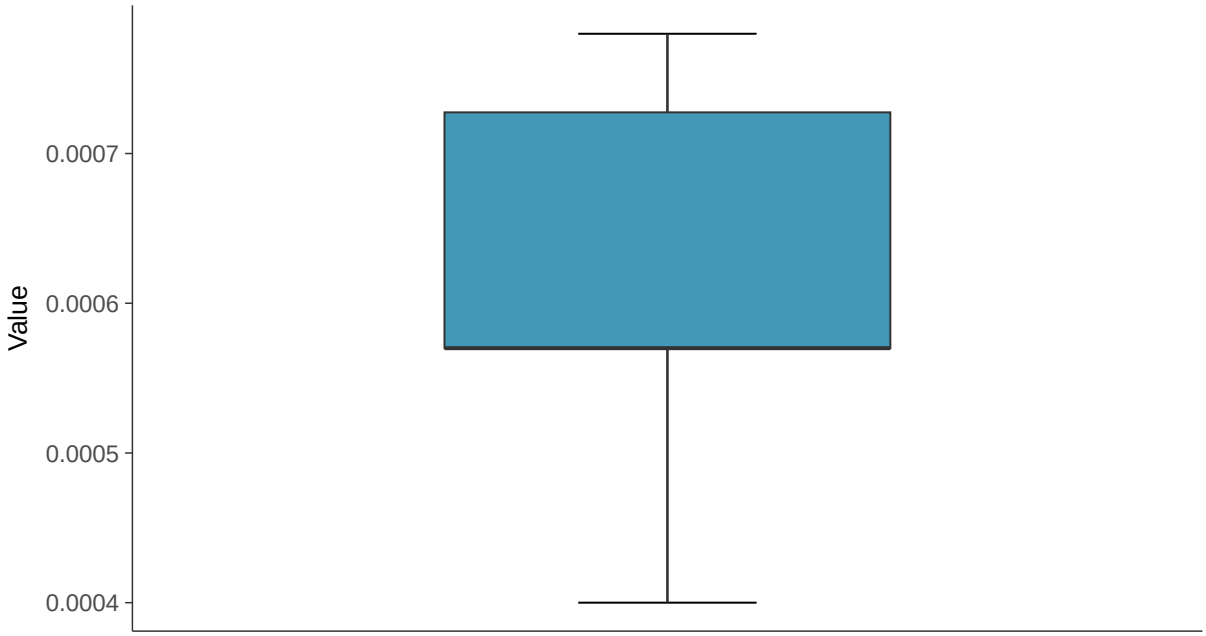
ID: 35_2_104





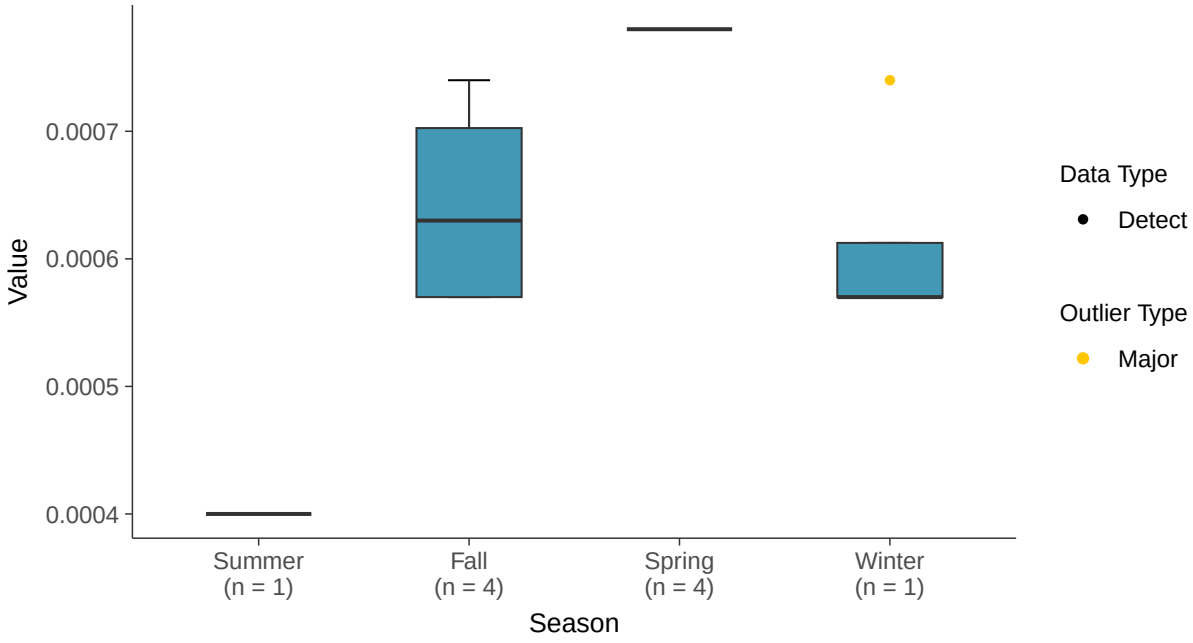
Boxplot

Antimony, MW-5 (mg/l)



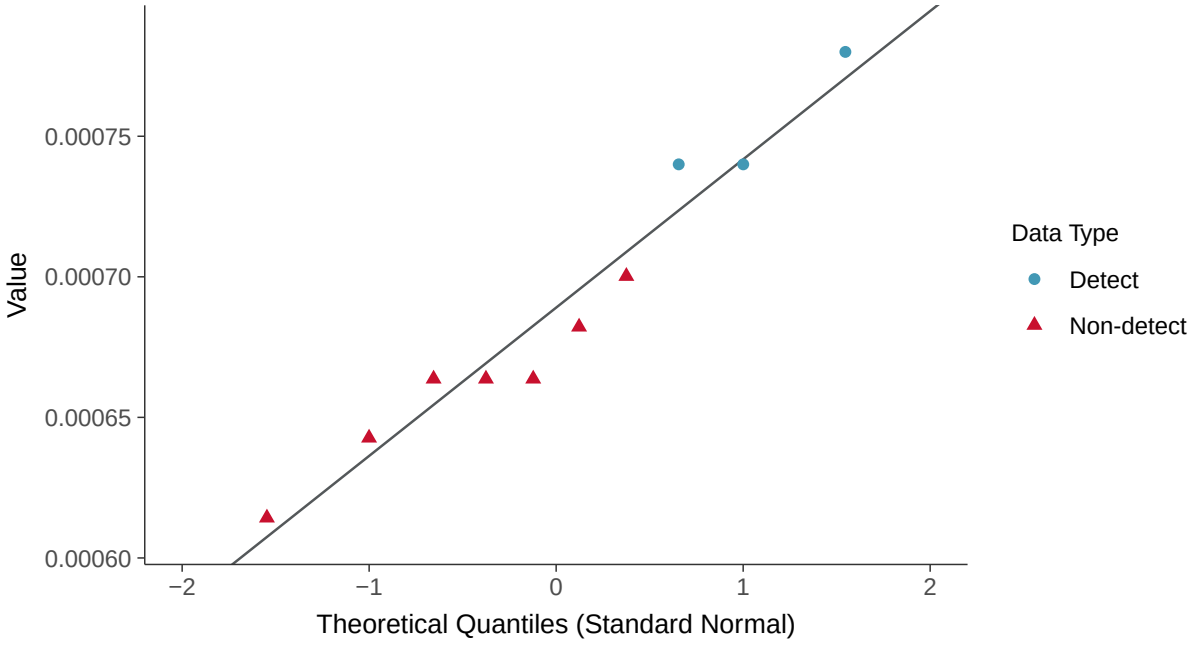
Boxplot by Season

Antimony, MW-5 (mg/l)



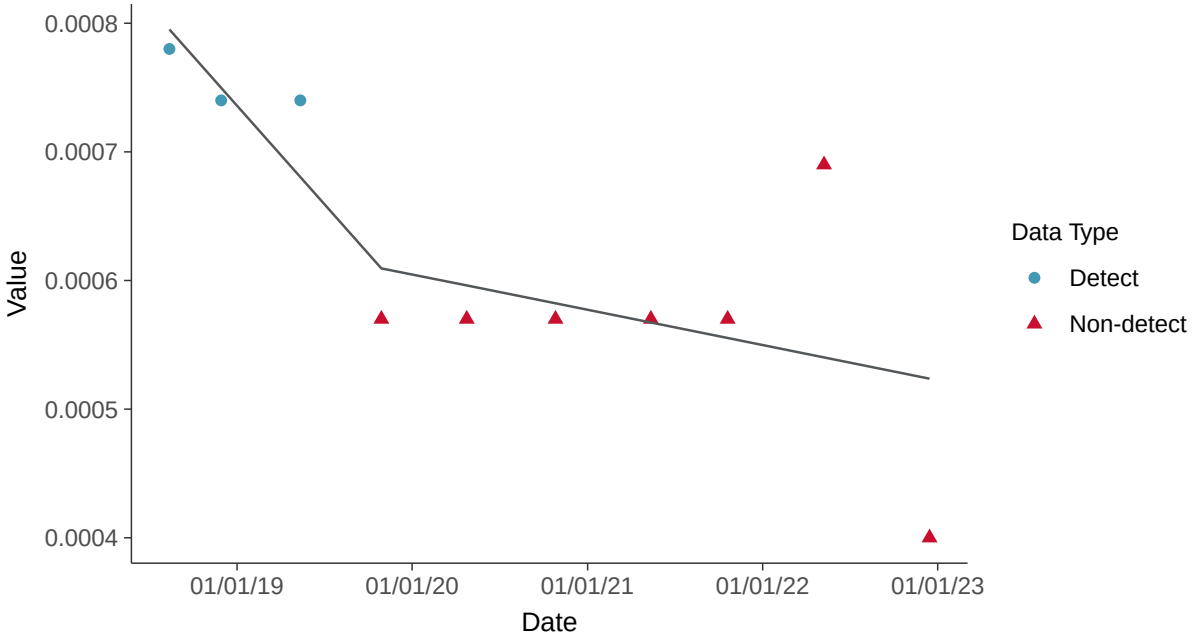
Normal Q-Q plot using ROS Imputed Estimates

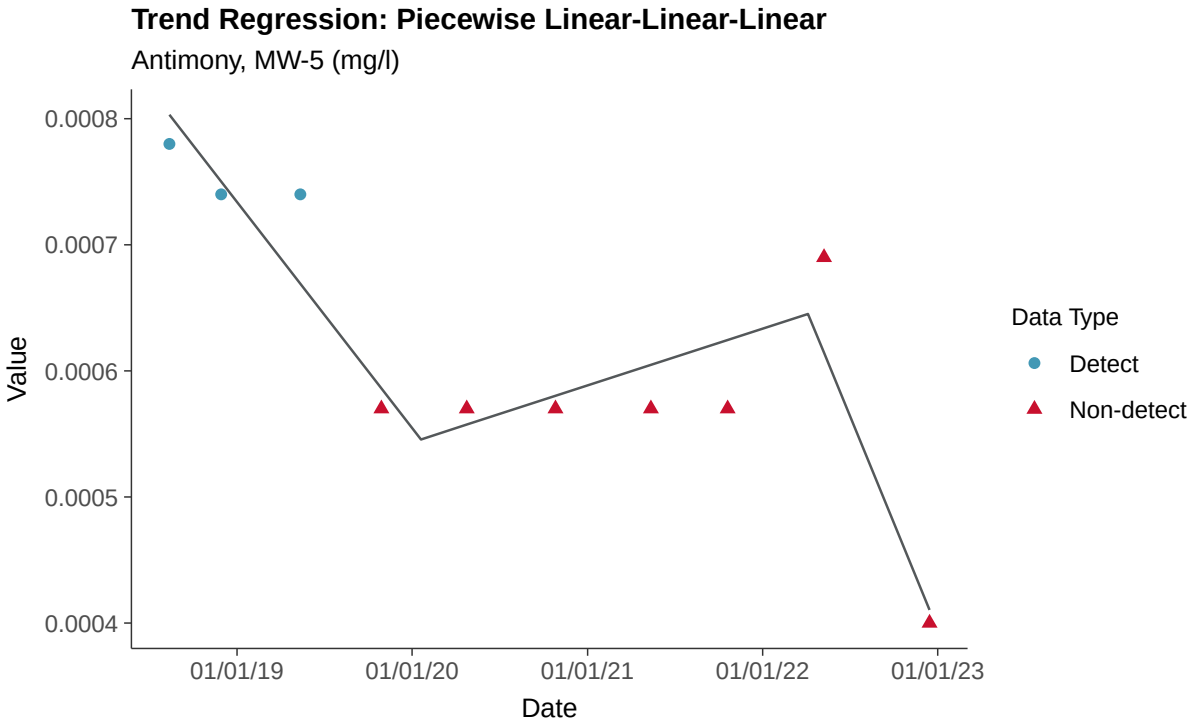
Antimony, MW-5 (mg/l)



Trend Regression: Piecewise Linear-Linear

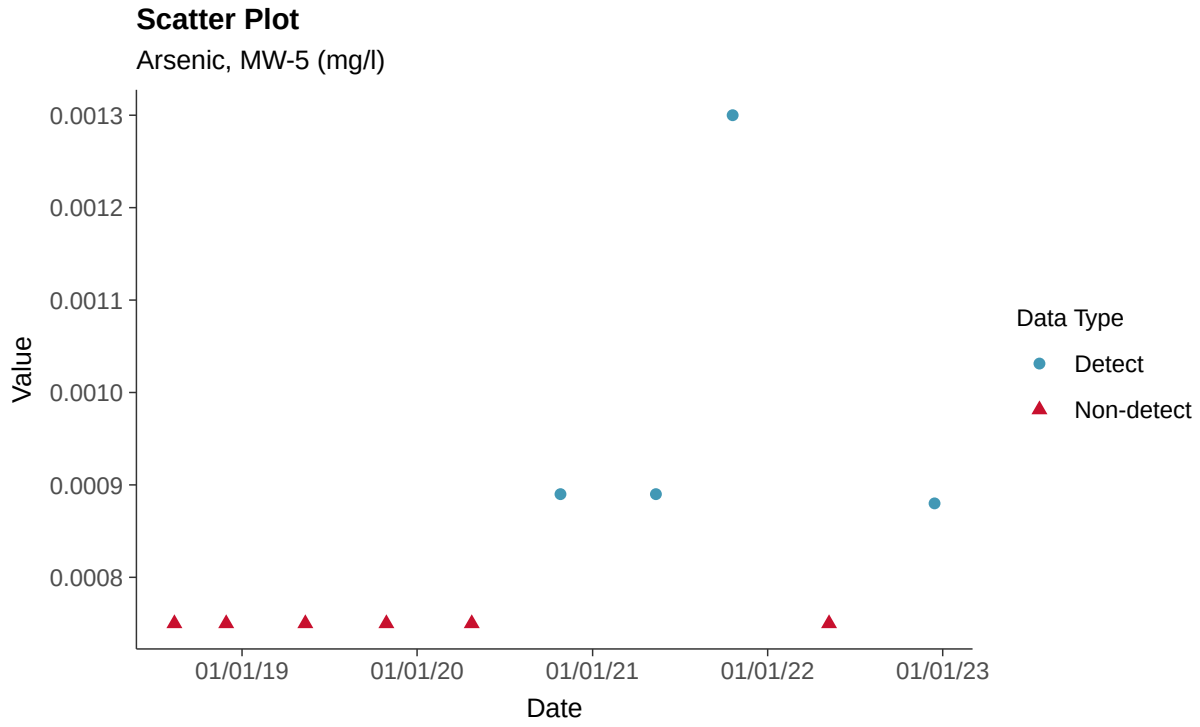
Antimony, MW-5 (mg/l)

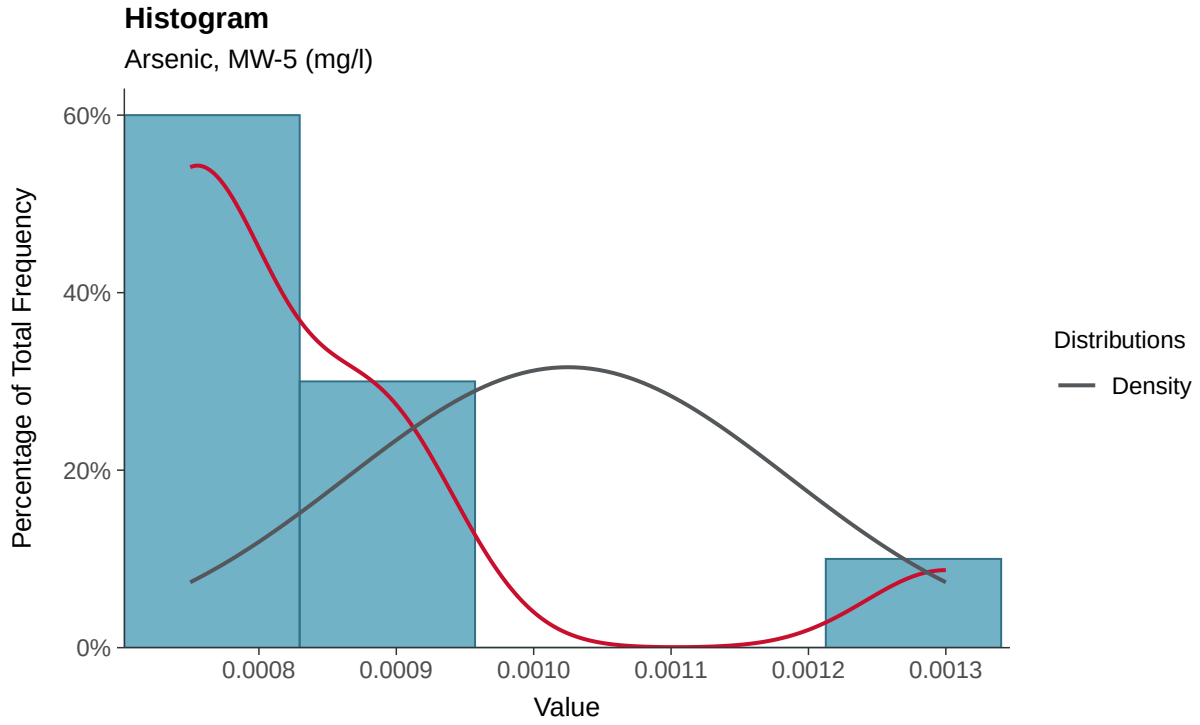



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-5 (mg/l)
Value
0.0008
0.0007
0.0006
0.0005
0.0004
01/01/19
01/01/20
01/01/21
01/01/22
01/01/23
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-5

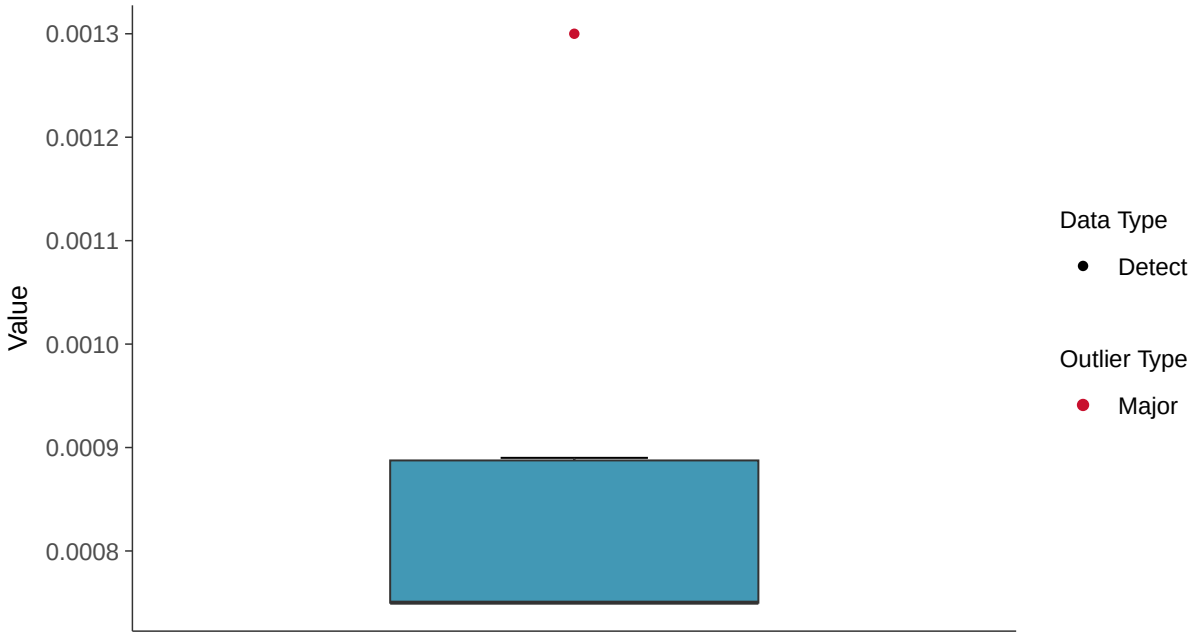
ID: 35_2_105





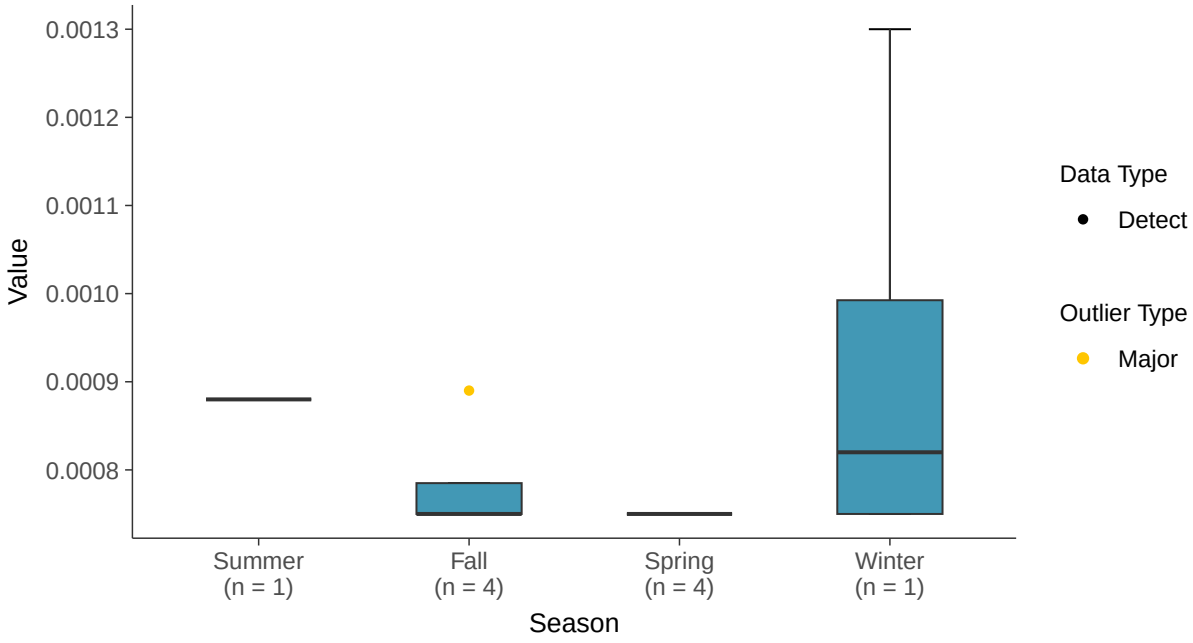
Boxplot

Arsenic, MW-5 (mg/l)



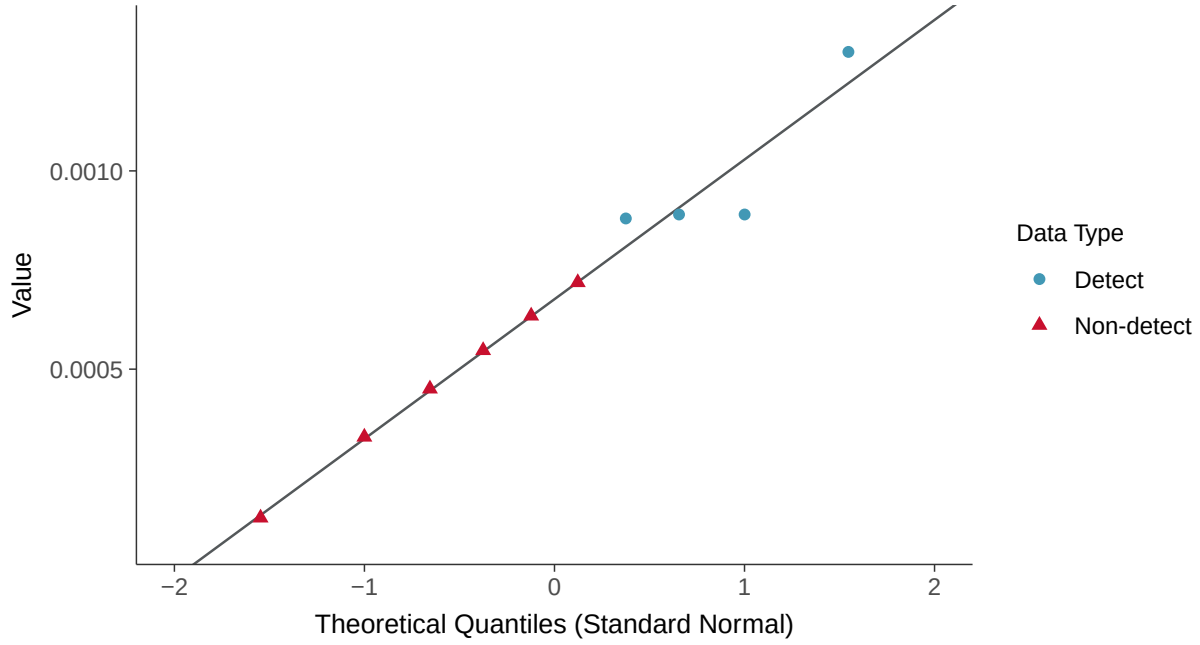
Boxplot by Season

Arsenic, MW-5 (mg/l)



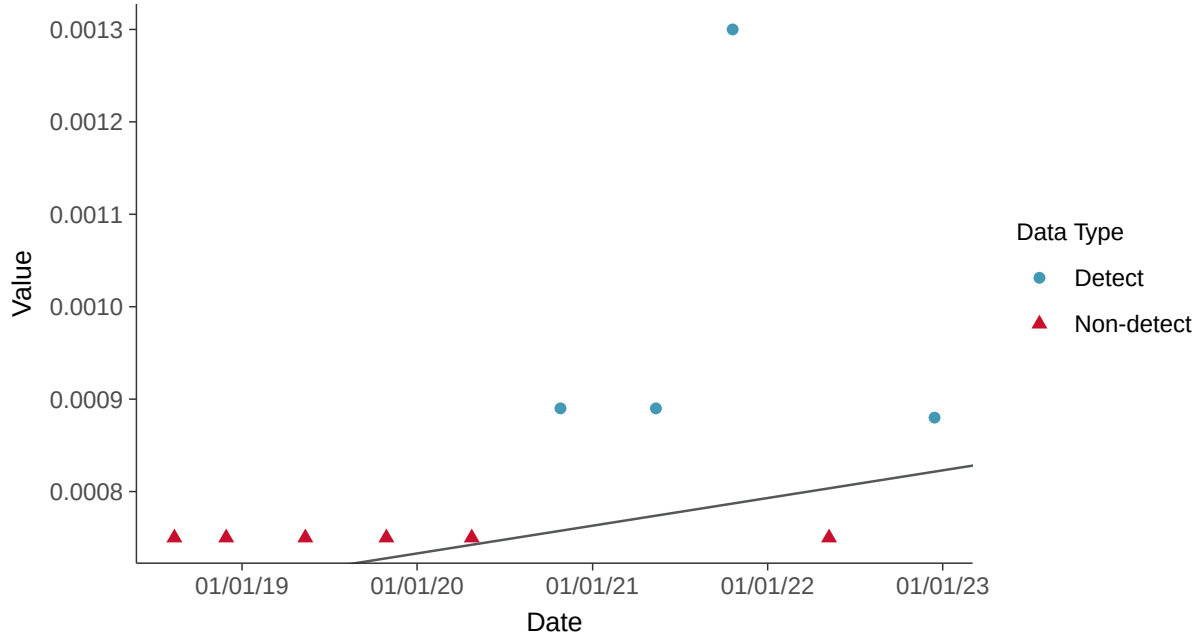
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-5 (mg/l)



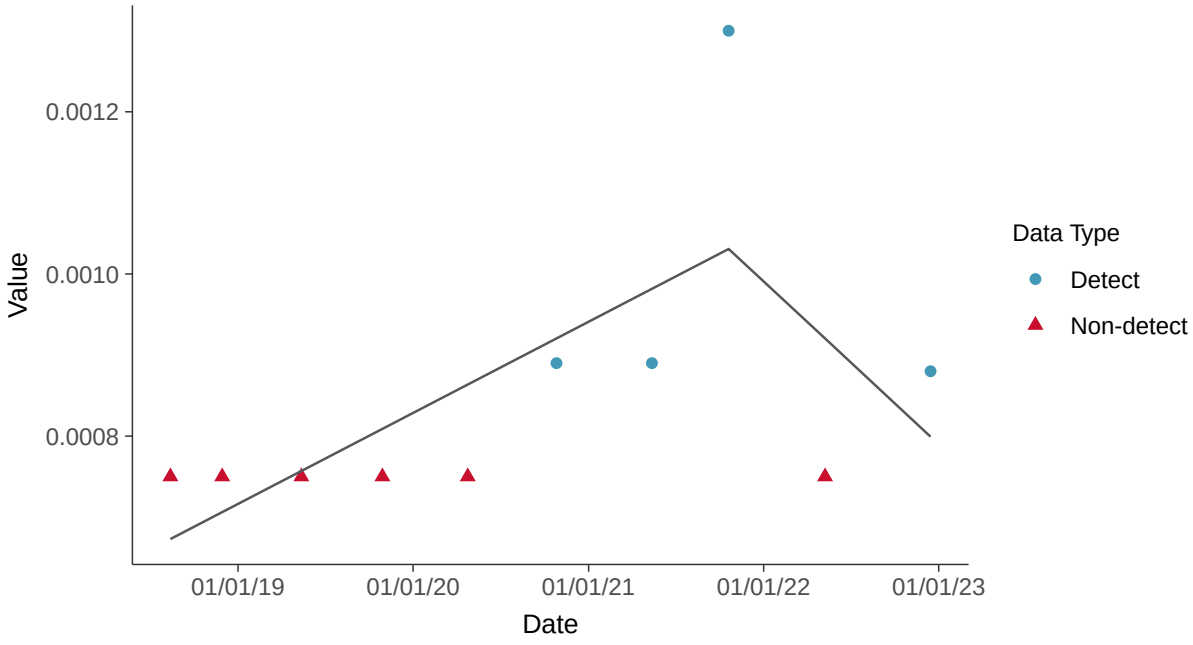
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-5 (mg/l)



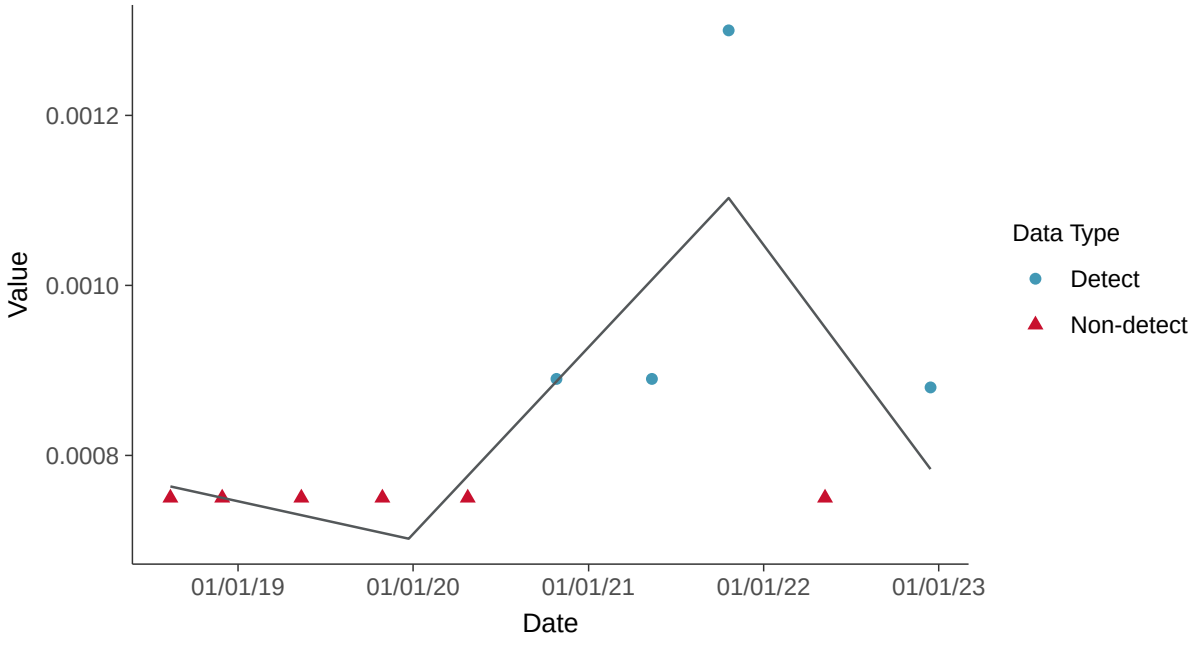
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-5 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-5 (mg/l)

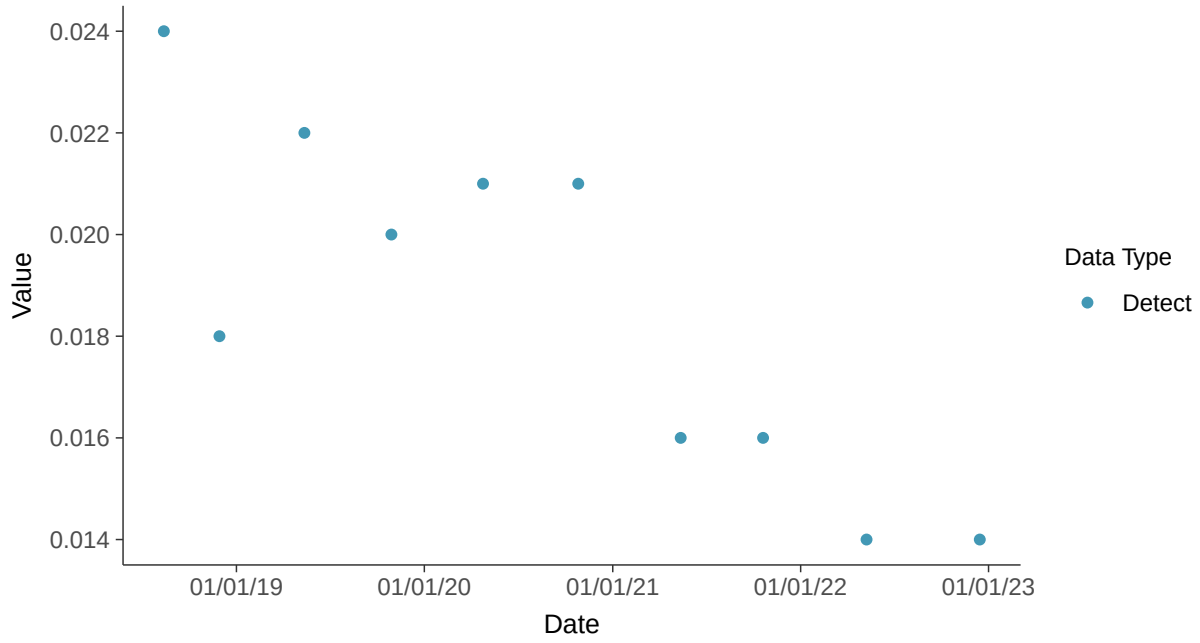


Appendix IV: Barium, MW-5

ID: 35_2_106

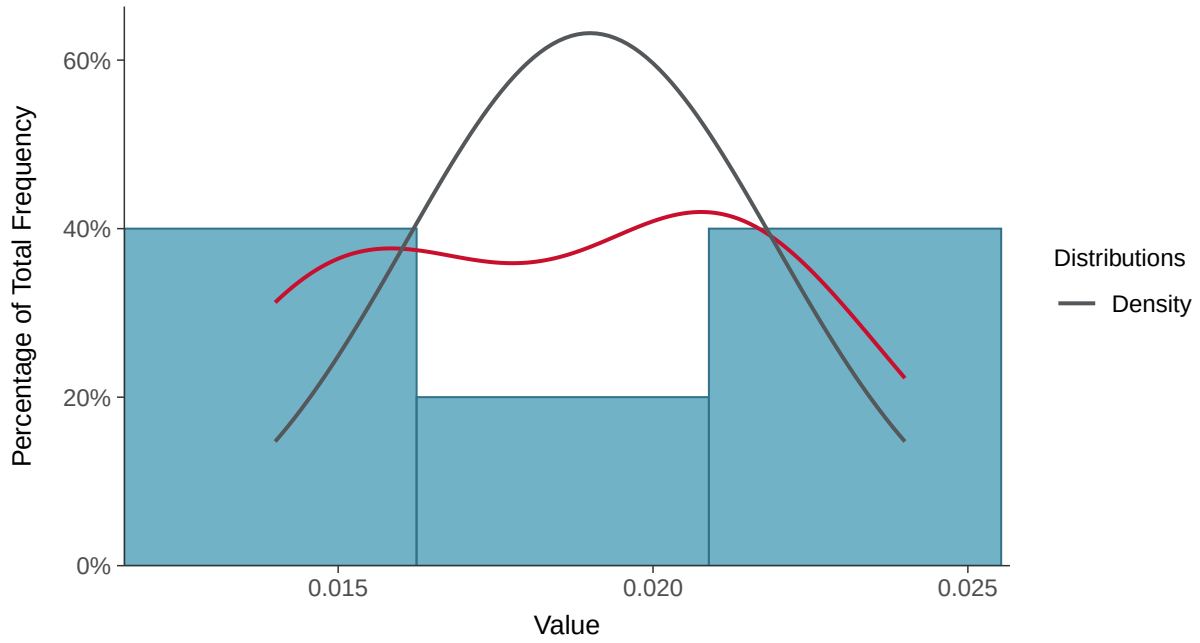
Scatter Plot

Barium, MW-5 (mg/l)



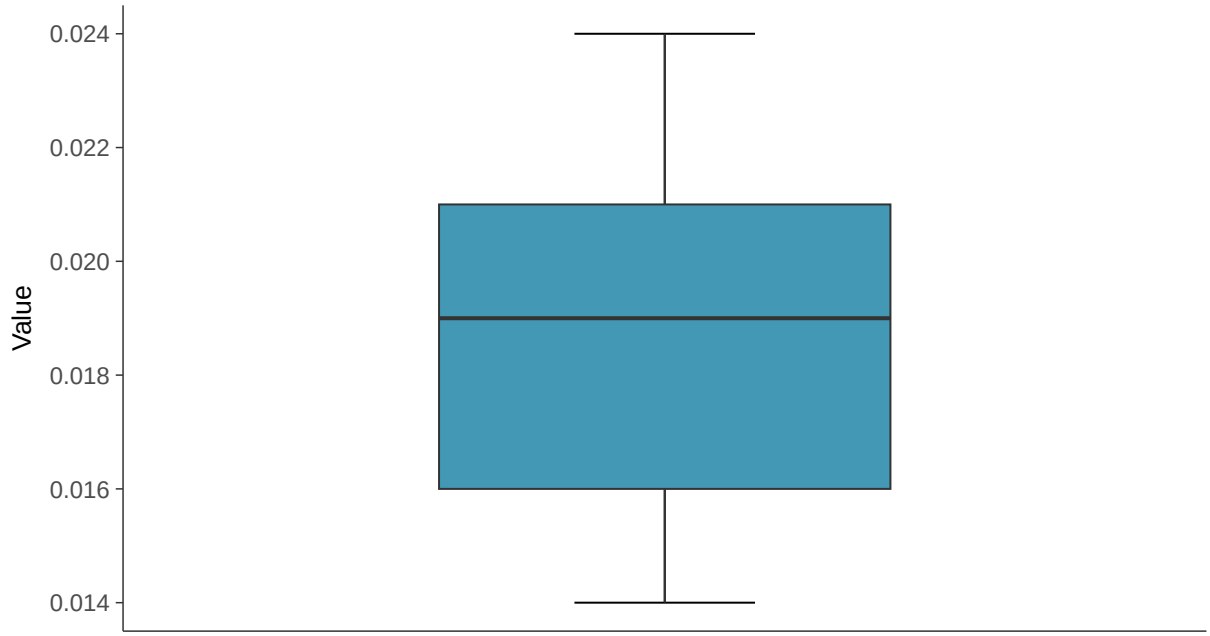
Histogram

Barium, MW-5 (mg/l)



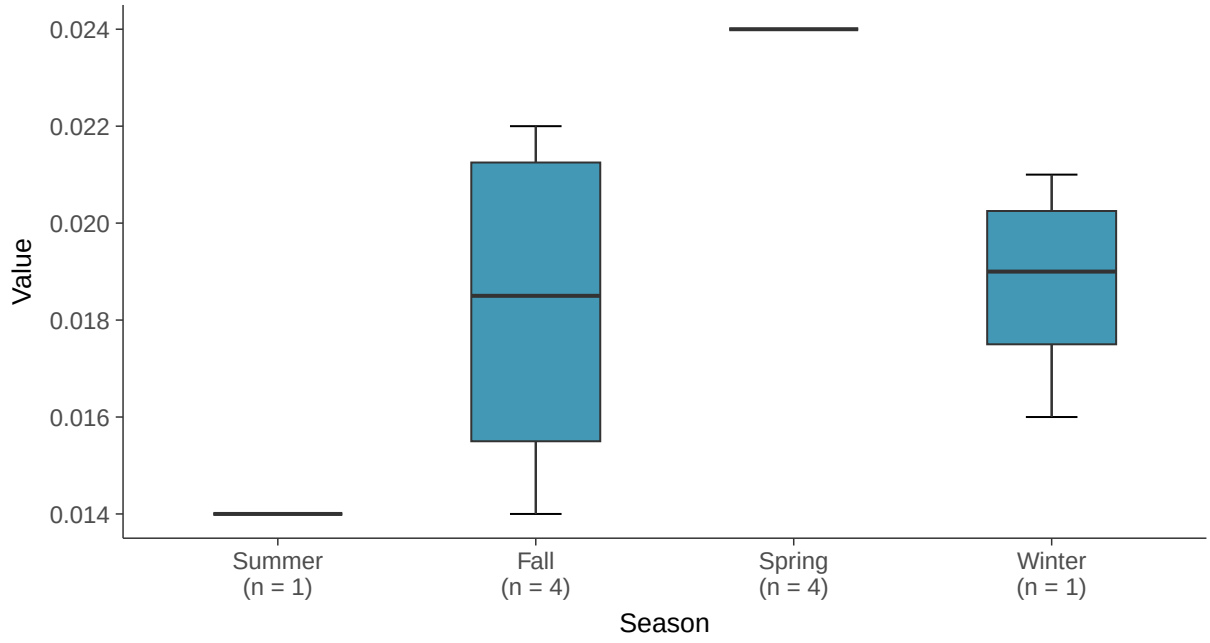
Boxplot

Barium, MW-5 (mg/l)



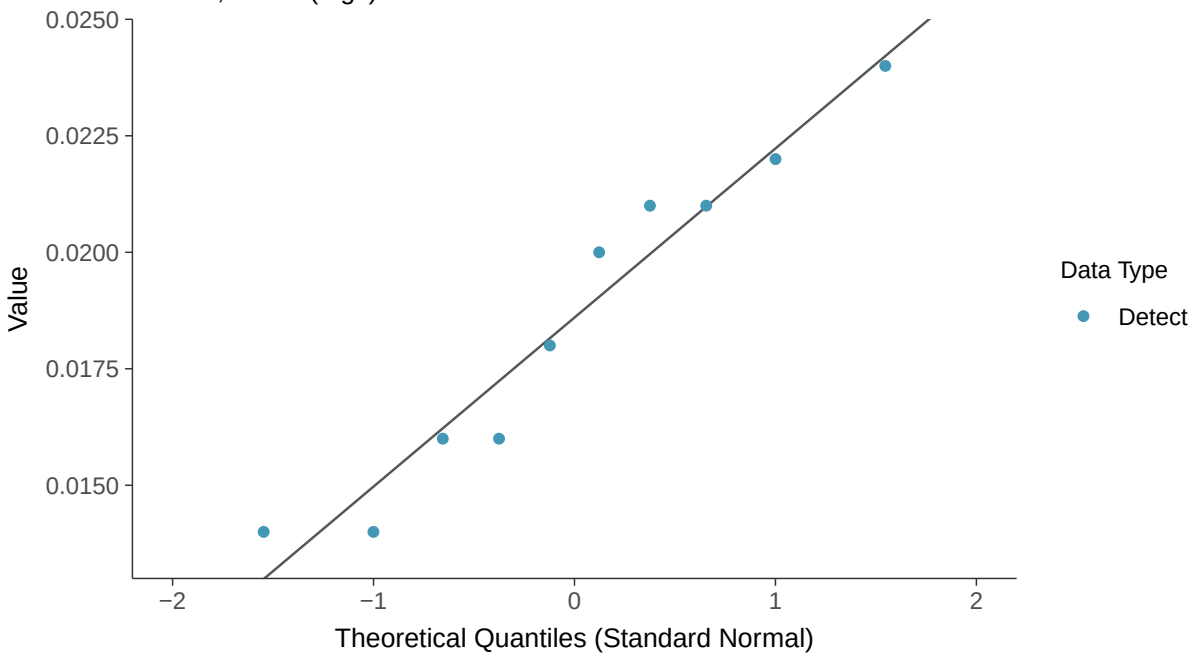
Boxplot by Season

Barium, MW-5 (mg/l)



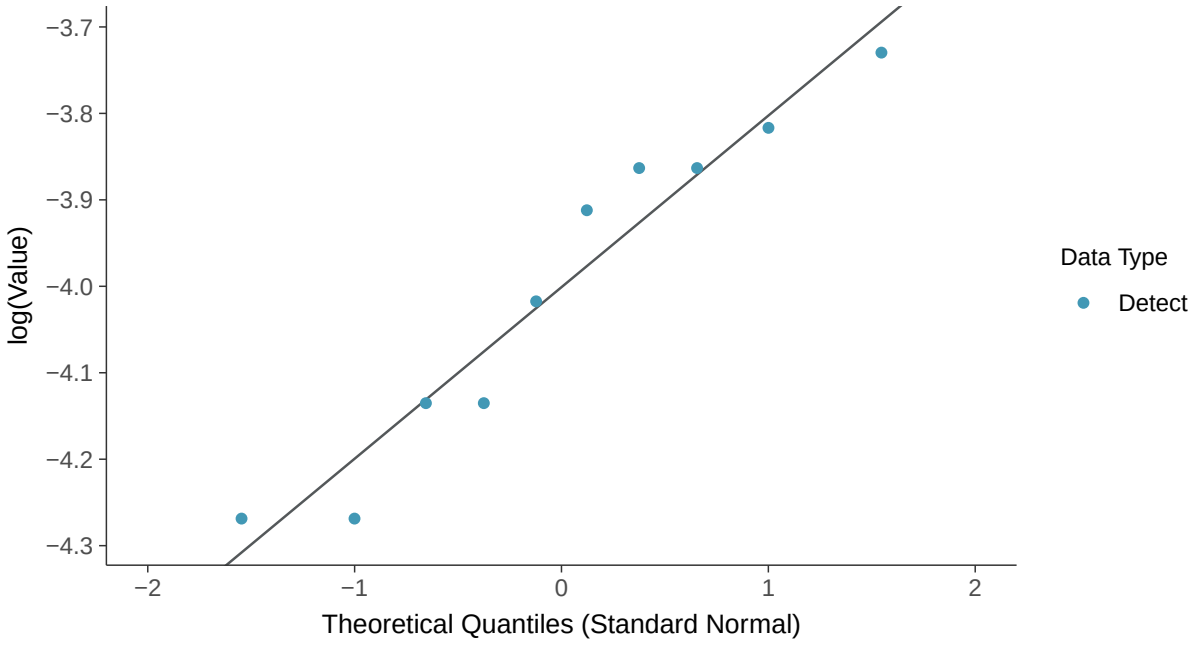
Normal Q-Q plot

Barium, MW-5 (mg/l)



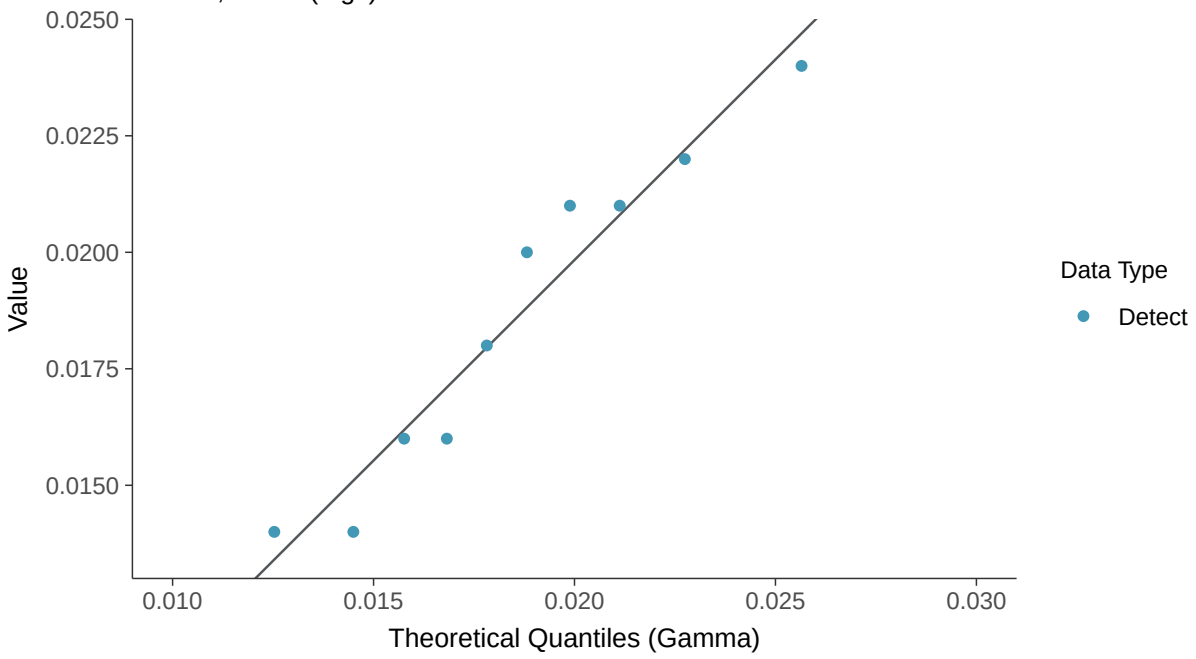
Lognormal Q-Q plot

Barium, MW-5 (mg/l)



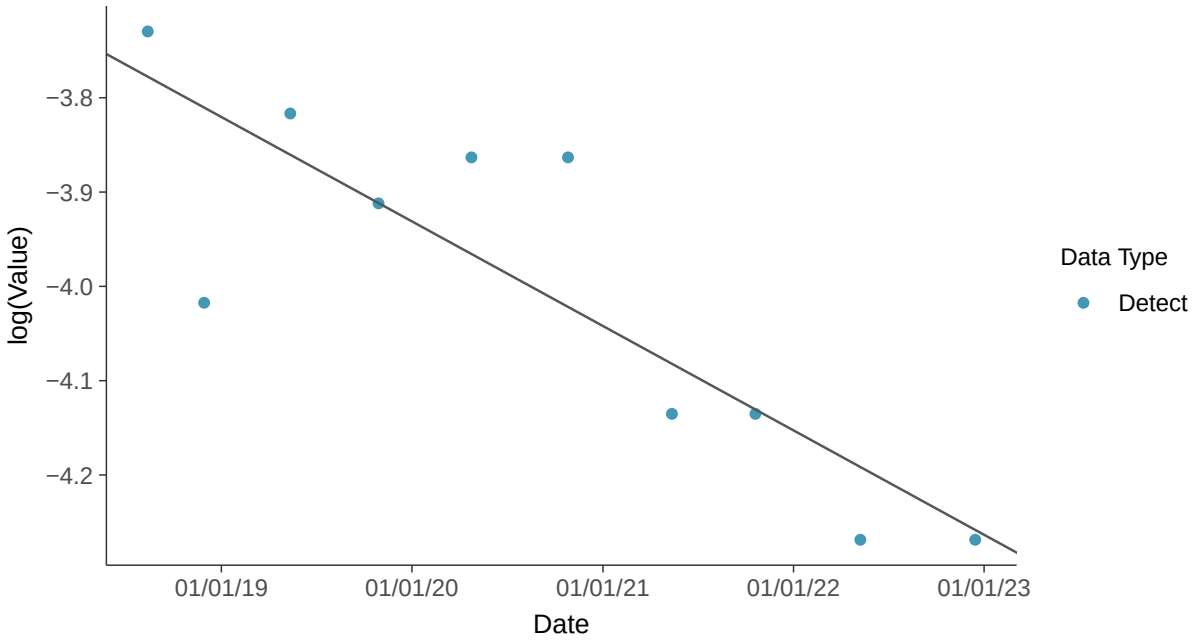
Gamma Q-Q plot

Barium, MW-5 (mg/l)



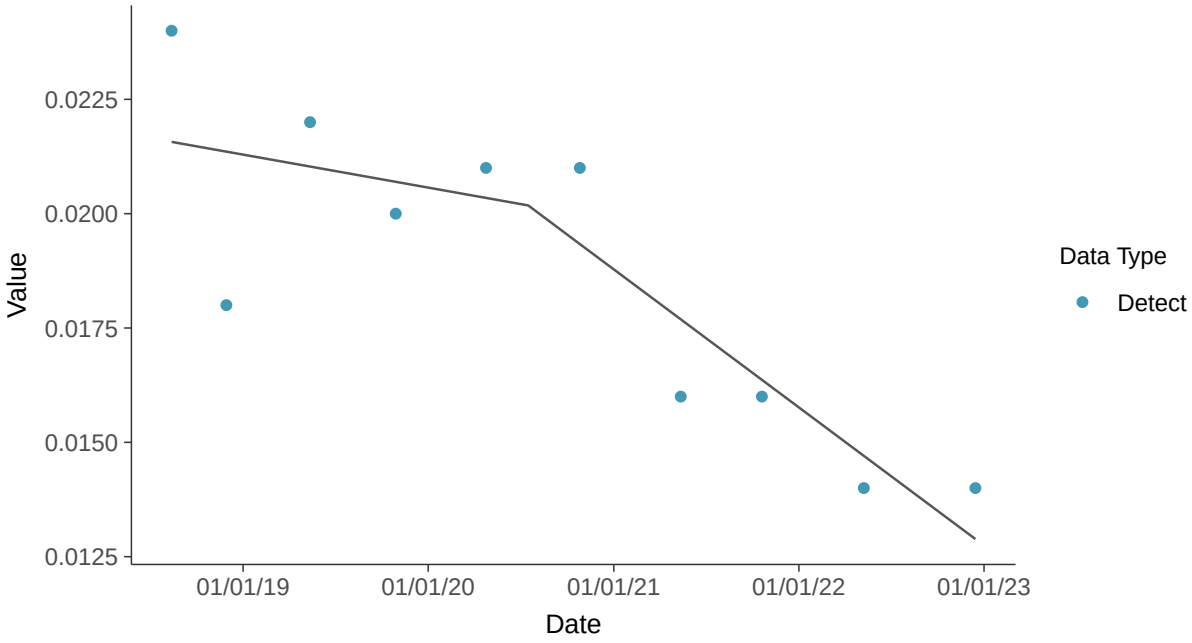
Trend Regression: Lognormal MLE

Barium, MW-5 (mg/l)



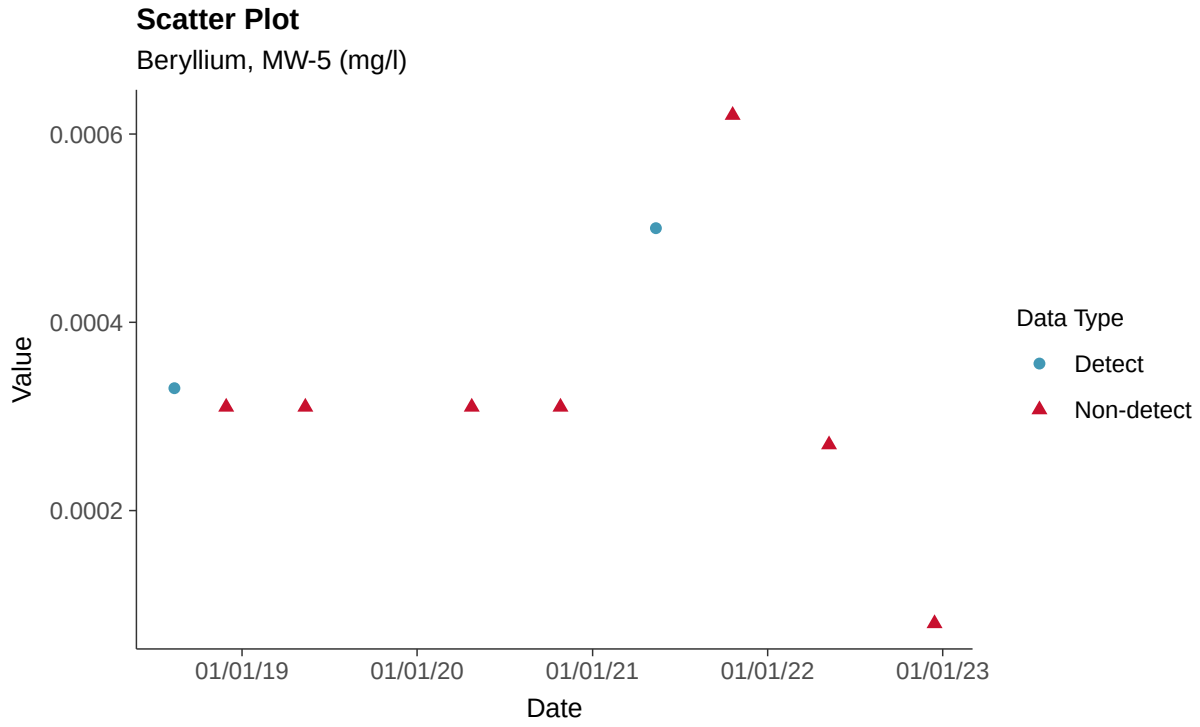
Trend Regression: Piecewise Linear-Linear

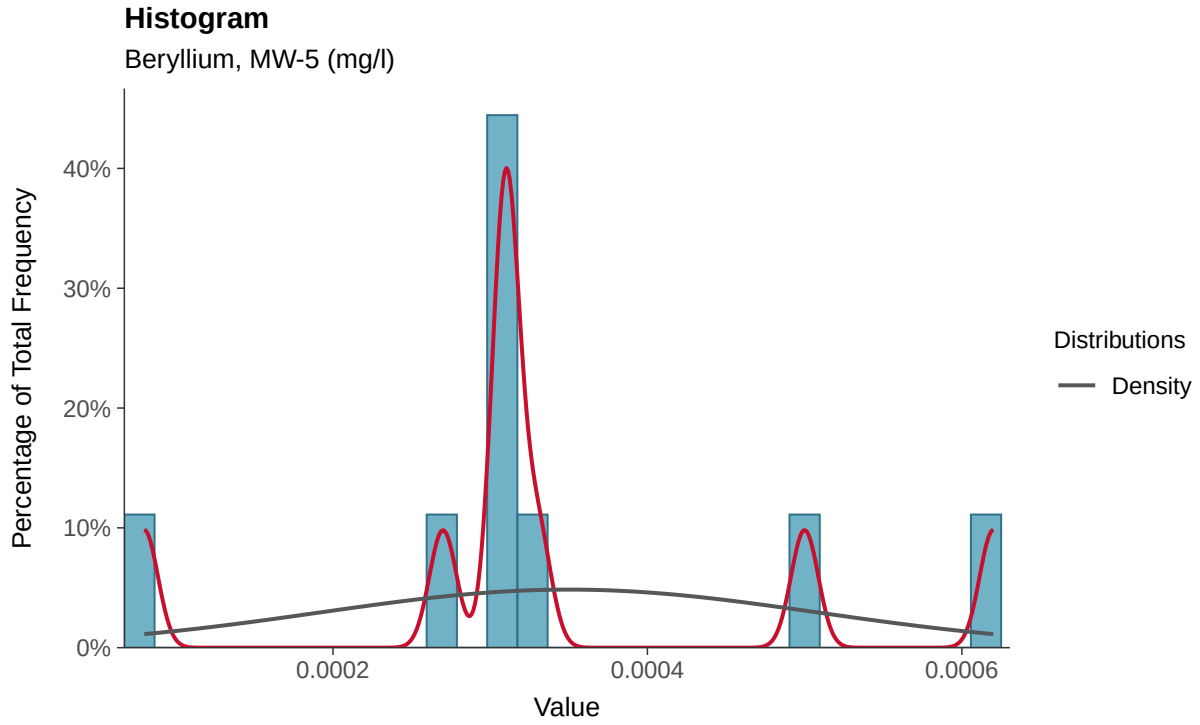
Barium, MW-5 (mg/l)



Appendix IV: Beryllium, MW-5

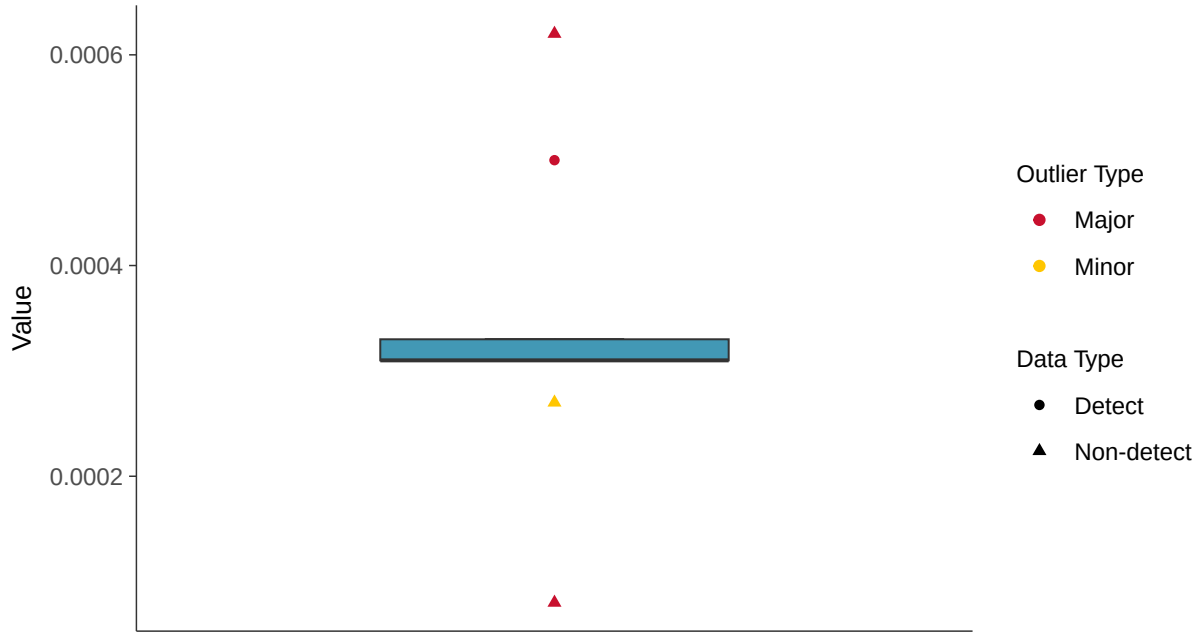
ID: 35_2_107





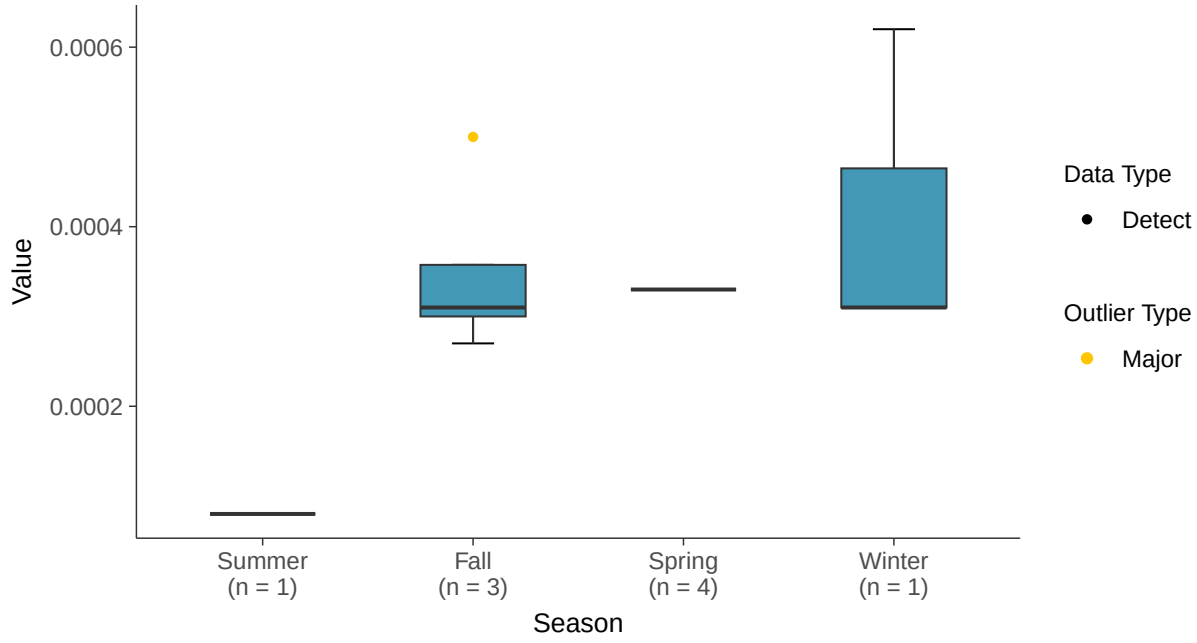
Boxplot

Beryllium, MW-5 (mg/l)



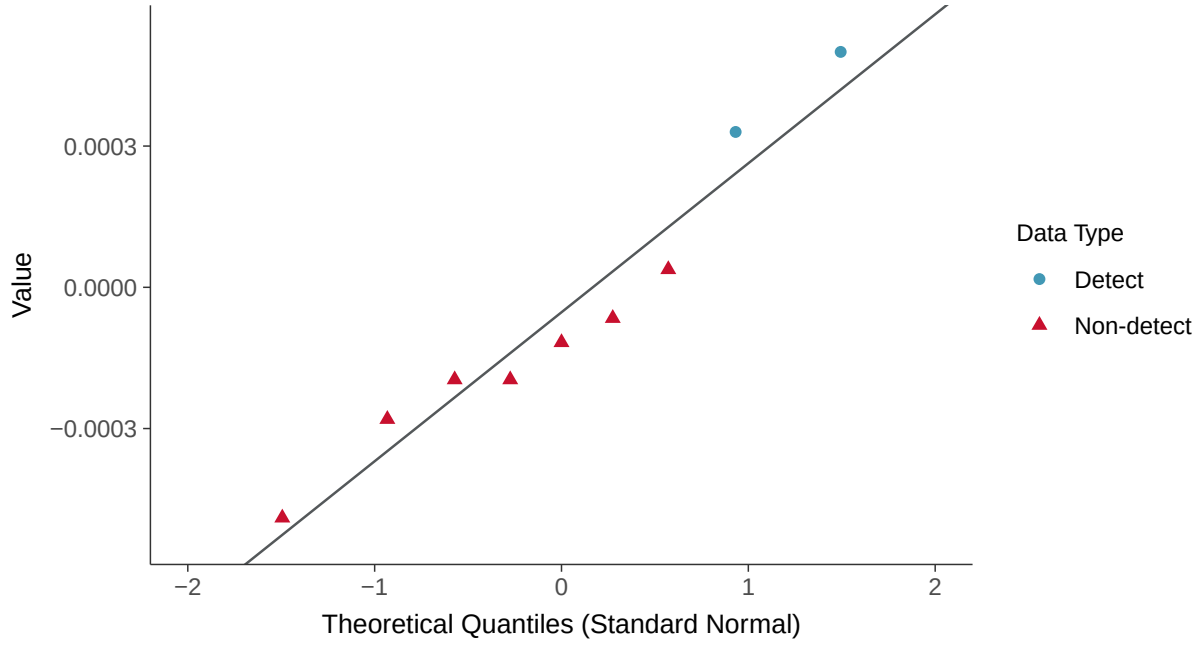
Boxplot by Season

Beryllium, MW-5 (mg/l)



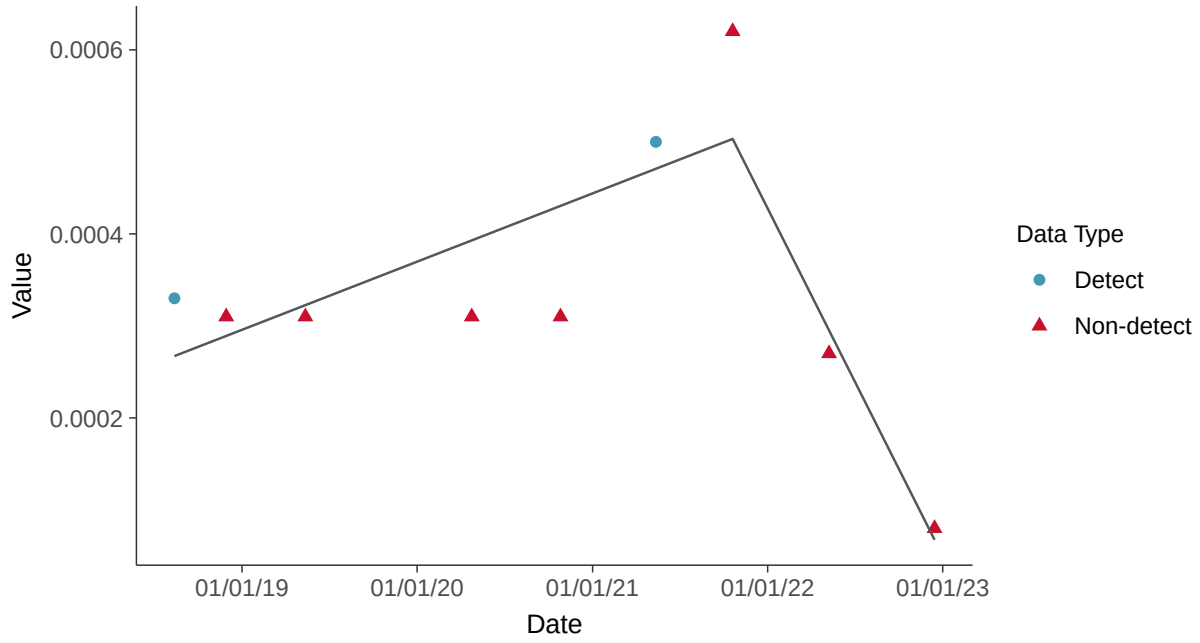
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-5 (mg/l)



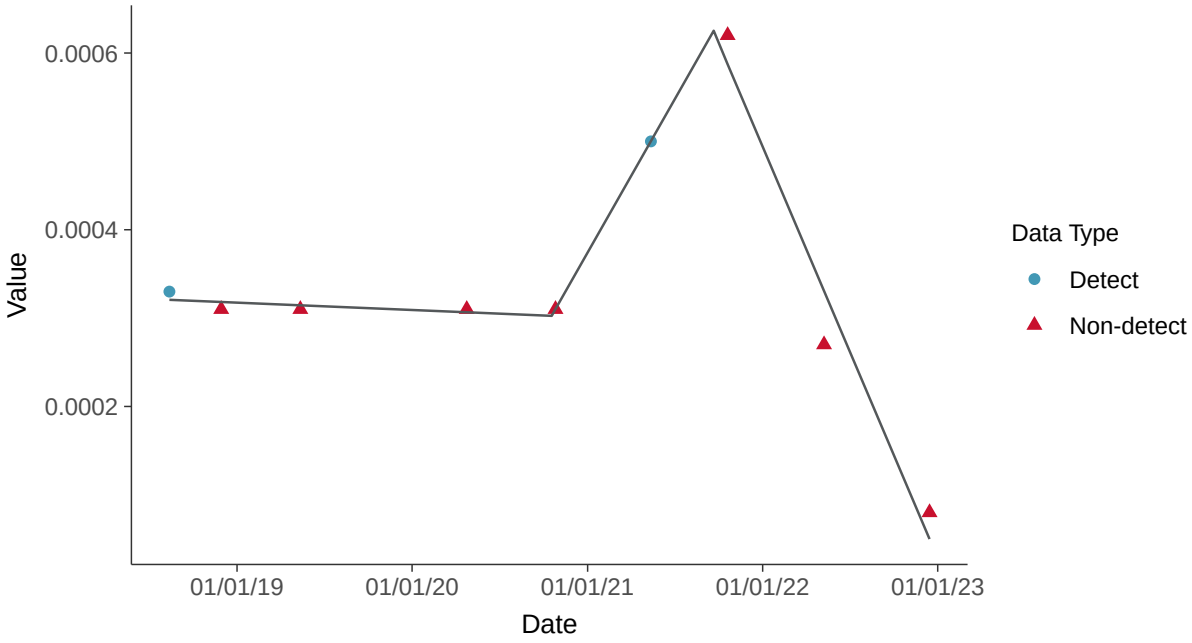
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-5 (mg/l)



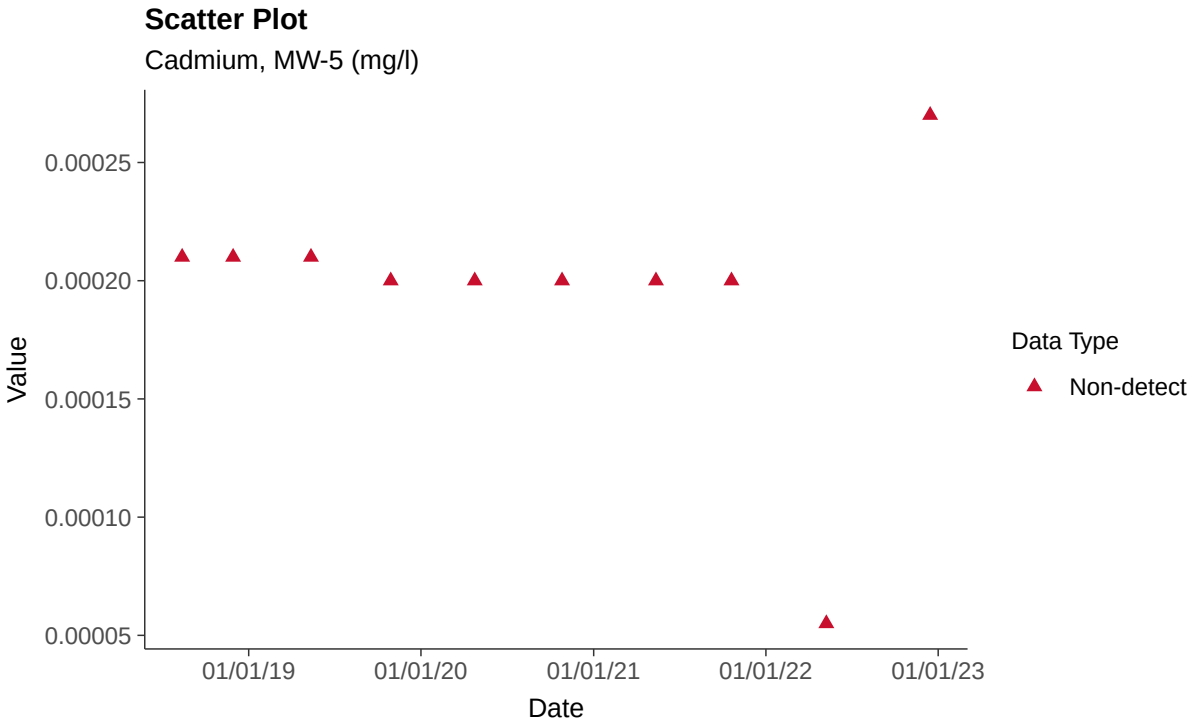
Trend Regression: Piecewise Linear-Linear-Linear

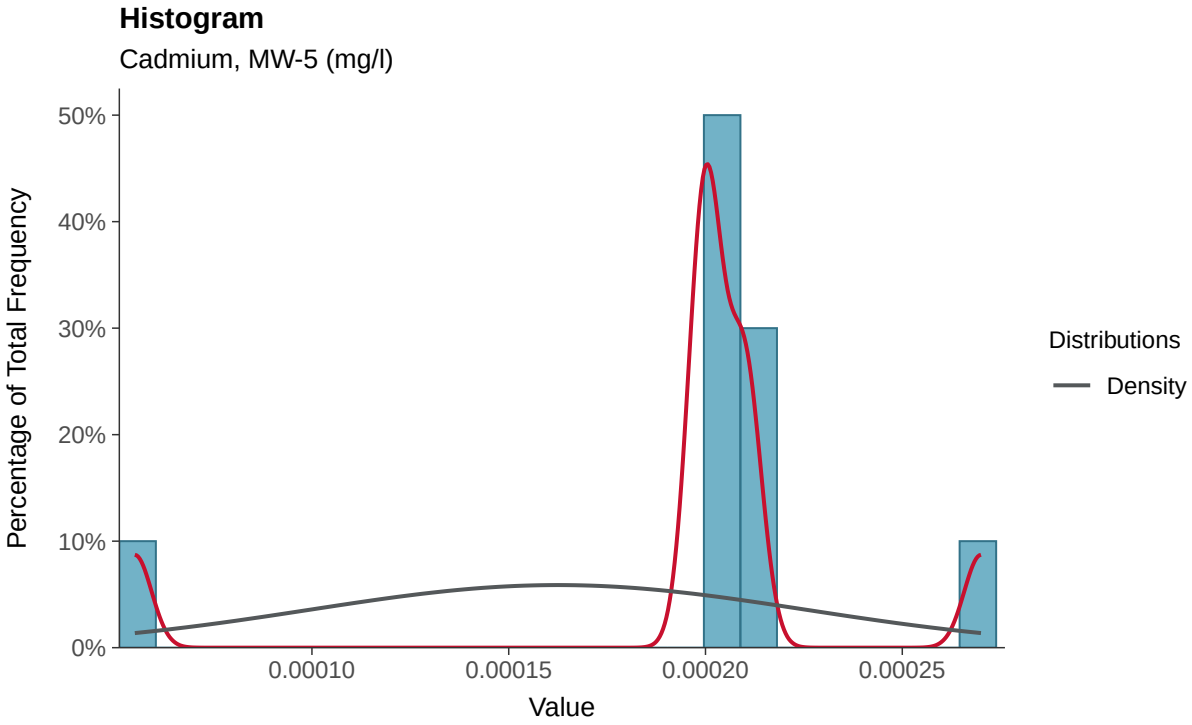
Beryllium, MW-5 (mg/l)



Appendix IV: Cadmium, MW-5

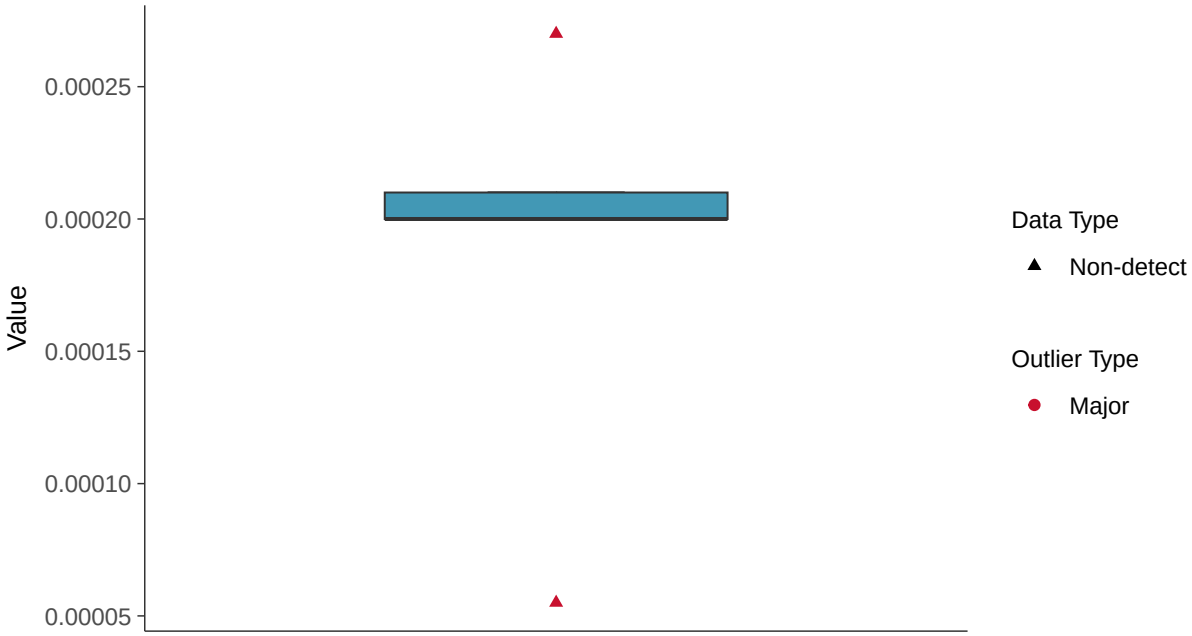
ID: 35_2_109





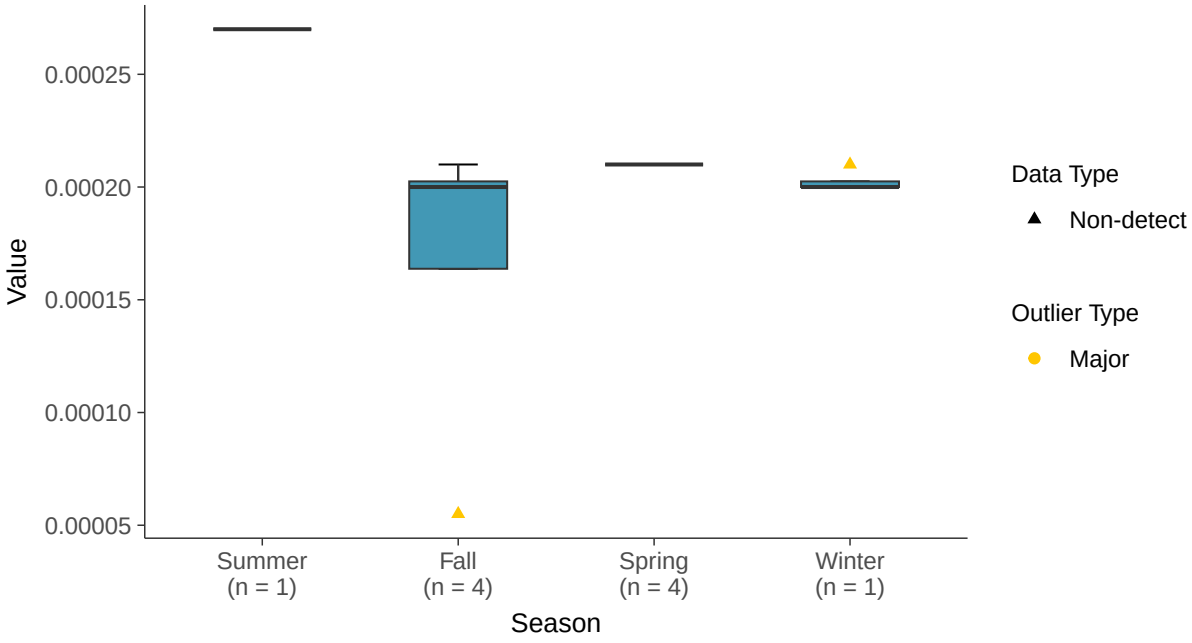
Boxplot

Cadmium, MW-5 (mg/l)



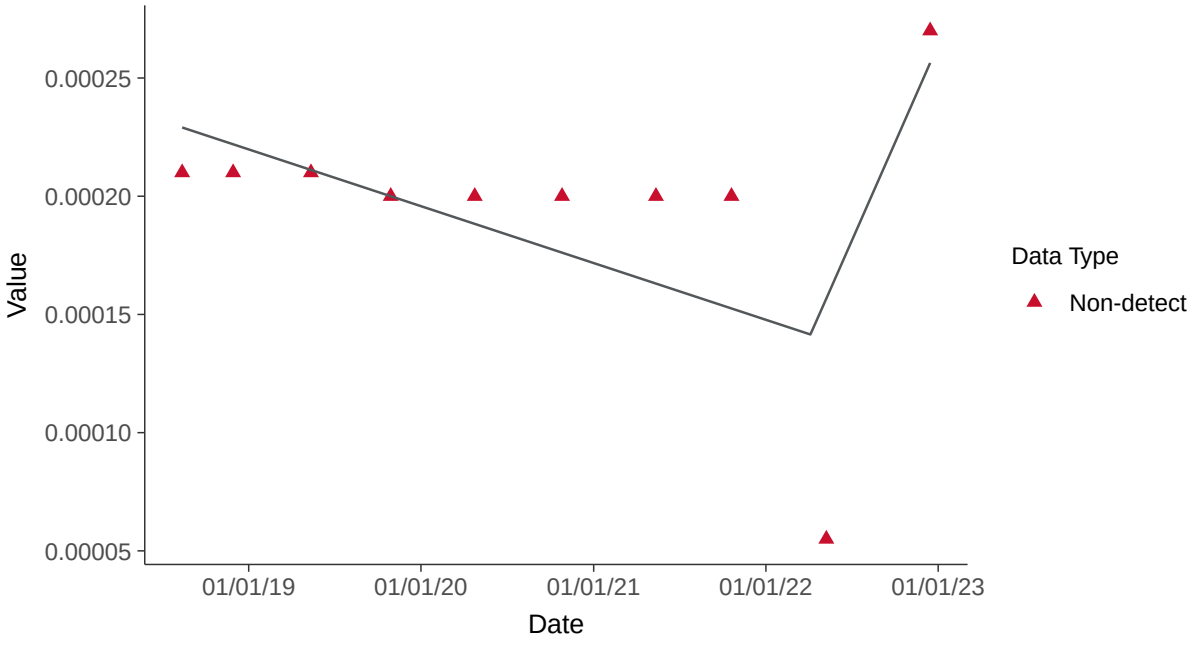
Boxplot by Season

Cadmium, MW-5 (mg/l)



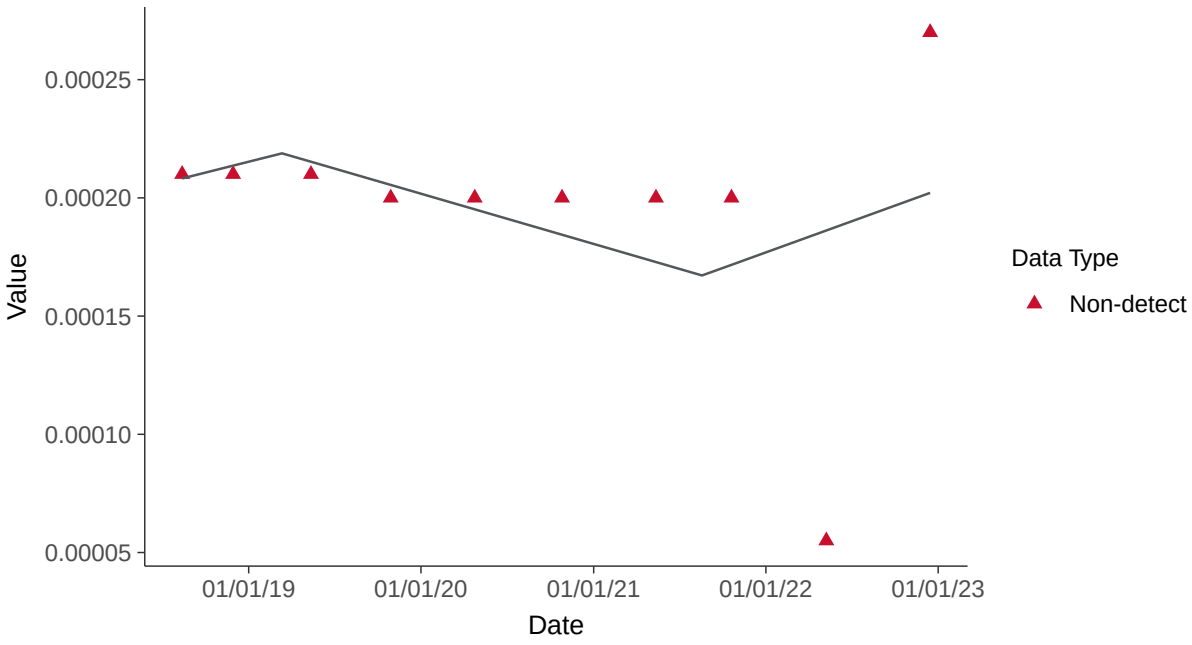
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-5 (mg/l)



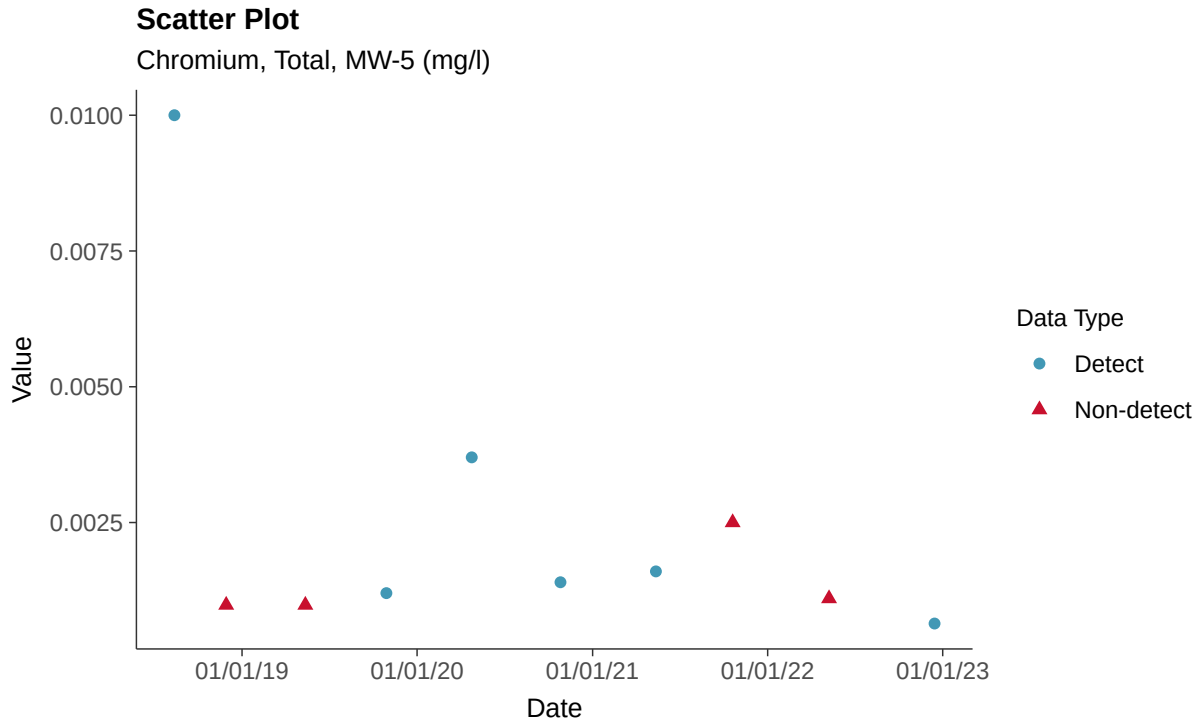
Trend Regression: Piecewise Linear-Linear-Linear

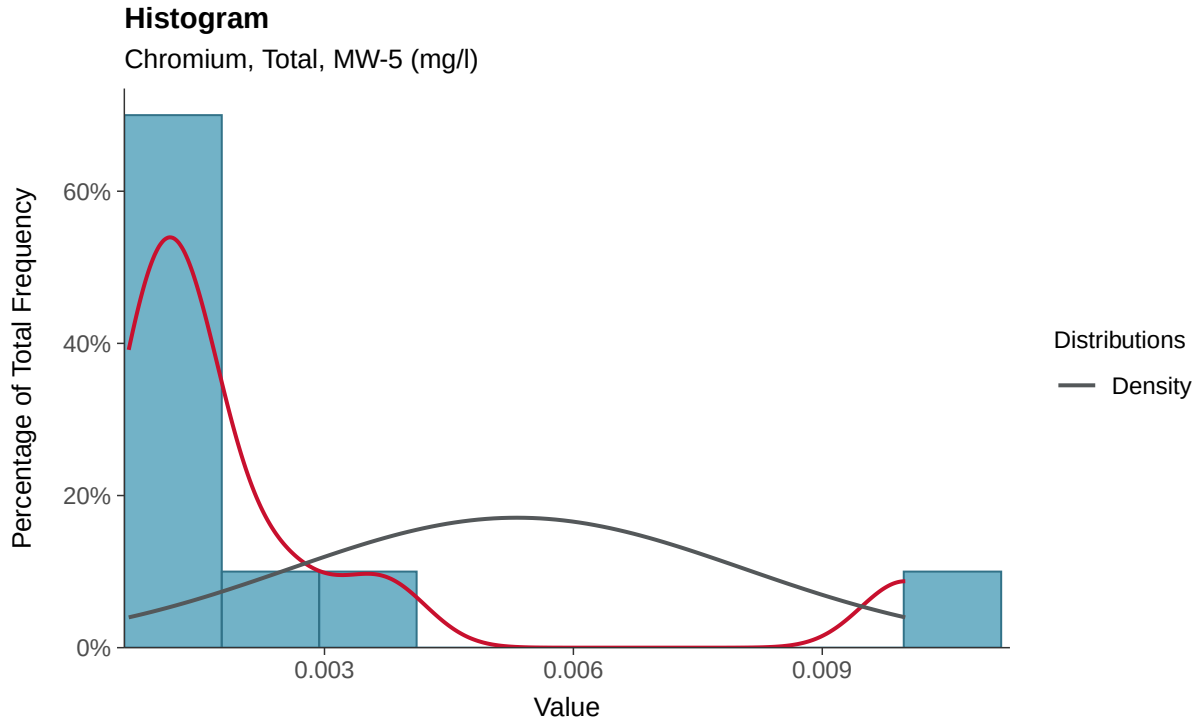
Cadmium, MW-5 (mg/l)



Appendix IV: Chromium, Total, MW-5

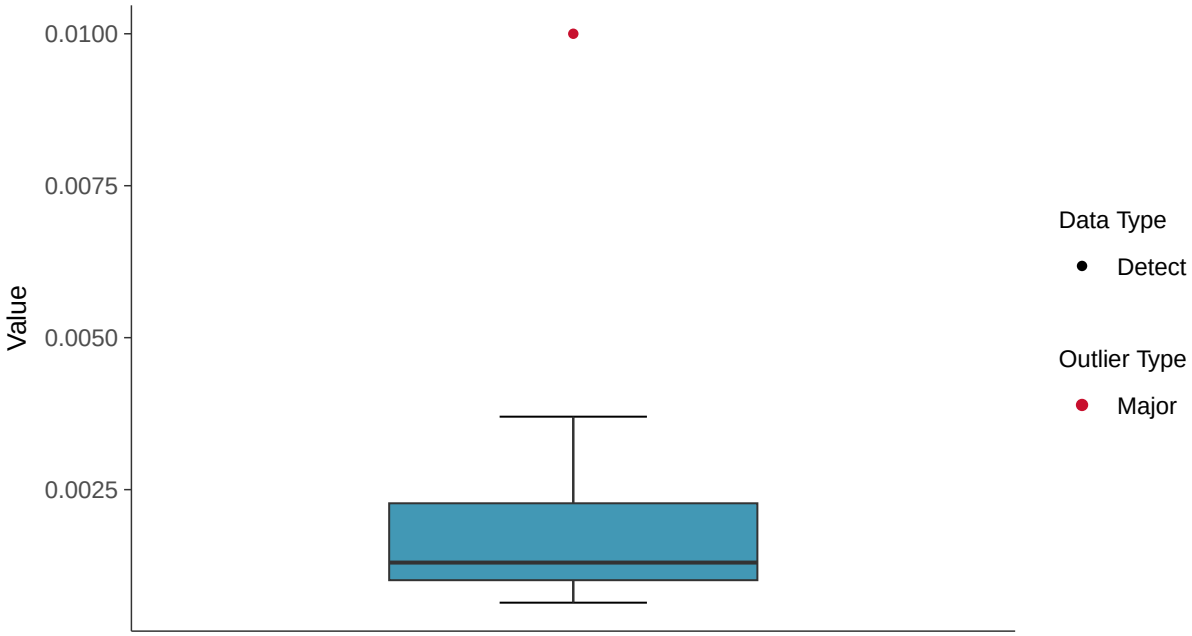
ID: 35_2_112





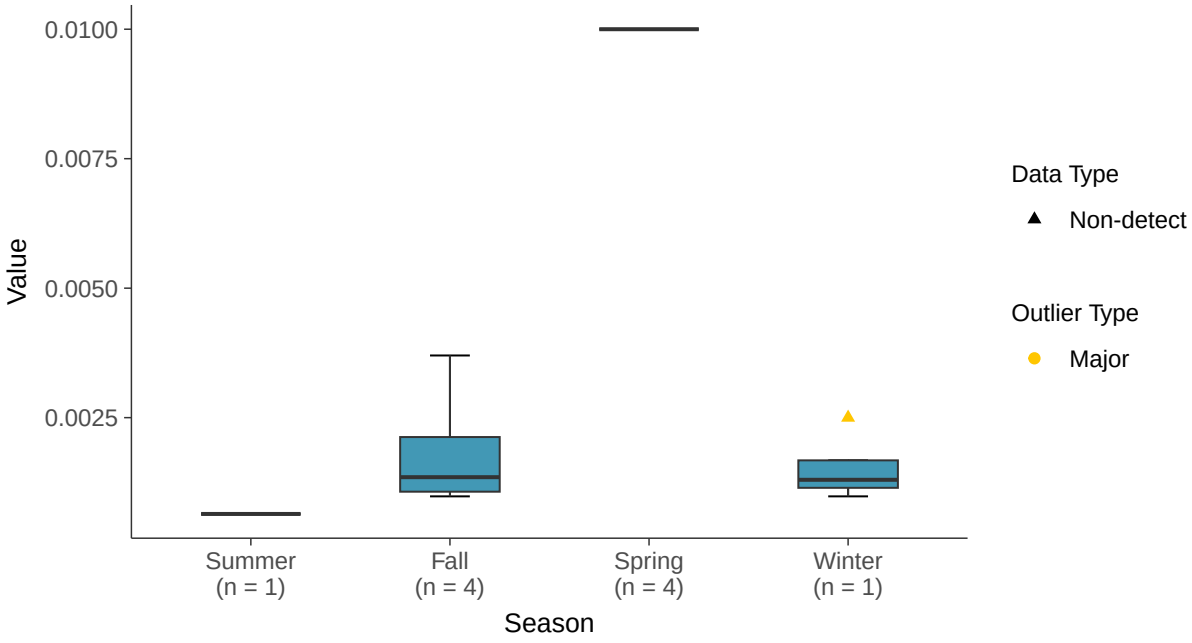
Boxplot

Chromium, Total, MW-5 (mg/l)



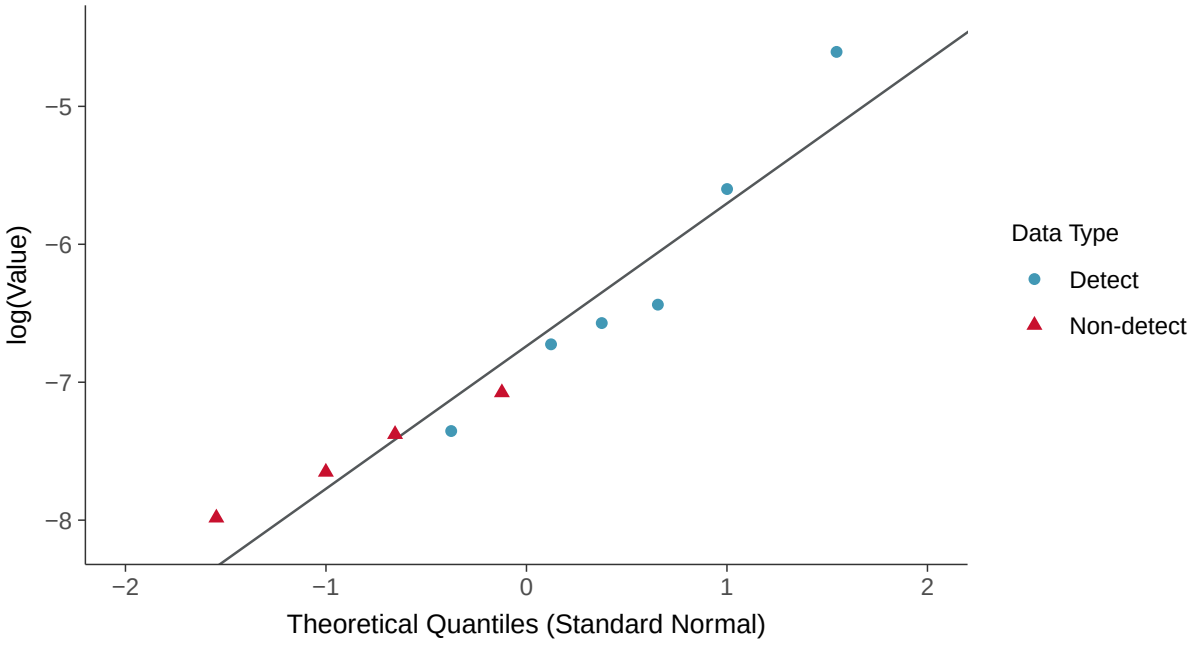
Boxplot by Season

Chromium, Total, MW-5 (mg/l)



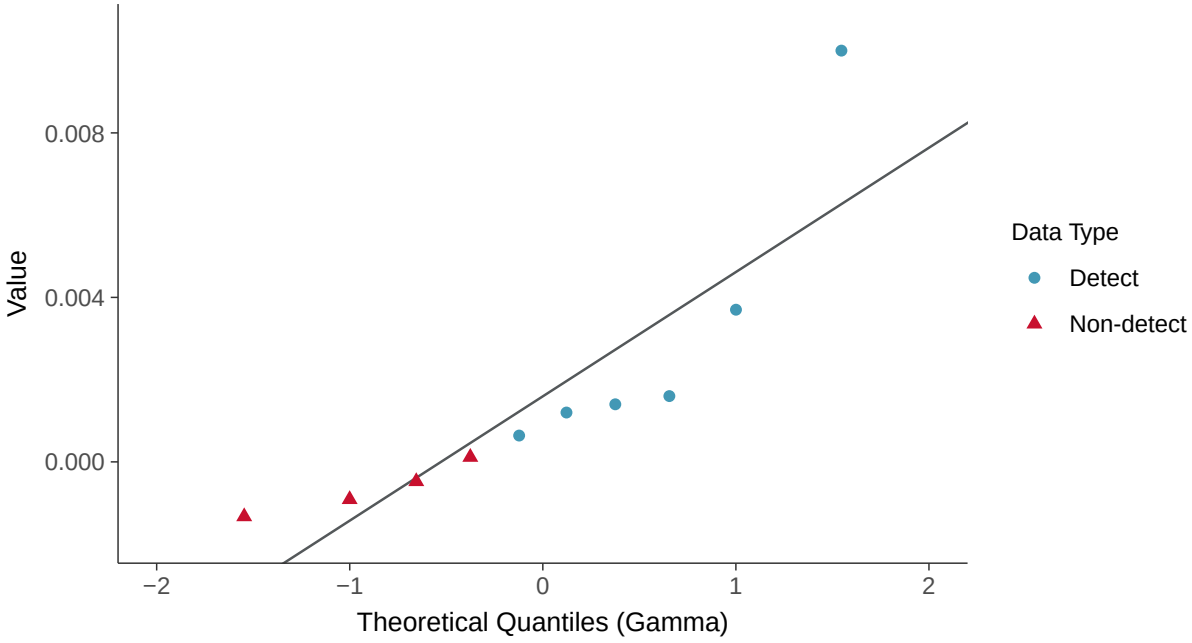
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-5 (mg/l)



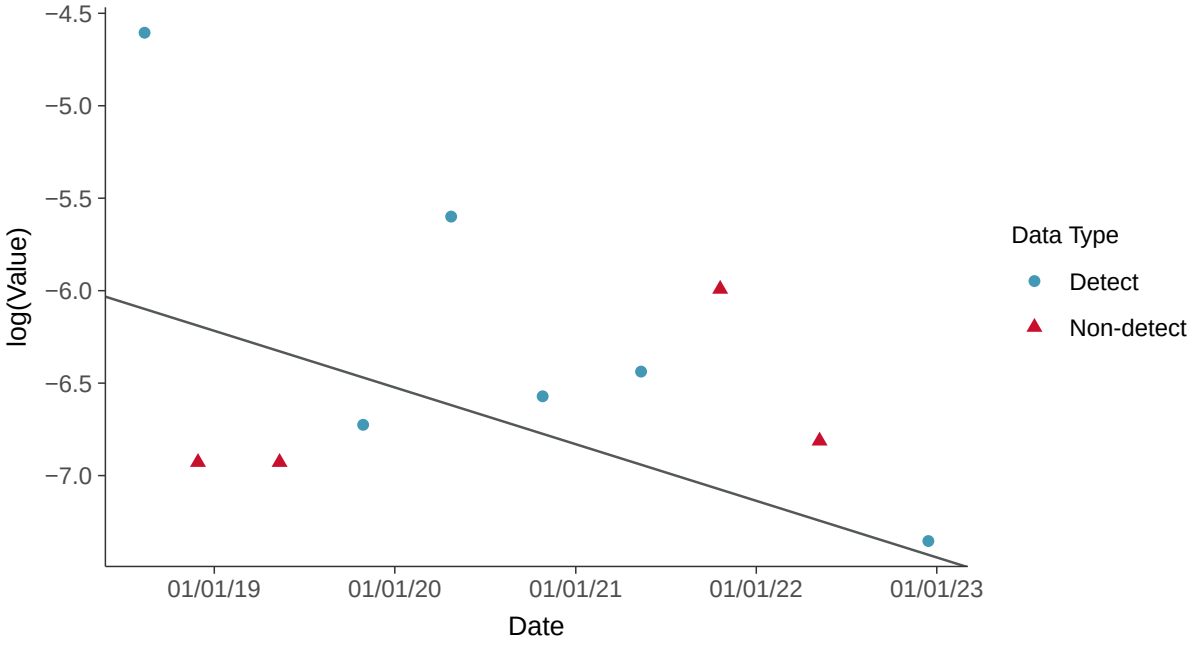
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-5 (mg/l)



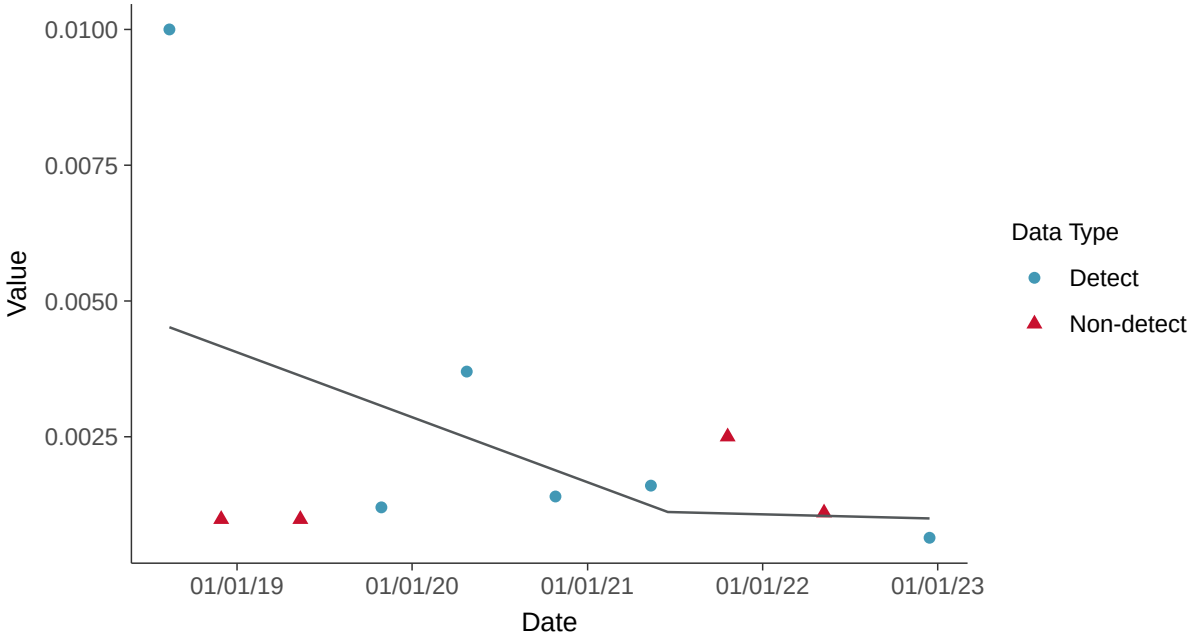
Trend Regression: Lognormal MLE

Chromium, Total, MW-5 (mg/l)



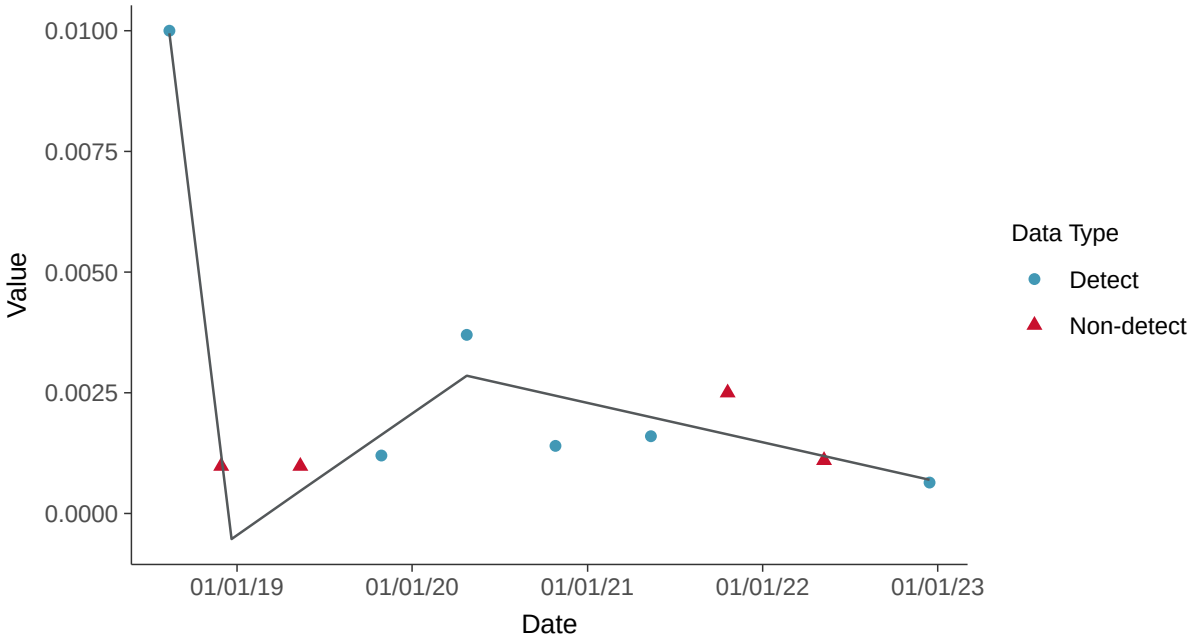
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-5 (mg/l)



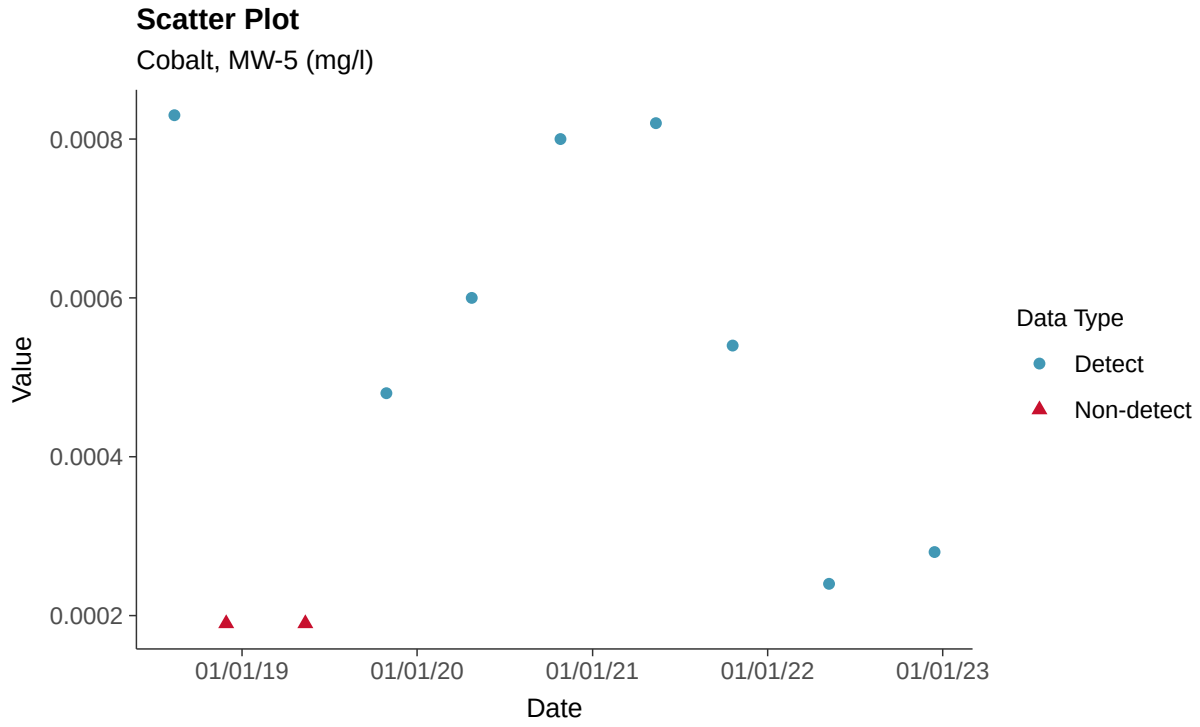
Trend Regression: Piecewise Linear-Linear-Linear

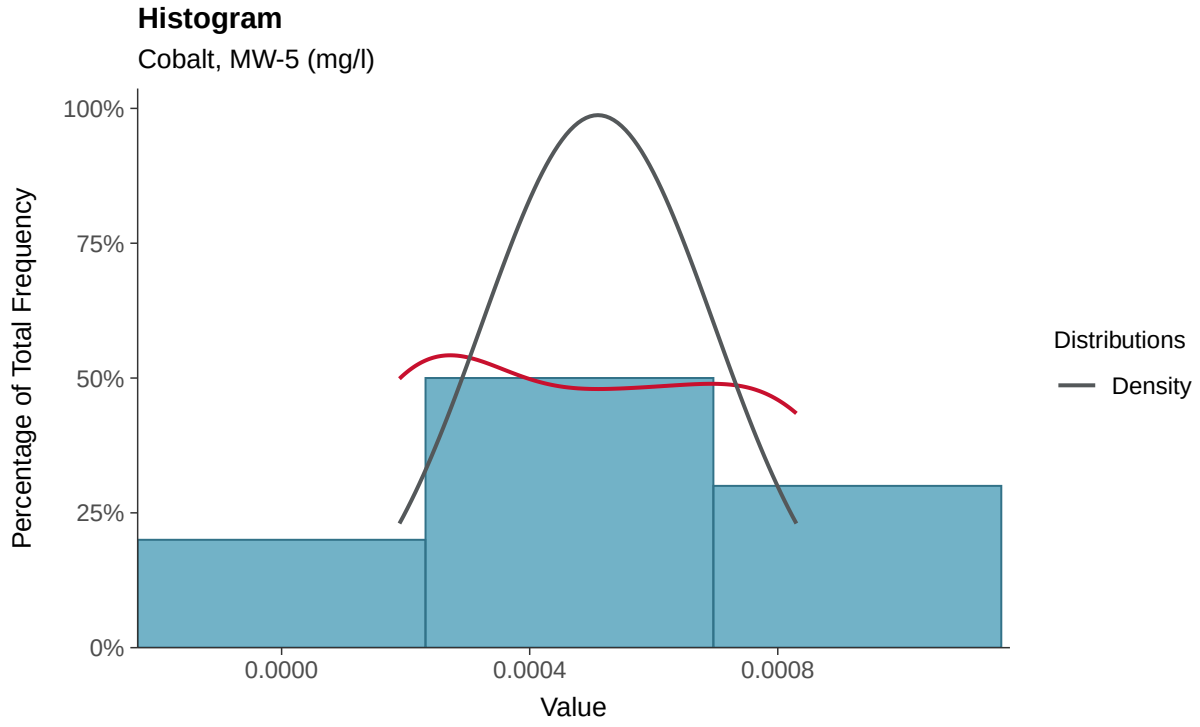
Chromium, Total, MW-5 (mg/l)



Appendix IV: Cobalt, MW-5

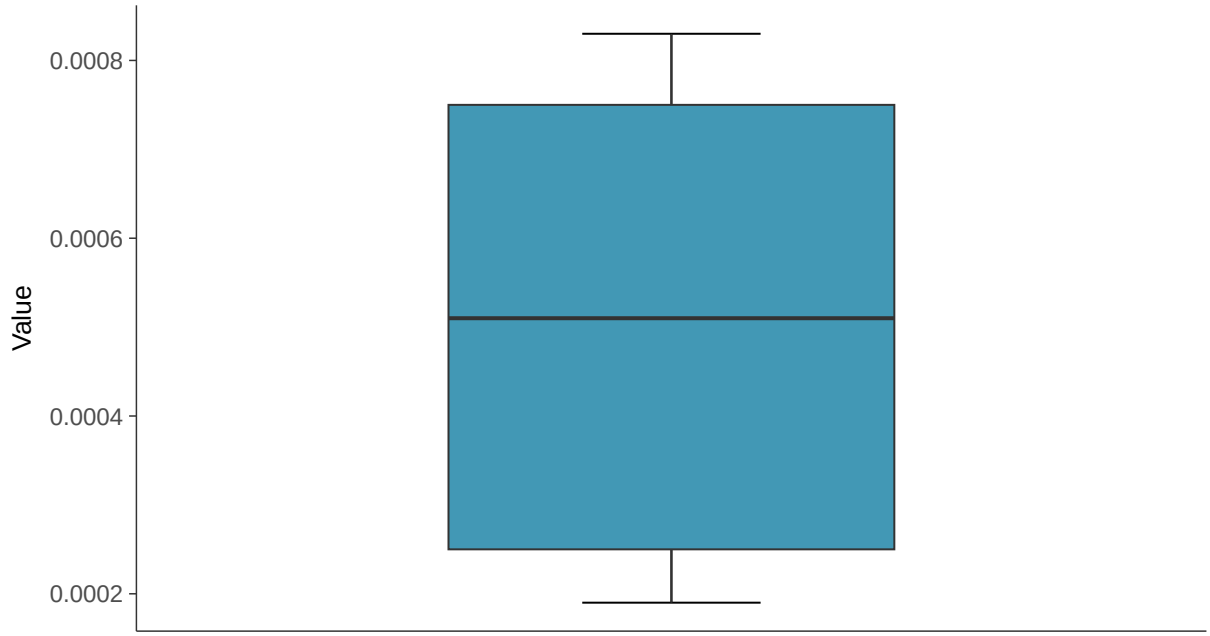
ID: 35_2_113





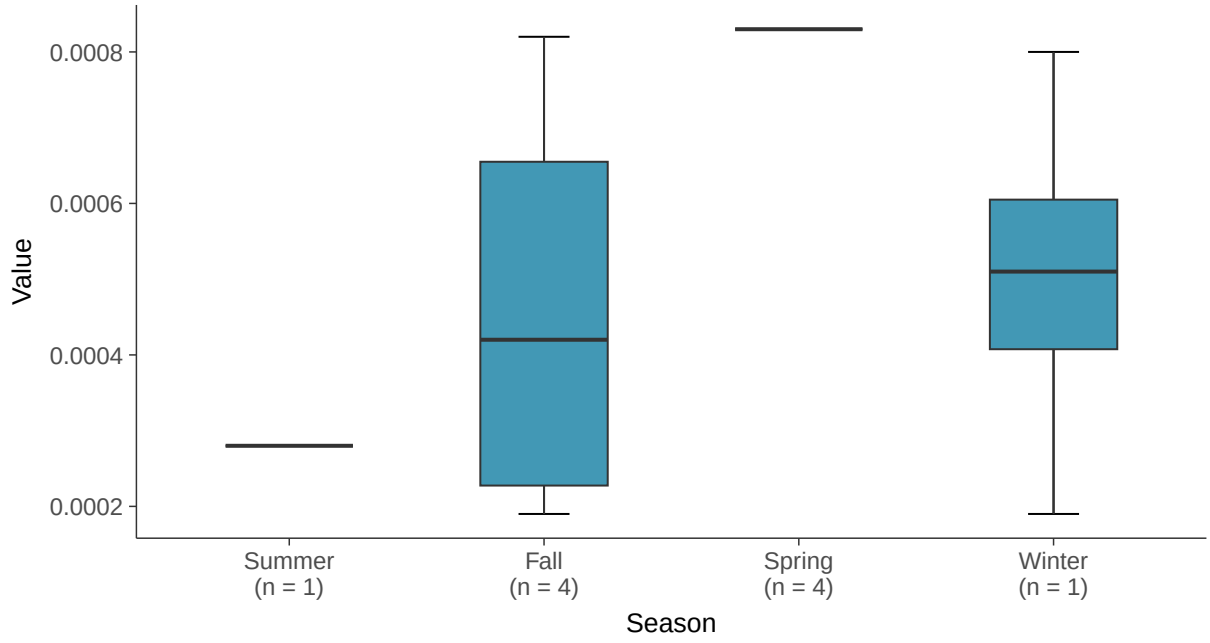
Boxplot

Cobalt, MW-5 (mg/l)



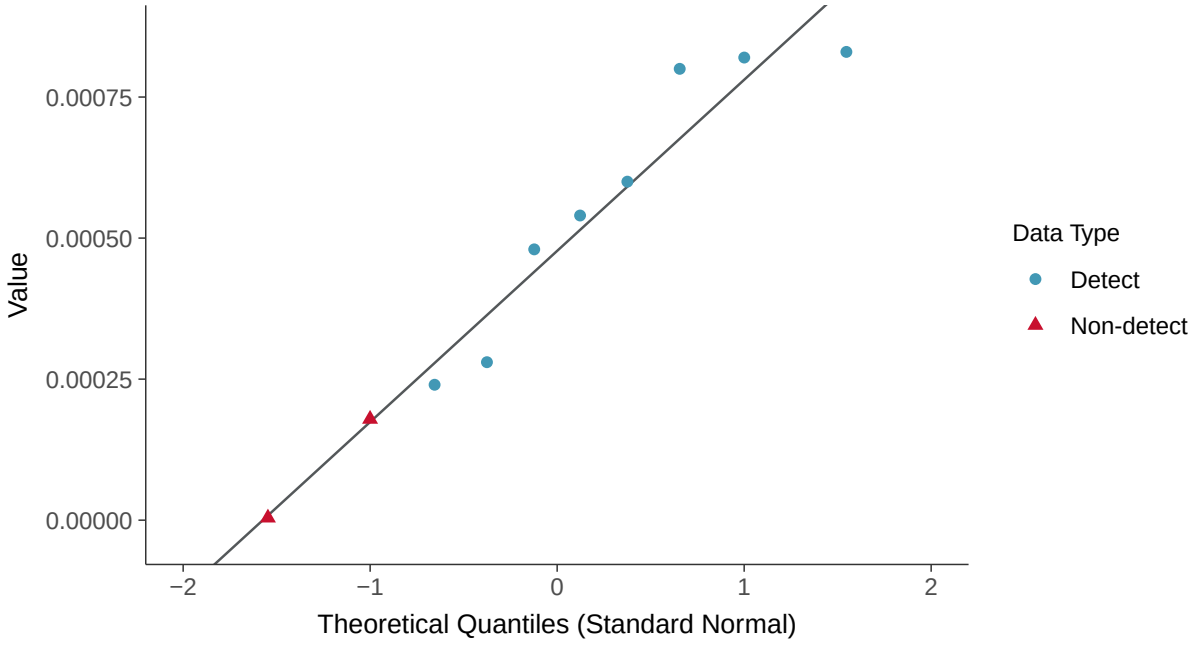
Boxplot by Season

Cobalt, MW-5 (mg/l)



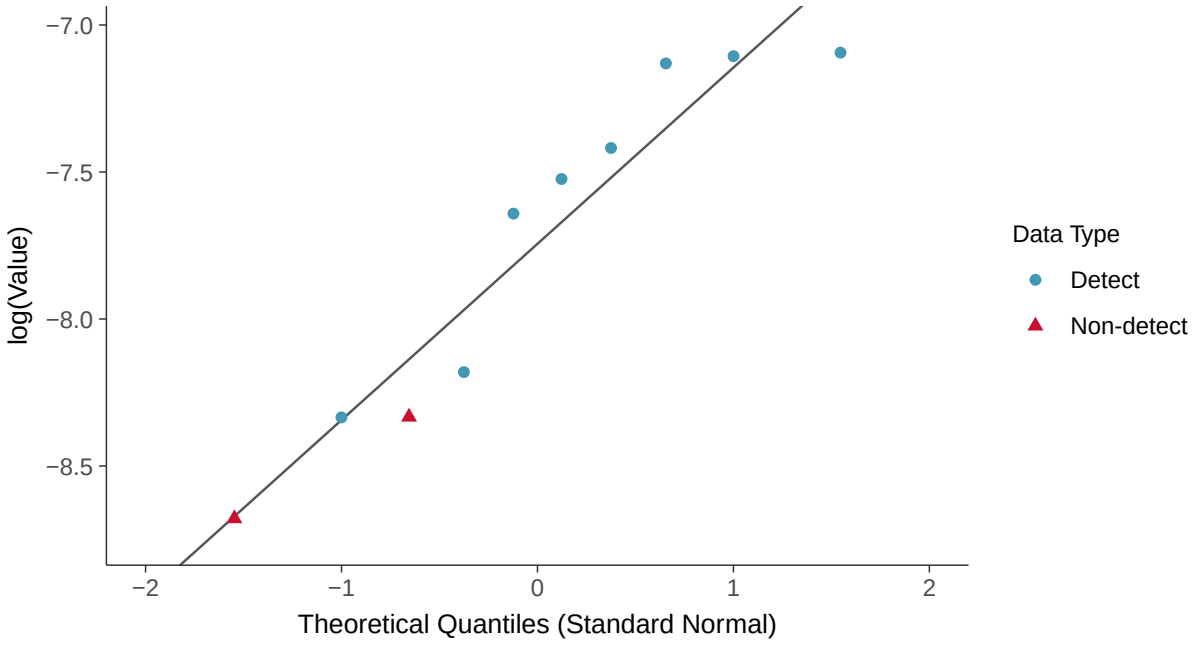
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-5 (mg/l)



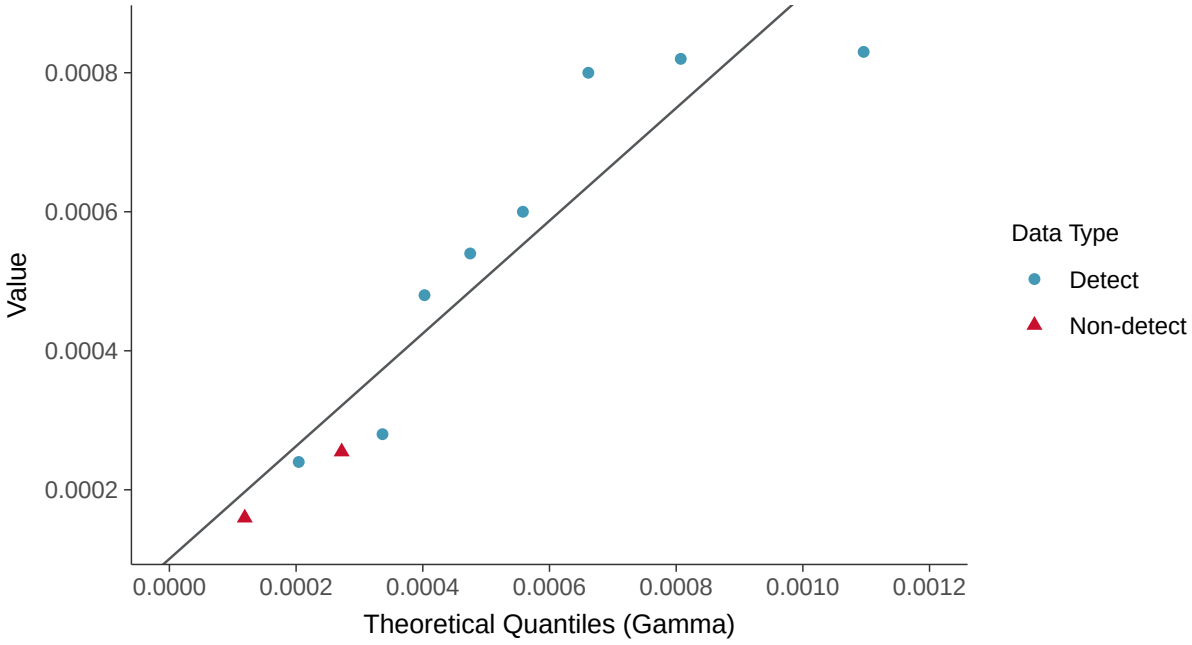
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-5 (mg/l)



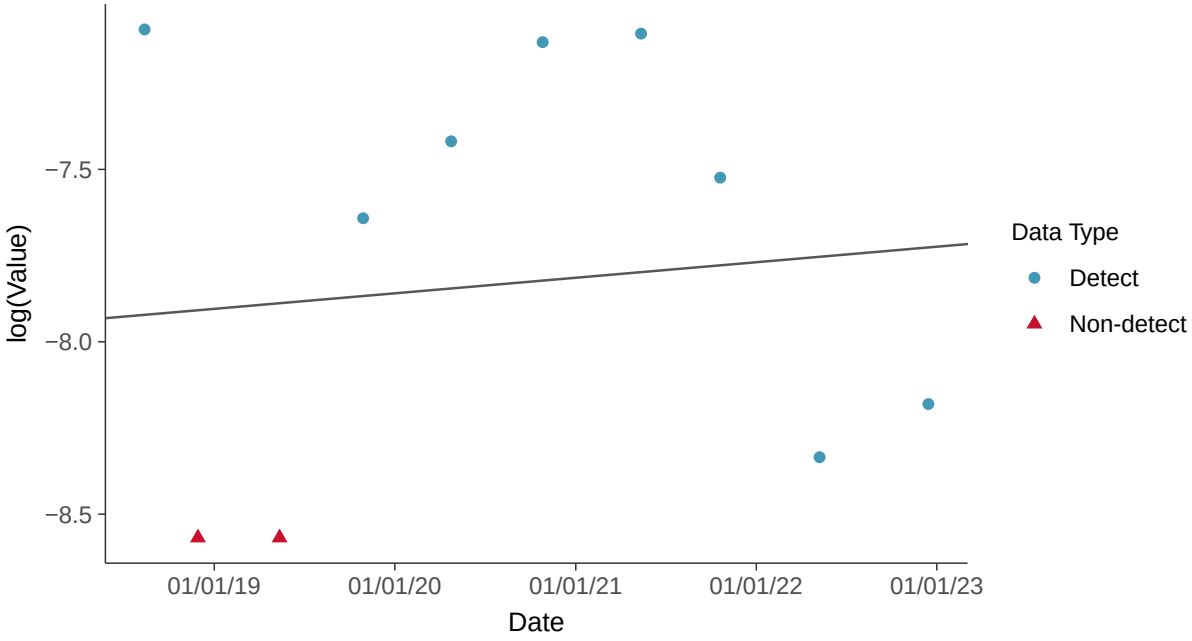
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-5 (mg/l)



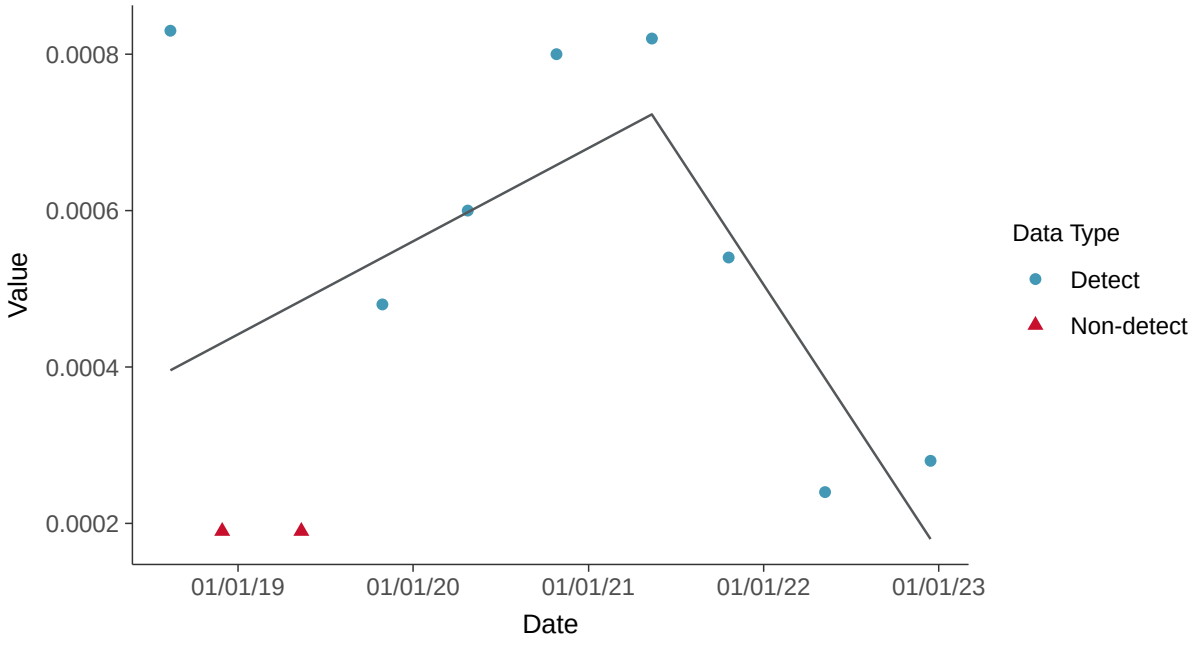
Trend Regression: Lognormal MLE

Cobalt, MW-5 (mg/l)



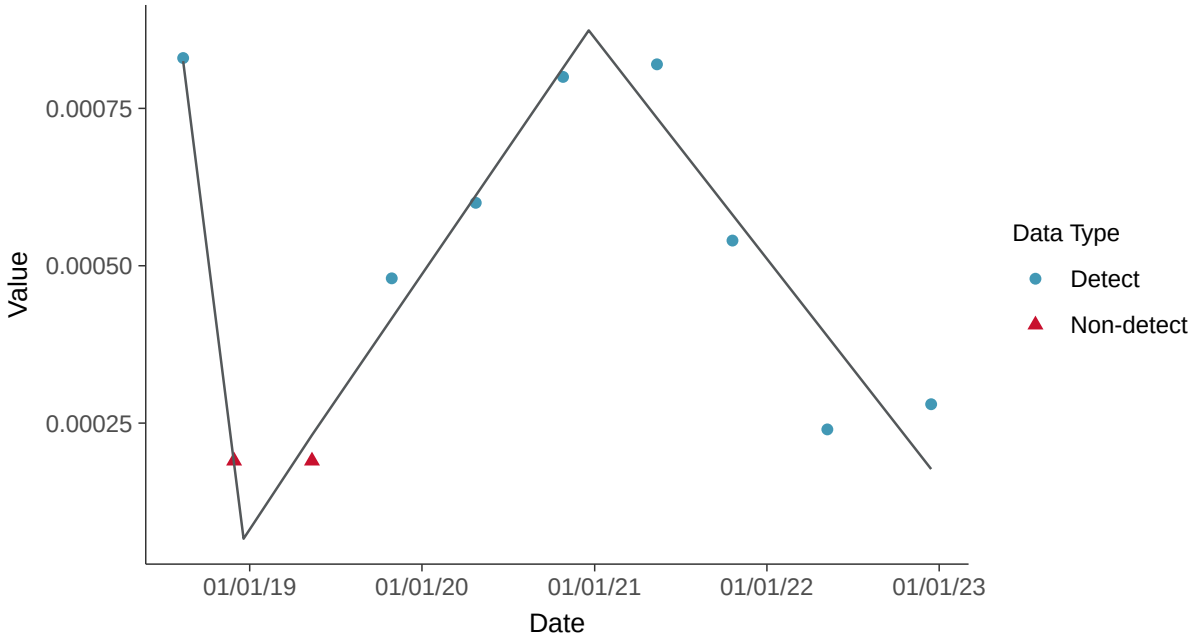
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-5 (mg/l)



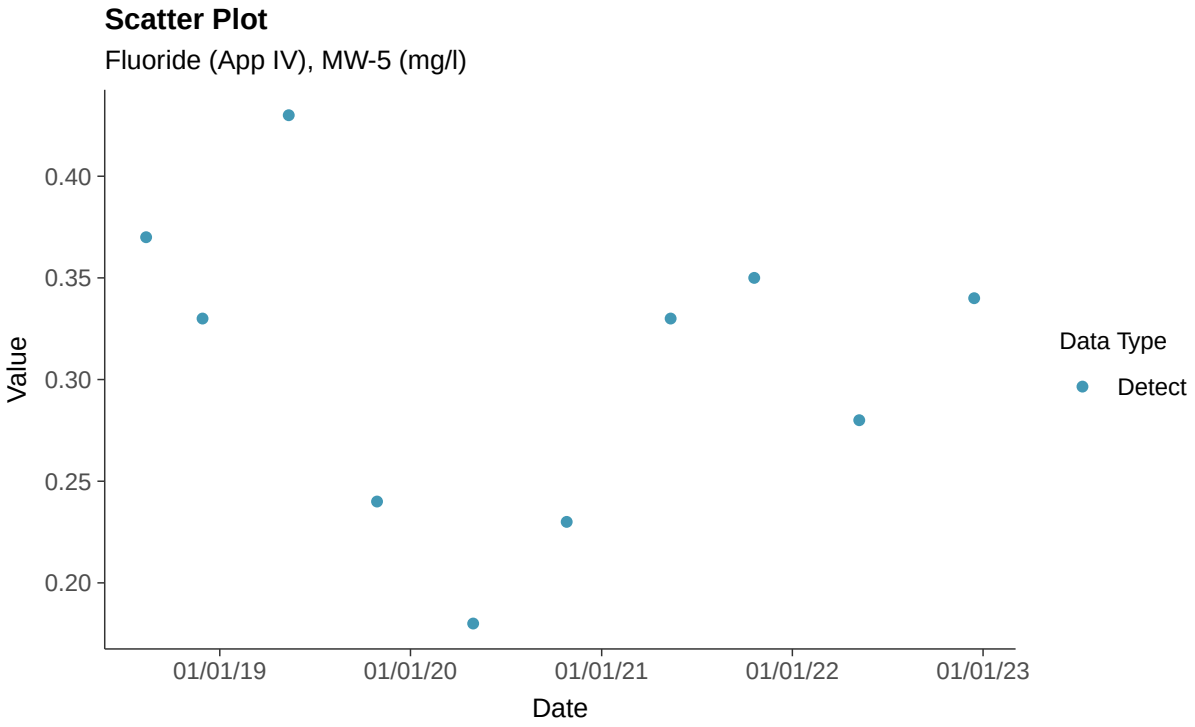
Trend Regression: Piecewise Linear-Linear-Linear

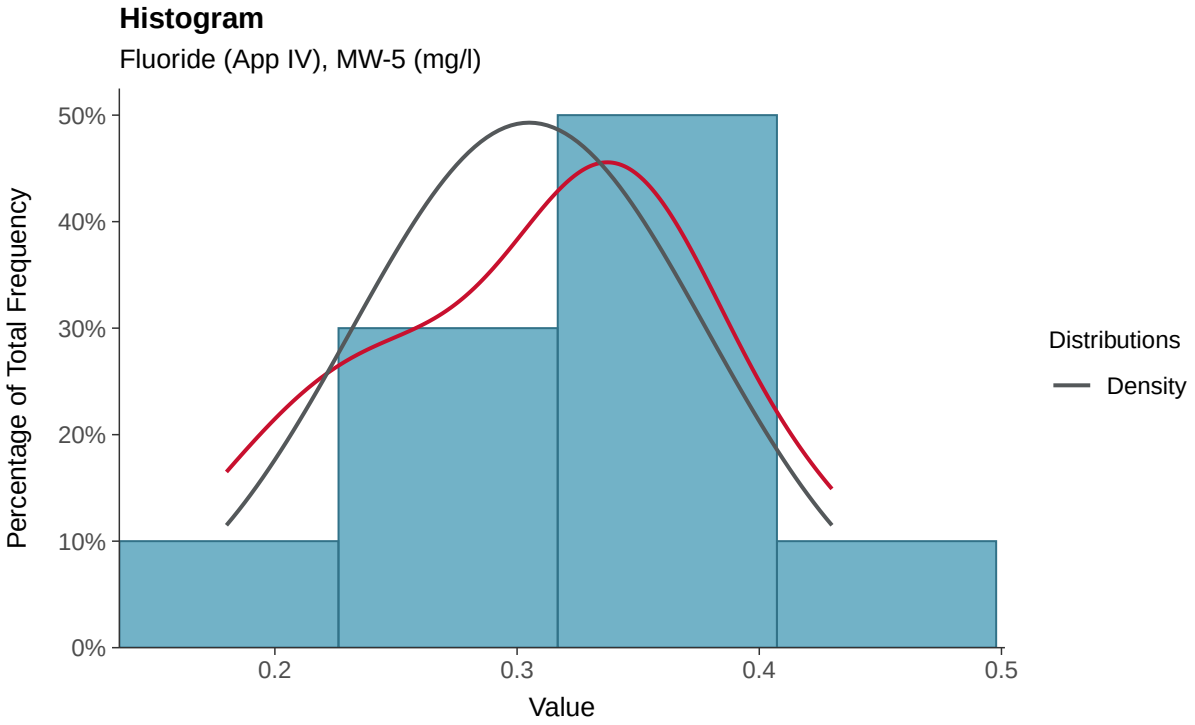
Cobalt, MW-5 (mg/l)



Appendix IV: Fluoride (App IV), MW-5

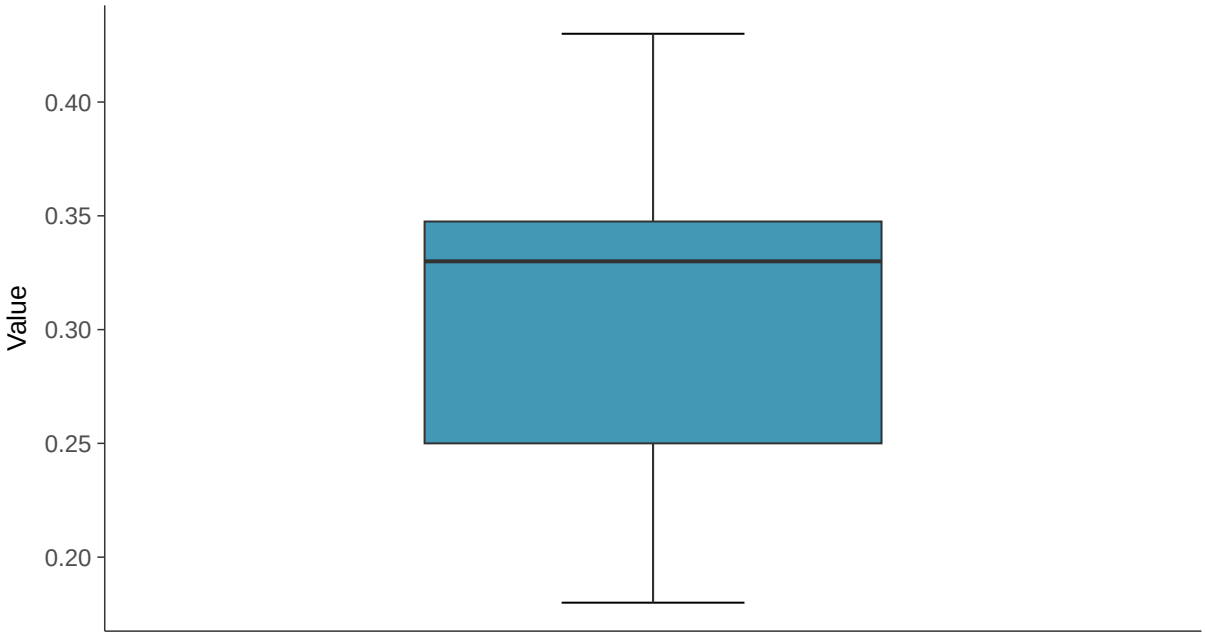
ID: 35_2_116





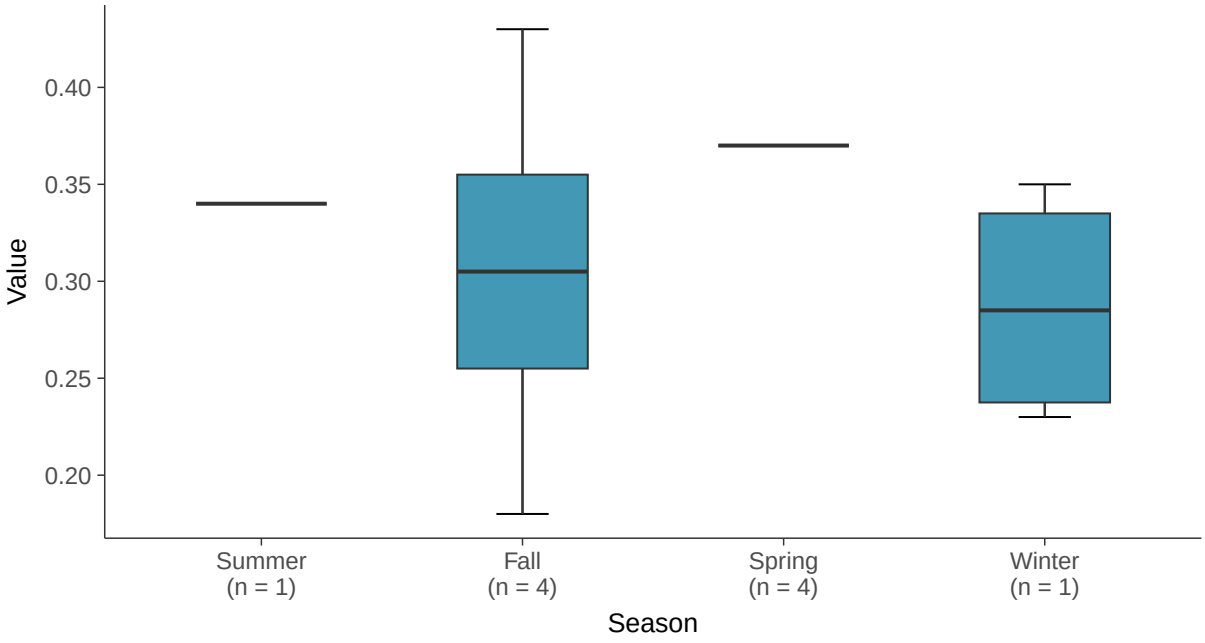
Boxplot

Fluoride (App IV), MW-5 (mg/l)



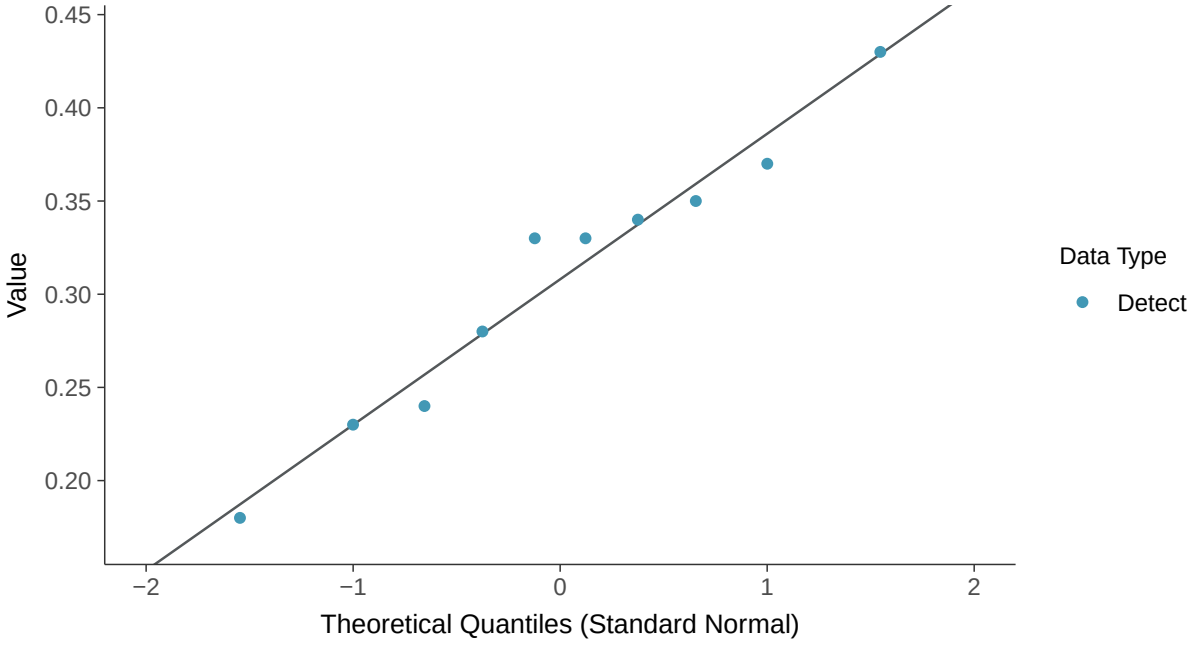
Boxplot by Season

Fluoride (App IV), MW-5 (mg/l)



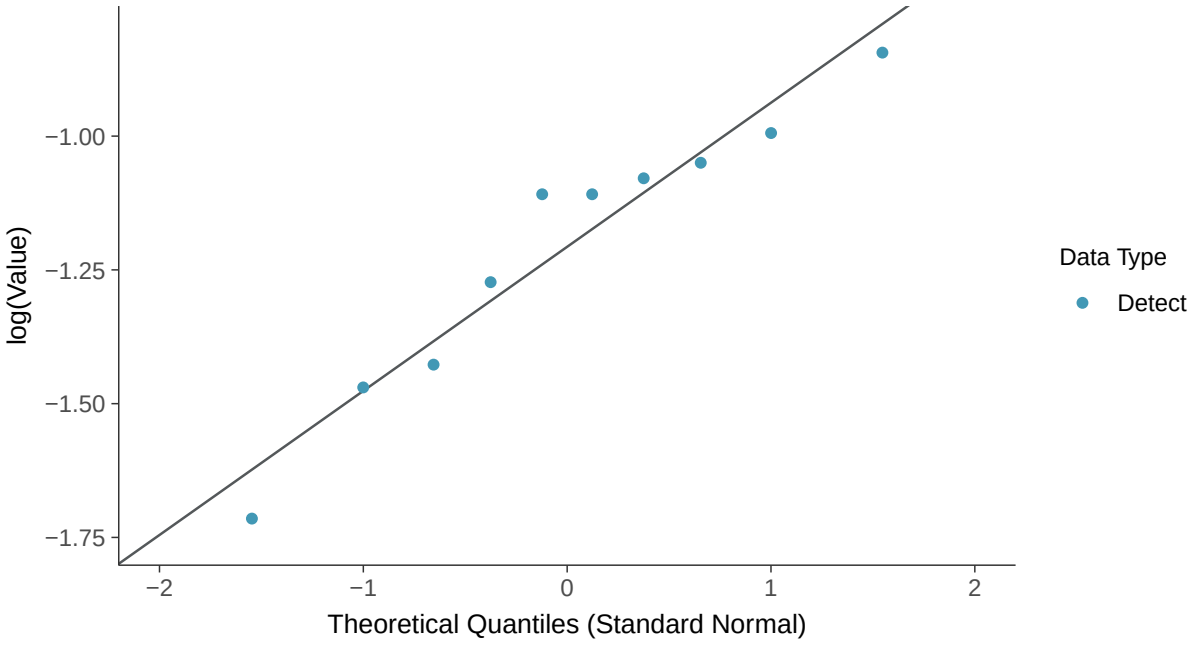
Normal Q-Q plot

Fluoride (App IV), MW-5 (mg/l)



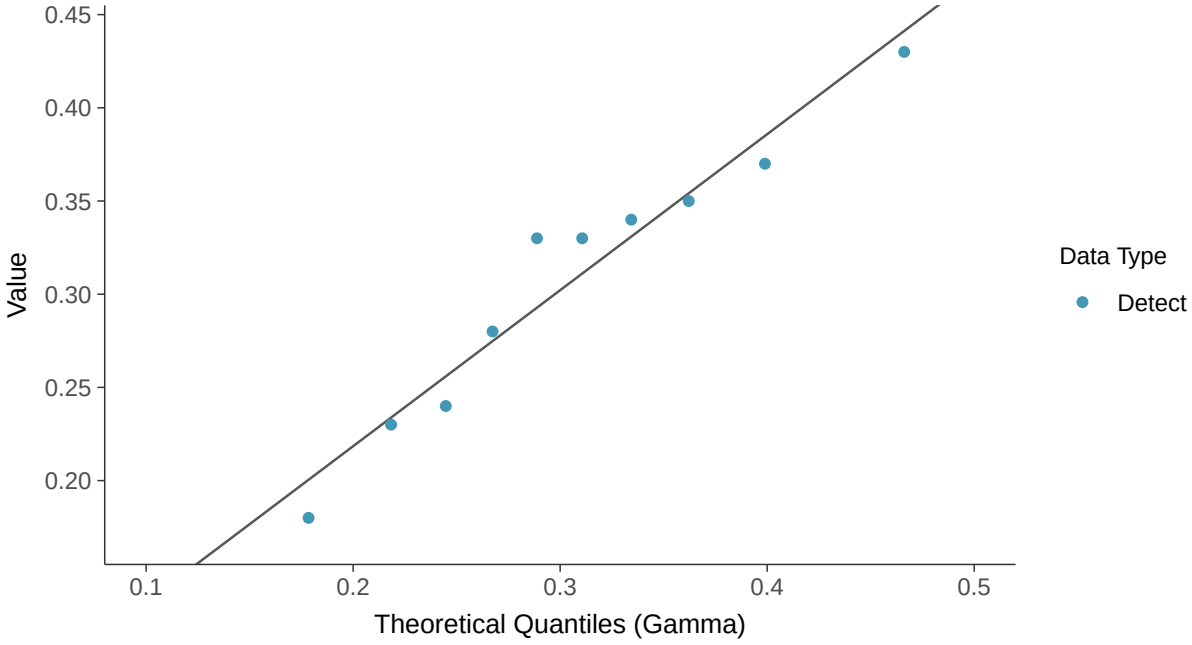
Lognormal Q-Q plot

Fluoride (App IV), MW-5 (mg/l)



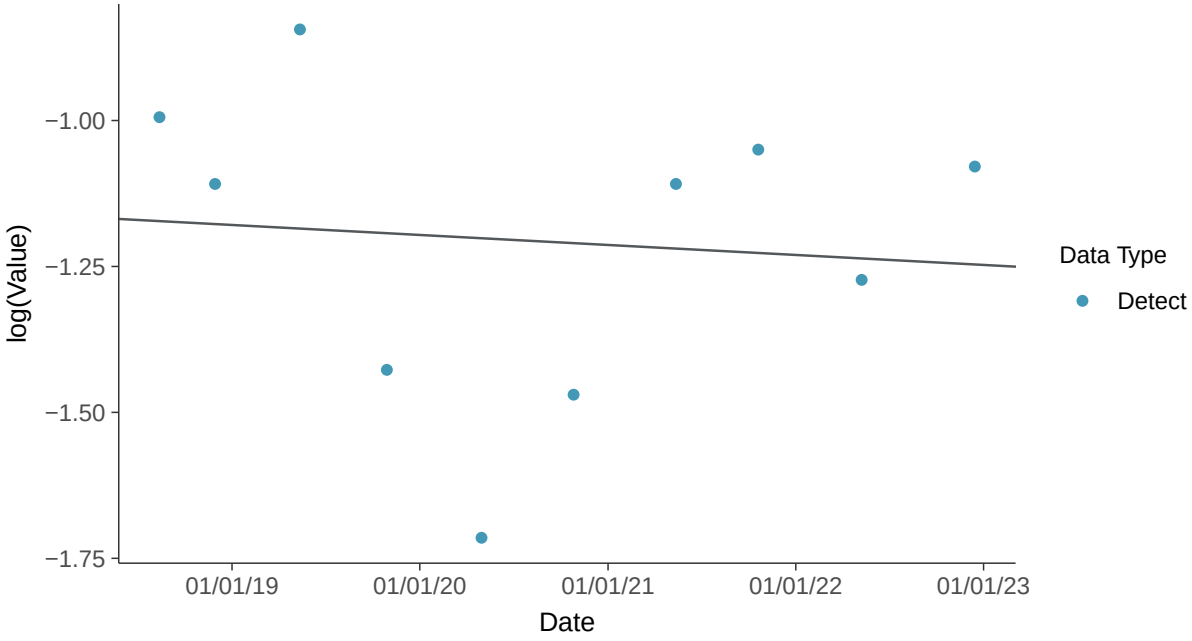
Gamma Q-Q plot

Fluoride (App IV), MW-5 (mg/l)



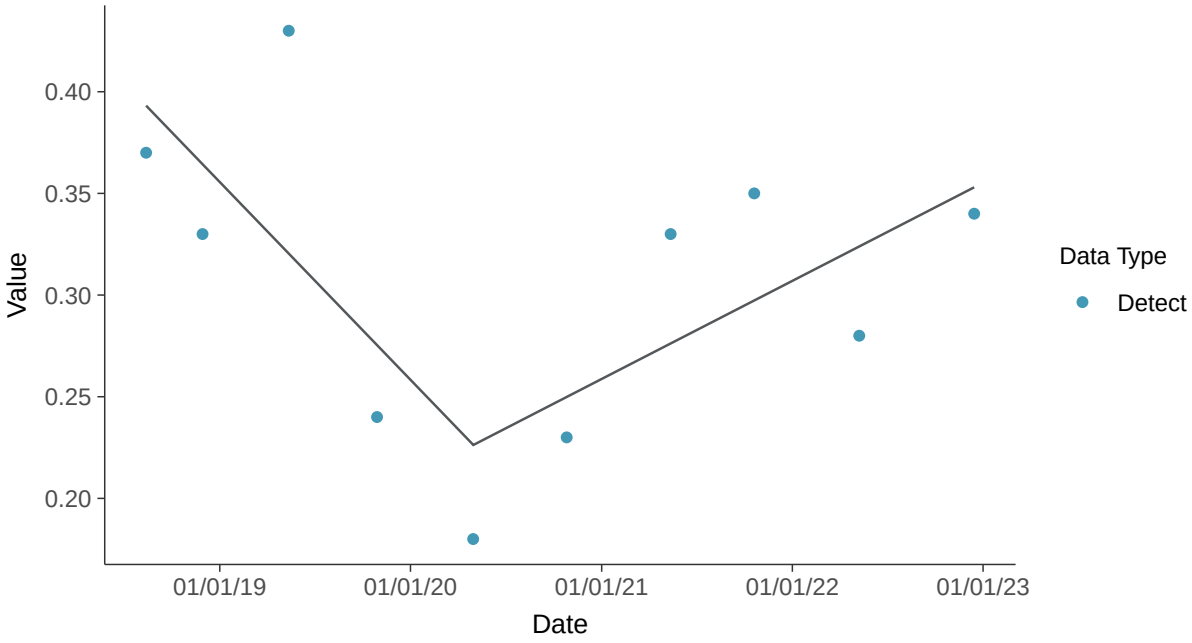
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-5 (mg/l)



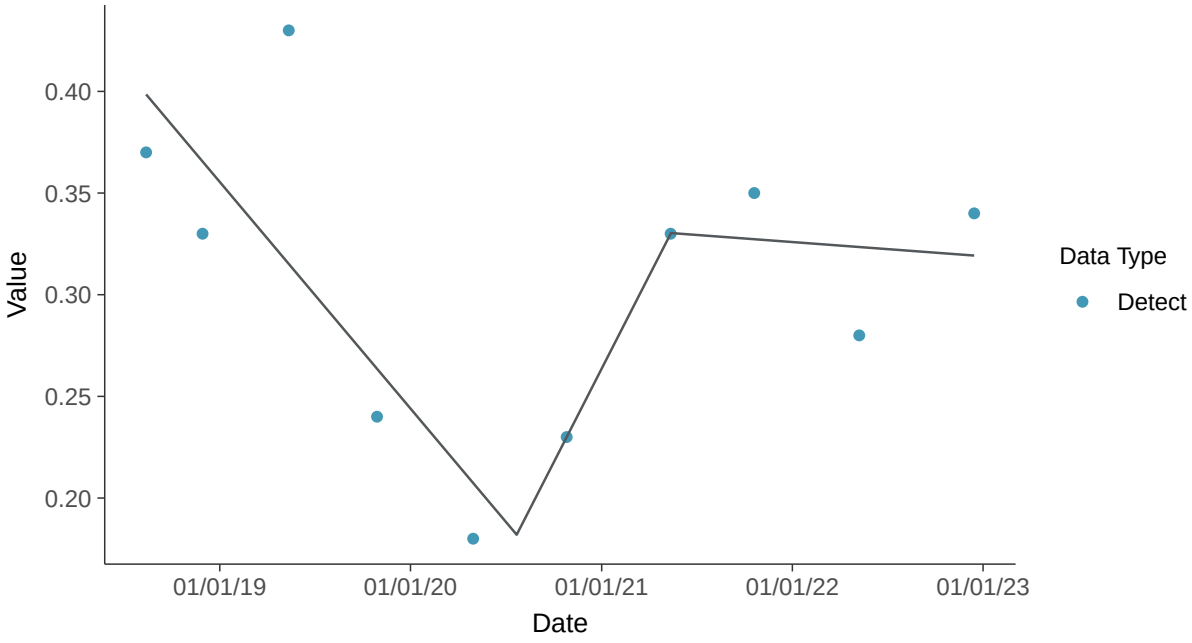
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-5 (mg/l)



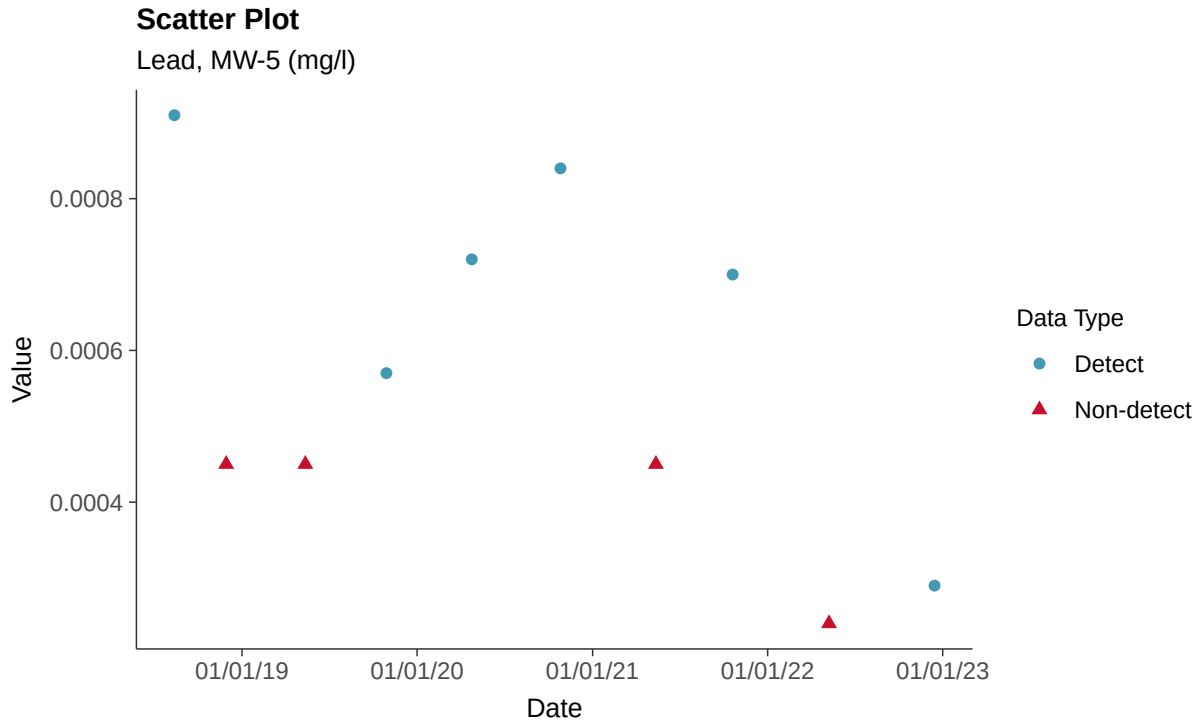
Trend Regression: Piecewise Linear-Linear-Linear

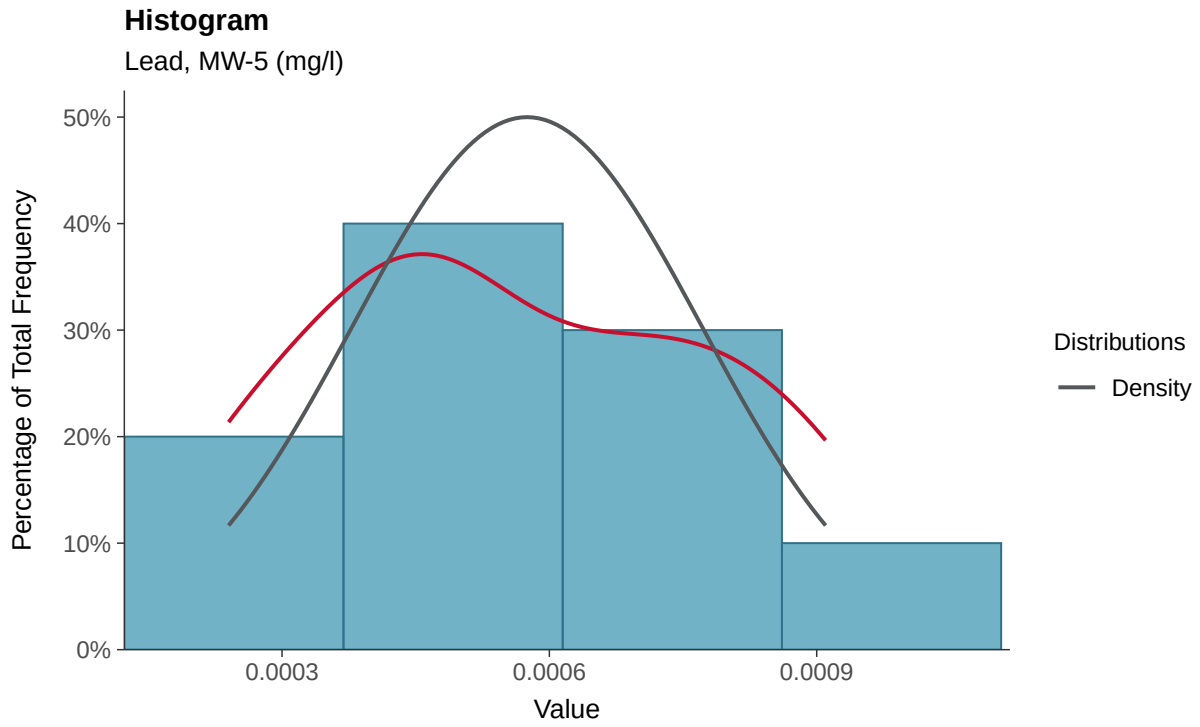
Fluoride (App IV), MW-5 (mg/l)



Appendix IV: Lead, MW-5

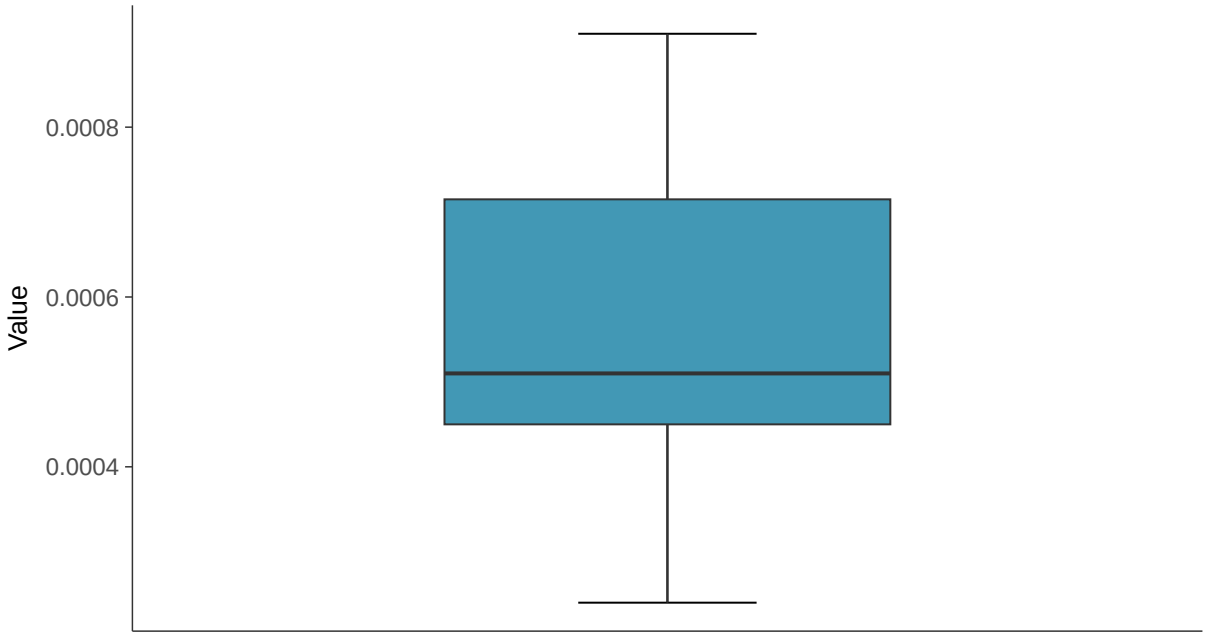
ID: 35_2_117





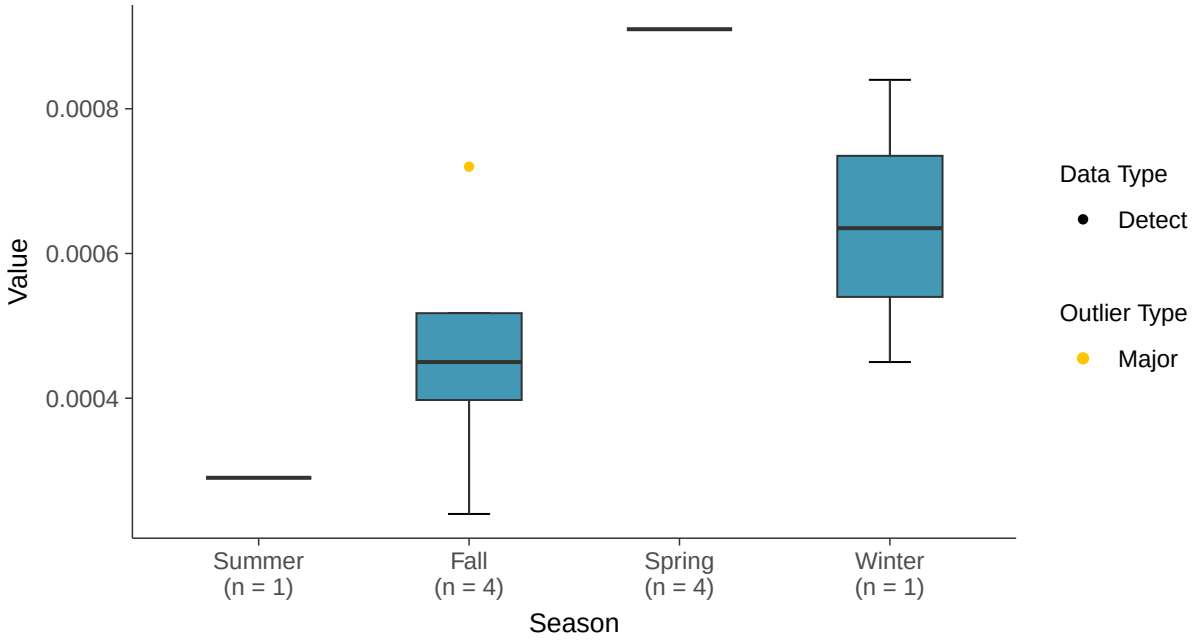
Boxplot

Lead, MW-5 (mg/l)



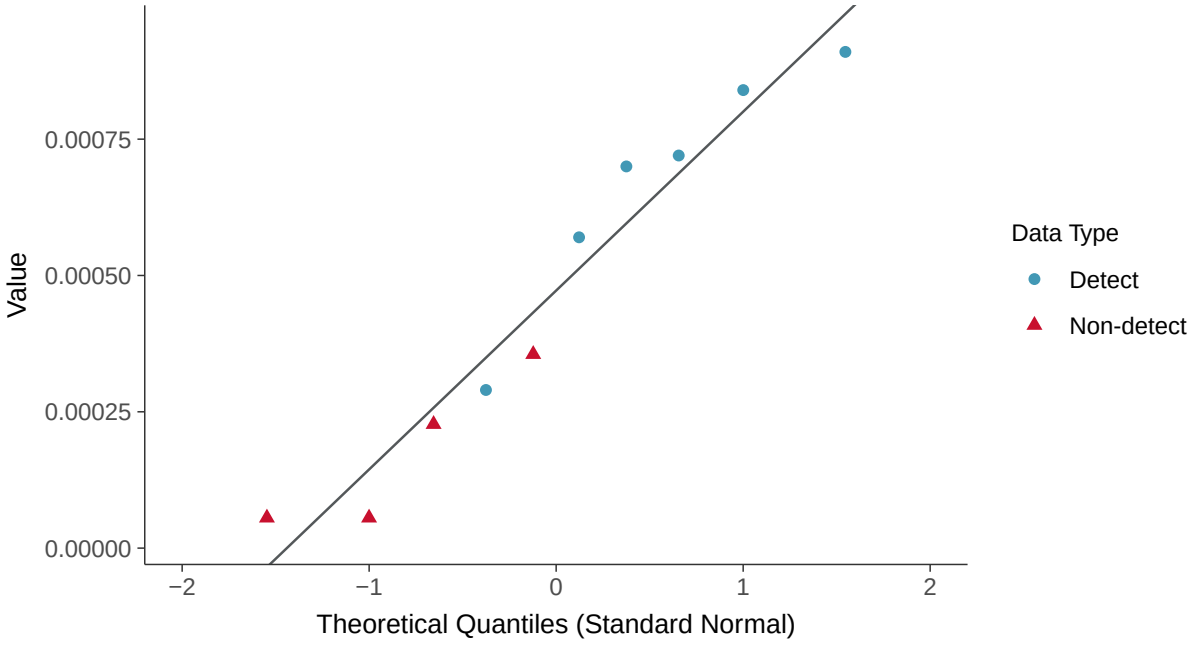
Boxplot by Season

Lead, MW-5 (mg/l)



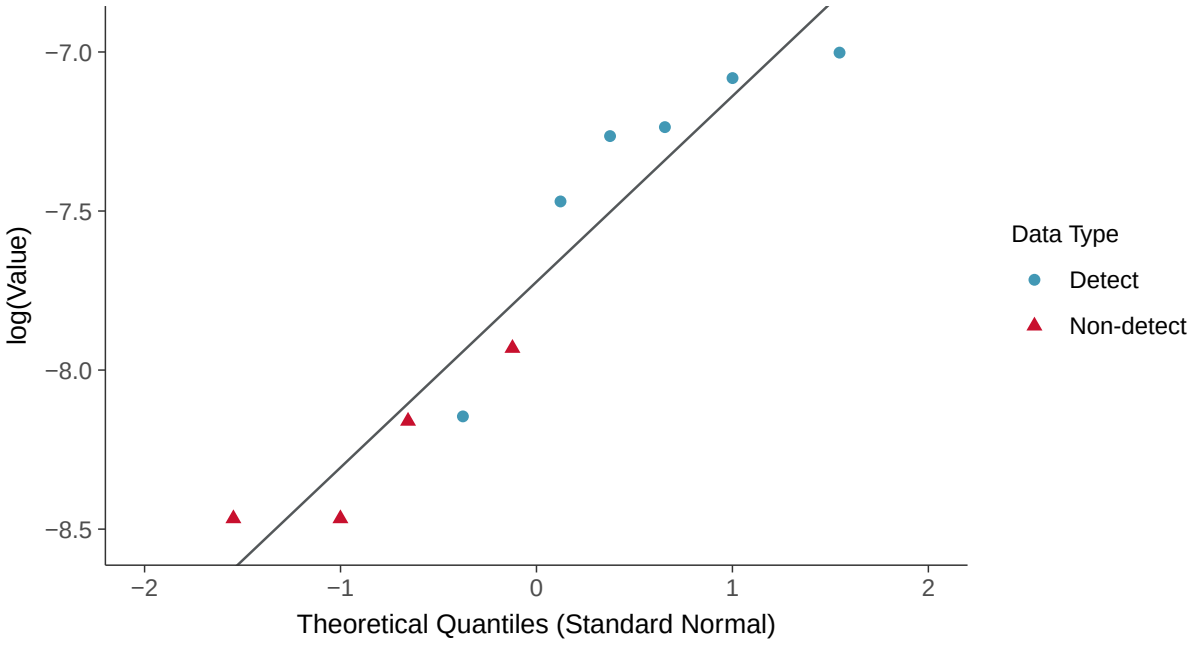
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-5 (mg/l)



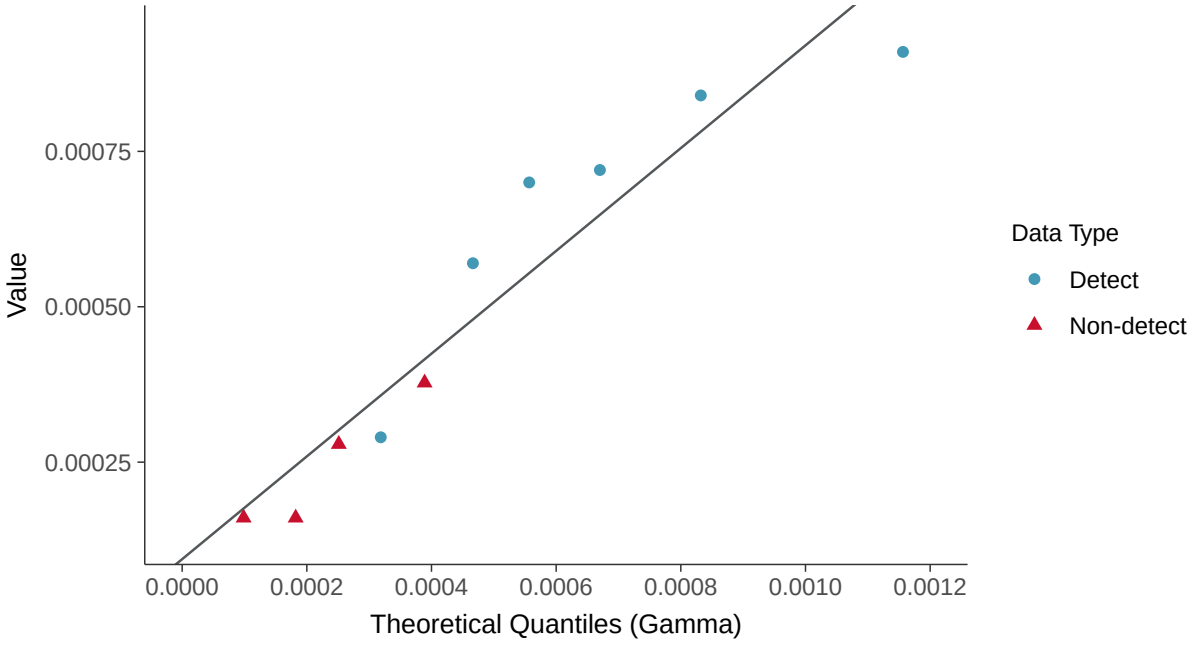
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-5 (mg/l)



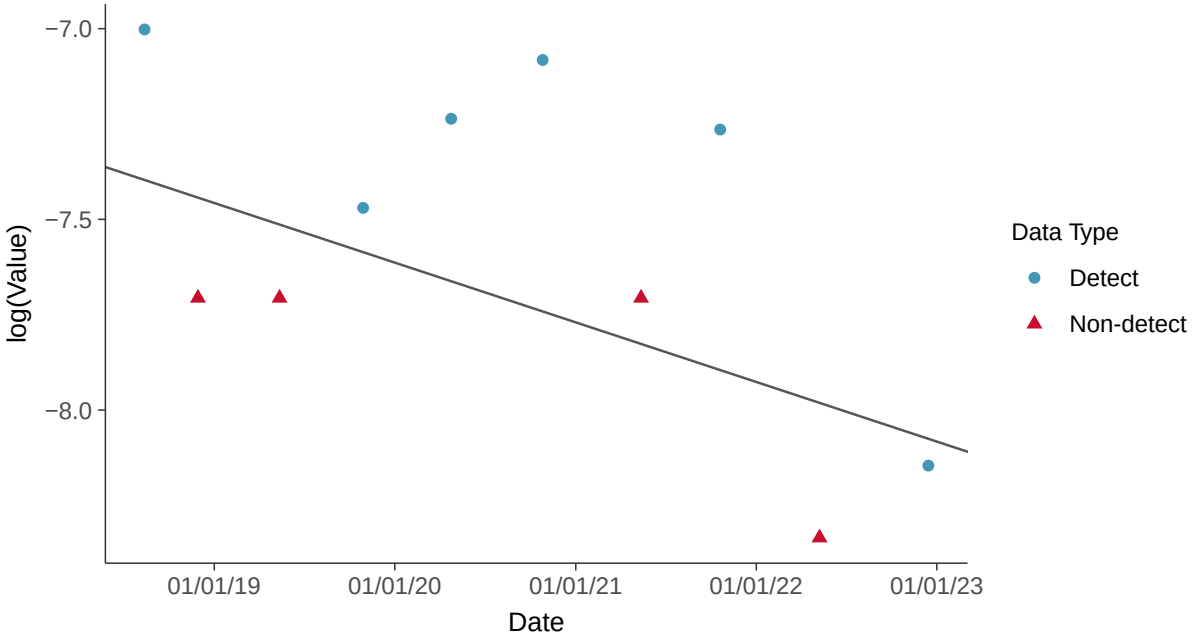
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-5 (mg/l)



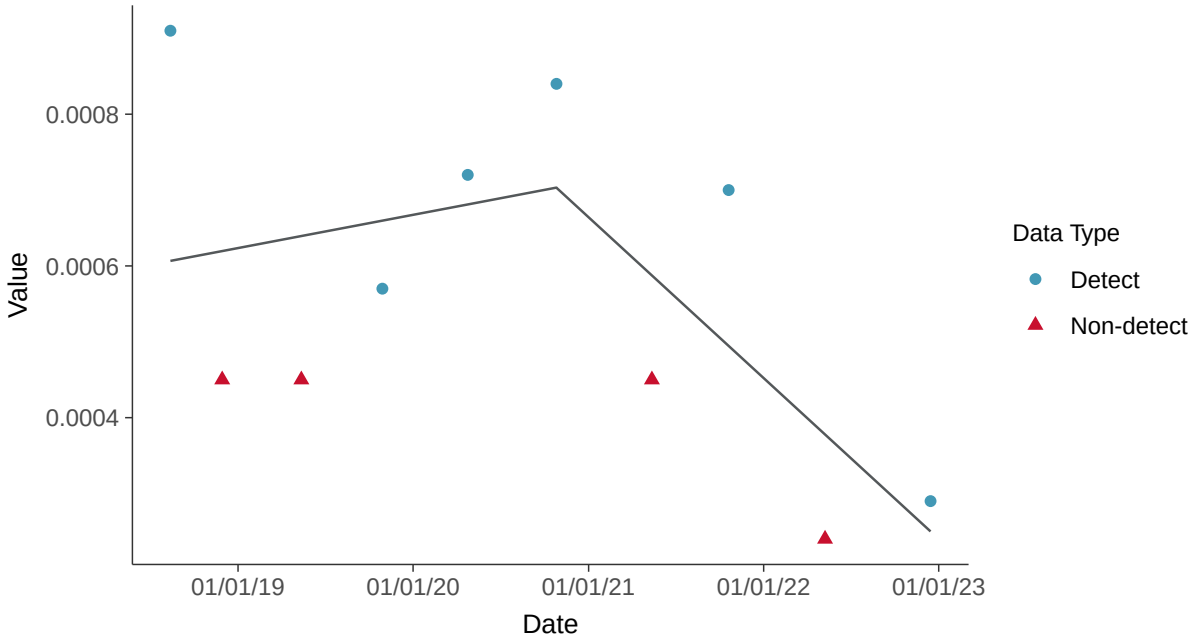
Trend Regression: Lognormal MLE

Lead, MW-5 (mg/l)



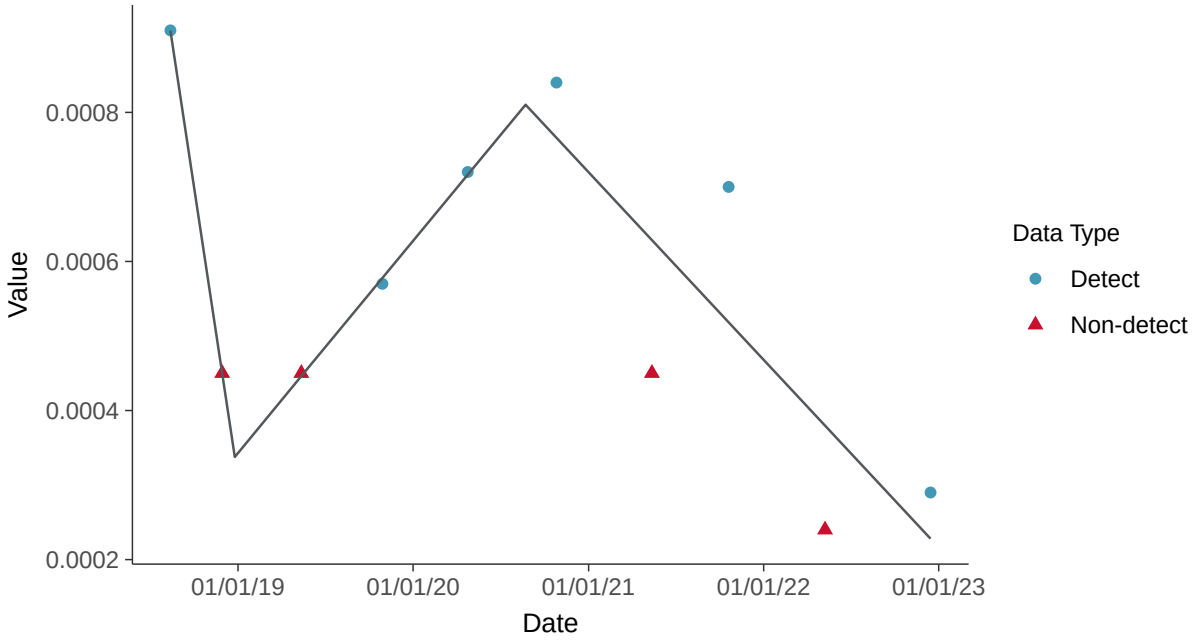
Trend Regression: Piecewise Linear-Linear

Lead, MW-5 (mg/l)



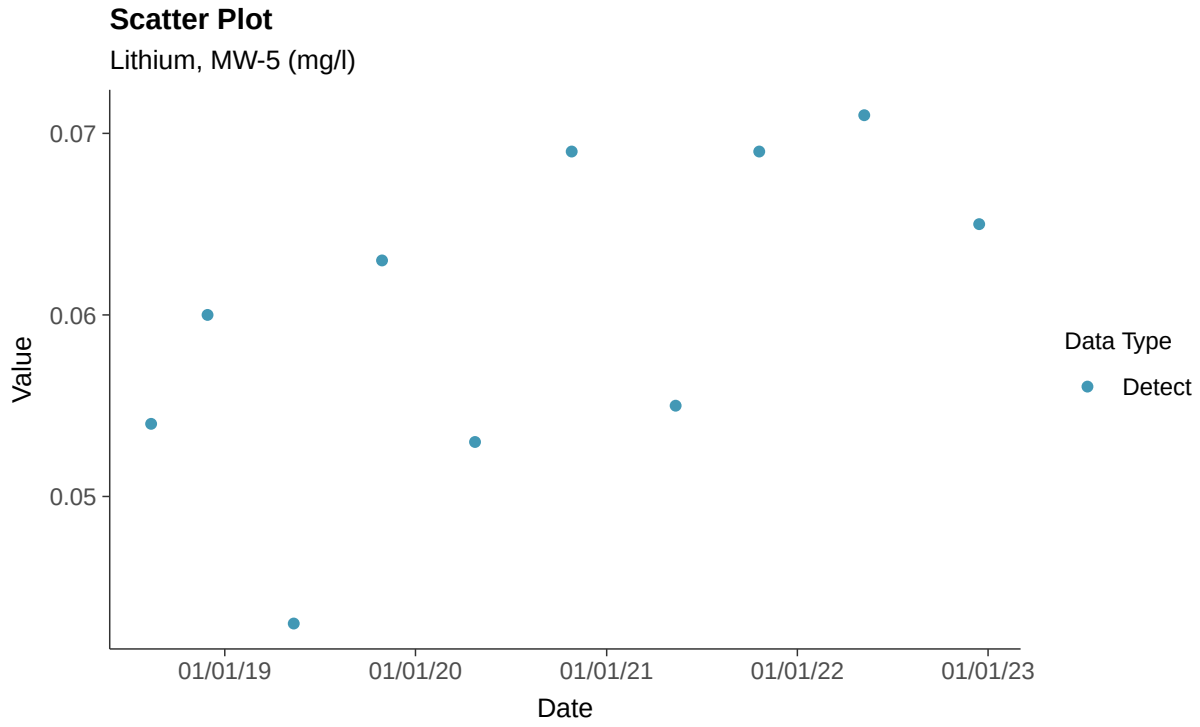
Trend Regression: Piecewise Linear-Linear-Linear

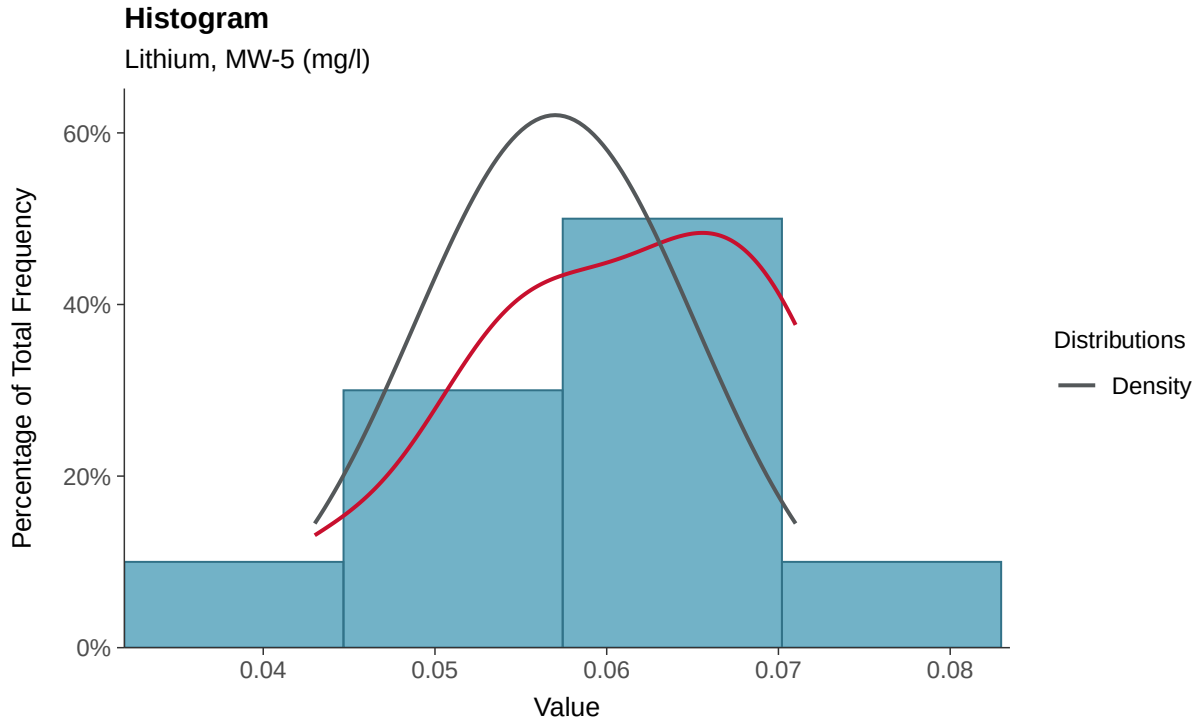
Lead, MW-5 (mg/l)



Appendix IV: Lithium, MW-5

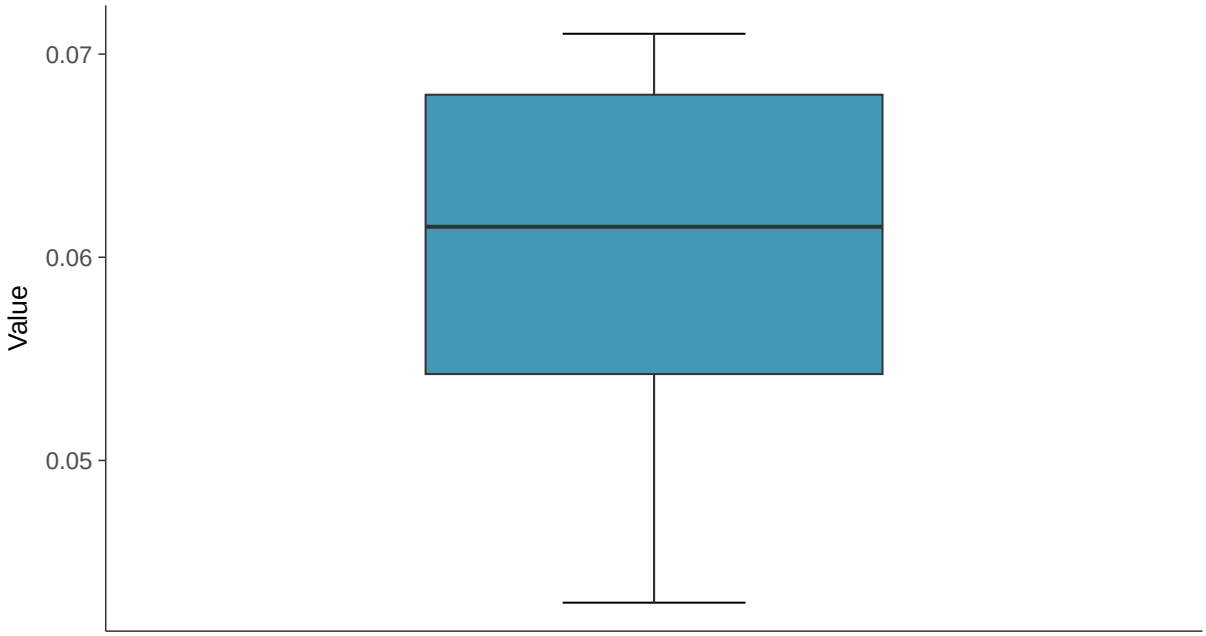
ID: 35_2_118





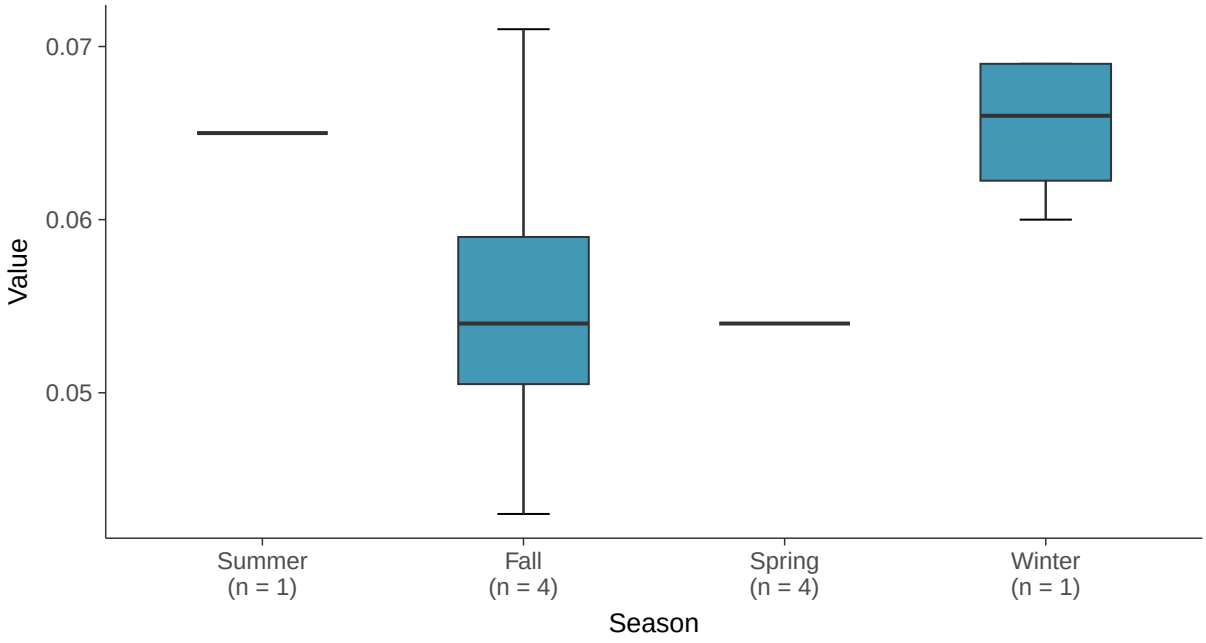
Boxplot

Lithium, MW-5 (mg/l)



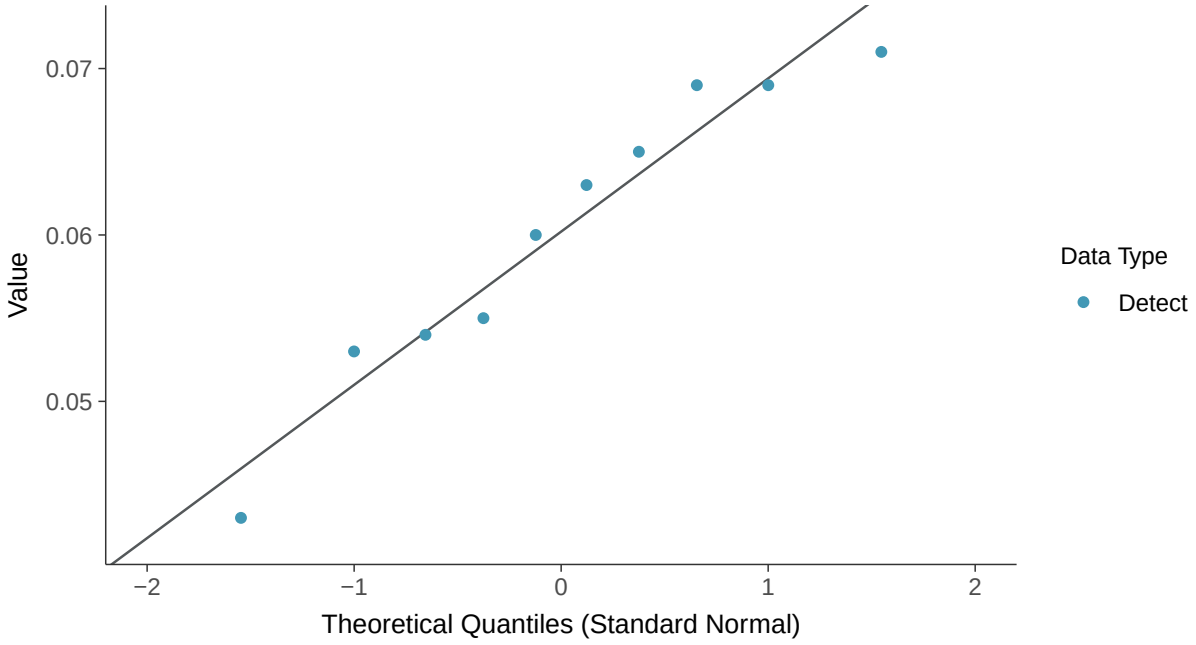
Boxplot by Season

Lithium, MW-5 (mg/l)



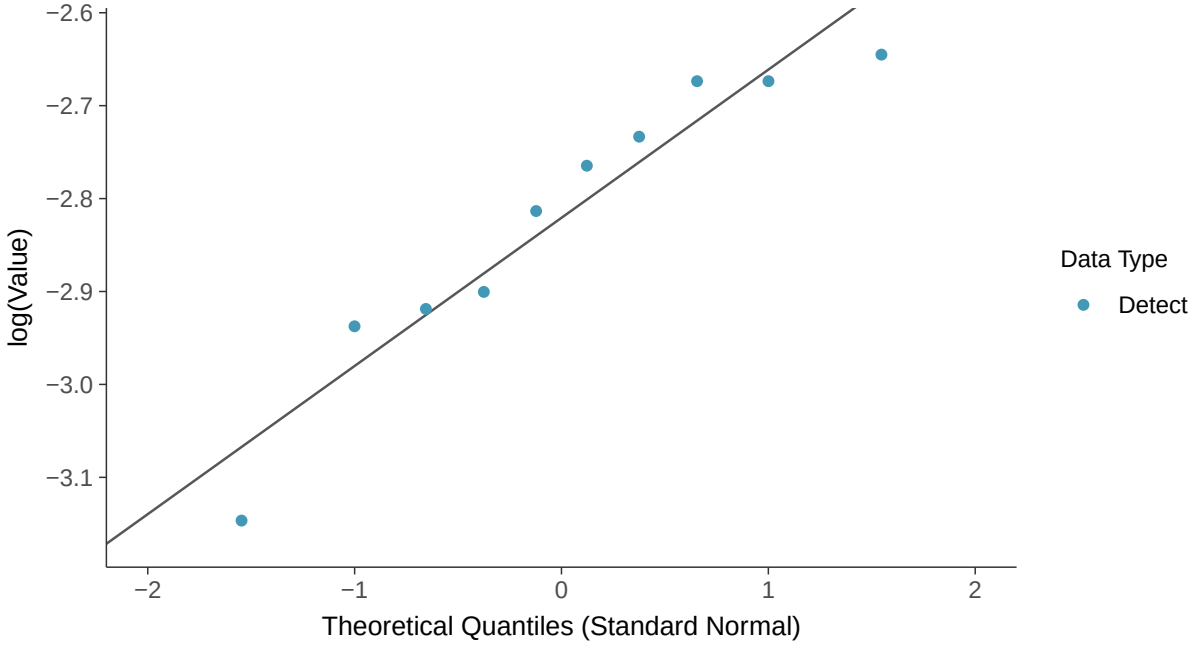
Normal Q-Q plot

Lithium, MW-5 (mg/l)



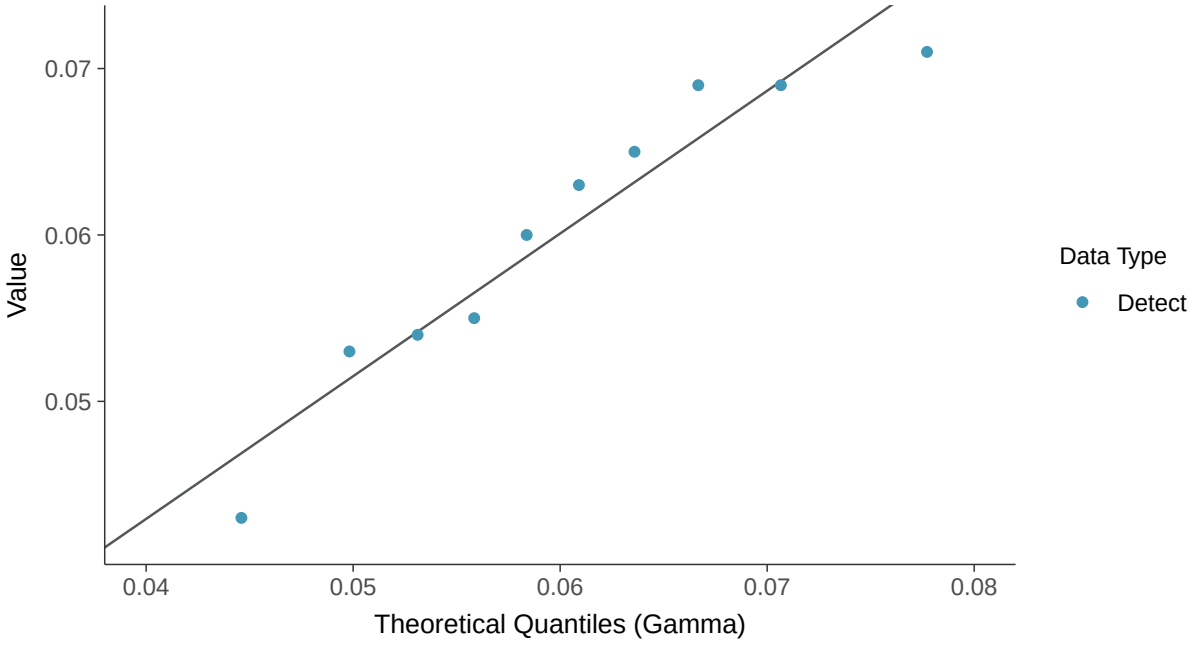
Lognormal Q-Q plot

Lithium, MW-5 (mg/l)



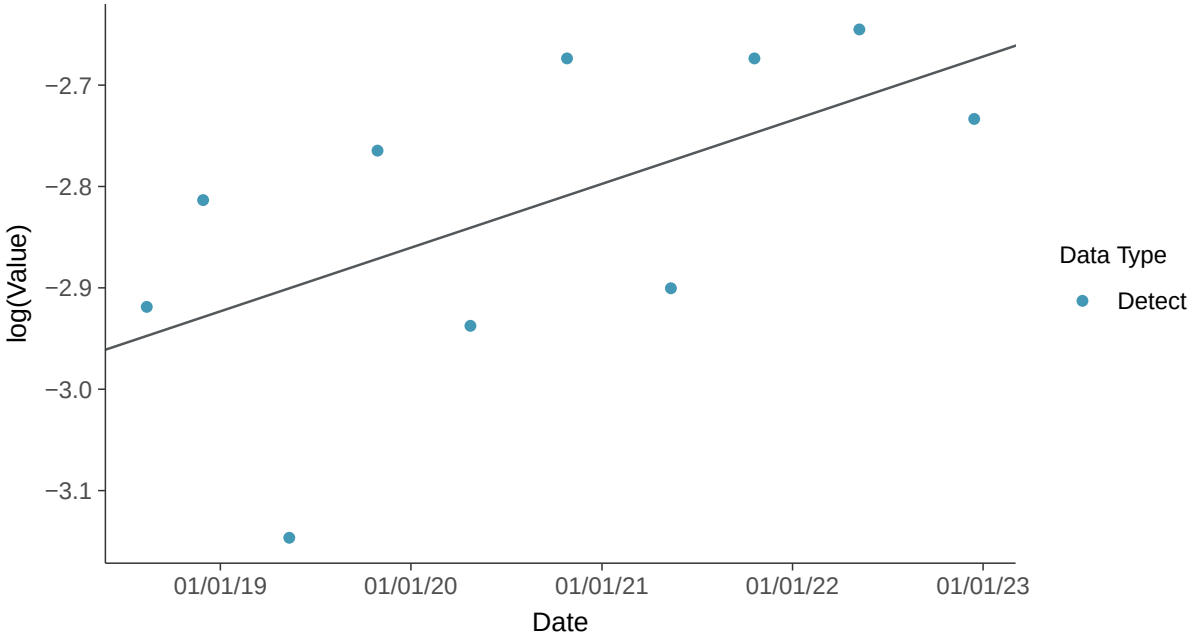
Gamma Q-Q plot

Lithium, MW-5 (mg/l)



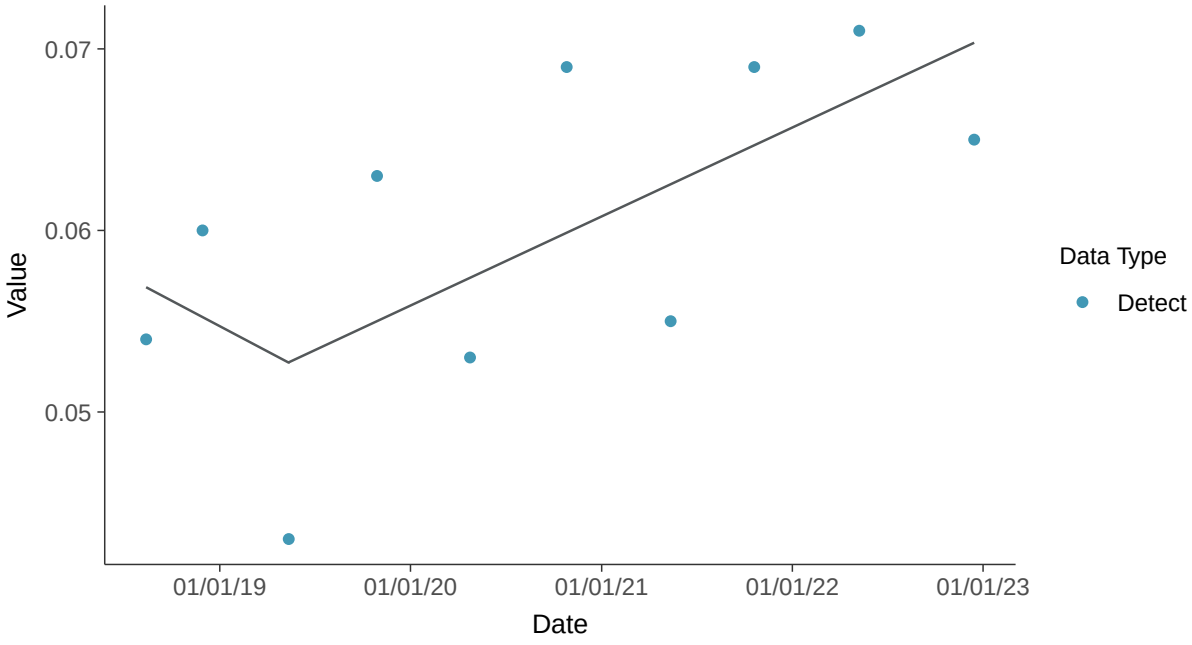
Trend Regression: Lognormal MLE

Lithium, MW-5 (mg/l)



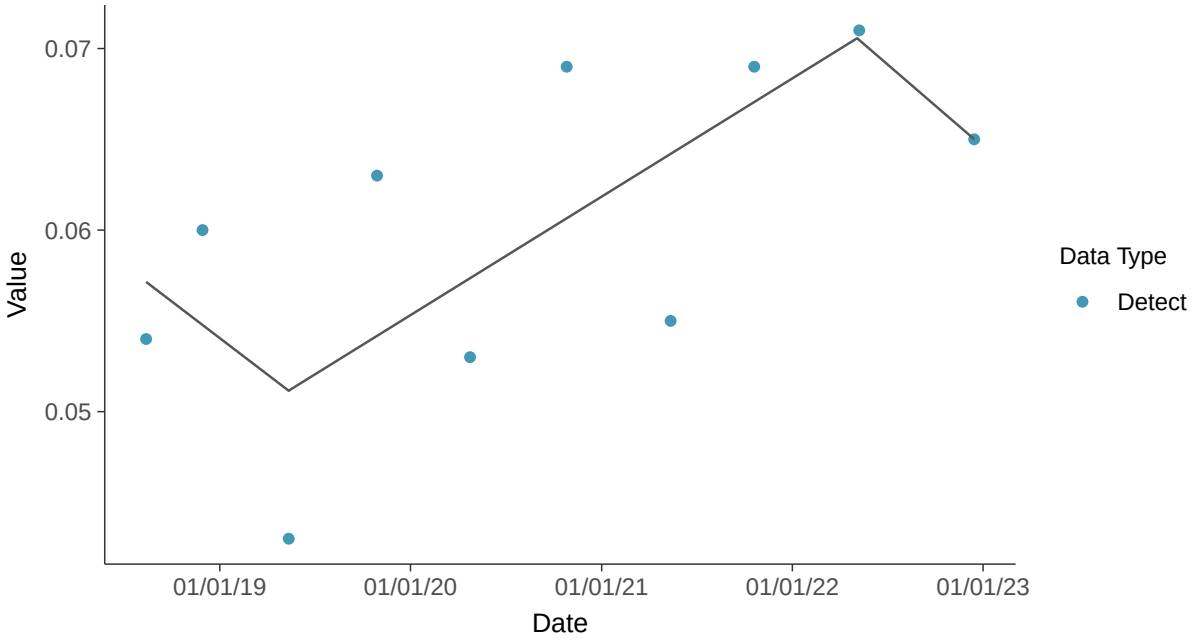
Trend Regression: Piecewise Linear-Linear

Lithium, MW-5 (mg/l)



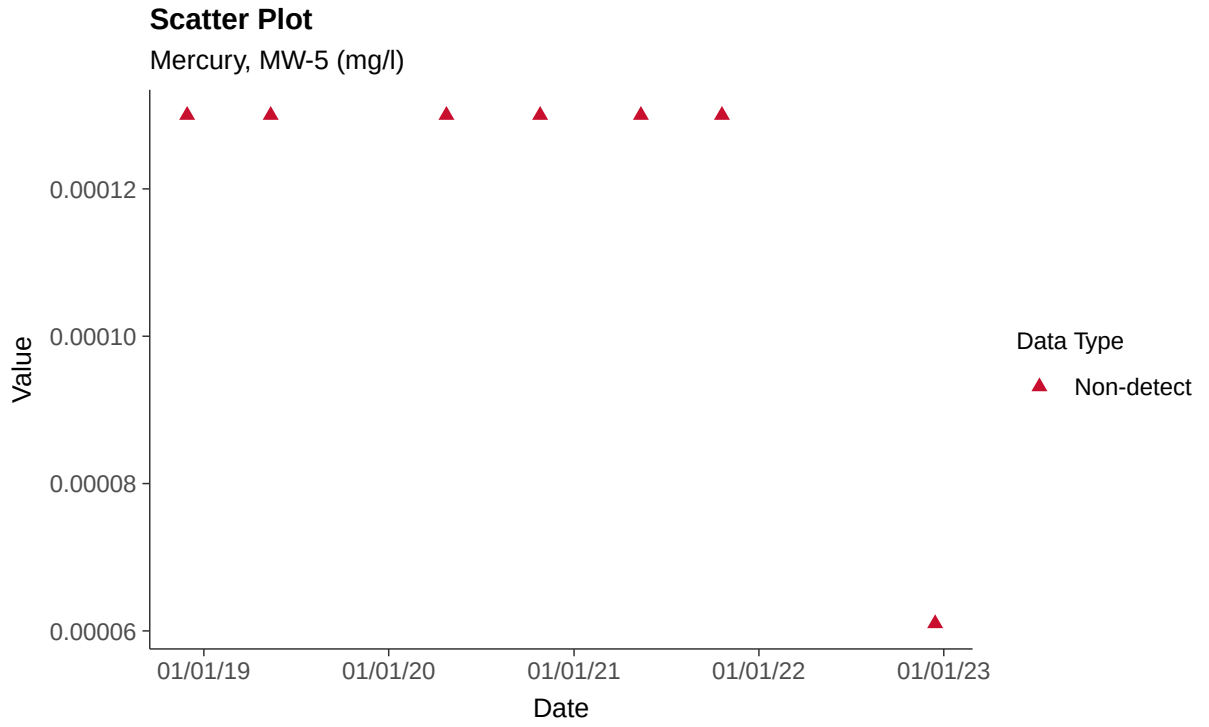
Trend Regression: Piecewise Linear-Linear-Linear

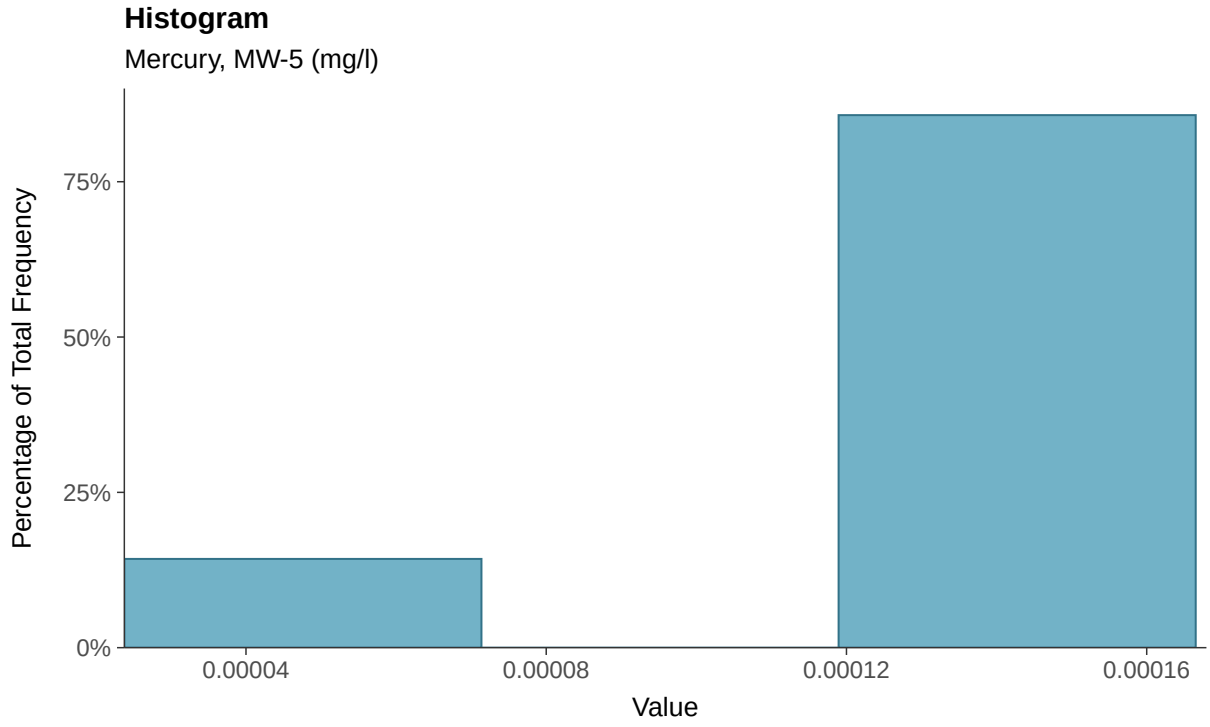
Lithium, MW-5 (mg/l)



Appendix IV: Mercury, MW-5

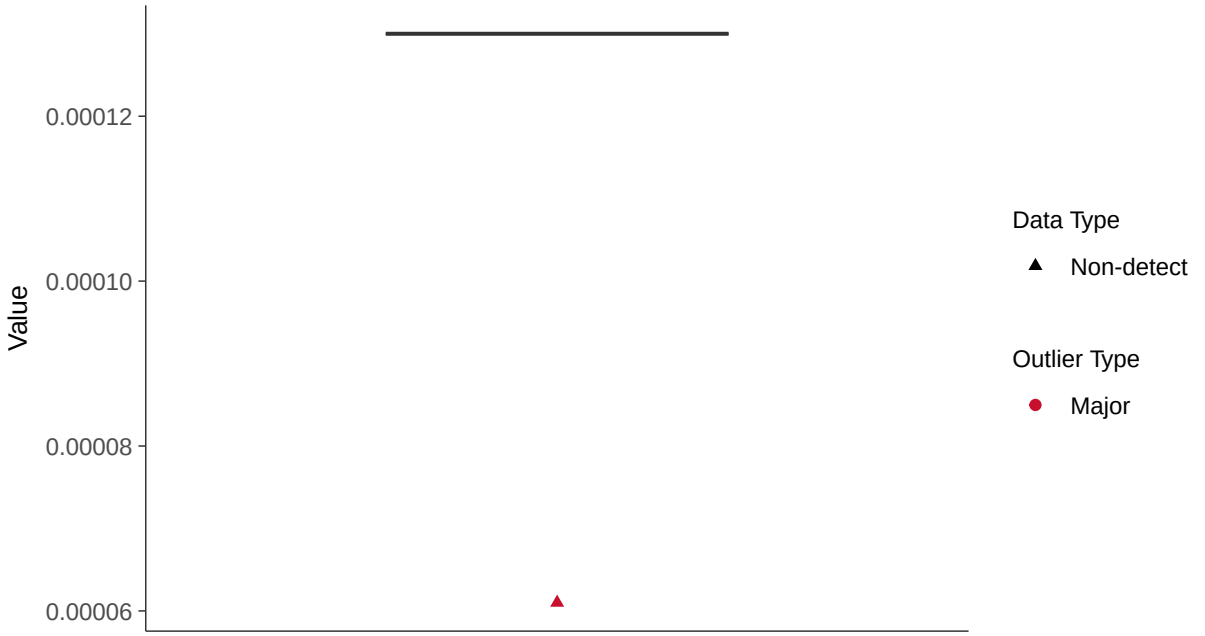
ID: 35_2_120





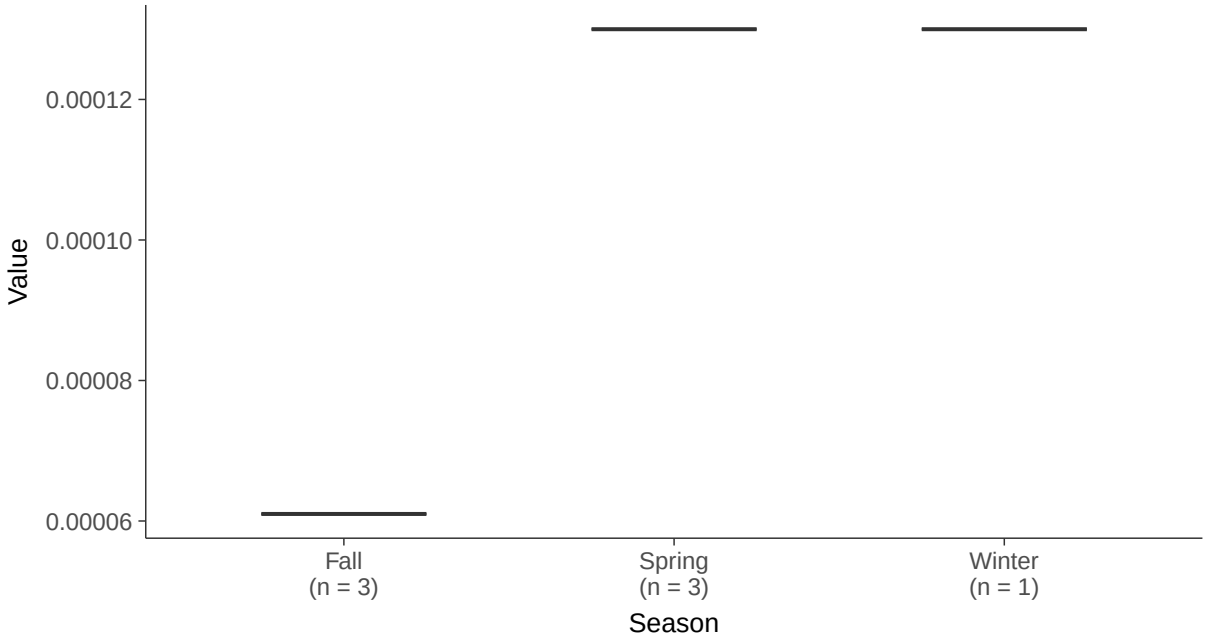
Boxplot

Mercury, MW-5 (mg/l)



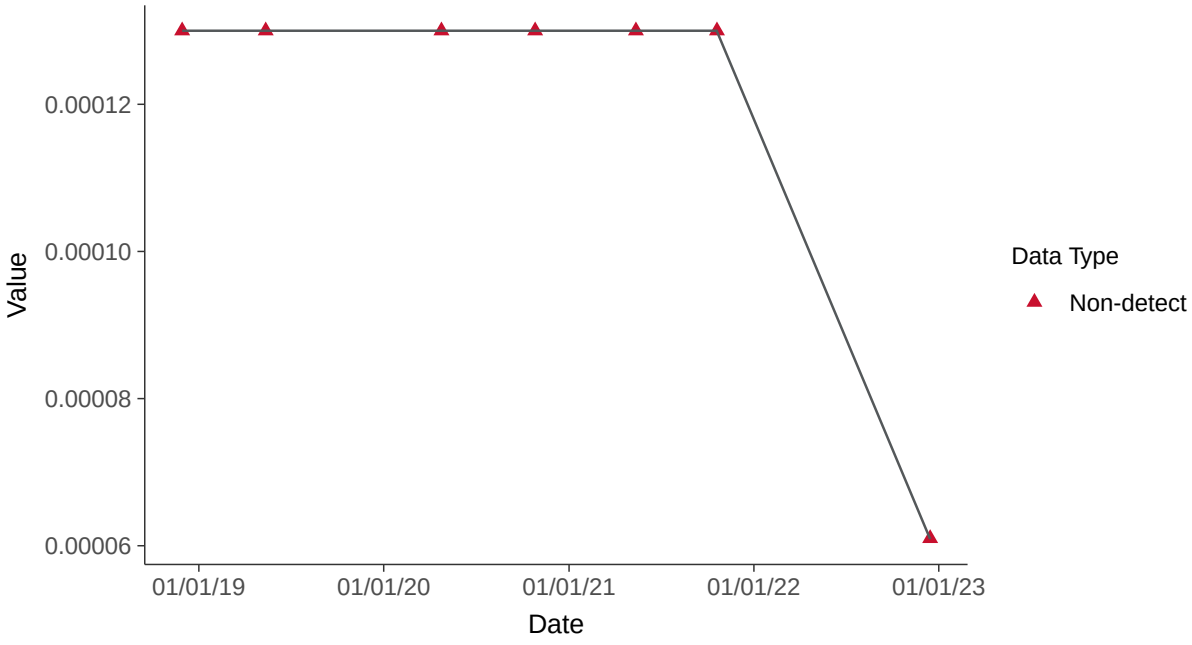
Boxplot by Season

Mercury, MW-5 (mg/l)



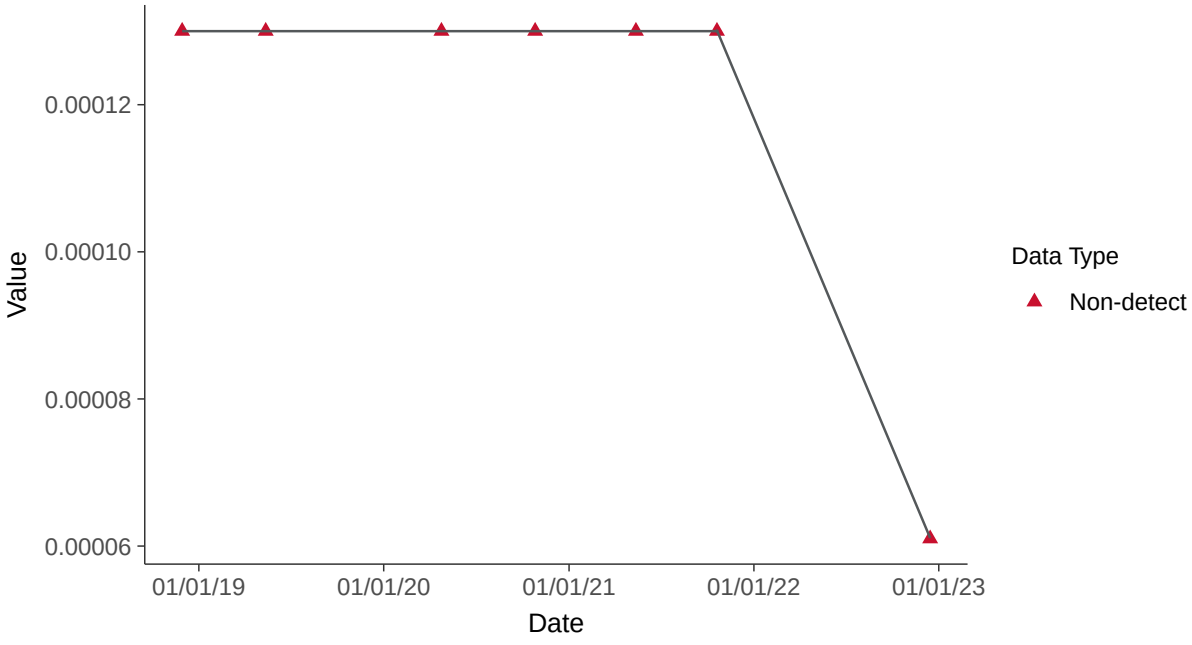
Trend Regression: Piecewise Linear-Linear

Mercury, MW-5 (mg/l)



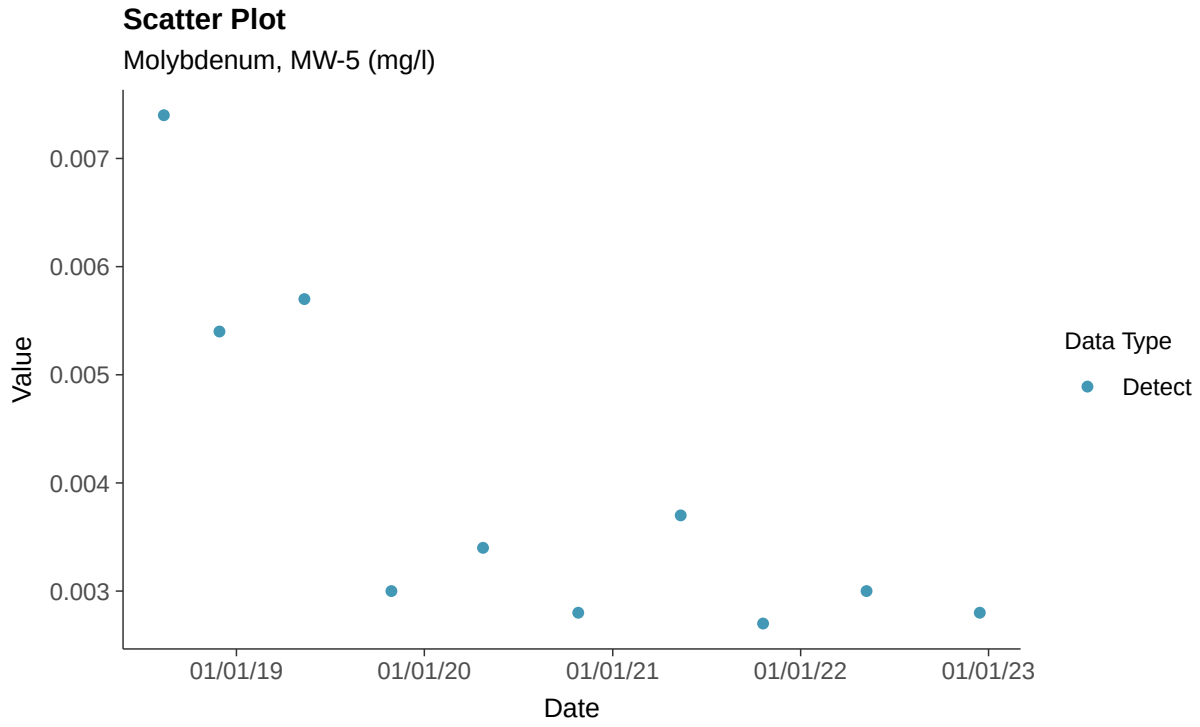
Trend Regression: Piecewise Linear-Linear-Linear

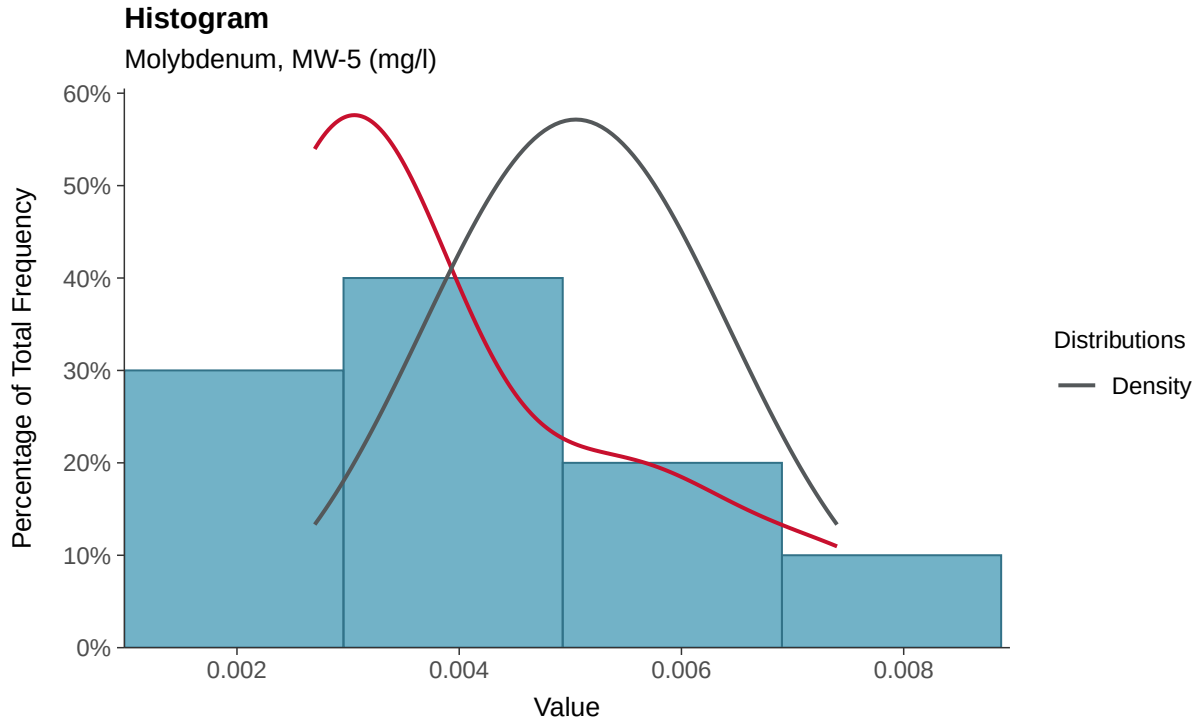
Mercury, MW-5 (mg/l)



Appendix IV: Molybdenum, MW-5

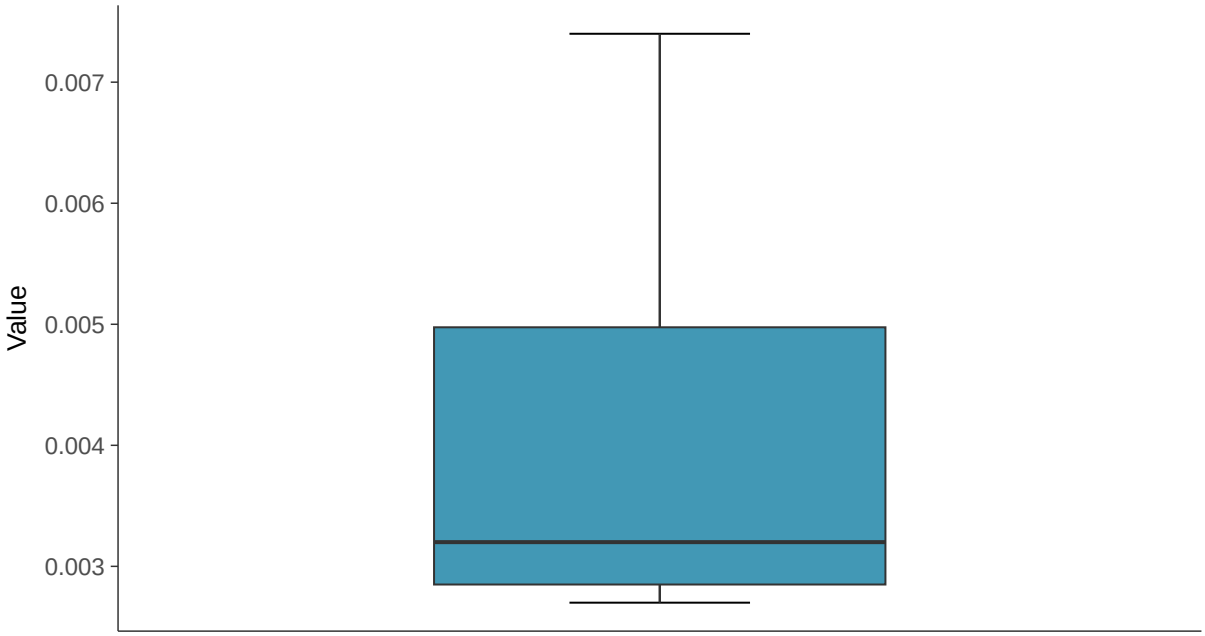
ID: 35_2_121





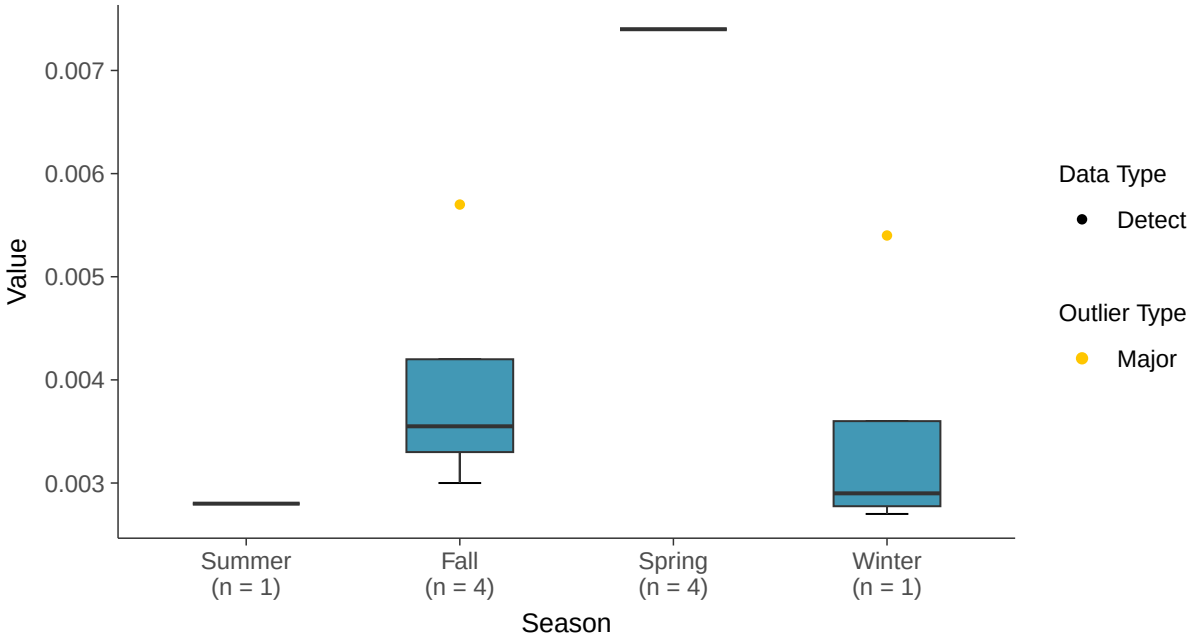
Boxplot

Molybdenum, MW-5 (mg/l)



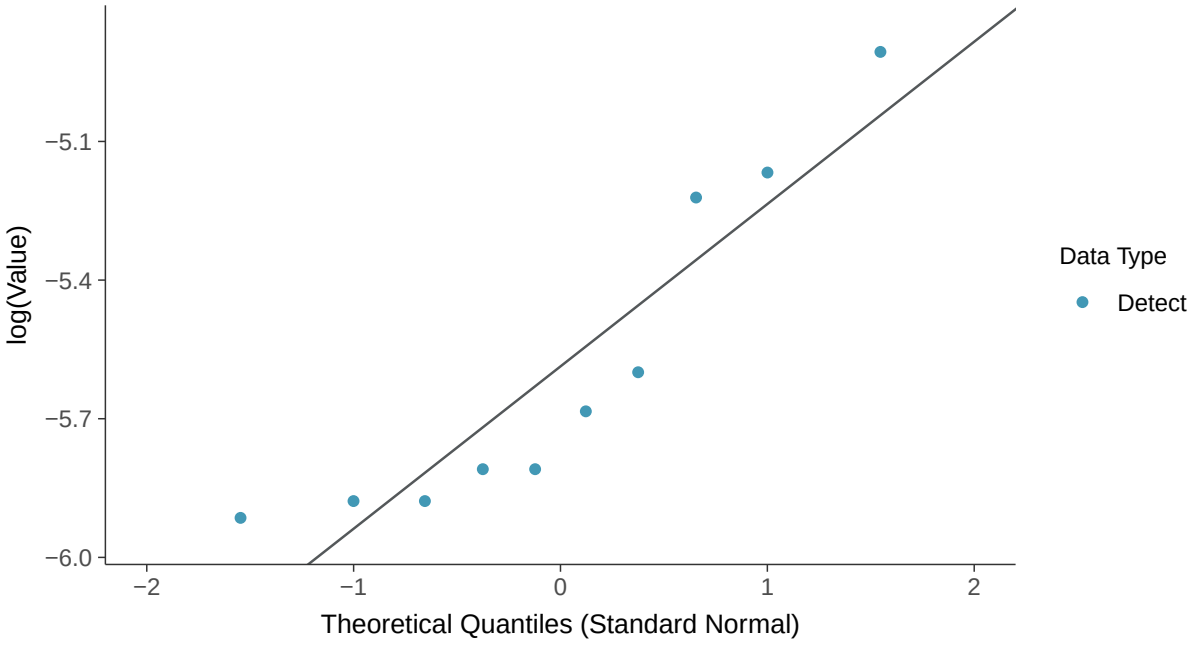
Boxplot by Season

Molybdenum, MW-5 (mg/l)



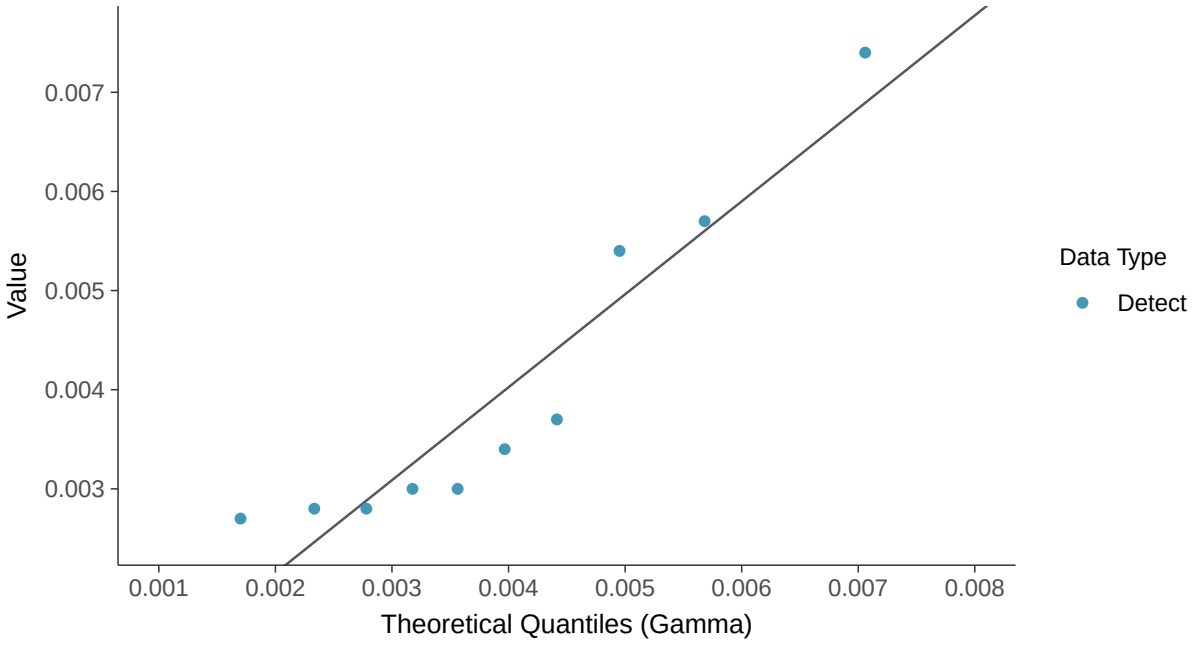
Lognormal Q-Q plot

Molybdenum, MW-5 (mg/l)



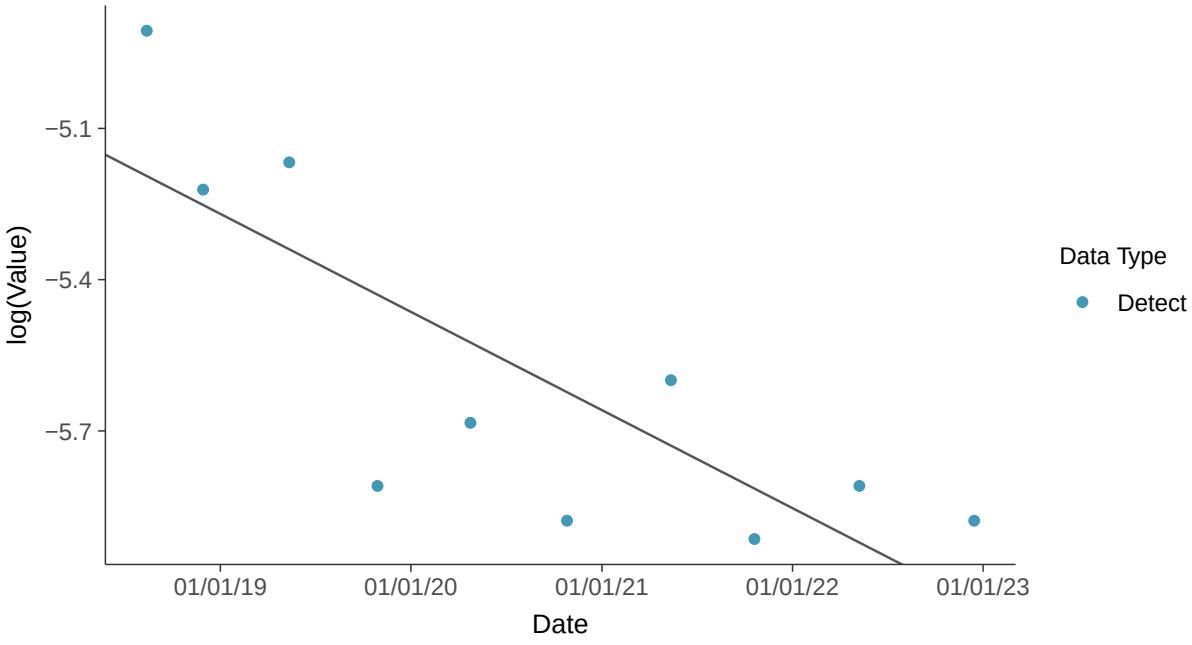
Gamma Q-Q plot

Molybdenum, MW-5 (mg/l)



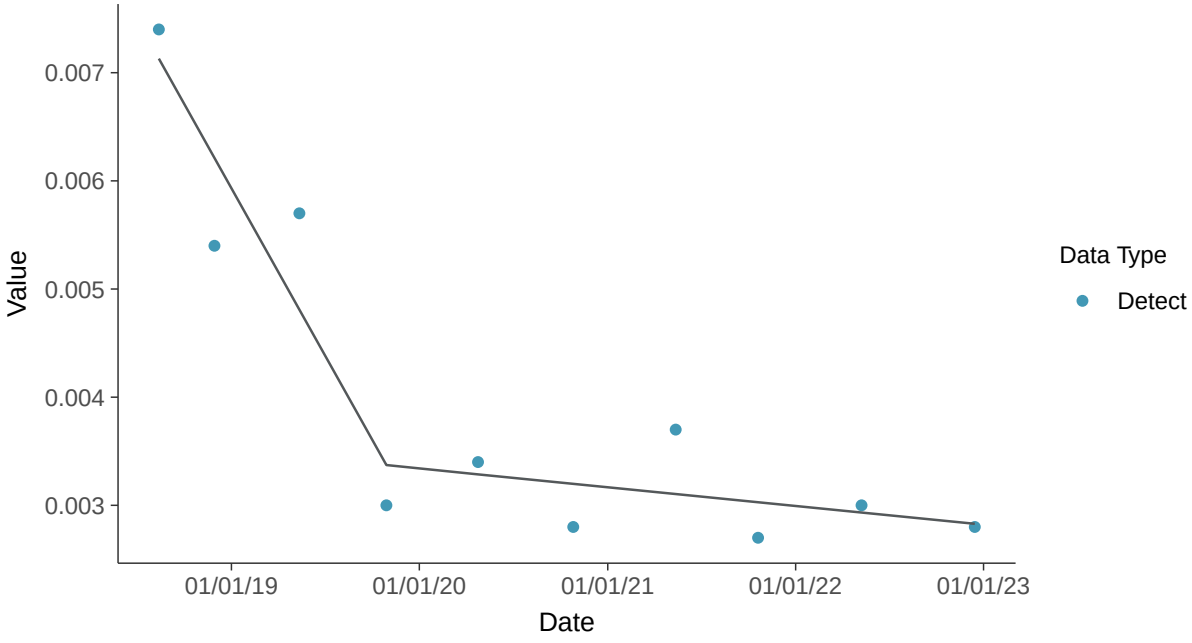
Trend Regression: Lognormal MLE

Molybdenum, MW-5 (mg/l)



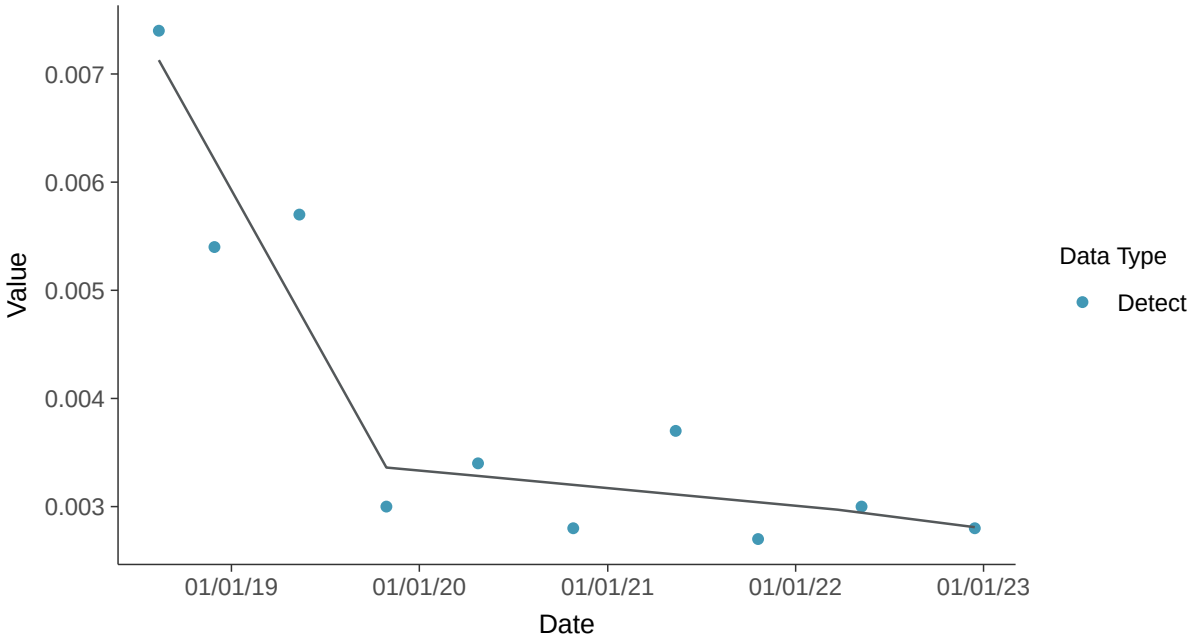
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-5 (mg/l)



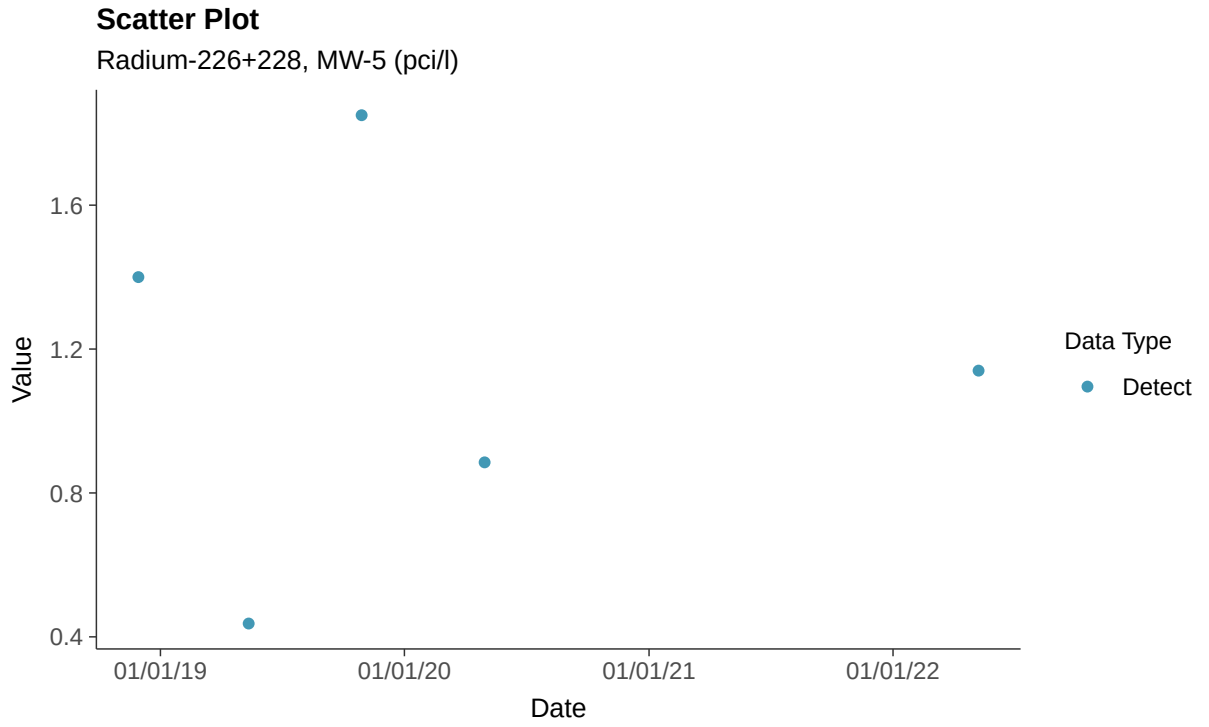
Trend Regression: Piecewise Linear-Linear-Linear

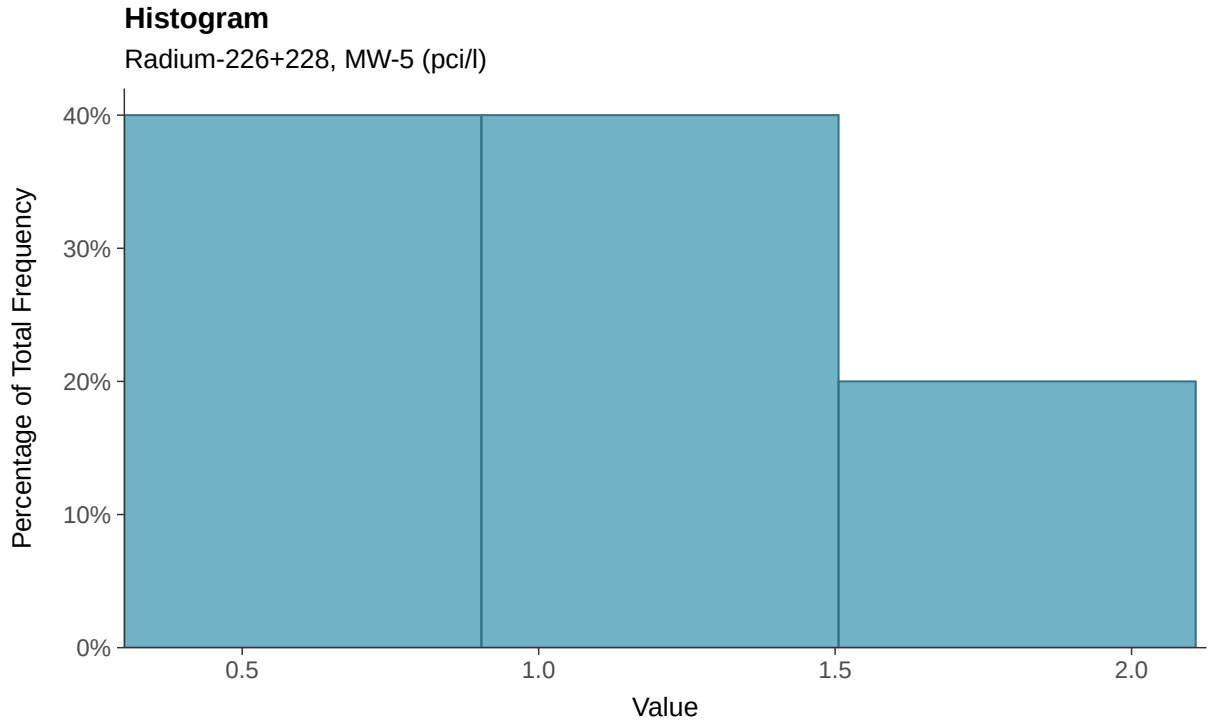
Molybdenum, MW-5 (mg/l)



Appendix IV: Radium-226+228, MW-5

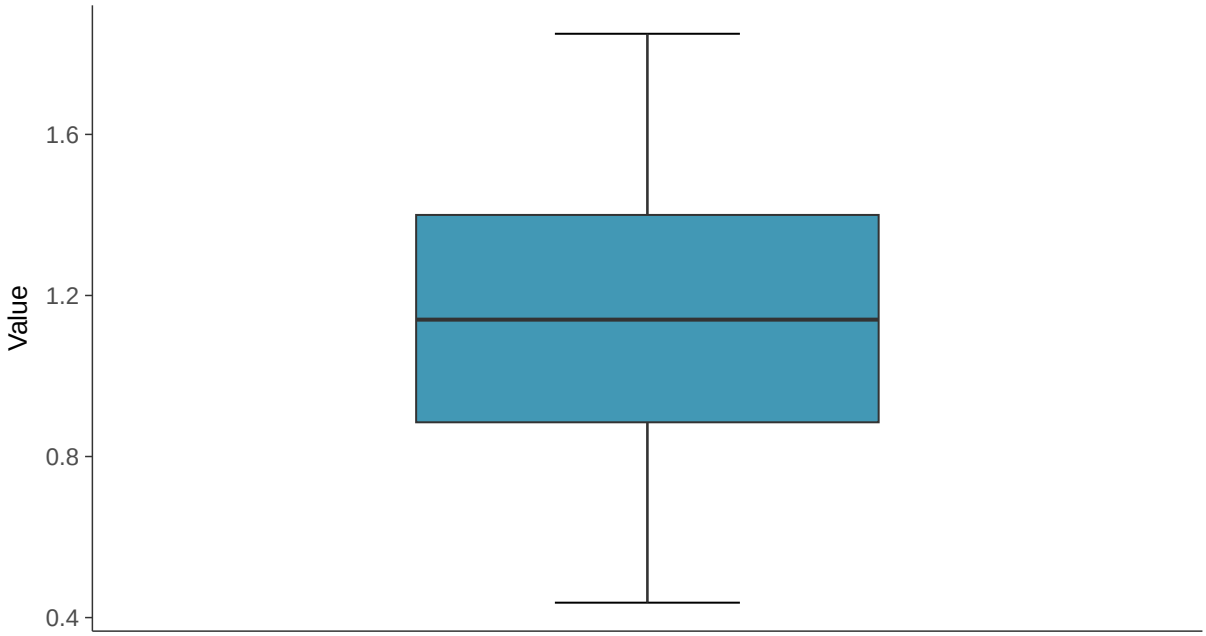
ID: 35_2_127





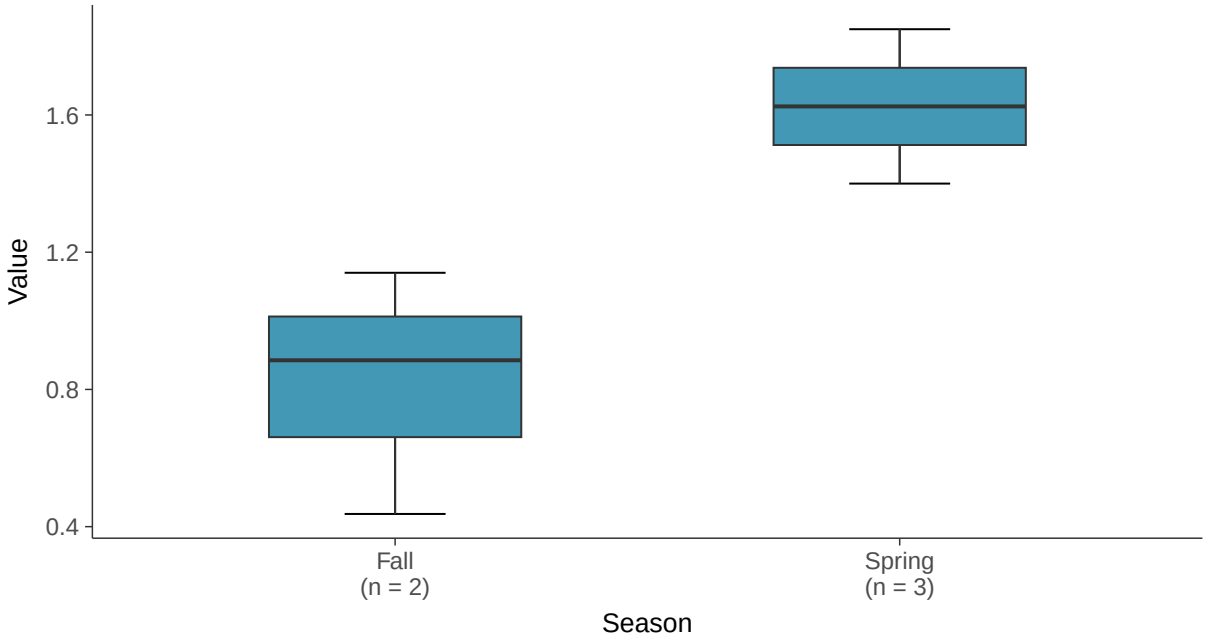
Boxplot

Radium-226+228, MW-5 (pci/l)



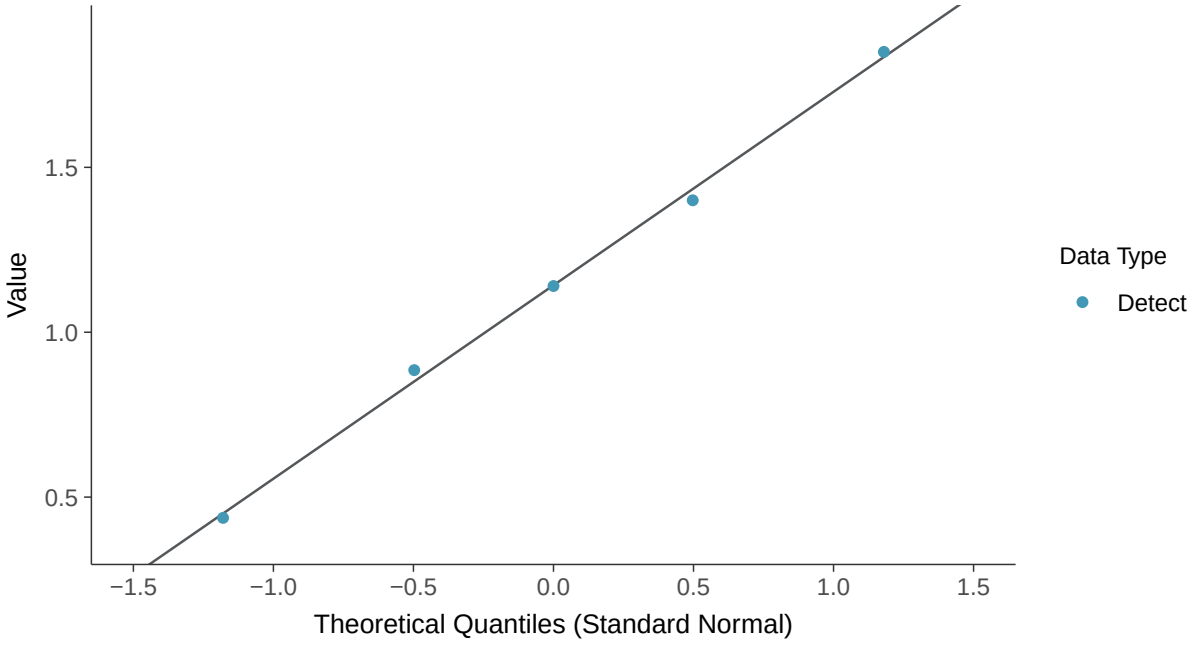
Boxplot by Season

Radium-226+228, MW-5 (pci/l)



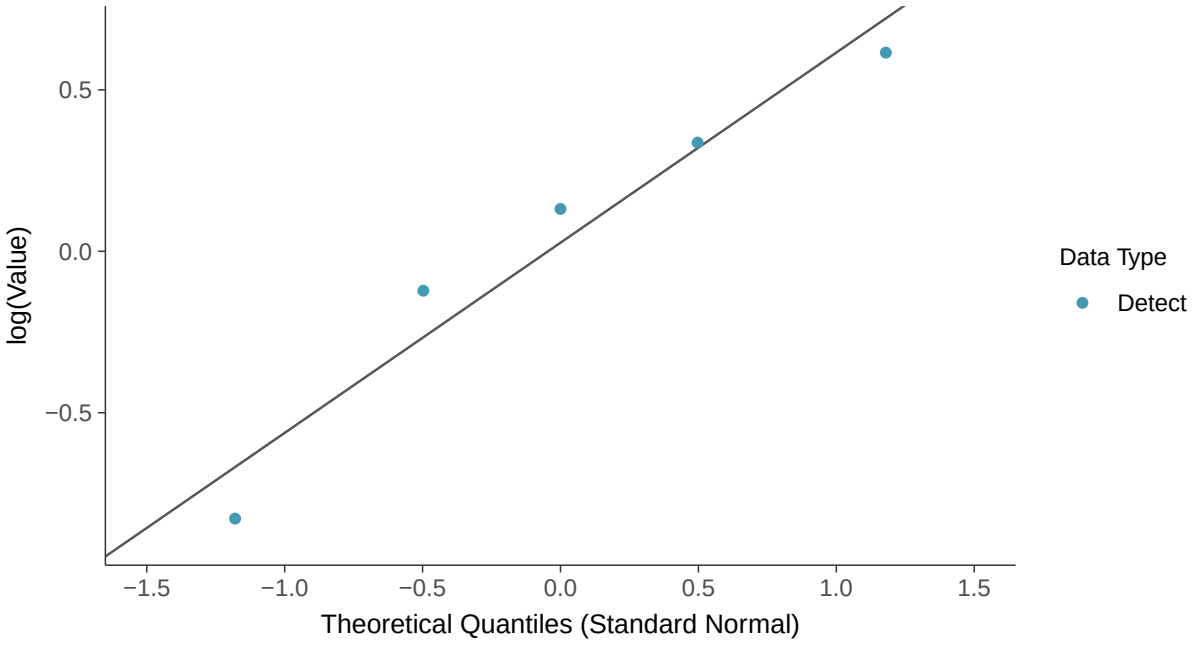
Normal Q-Q plot

Radium-226+228, MW-5 (pci/l)



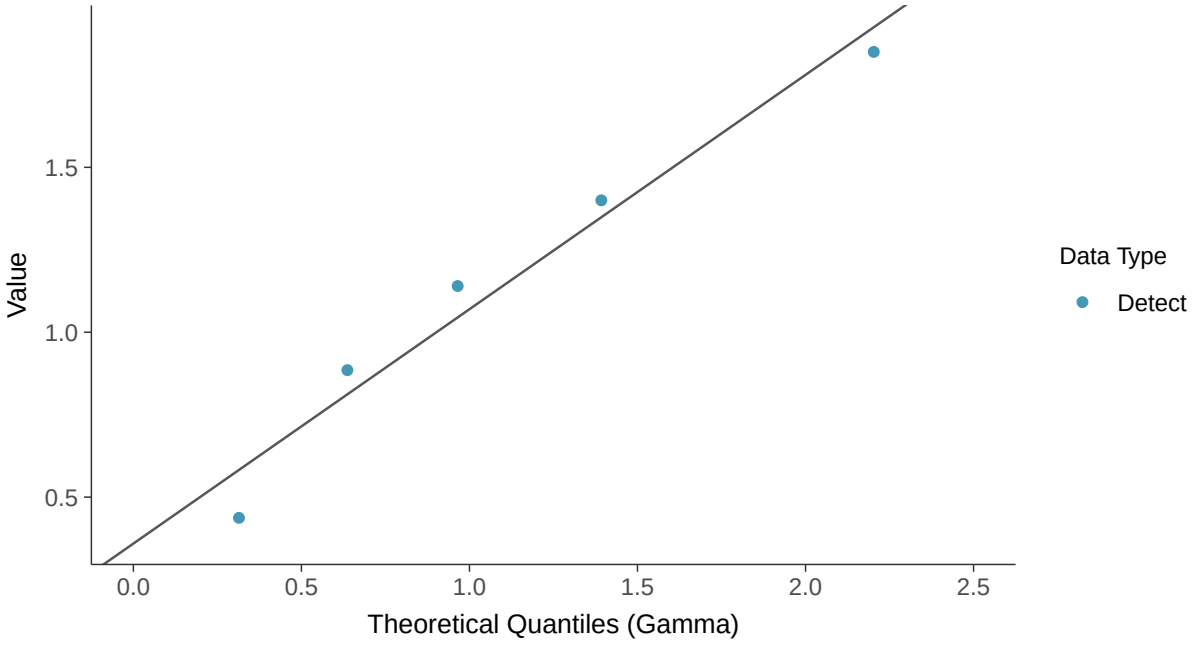
Lognormal Q-Q plot

Radium-226+228, MW-5 (pci/l)



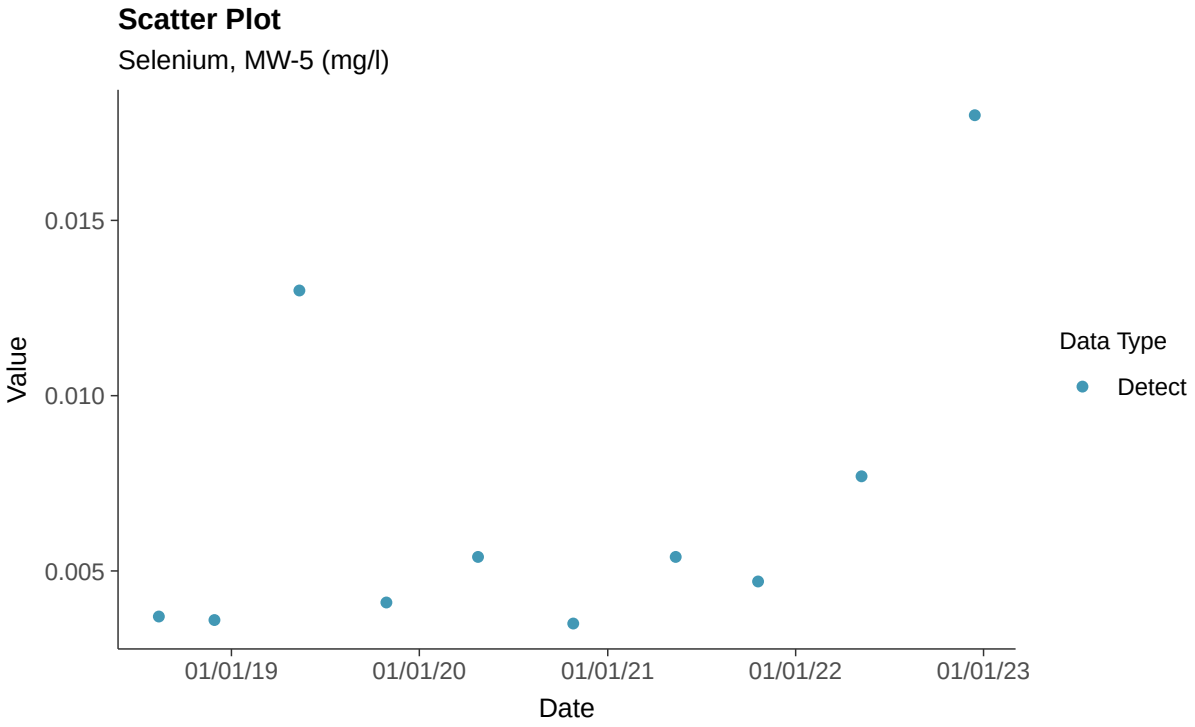
Gamma Q-Q plot

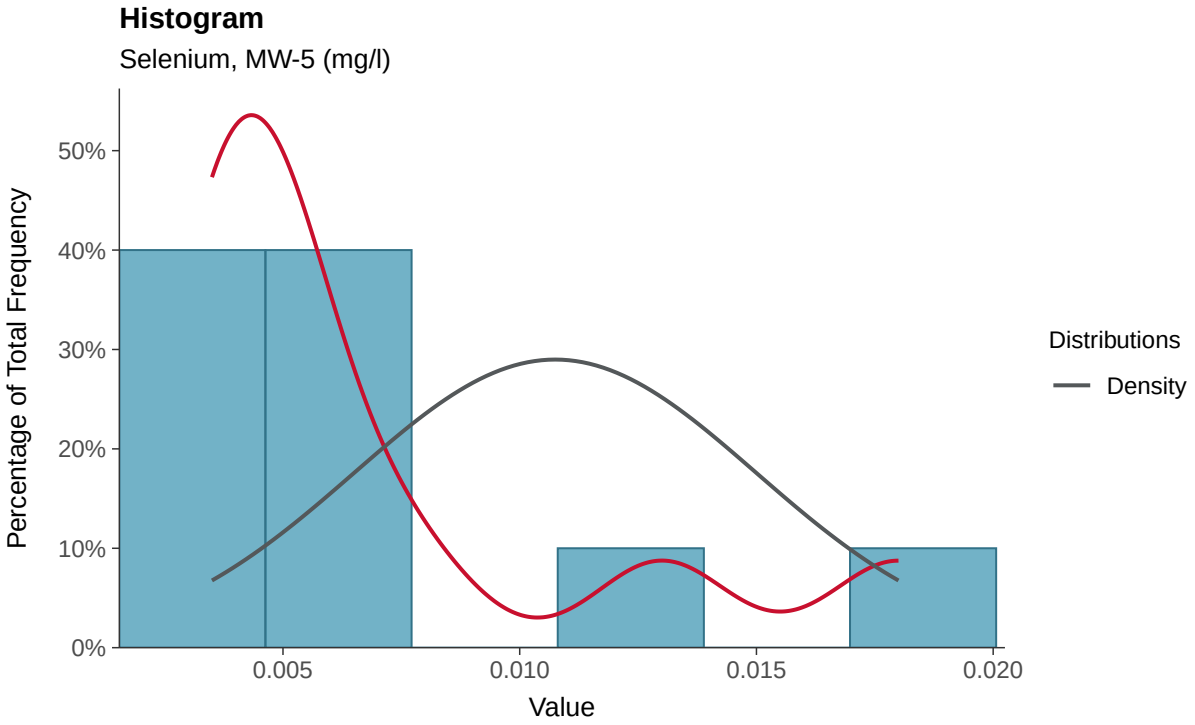
Radium-226+228, MW-5 (pci/l)



Appendix IV: Selenium, MW-5

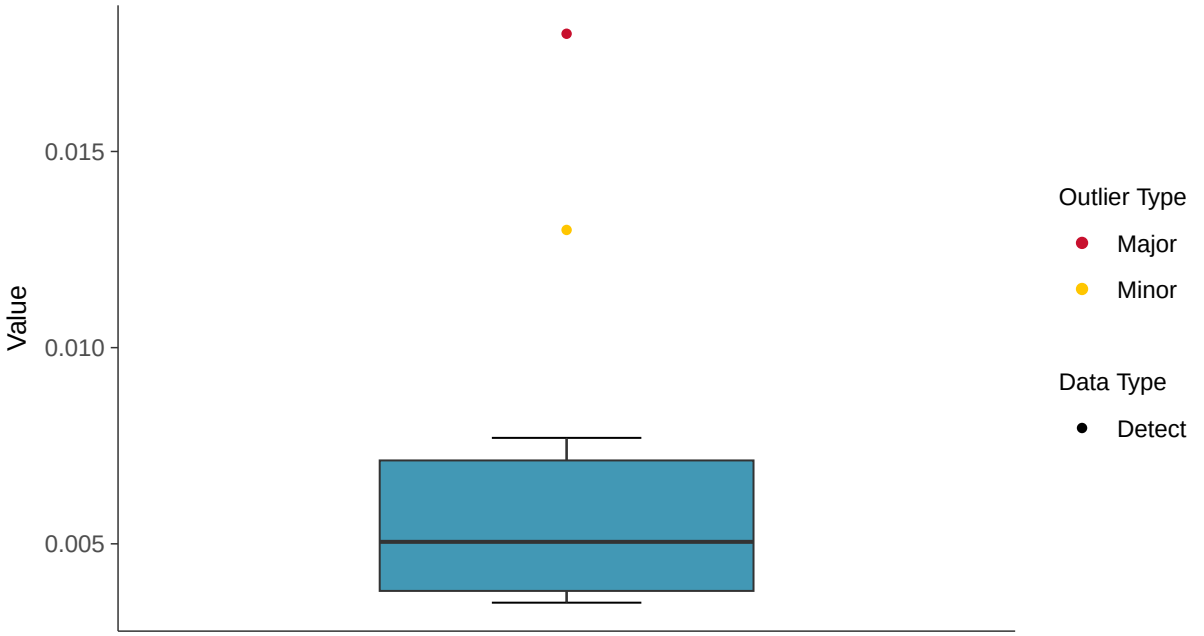
ID: 35_2_129





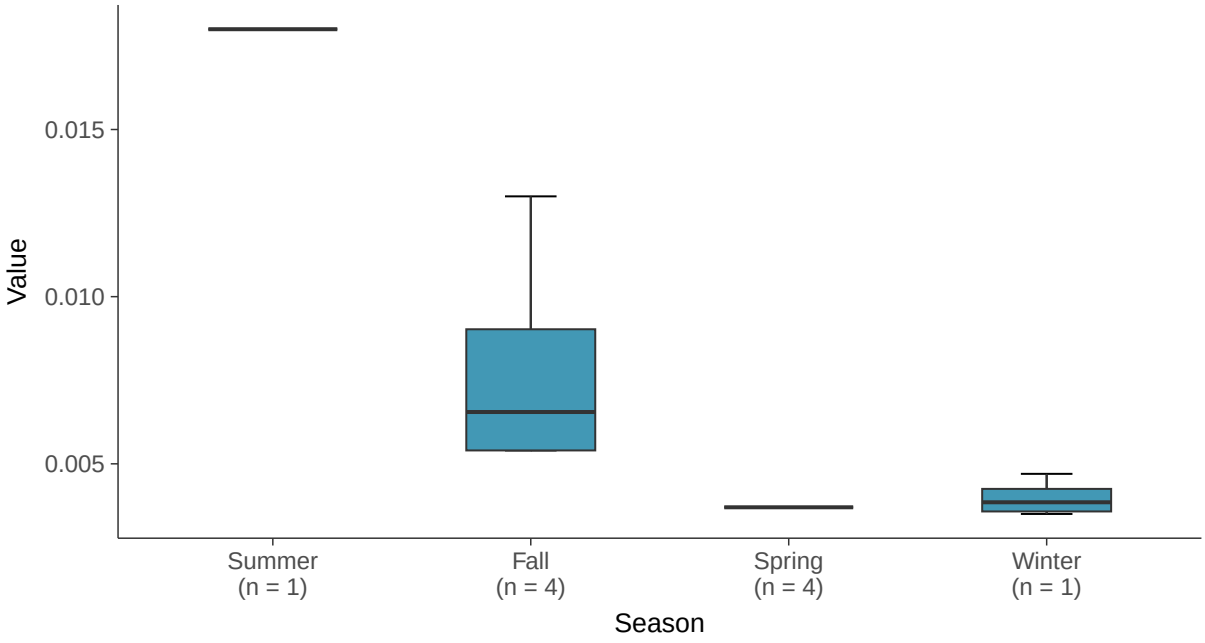
Boxplot

Selenium, MW-5 (mg/l)



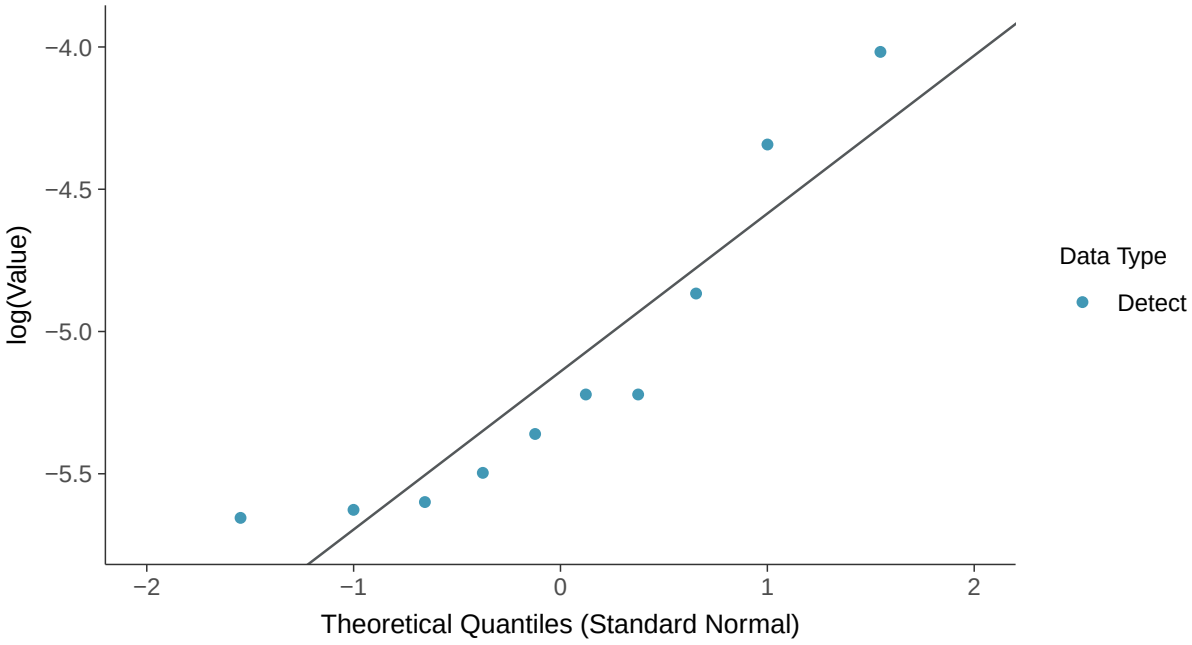
Boxplot by Season

Selenium, MW-5 (mg/l)



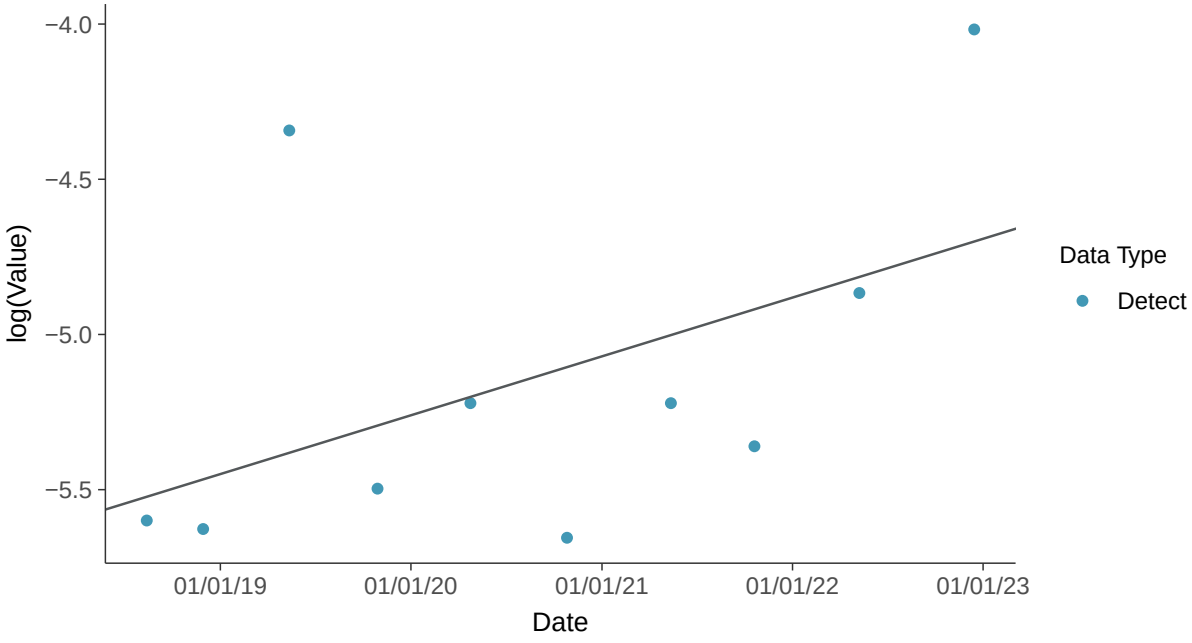
Lognormal Q-Q plot

Selenium, MW-5 (mg/l)



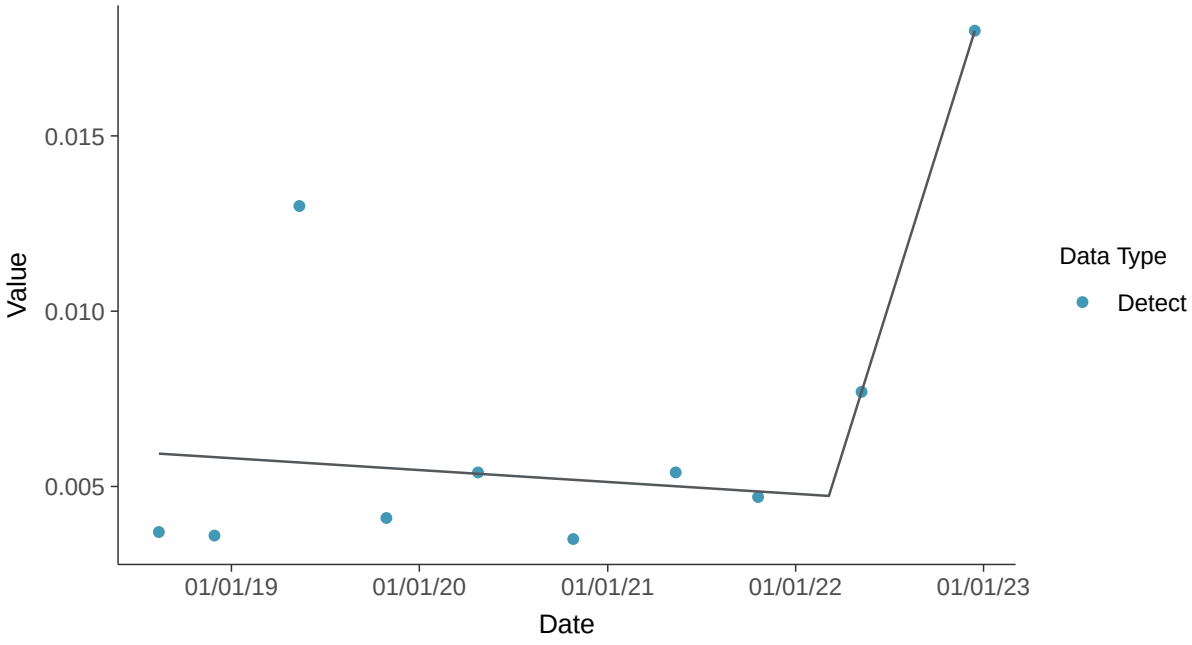
Trend Regression: Lognormal MLE

Selenium, MW-5 (mg/l)



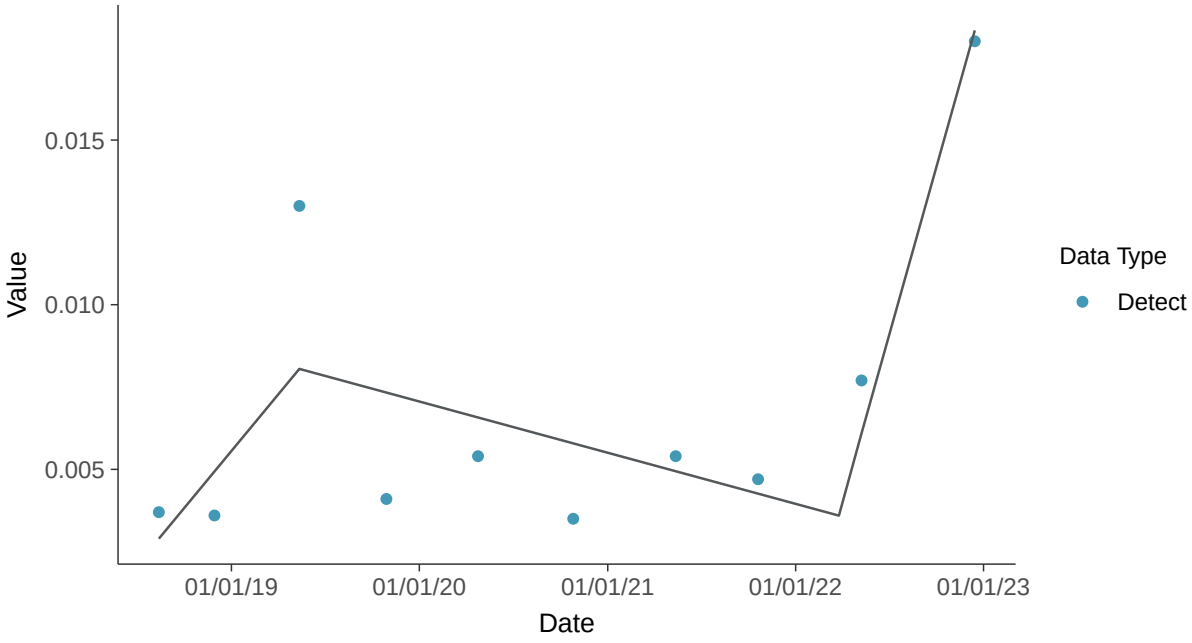
Trend Regression: Piecewise Linear-Linear

Selenium, MW-5 (mg/l)



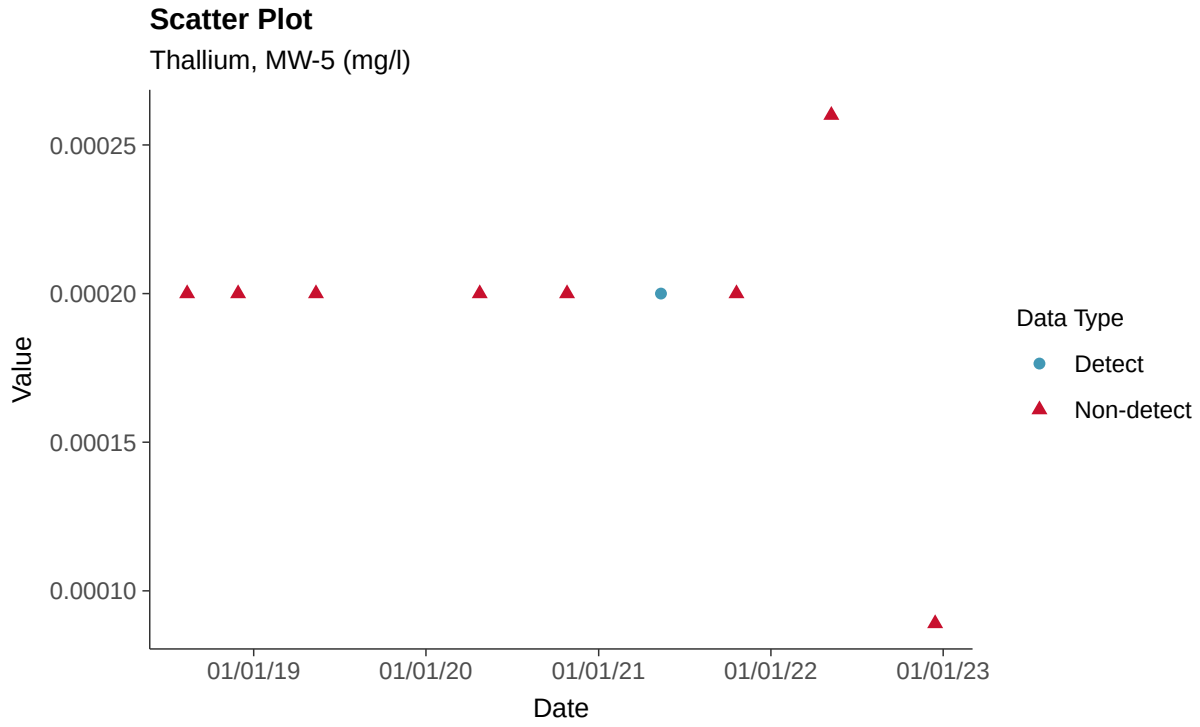
Trend Regression: Piecewise Linear-Linear-Linear

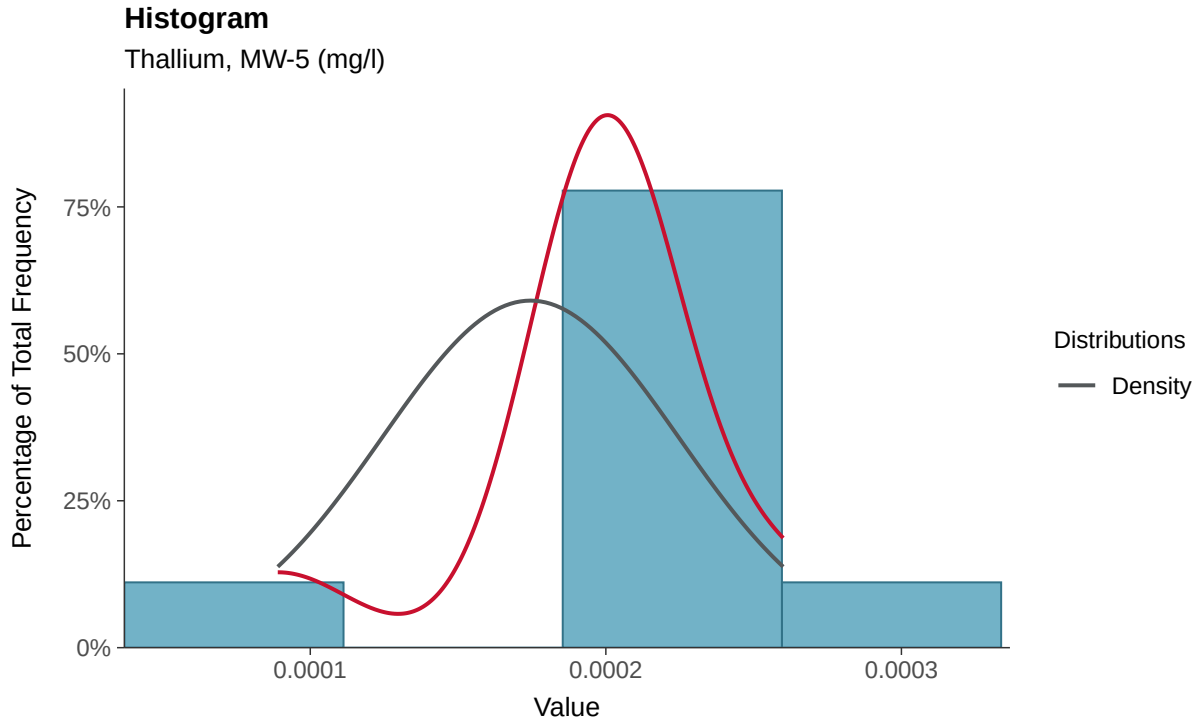
Selenium, MW-5 (mg/l)



Appendix IV: Thallium, MW-5

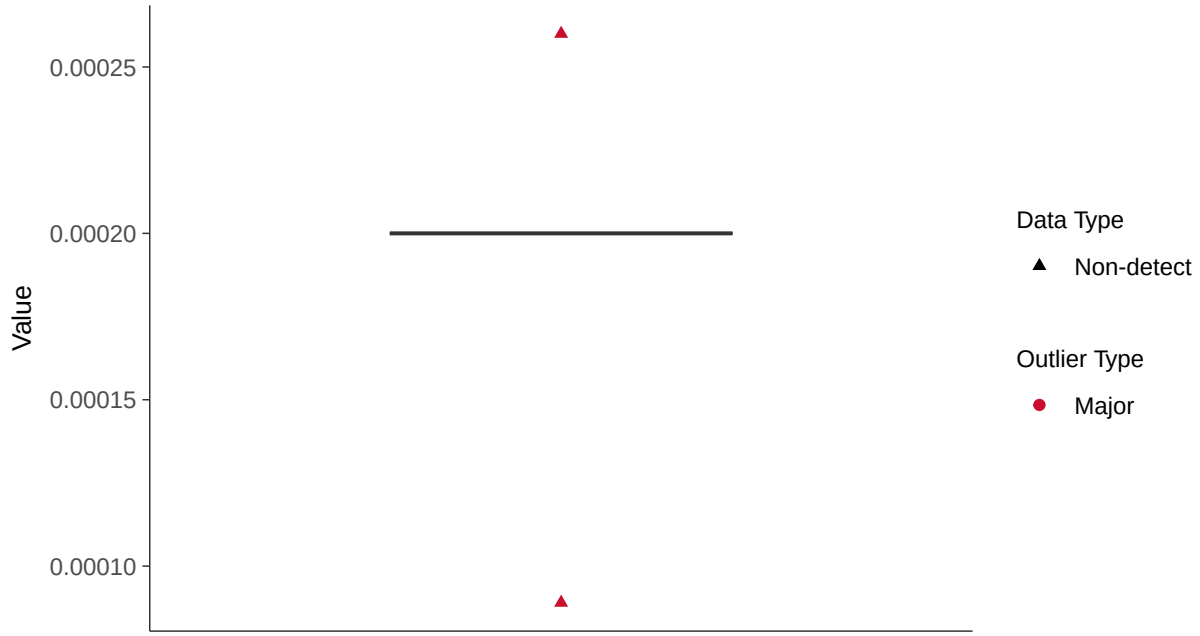
ID: 35_2_134





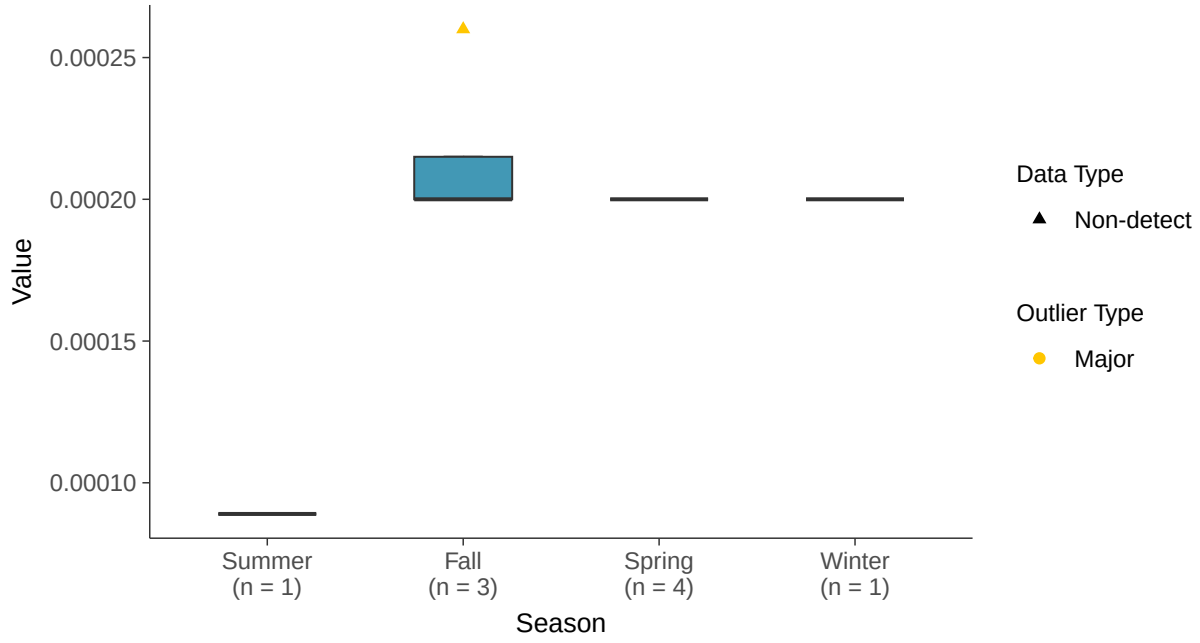
Boxplot

Thallium, MW-5 (mg/l)



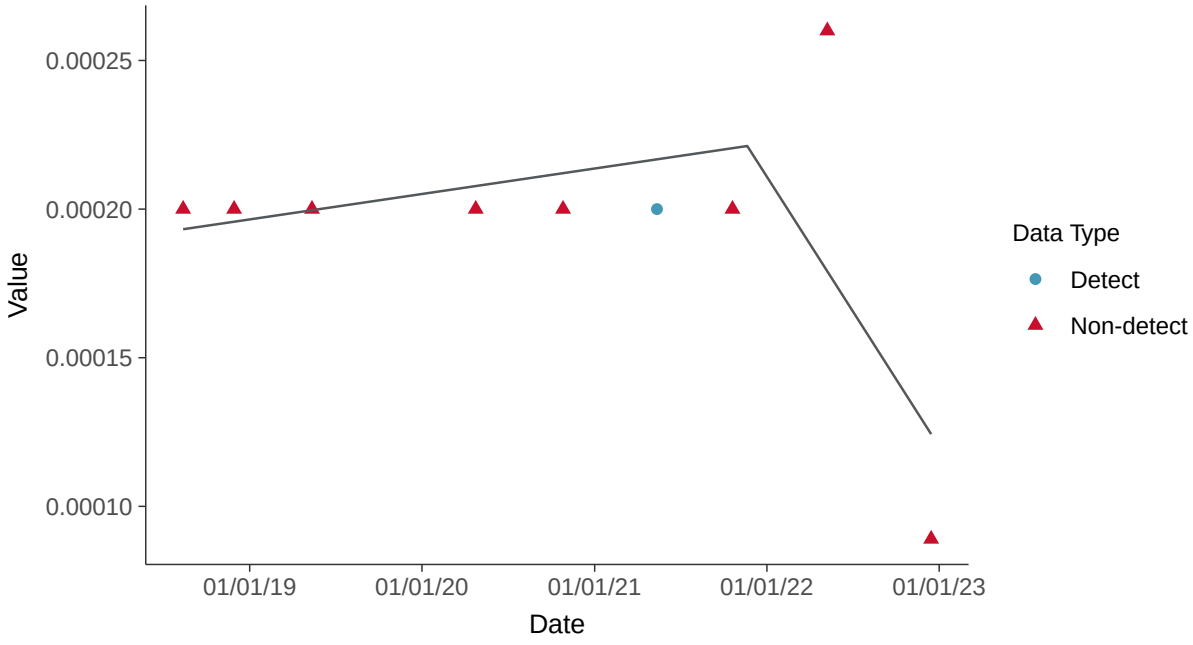
Boxplot by Season

Thallium, MW-5 (mg/l)



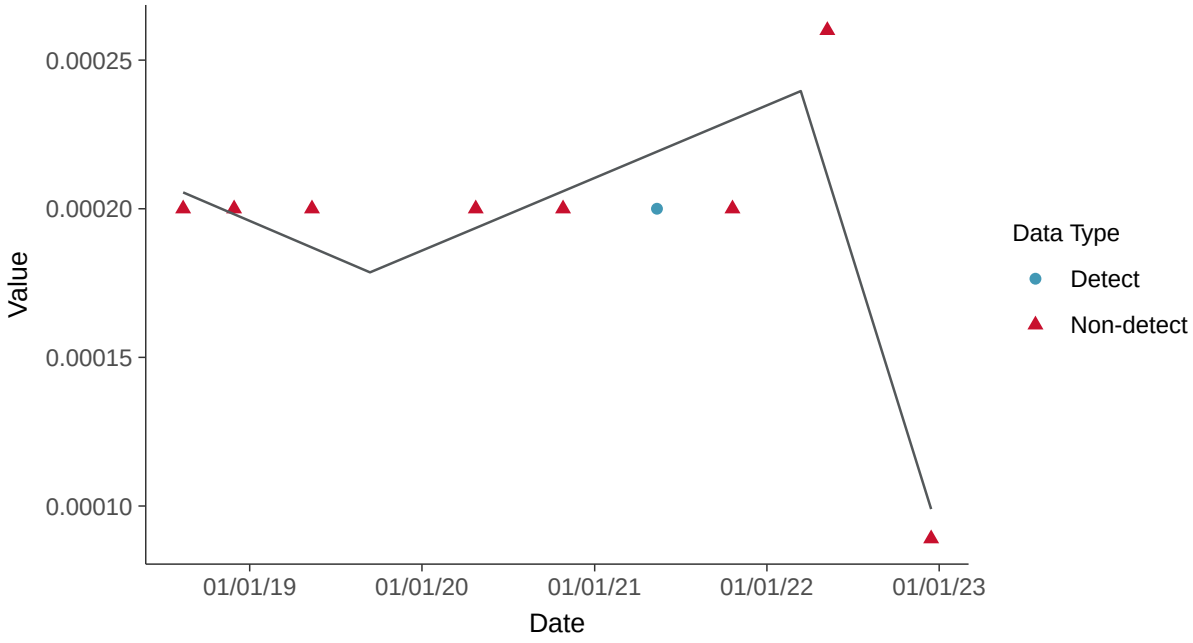
Trend Regression: Piecewise Linear-Linear

Thallium, MW-5 (mg/l)



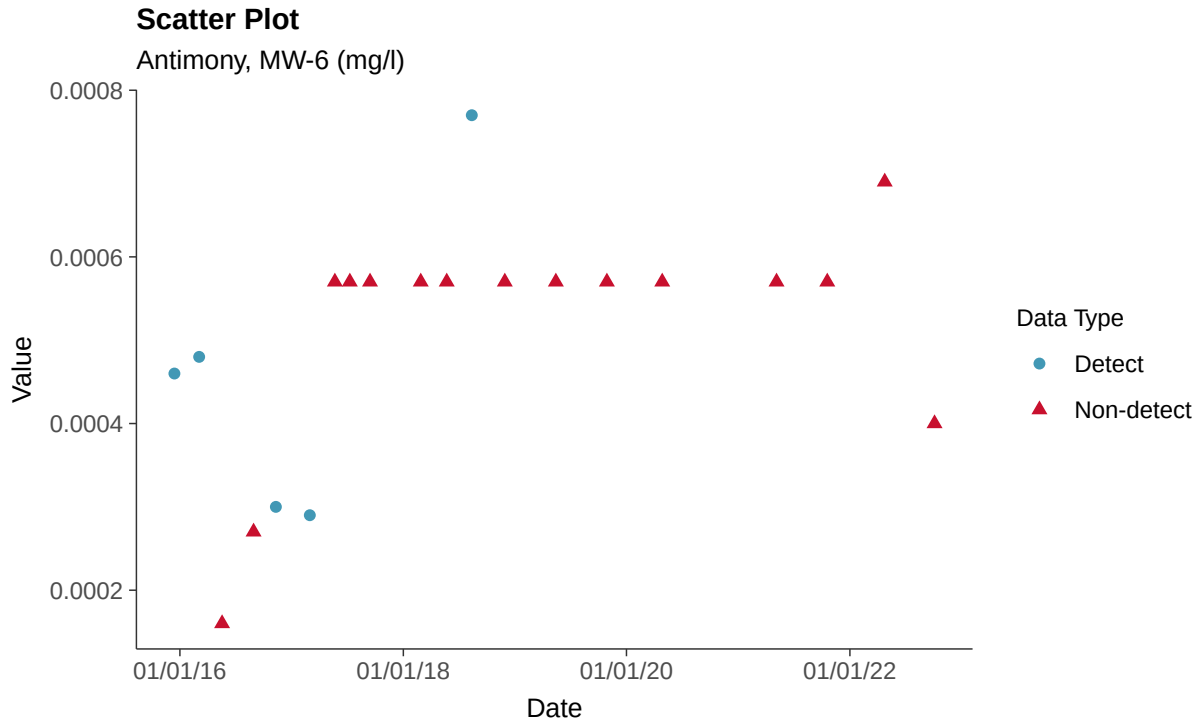
Trend Regression: Piecewise Linear-Linear-Linear

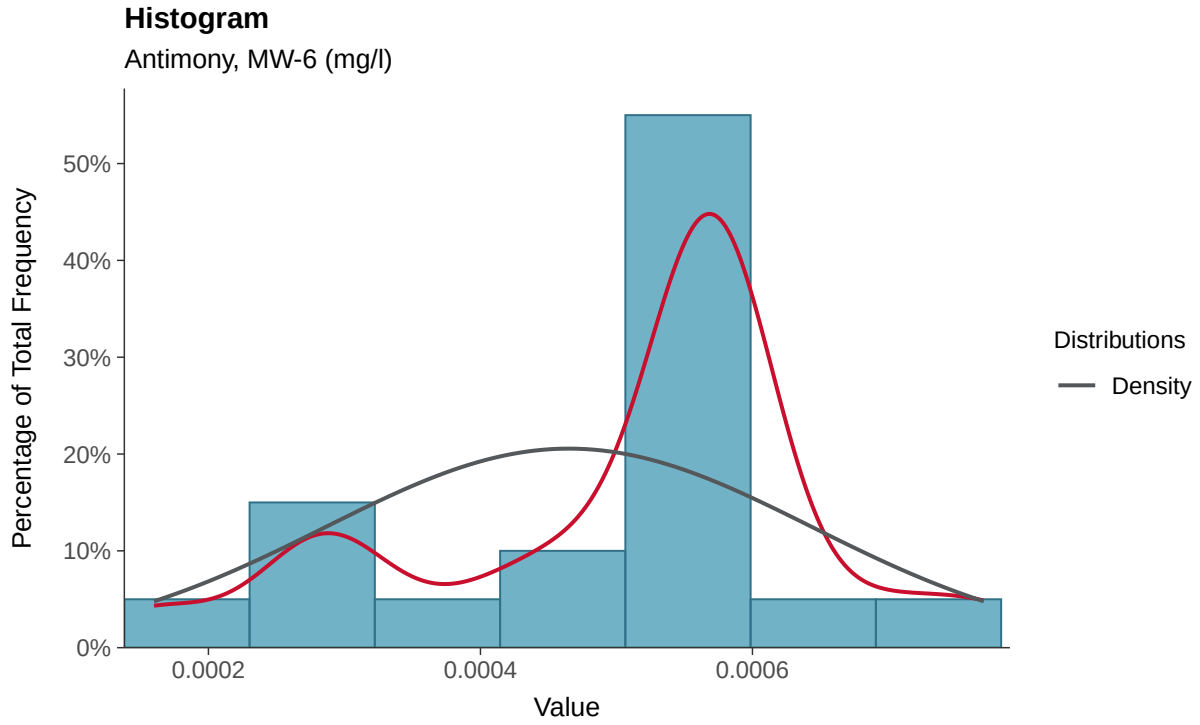
Thallium, MW-5 (mg/l)



Appendix IV: Antimony, MW-6

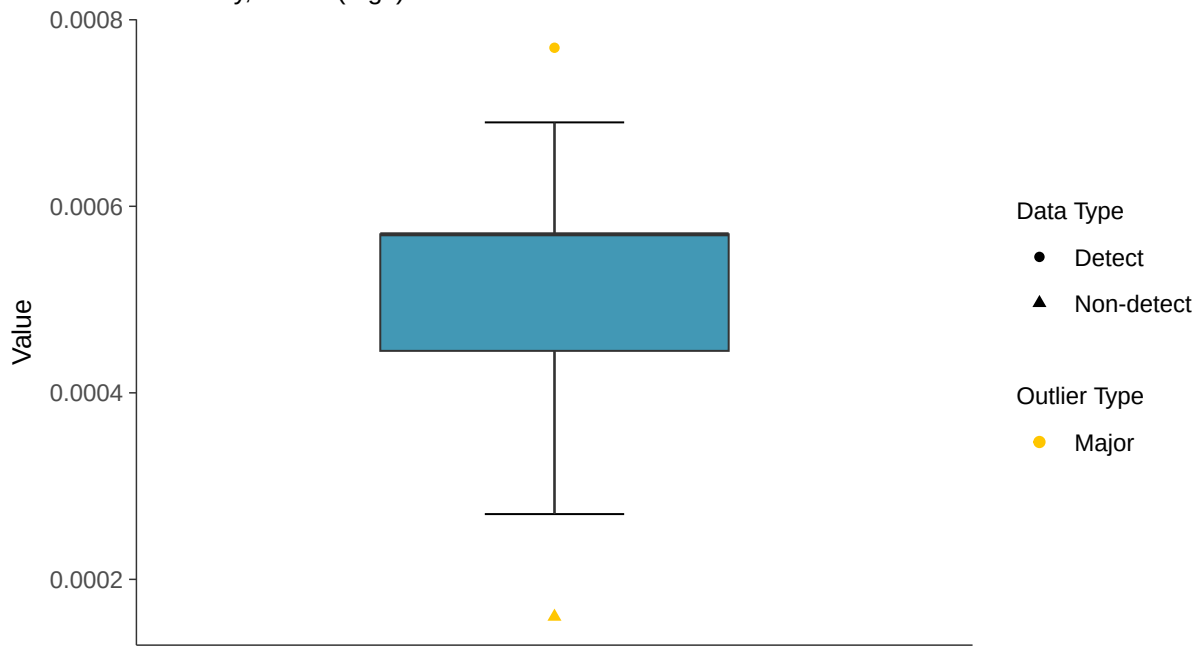
ID: 36_2_104





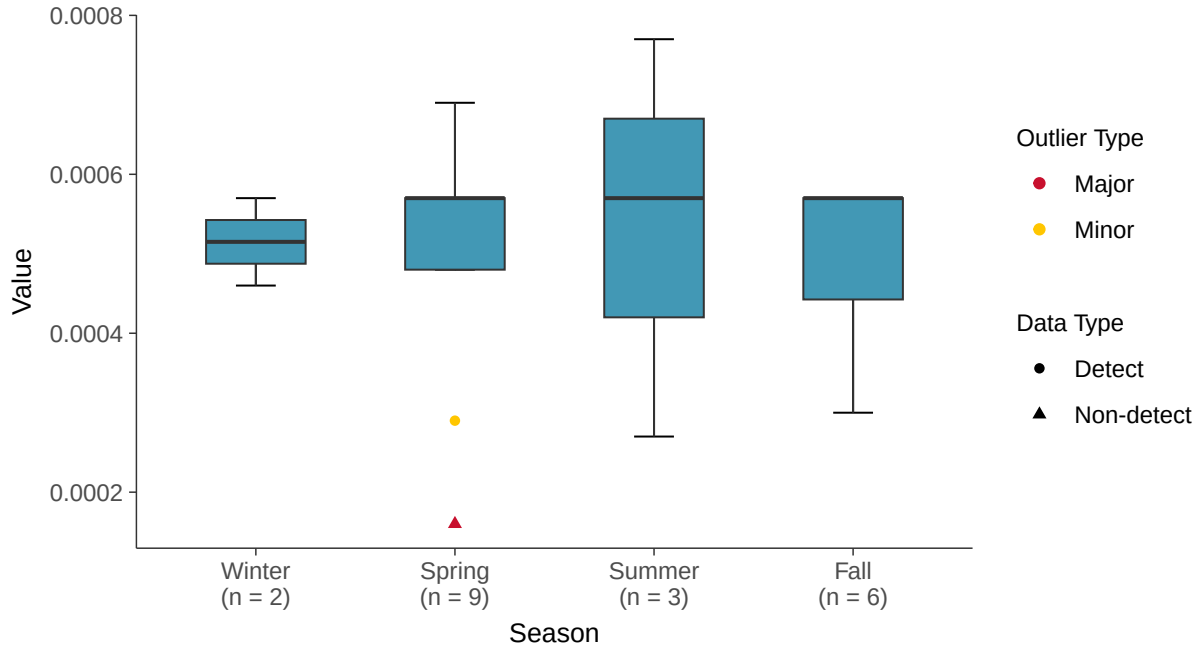
Boxplot

Antimony, MW-6 (mg/l)



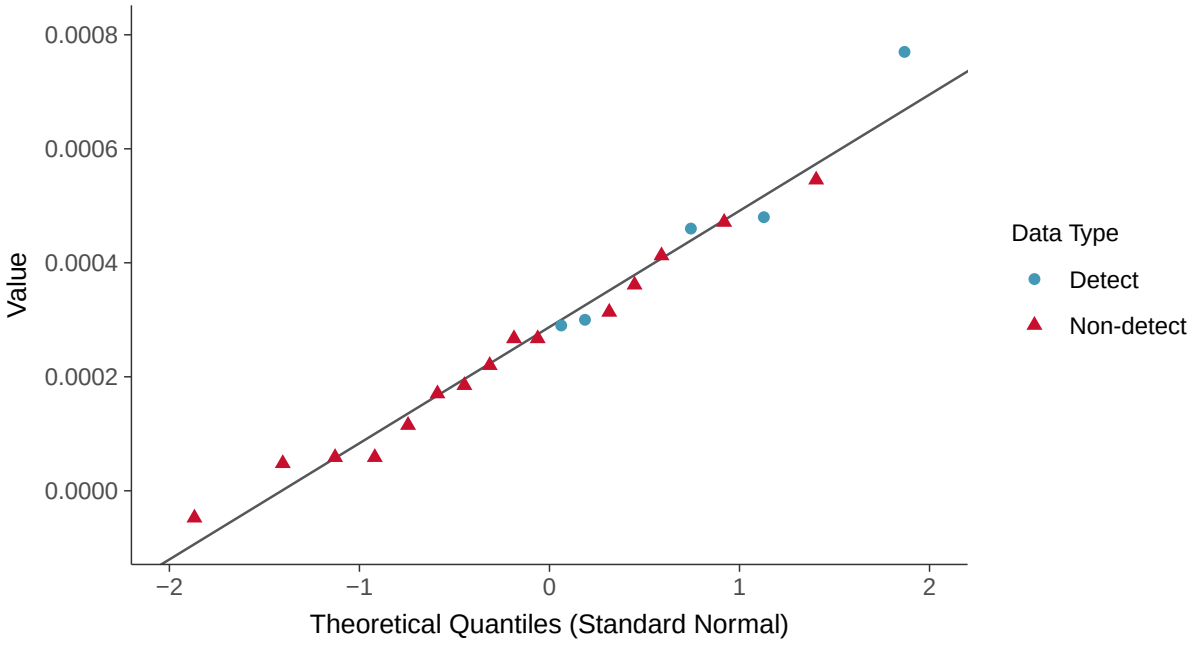
Boxplot by Season

Antimony, MW-6 (mg/l)



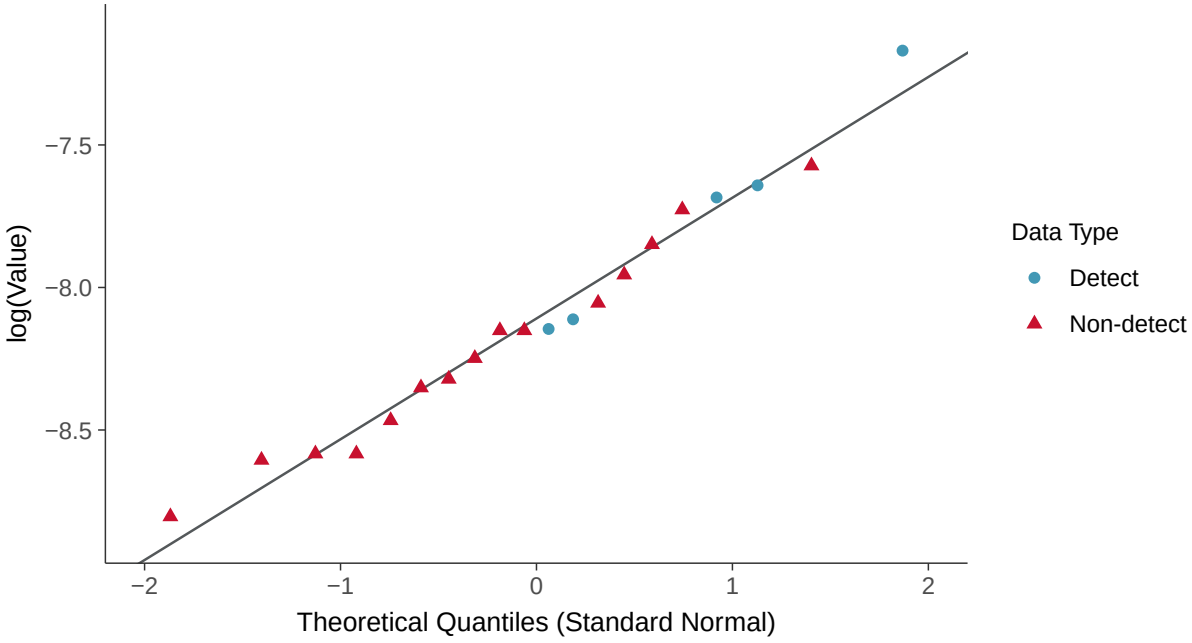
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-6 (mg/l)



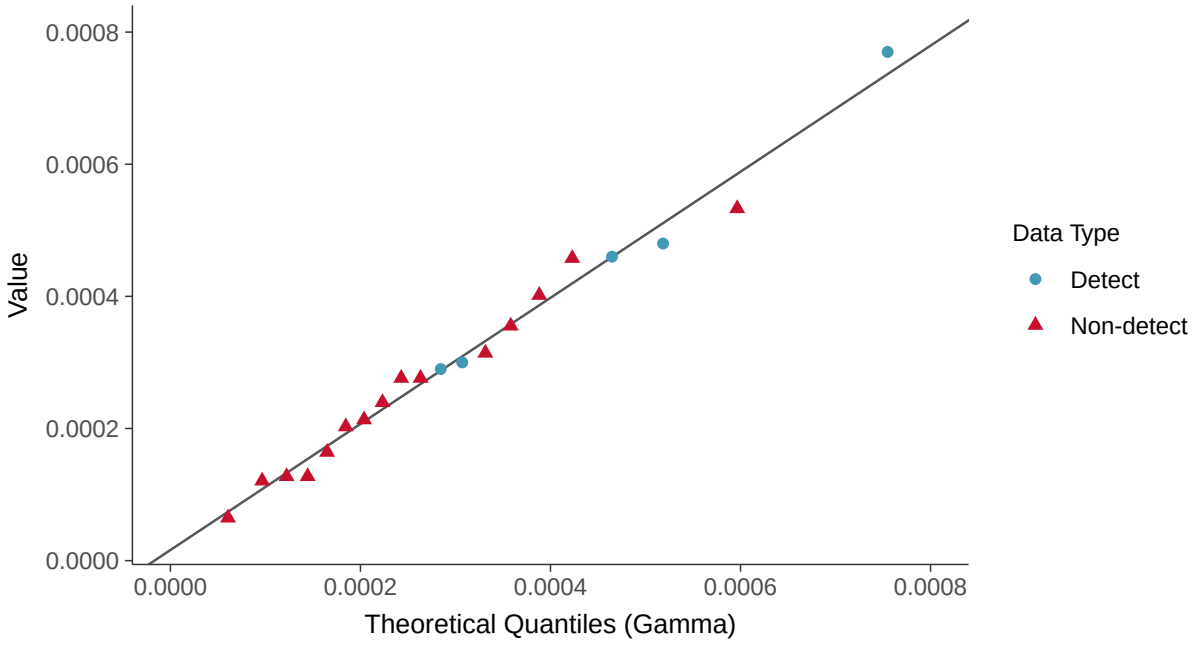
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-6 (mg/l)



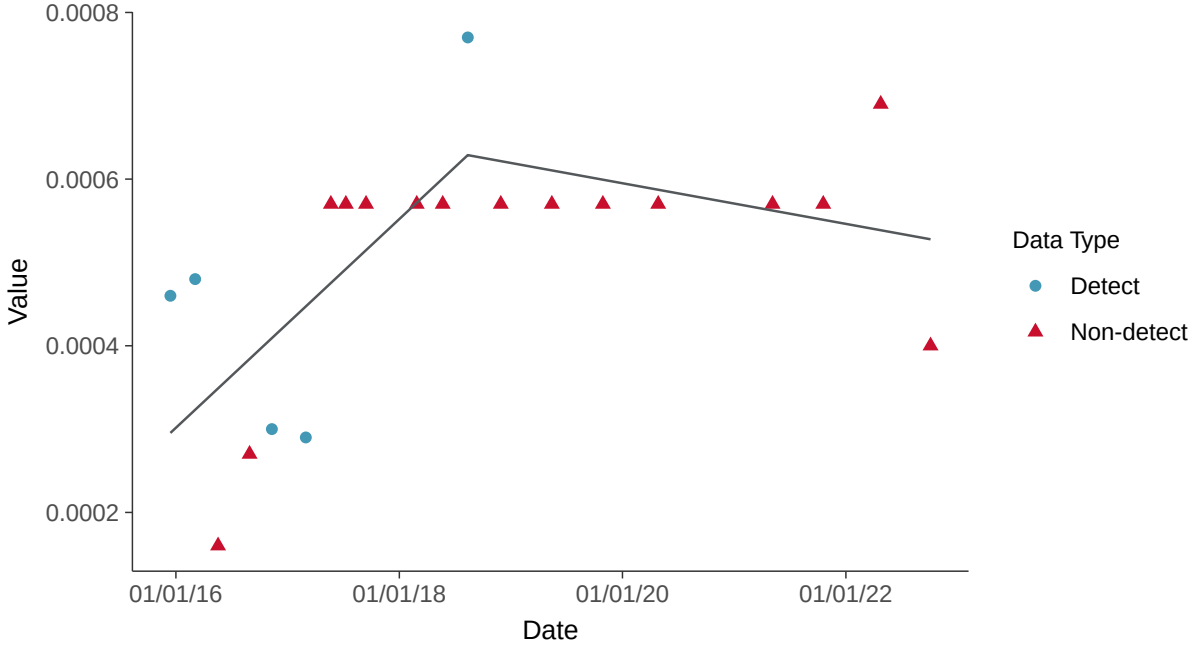
Gamma Q-Q plot using ROS Imputed Estimates

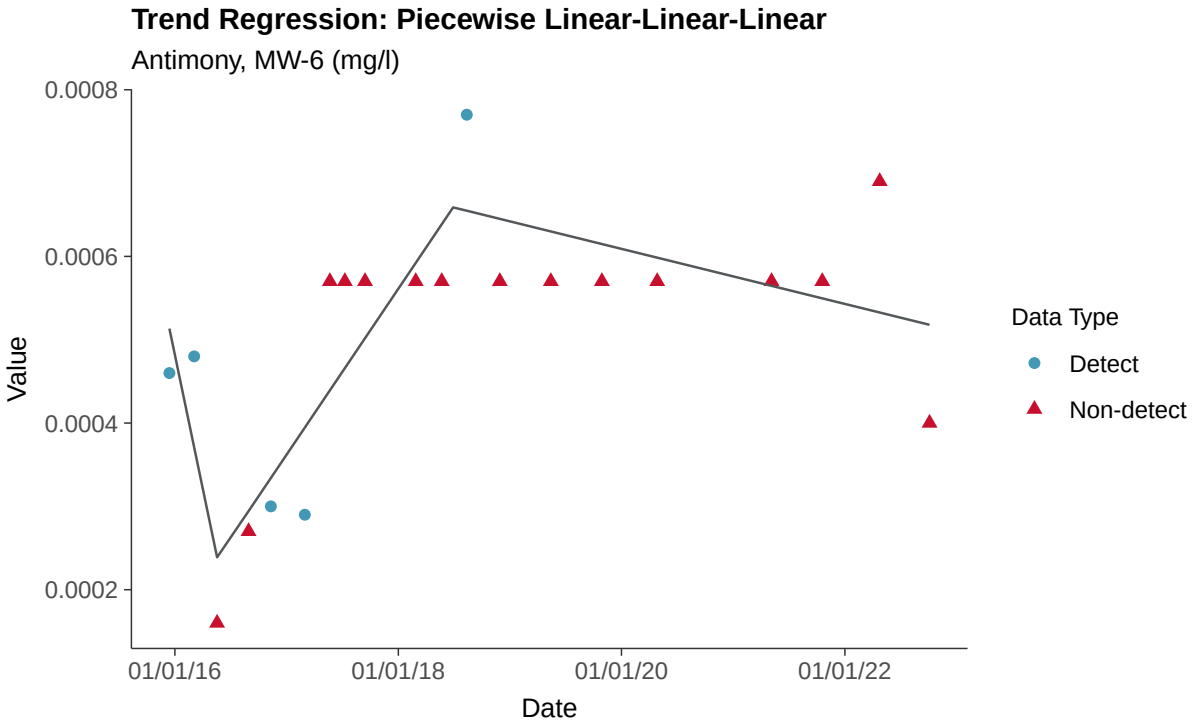
Antimony, MW-6 (mg/l)



Trend Regression: Piecewise Linear-Linear

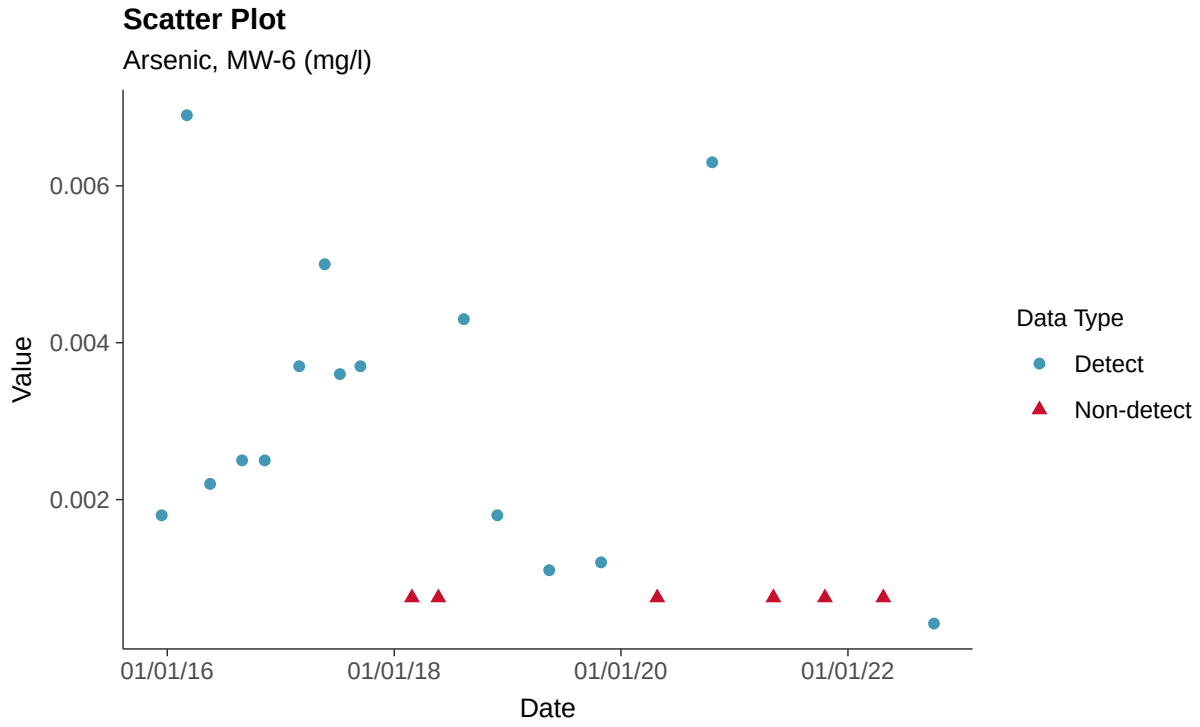
Antimony, MW-6 (mg/l)

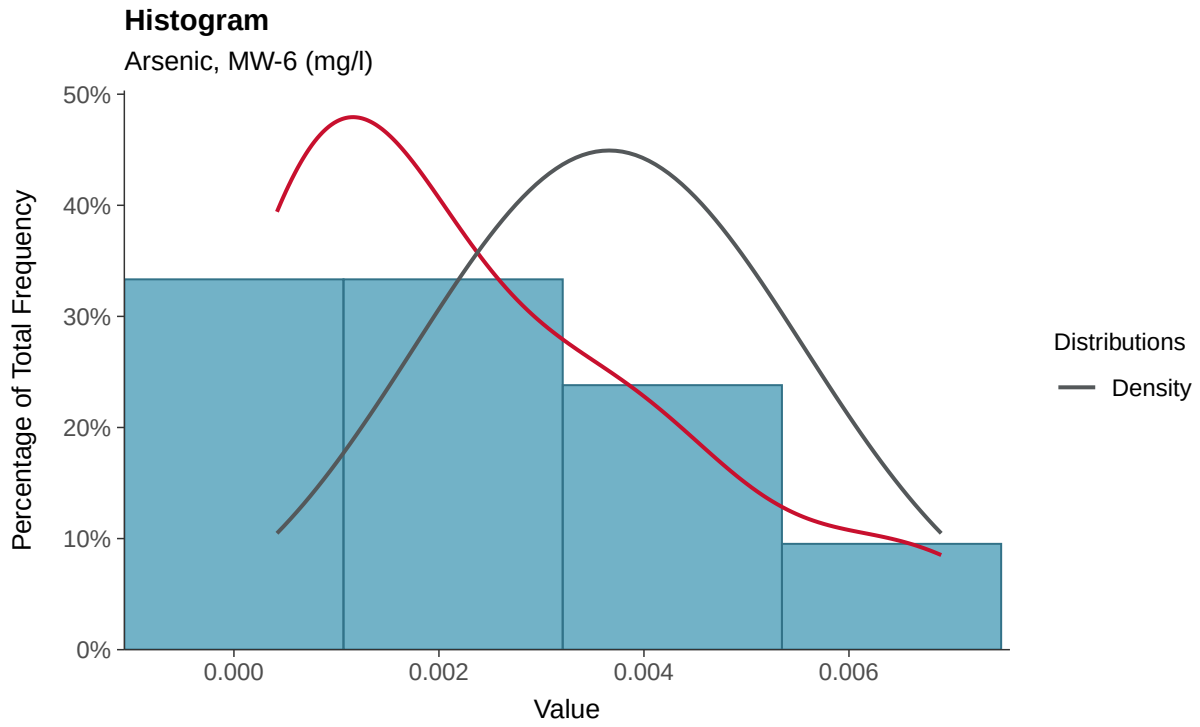



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-6 (mg/l)
0.0008
0.0006
0.0004
0.0002
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-6

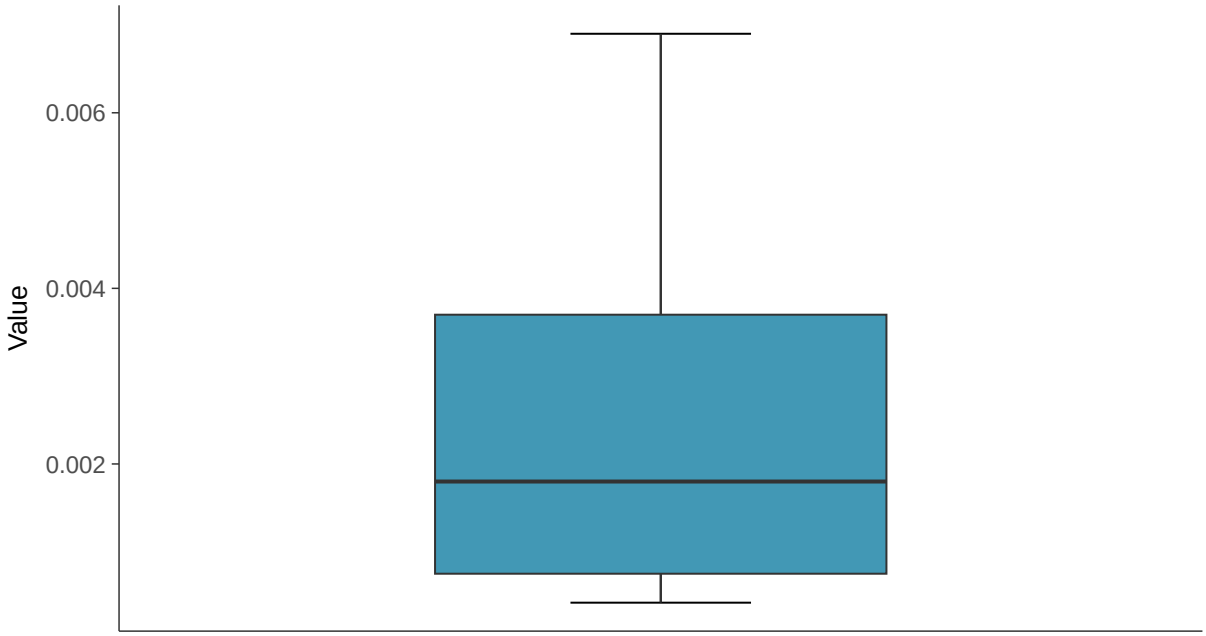
ID: 36_2_105





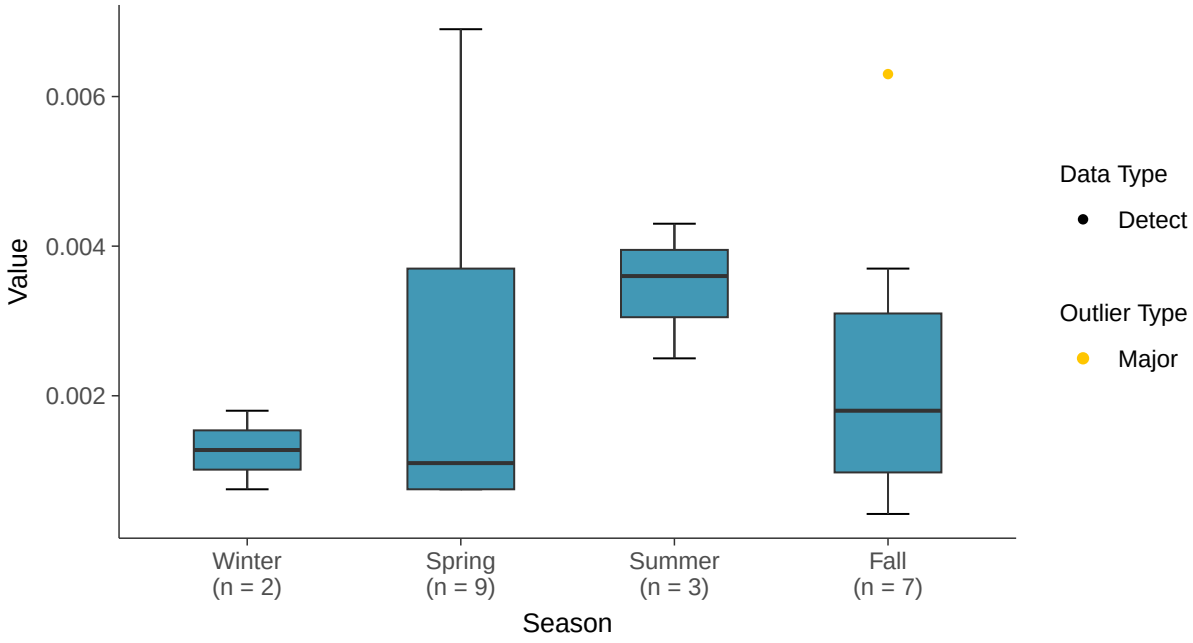
Boxplot

Arsenic, MW-6 (mg/l)



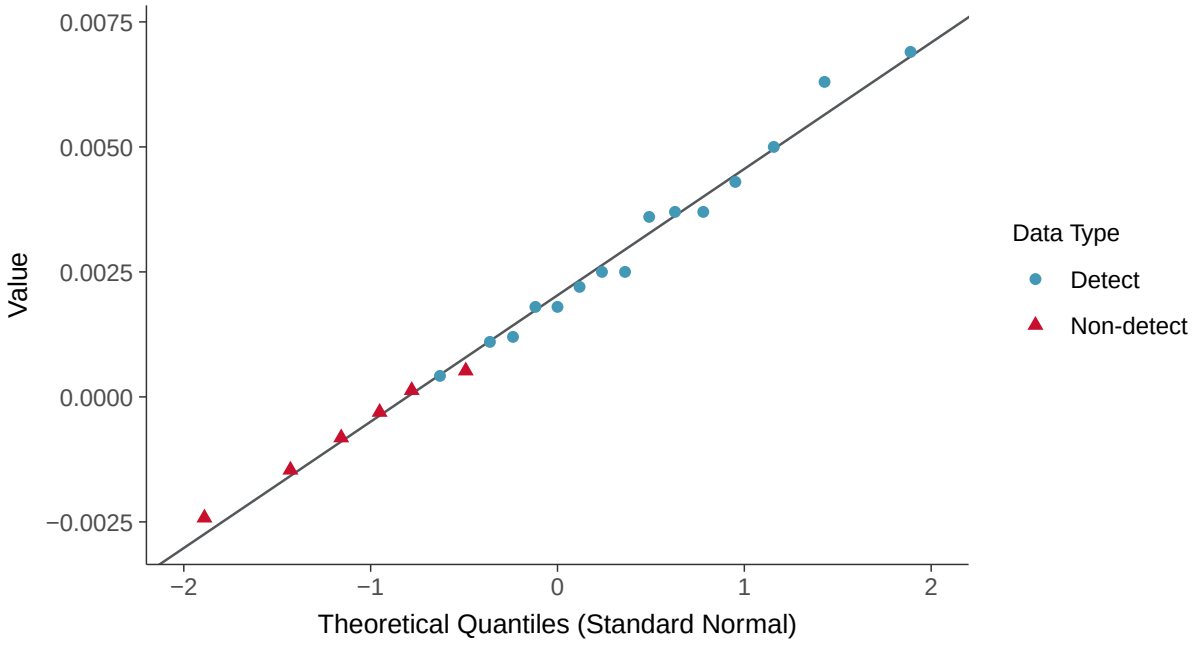
Boxplot by Season

Arsenic, MW-6 (mg/l)



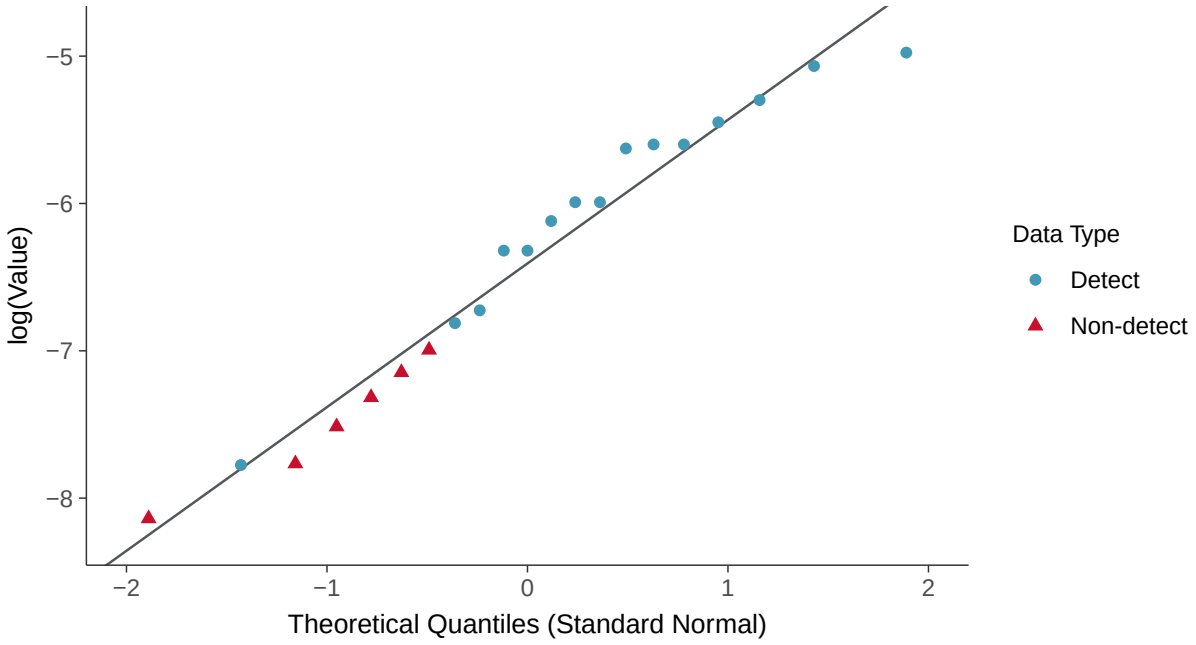
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-6 (mg/l)



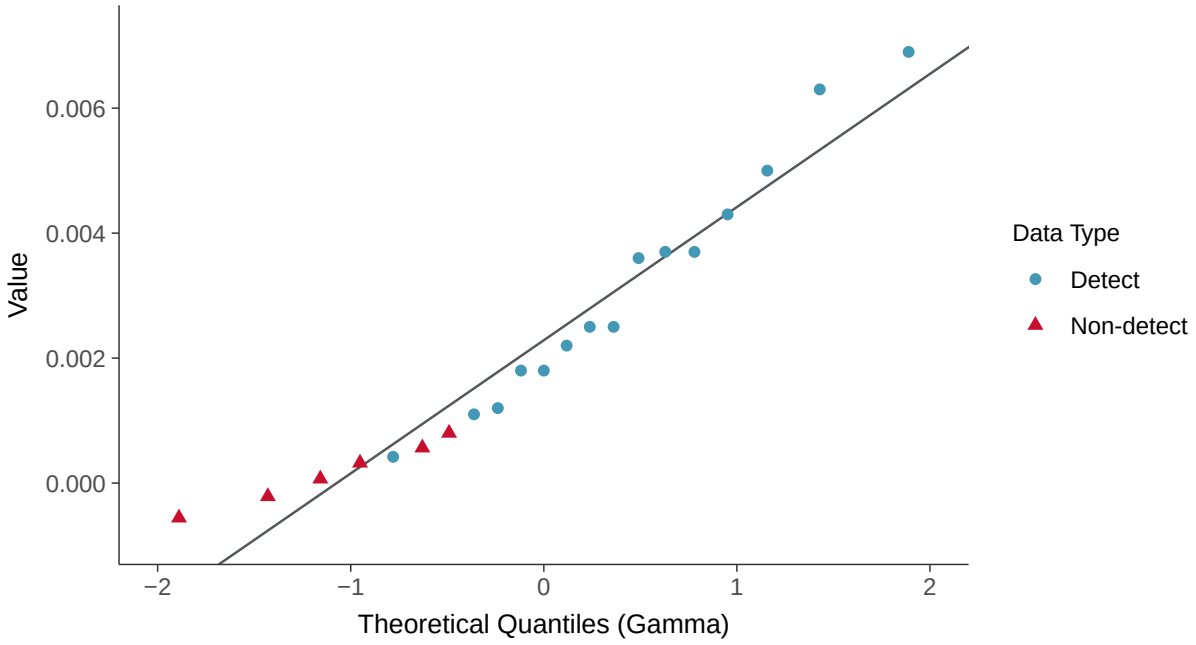
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-6 (mg/l)



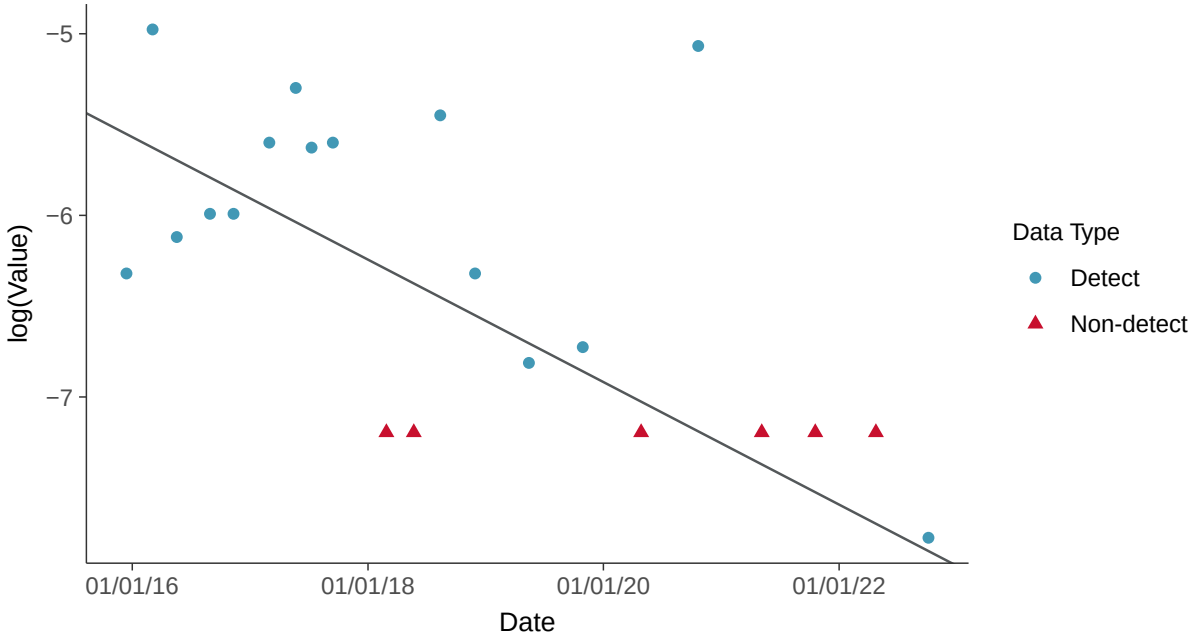
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-6 (mg/l)



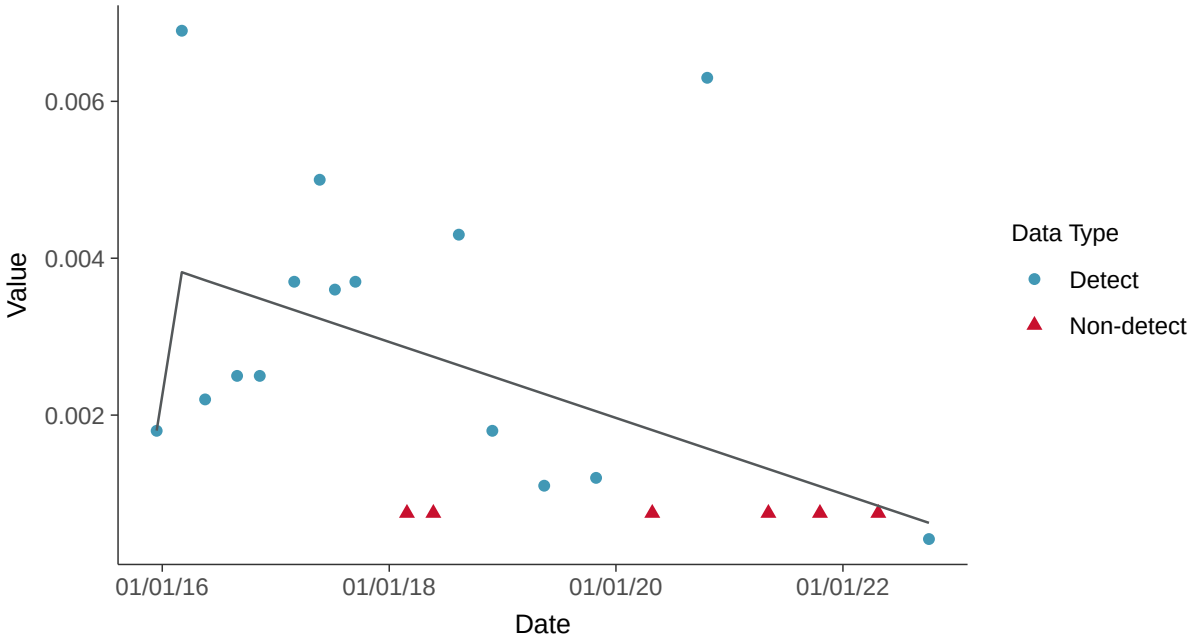
Trend Regression: Lognormal MLE

Arsenic, MW-6 (mg/l)



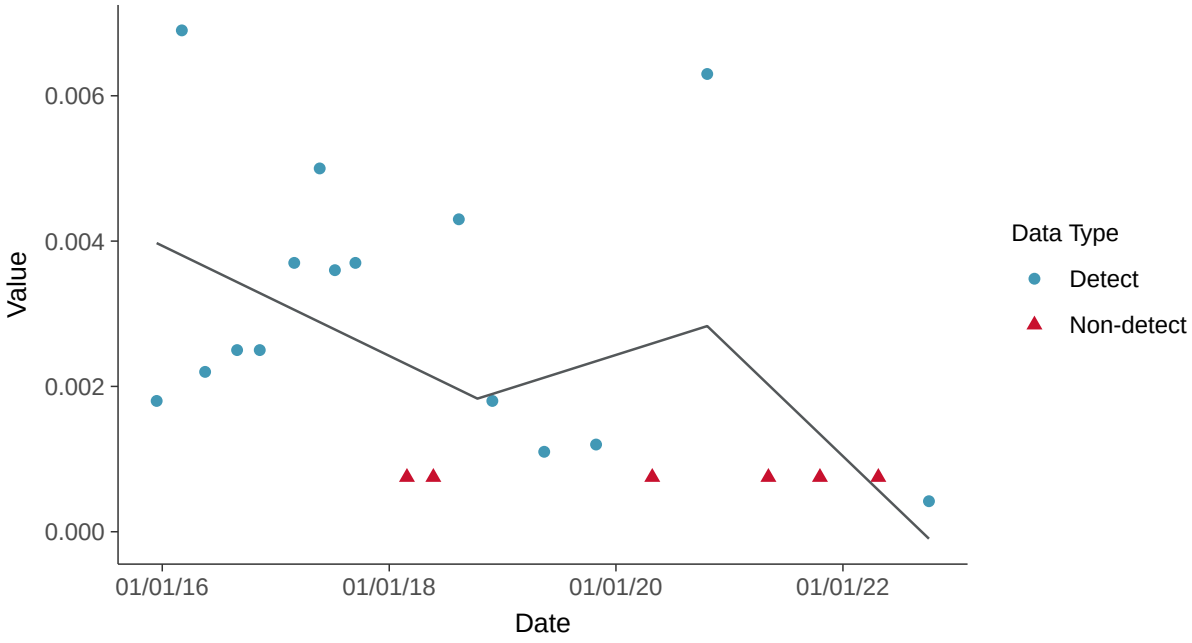
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-6 (mg/l)



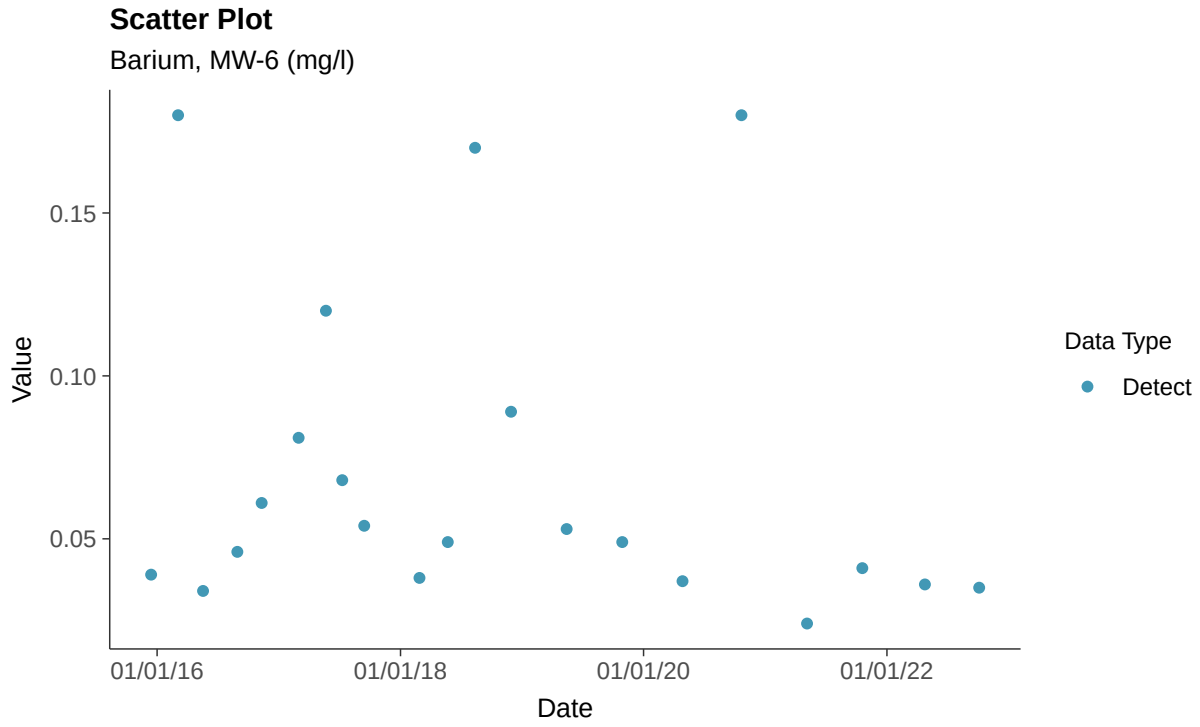
Trend Regression: Piecewise Linear-Linear-Linear

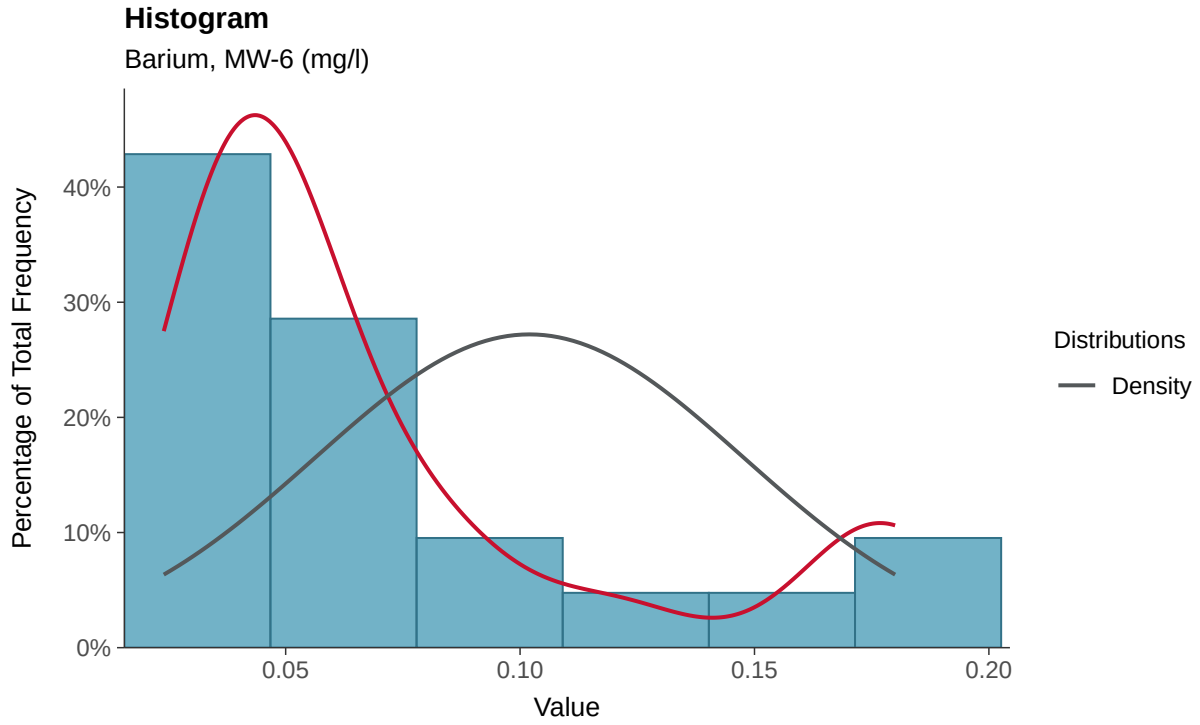
Arsenic, MW-6 (mg/l)



Appendix IV: Barium, MW-6

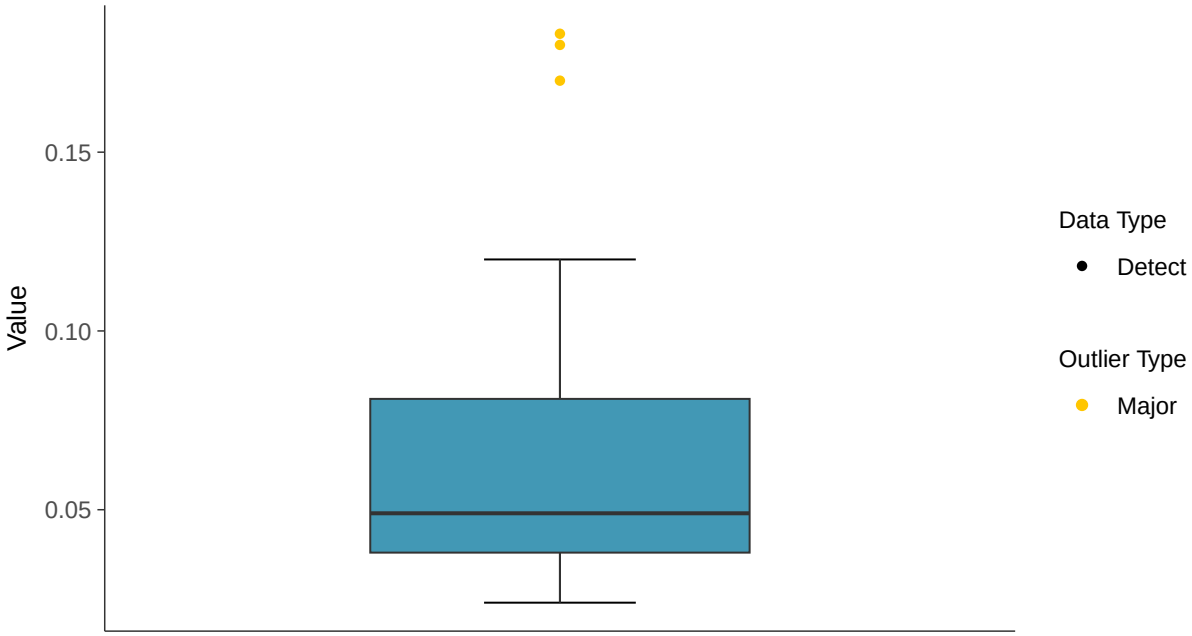
ID: 36_2_106





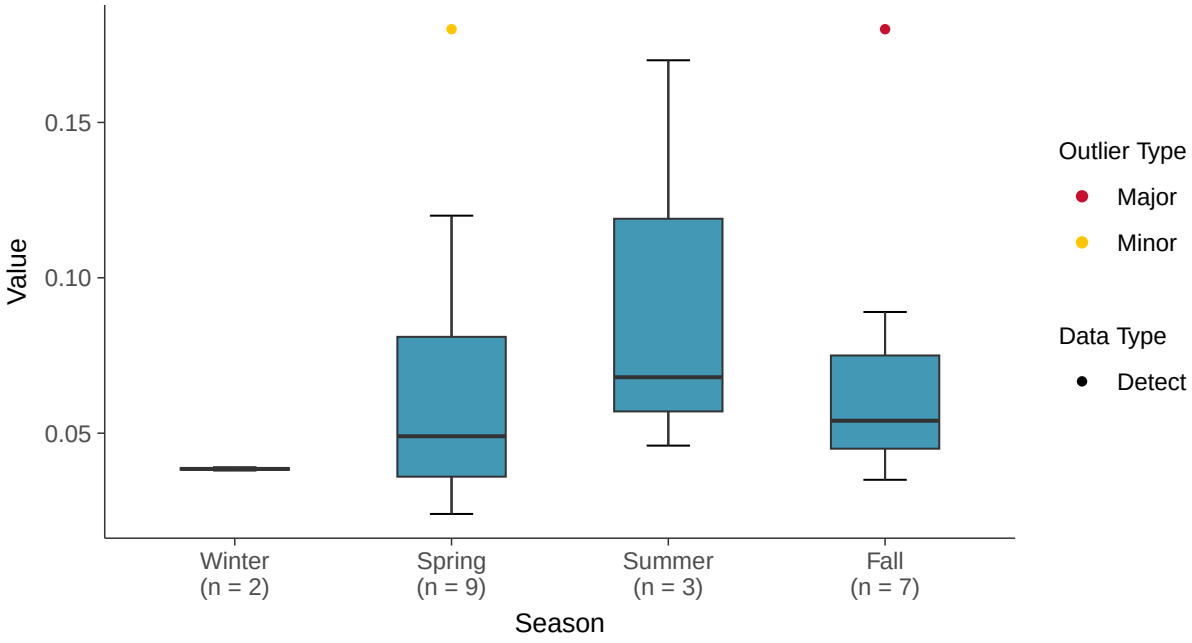
Boxplot

Barium, MW-6 (mg/l)



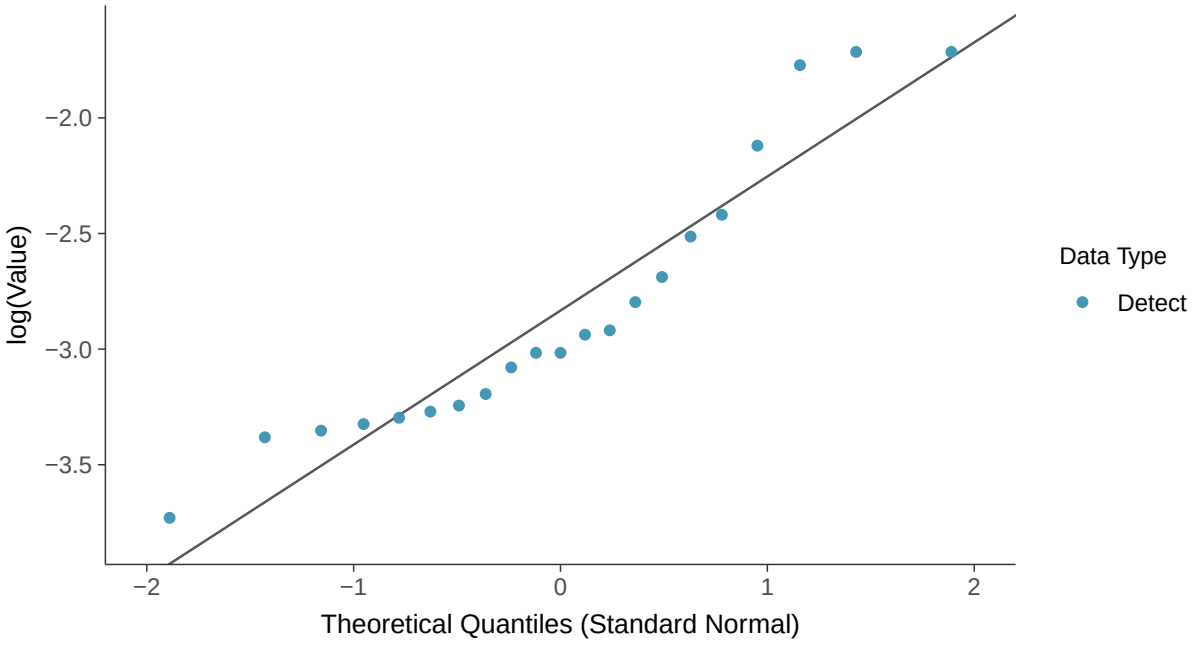
Boxplot by Season

Barium, MW-6 (mg/l)



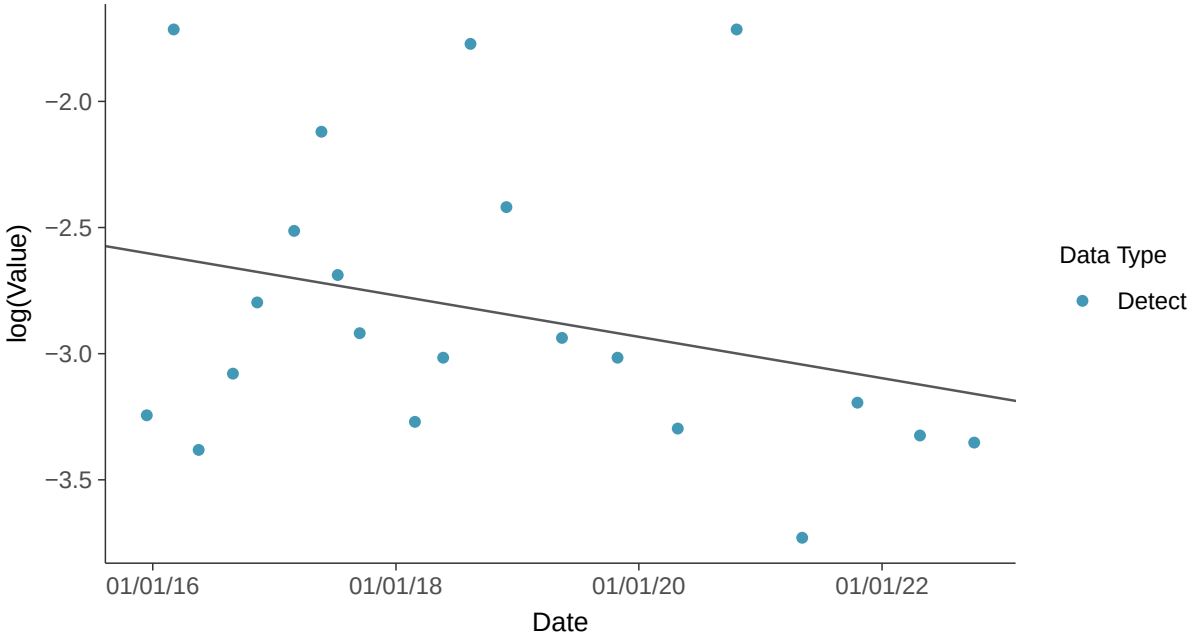
Lognormal Q-Q plot

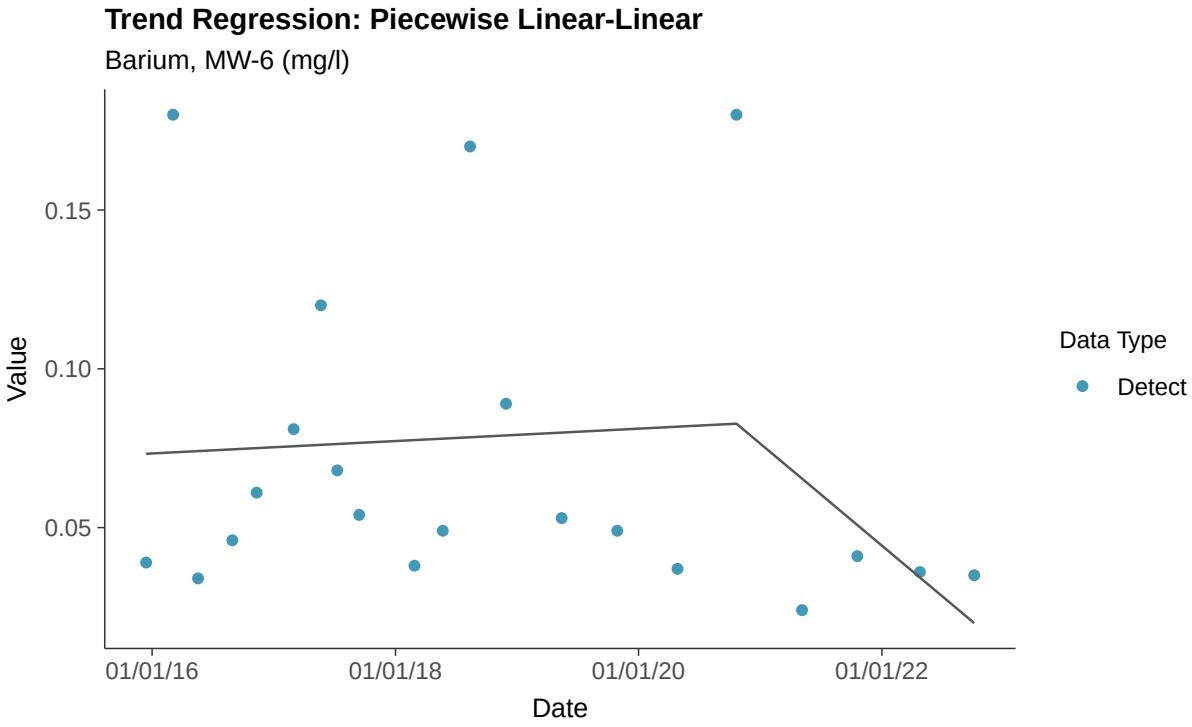
Barium, MW-6 (mg/l)



Trend Regression: Lognormal MLE

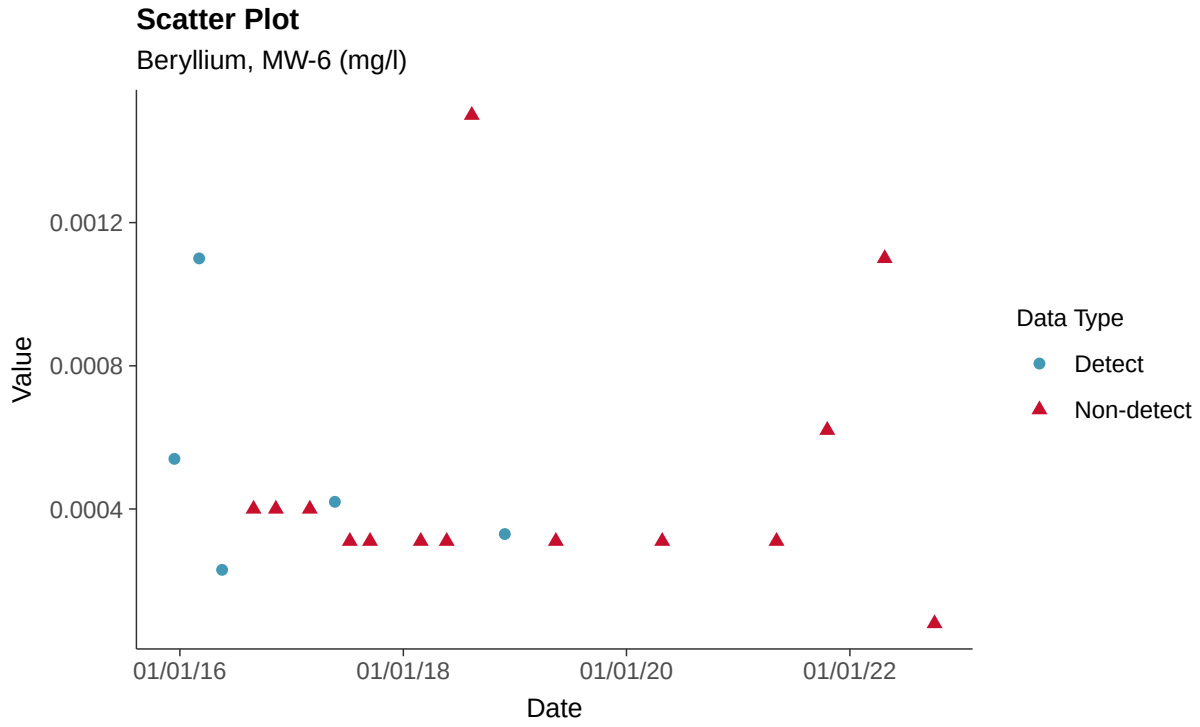
Barium, MW-6 (mg/l)

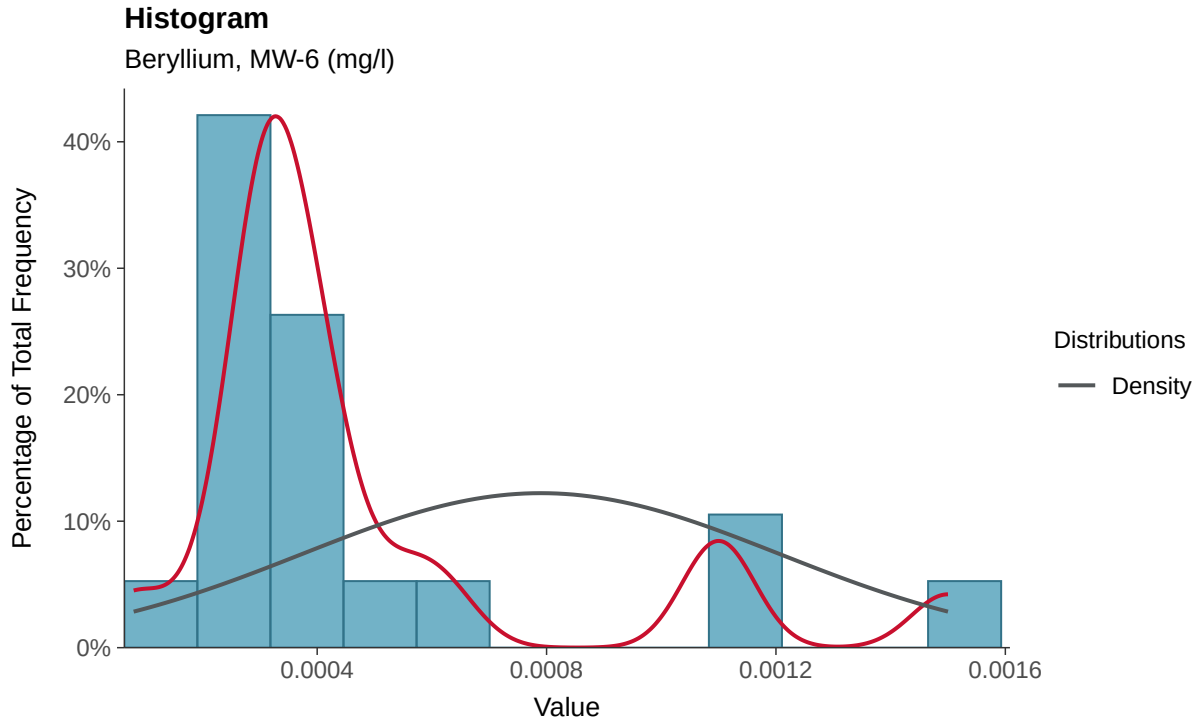



Trend Regression: Piecewise Linear-Linear
Barium, MW-6 (mg/l)
Value
0.15
0.10
0.05
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect

Appendix IV: Beryllium, MW-6

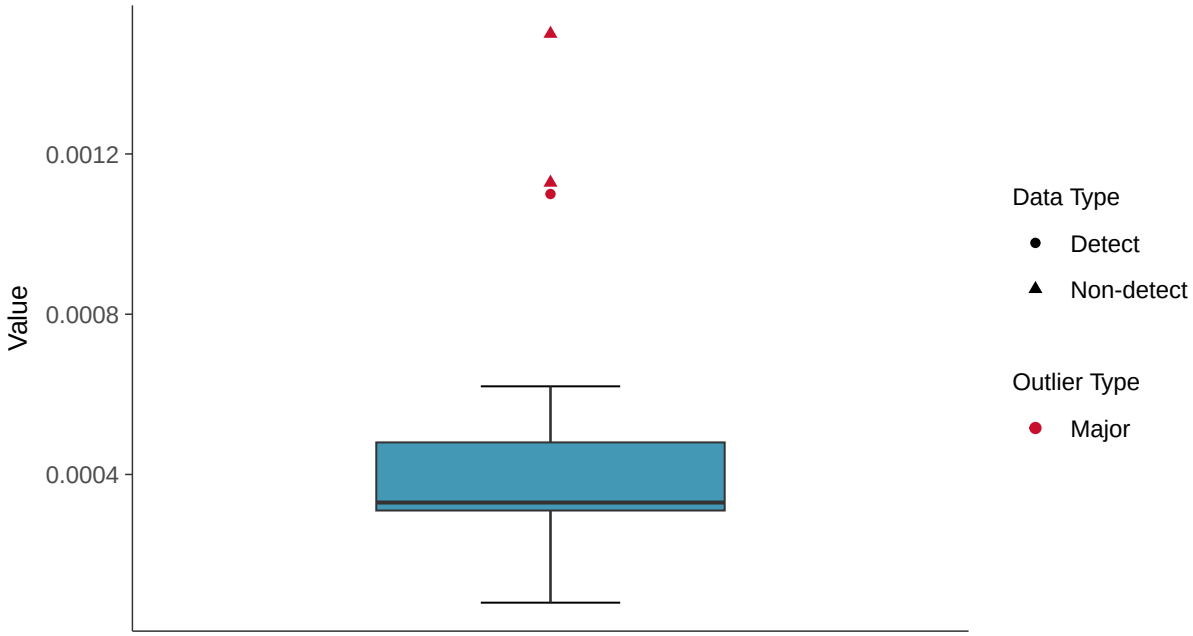
ID: 36_2_107





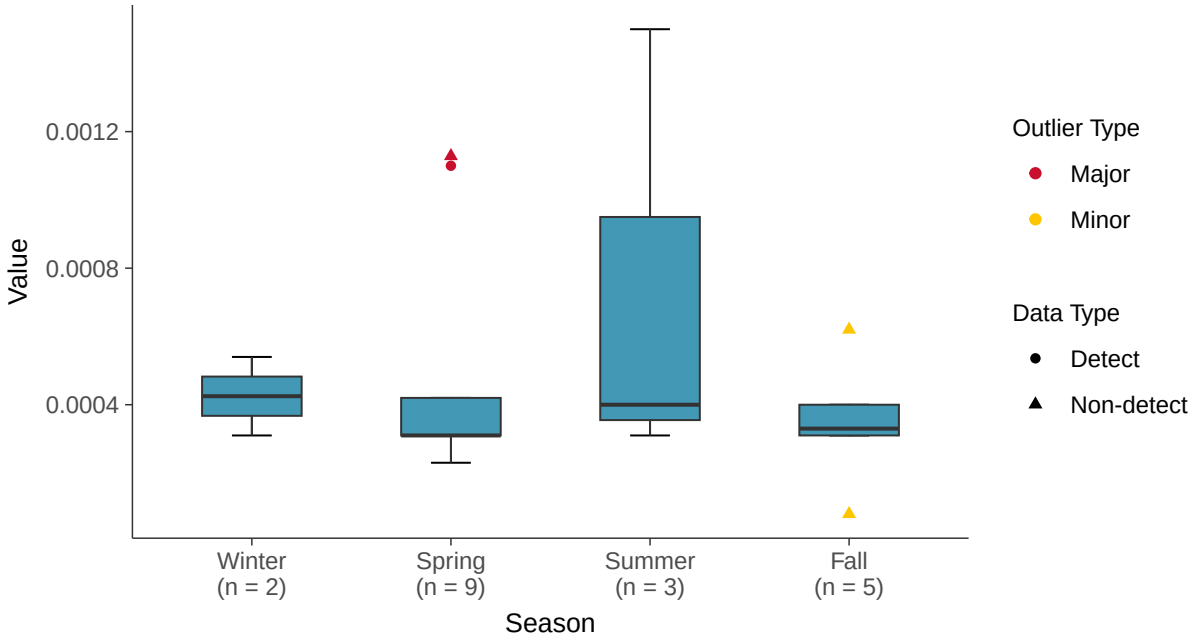
Boxplot

Beryllium, MW-6 (mg/l)



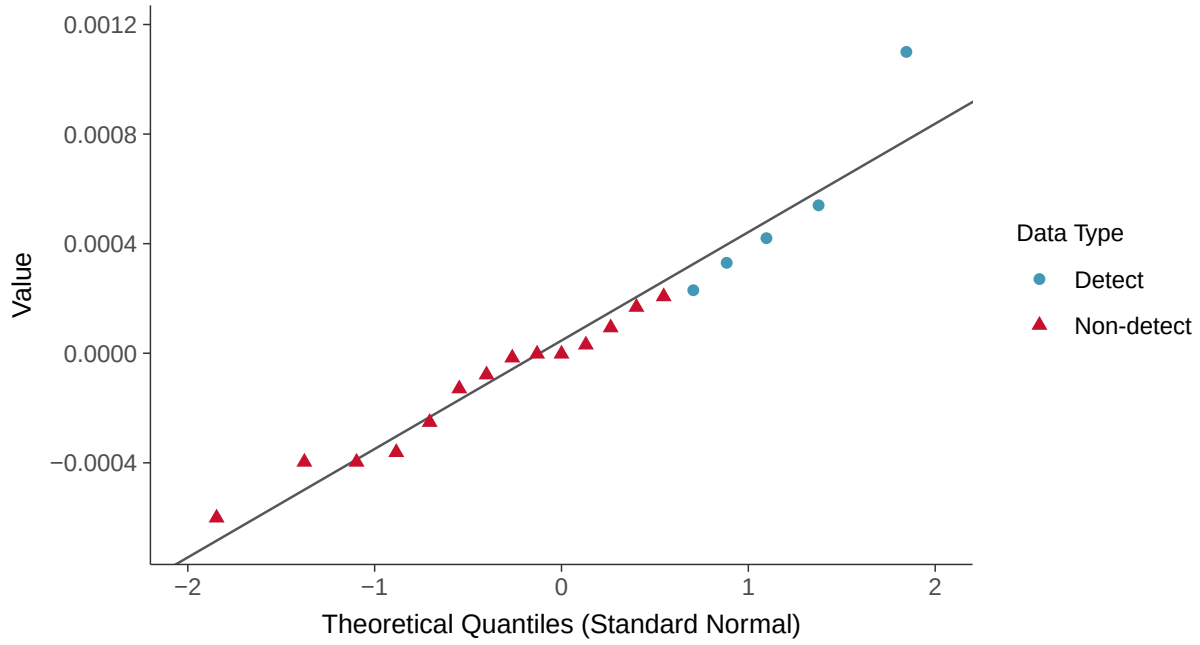
Boxplot by Season

Beryllium, MW-6 (mg/l)



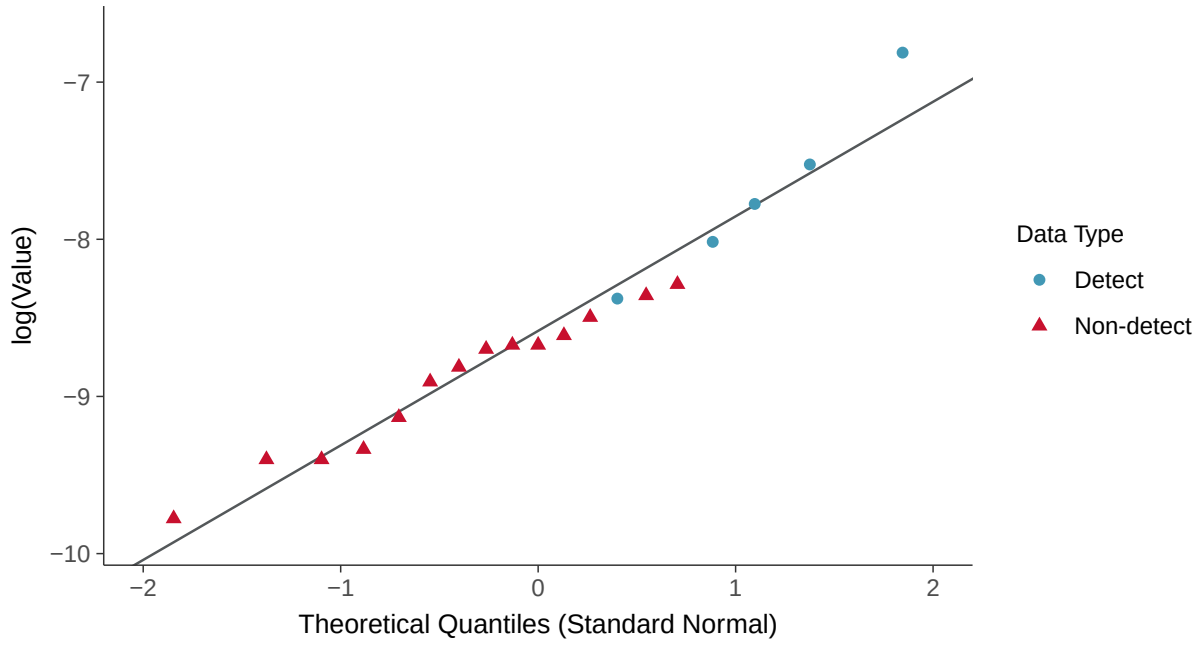
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-6 (mg/l)



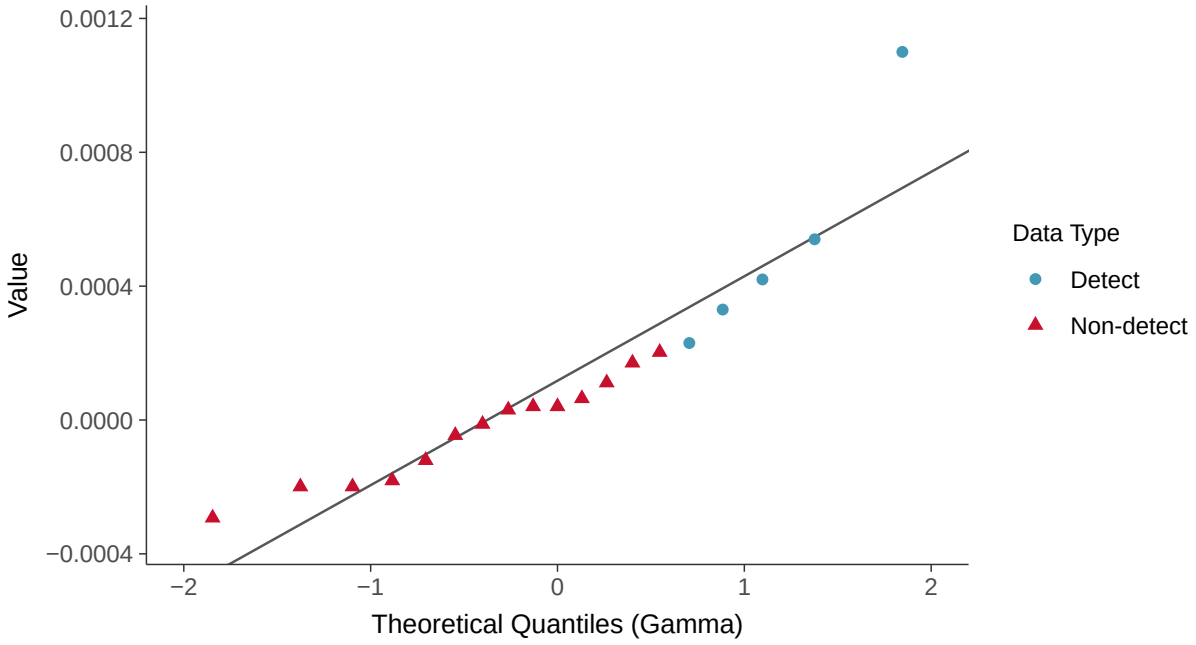
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-6 (mg/l)



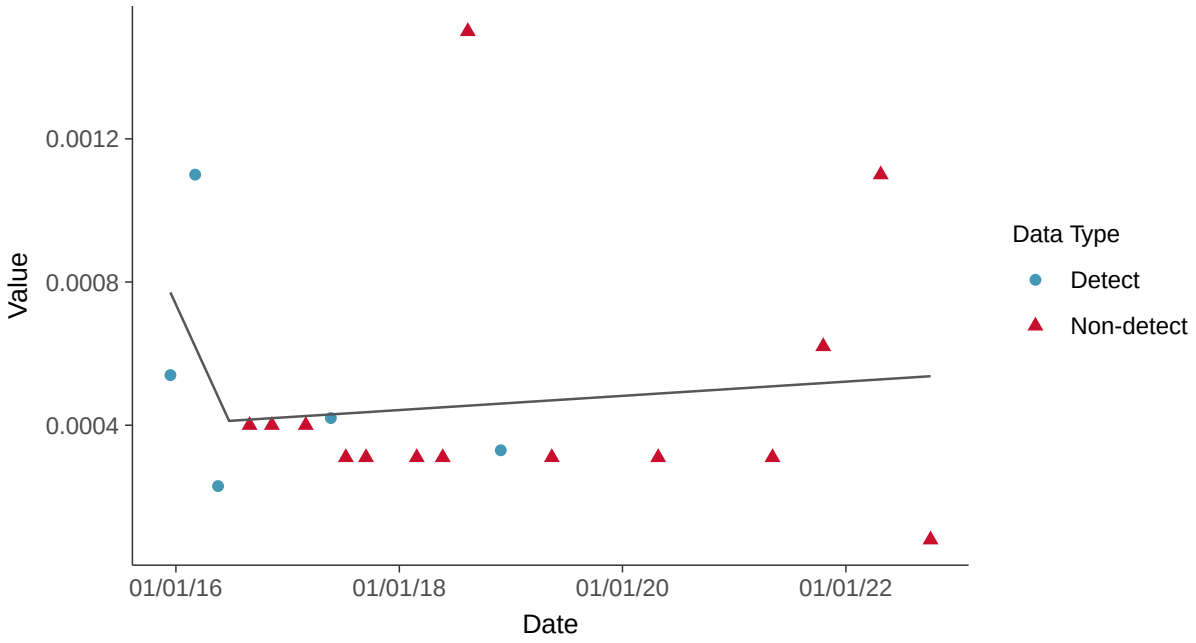
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-6 (mg/l)



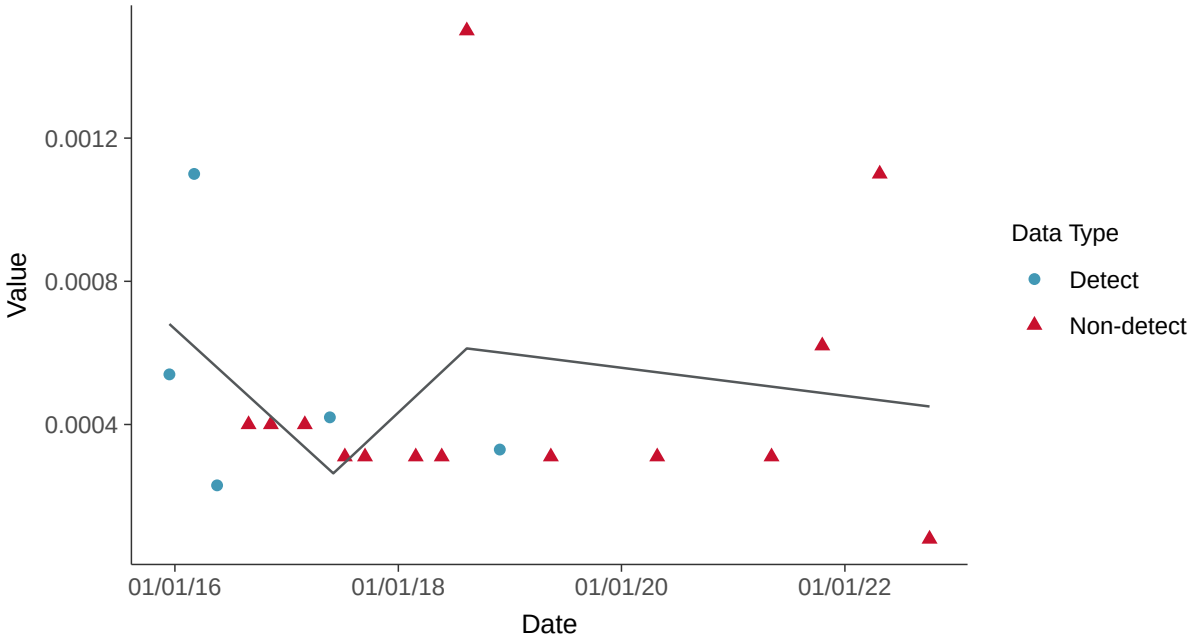
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-6 (mg/l)



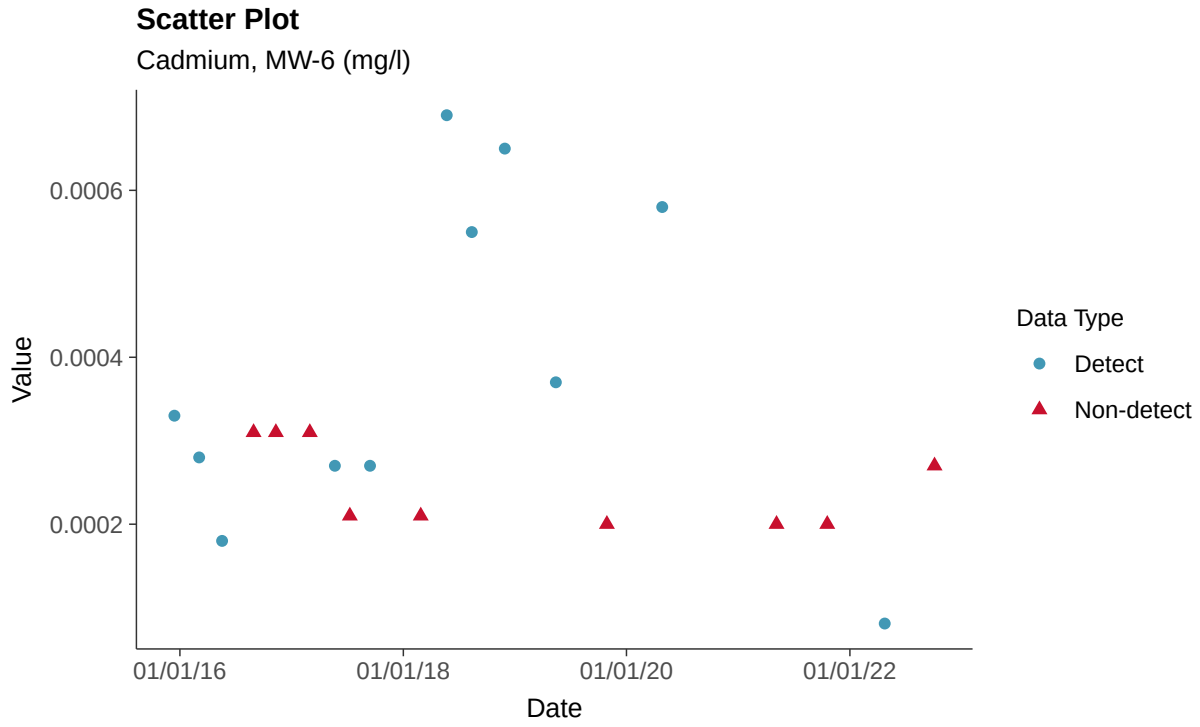
Trend Regression: Piecewise Linear-Linear-Linear

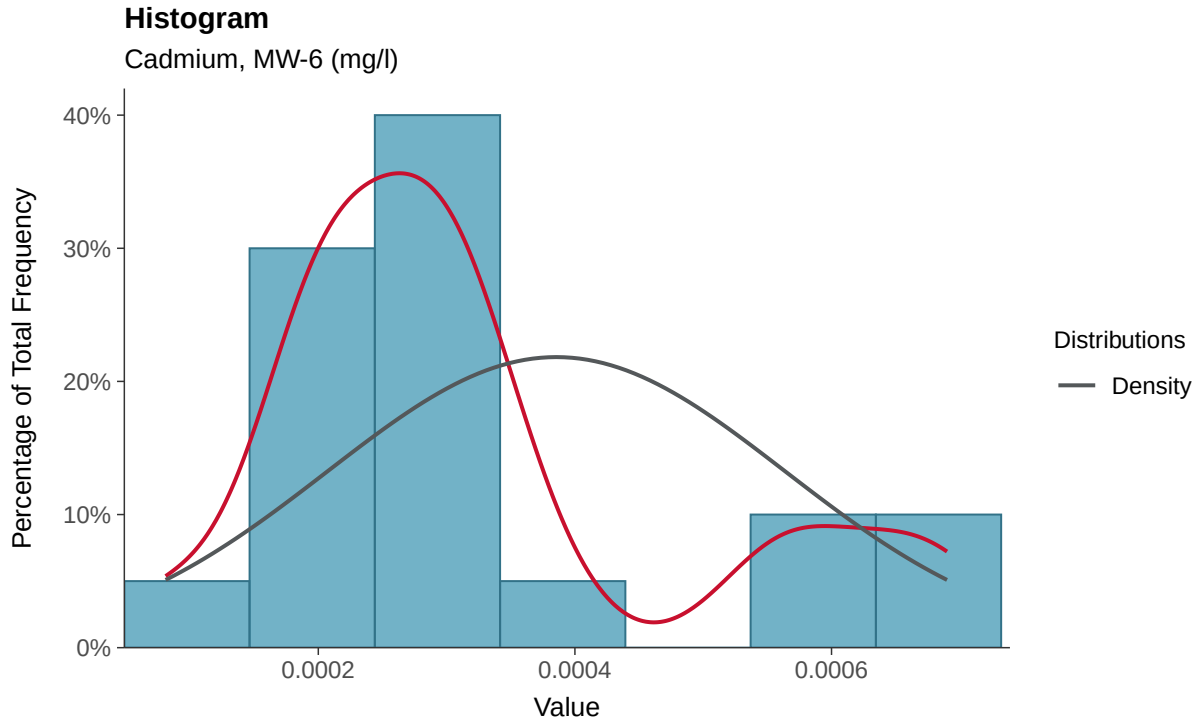
Beryllium, MW-6 (mg/l)



Appendix IV: Cadmium, MW-6

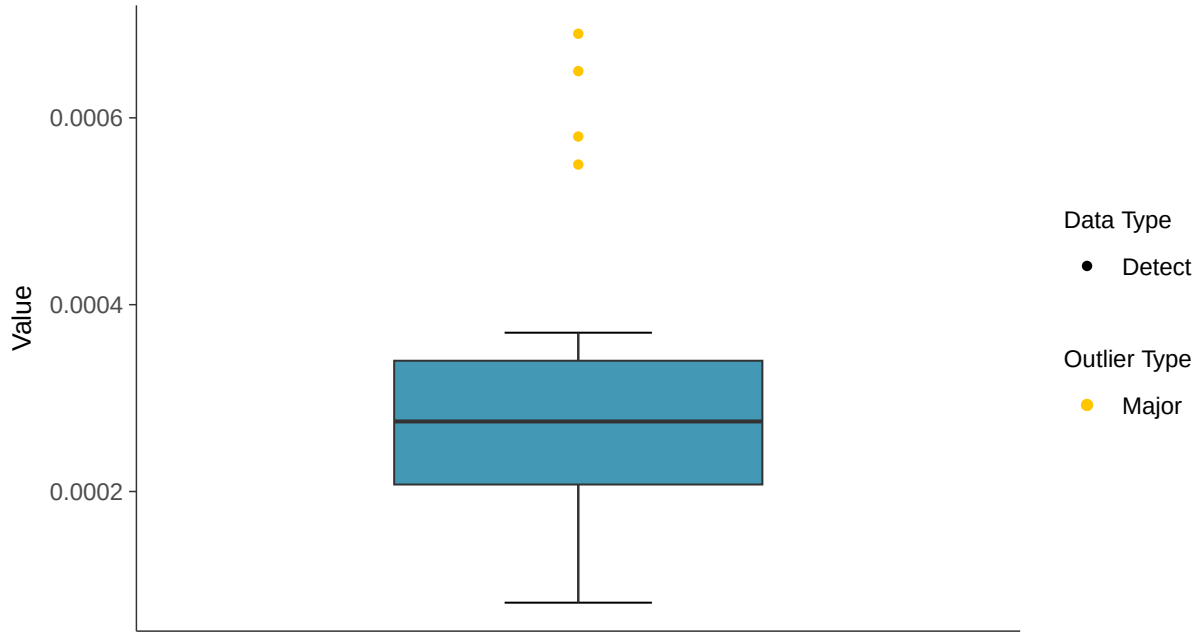
ID: 36_2_109





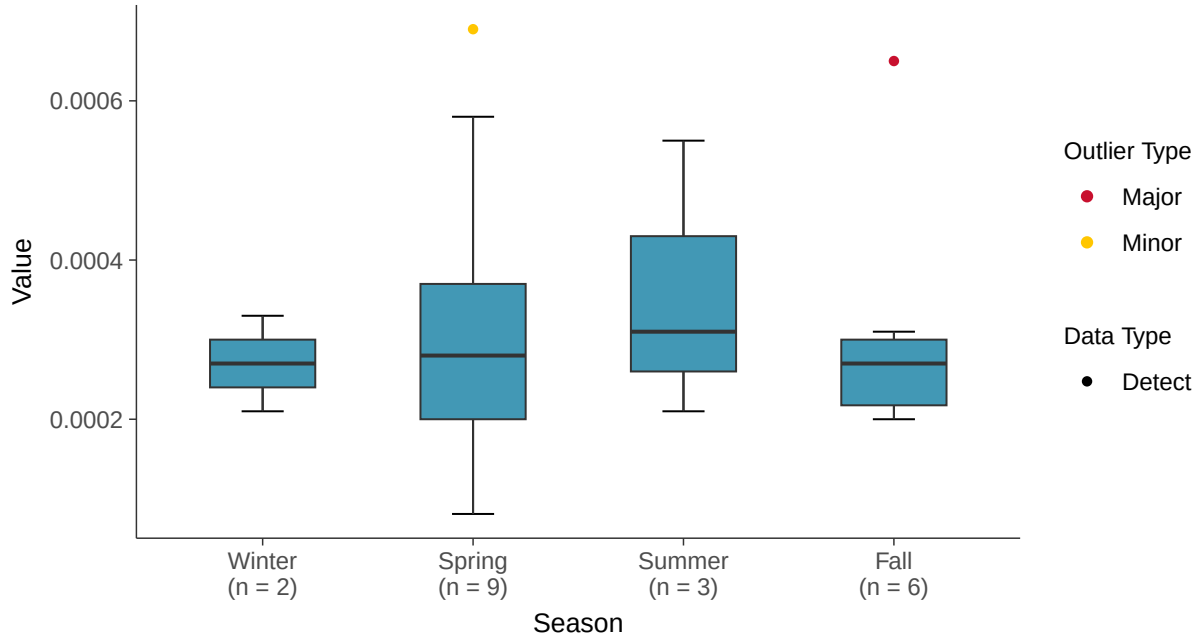
Boxplot

Cadmium, MW-6 (mg/l)



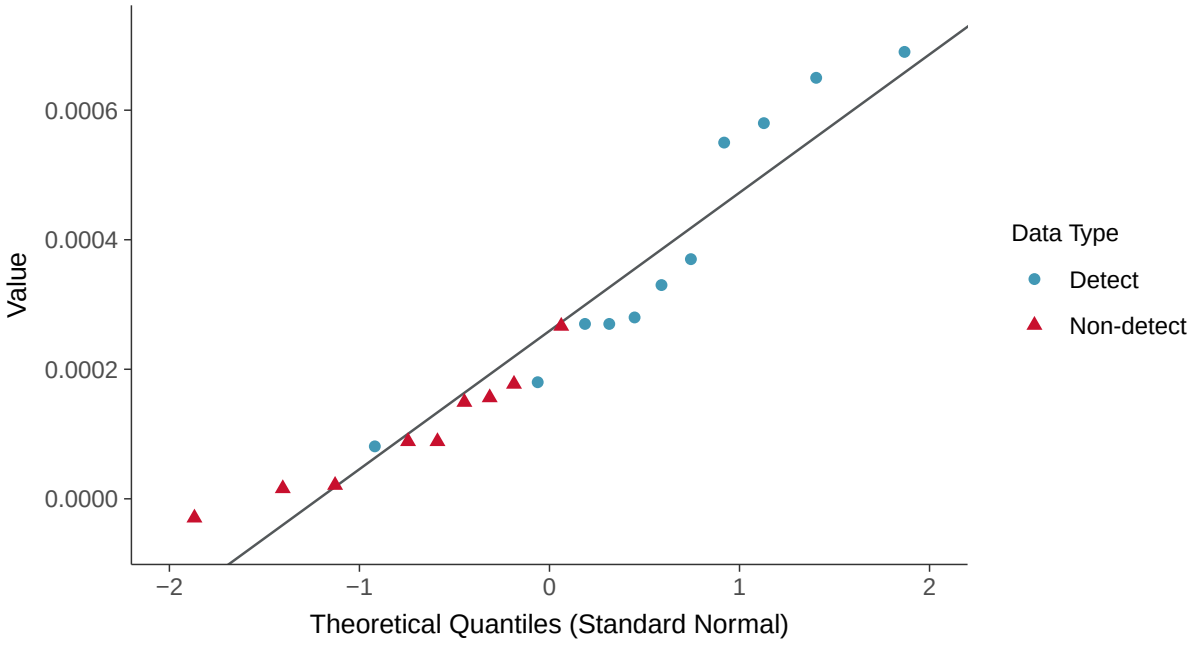
Boxplot by Season

Cadmium, MW-6 (mg/l)



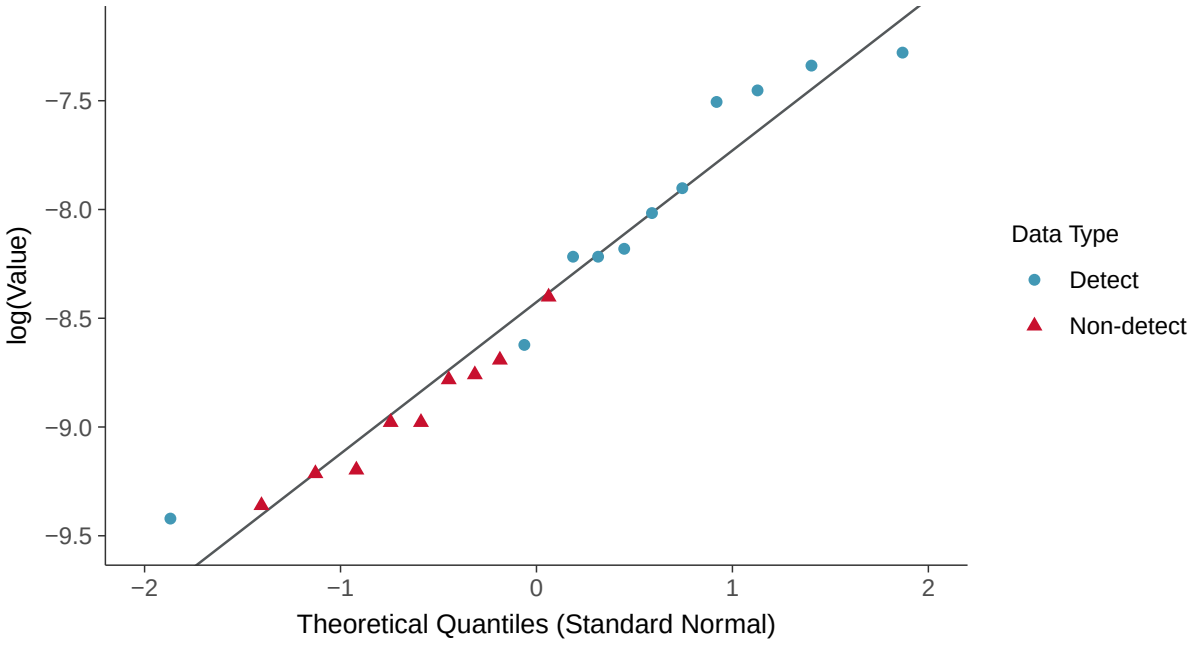
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-6 (mg/l)



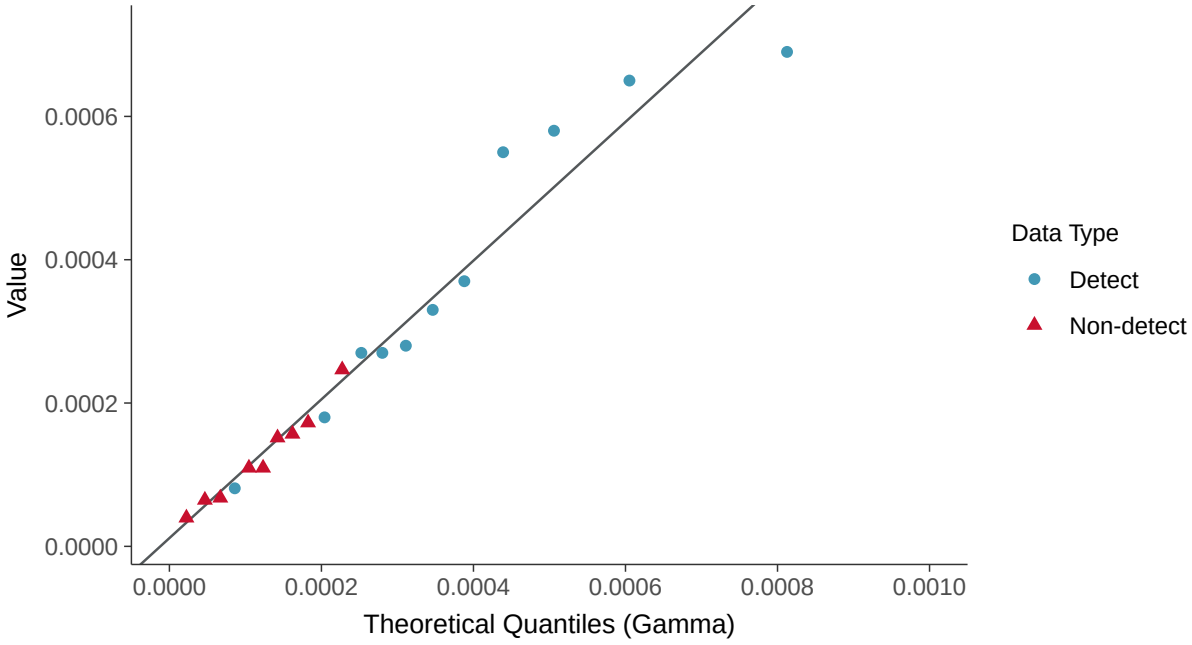
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-6 (mg/l)



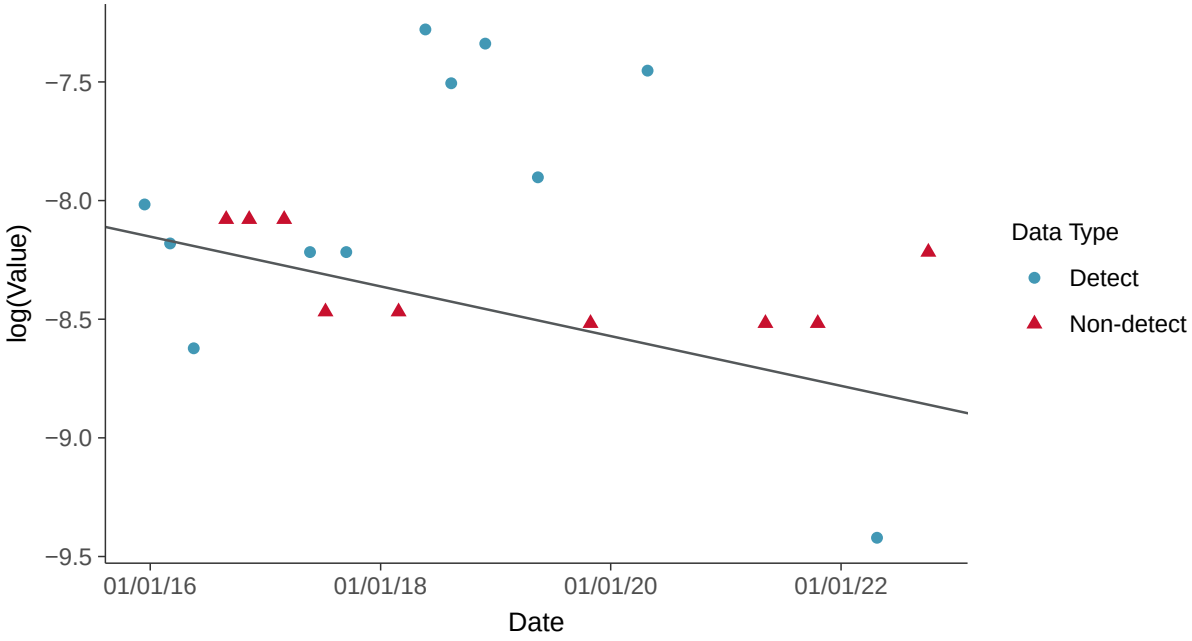
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-6 (mg/l)



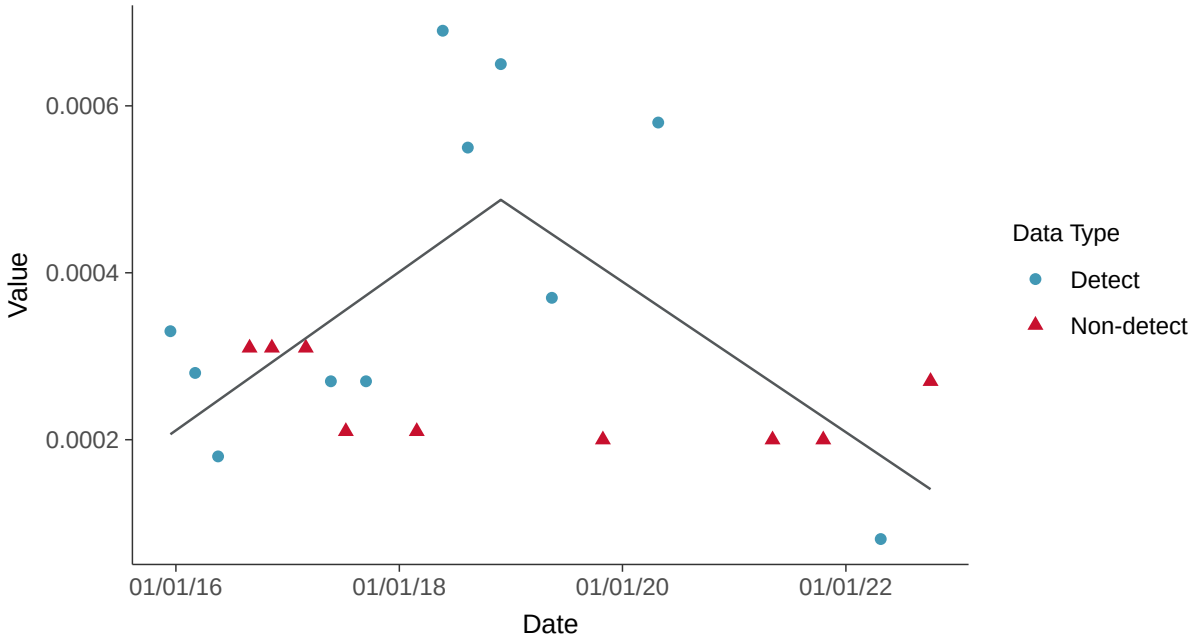
Trend Regression: Lognormal MLE

Cadmium, MW-6 (mg/l)



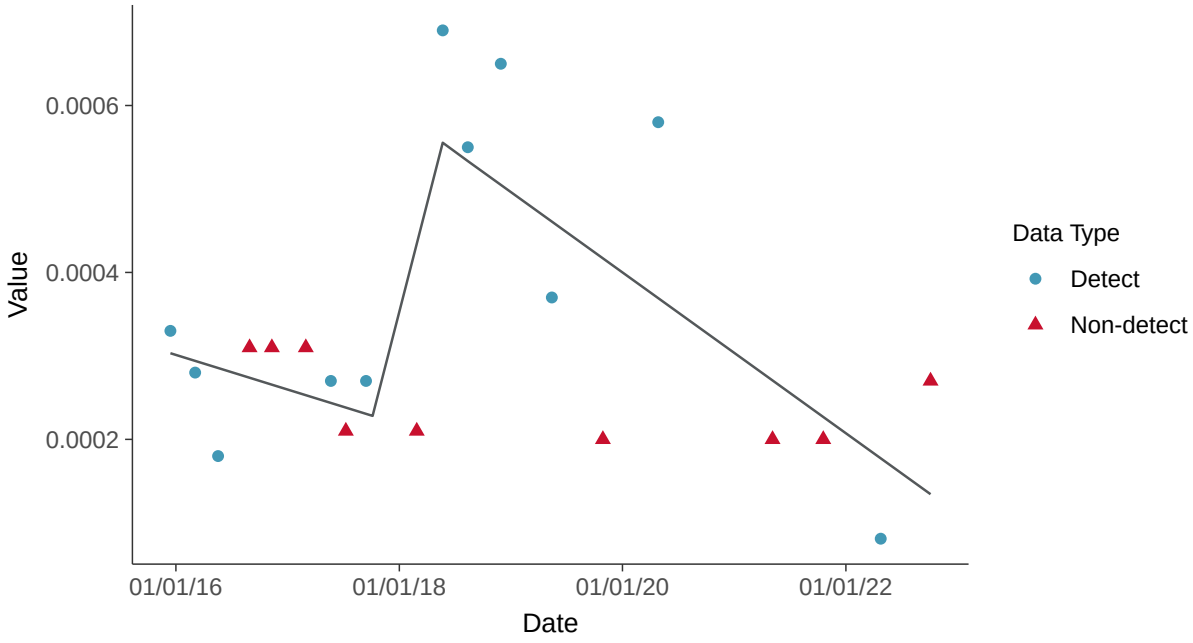
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-6 (mg/l)



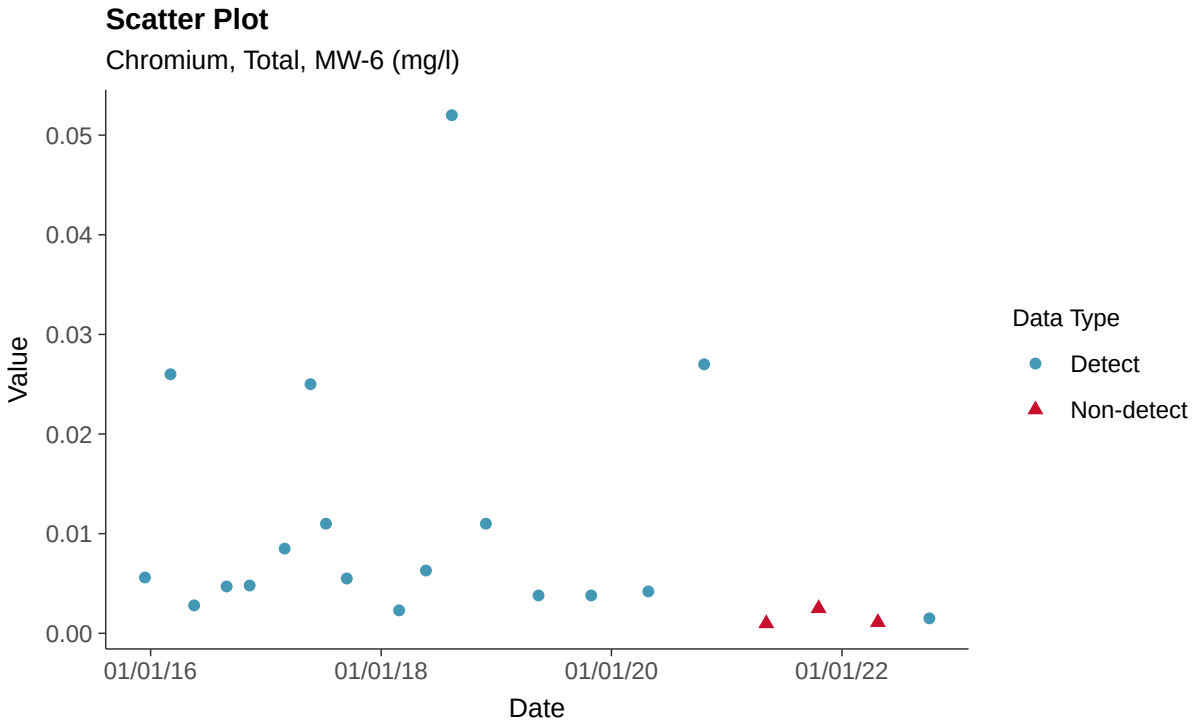
Trend Regression: Piecewise Linear-Linear-Linear

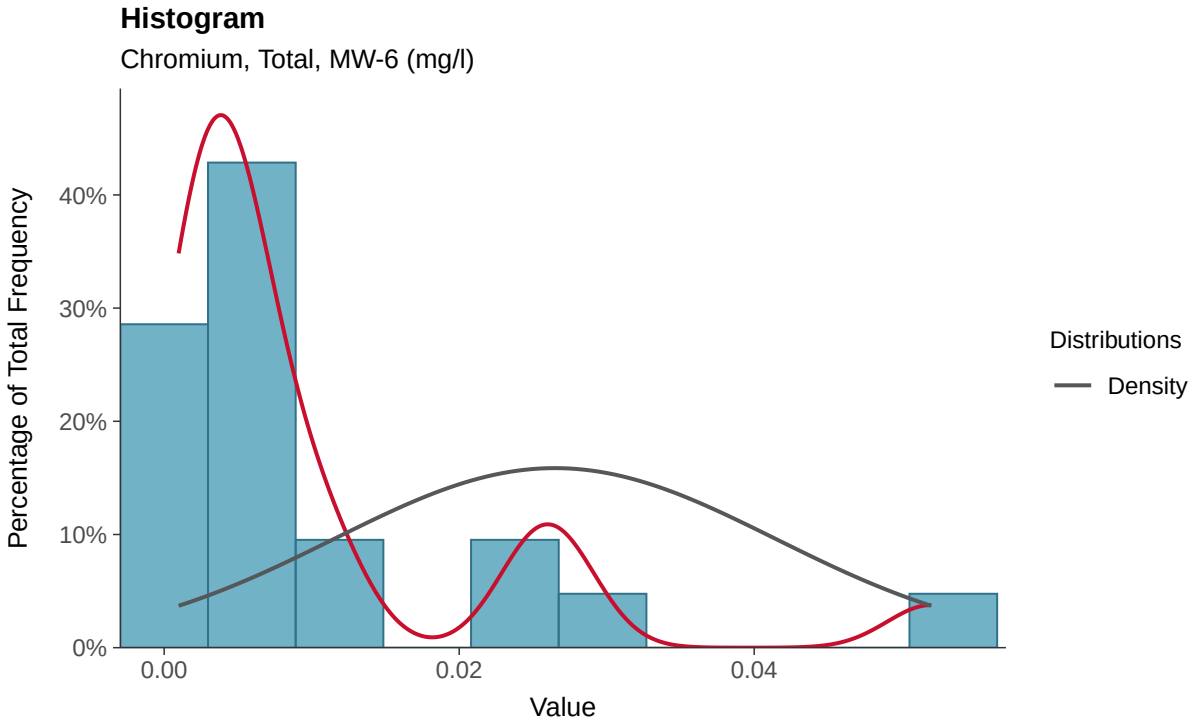
Cadmium, MW-6 (mg/l)



Appendix IV: Chromium, Total, MW-6

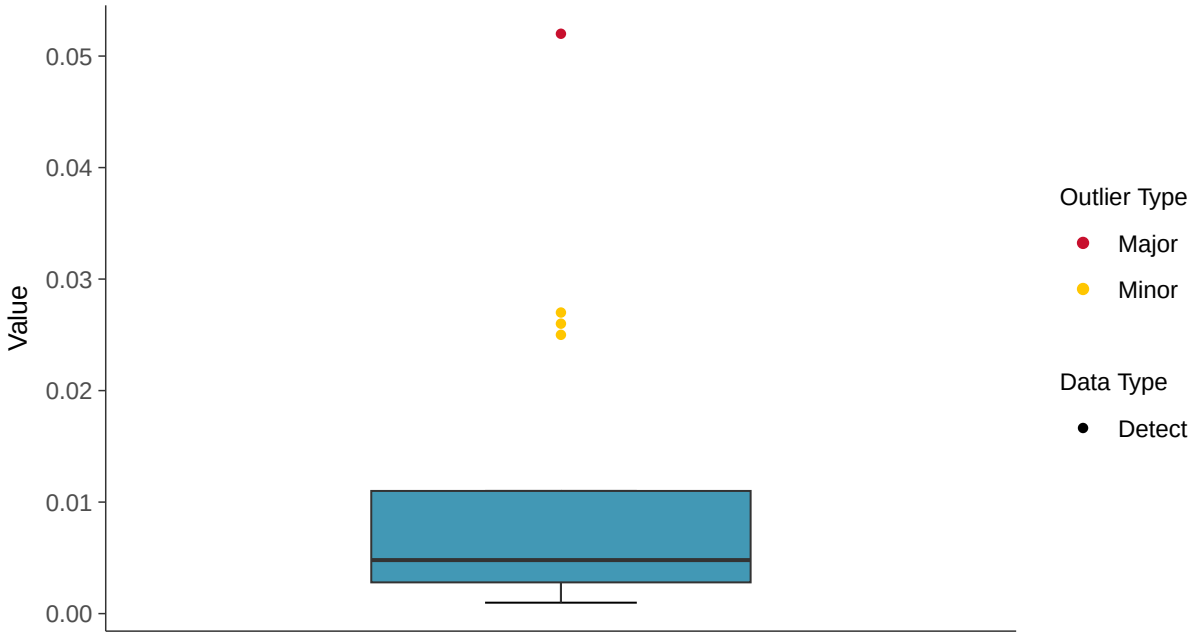
ID: 36_2_112





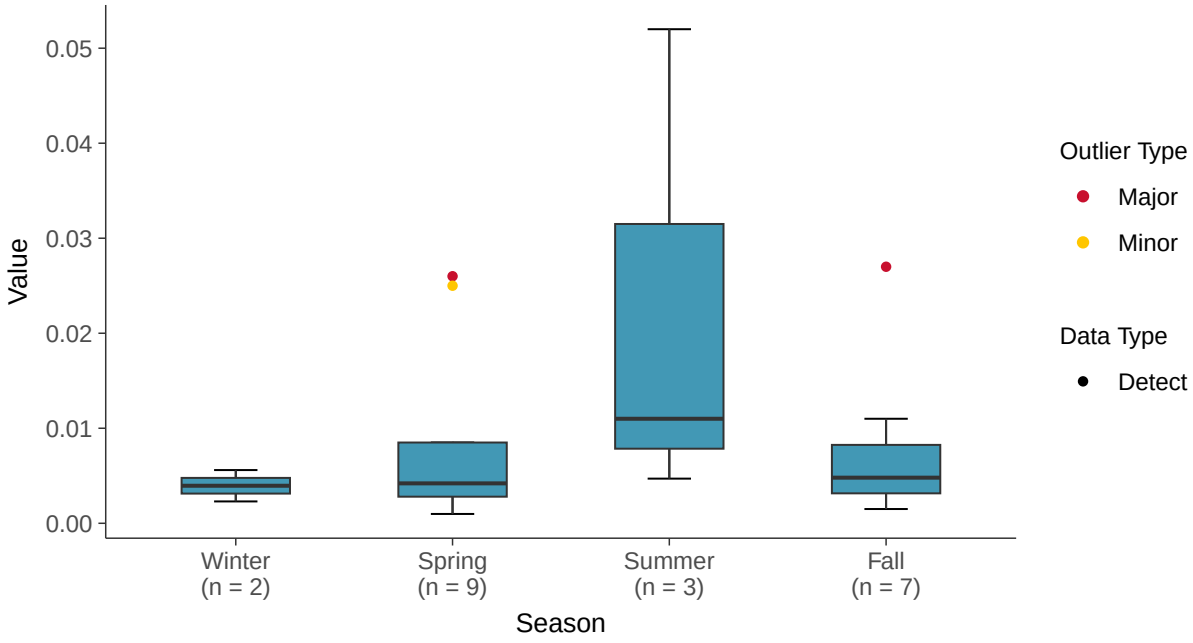
Boxplot

Chromium, Total, MW-6 (mg/l)



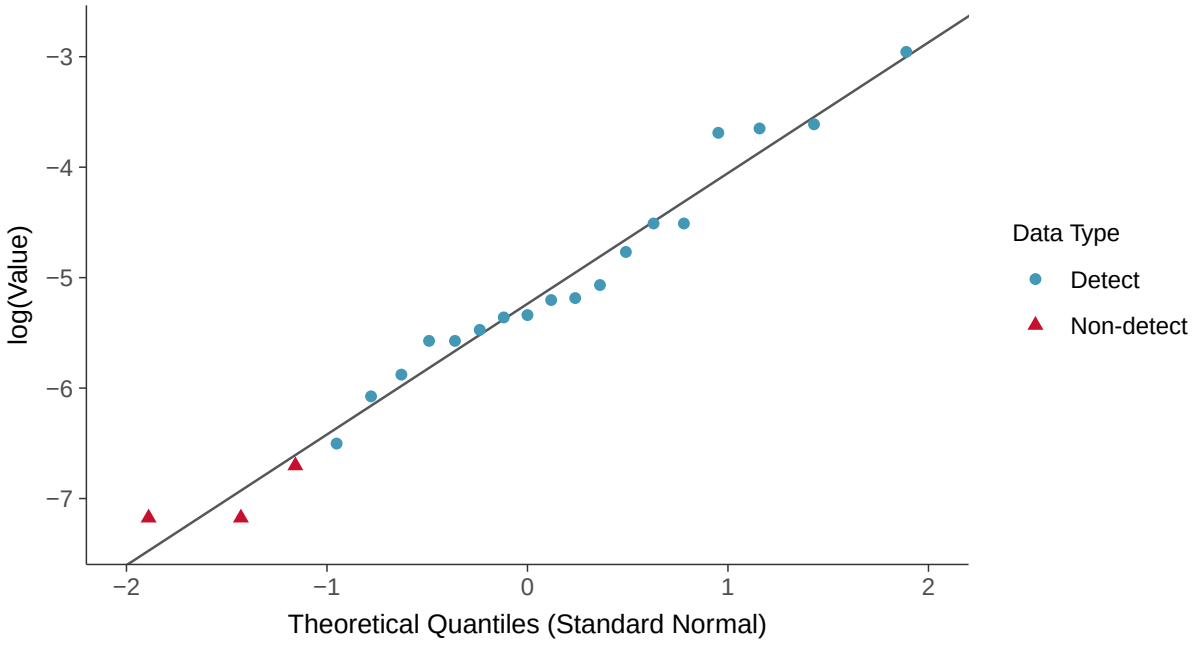
Boxplot by Season

Chromium, Total, MW-6 (mg/l)



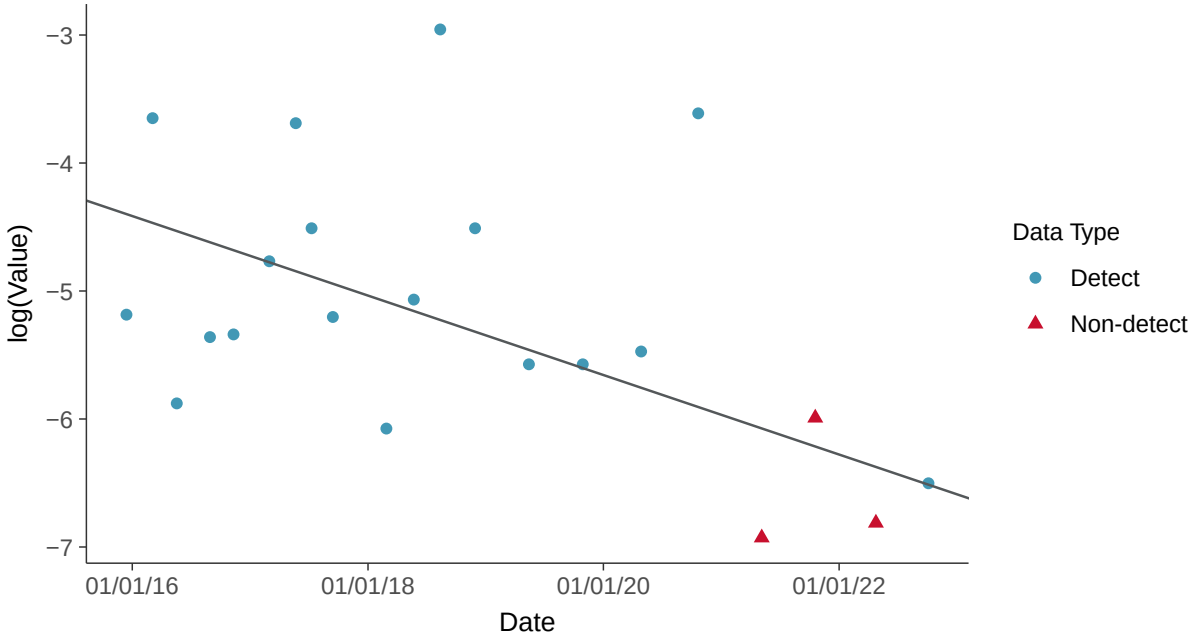
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-6 (mg/l)



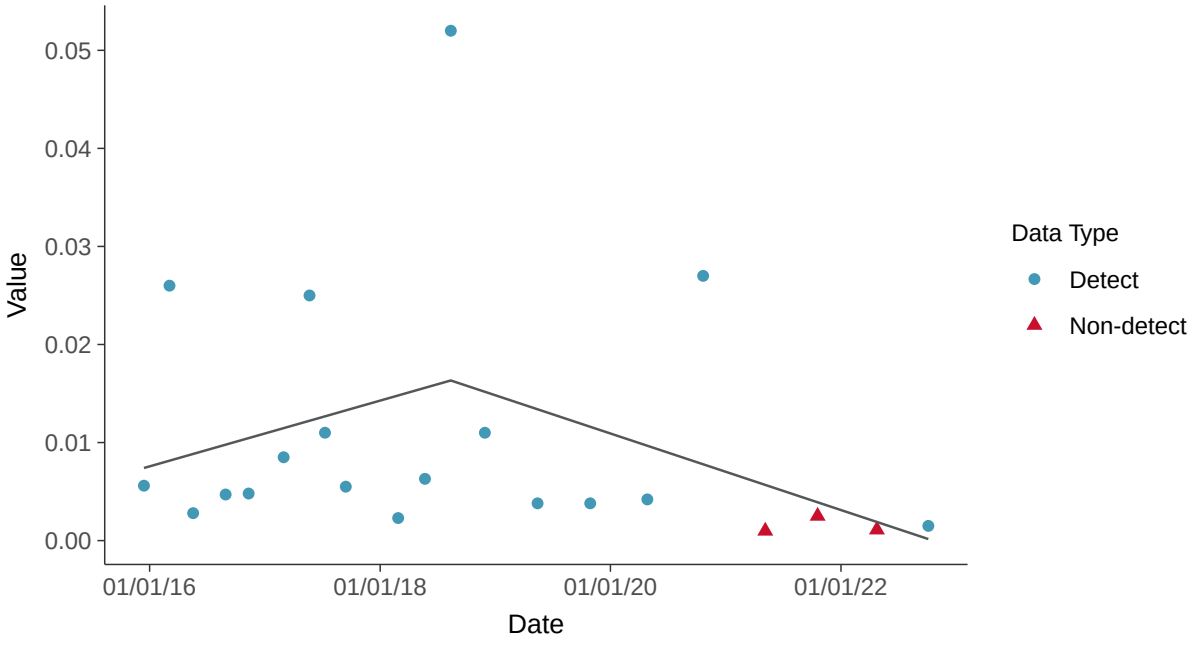
Trend Regression: Lognormal MLE

Chromium, Total, MW-6 (mg/l)



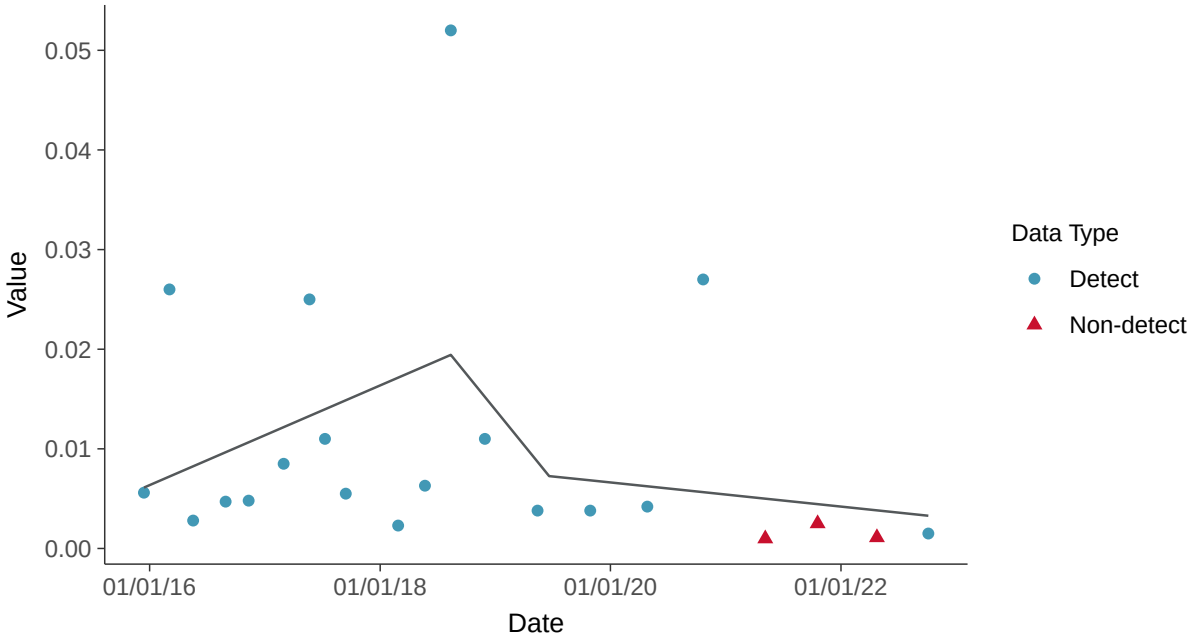
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-6 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-6 (mg/l)

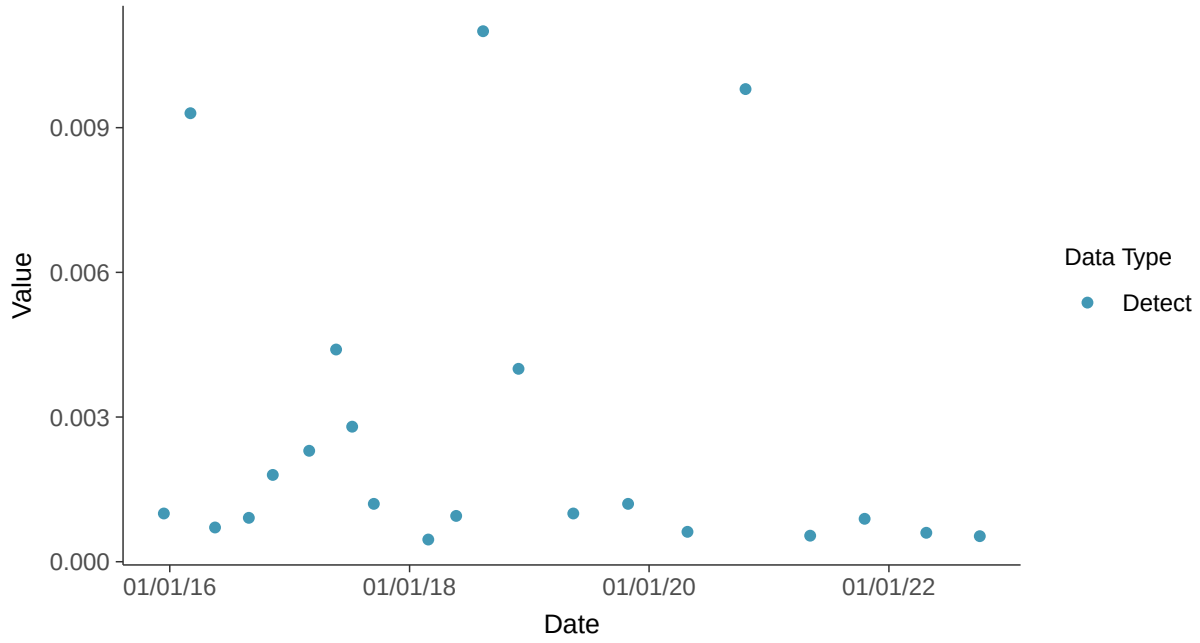


Appendix IV: Cobalt, MW-6

ID: 36_2_113

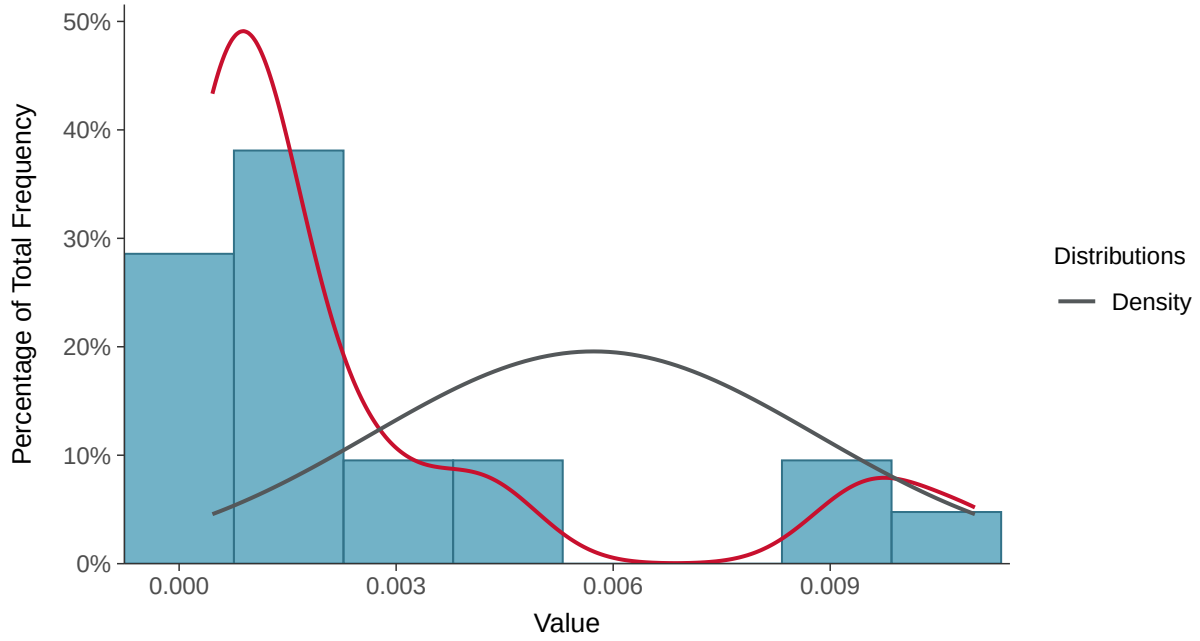
Scatter Plot

Cobalt, MW-6 (mg/l)



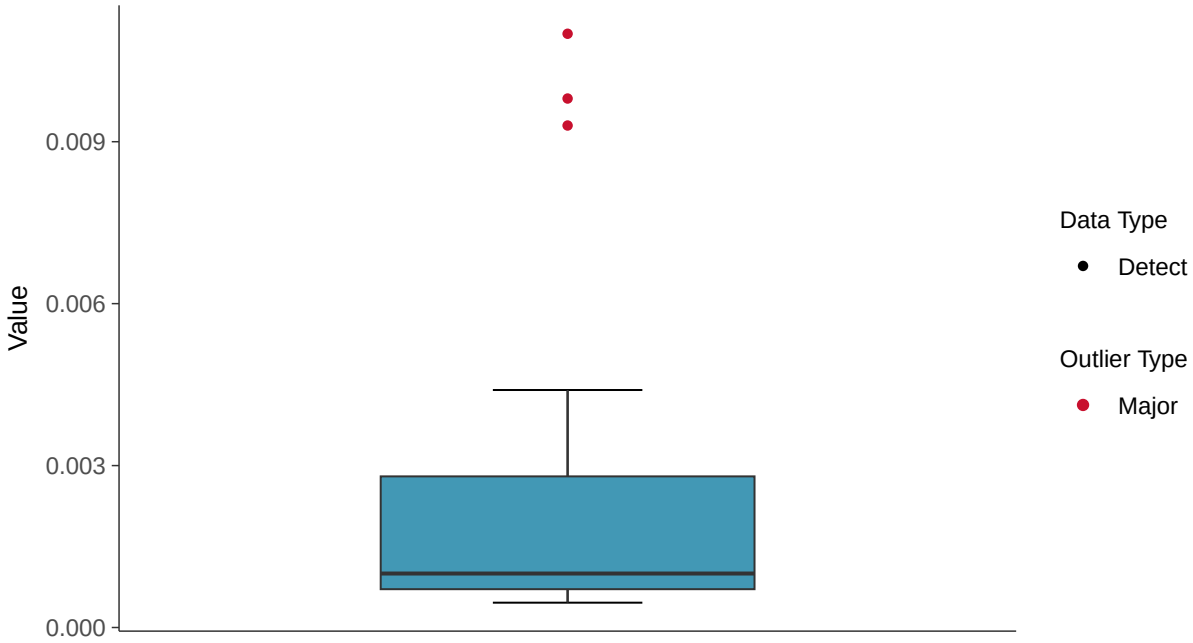
Histogram

Cobalt, MW-6 (mg/l)



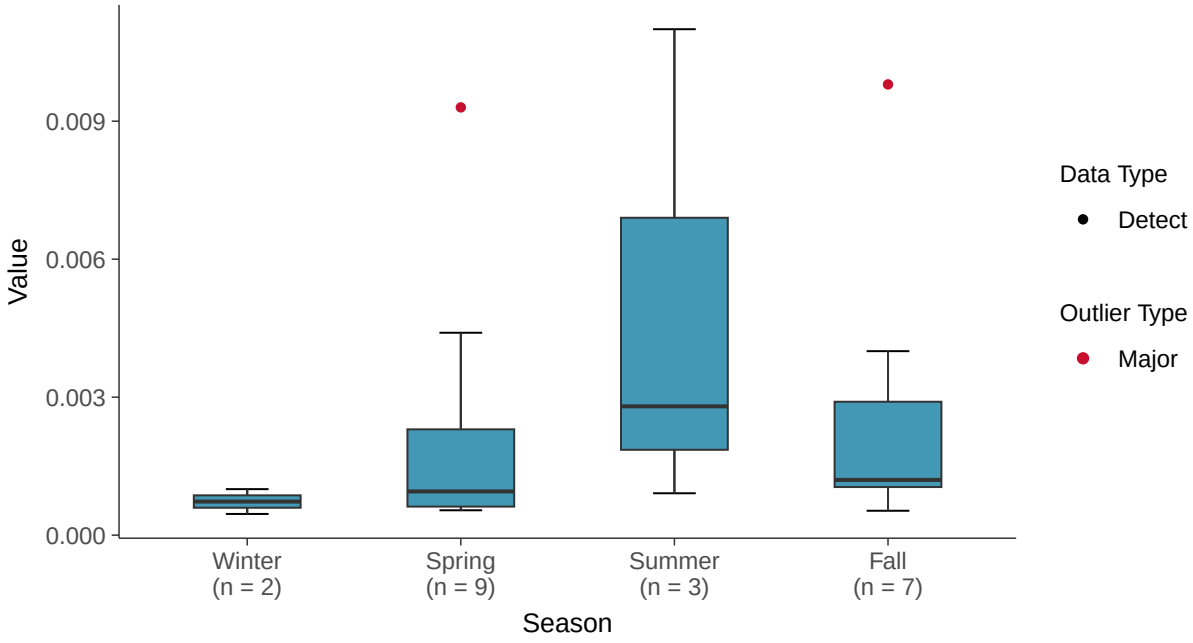
Boxplot

Cobalt, MW-6 (mg/l)



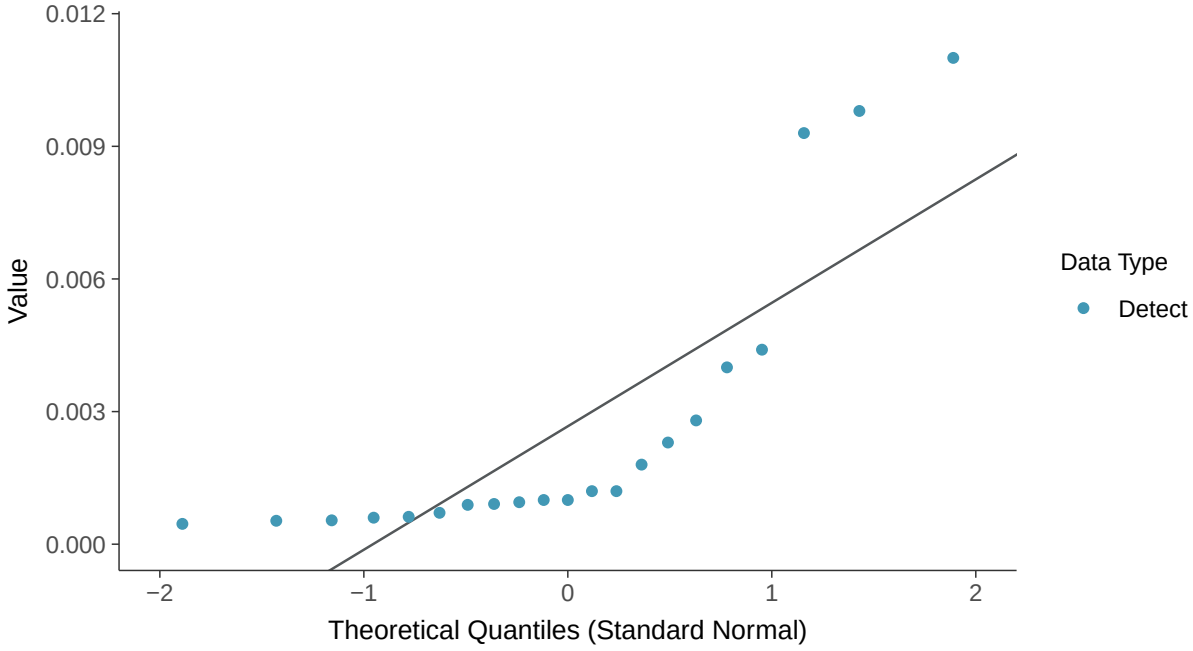
Boxplot by Season

Cobalt, MW-6 (mg/l)



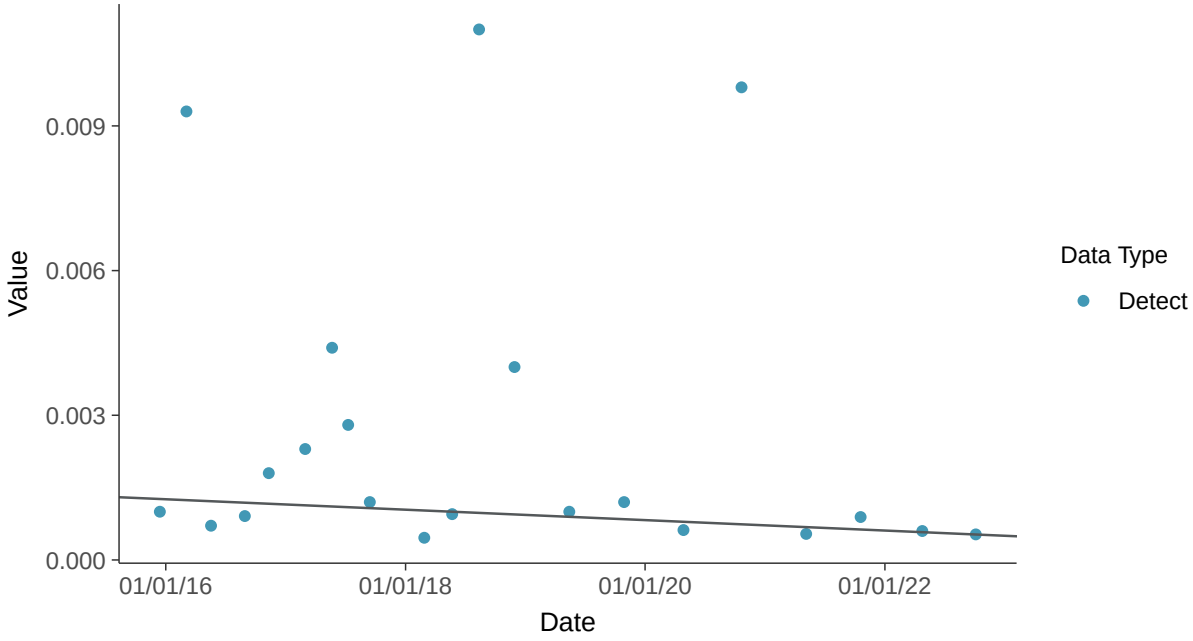
Normal Q-Q plot

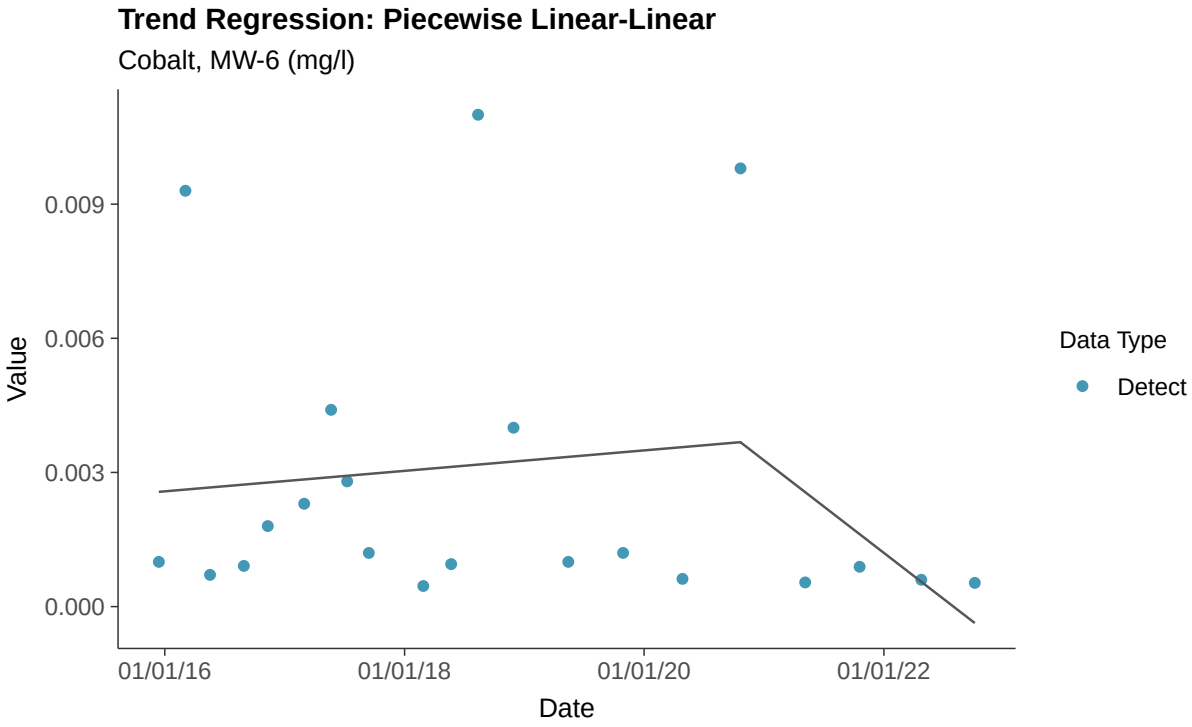
Cobalt, MW-6 (mg/l)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

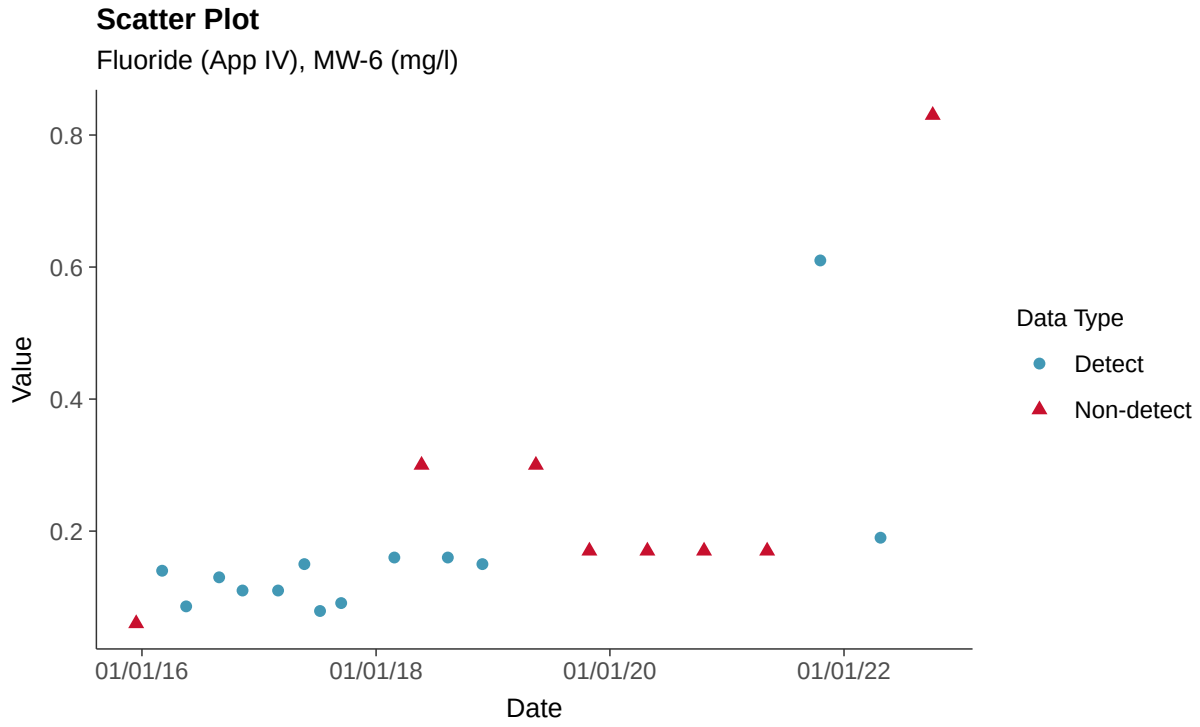
Cobalt, MW-6 (mg/l)

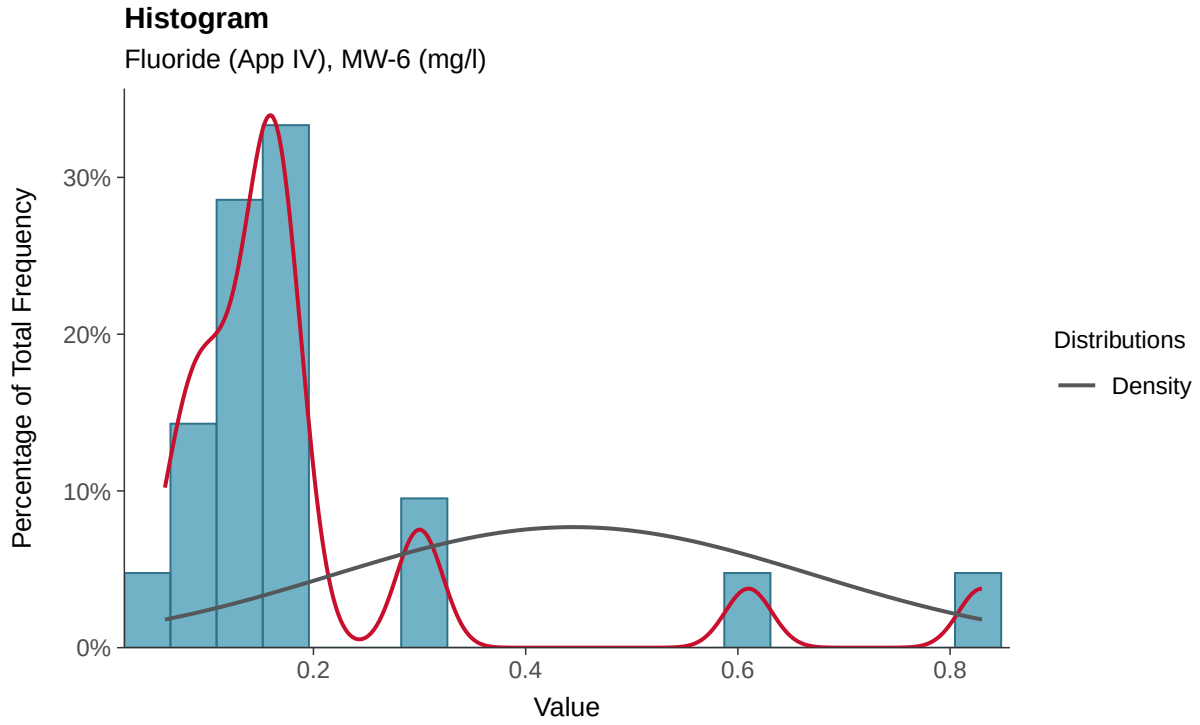



Trend Regression: Piecewise Linear-Linear
Cobalt, MW-6 (mg/l)
Value
0.009
0.006
0.003
0.000
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-6

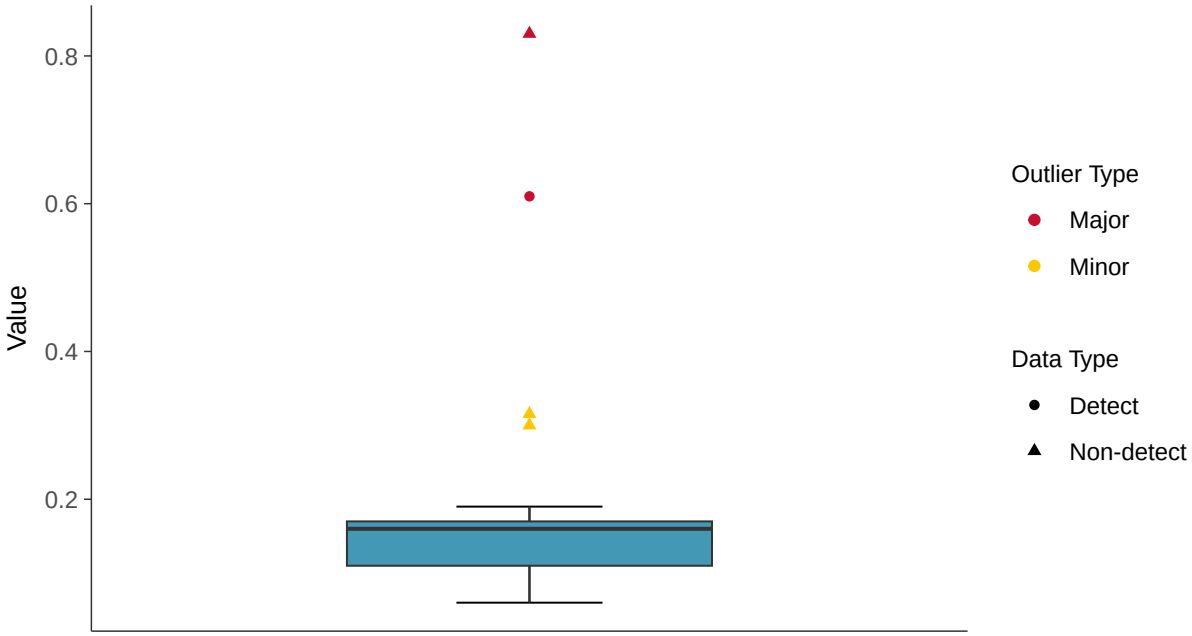
ID: 36_2_116





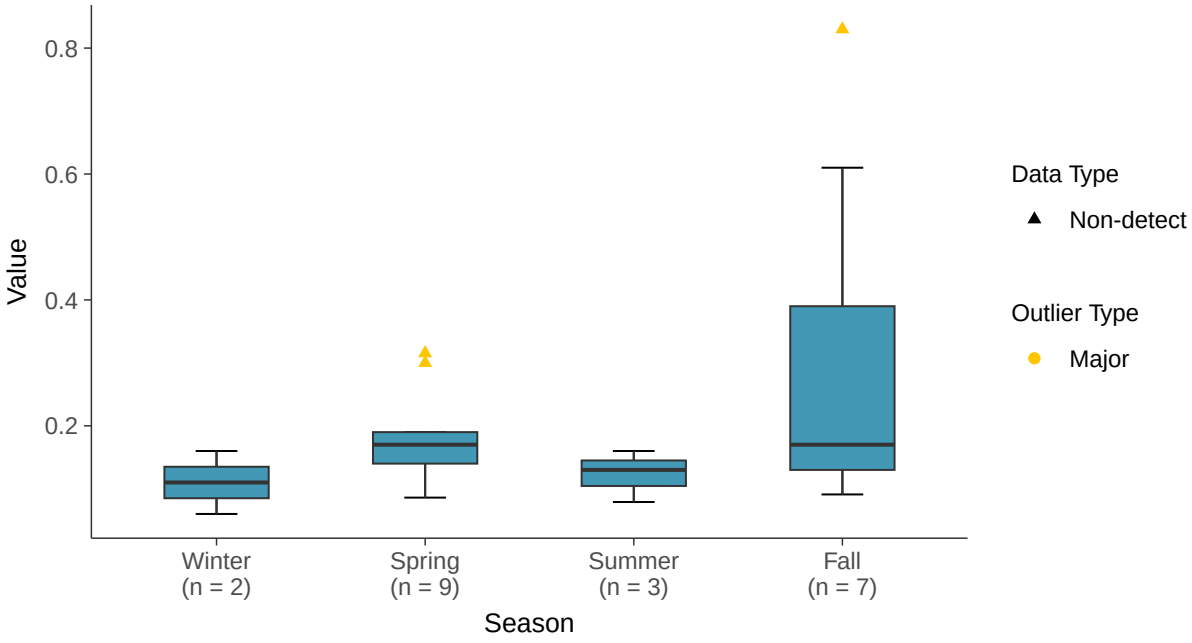
Boxplot

Fluoride (App IV), MW-6 (mg/l)



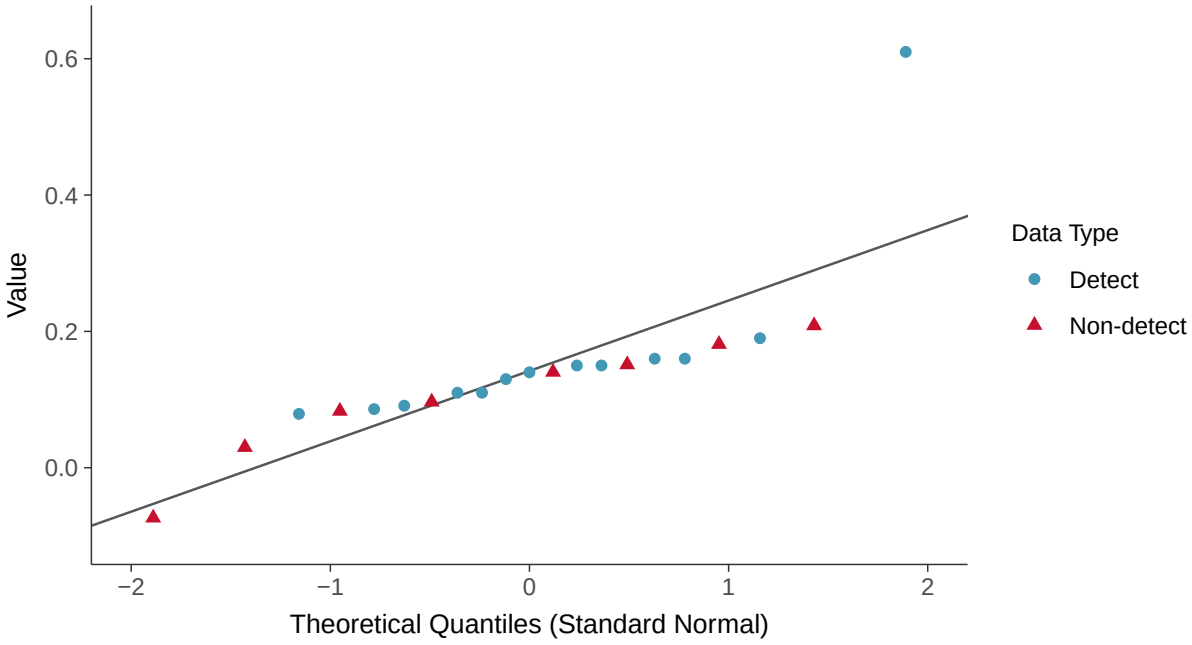
Boxplot by Season

Fluoride (App IV), MW-6 (mg/l)



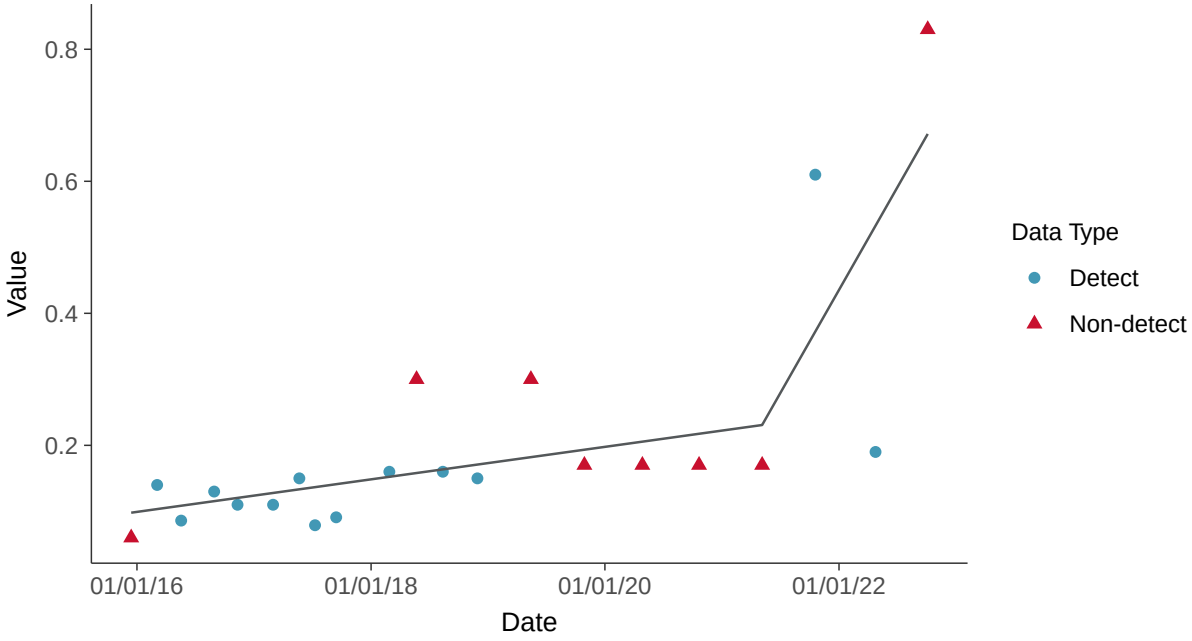
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-6 (mg/l)



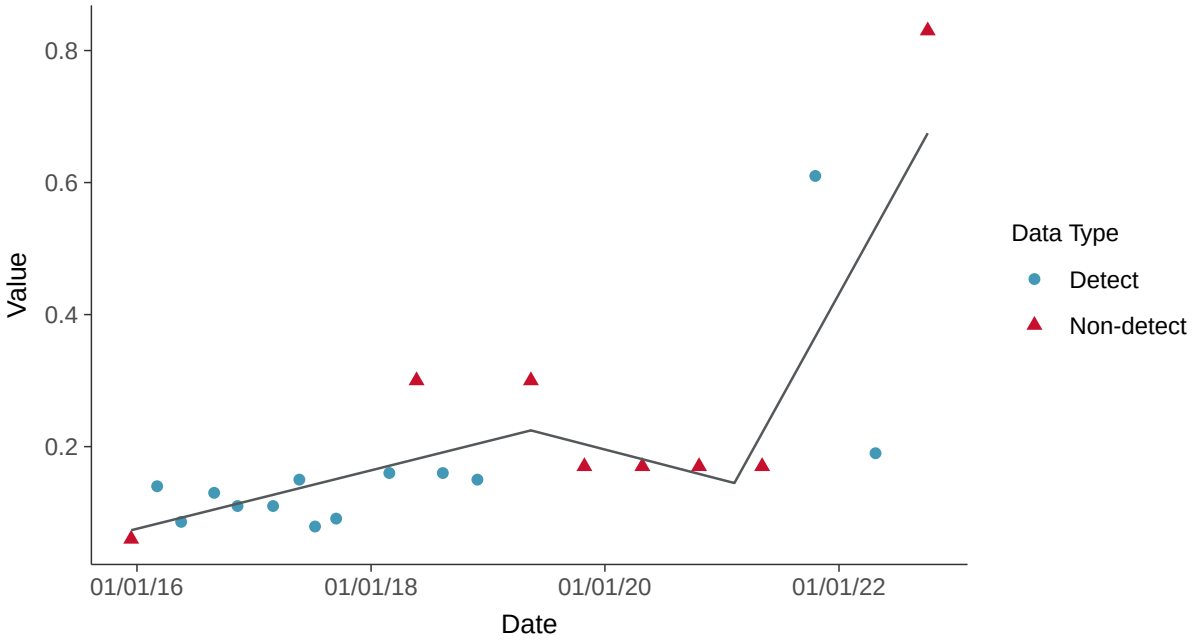
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-6 (mg/l)



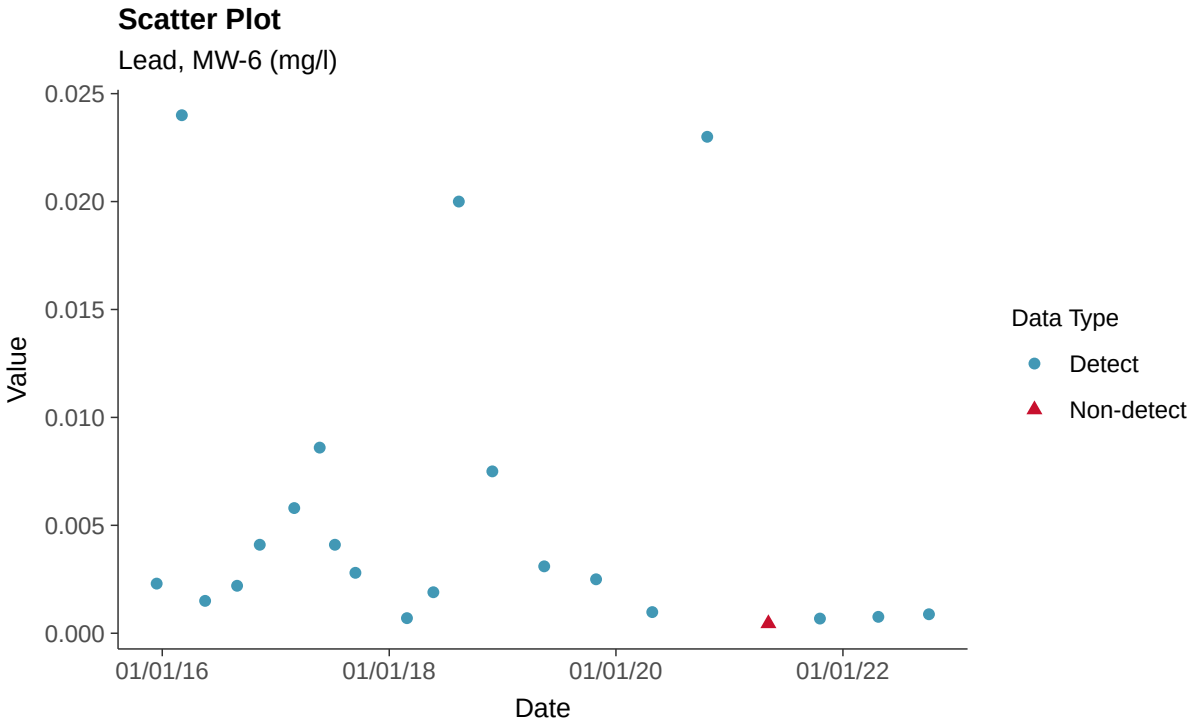
Trend Regression: Piecewise Linear-Linear-Linear

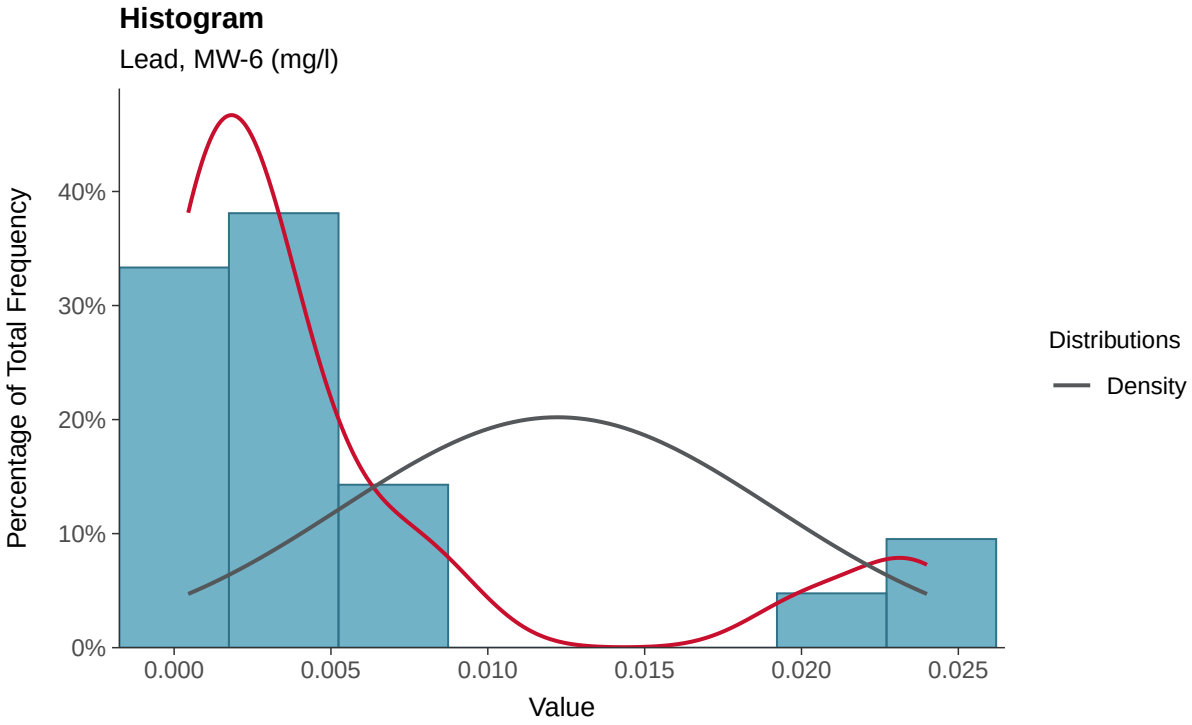
Fluoride (App IV), MW-6 (mg/l)



Appendix IV: Lead, MW-6

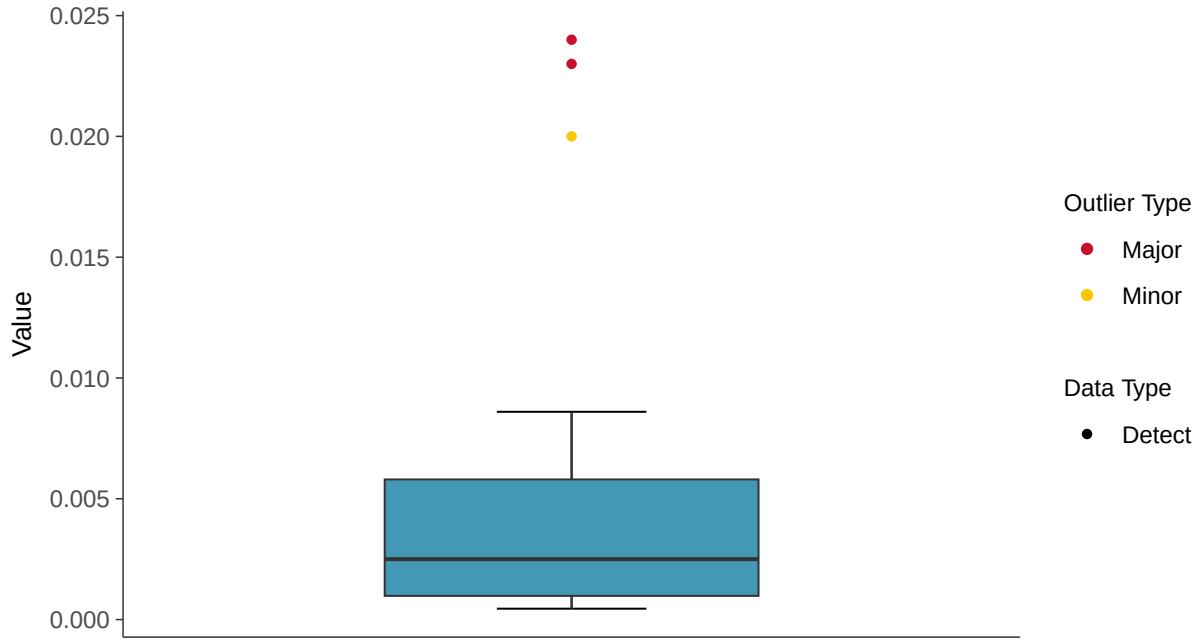
ID: 36_2_117





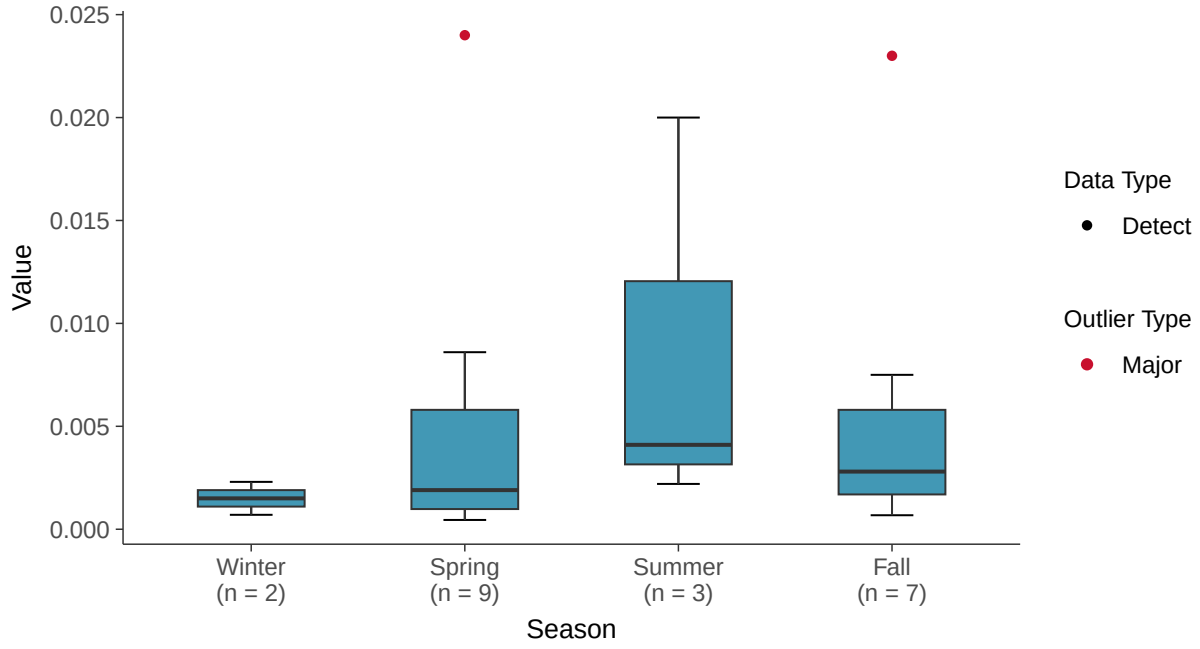
Boxplot

Lead, MW-6 (mg/l)



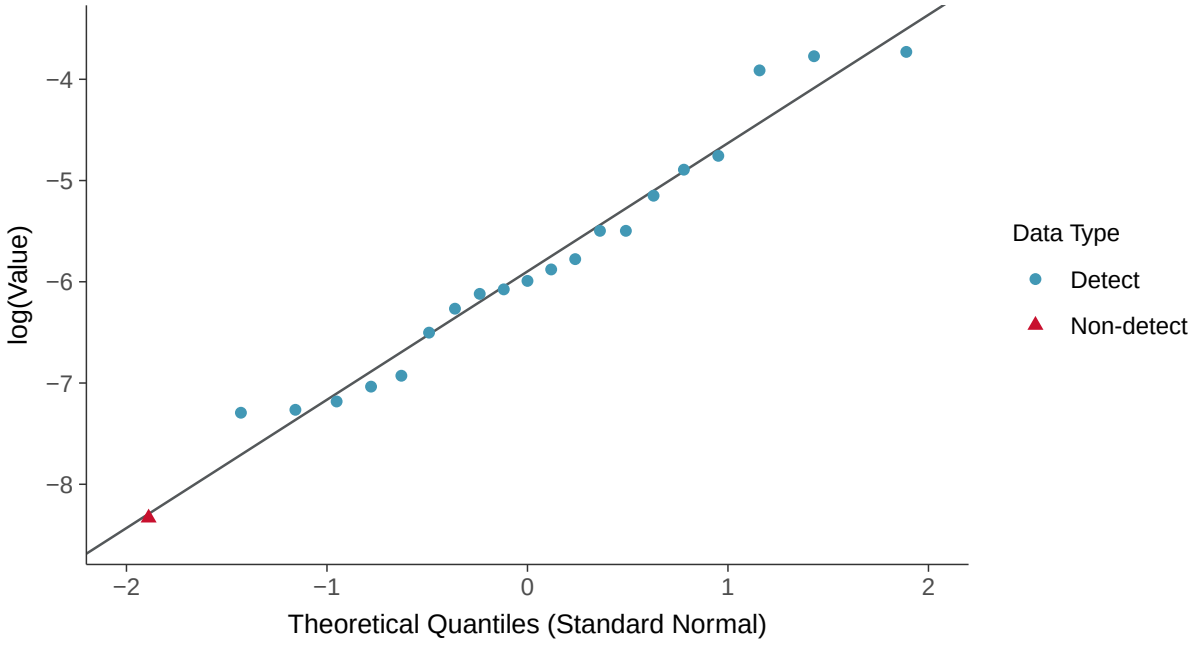
Boxplot by Season

Lead, MW-6 (mg/l)



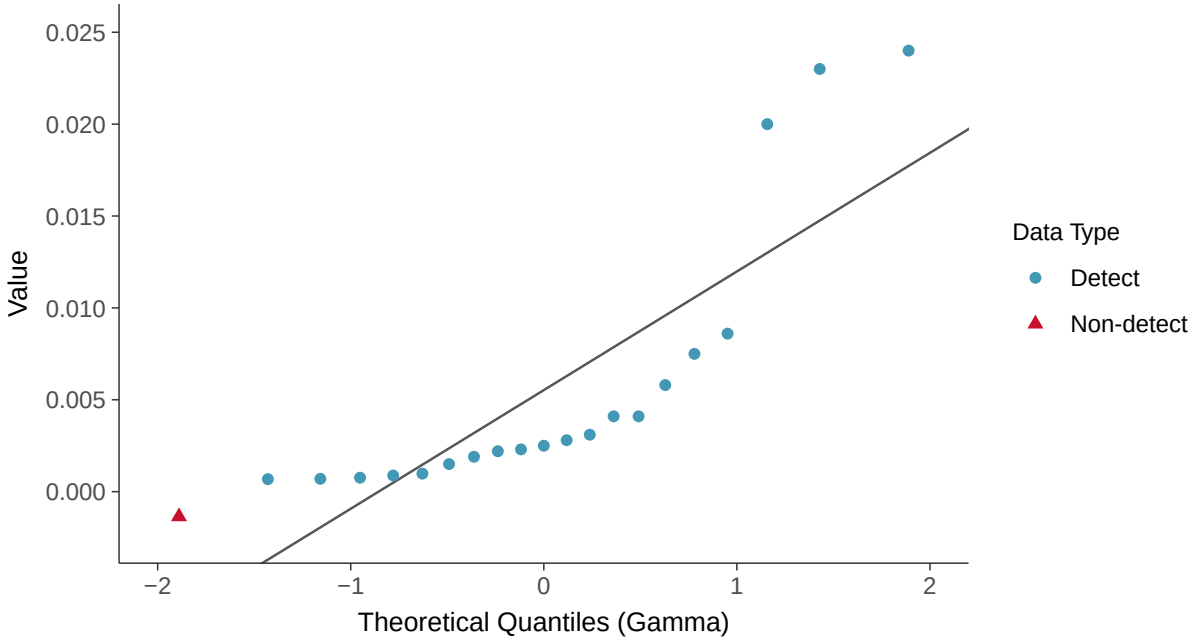
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-6 (mg/l)



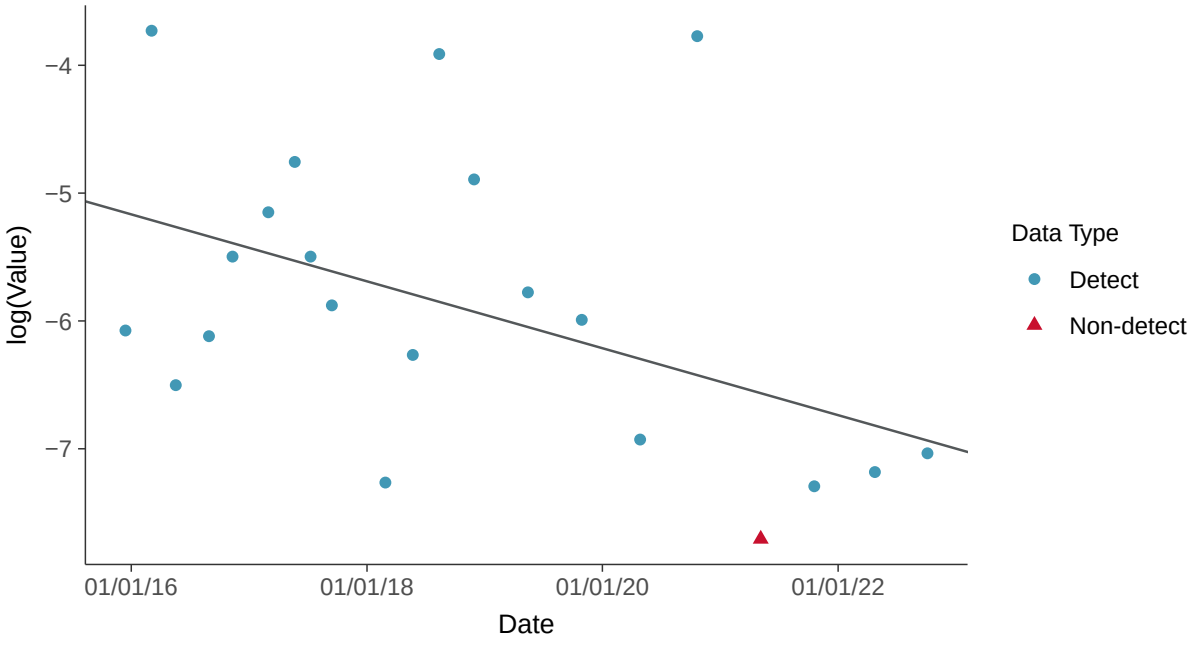
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-6 (mg/l)



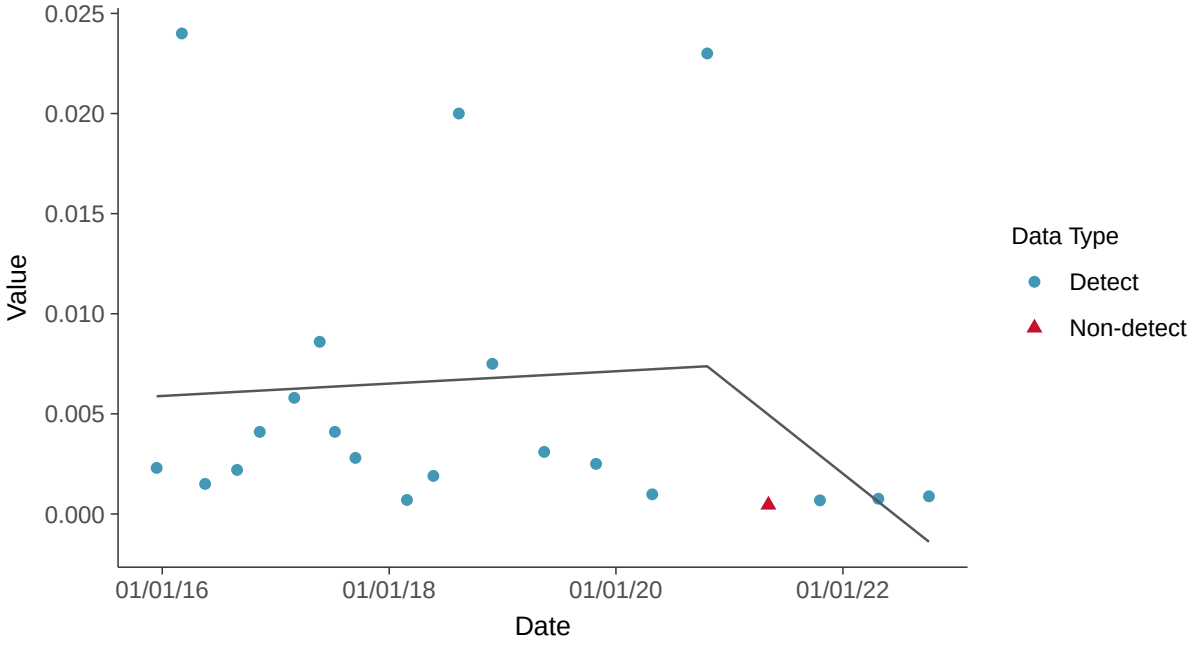
Trend Regression: Lognormal MLE

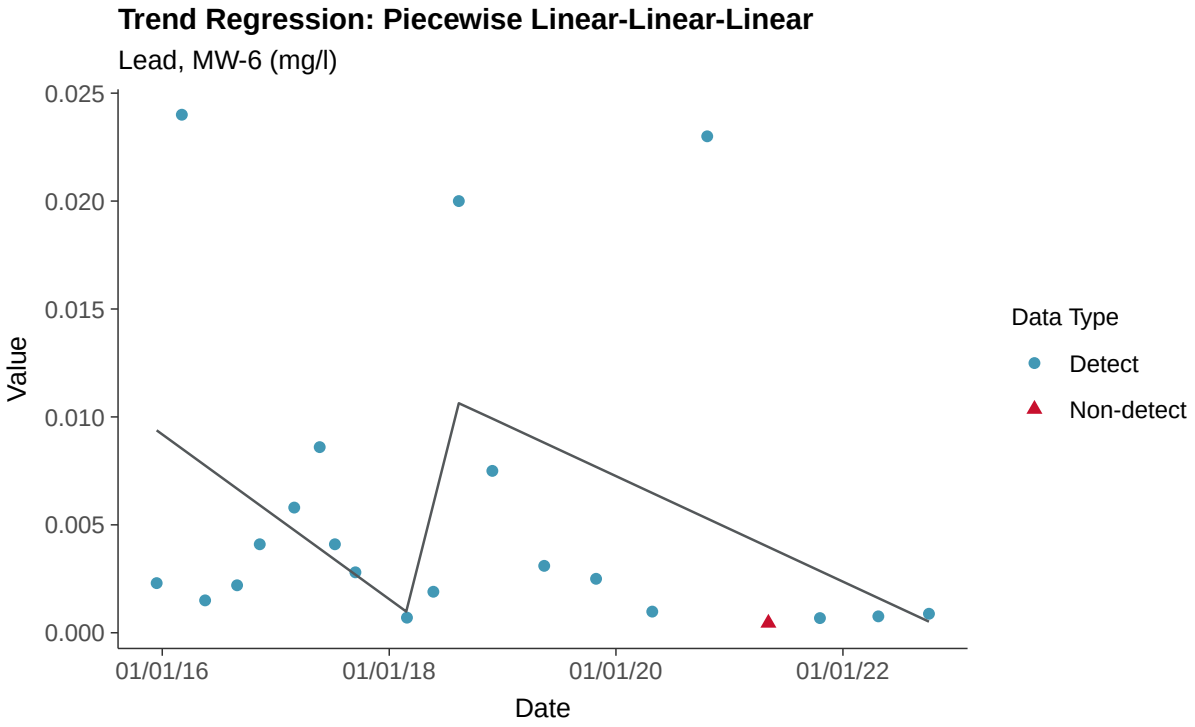
Lead, MW-6 (mg/l)



Trend Regression: Piecewise Linear-Linear

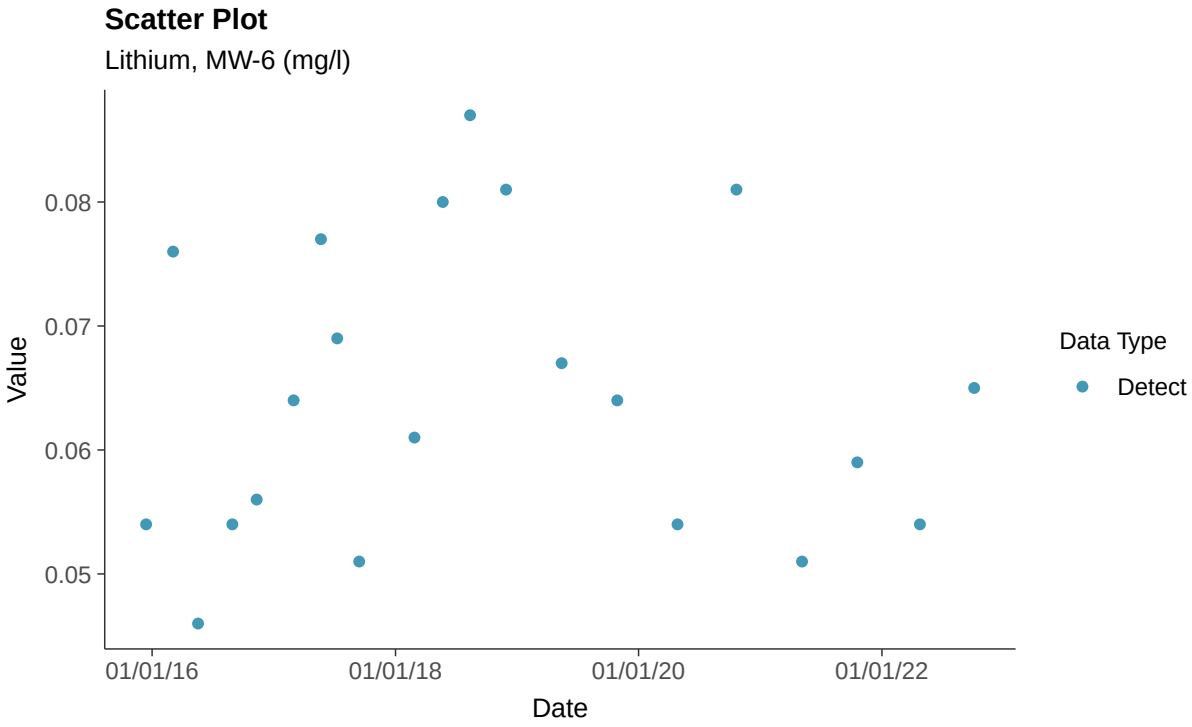
Lead, MW-6 (mg/l)

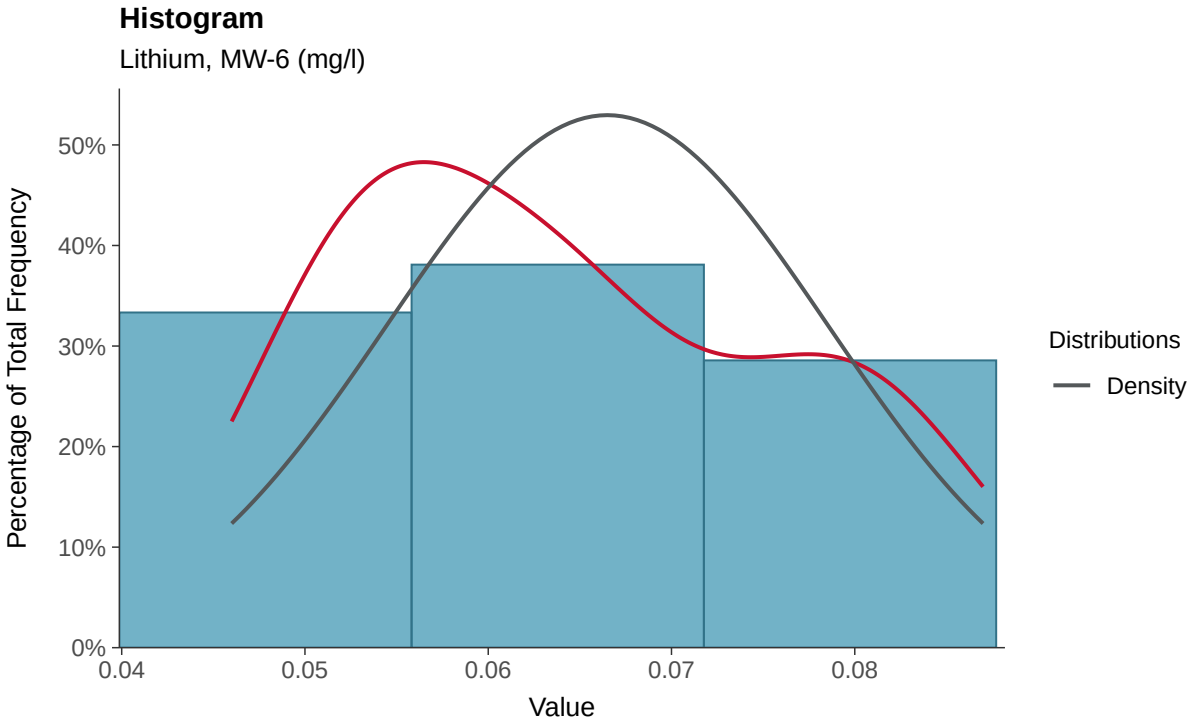



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-6 (mg/l)
Value
0.025
0.020
0.015
0.010
0.005
0.000
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-6

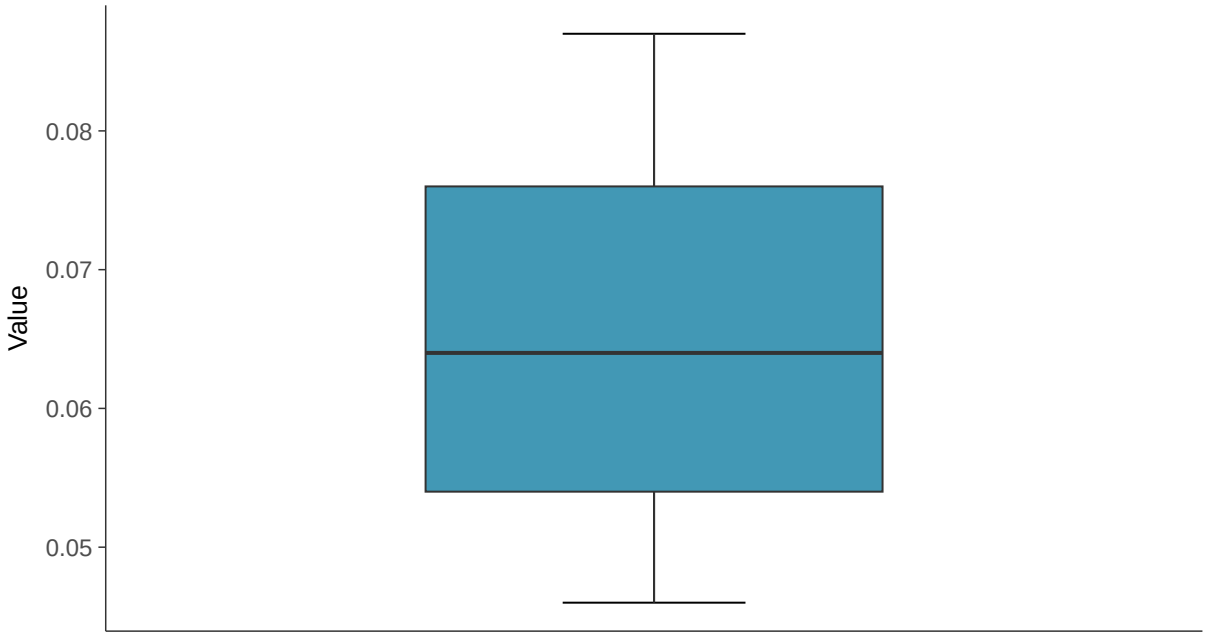
ID: 36_2_118





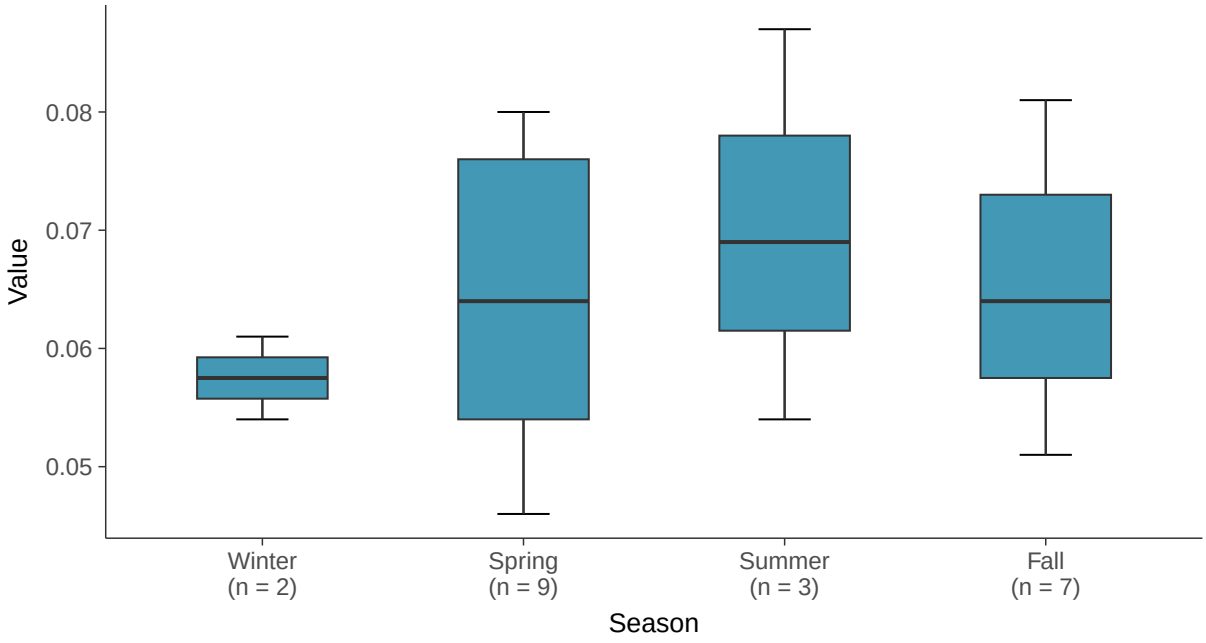
Boxplot

Lithium, MW-6 (mg/l)



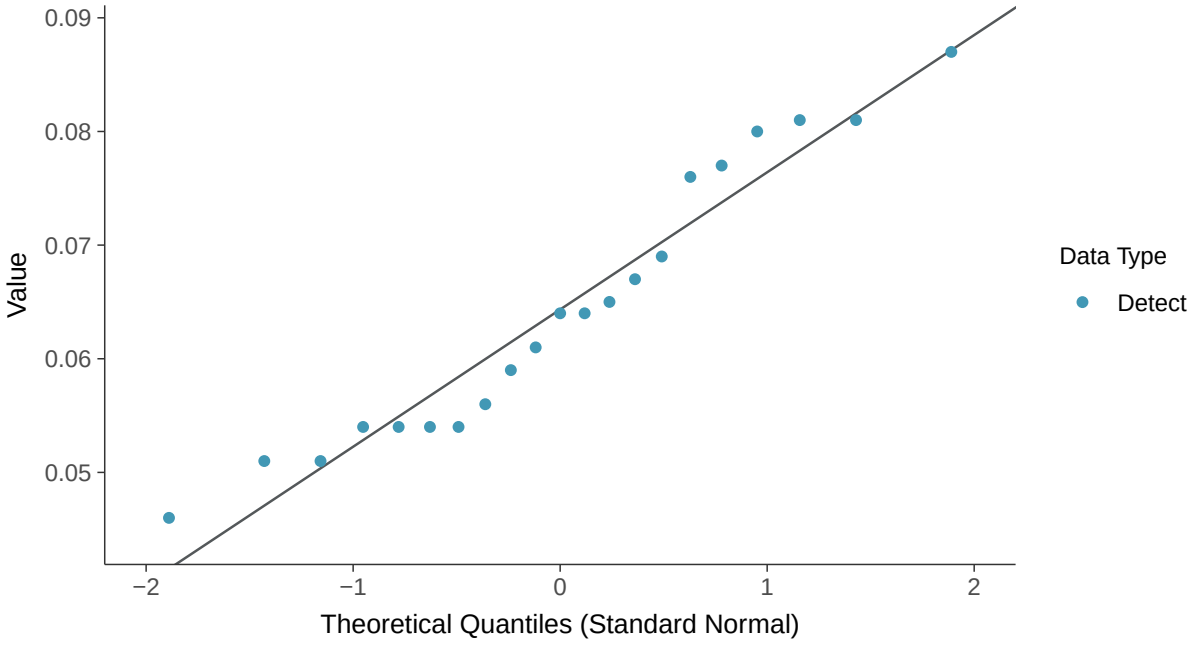
Boxplot by Season

Lithium, MW-6 (mg/l)



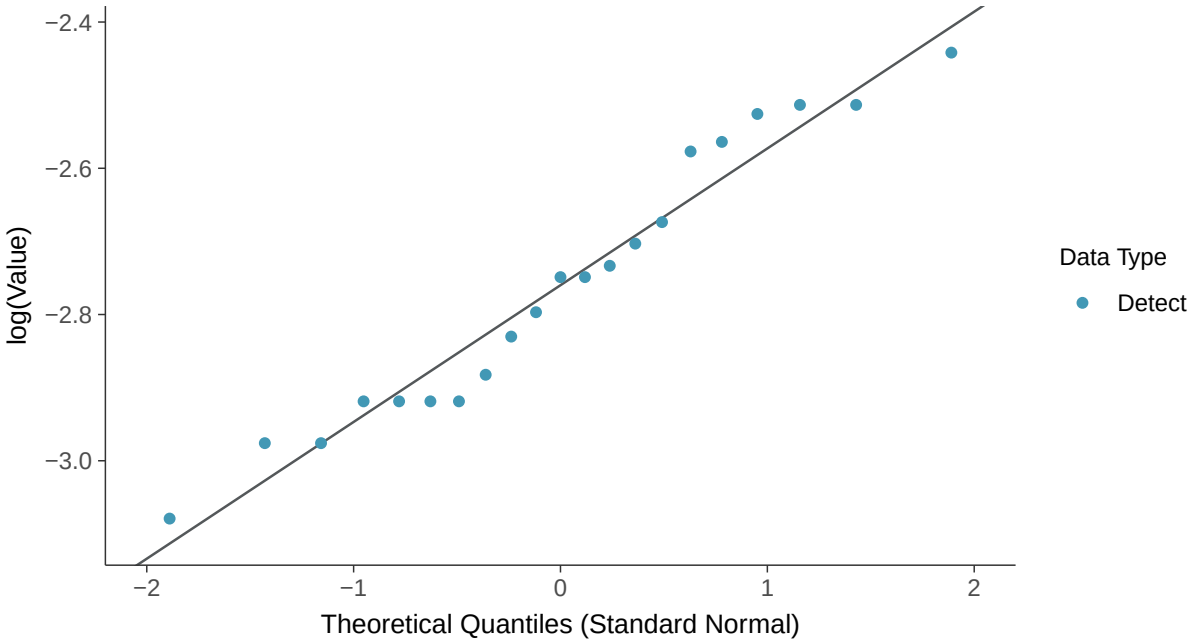
Normal Q-Q plot

Lithium, MW-6 (mg/l)



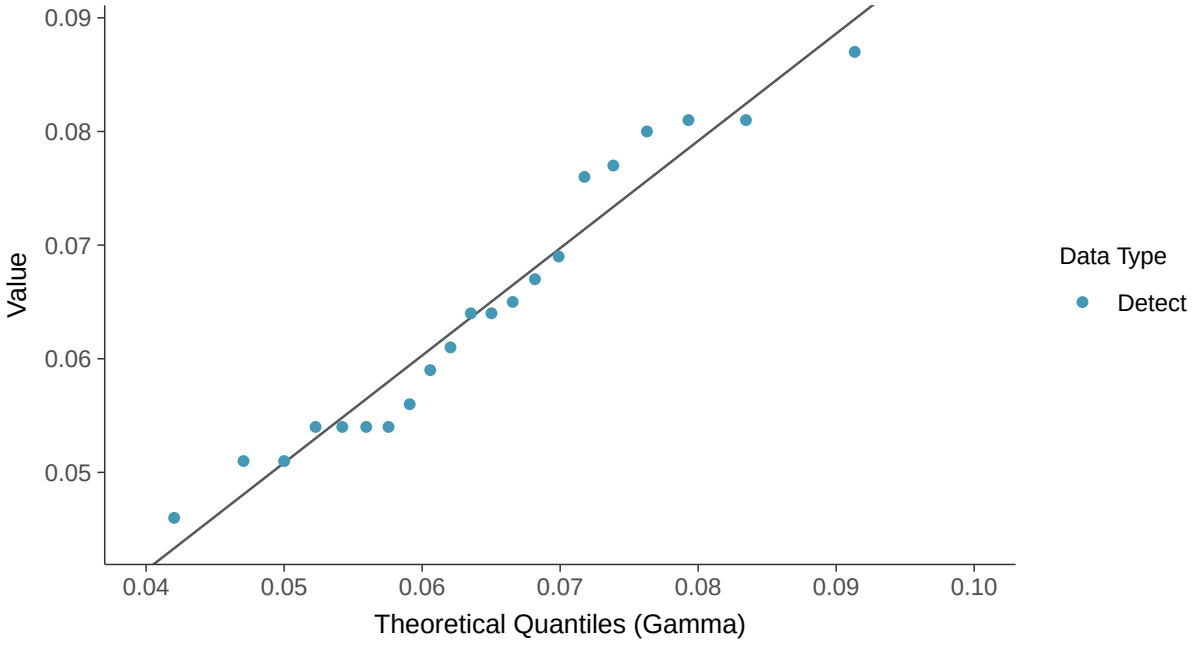
Lognormal Q-Q plot

Lithium, MW-6 (mg/l)



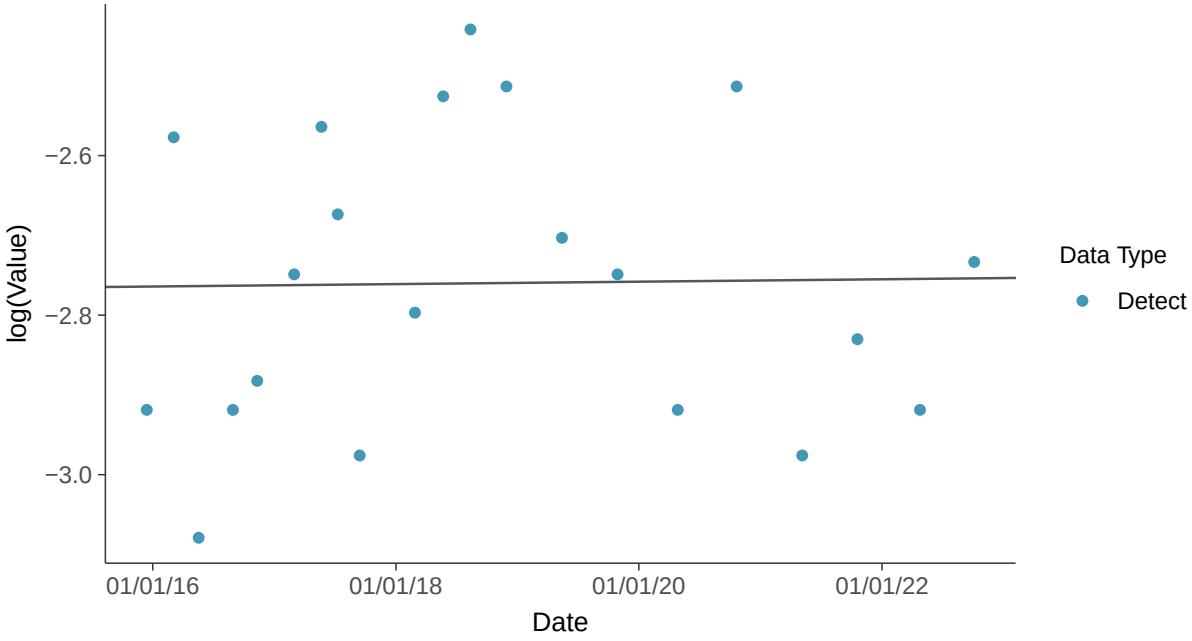
Gamma Q-Q plot

Lithium, MW-6 (mg/l)



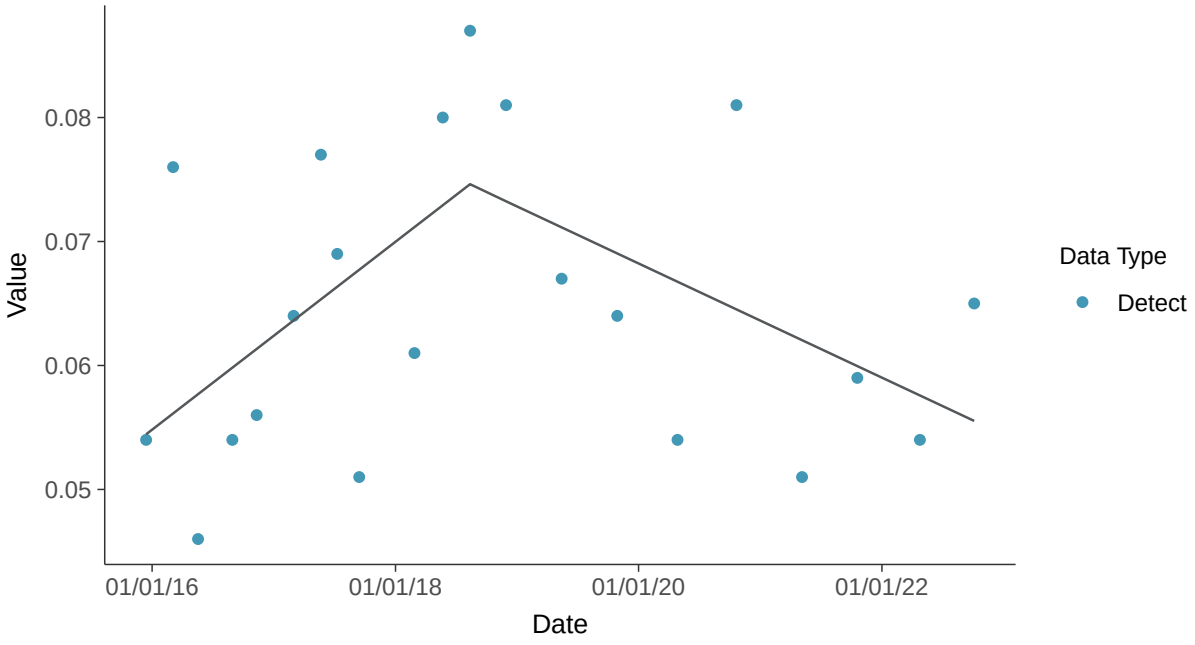
Trend Regression: Lognormal MLE

Lithium, MW-6 (mg/l)



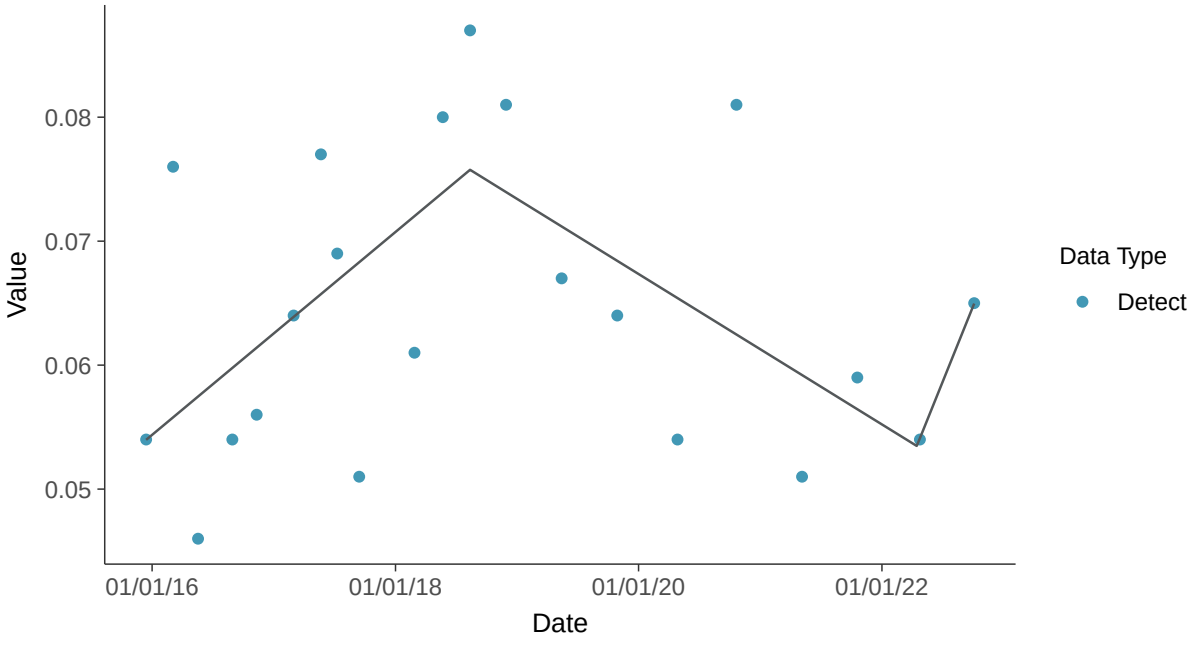
Trend Regression: Piecewise Linear-Linear

Lithium, MW-6 (mg/l)



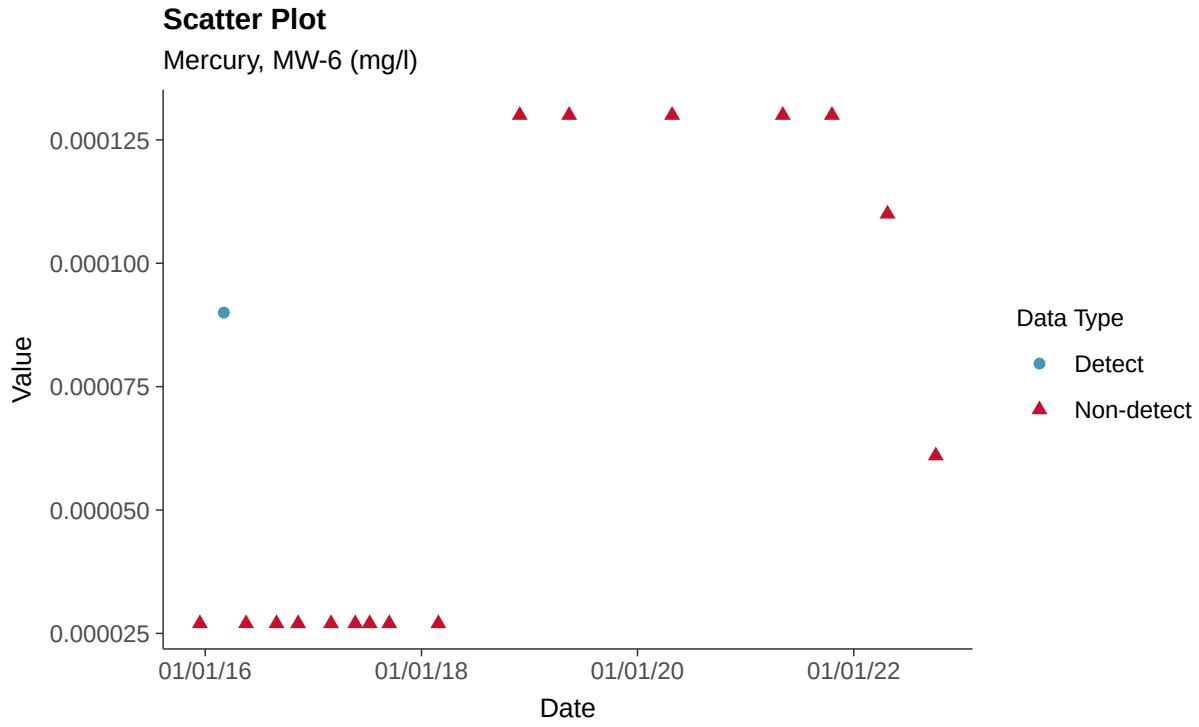
Trend Regression: Piecewise Linear-Linear-Linear

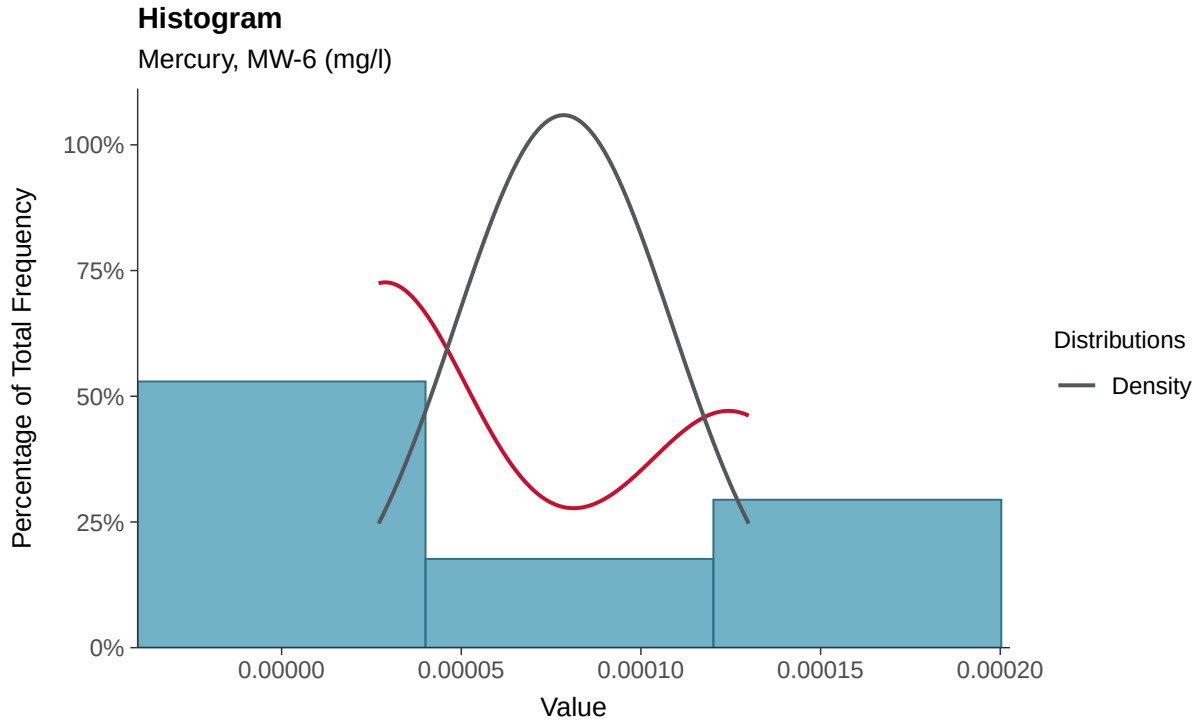
Lithium, MW-6 (mg/l)



Appendix IV: Mercury, MW-6

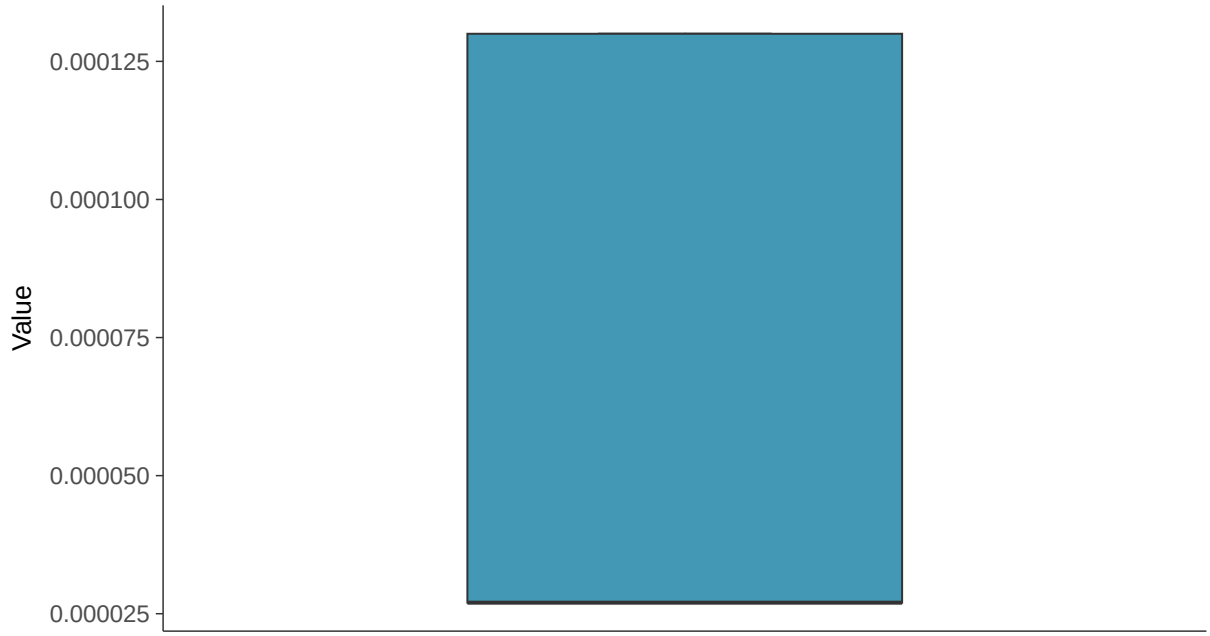
ID: 36_2_120





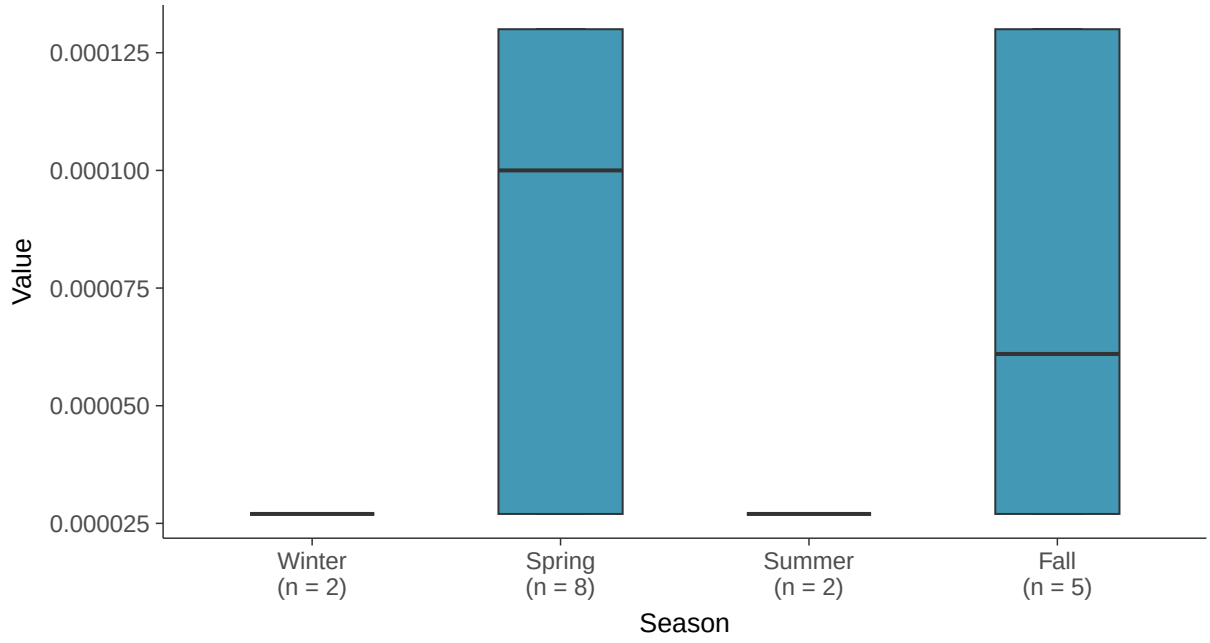
Boxplot

Mercury, MW-6 (mg/l)



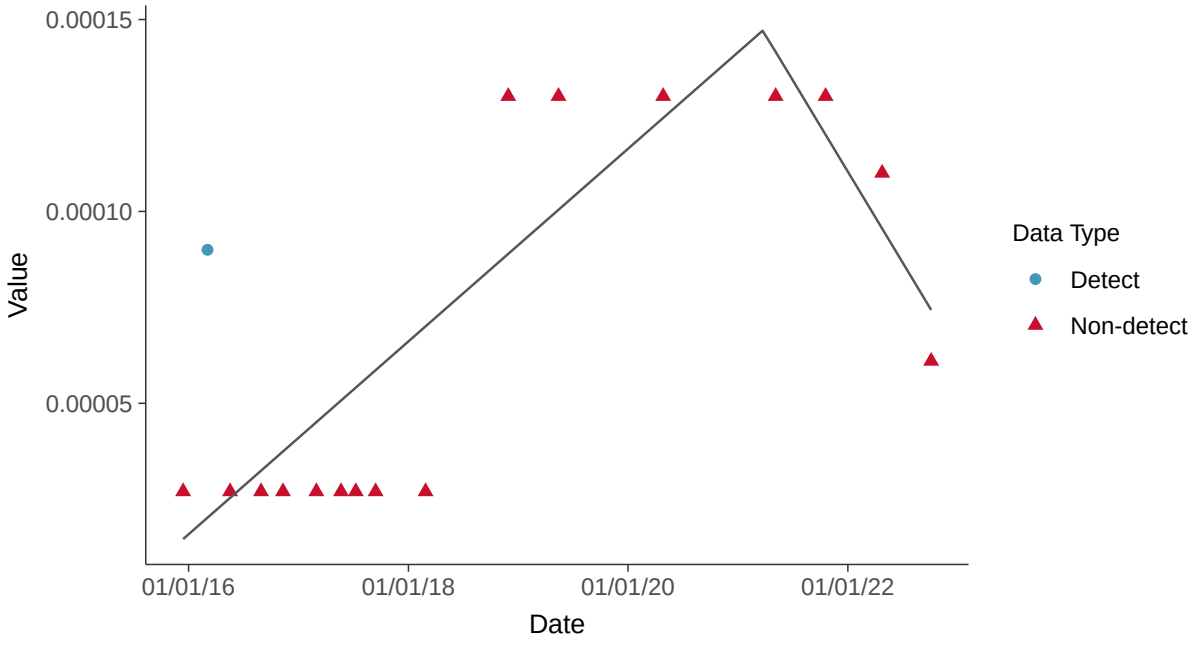
Boxplot by Season

Mercury, MW-6 (mg/l)



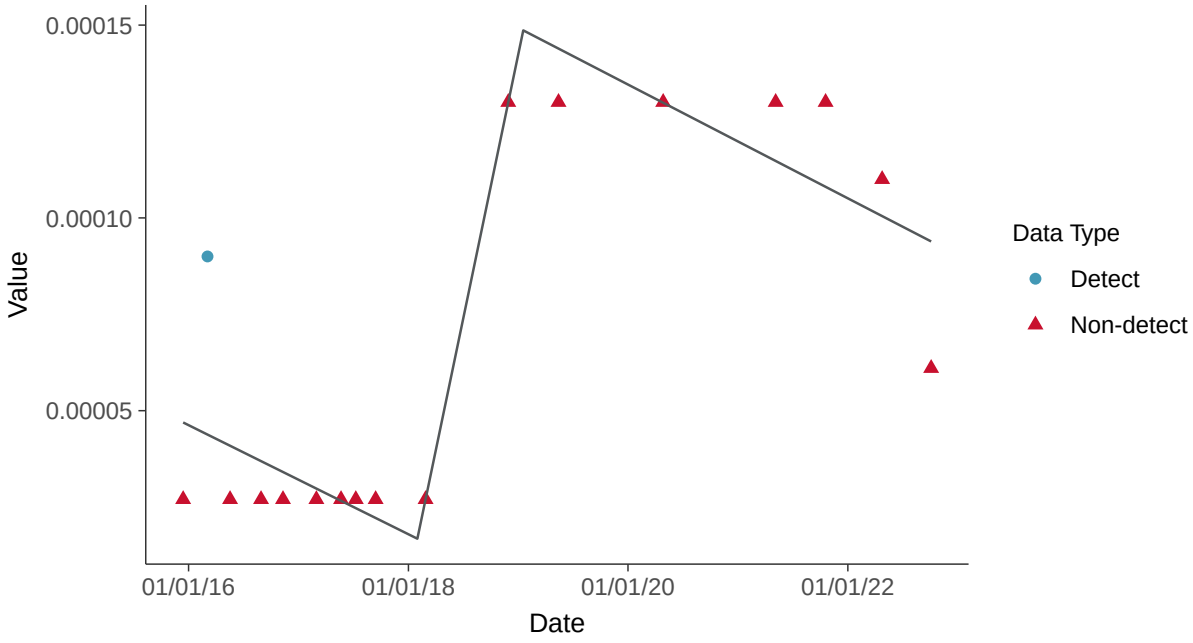
Trend Regression: Piecewise Linear-Linear

Mercury, MW-6 (mg/l)



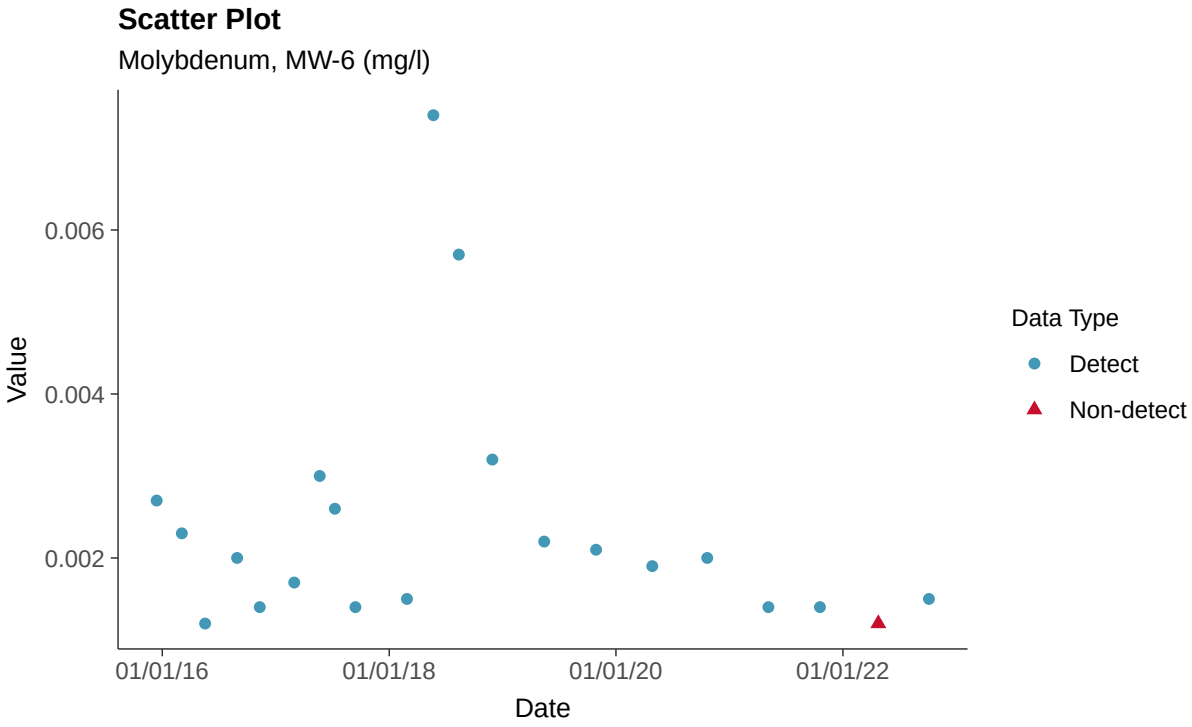
Trend Regression: Piecewise Linear-Linear-Linear

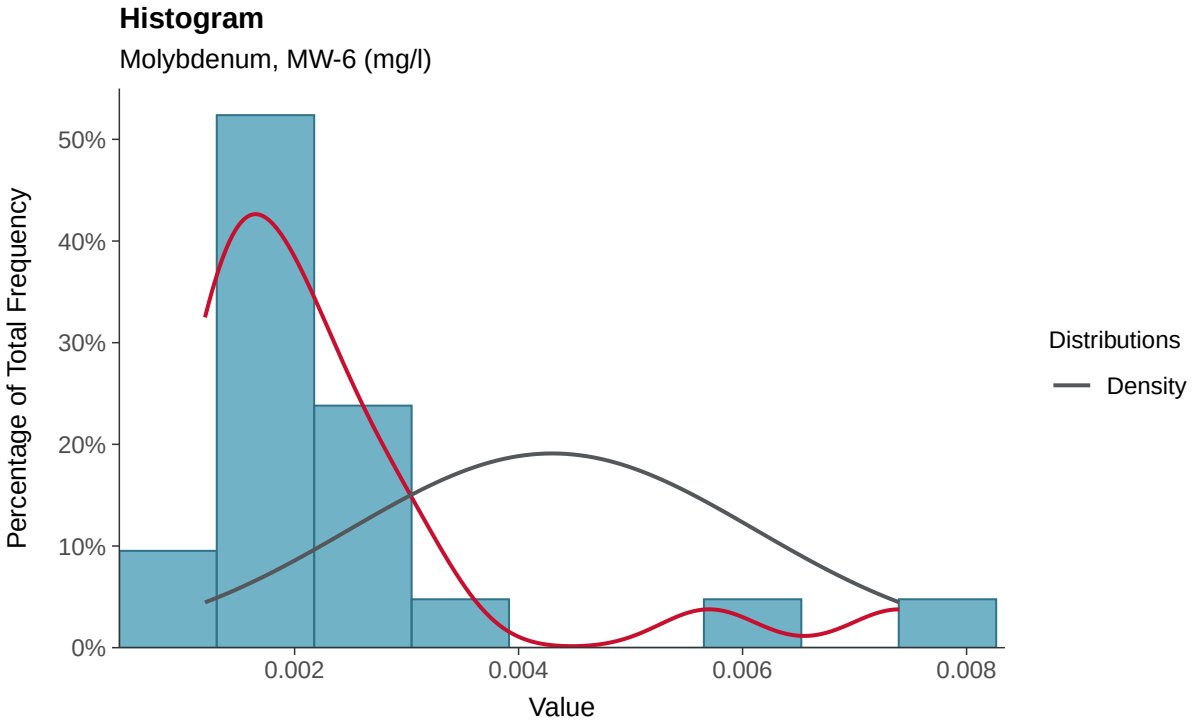
Mercury, MW-6 (mg/l)



Appendix IV: Molybdenum, MW-6

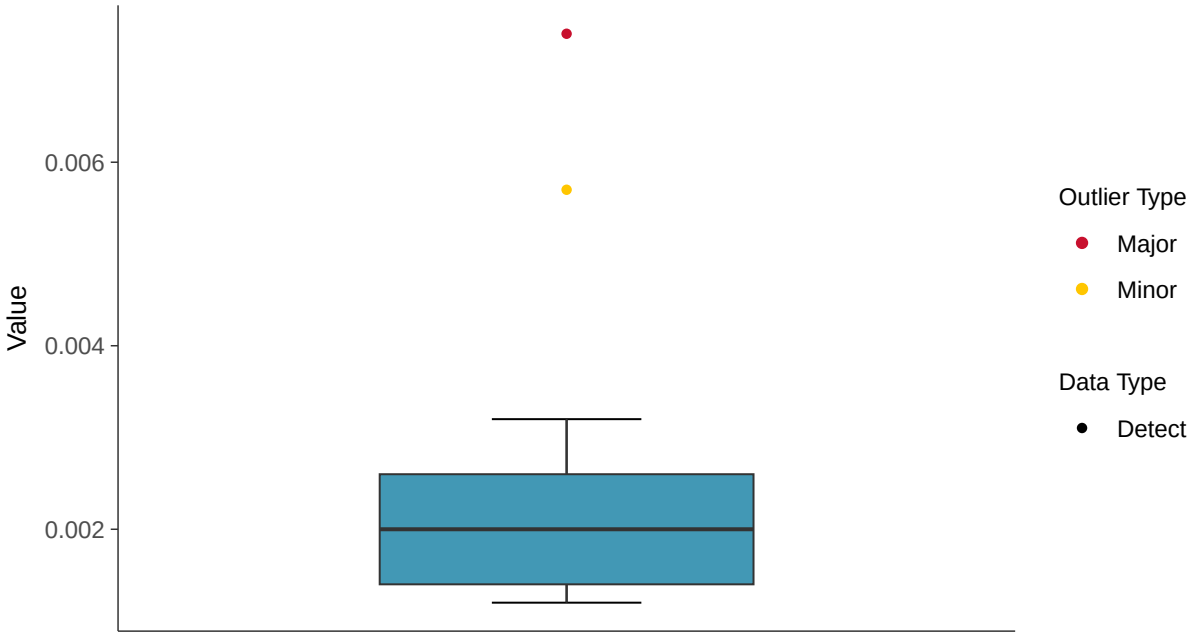
ID: 36_2_121





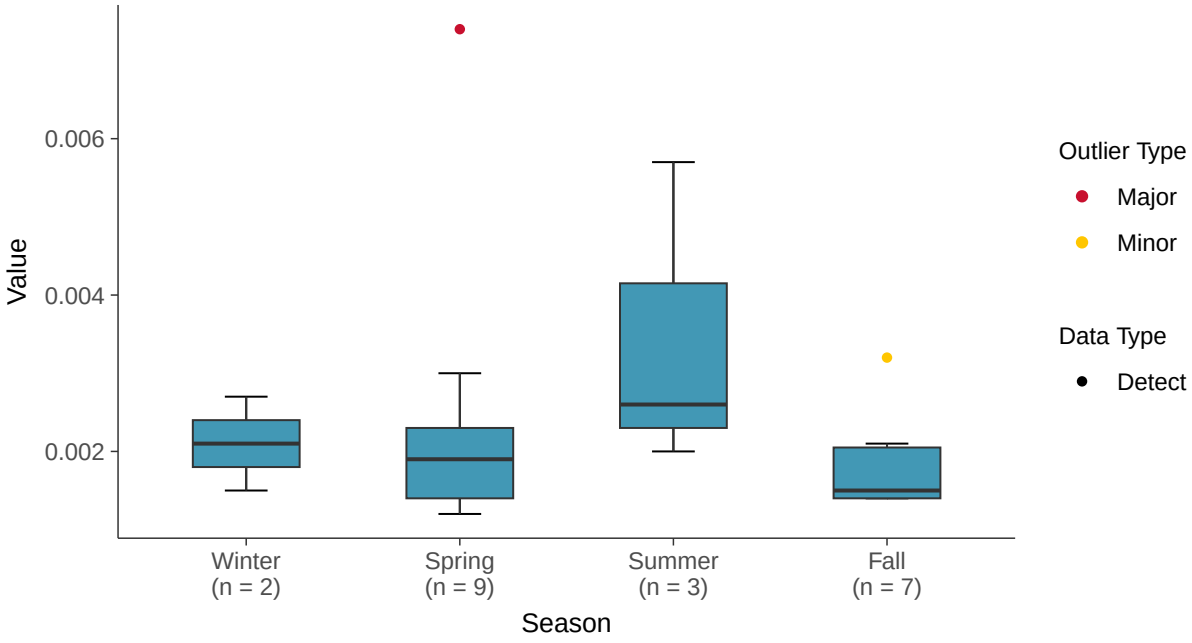
Boxplot

Molybdenum, MW-6 (mg/l)



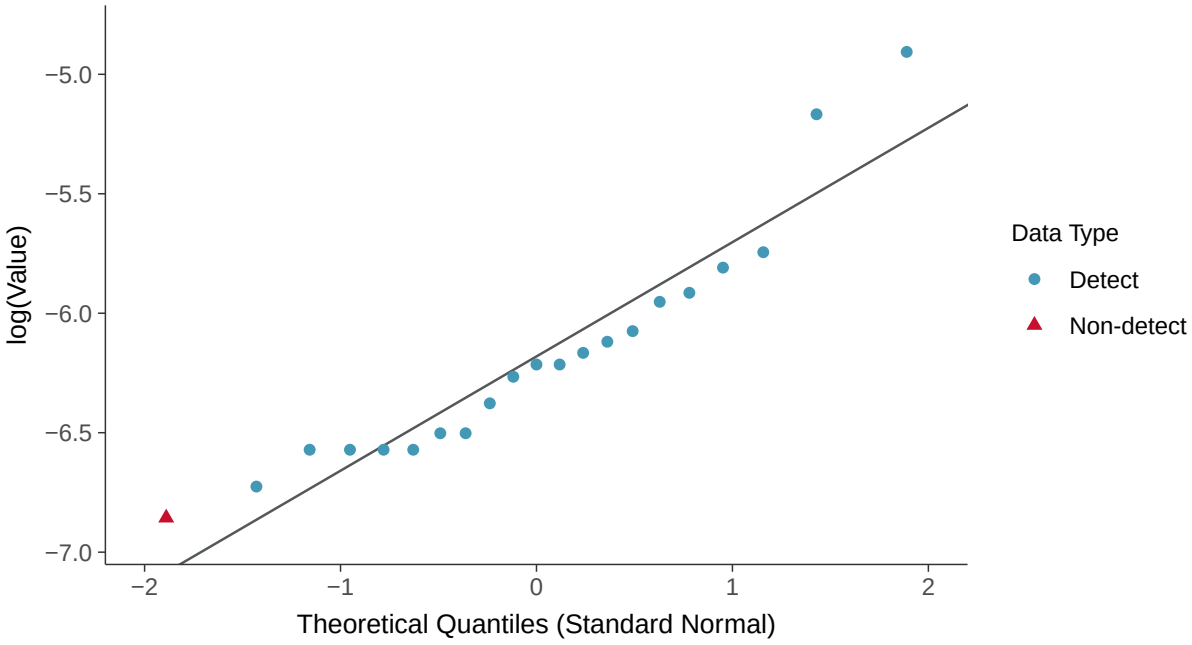
Boxplot by Season

Molybdenum, MW-6 (mg/l)



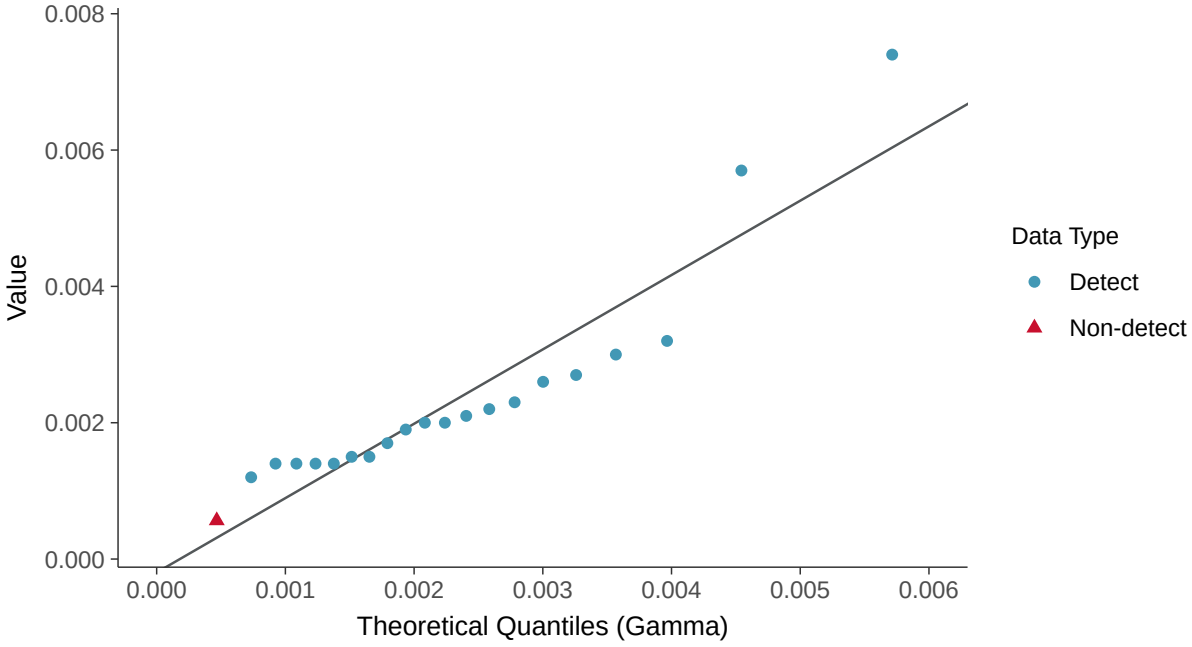
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-6 (mg/l)



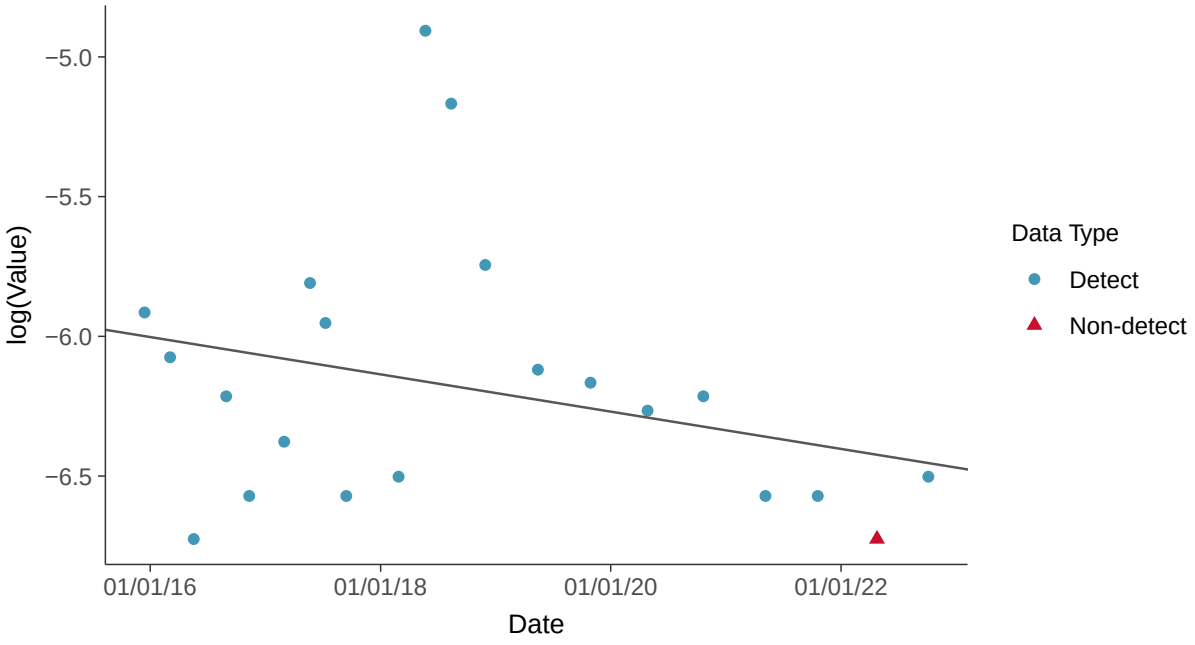
Gamma Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-6 (mg/l)



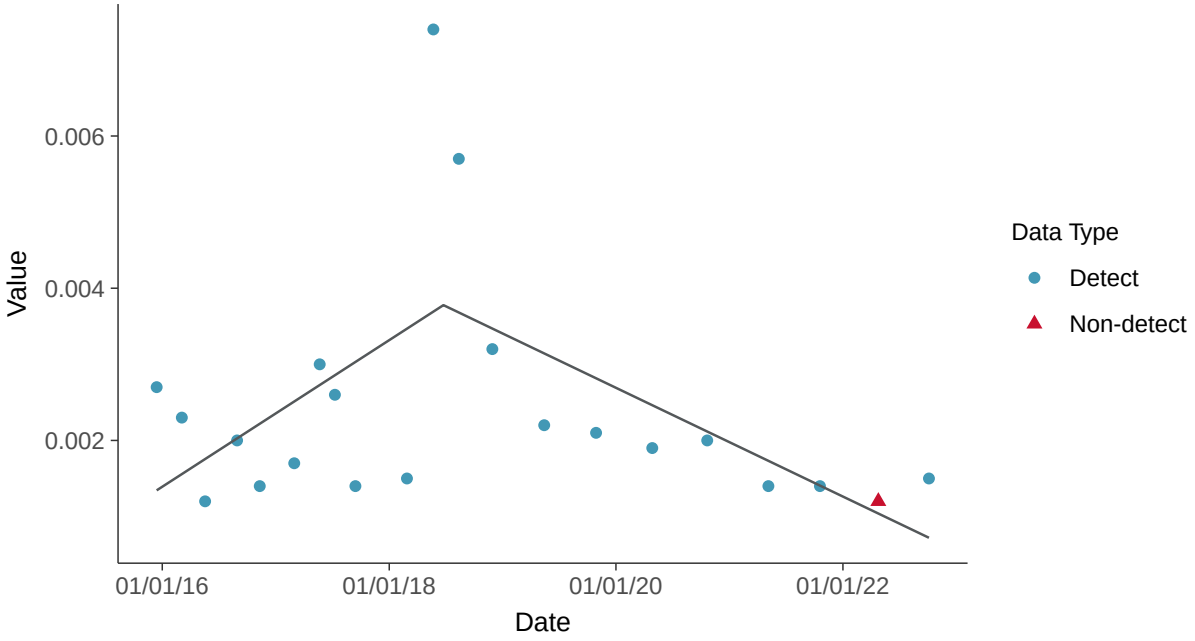
Trend Regression: Lognormal MLE

Molybdenum, MW-6 (mg/l)



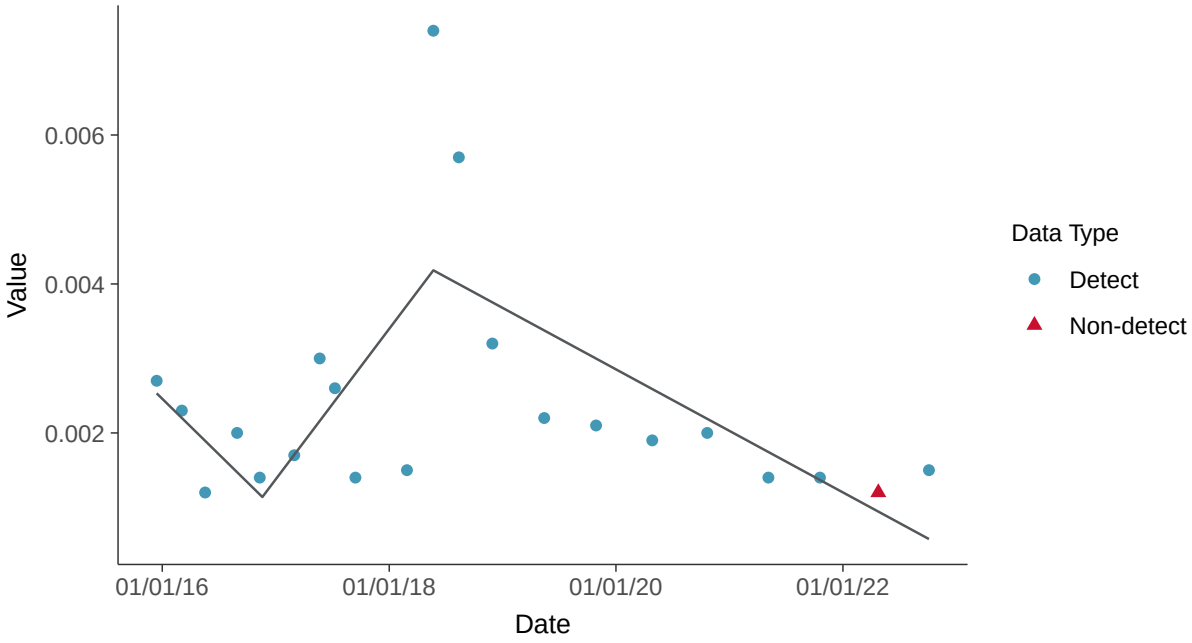
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-6 (mg/l)



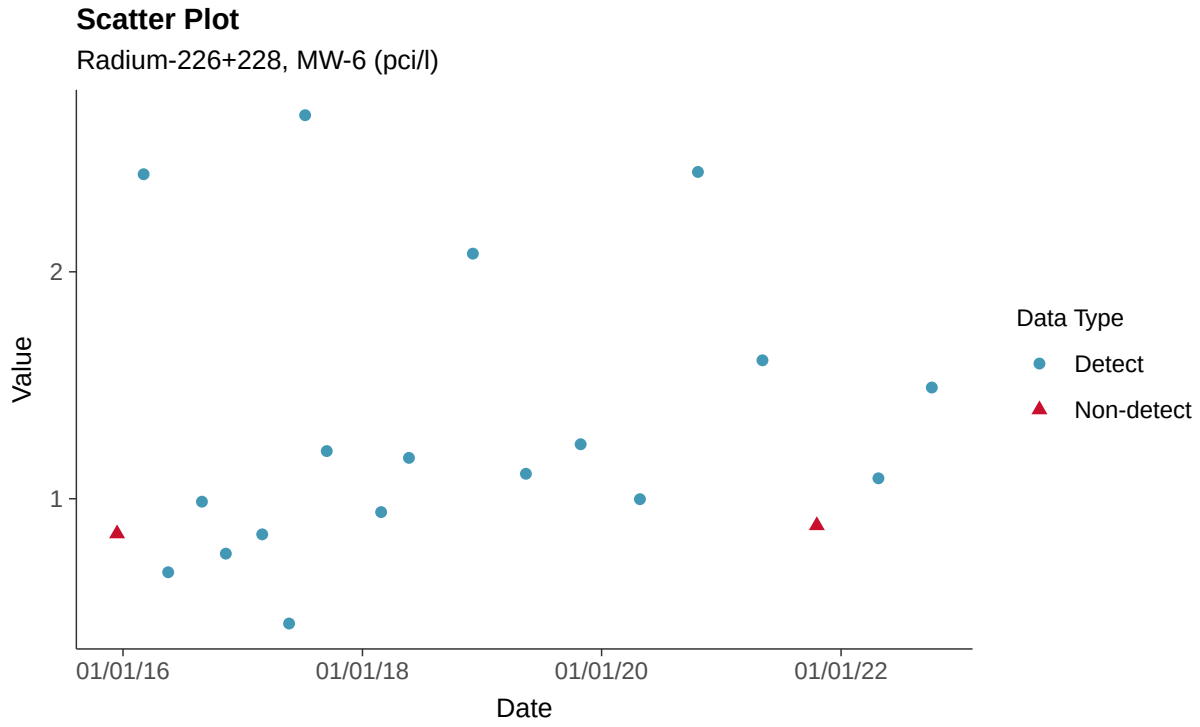
Trend Regression: Piecewise Linear-Linear-Linear

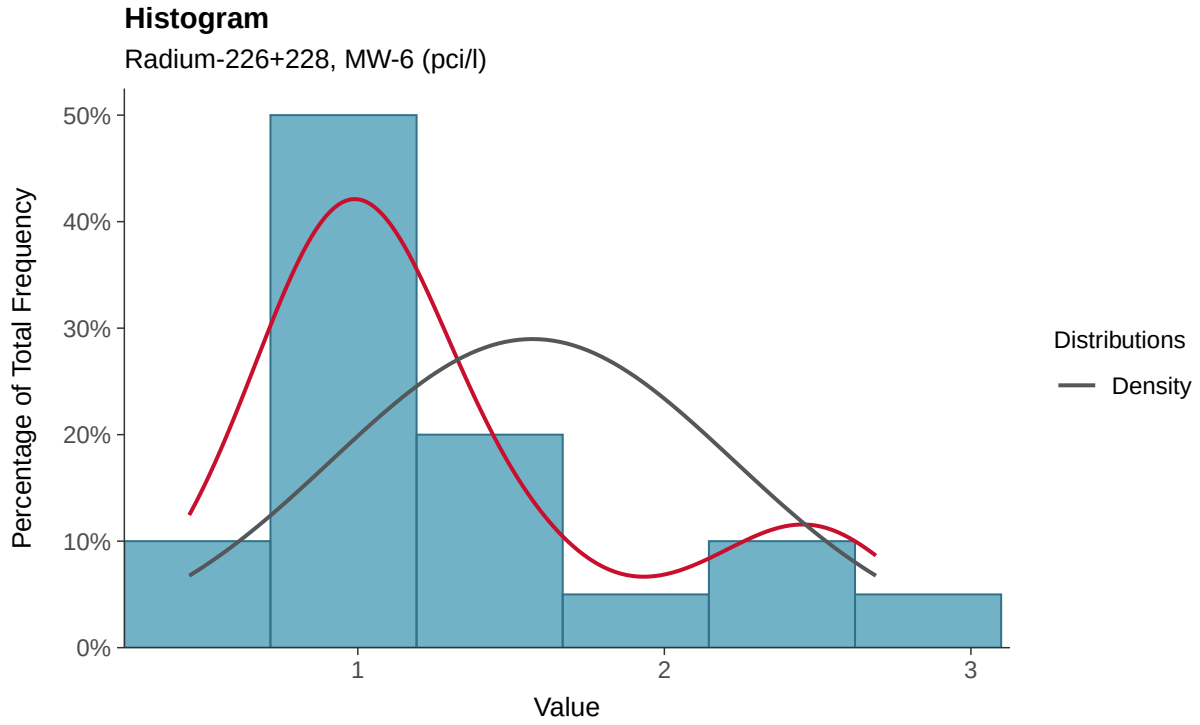
Molybdenum, MW-6 (mg/l)



Appendix IV: Radium-226+228, MW-6

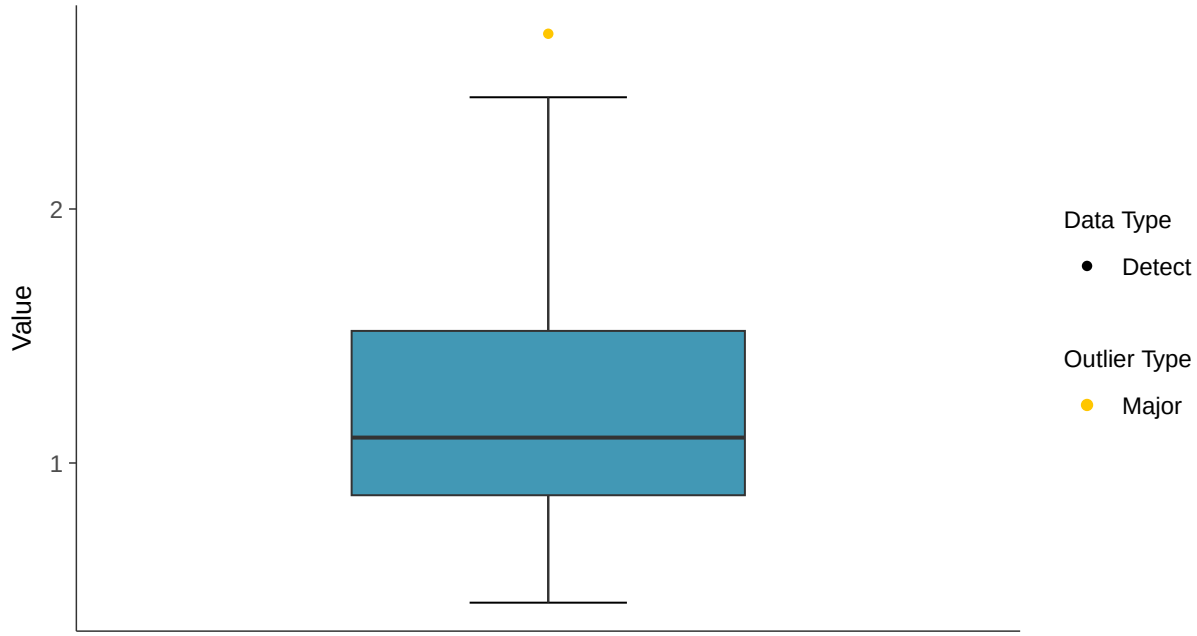
ID: 36_2_127





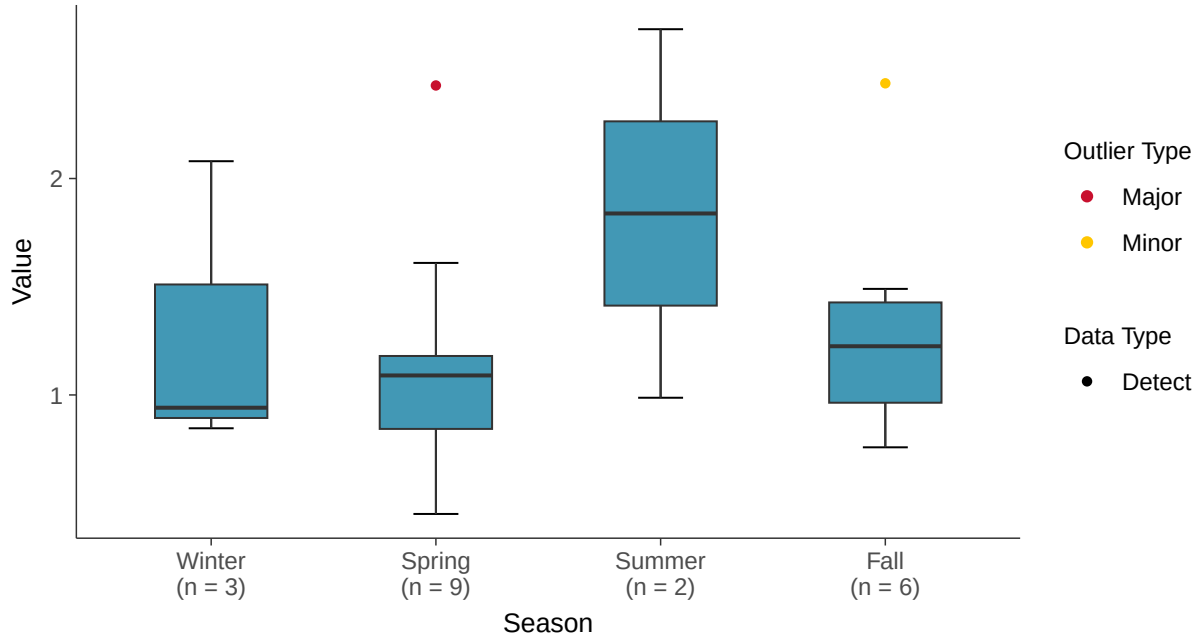
Boxplot

Radium-226+228, MW-6 (pci/l)



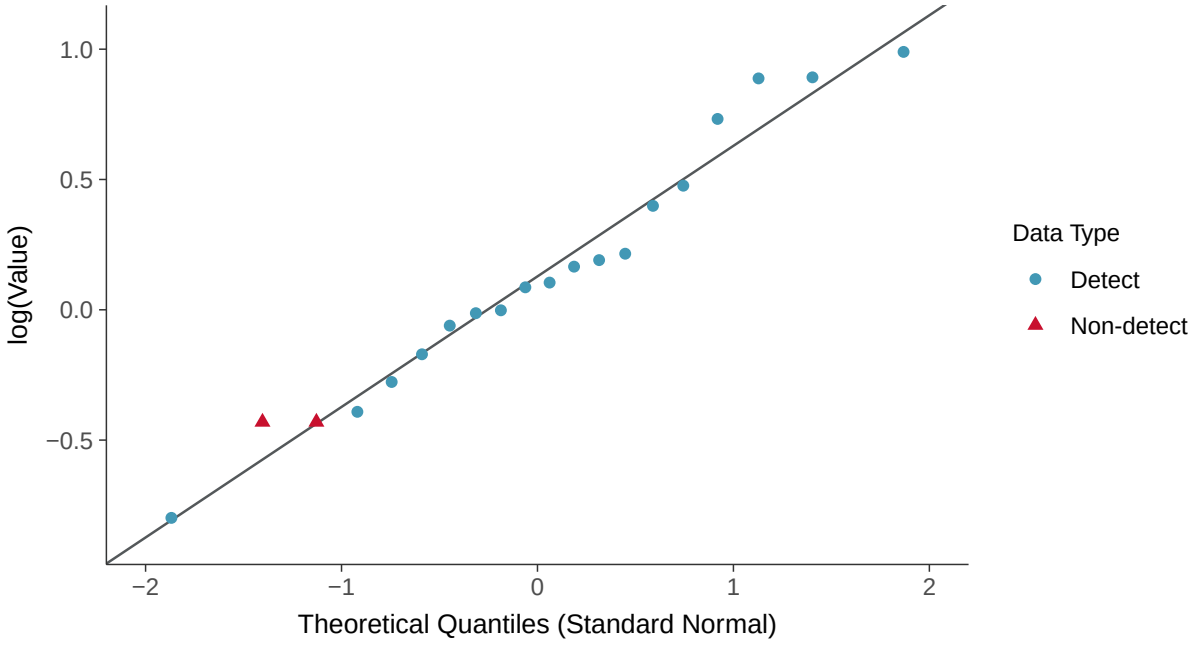
Boxplot by Season

Radium-226+228, MW-6 (pci/l)



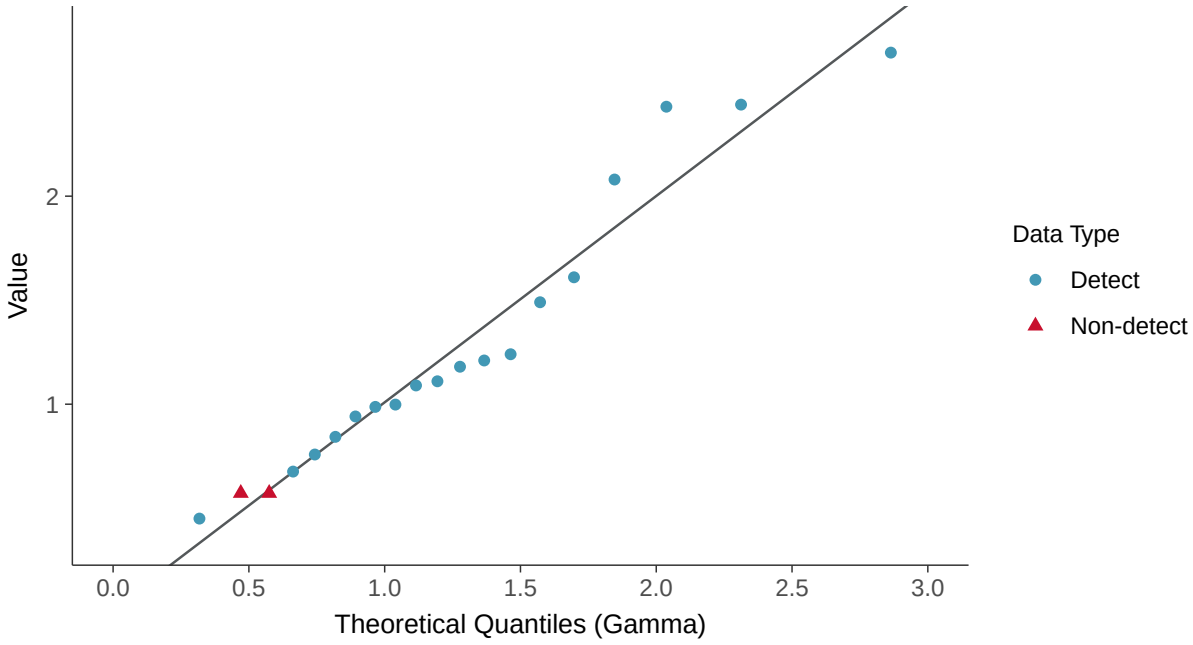
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-6 (pci/l)



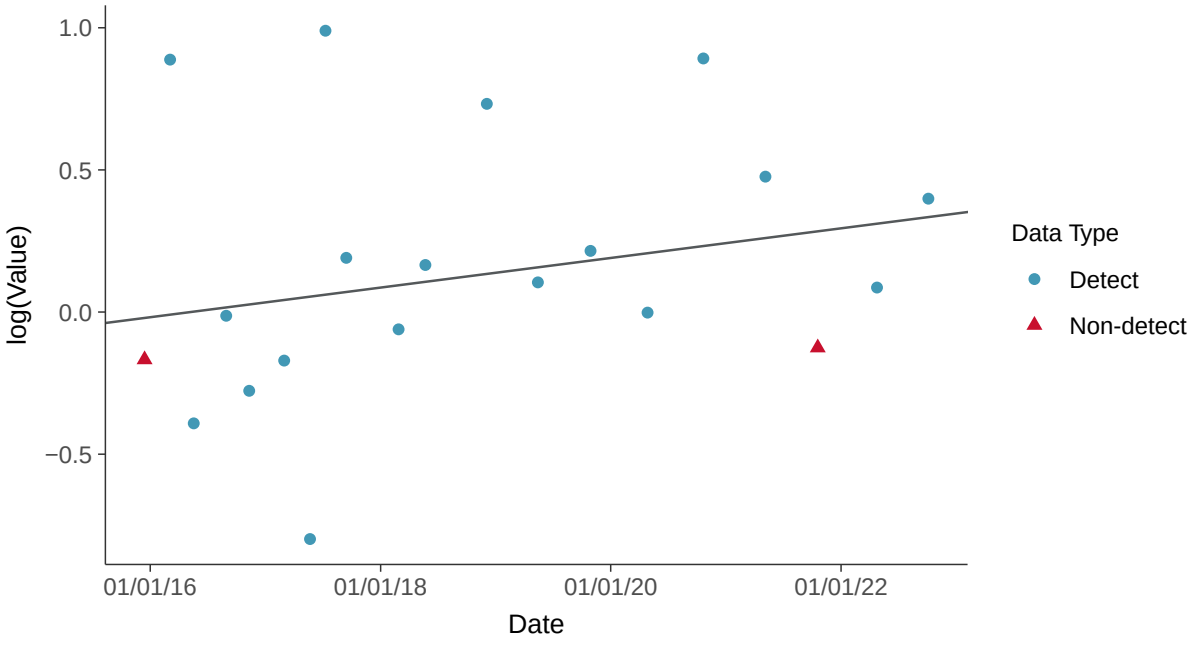
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-6 (pci/l)



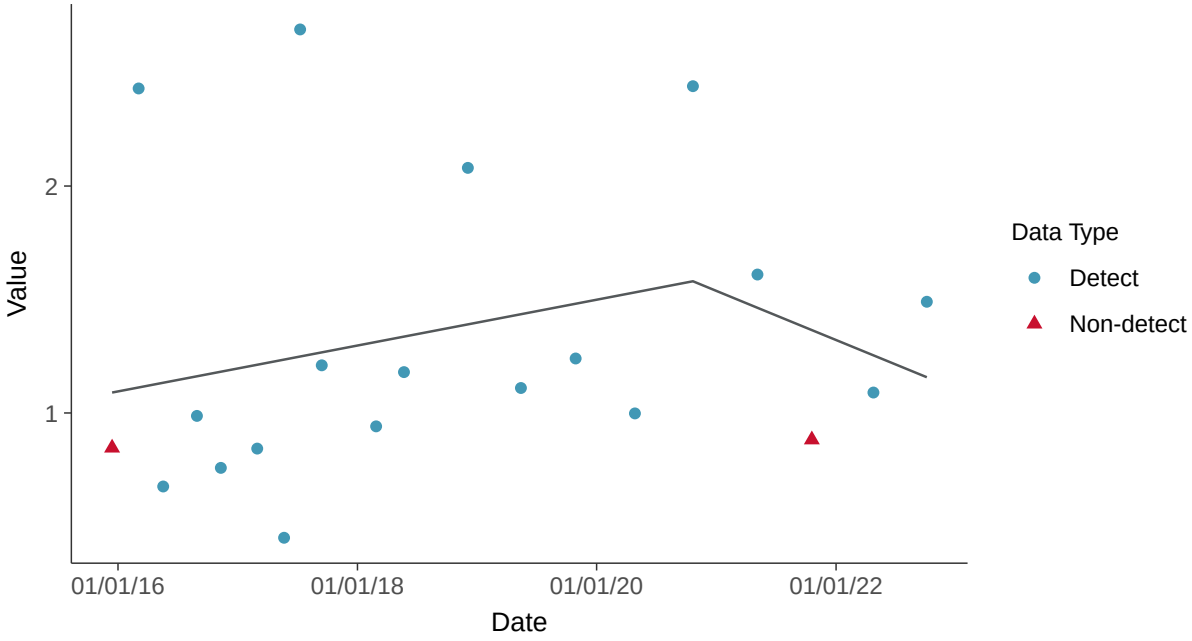
Trend Regression: Lognormal MLE

Radium-226+228, MW-6 (pci/l)



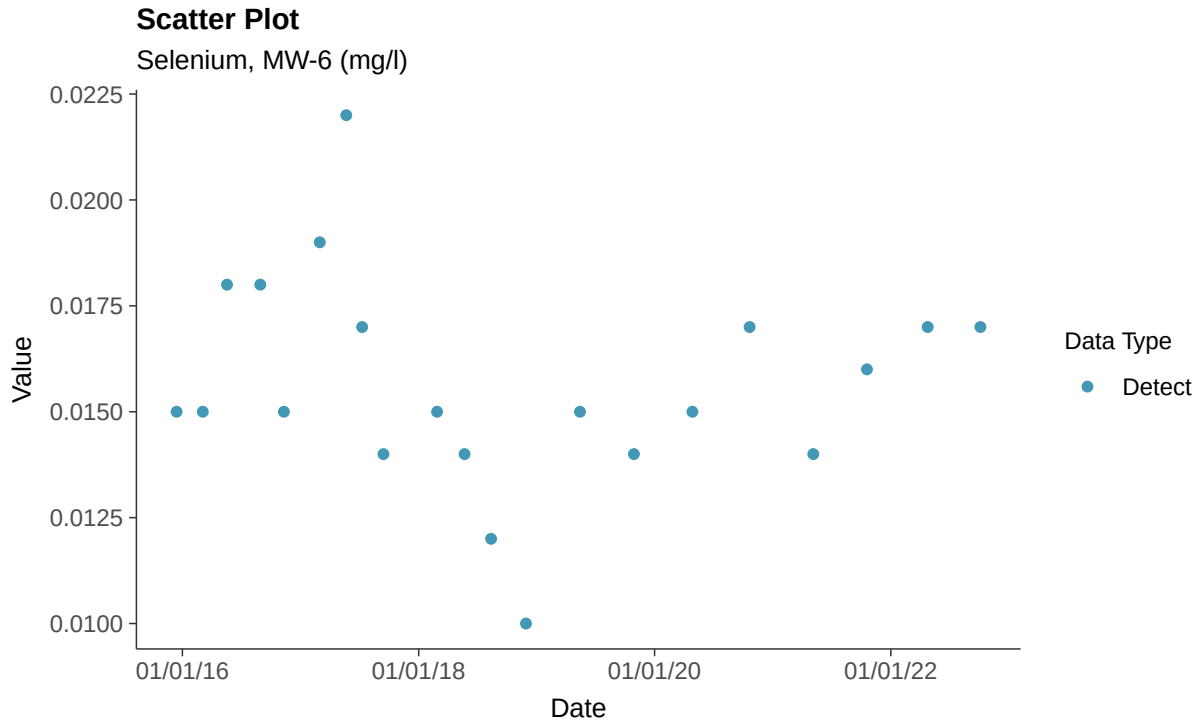
Trend Regression: Piecewise Linear-Linear

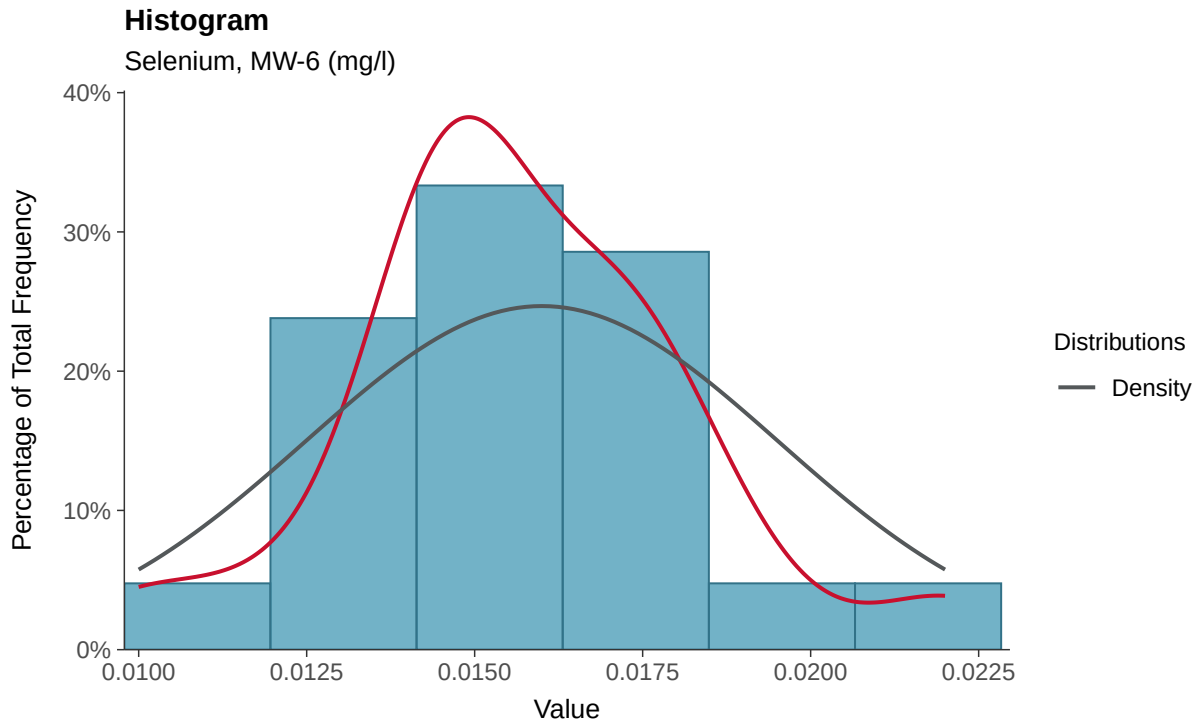
Radium-226+228, MW-6 (pci/l)



Appendix IV: Selenium, MW-6

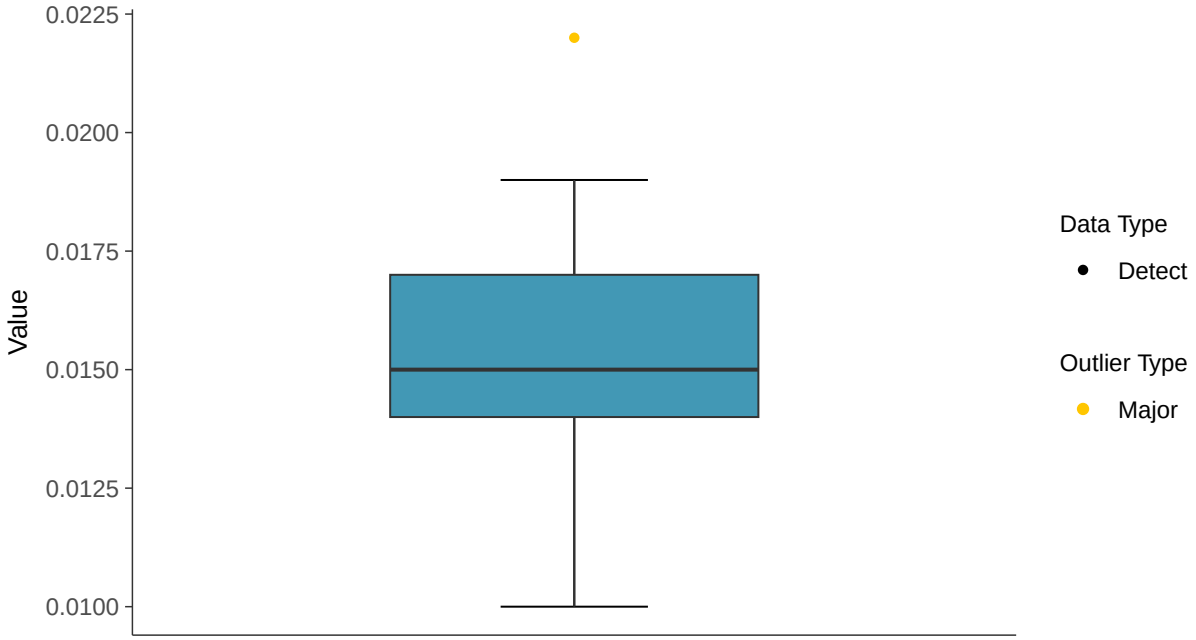
ID: 36_2_129





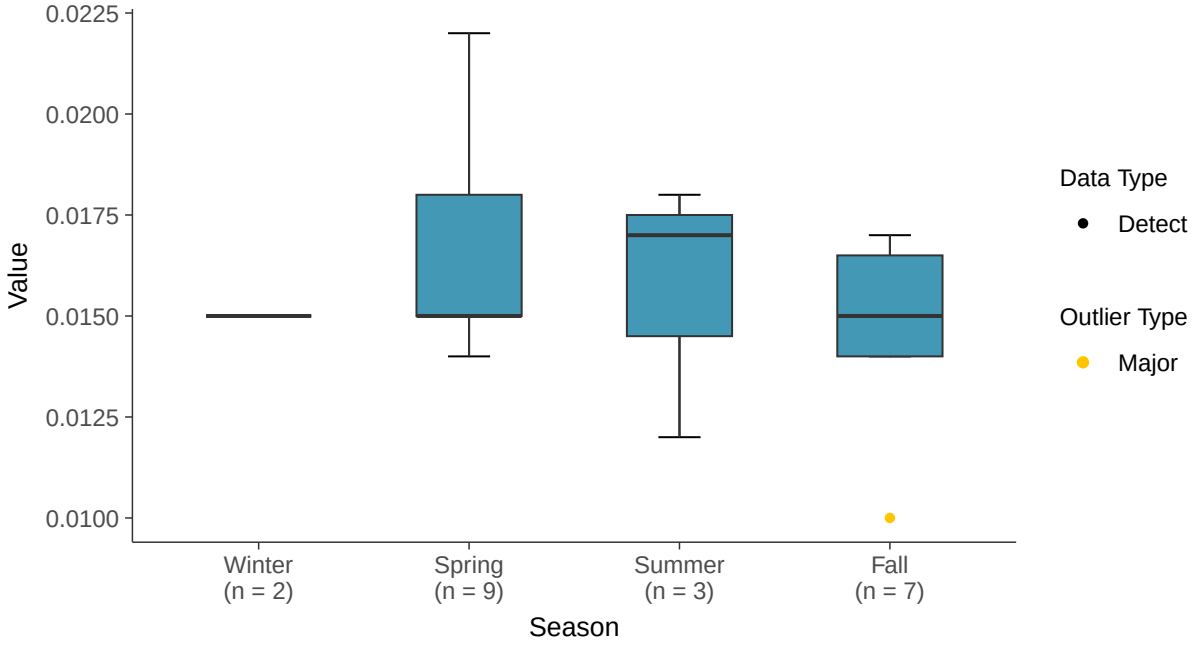
Boxplot

Selenium, MW-6 (mg/l)



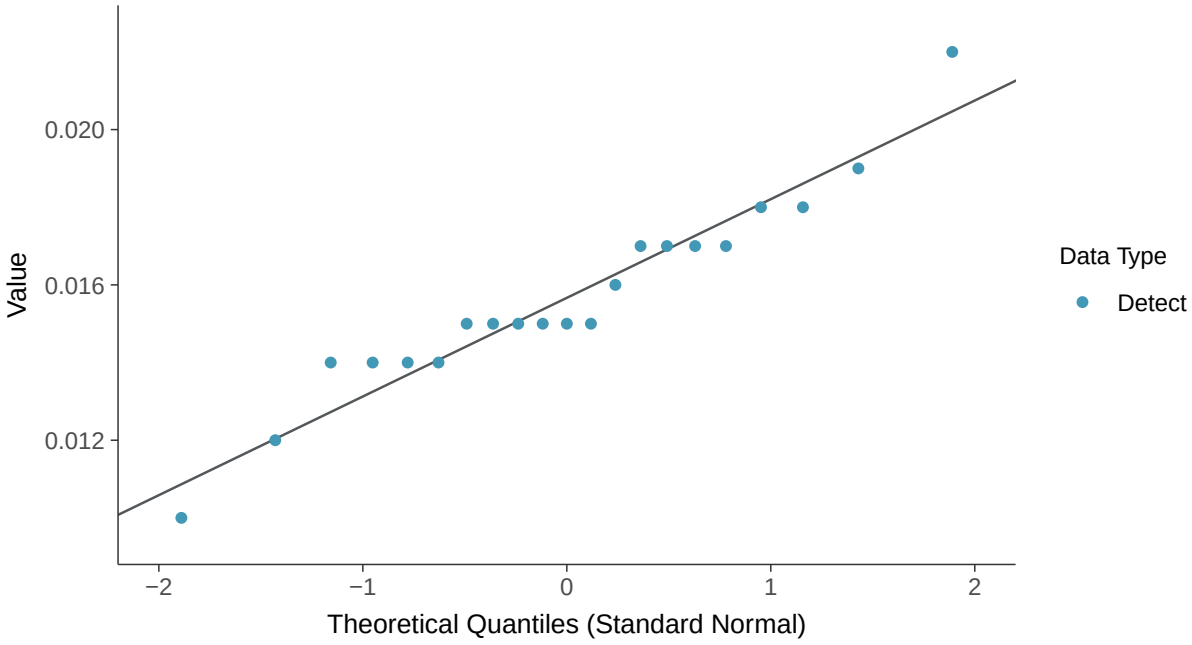
Boxplot by Season

Selenium, MW-6 (mg/l)



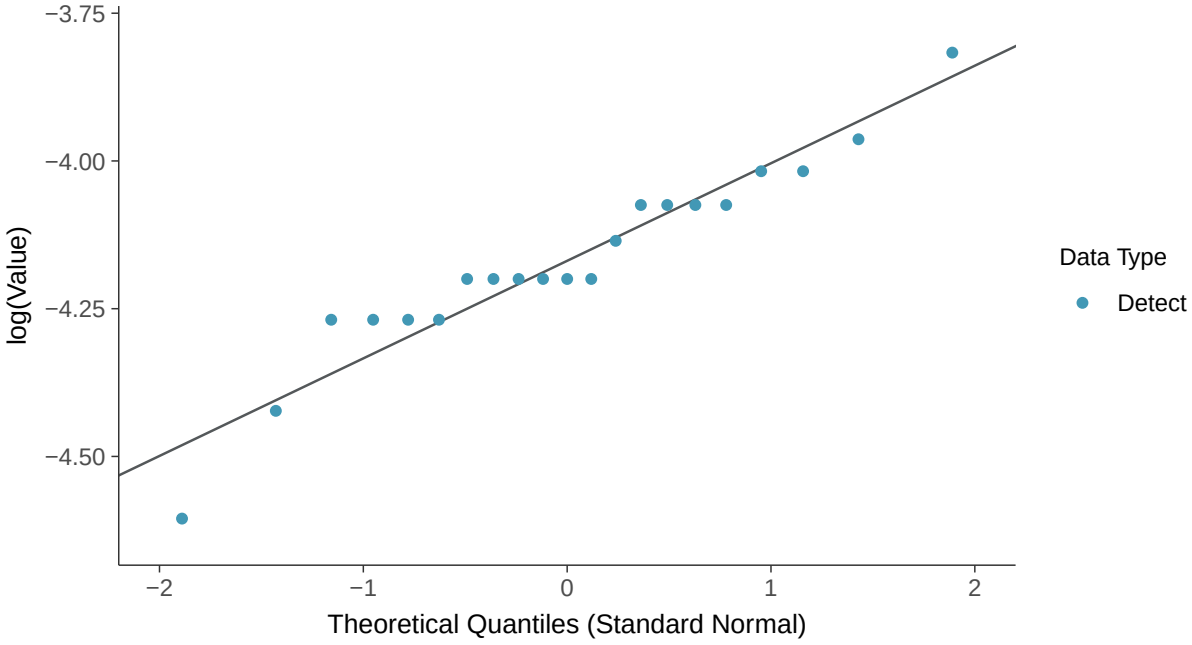
Normal Q-Q plot

Selenium, MW-6 (mg/l)



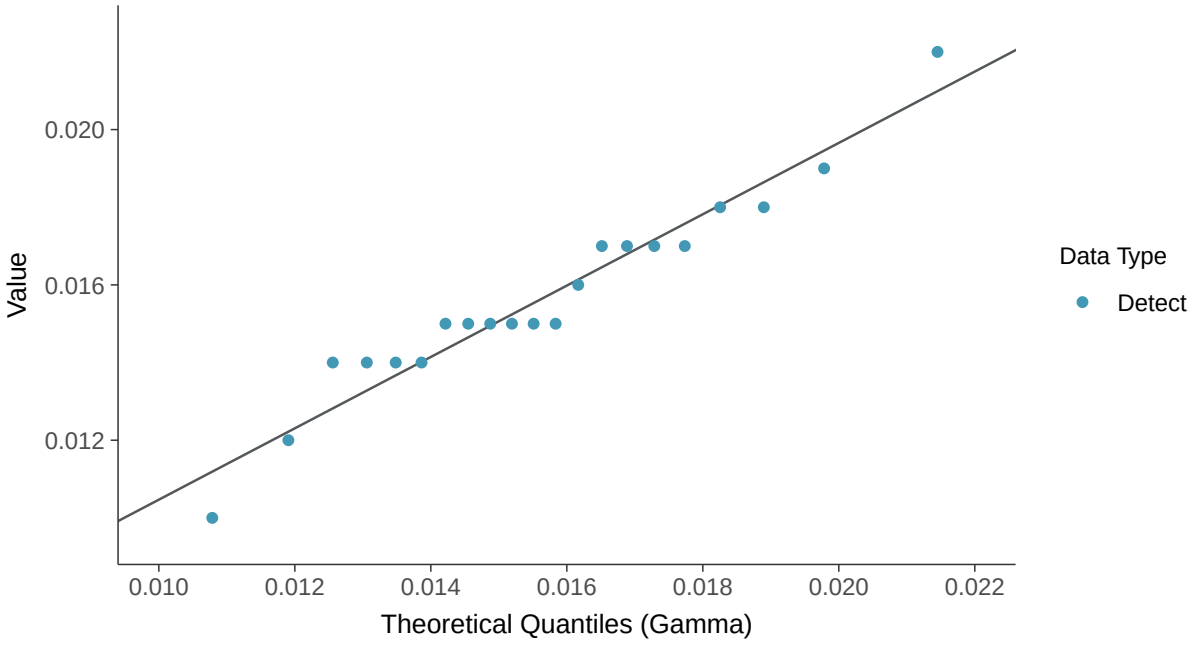
Lognormal Q-Q plot

Selenium, MW-6 (mg/l)



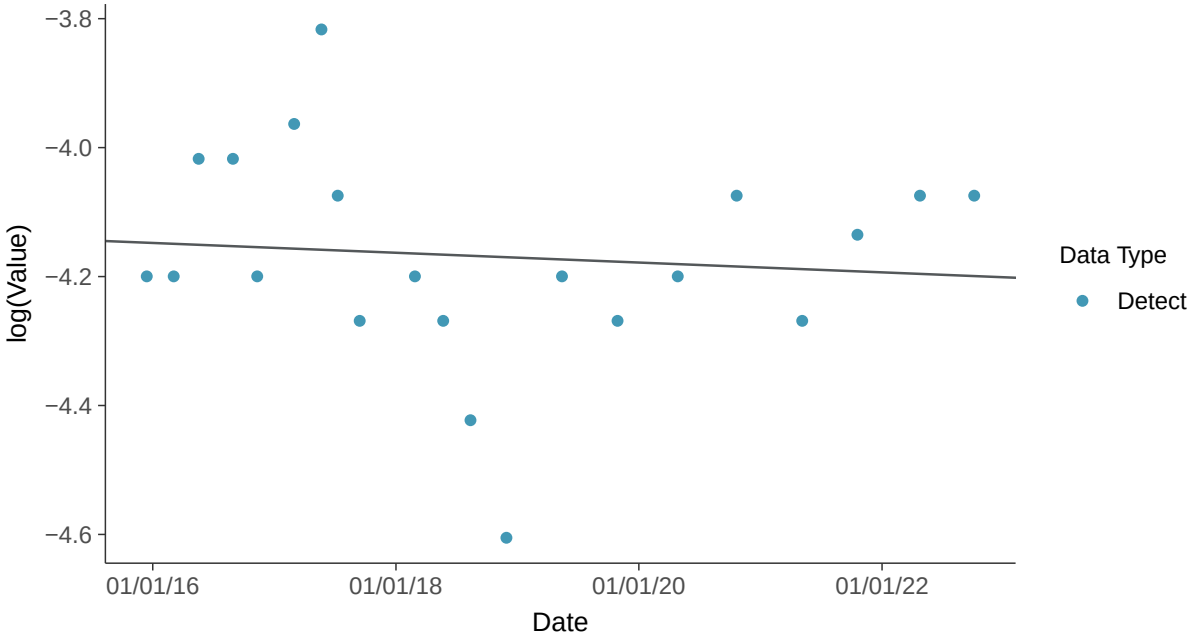
Gamma Q-Q plot

Selenium, MW-6 (mg/l)



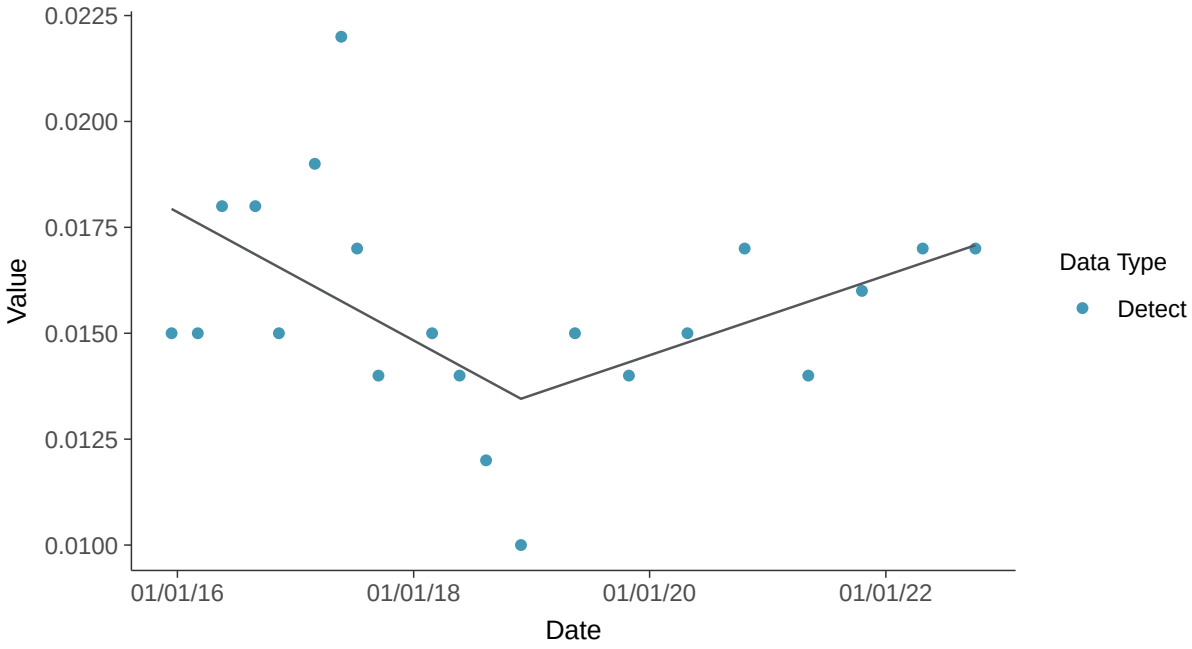
Trend Regression: Lognormal MLE

Selenium, MW-6 (mg/l)



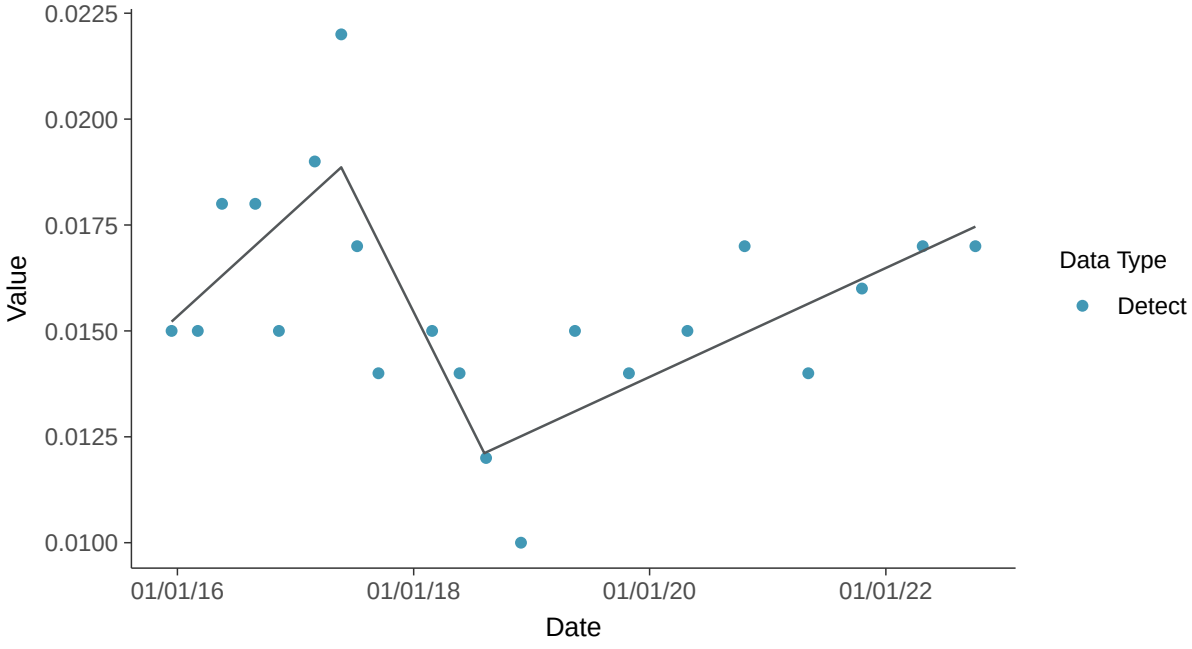
Trend Regression: Piecewise Linear-Linear

Selenium, MW-6 (mg/l)



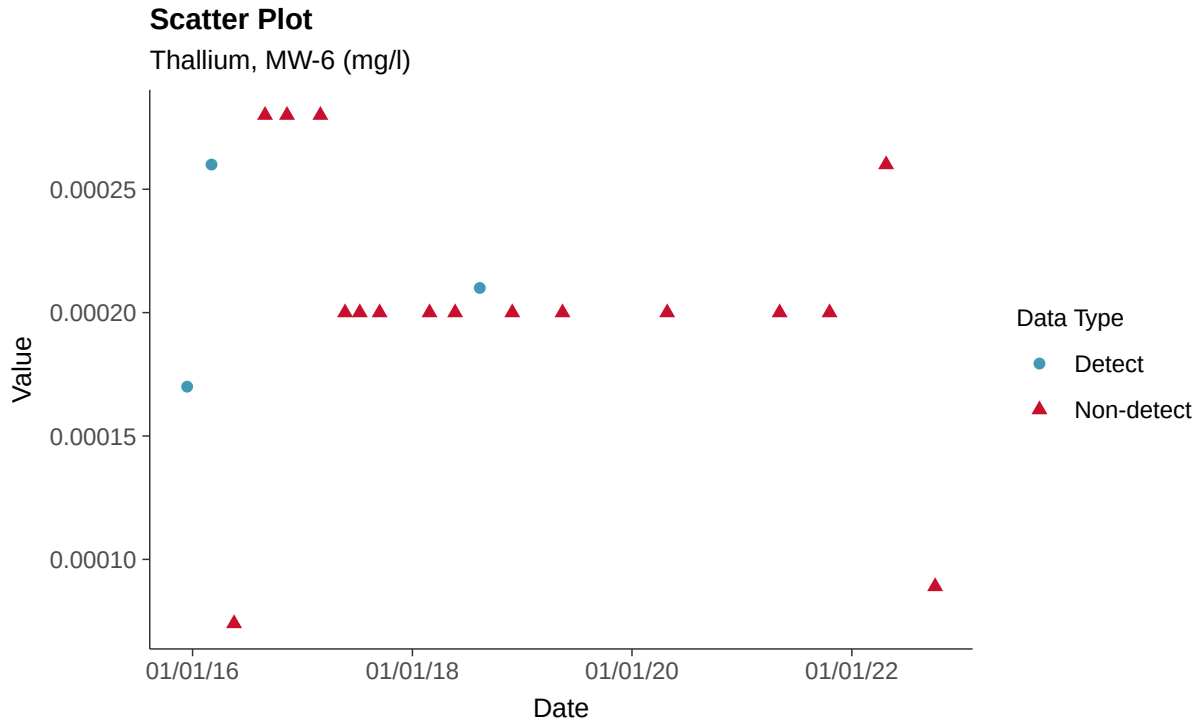
Trend Regression: Piecewise Linear-Linear-Linear

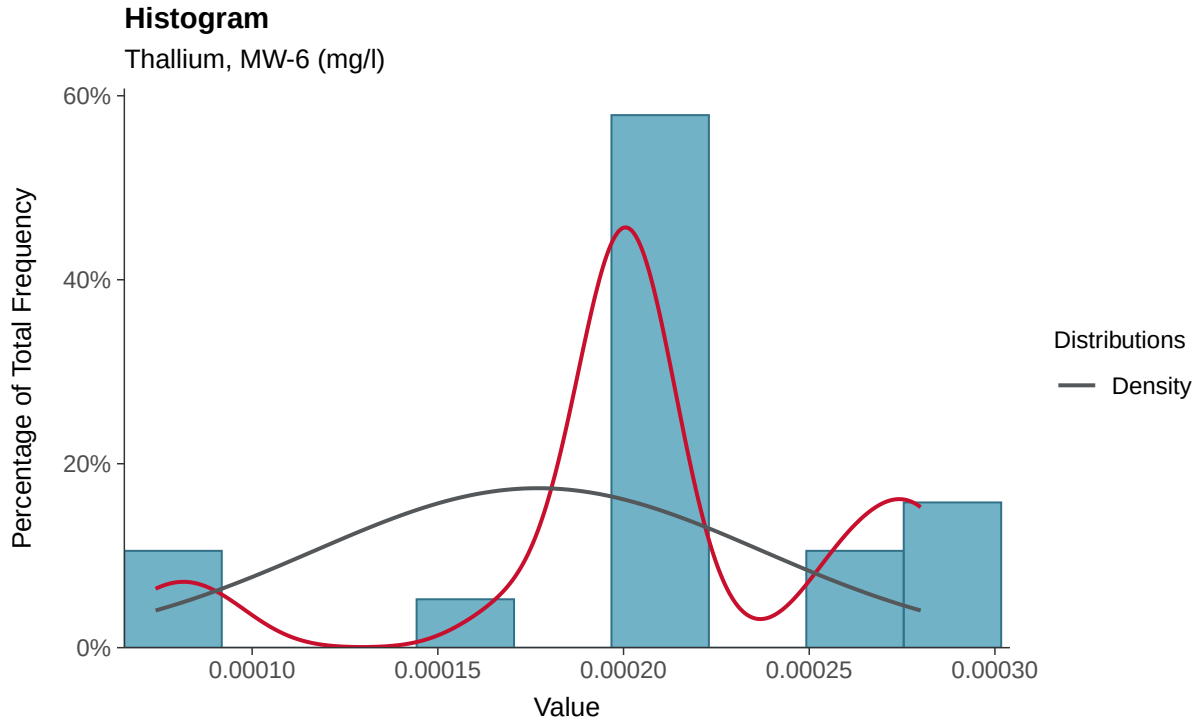
Selenium, MW-6 (mg/l)



Appendix IV: Thallium, MW-6

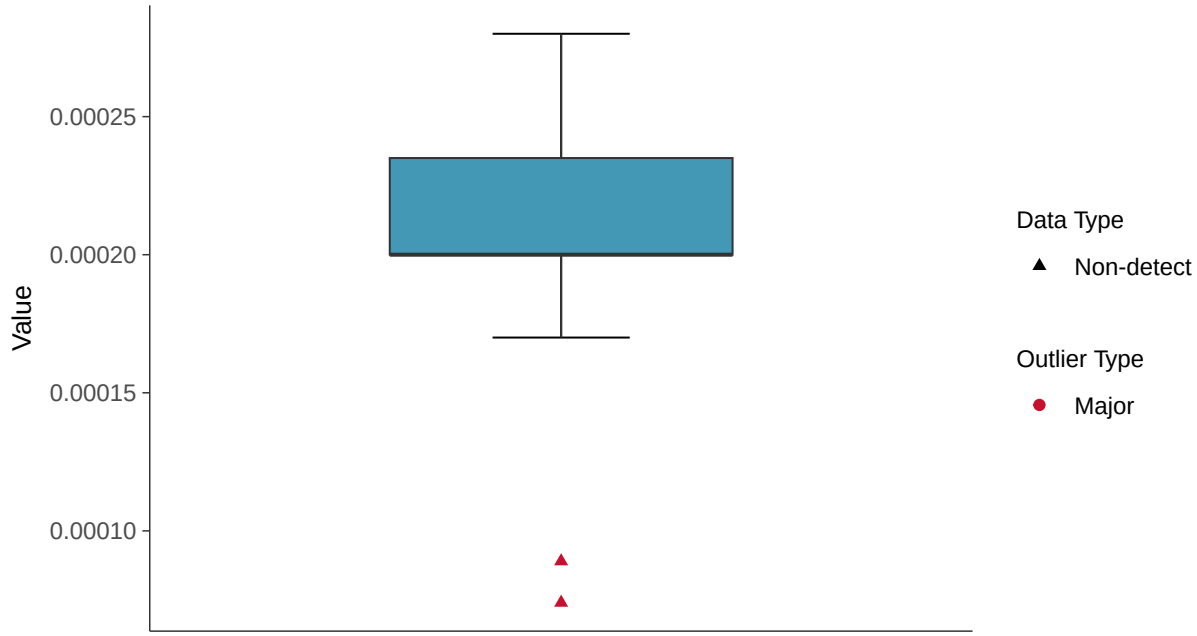
ID: 36_2_134





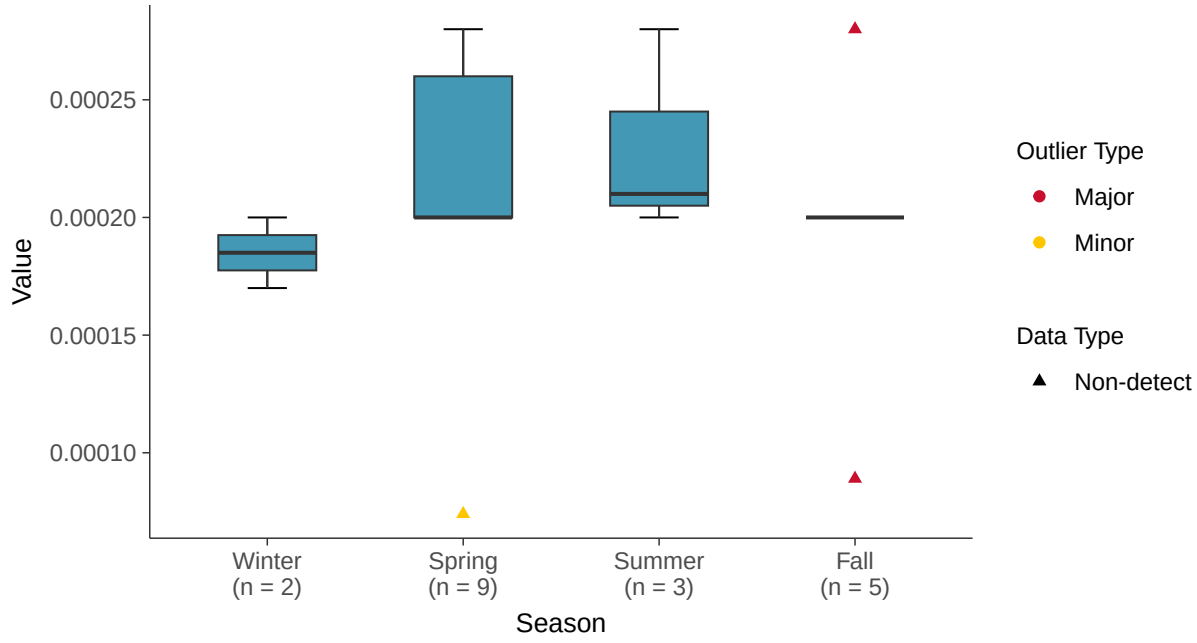
Boxplot

Thallium, MW-6 (mg/l)



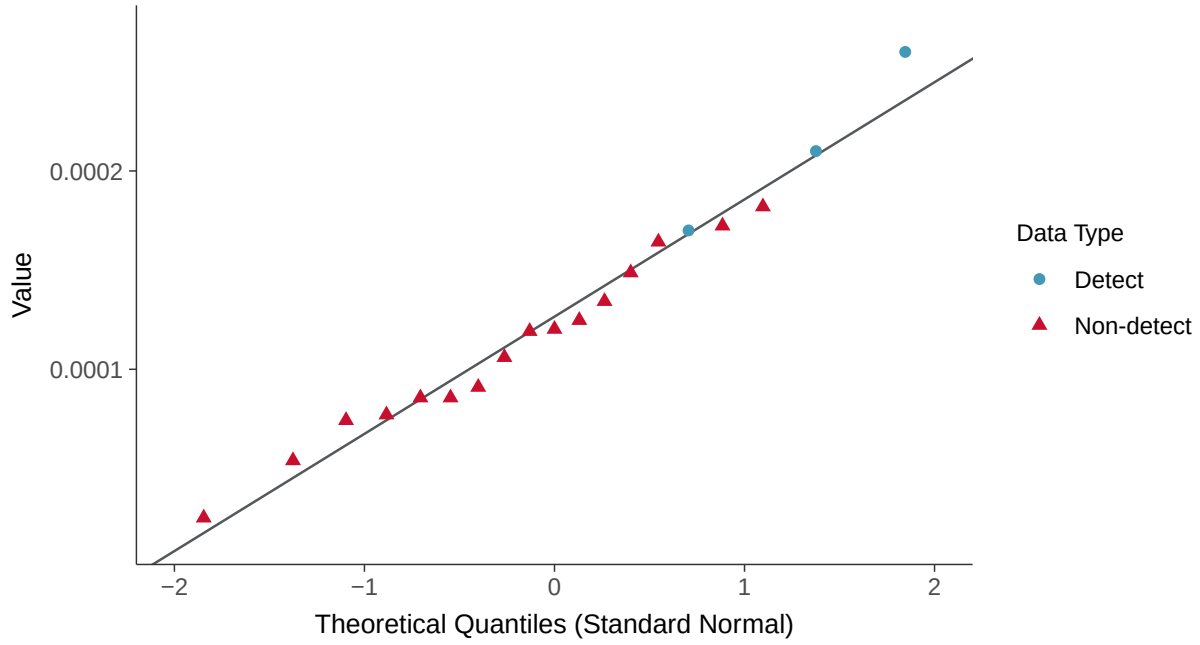
Boxplot by Season

Thallium, MW-6 (mg/l)



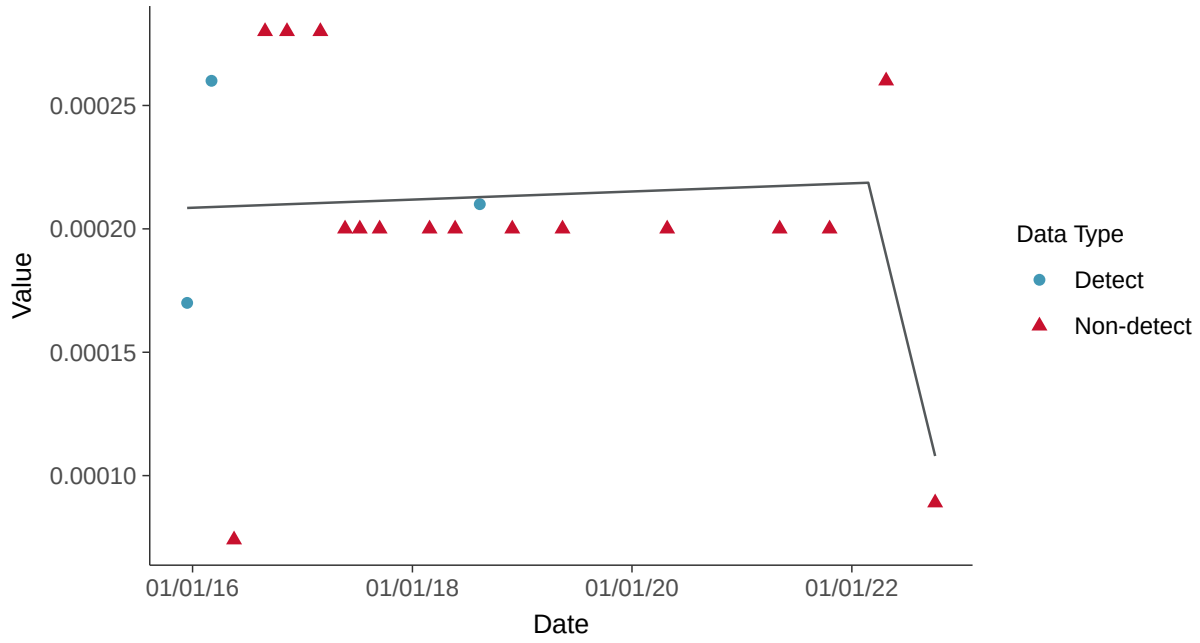
Normal Q-Q plot using ROS Imputed Estimates

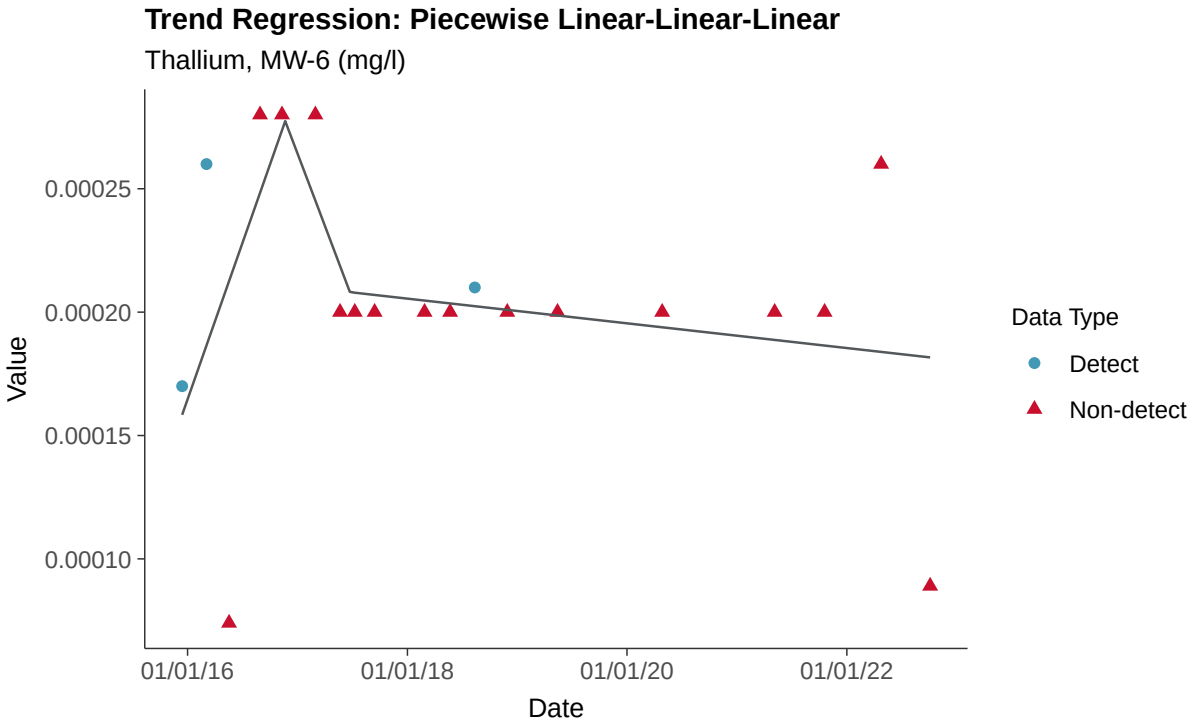
Thallium, MW-6 (mg/l)



Trend Regression: Piecewise Linear-Linear

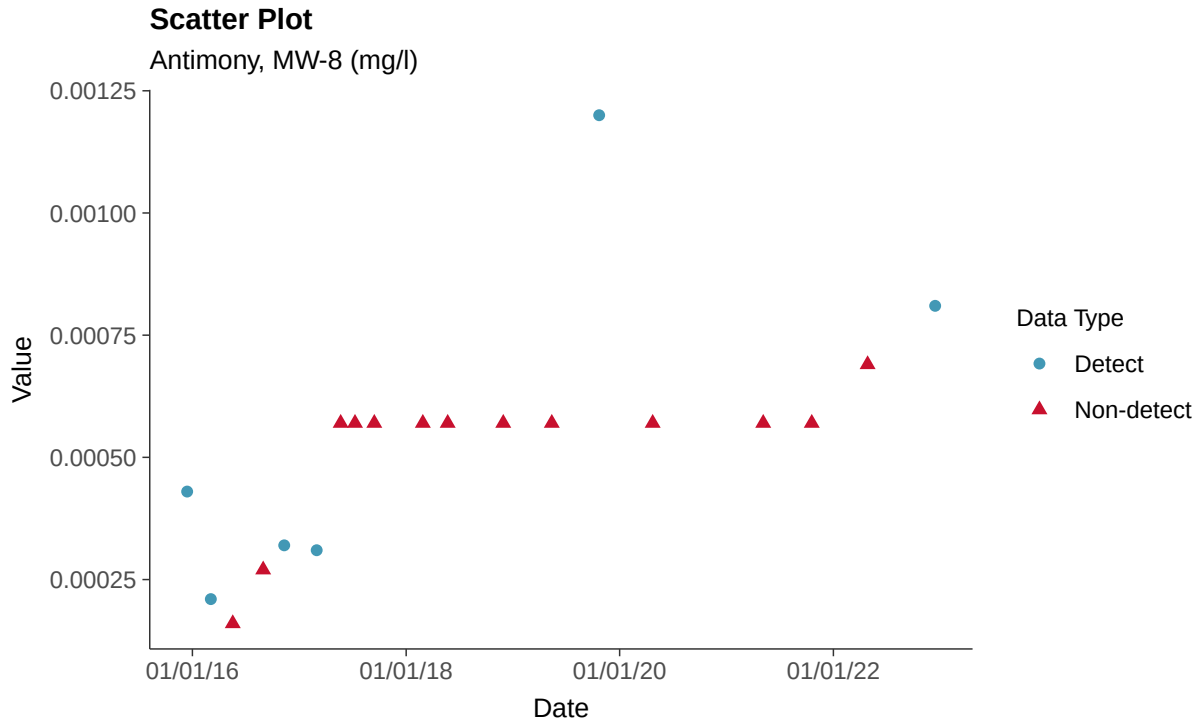
Thallium, MW-6 (mg/l)

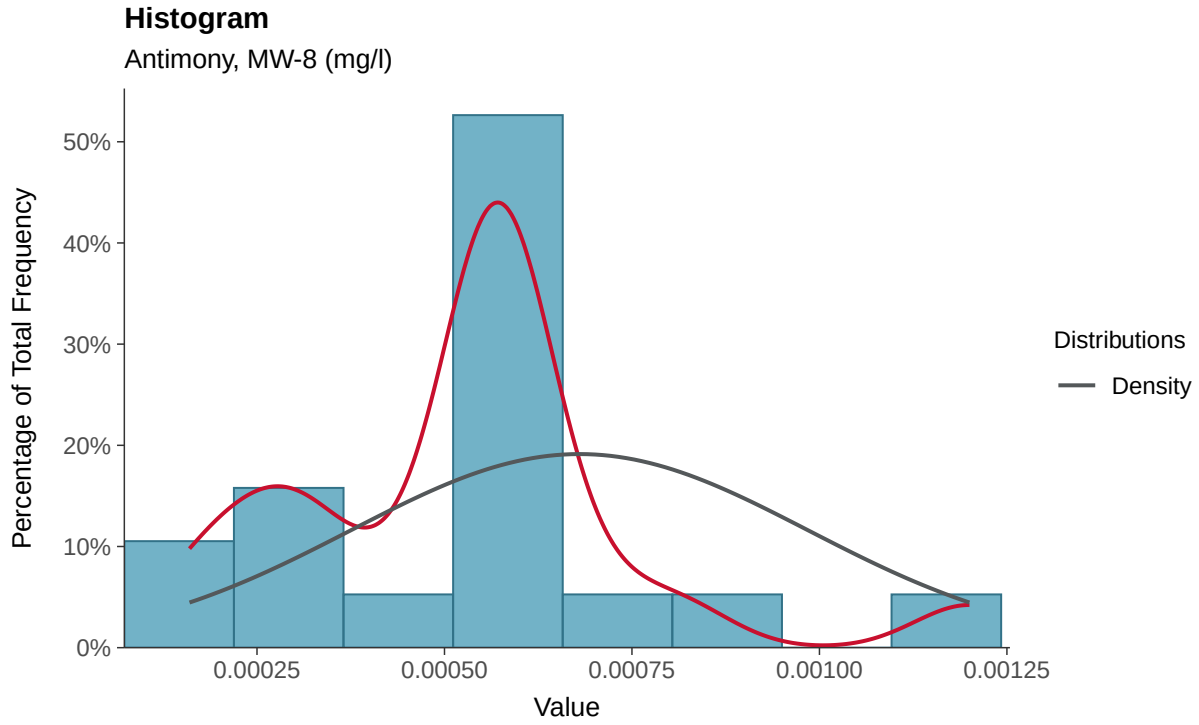



Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-6 (mg/l)
Value
0.00025
0.00020
0.00015
0.00010
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-8

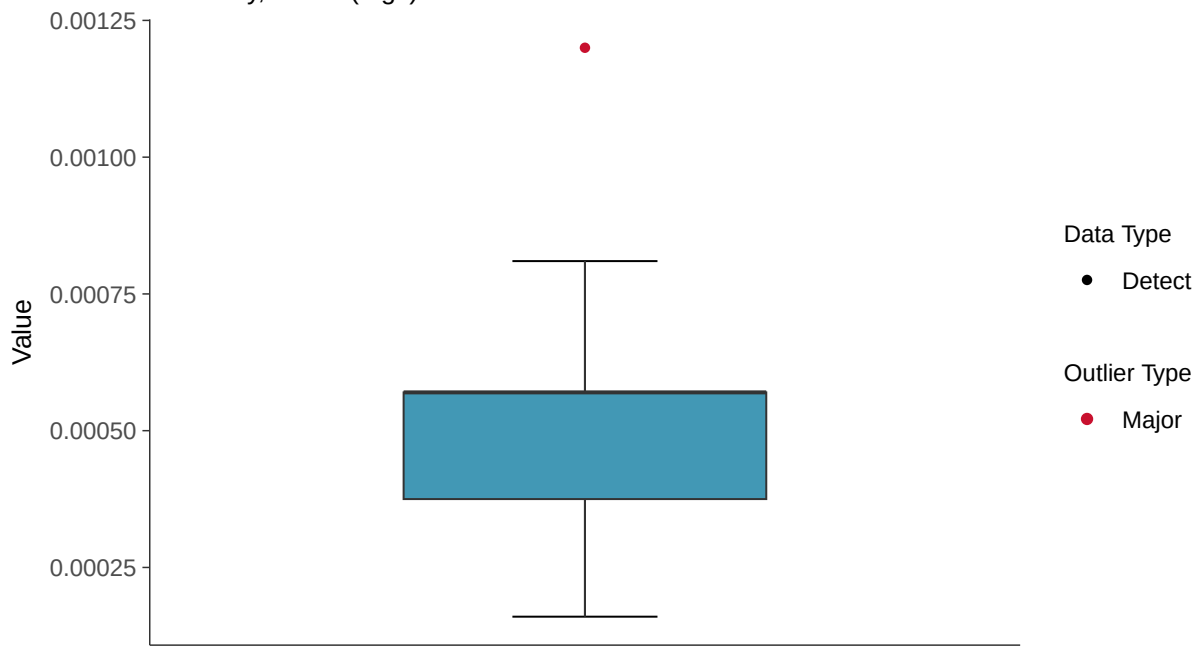
ID: 37_2_104





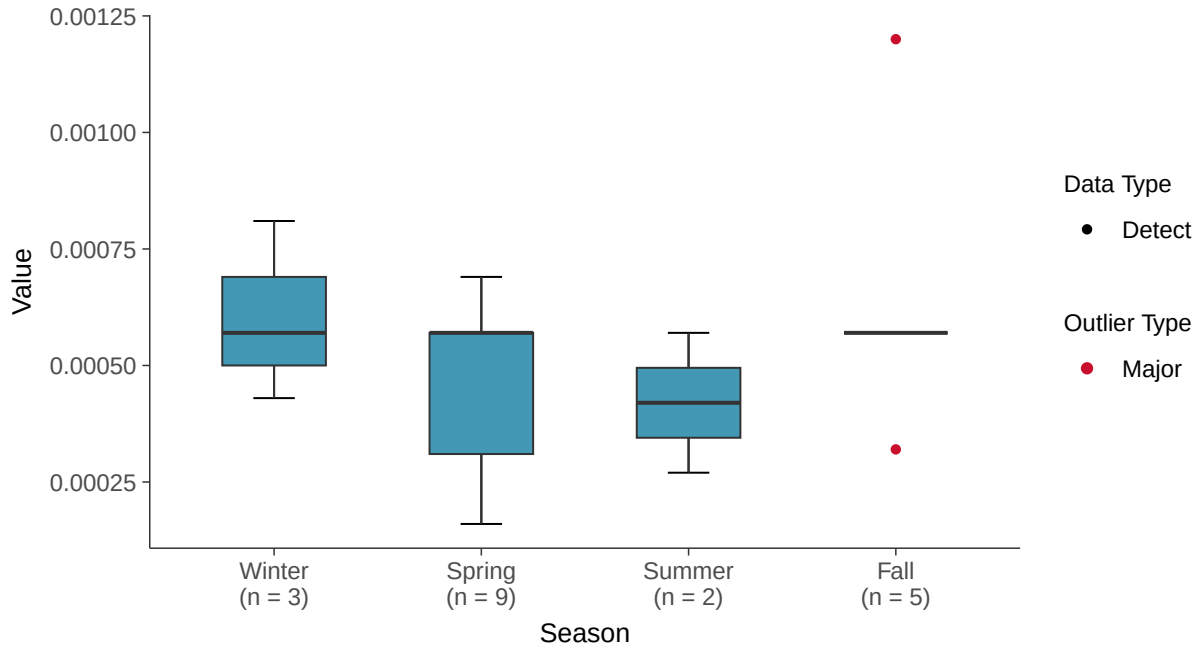
Boxplot

Antimony, MW-8 (mg/l)



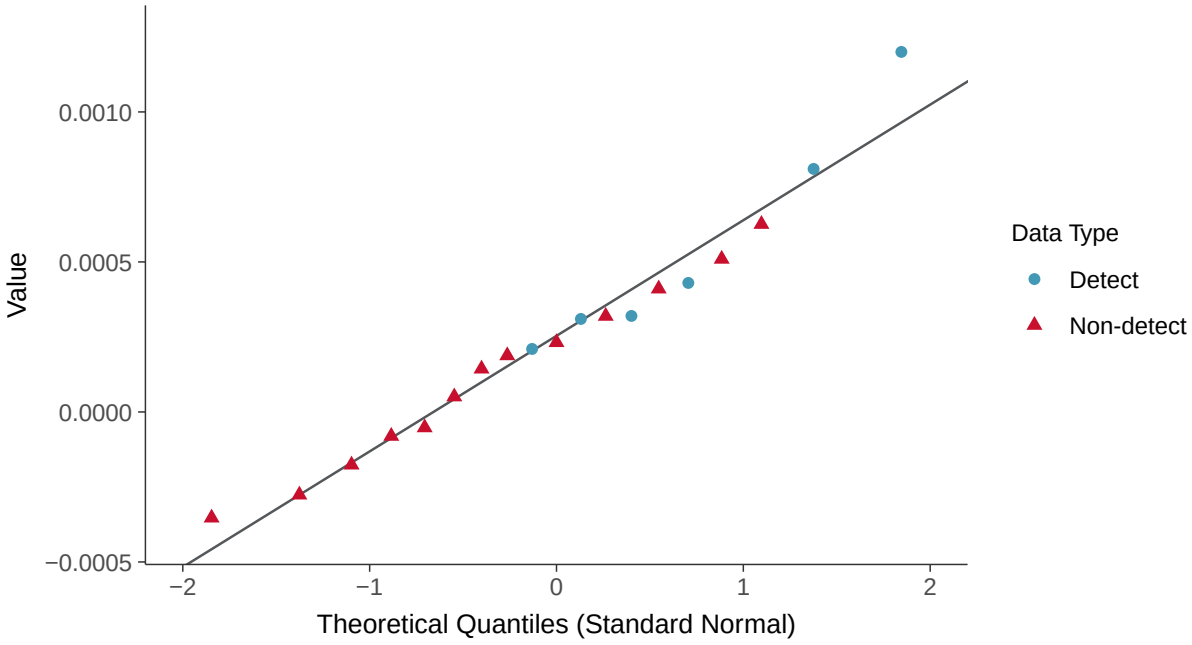
Boxplot by Season

Antimony, MW-8 (mg/l)



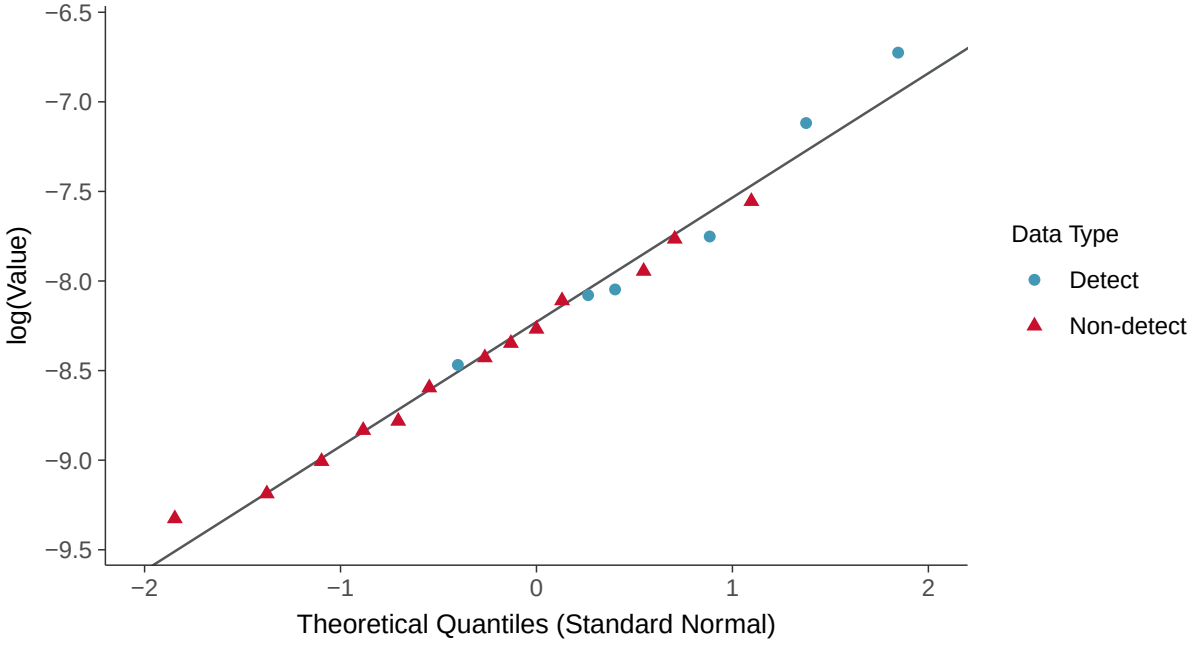
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



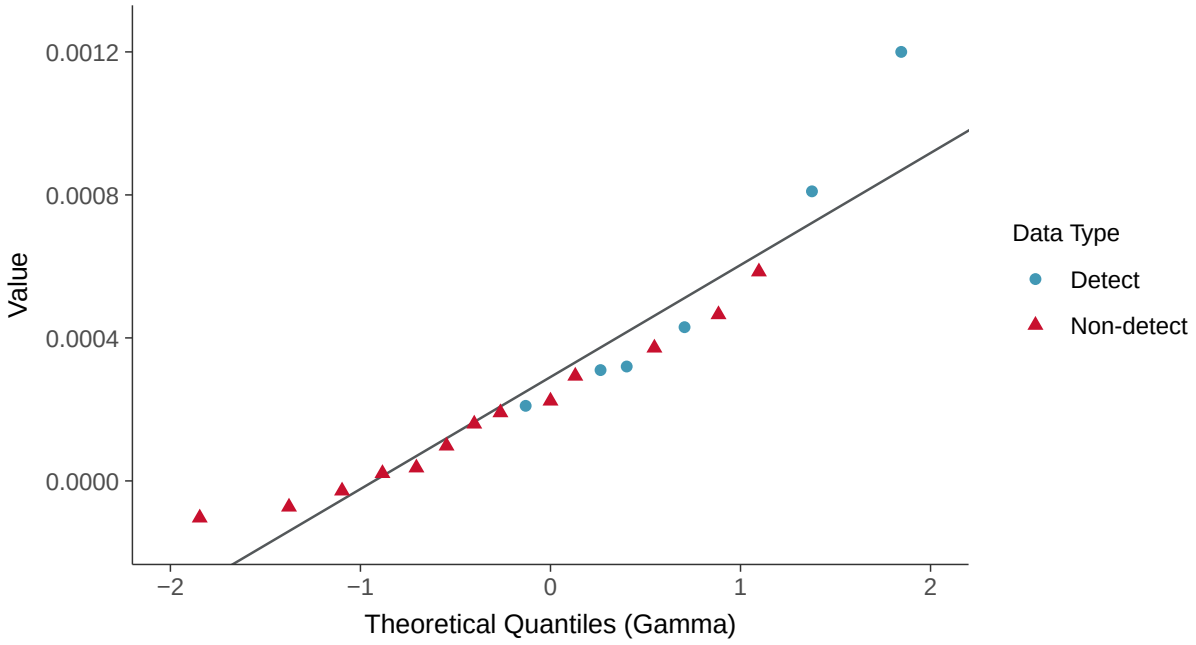
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



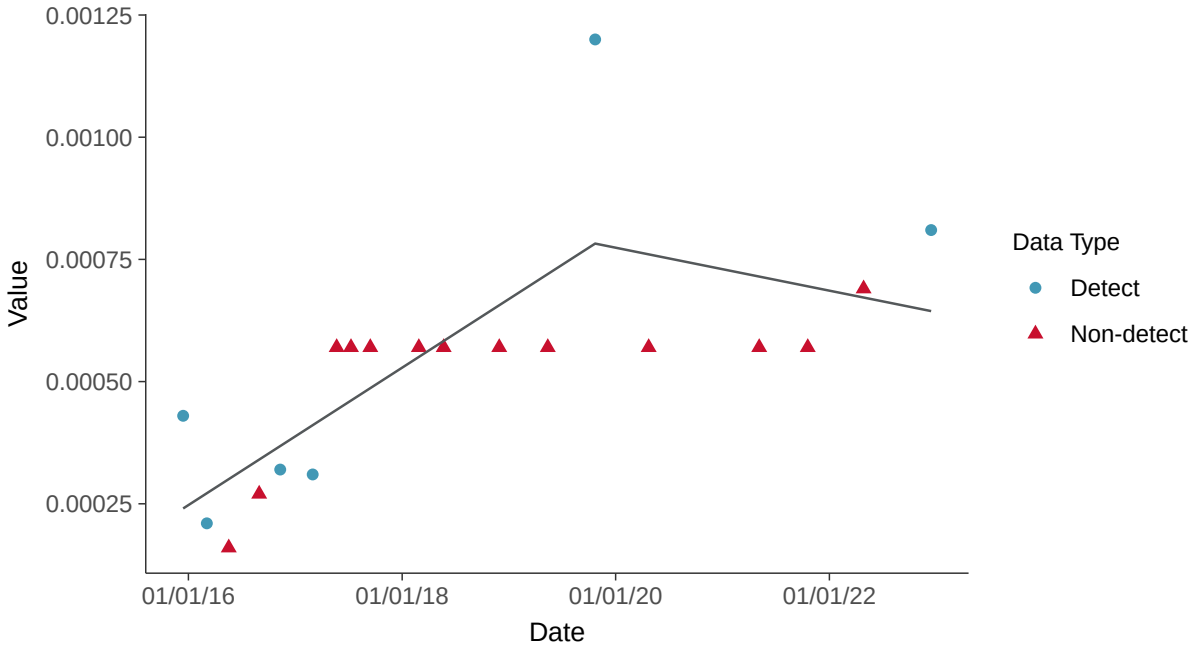
Gamma Q-Q plot using ROS Imputed Estimates

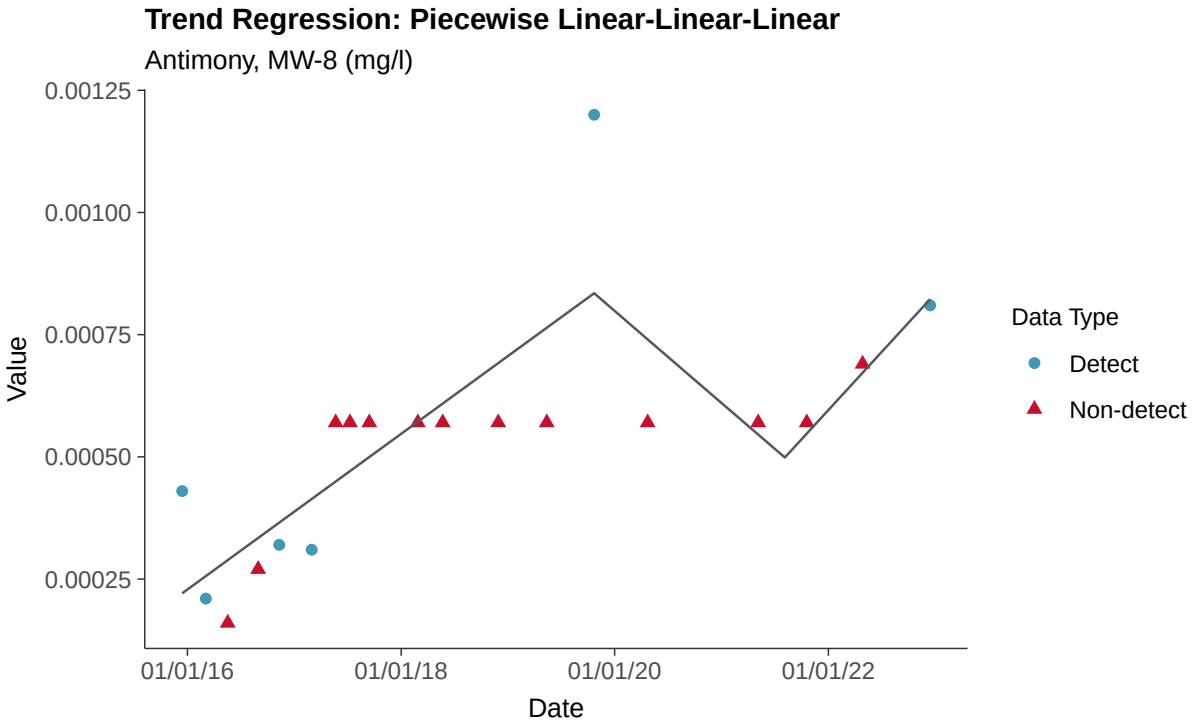
Antimony, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

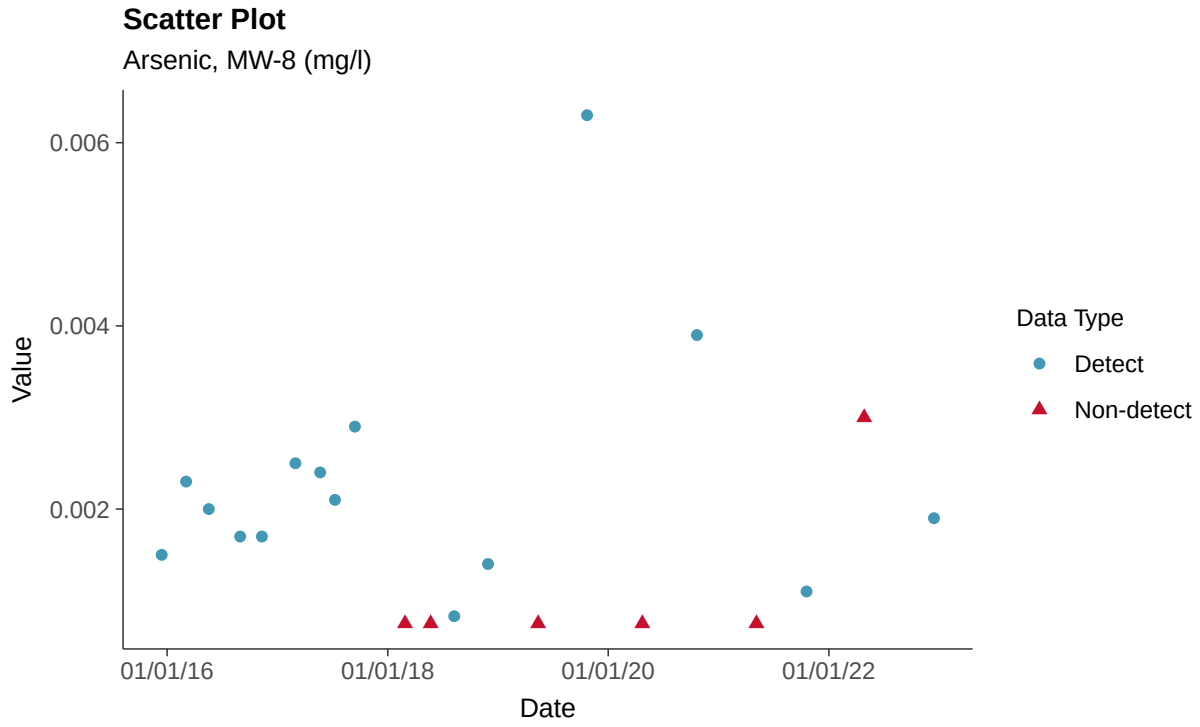
Antimony, MW-8 (mg/l)

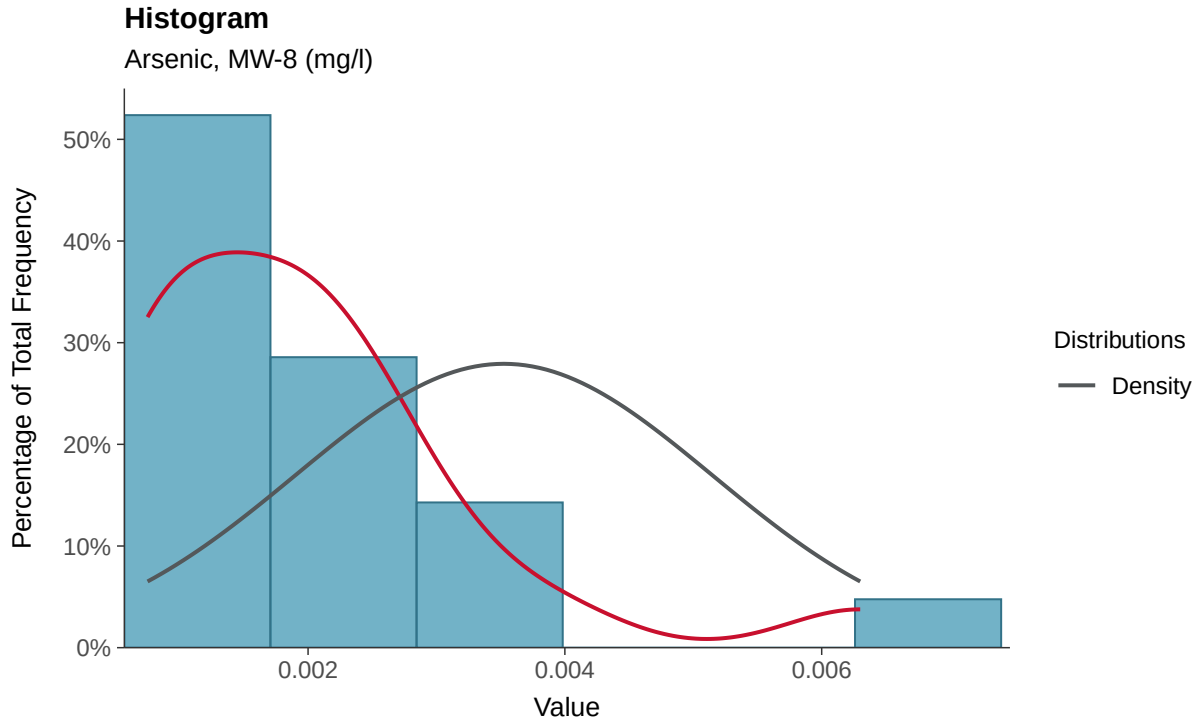



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-8 (mg/l)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-8

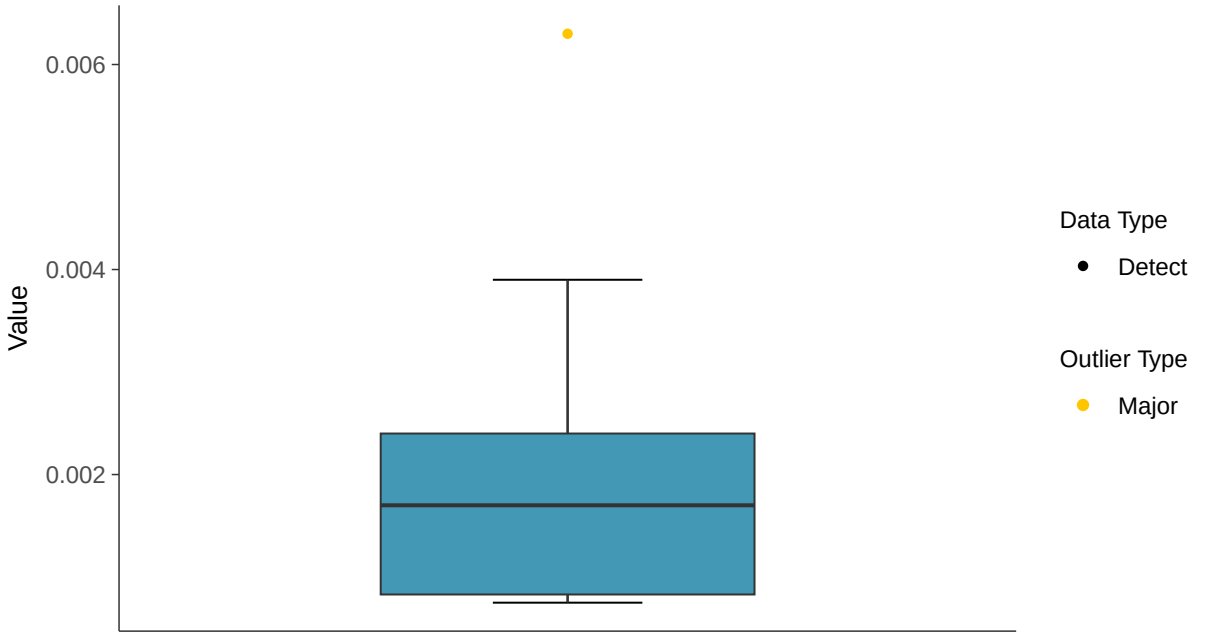
ID: 37_2_105





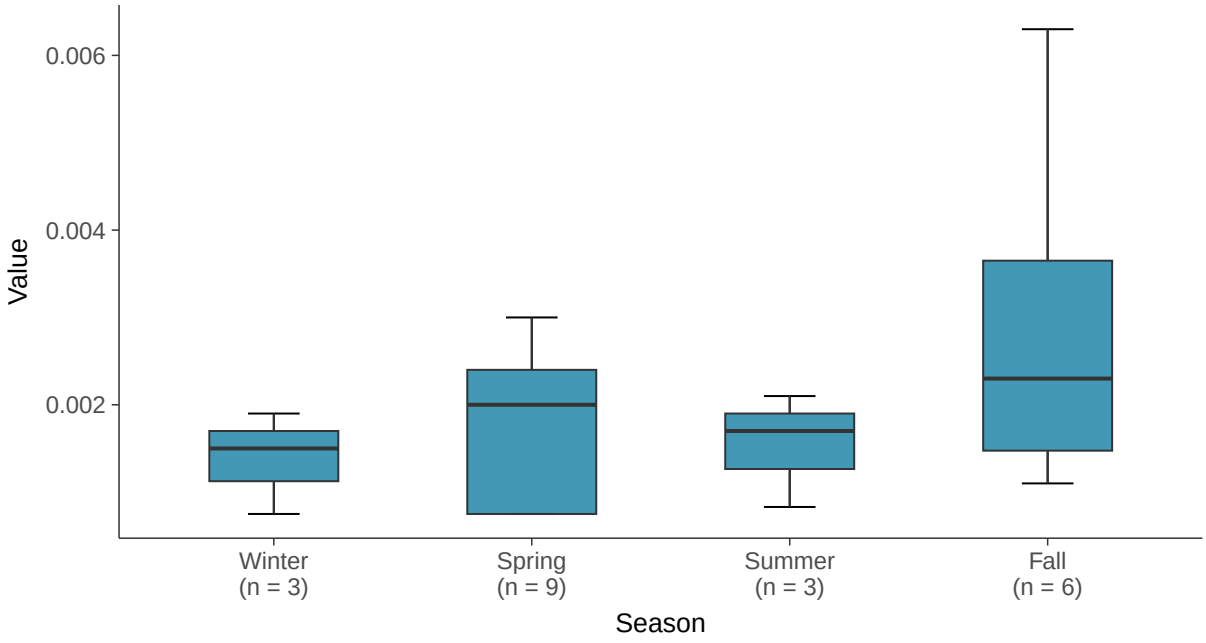
Boxplot

Arsenic, MW-8 (mg/l)



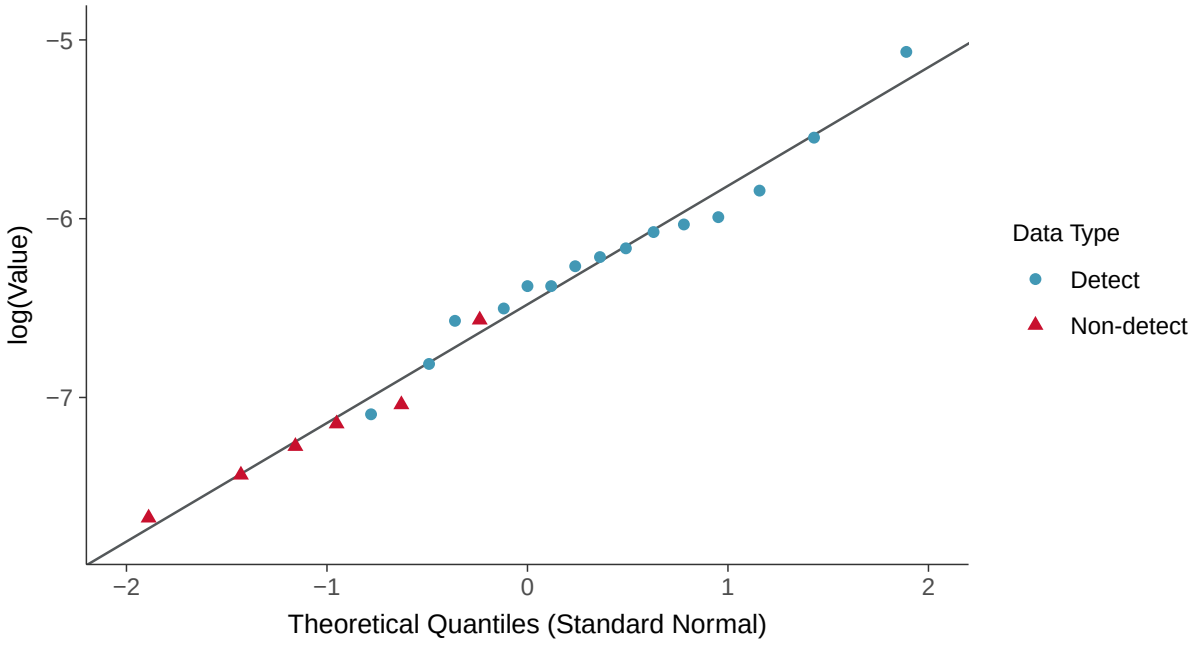
Boxplot by Season

Arsenic, MW-8 (mg/l)



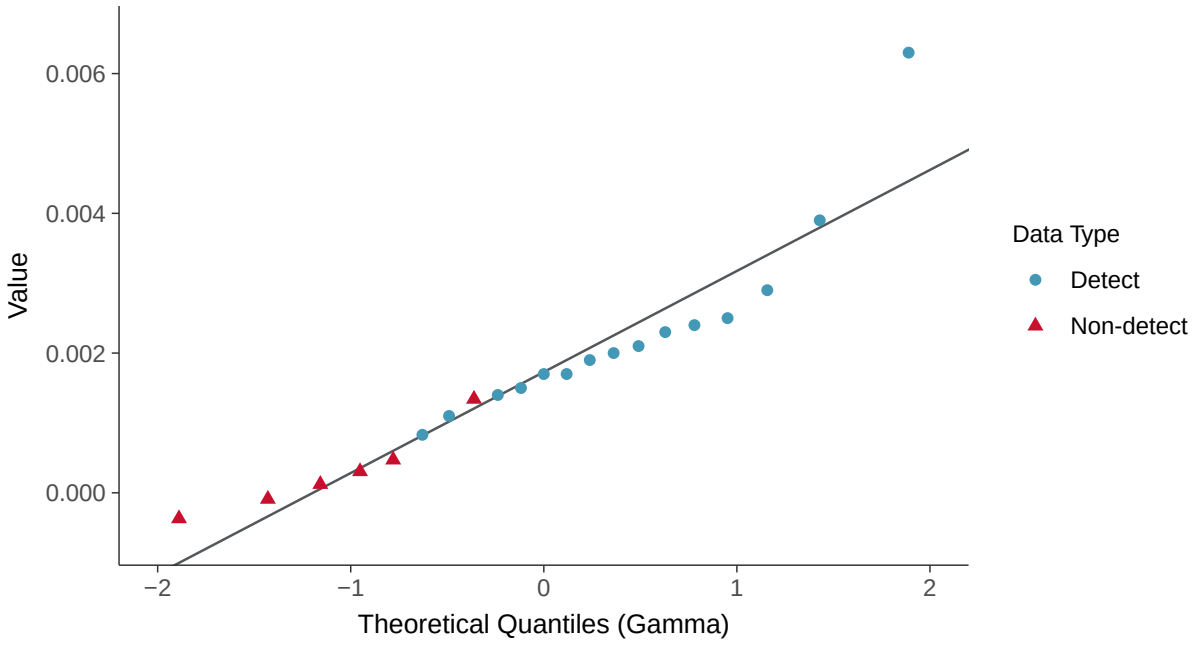
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-8 (mg/l)



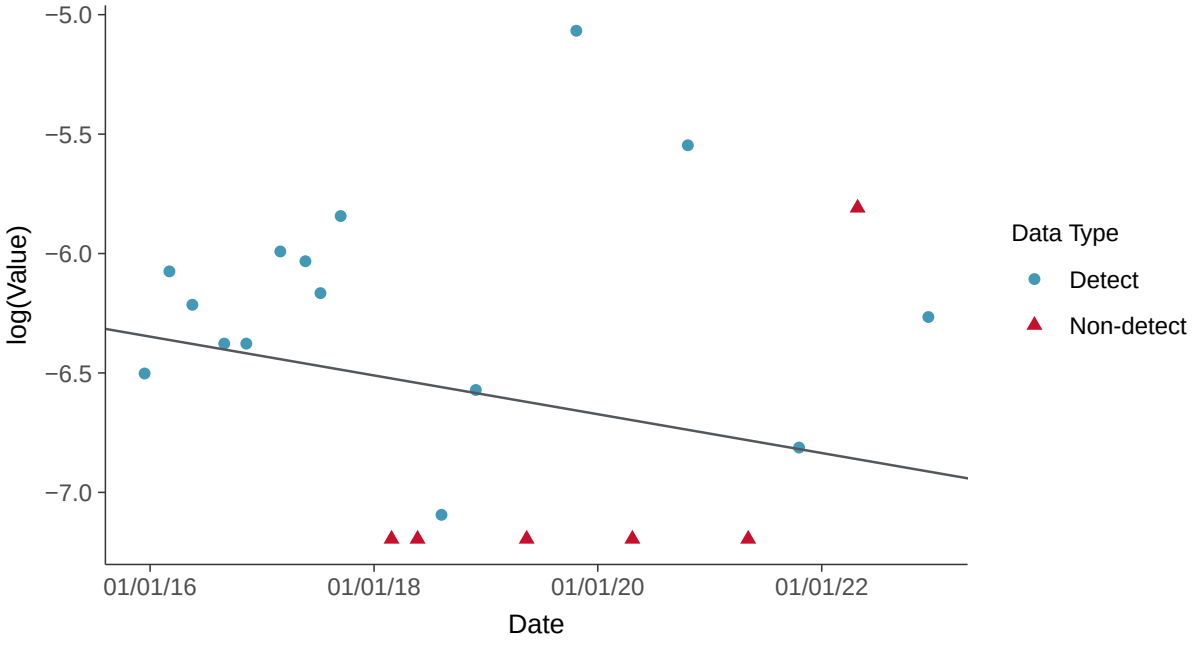
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-8 (mg/l)



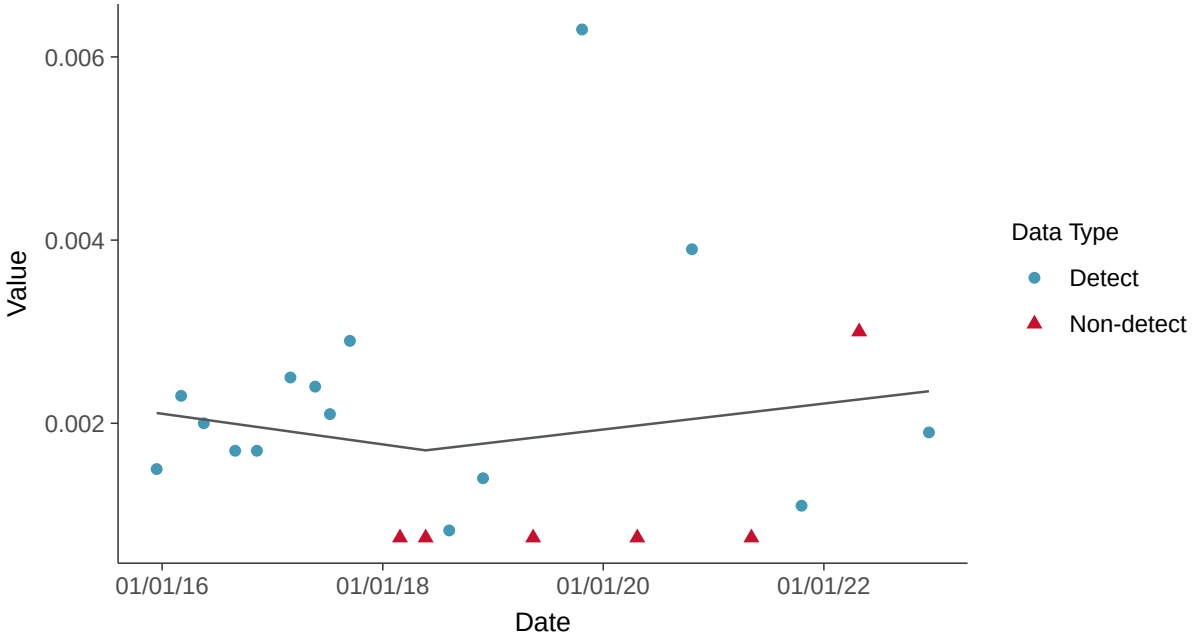
Trend Regression: Lognormal MLE

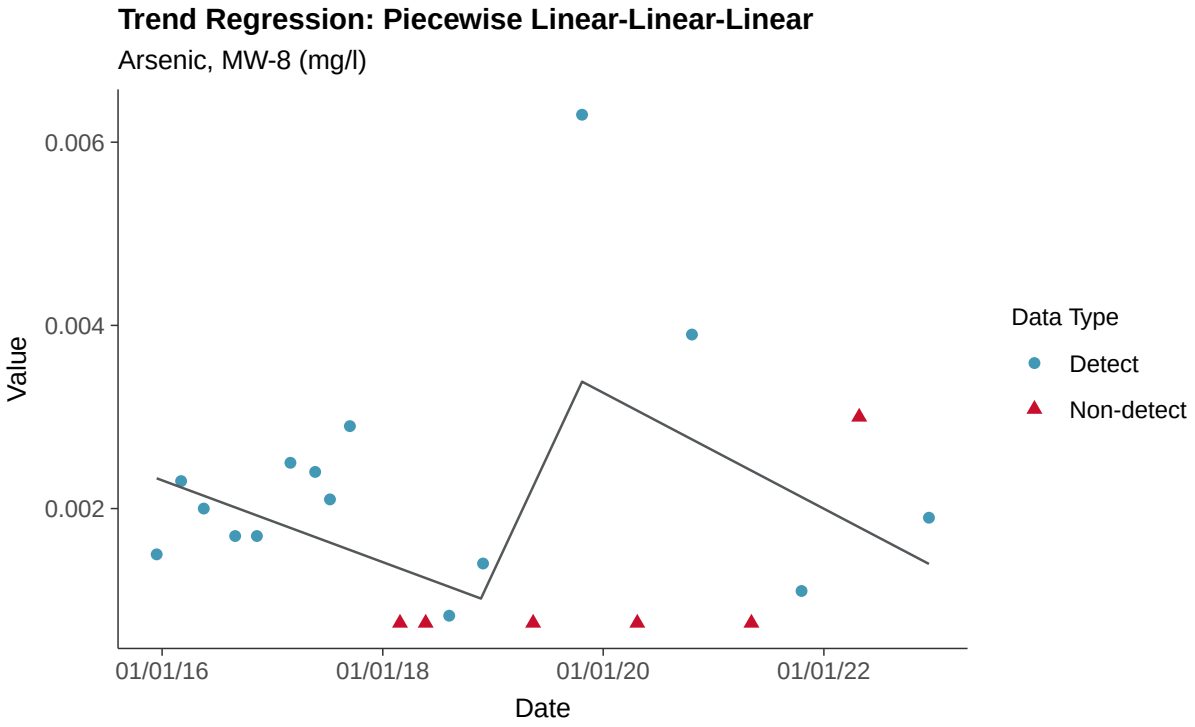
Arsenic, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

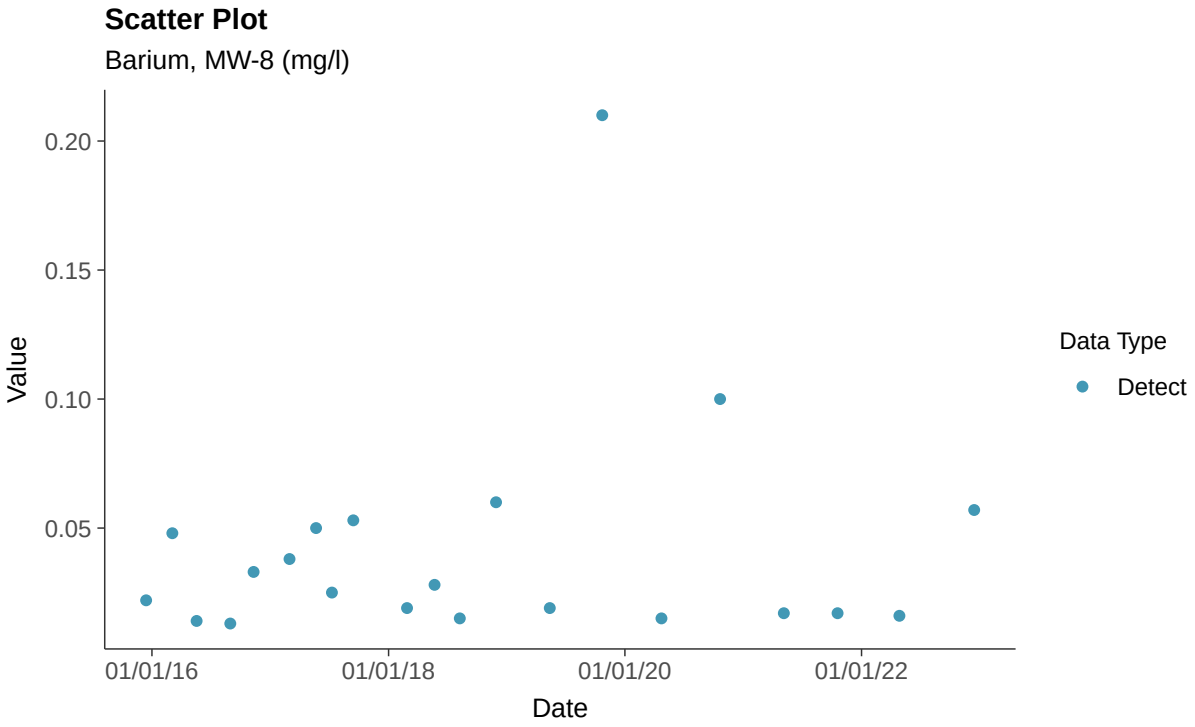
Arsenic, MW-8 (mg/l)

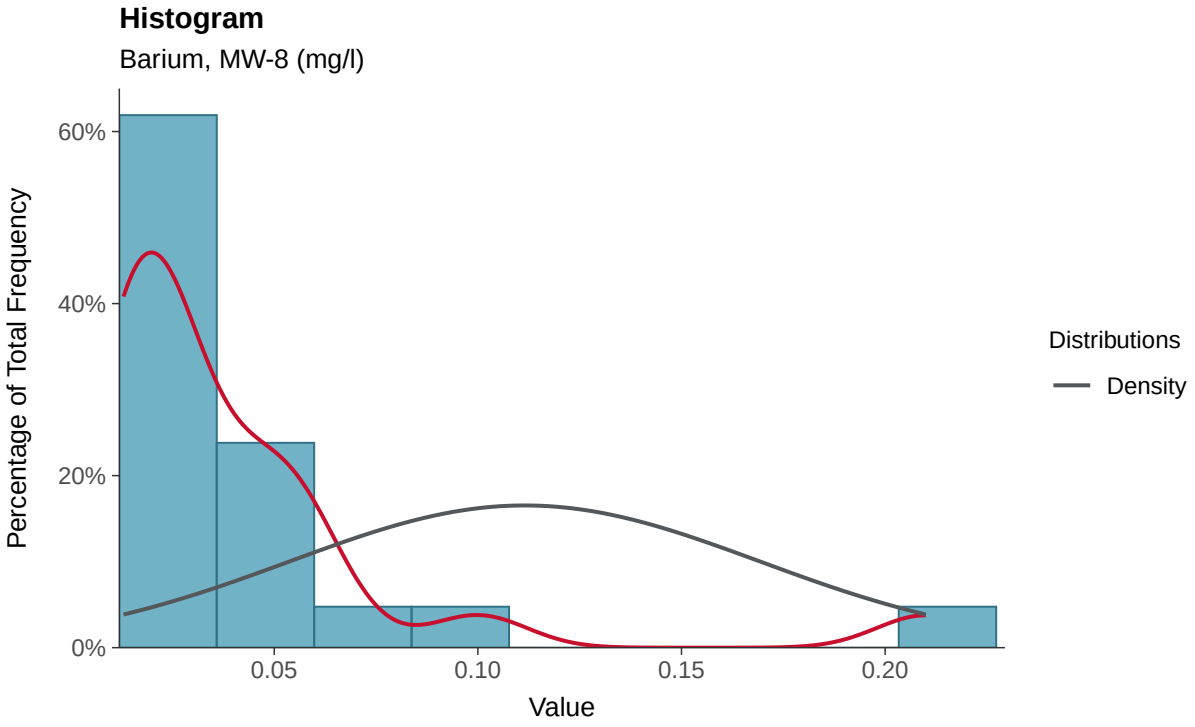



Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-8 (mg/l)
0.006
0.004
0.002
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-8

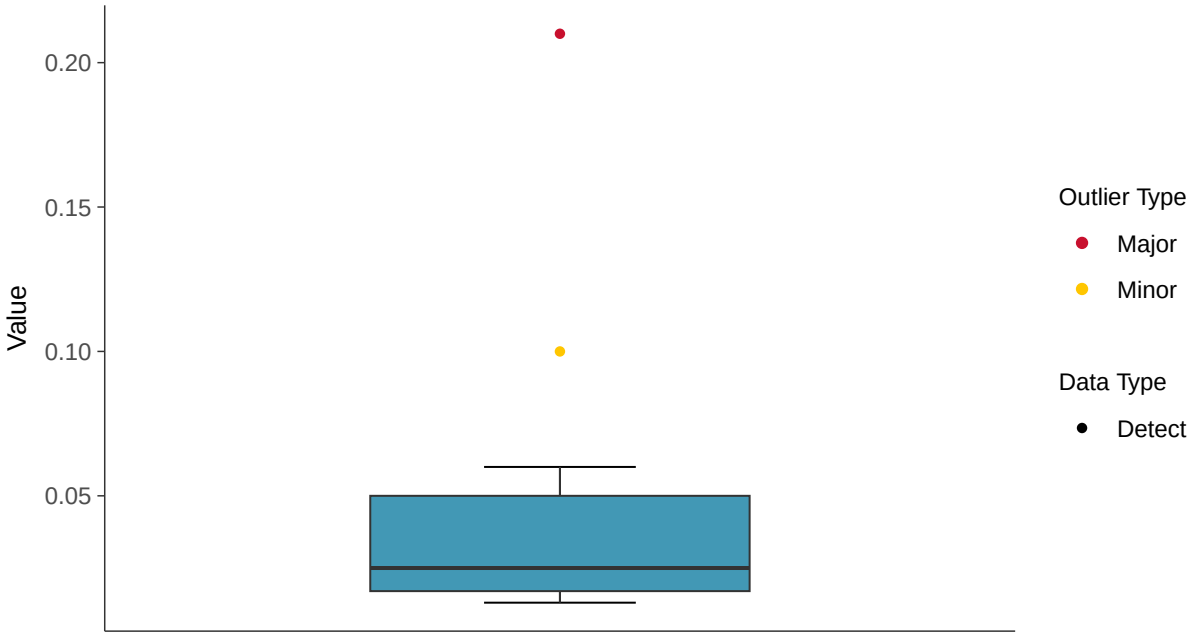
ID: 37_2_106





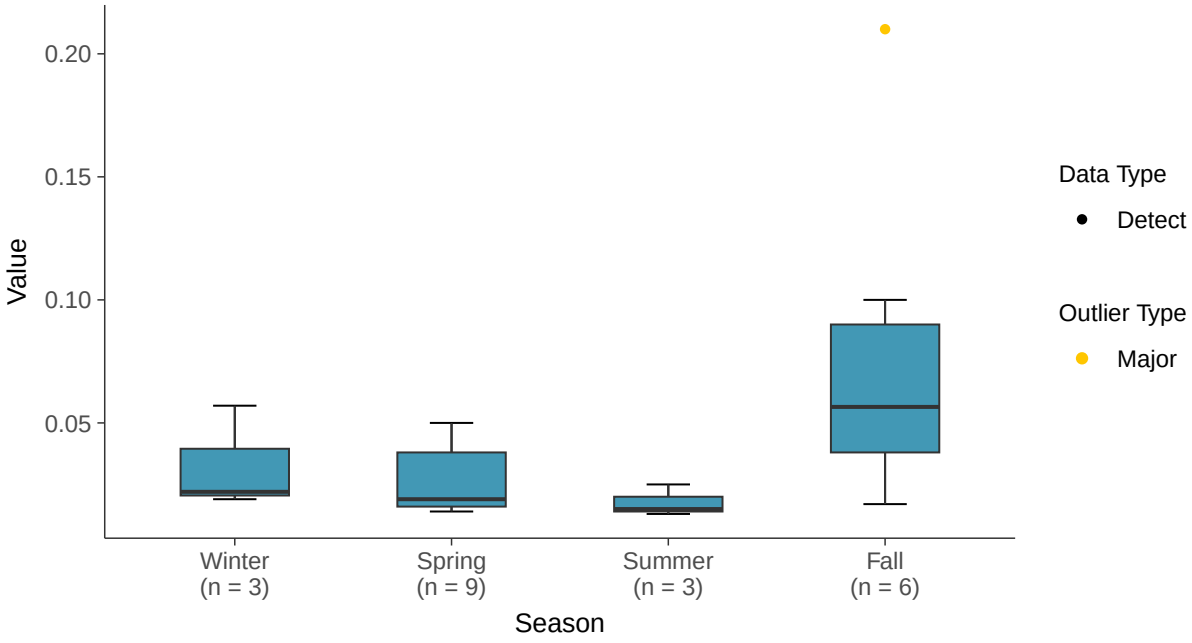
Boxplot

Barium, MW-8 (mg/l)



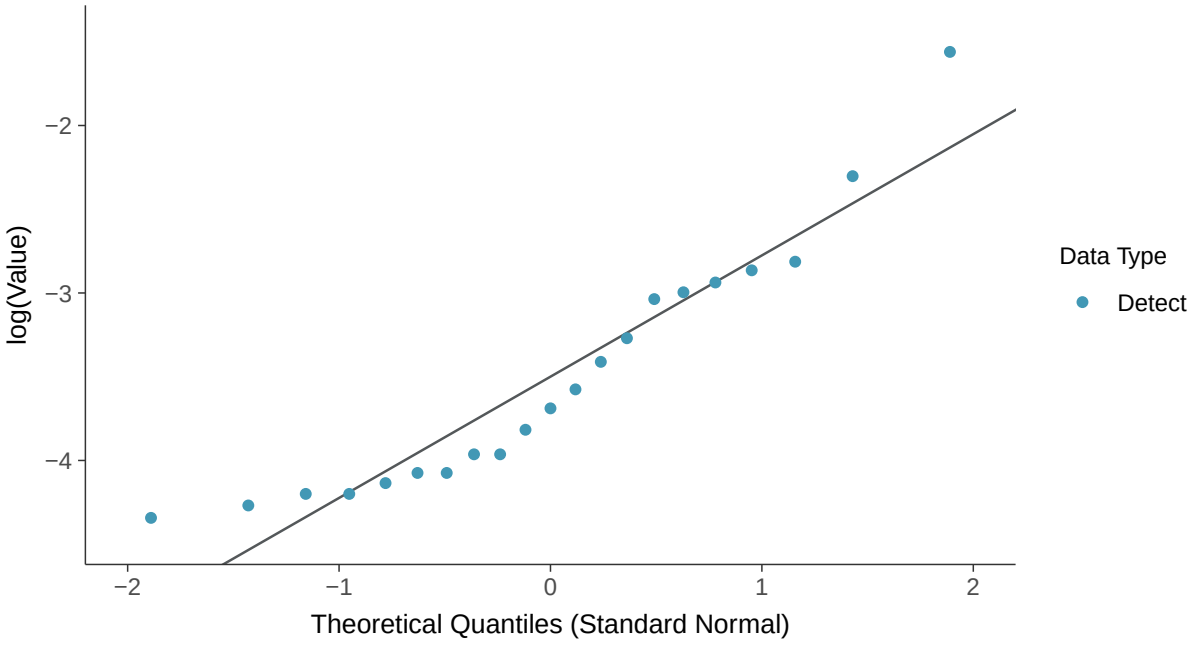
Boxplot by Season

Barium, MW-8 (mg/l)



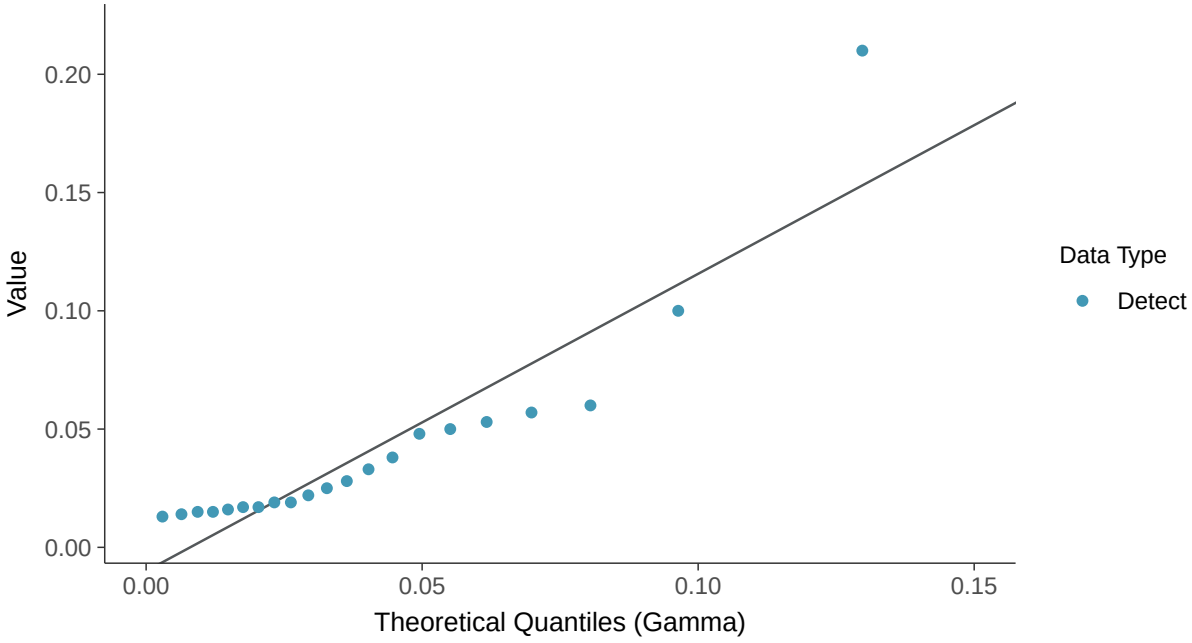
Lognormal Q-Q plot

Barium, MW-8 (mg/l)



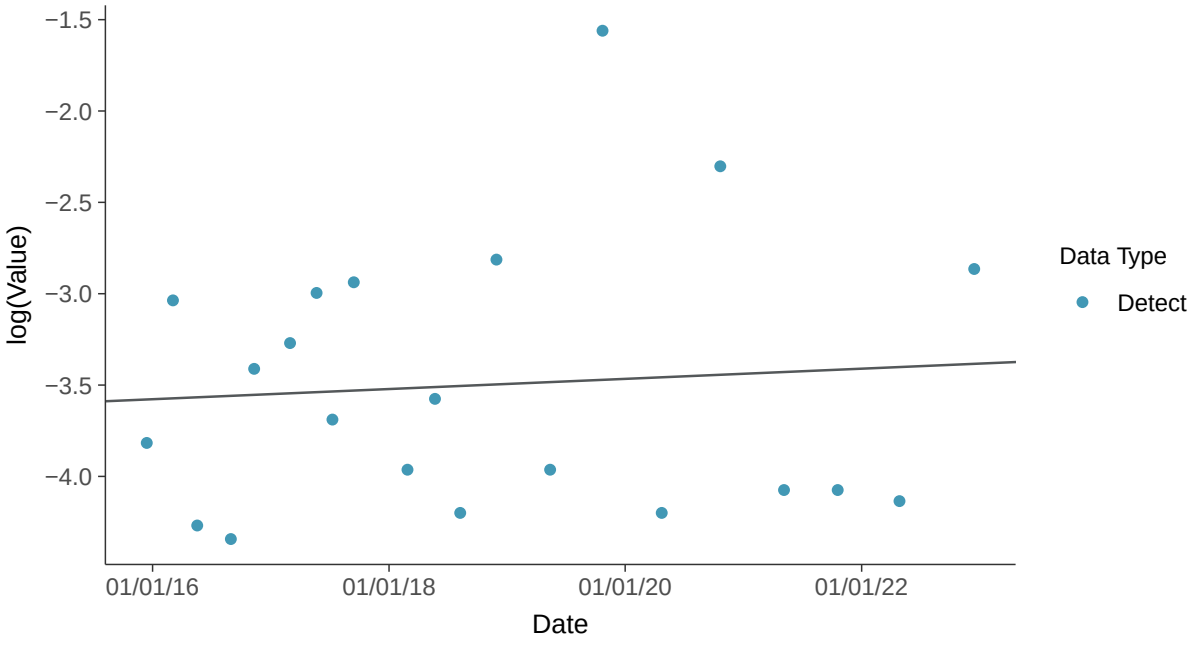
Gamma Q-Q plot

Barium, MW-8 (mg/l)



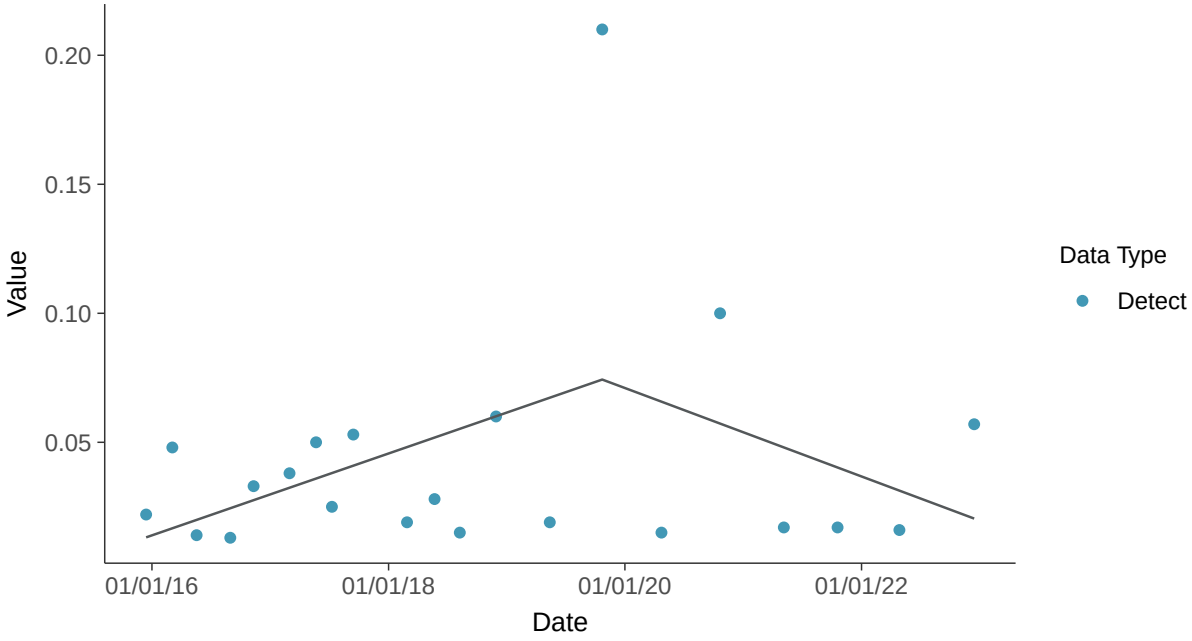
Trend Regression: Lognormal MLE

Barium, MW-8 (mg/l)



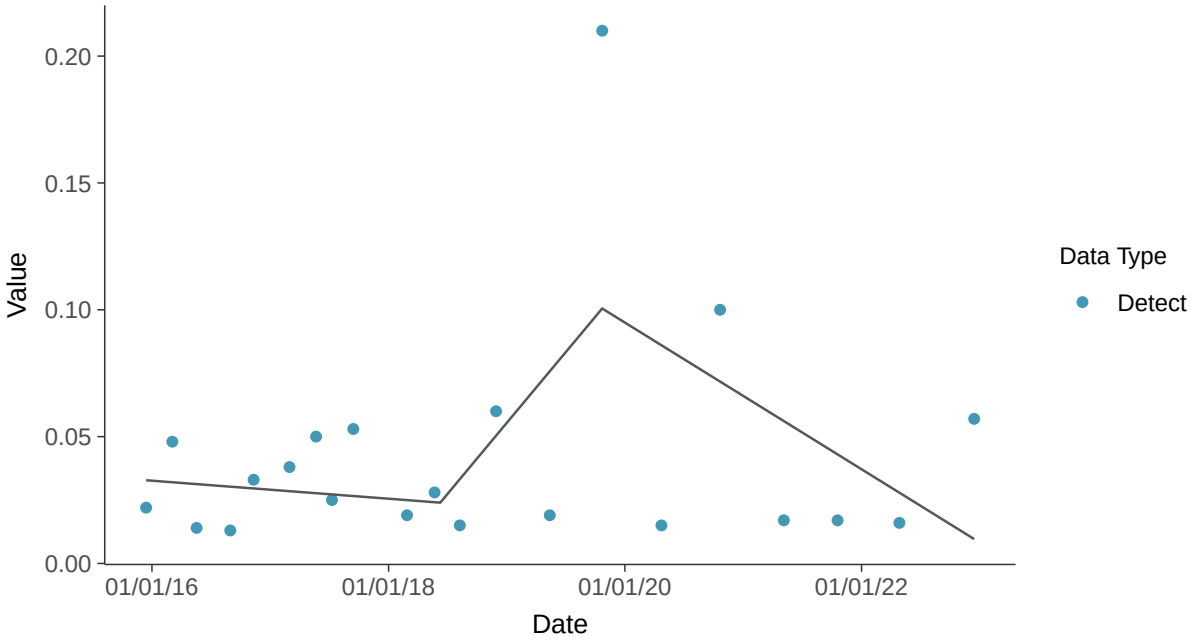
Trend Regression: Piecewise Linear-Linear

Barium, MW-8 (mg/l)



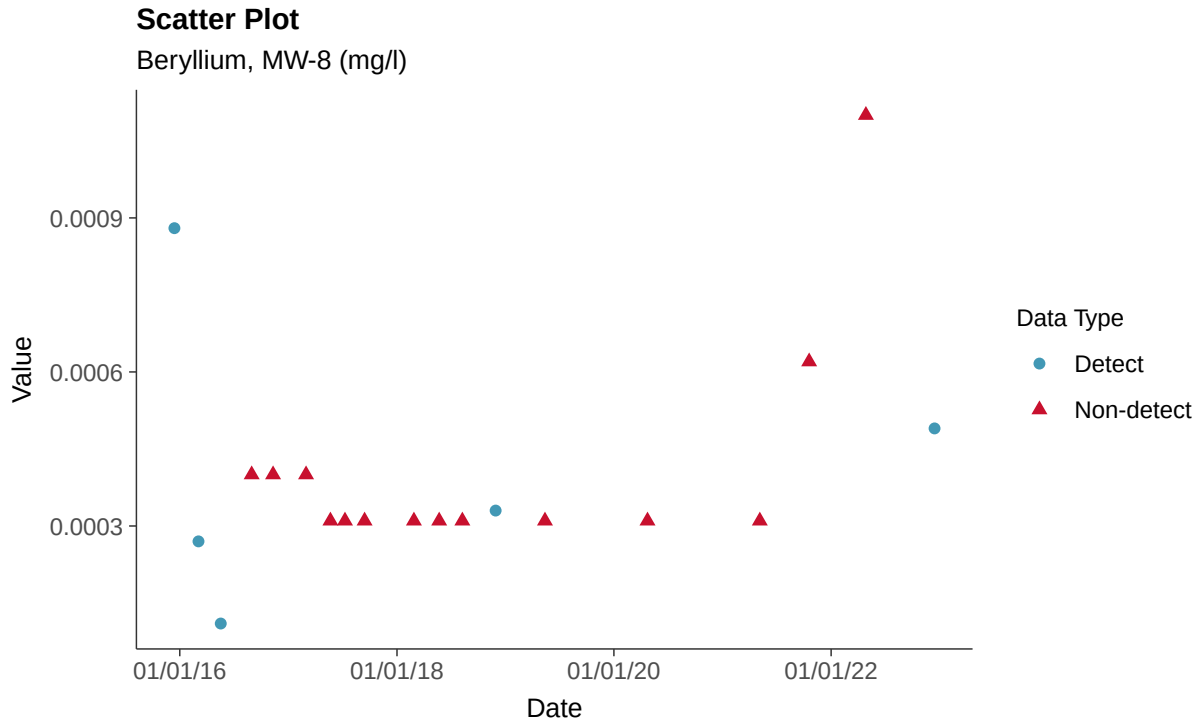
Trend Regression: Piecewise Linear-Linear-Linear

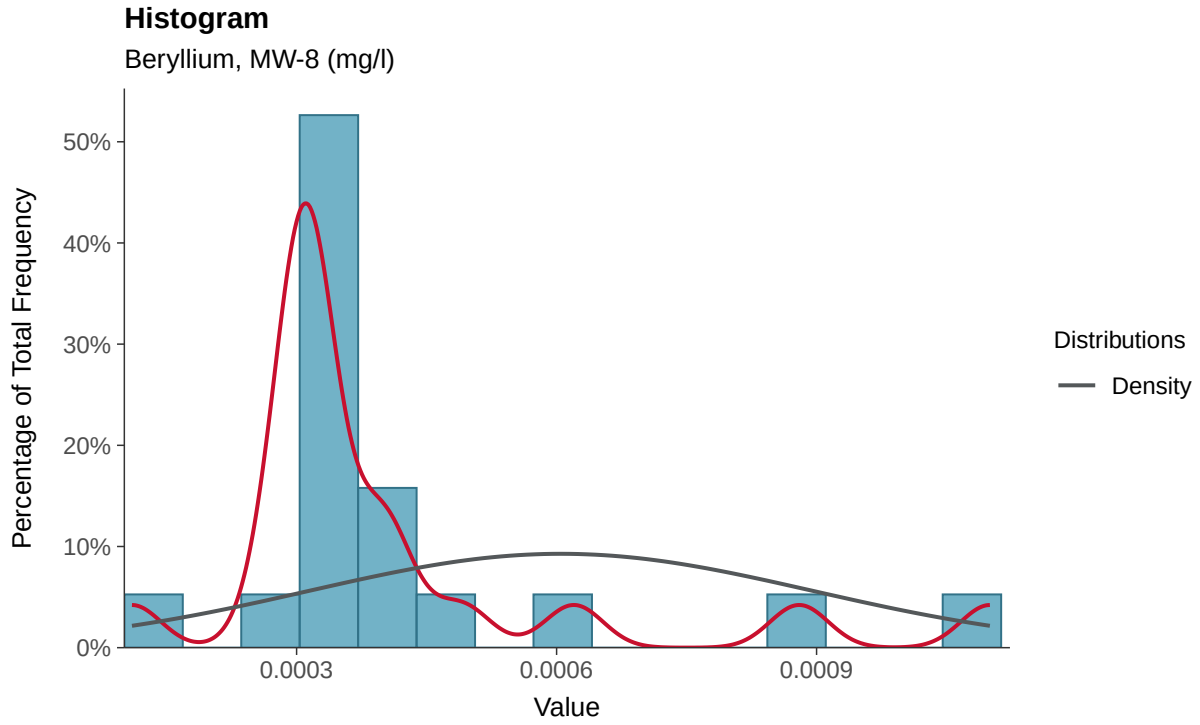
Barium, MW-8 (mg/l)



Appendix IV: Beryllium, MW-8

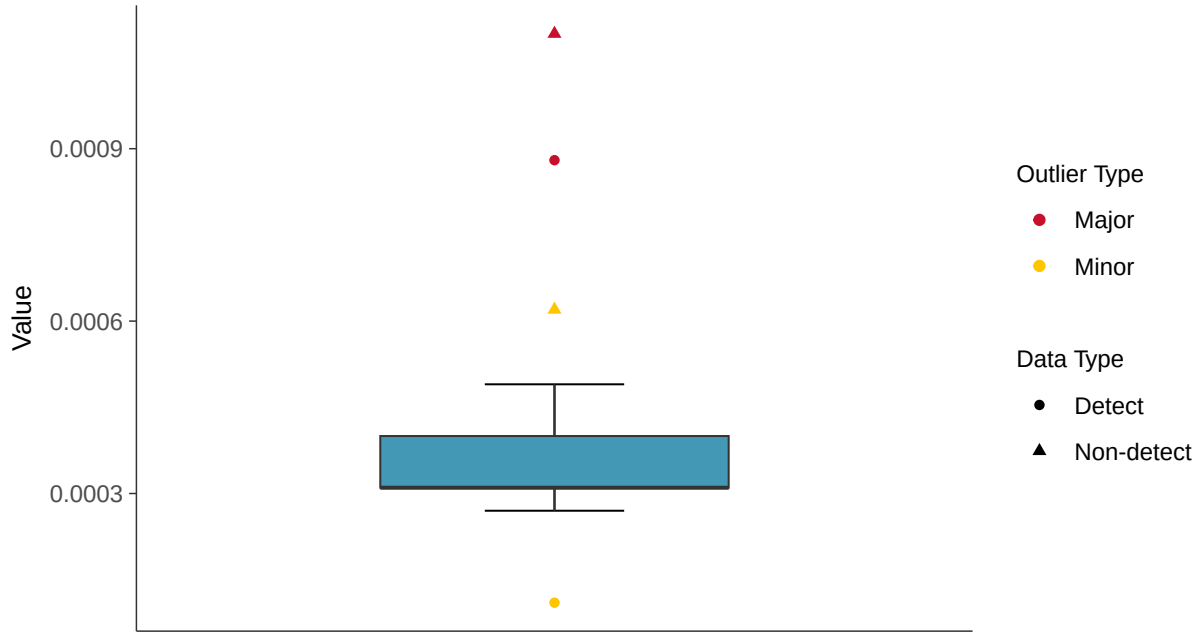
ID: 37_2_107





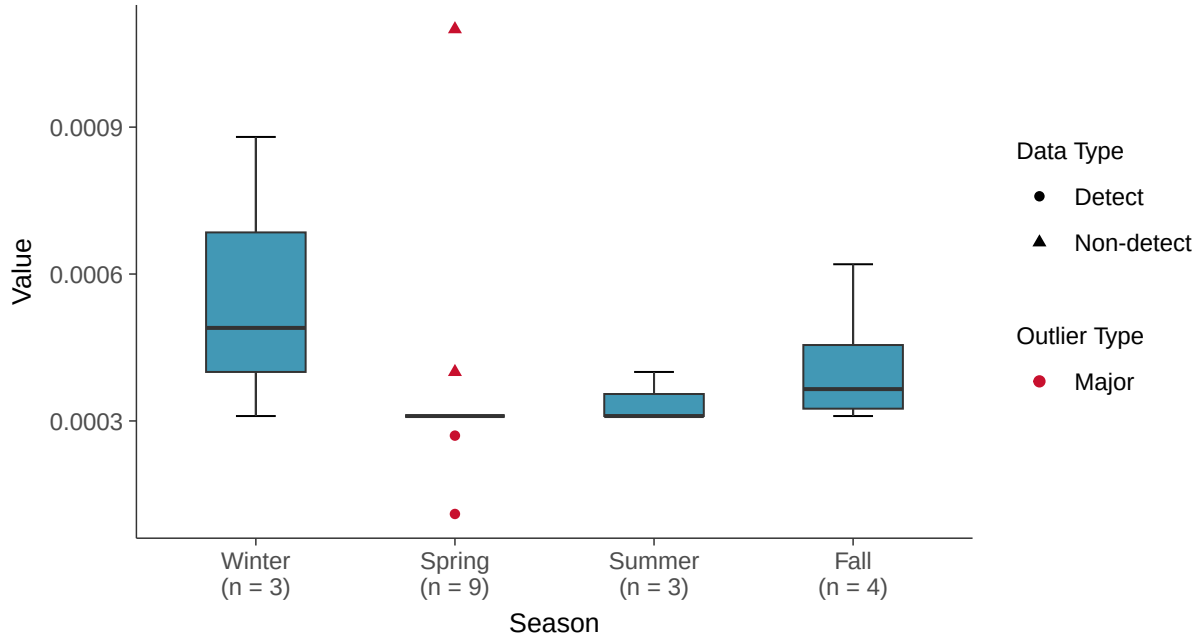
Boxplot

Beryllium, MW-8 (mg/l)



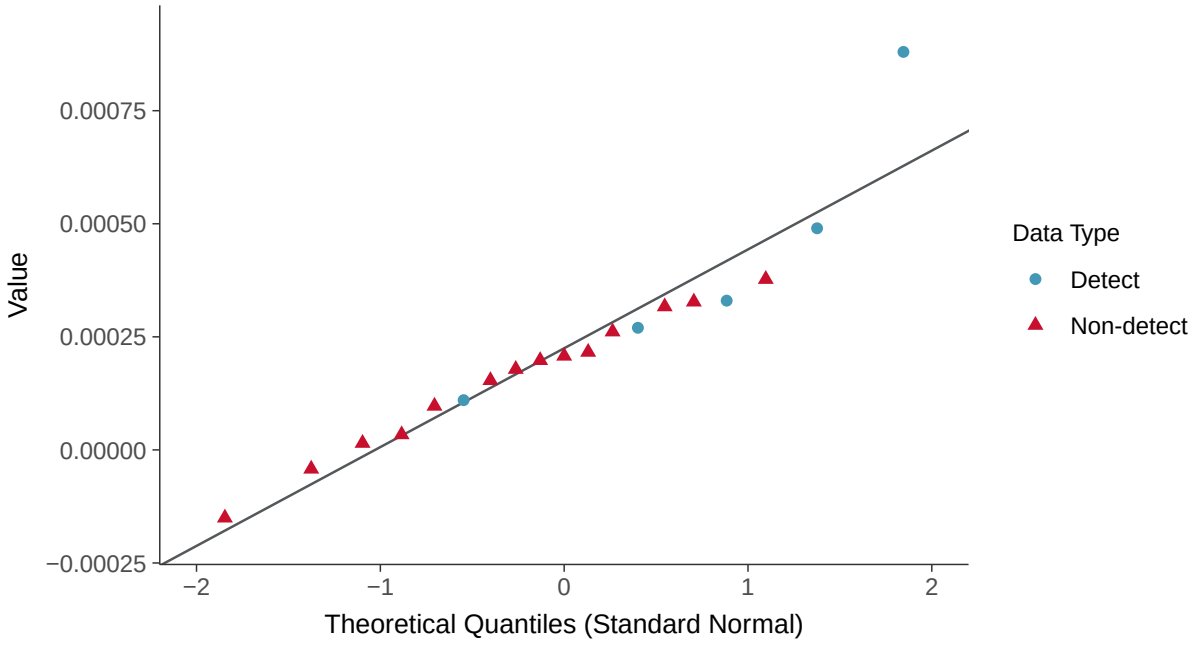
Boxplot by Season

Beryllium, MW-8 (mg/l)



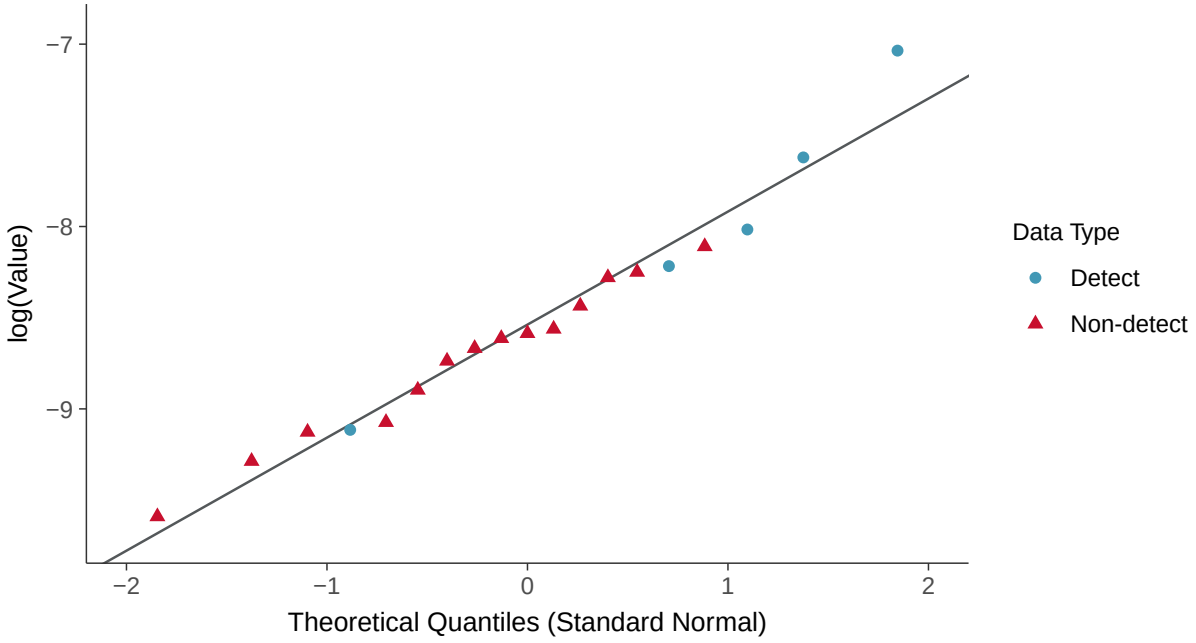
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-8 (mg/l)



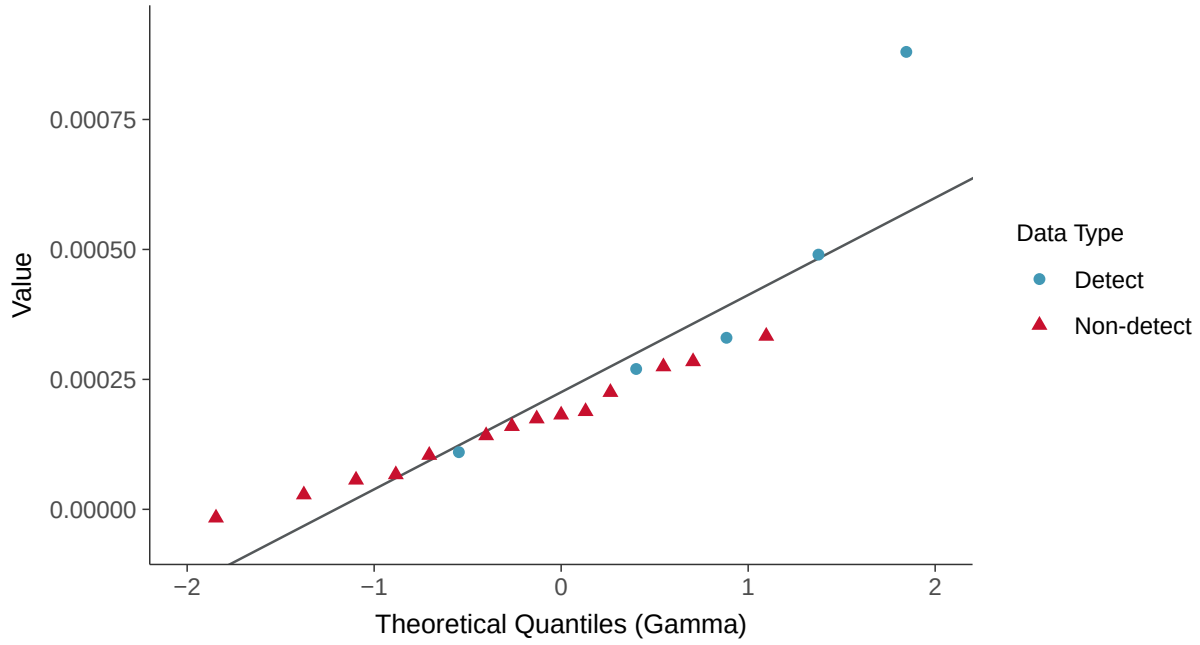
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-8 (mg/l)



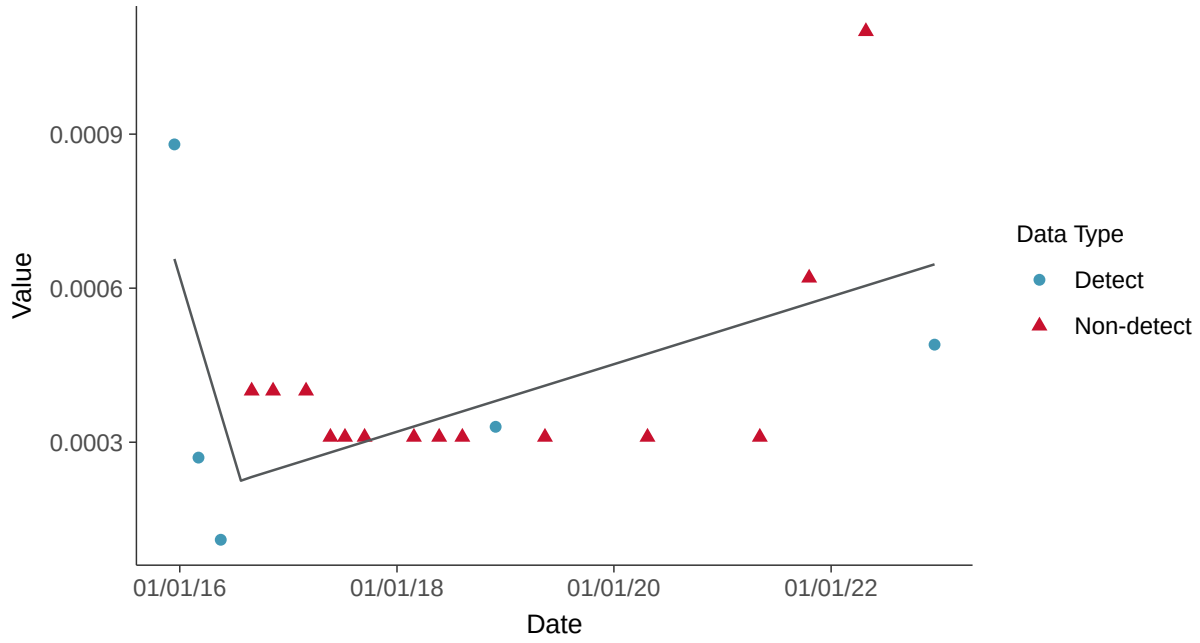
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-8 (mg/l)



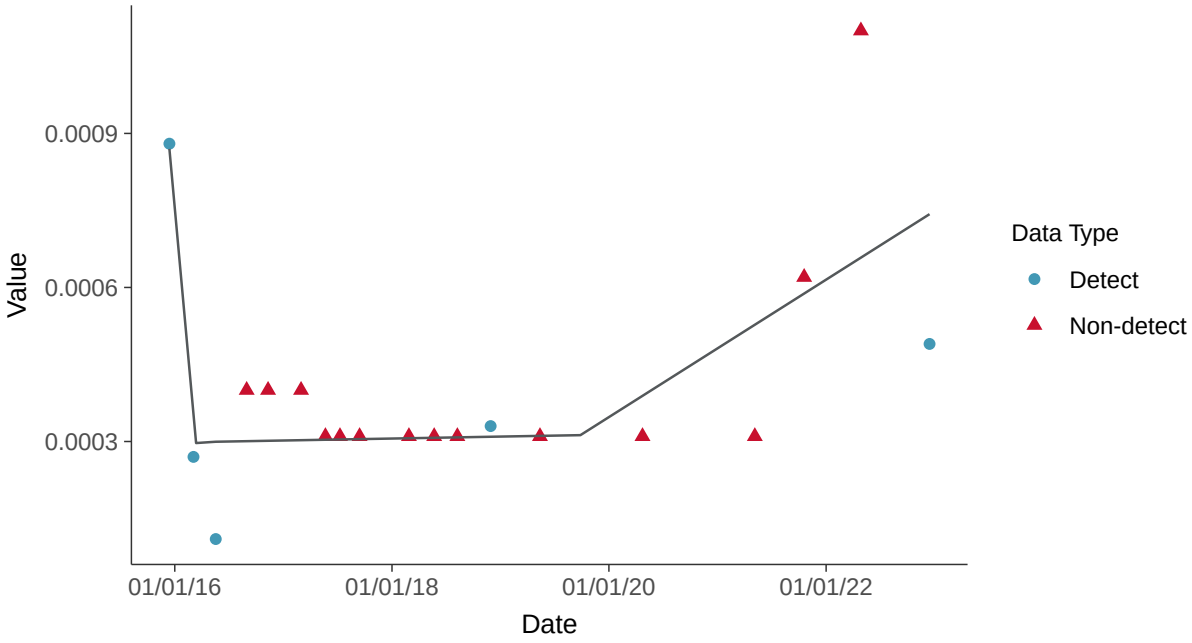
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-8 (mg/l)



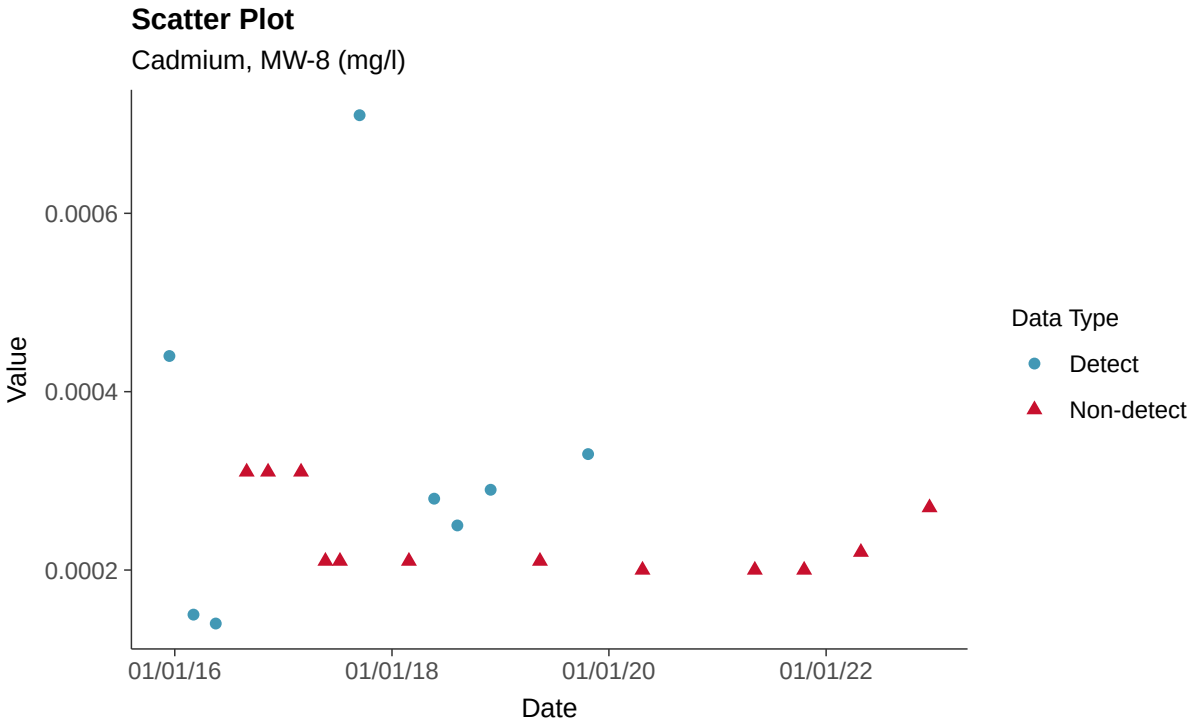
Trend Regression: Piecewise Linear-Linear-Linear

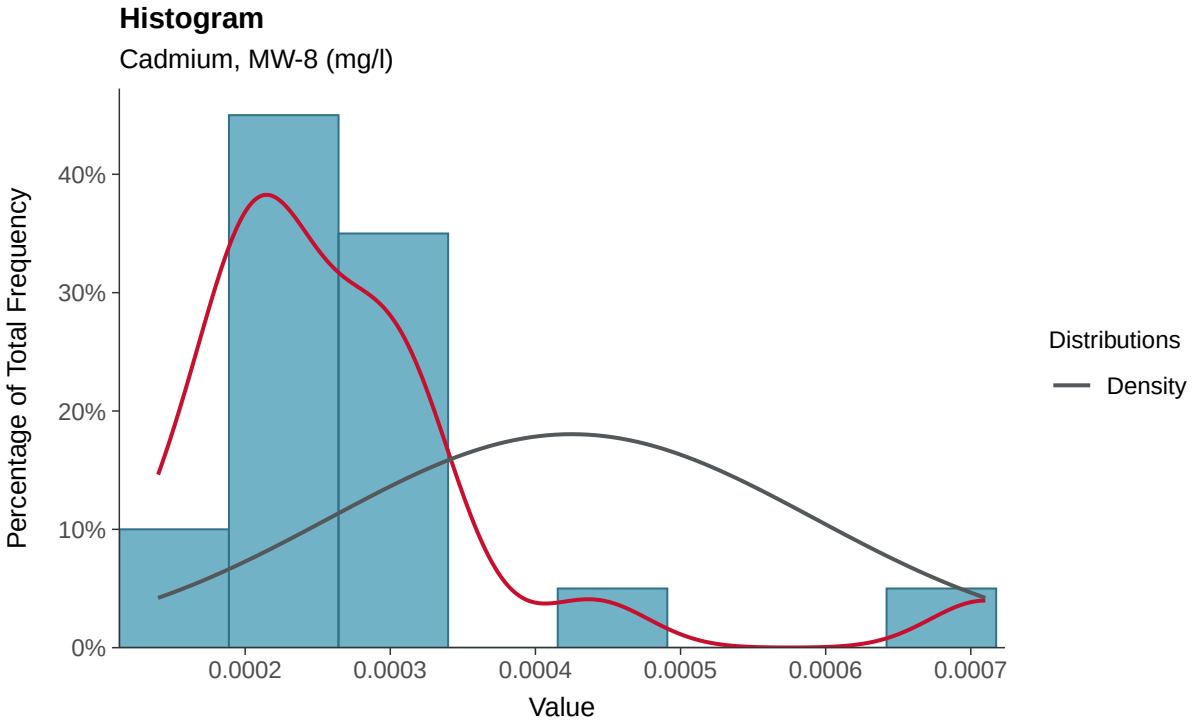
Beryllium, MW-8 (mg/l)



Appendix IV: Cadmium, MW-8

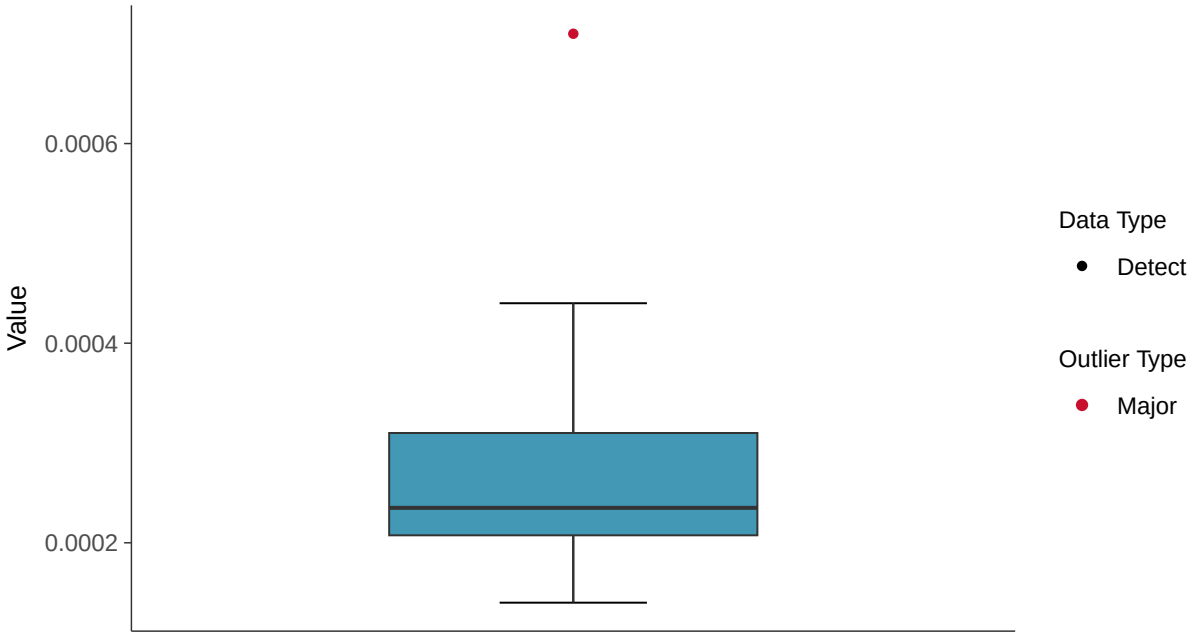
ID: 37_2_109





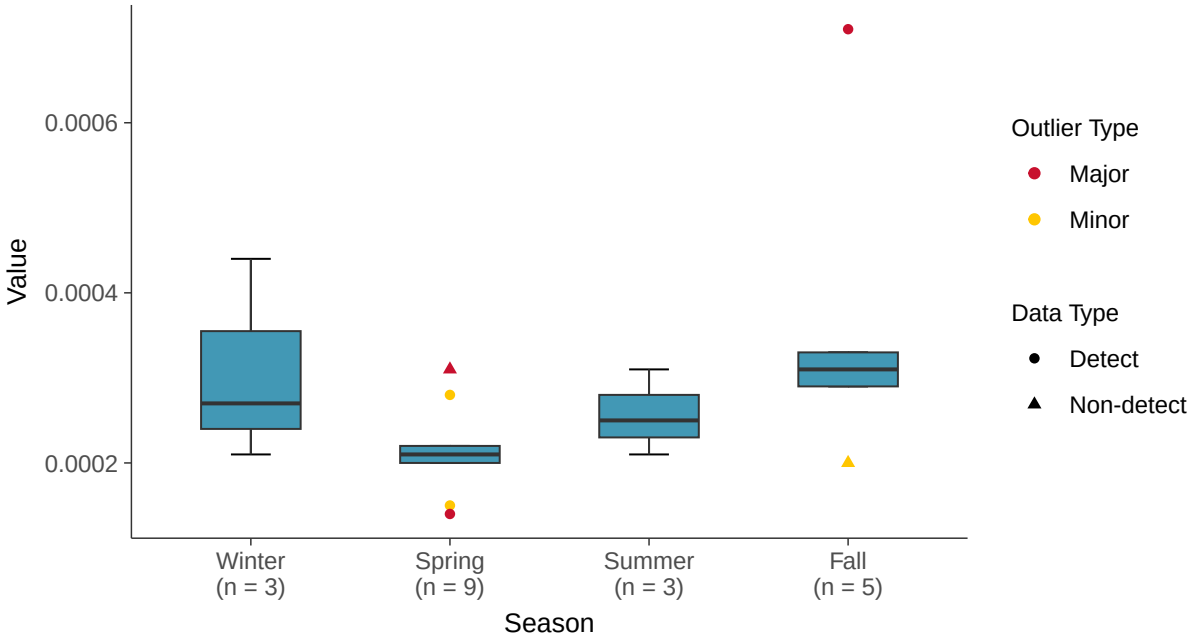
Boxplot

Cadmium, MW-8 (mg/l)



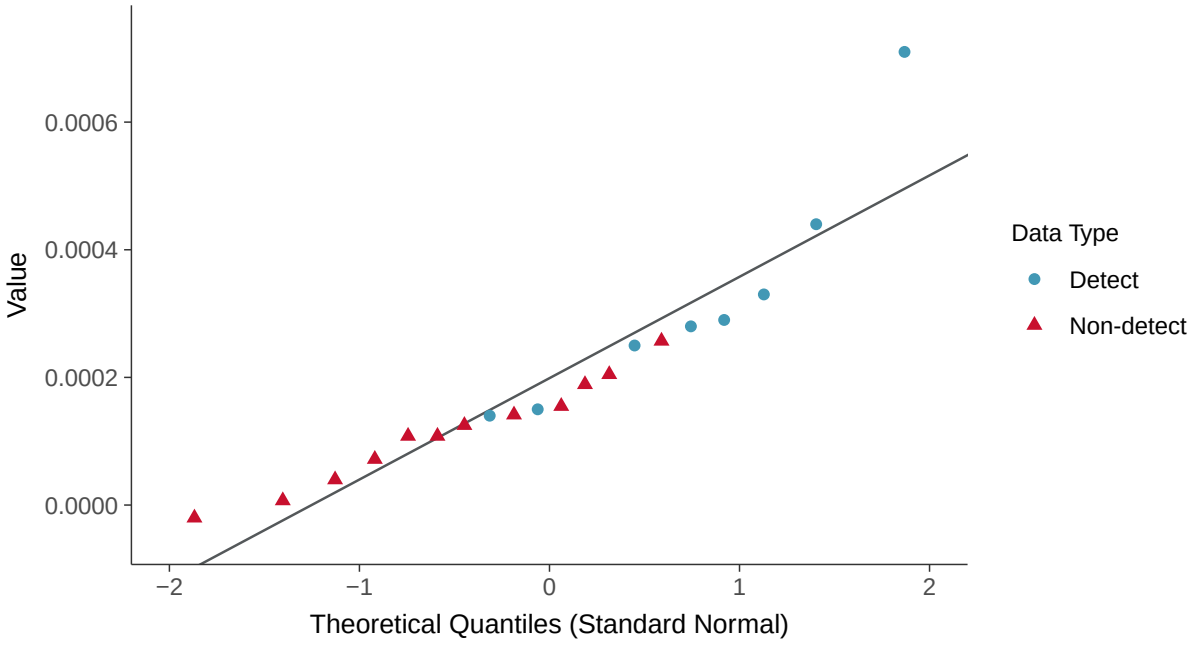
Boxplot by Season

Cadmium, MW-8 (mg/l)



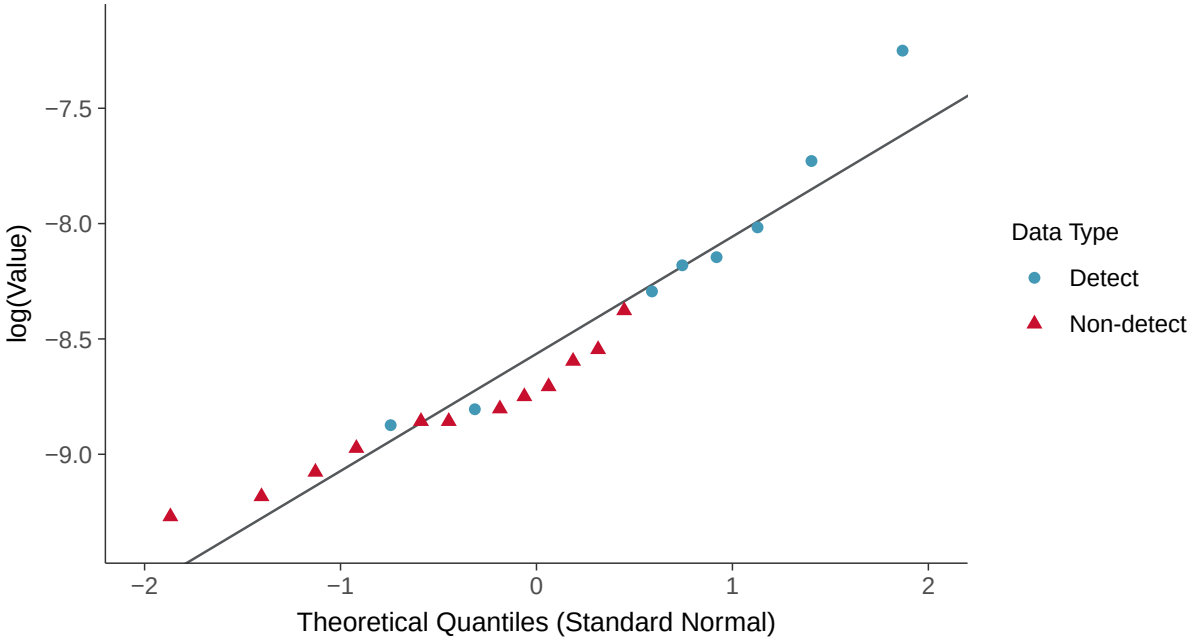
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



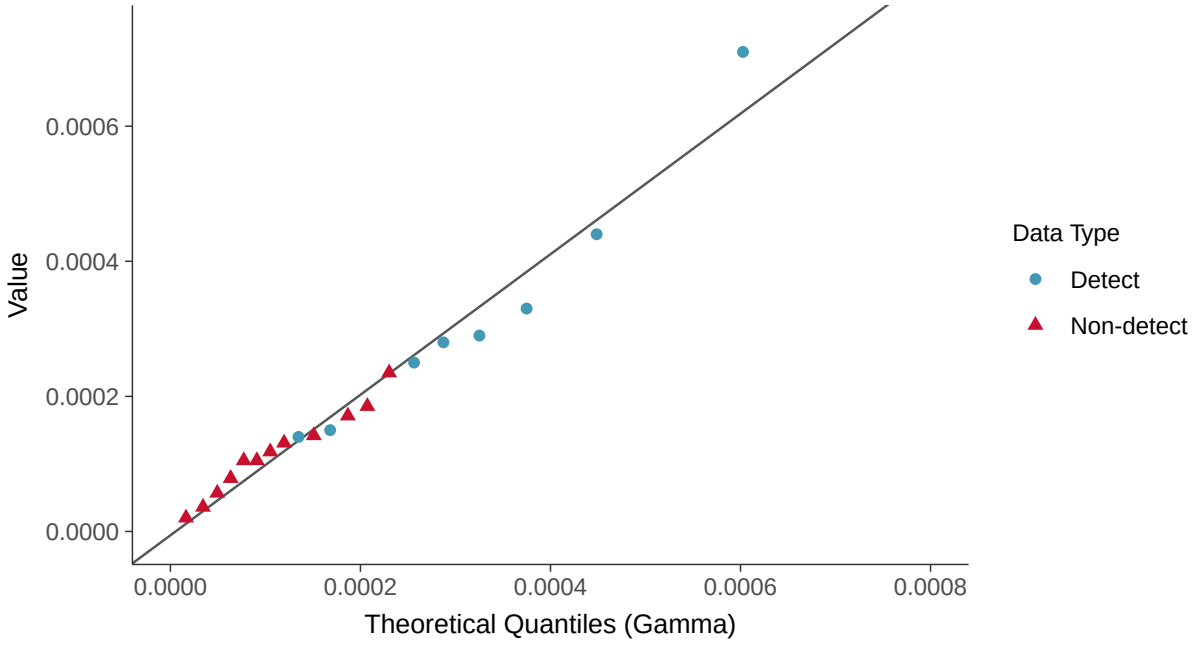
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



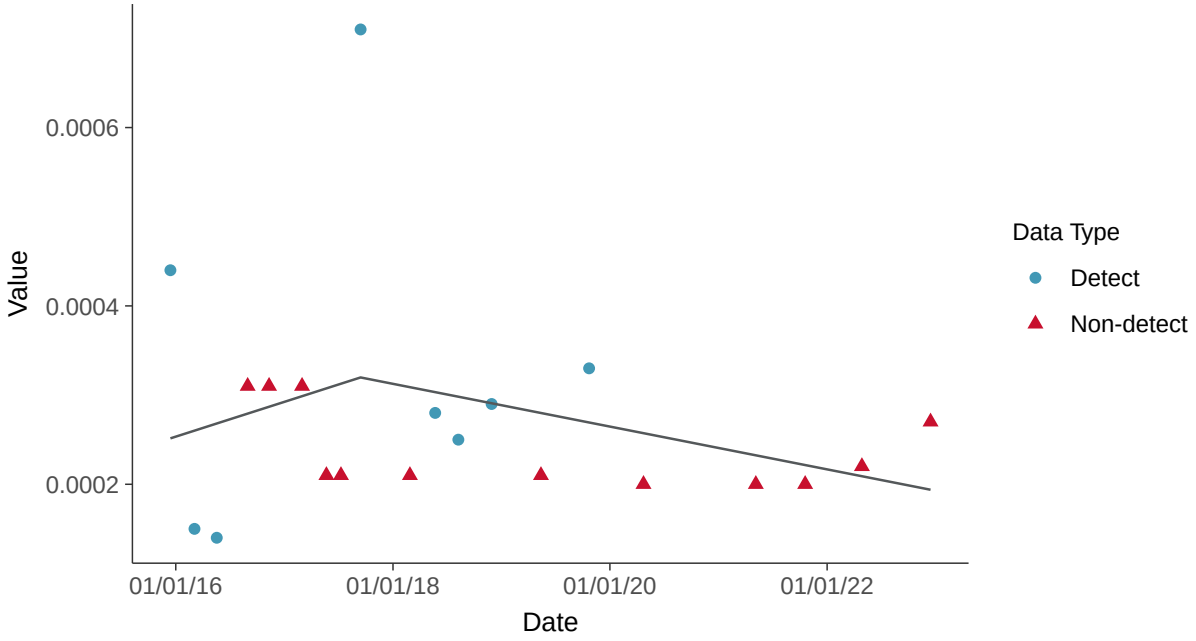
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



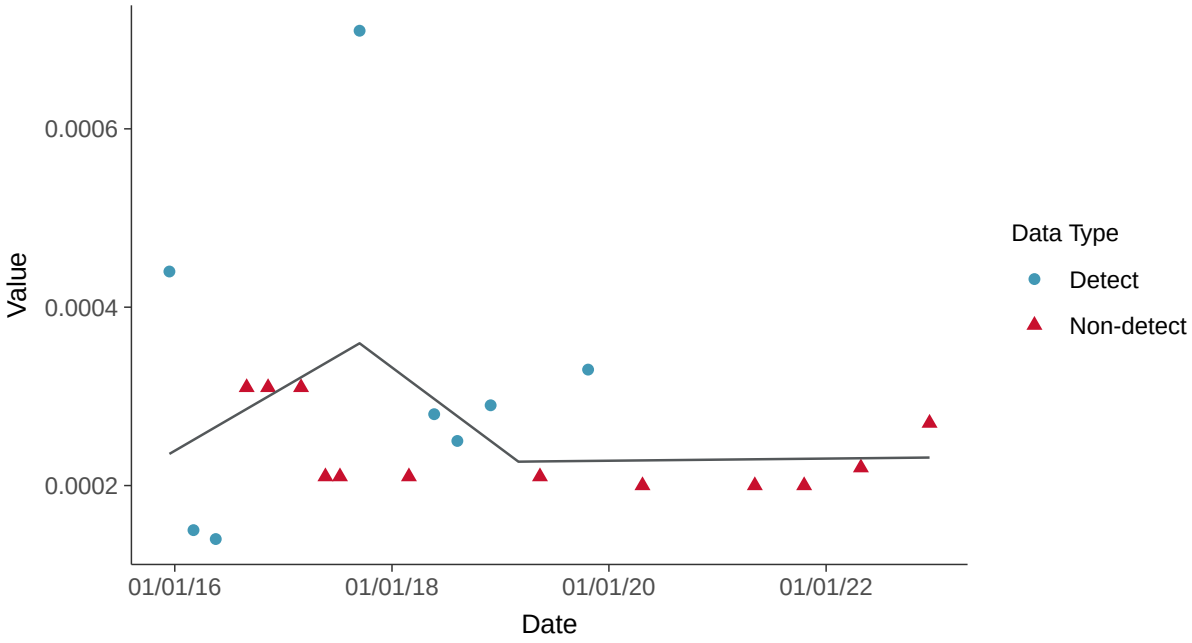
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-8 (mg/l)



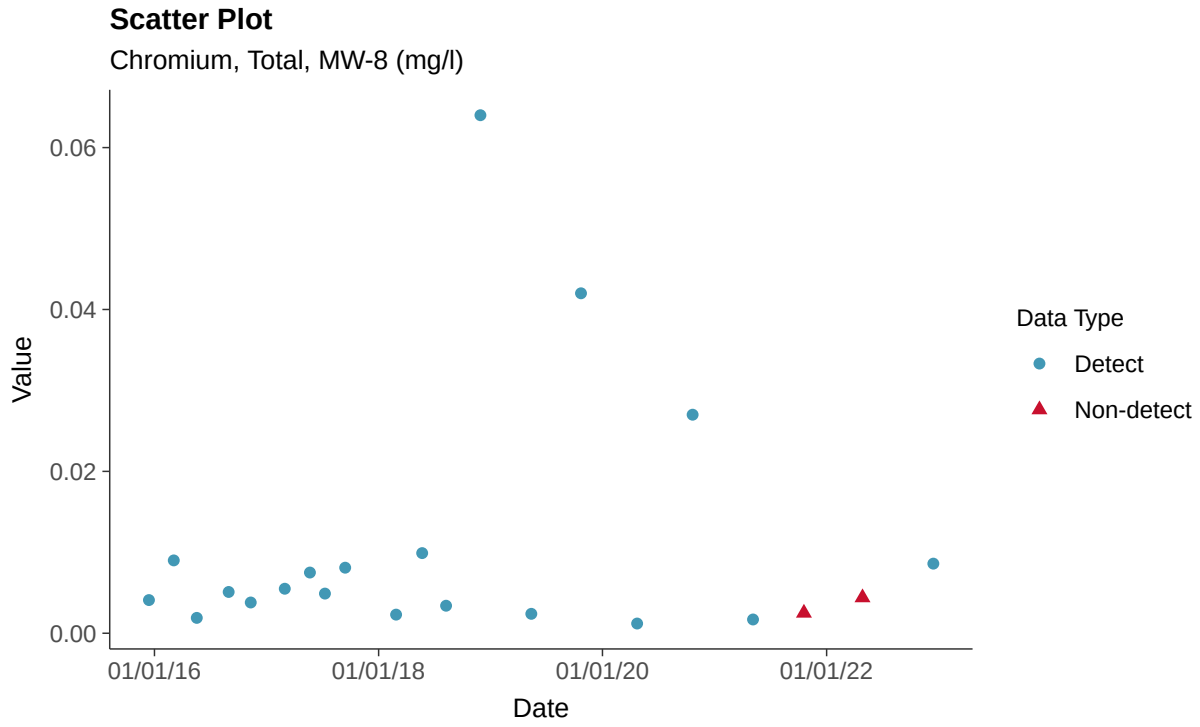
Trend Regression: Piecewise Linear-Linear-Linear

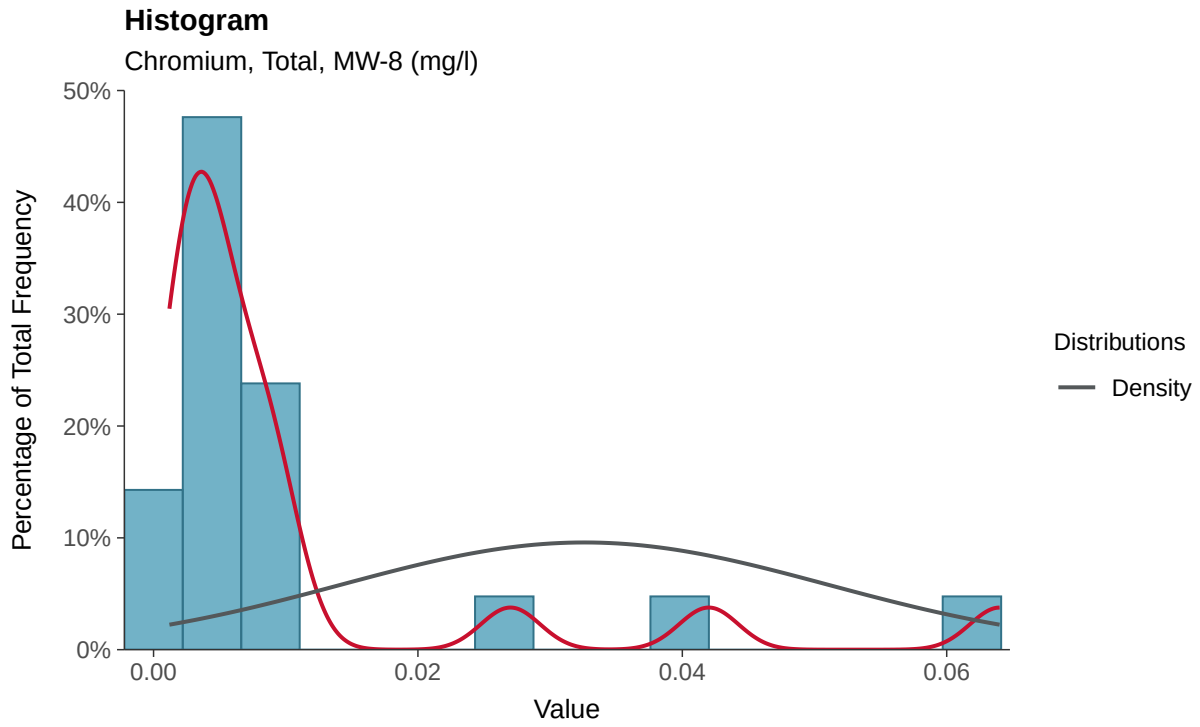
Cadmium, MW-8 (mg/l)



Appendix IV: Chromium, Total, MW-8

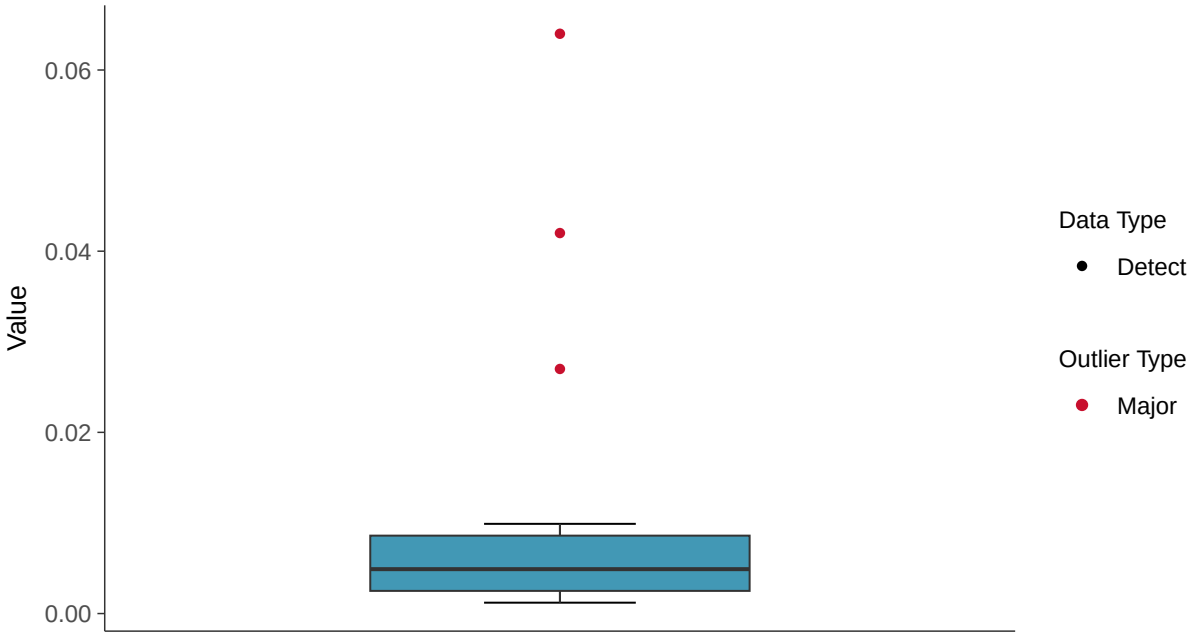
ID: 37_2_112





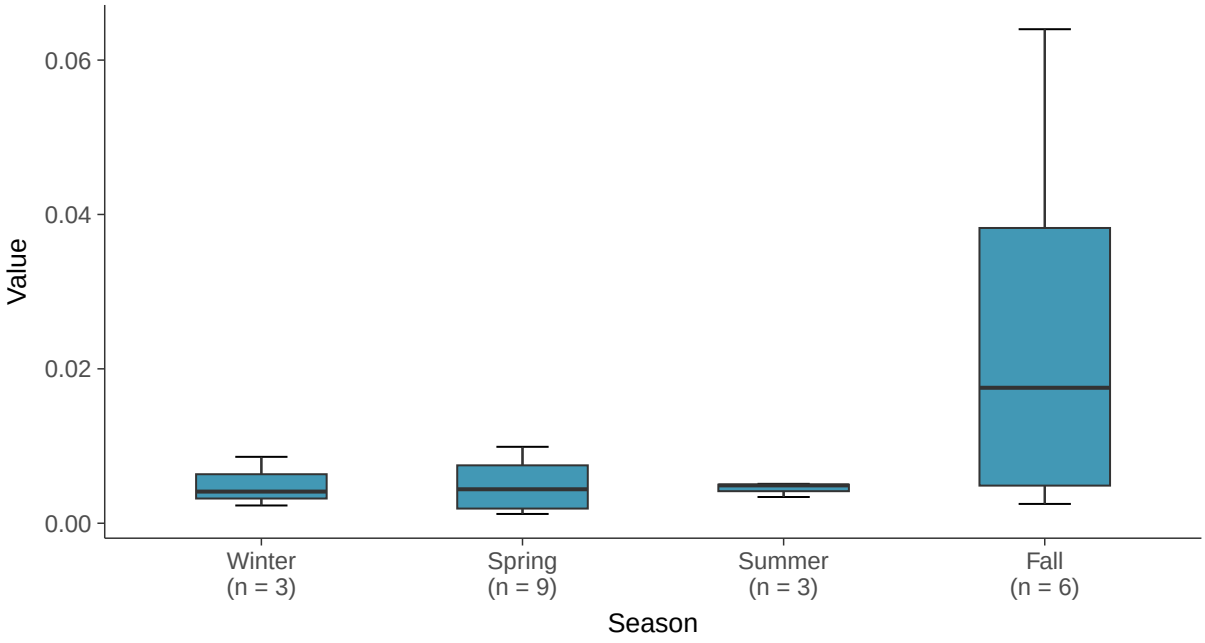
Boxplot

Chromium, Total, MW-8 (mg/l)



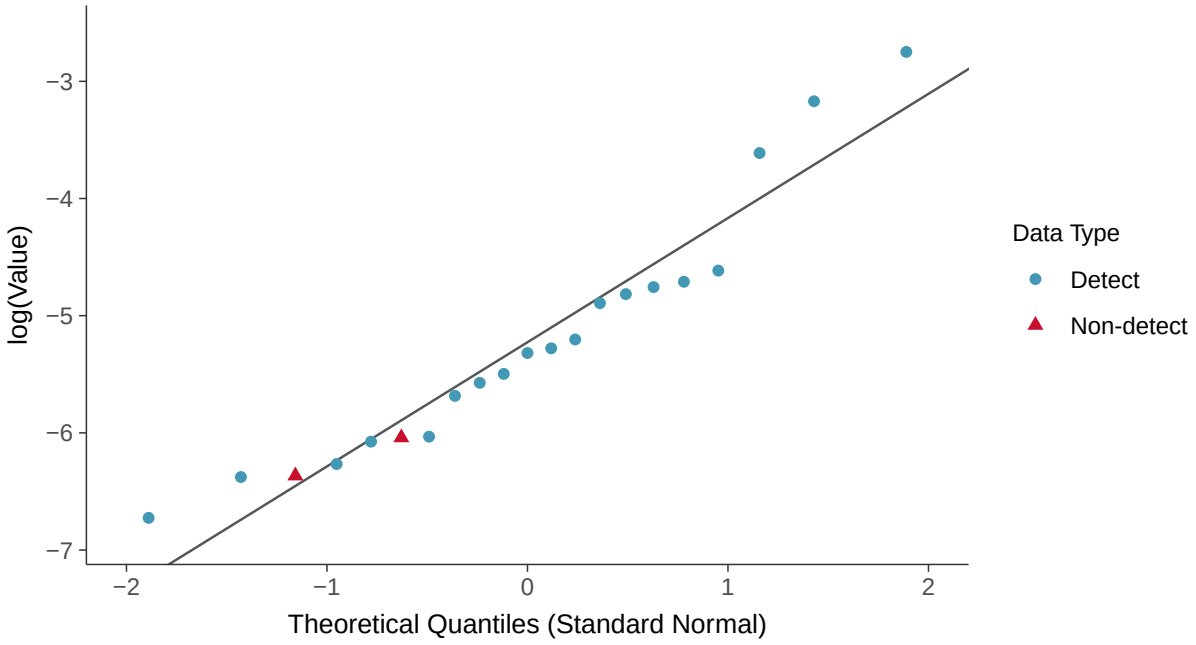
Boxplot by Season

Chromium, Total, MW-8 (mg/l)



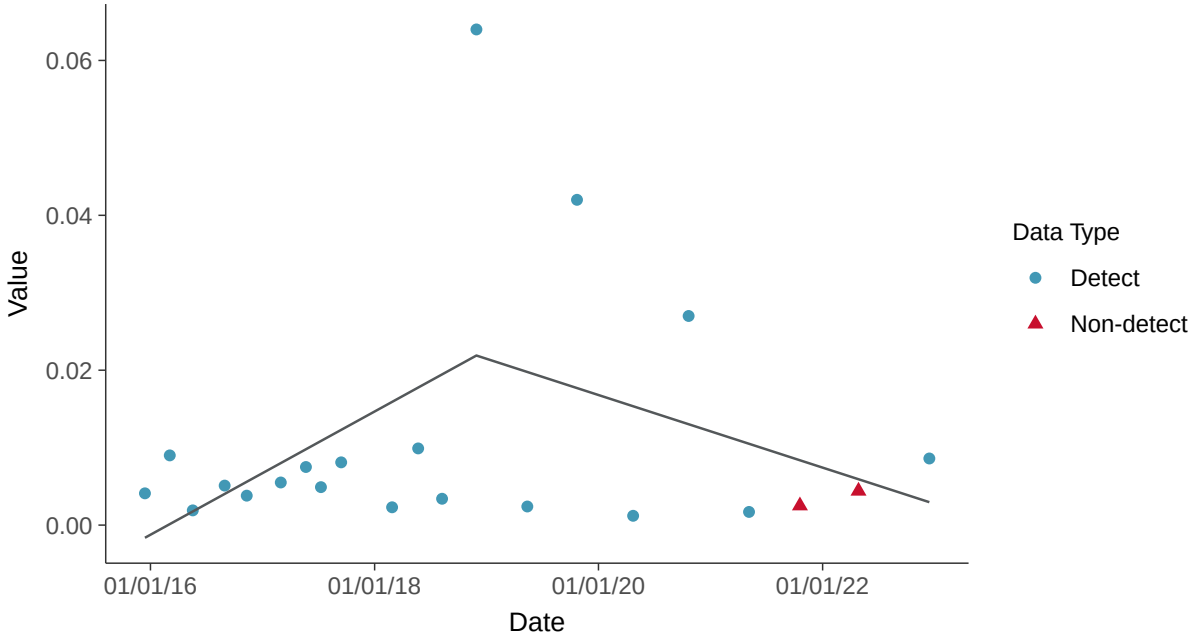
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-8 (mg/l)



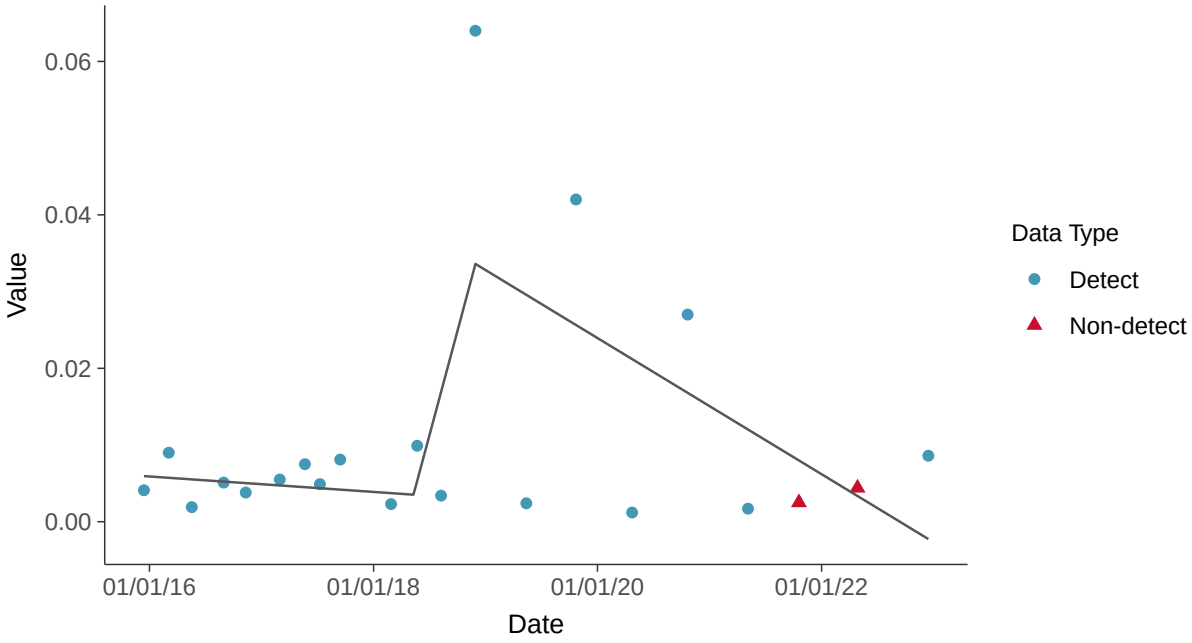
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-8 (mg/l)



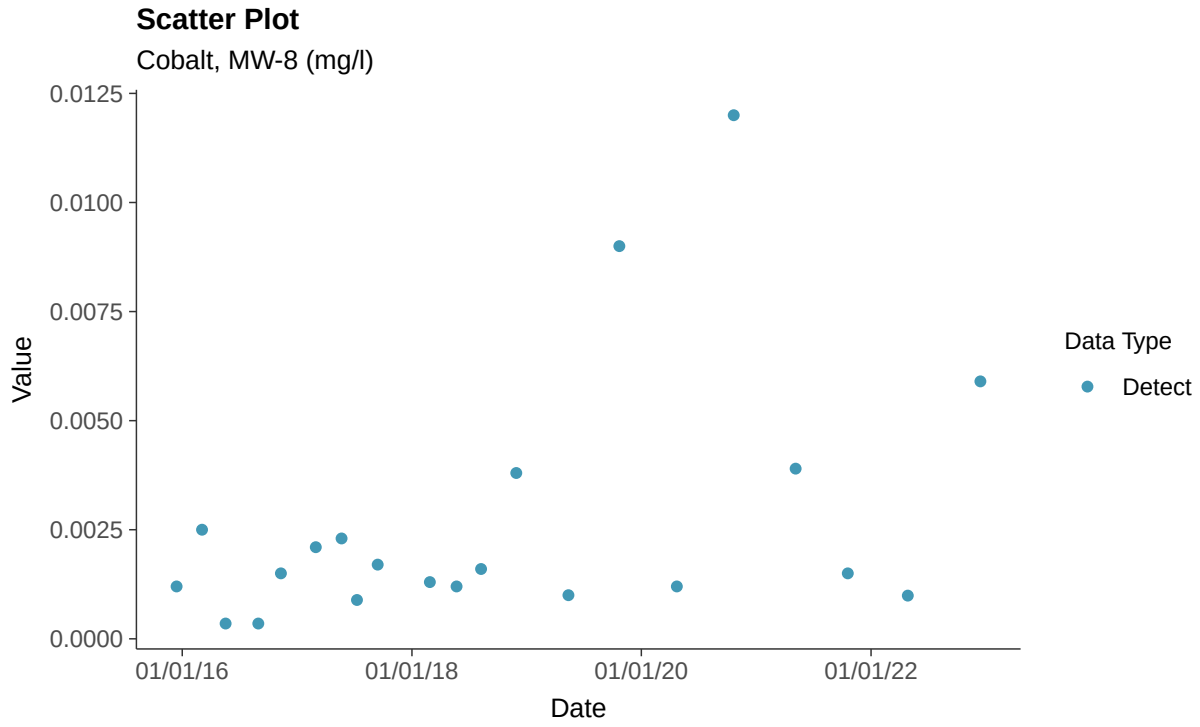
Trend Regression: Piecewise Linear-Linear-Linear

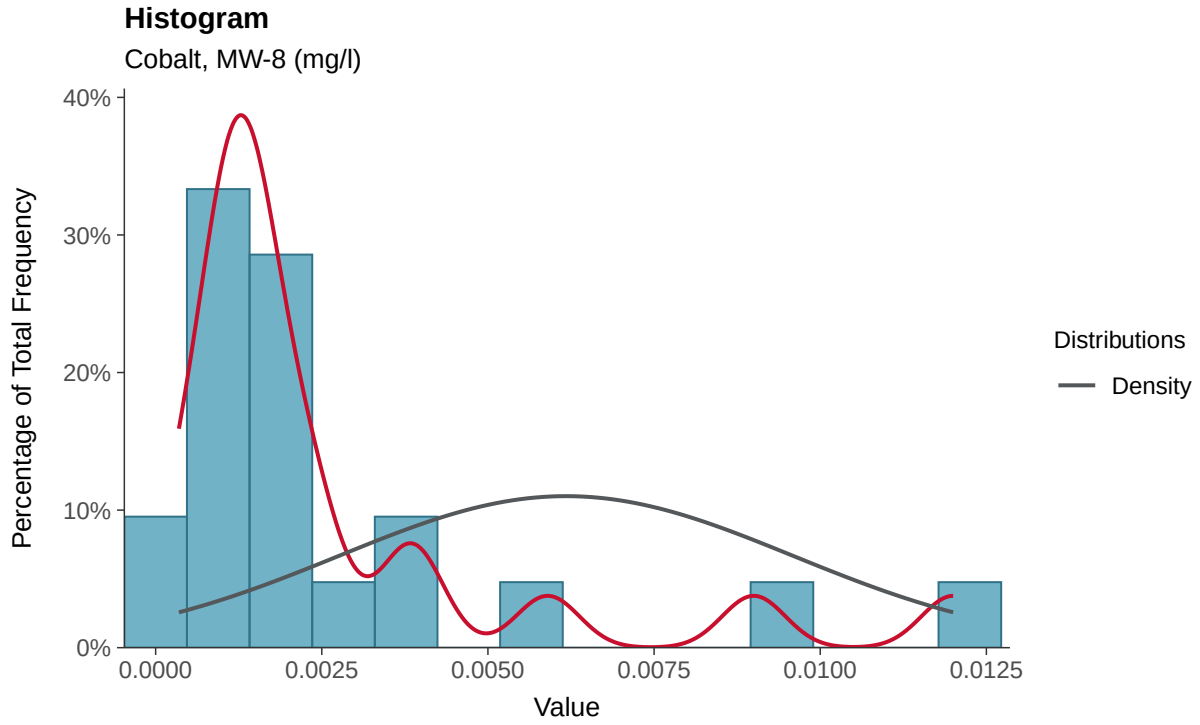
Chromium, Total, MW-8 (mg/l)



Appendix IV: Cobalt, MW-8

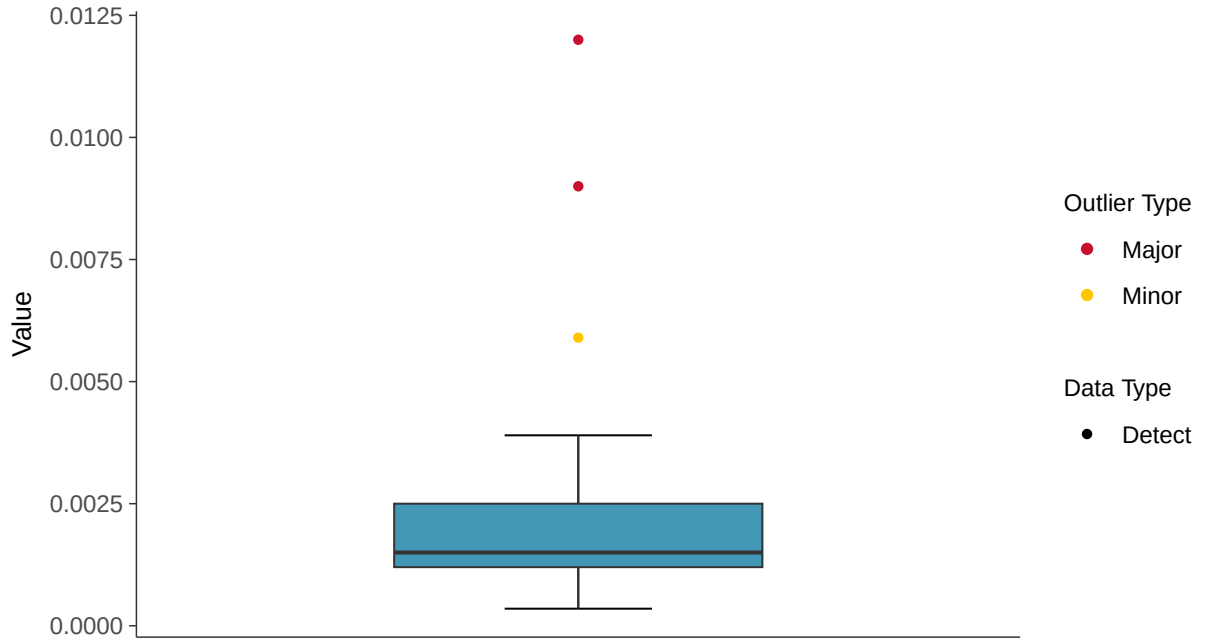
ID: 37_2_113





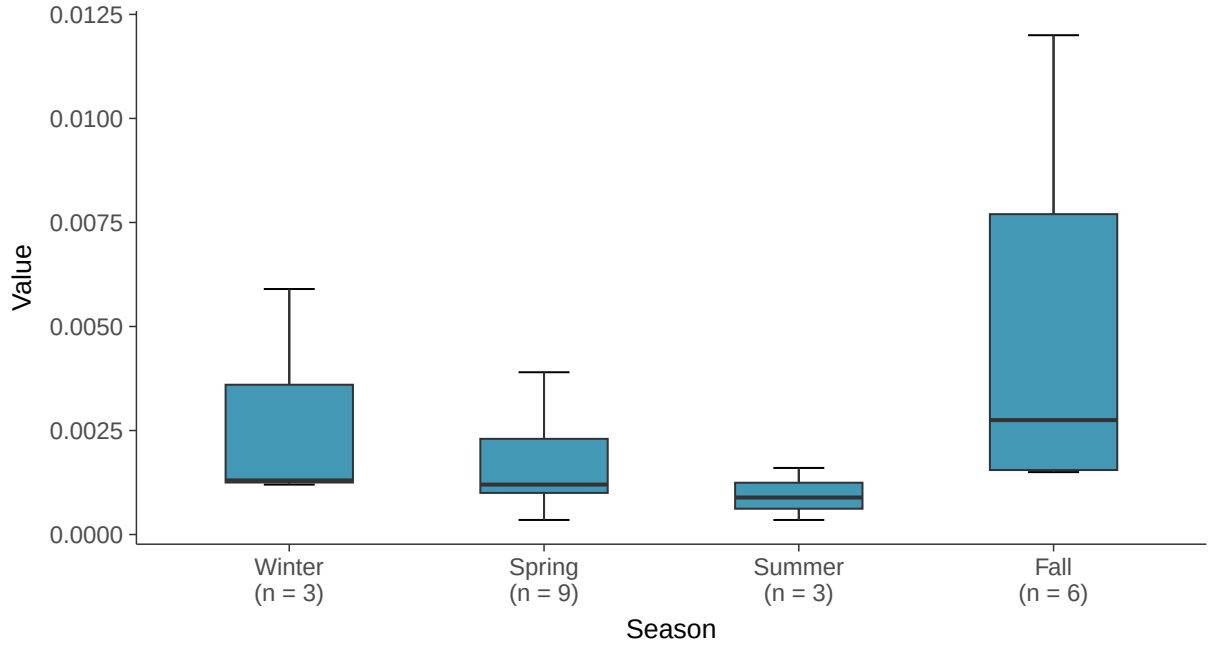
Boxplot

Cobalt, MW-8 (mg/l)



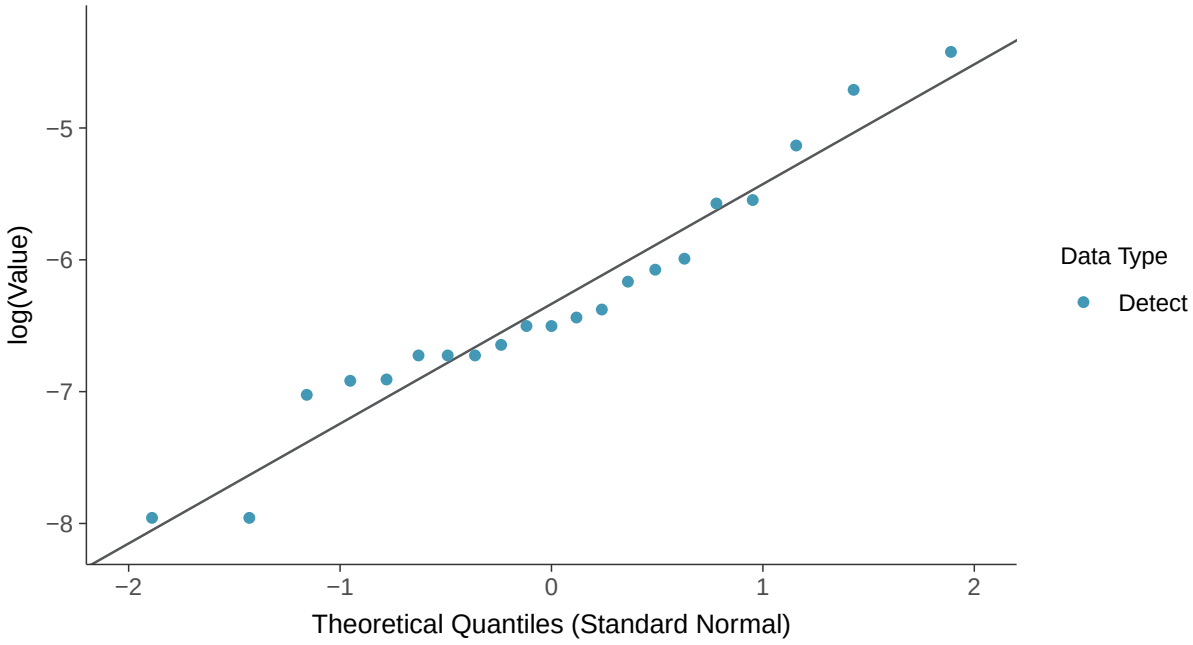
Boxplot by Season

Cobalt, MW-8 (mg/l)



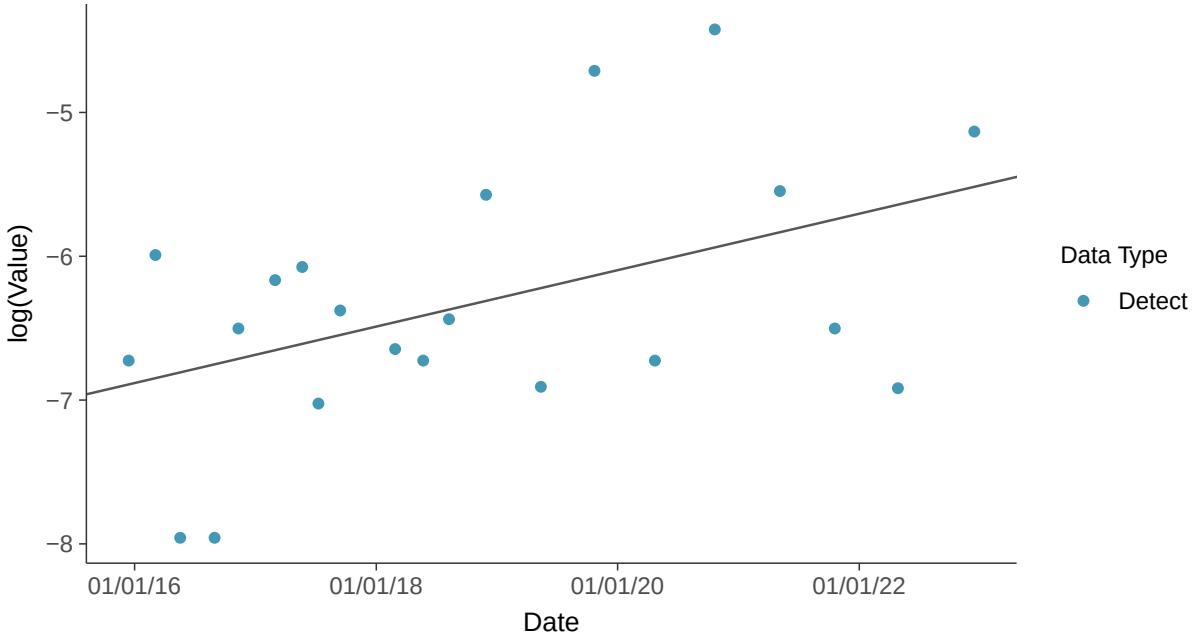
Lognormal Q-Q plot

Cobalt, MW-8 (mg/l)



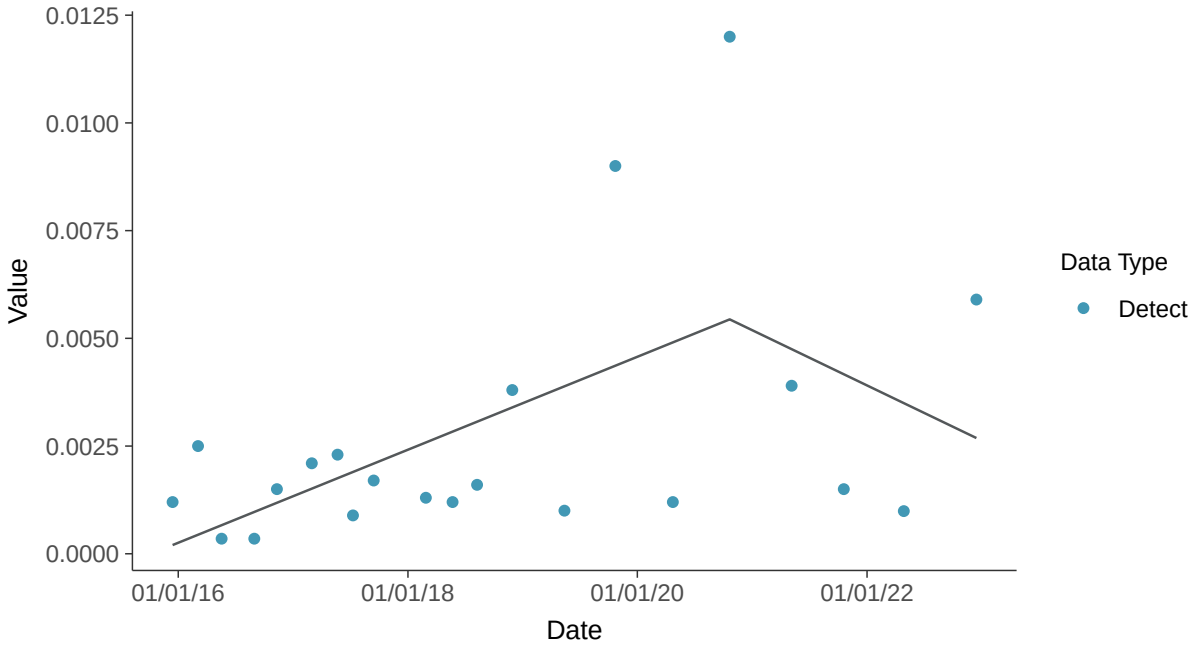
Trend Regression: Lognormal MLE

Cobalt, MW-8 (mg/l)



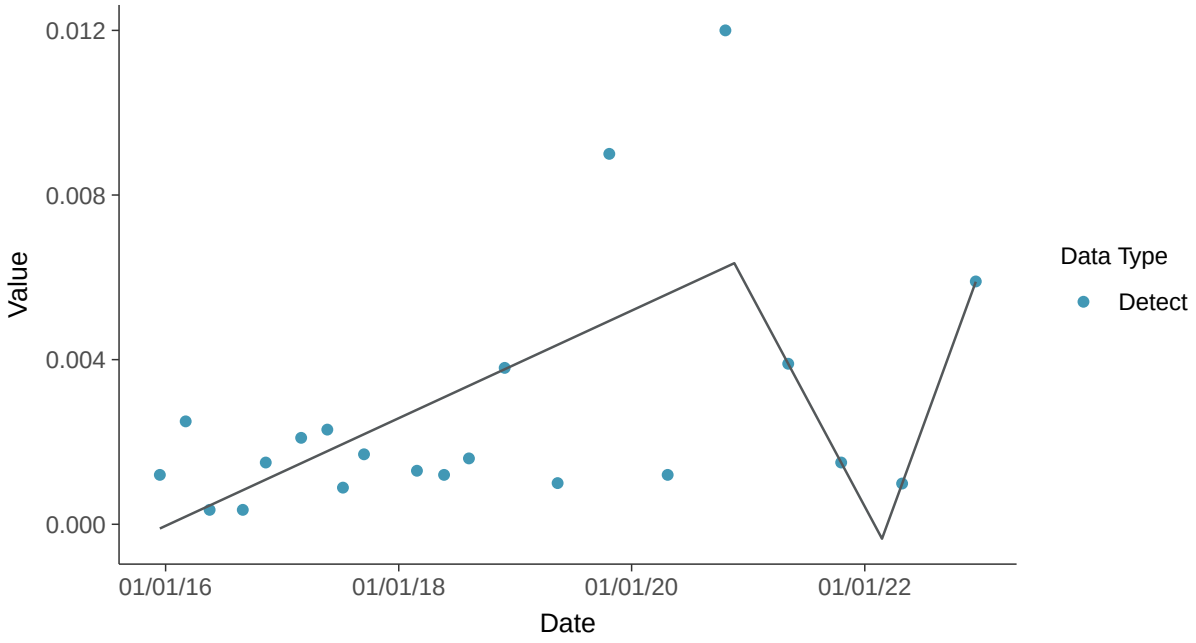
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-8 (mg/l)

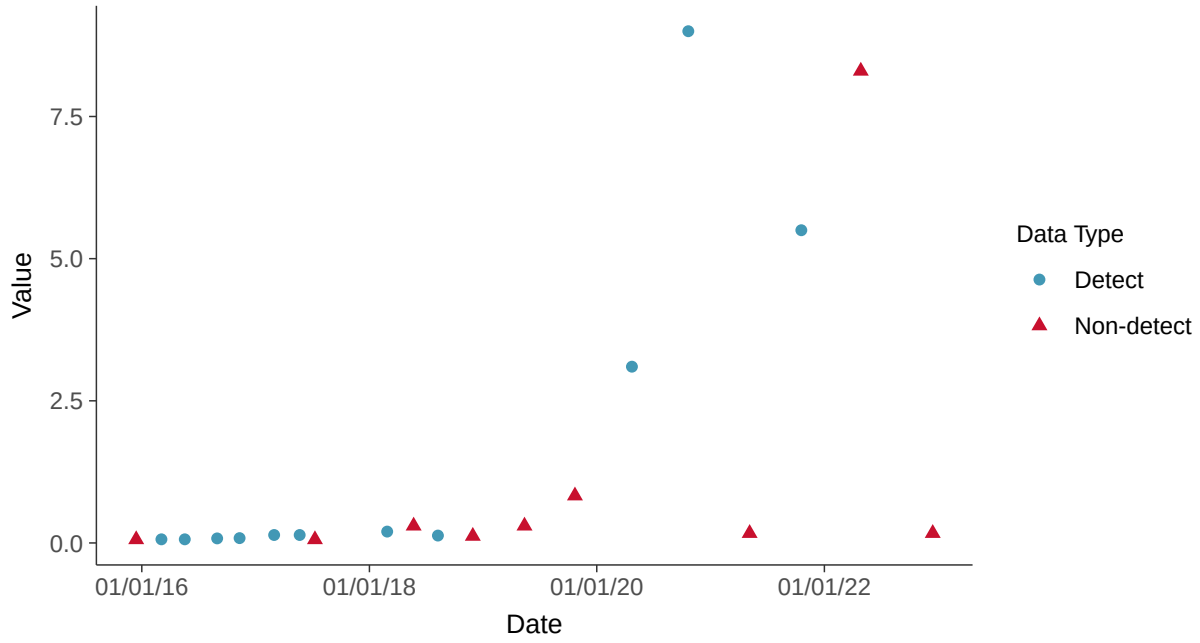


Appendix IV: Fluoride (App IV), MW-8

ID: 37_2_116

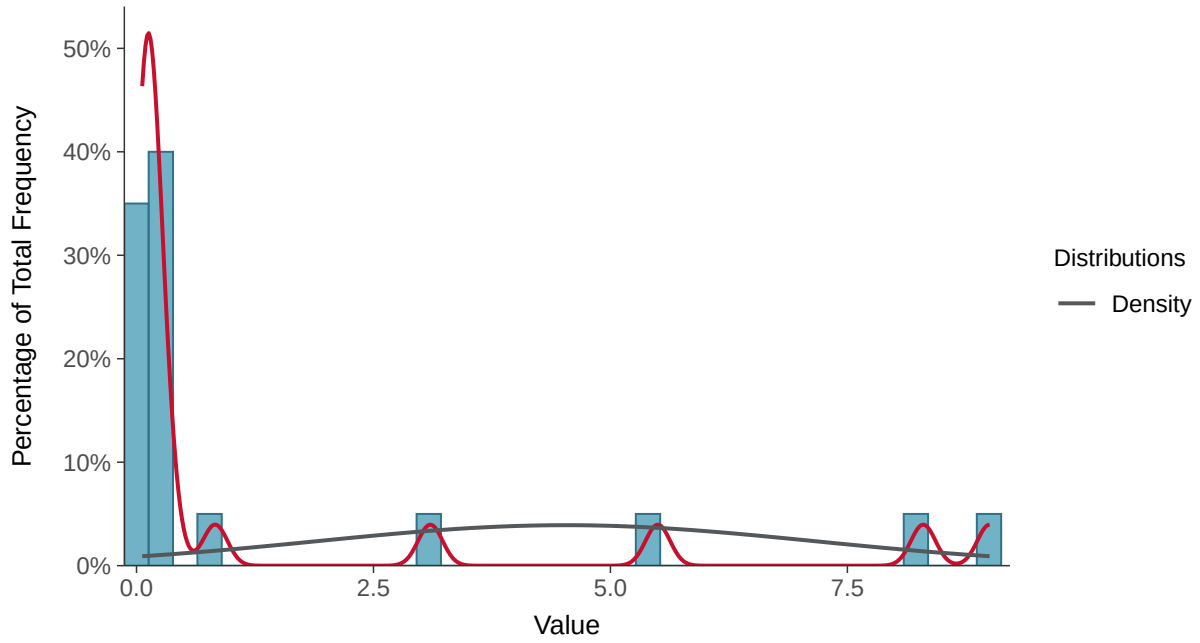
Scatter Plot

Fluoride (App IV), MW-8 (mg/l)



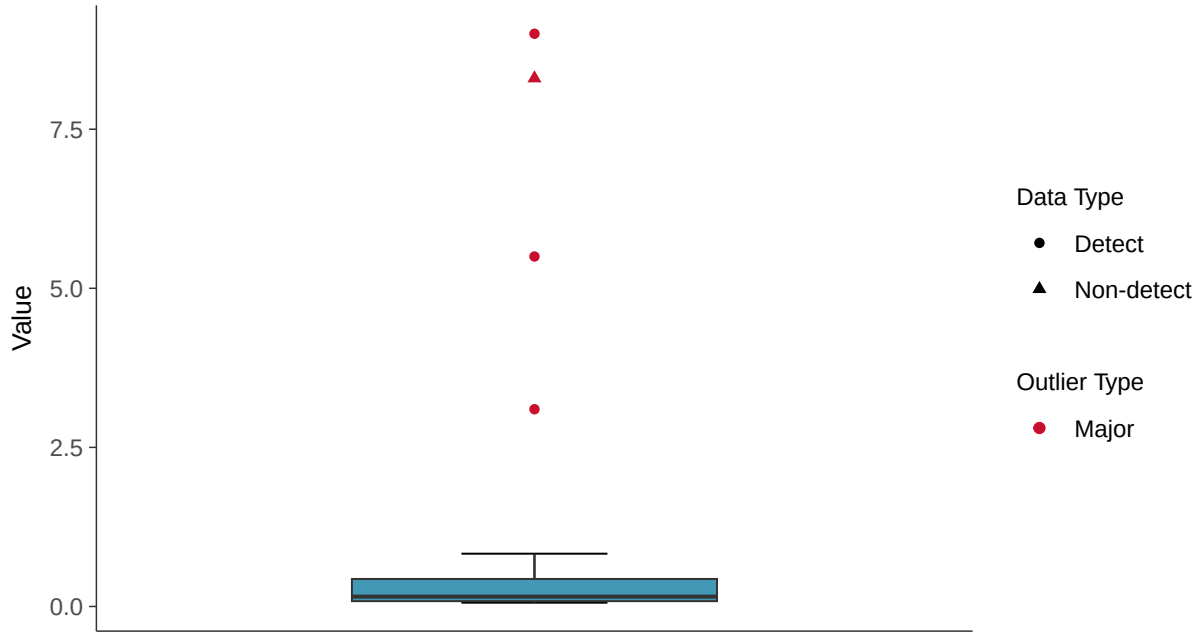
Histogram

Fluoride (App IV), MW-8 (mg/l)



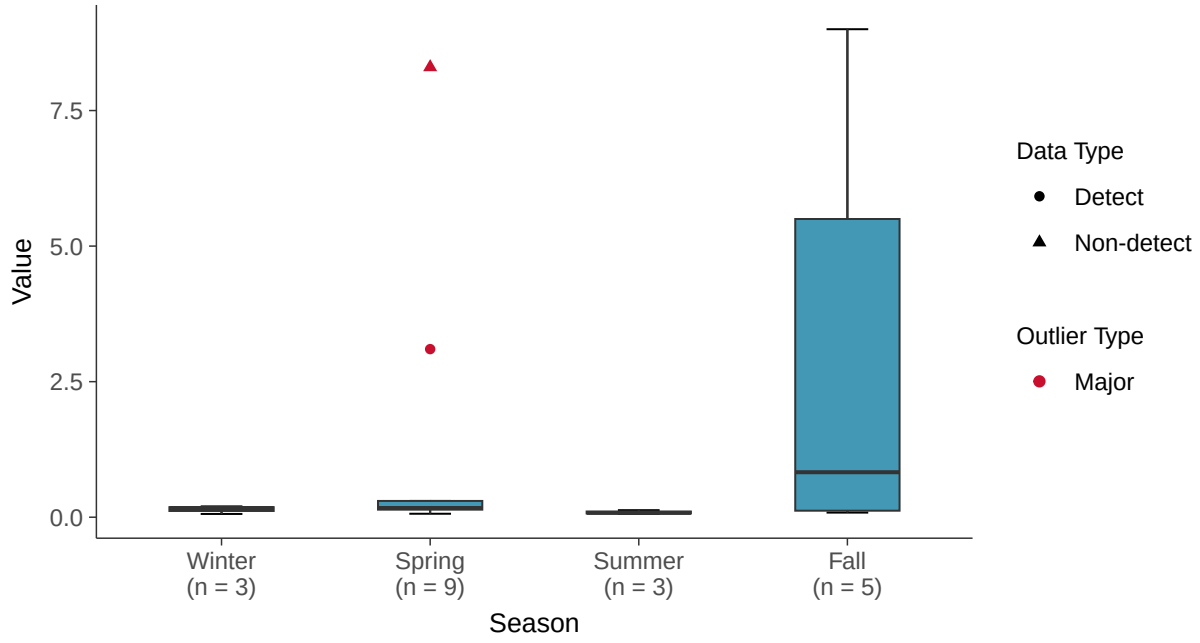
Boxplot

Fluoride (App IV), MW-8 (mg/l)



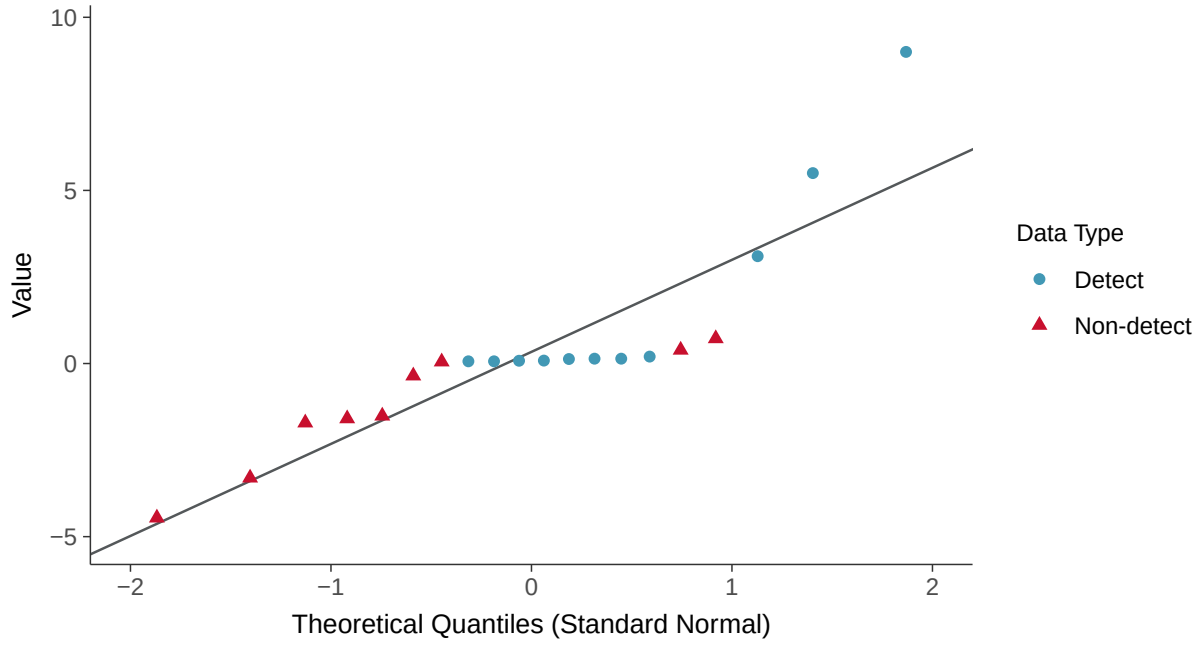
Boxplot by Season

Fluoride (App IV), MW-8 (mg/l)



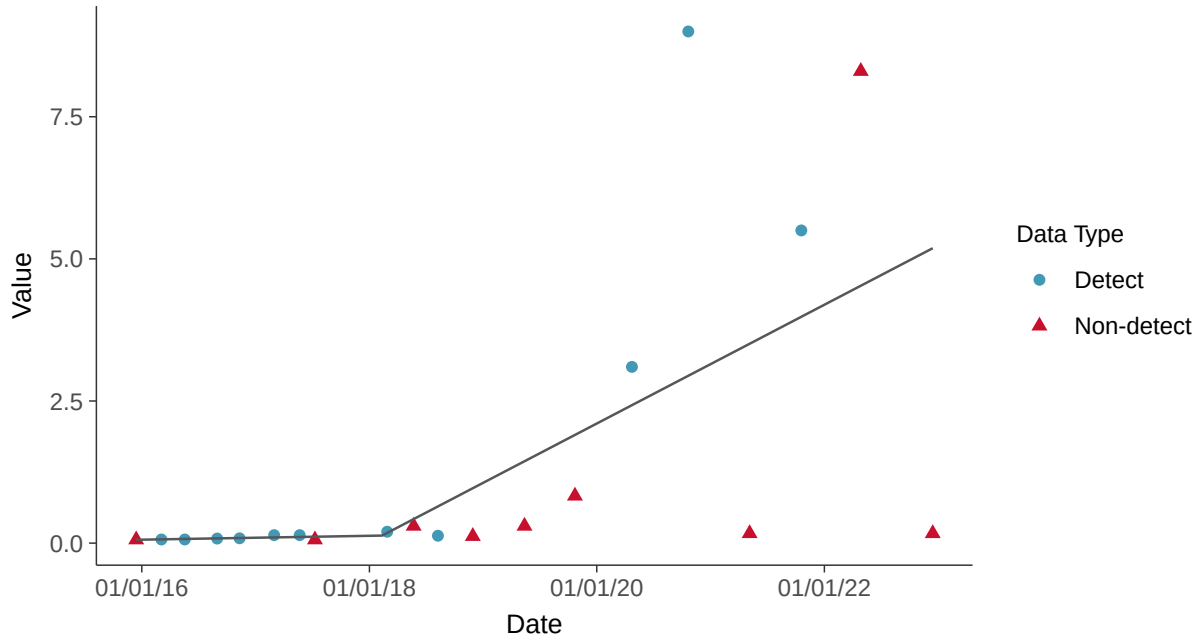
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-8 (mg/l)



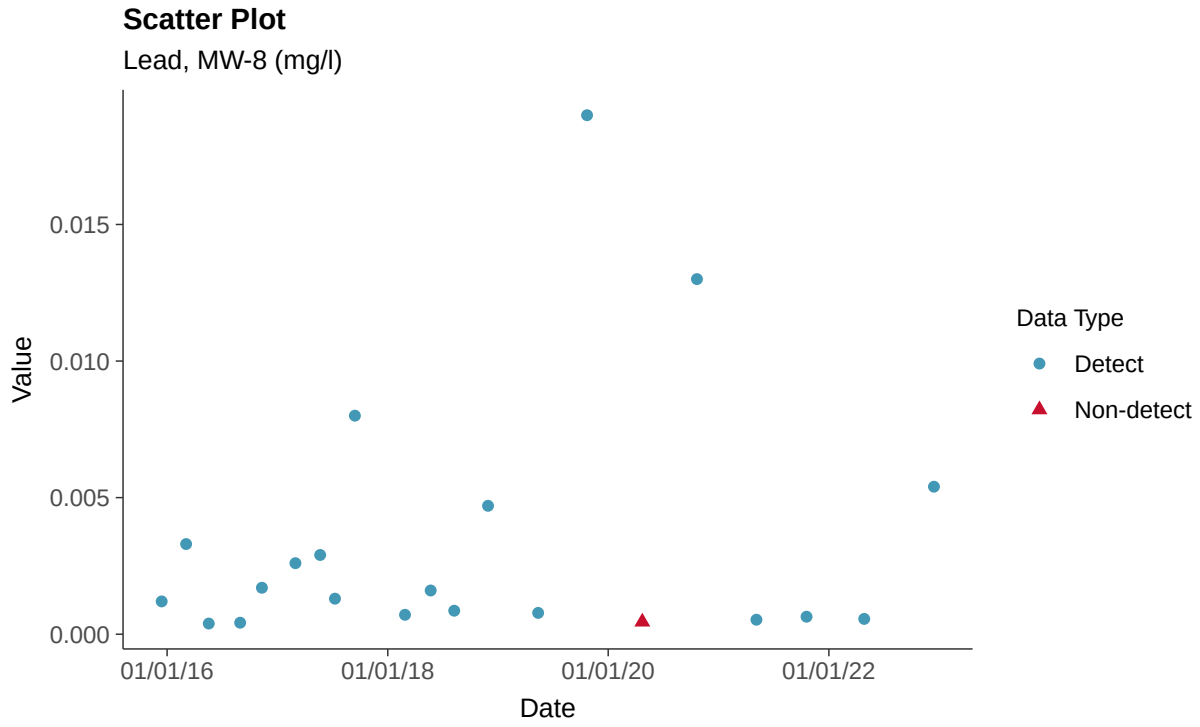
Trend Regression: Piecewise Linear-Linear

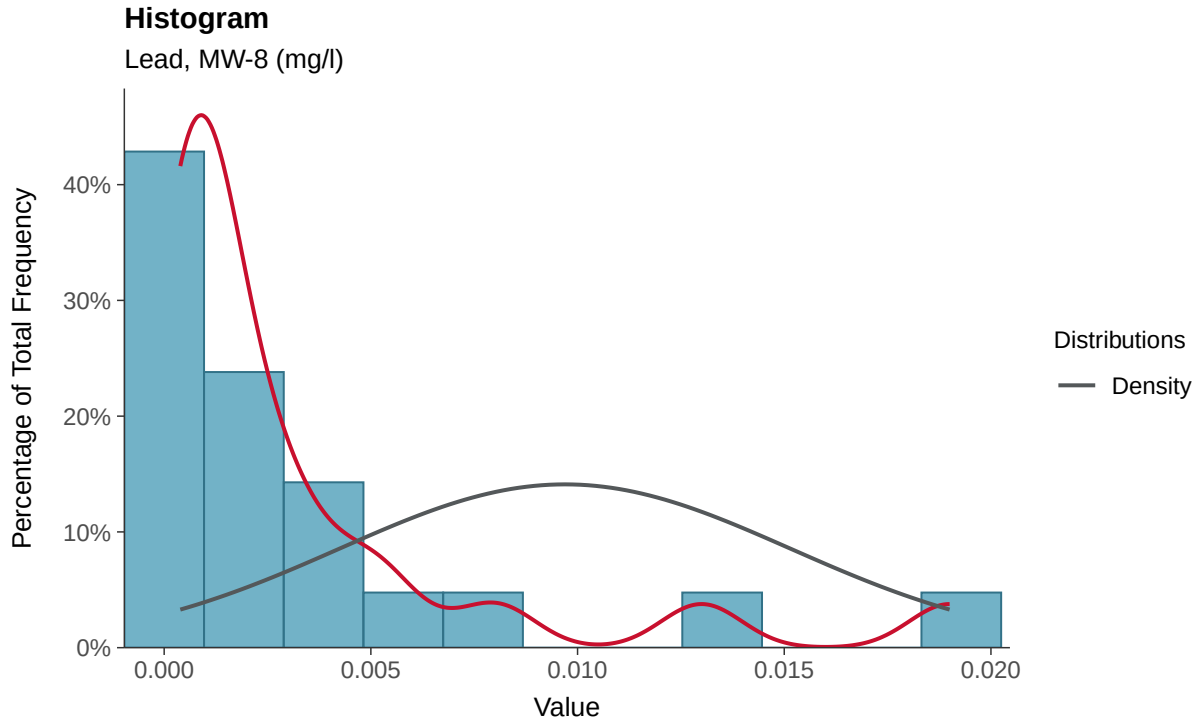
Fluoride (App IV), MW-8 (mg/l)



Appendix IV: Lead, MW-8

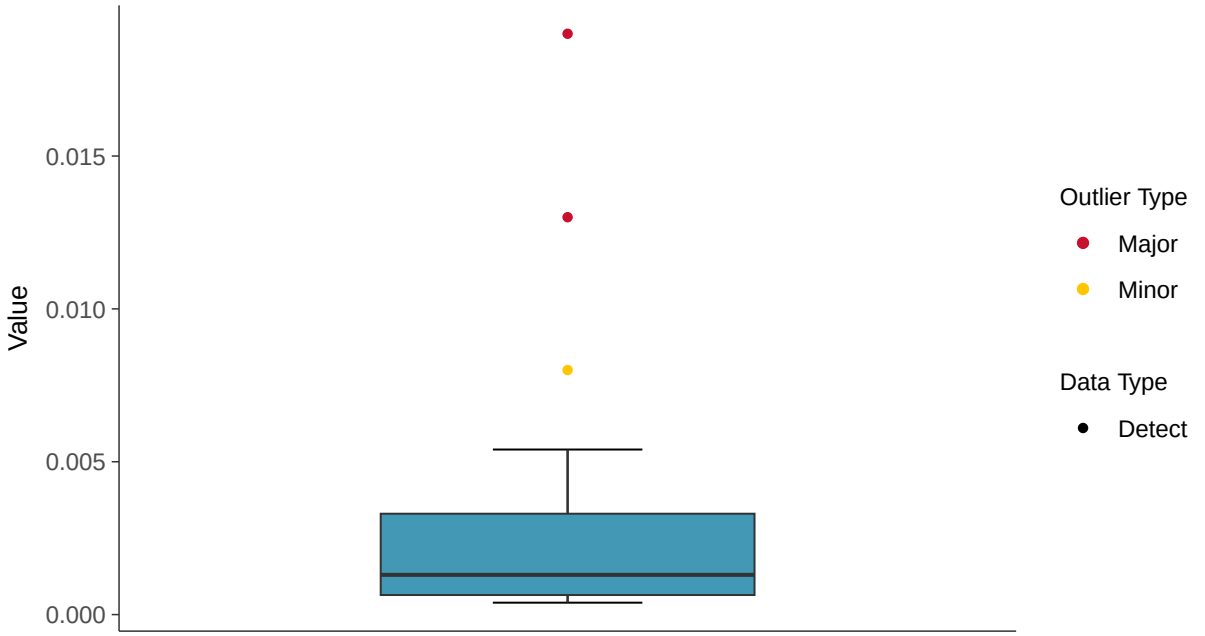
ID: 37_2_117





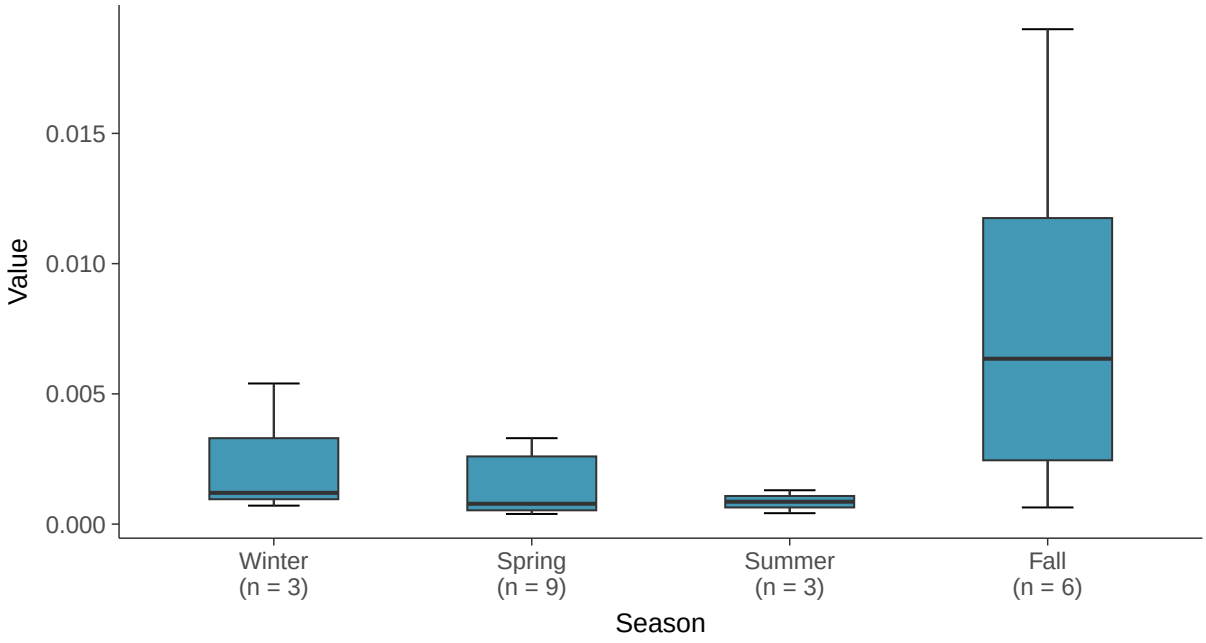
Boxplot

Lead, MW-8 (mg/l)



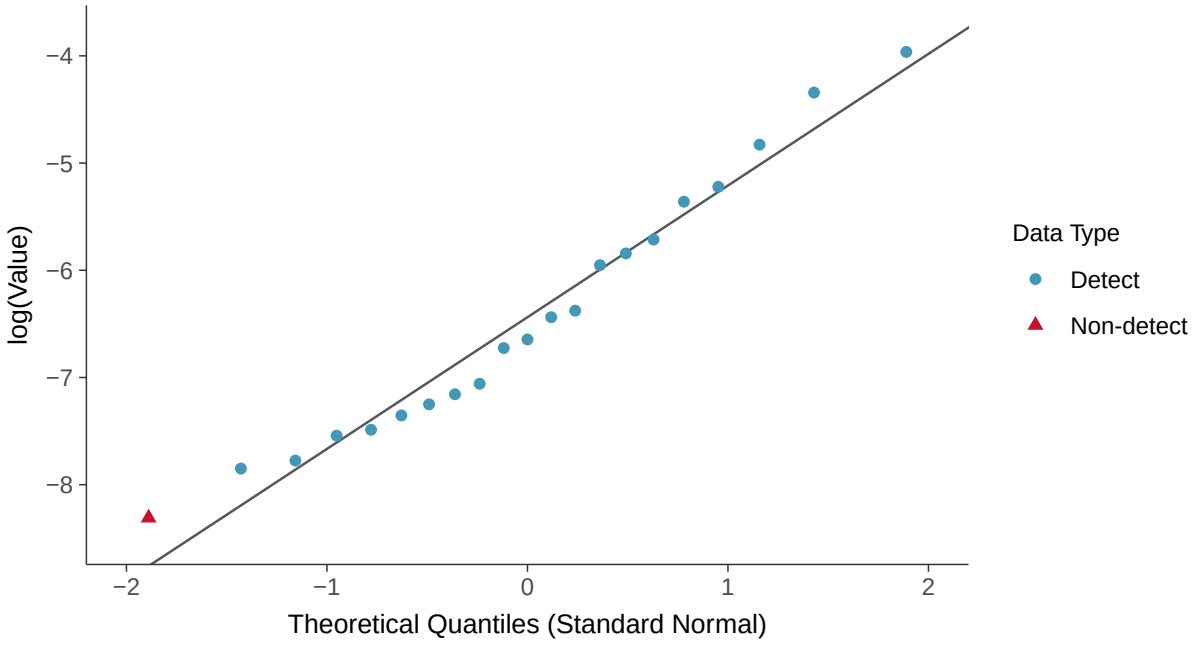
Boxplot by Season

Lead, MW-8 (mg/l)



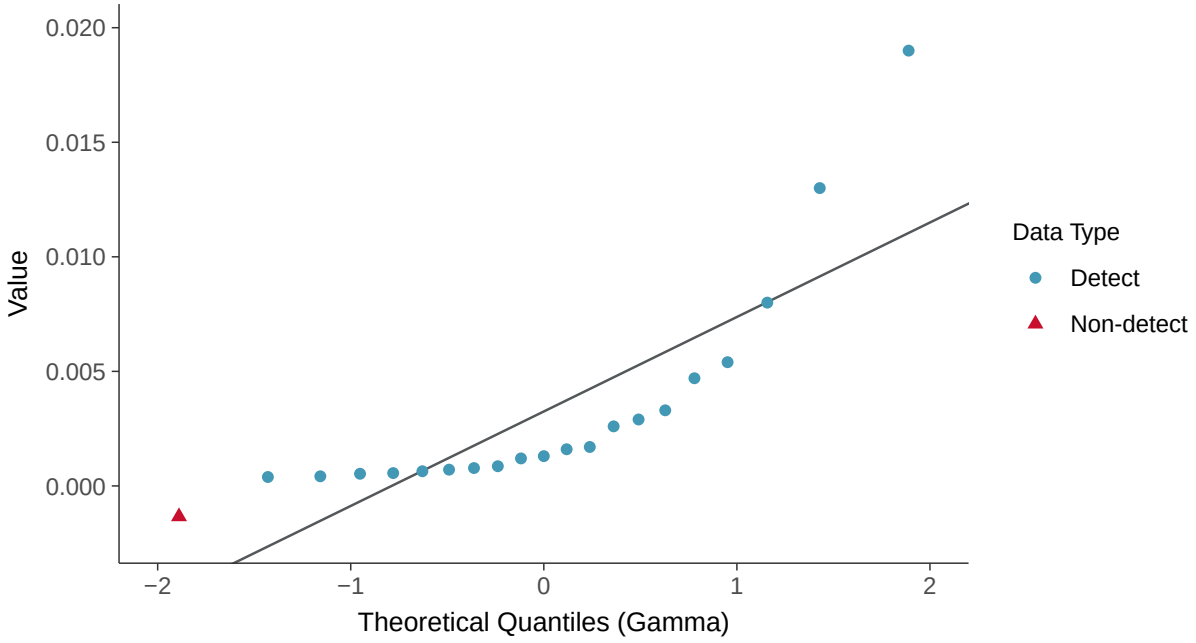
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



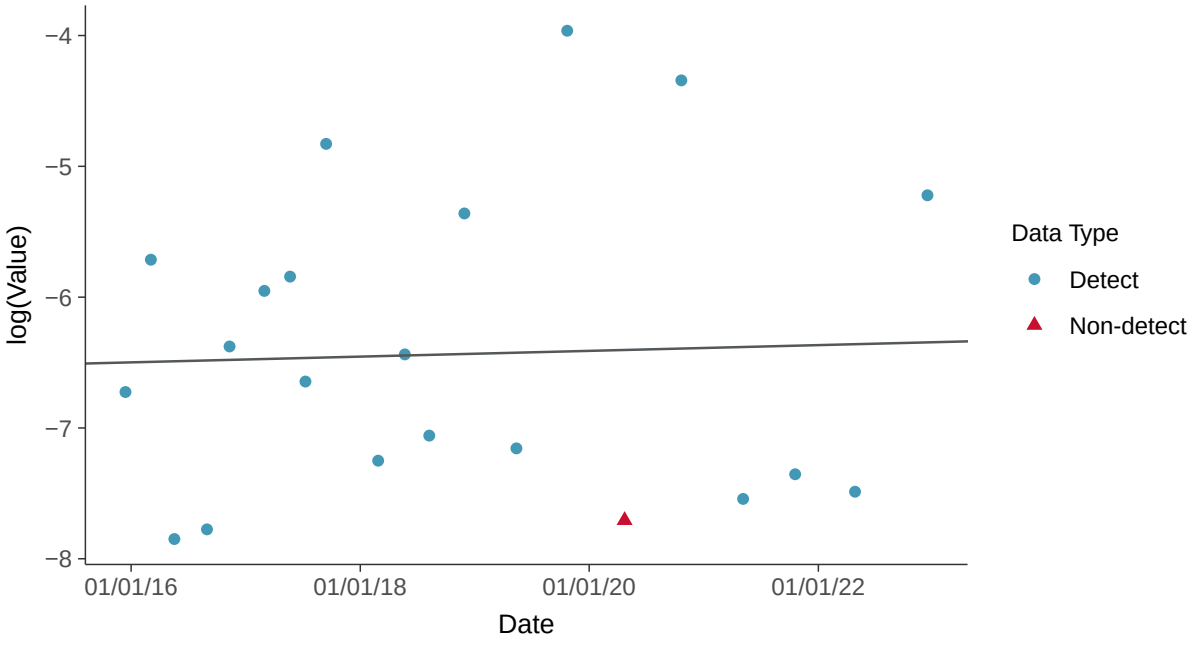
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



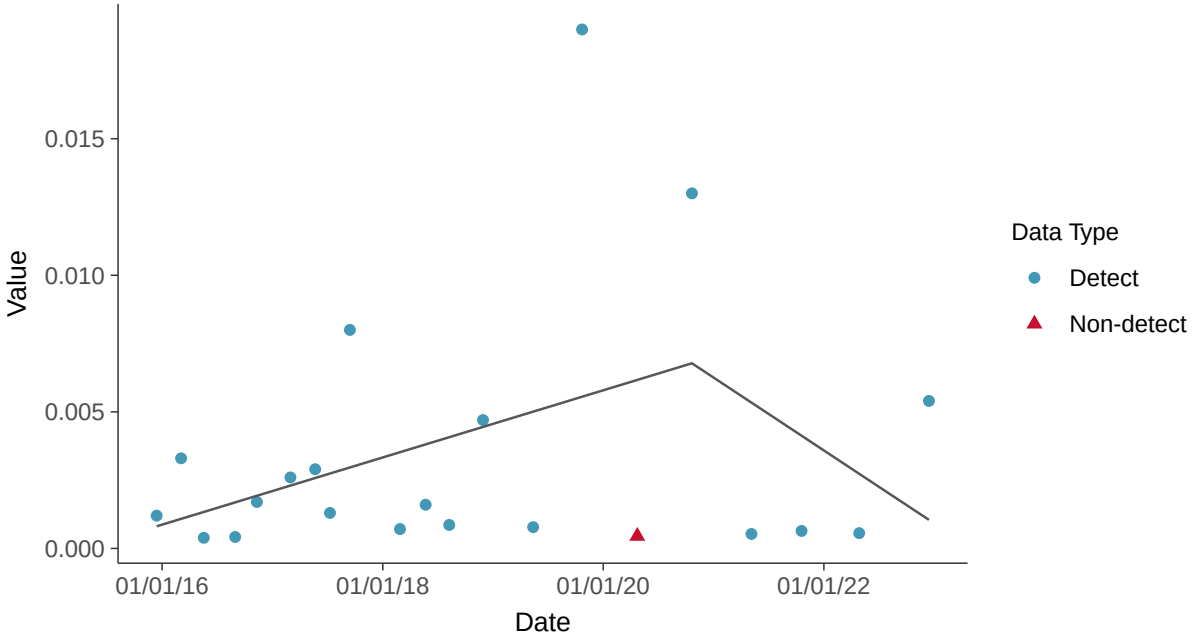
Trend Regression: Lognormal MLE

Lead, MW-8 (mg/l)



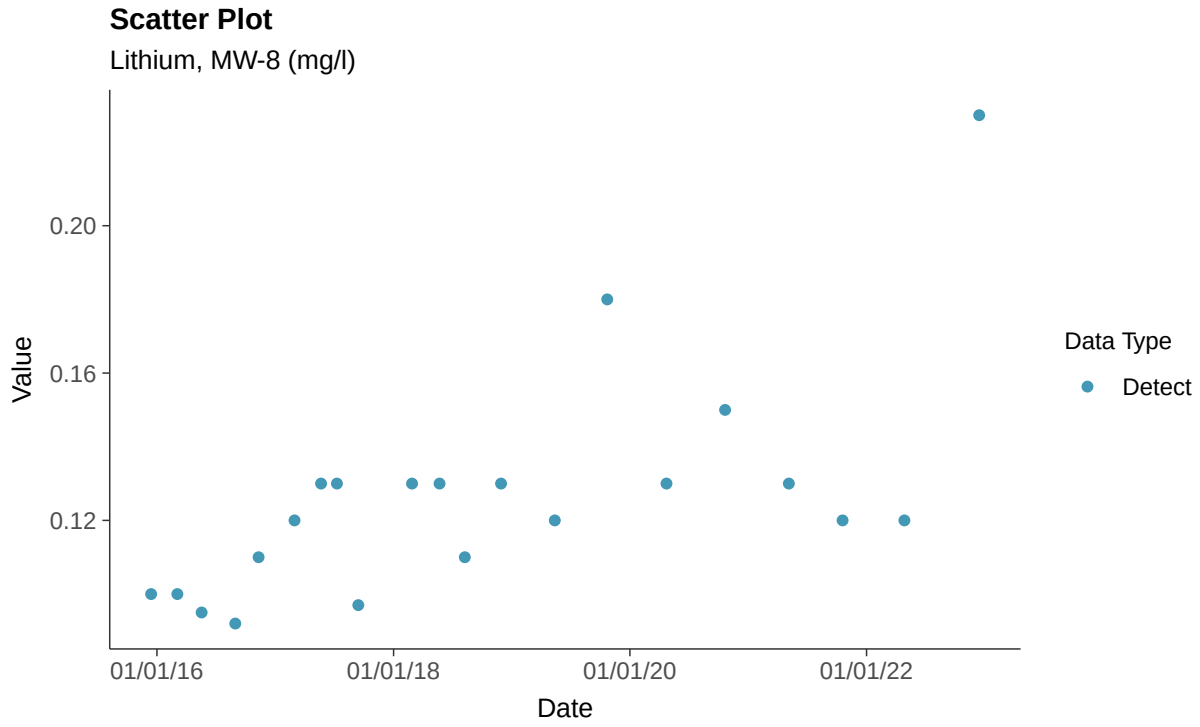
Trend Regression: Piecewise Linear-Linear

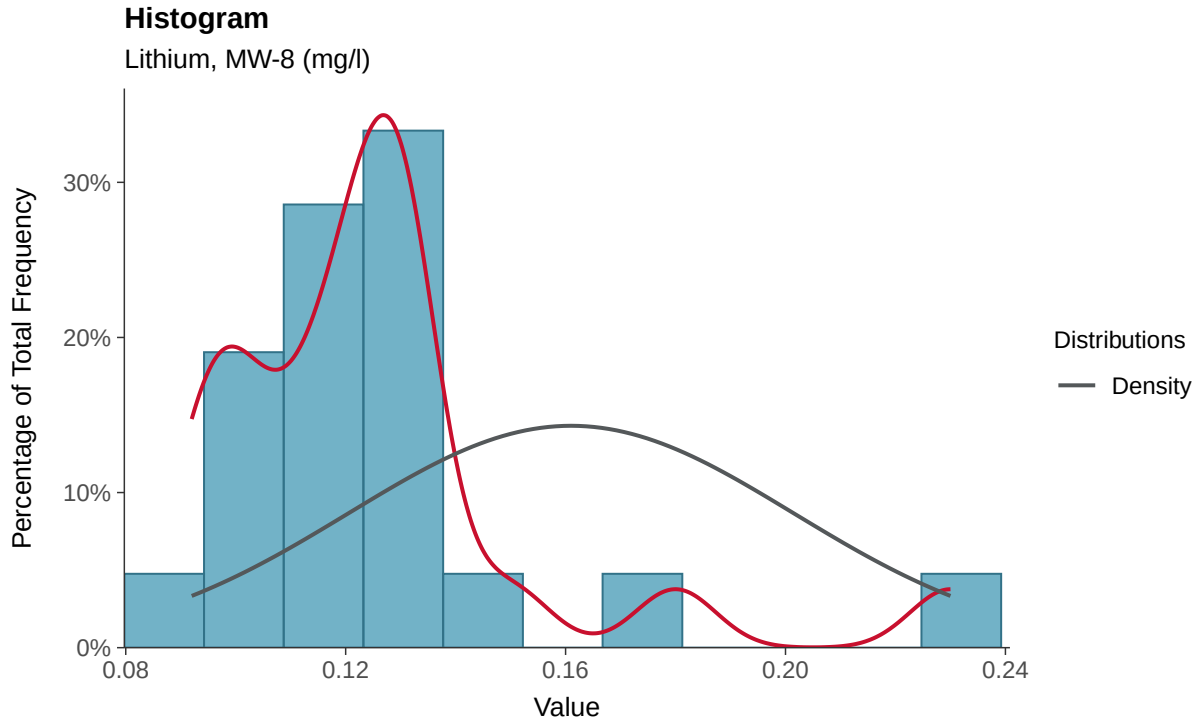
Lead, MW-8 (mg/l)



Appendix IV: Lithium, MW-8

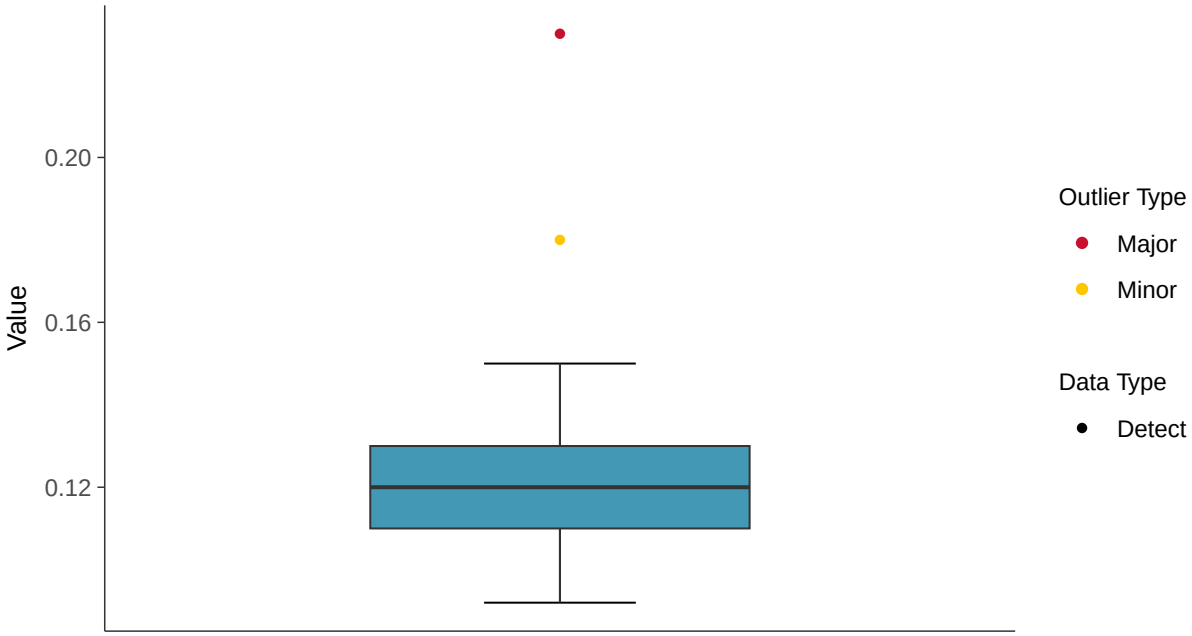
ID: 37_2_118





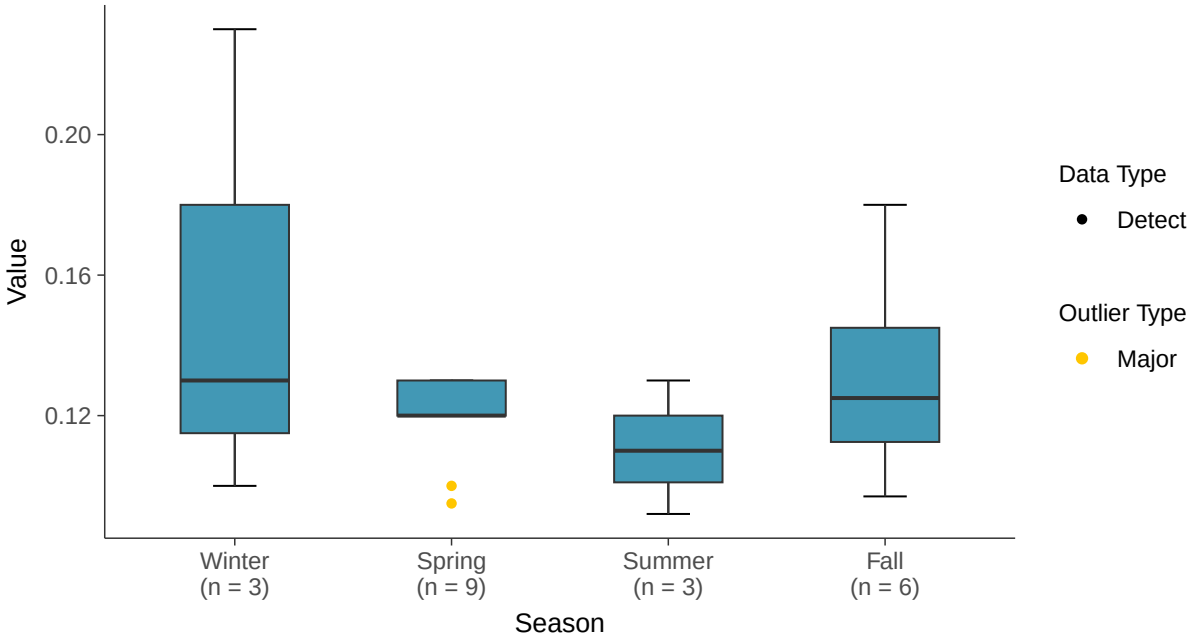
Boxplot

Lithium, MW-8 (mg/l)



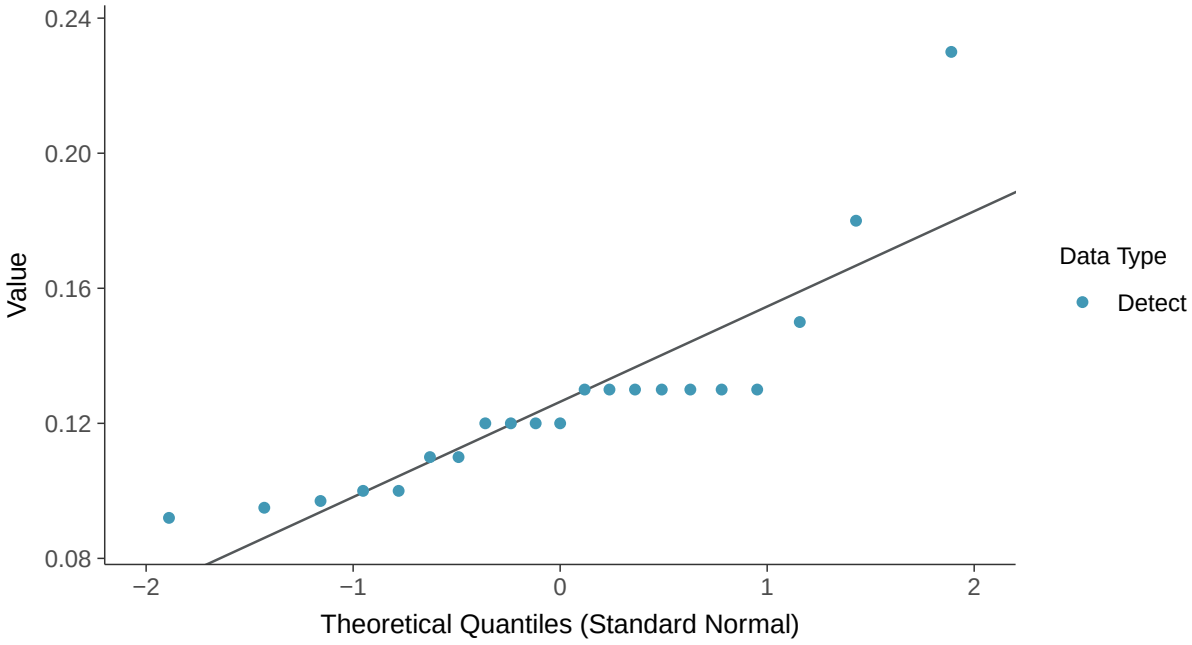
Boxplot by Season

Lithium, MW-8 (mg/l)



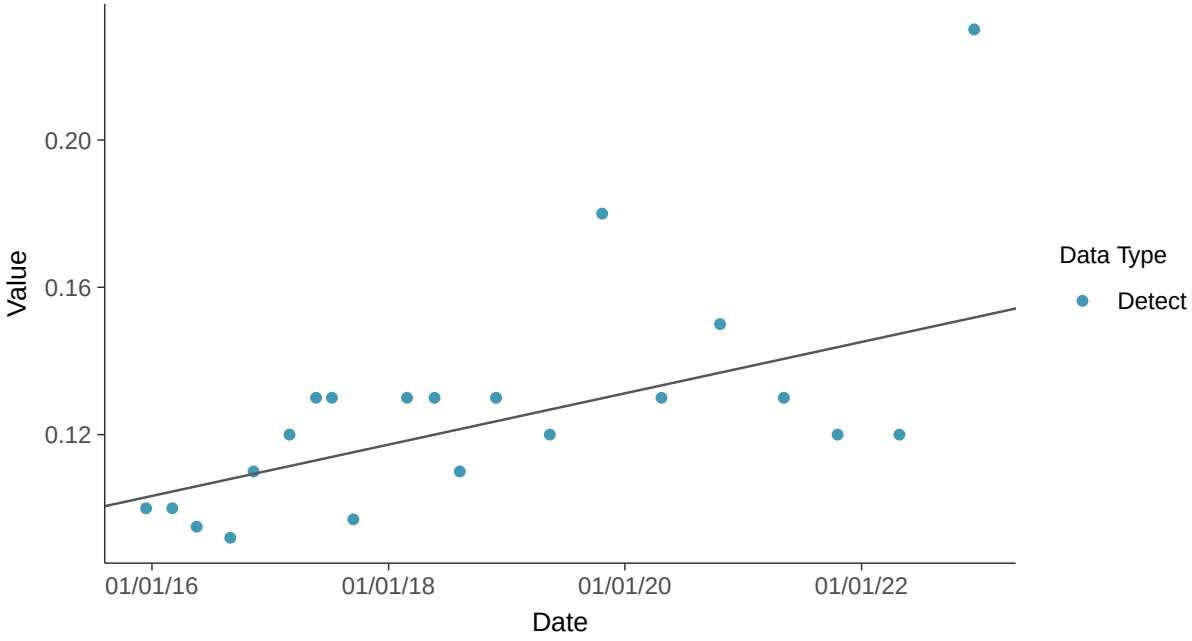
Normal Q-Q plot

Lithium, MW-8 (mg/l)



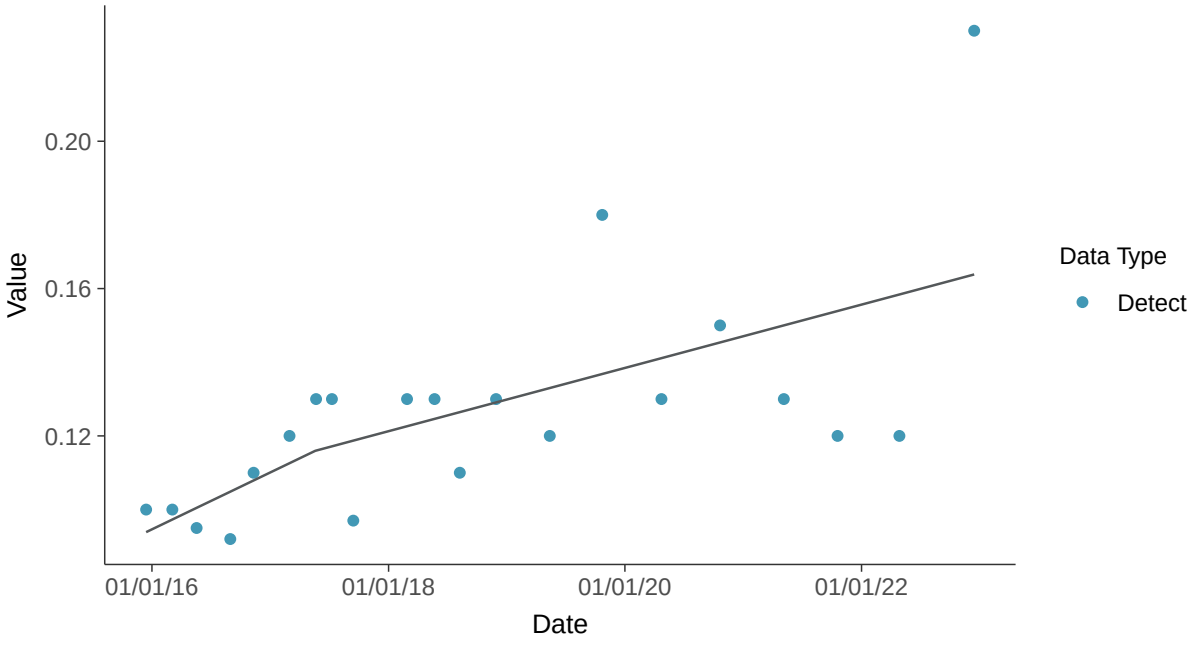
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-8 (mg/l)



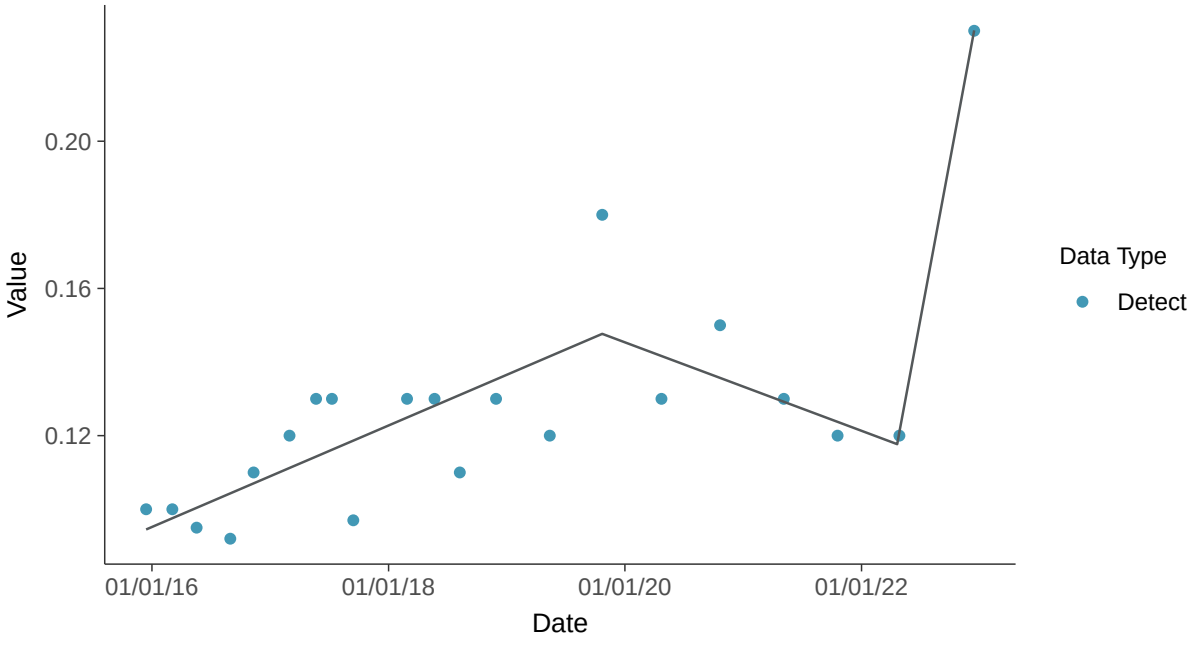
Trend Regression: Piecewise Linear-Linear

Lithium, MW-8 (mg/l)



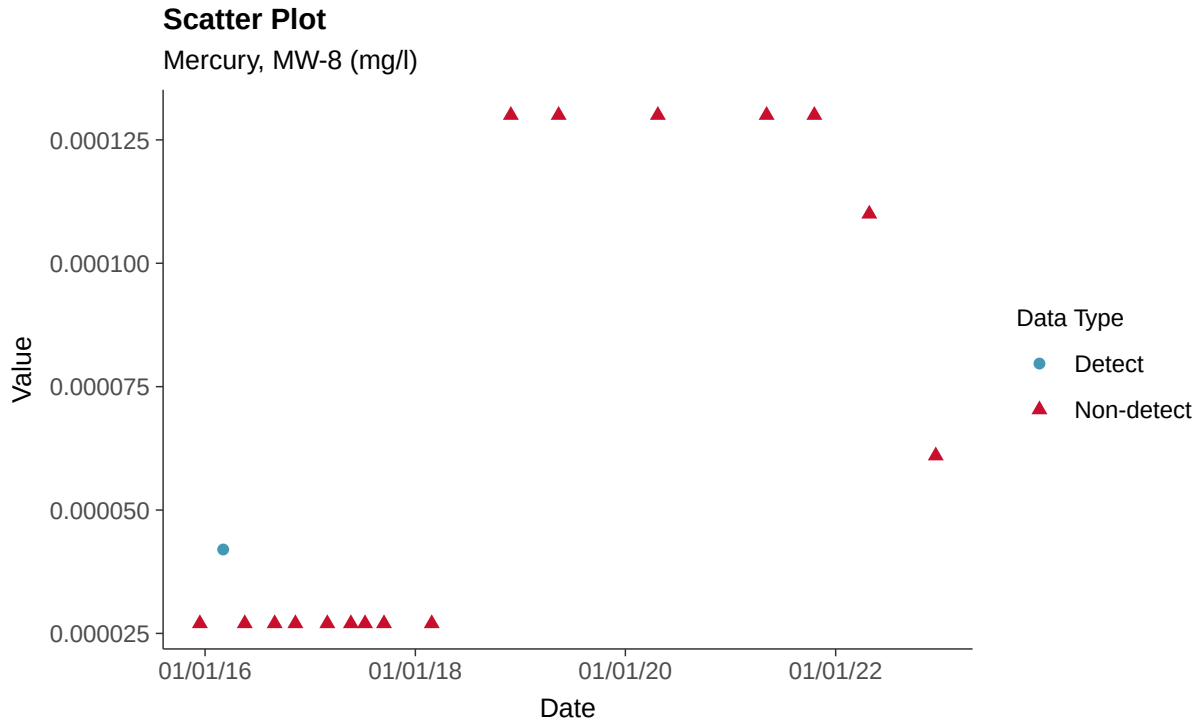
Trend Regression: Piecewise Linear-Linear-Linear

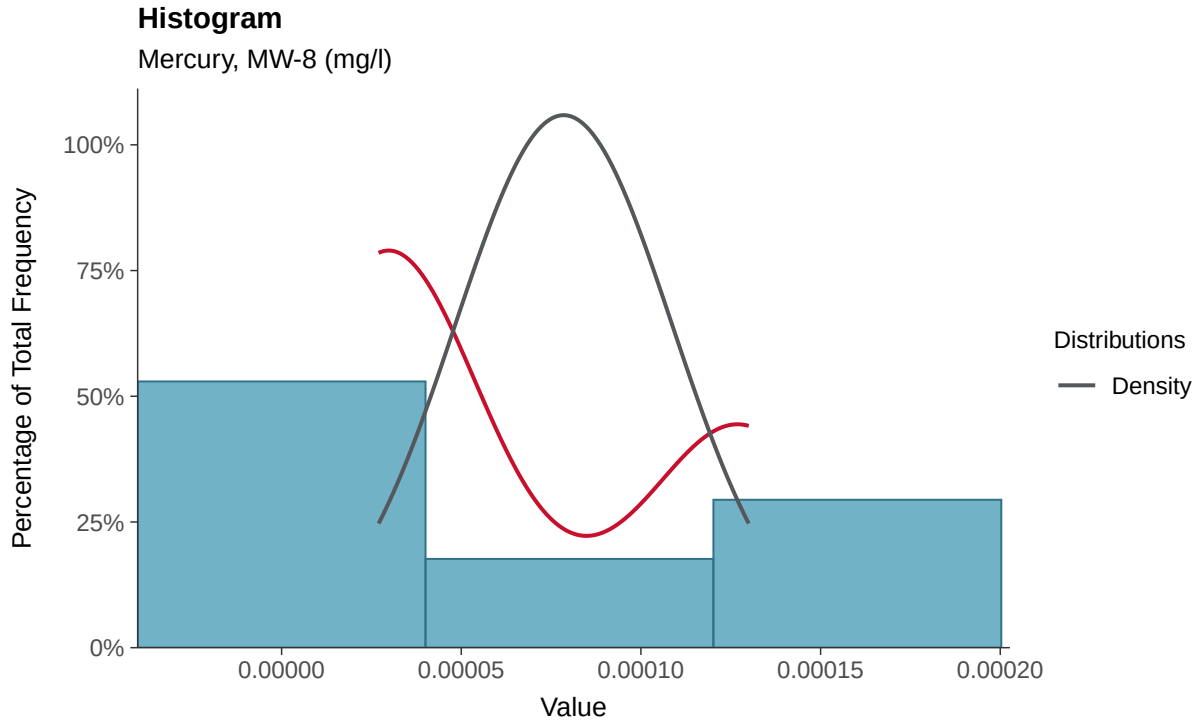
Lithium, MW-8 (mg/l)



Appendix IV: Mercury, MW-8

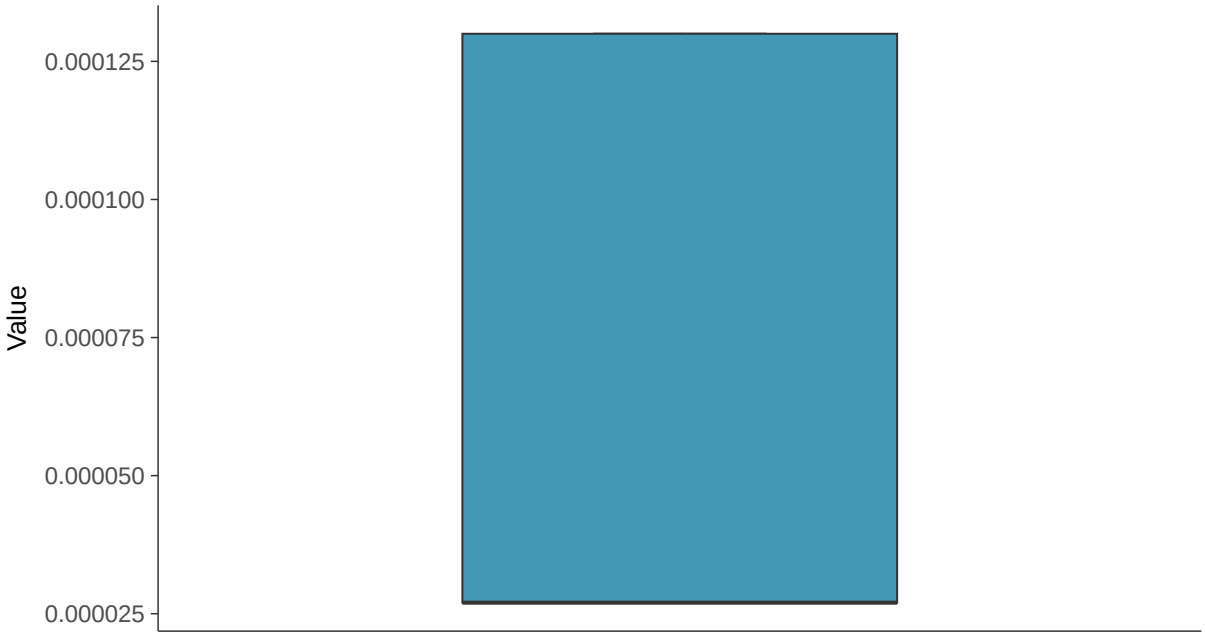
ID: 37_2_120





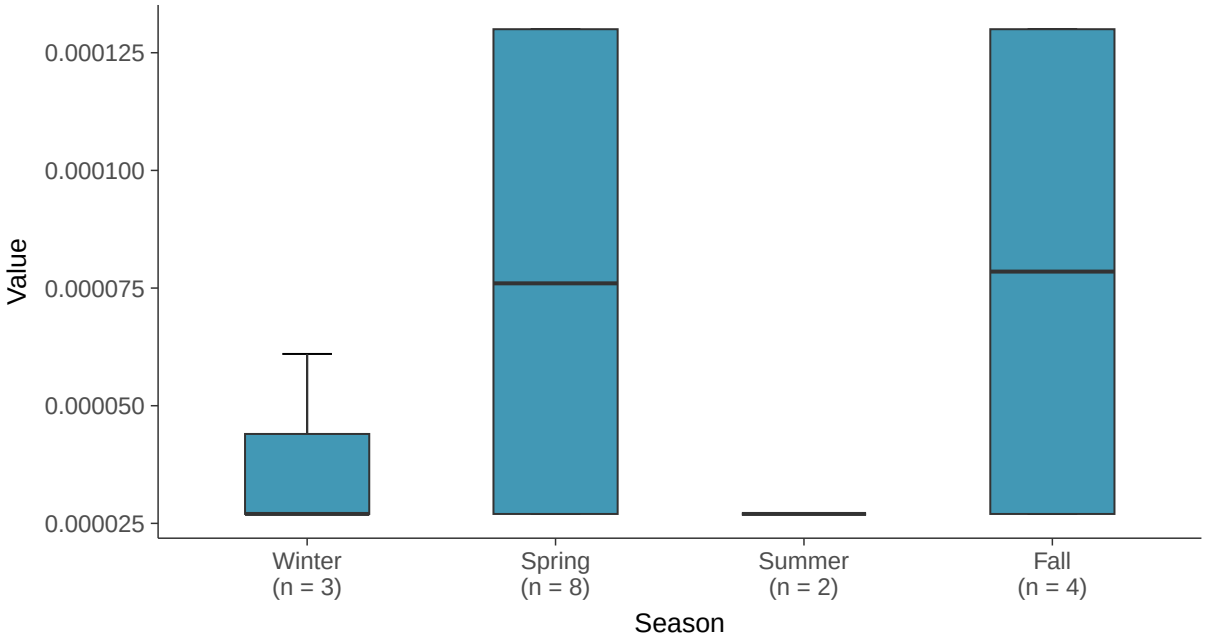
Boxplot

Mercury, MW-8 (mg/l)



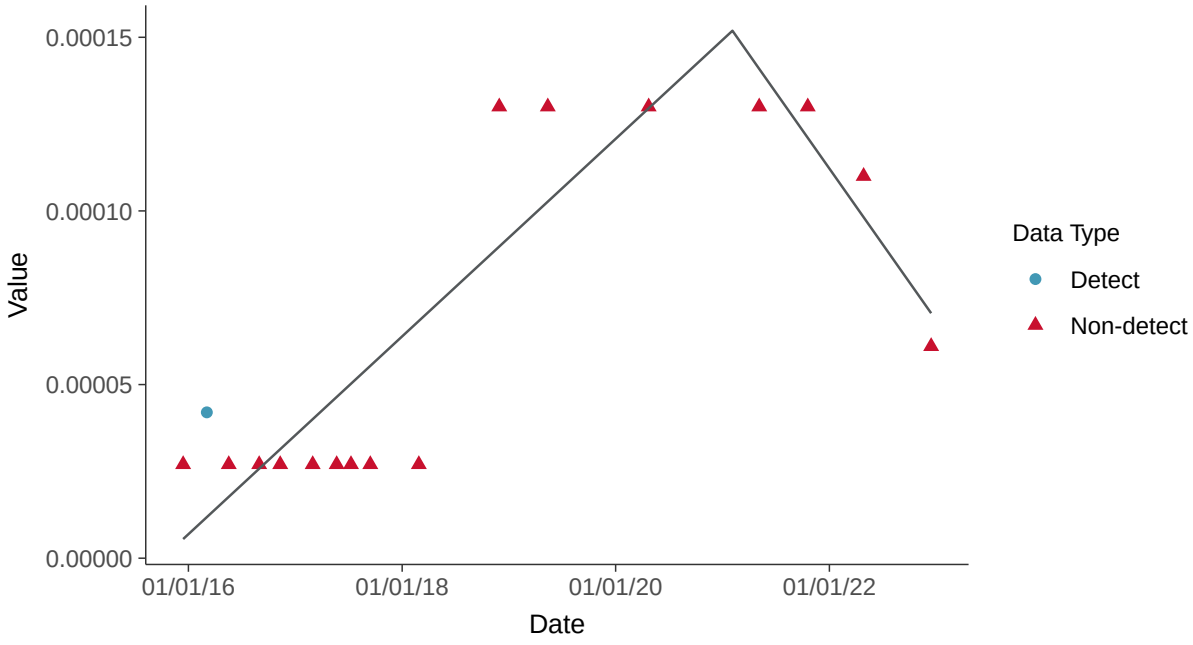
Boxplot by Season

Mercury, MW-8 (mg/l)



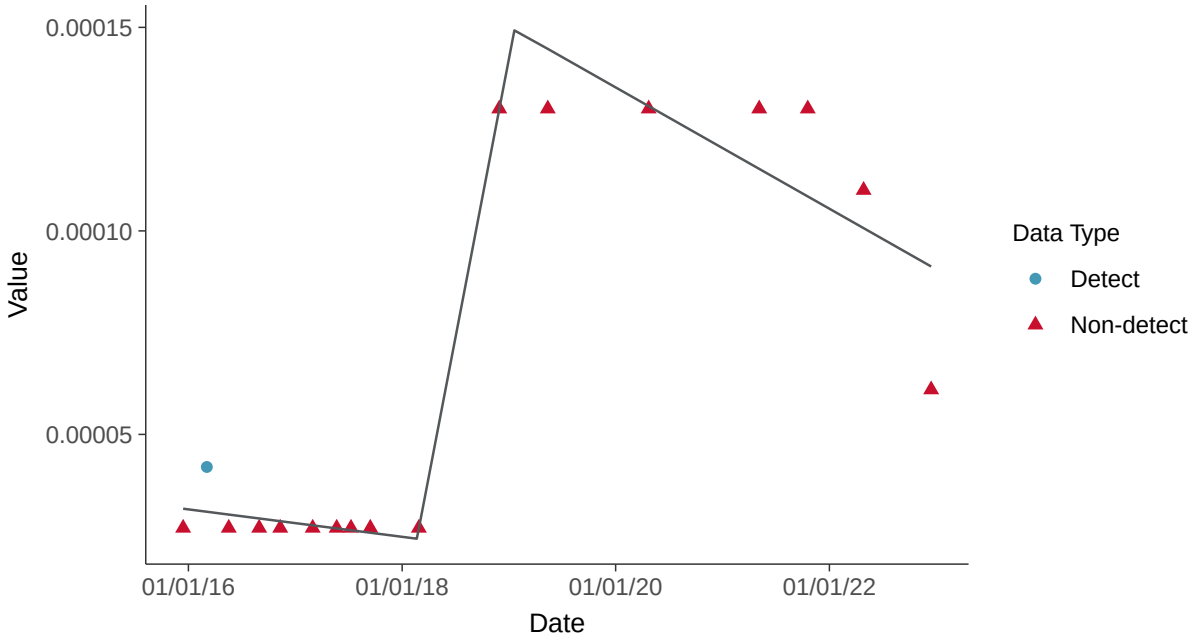
Trend Regression: Piecewise Linear-Linear

Mercury, MW-8 (mg/l)



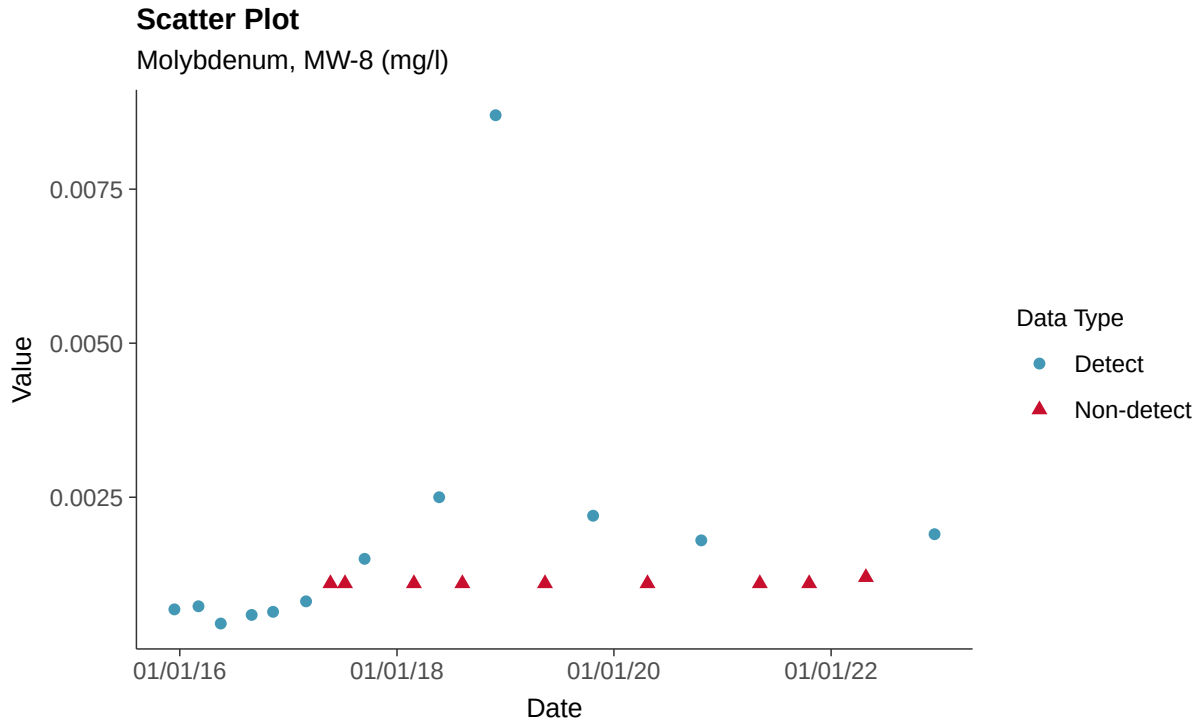
Trend Regression: Piecewise Linear-Linear-Linear

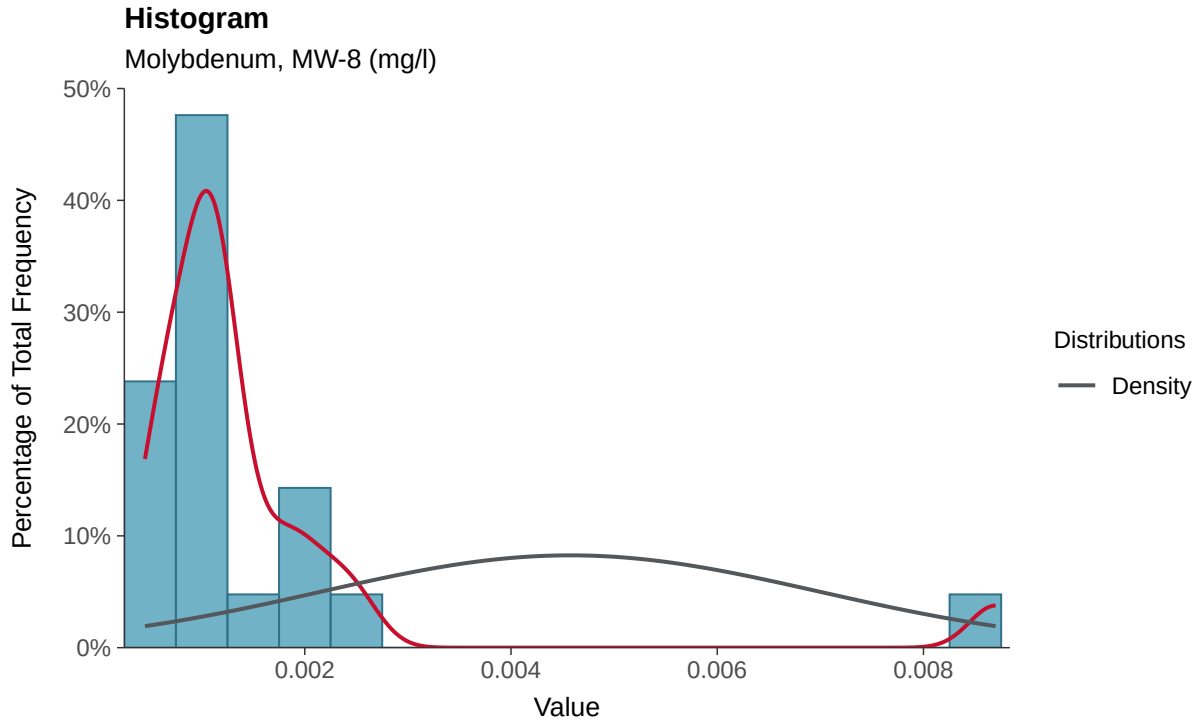
Mercury, MW-8 (mg/l)



Appendix IV: Molybdenum, MW-8

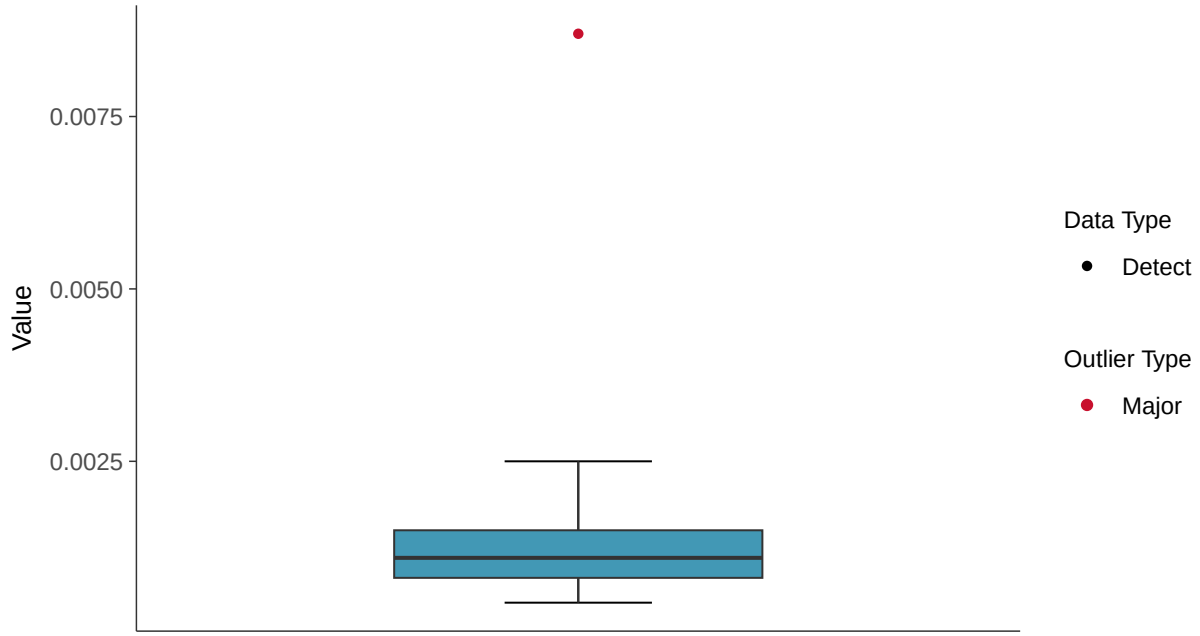
ID: 37_2_121





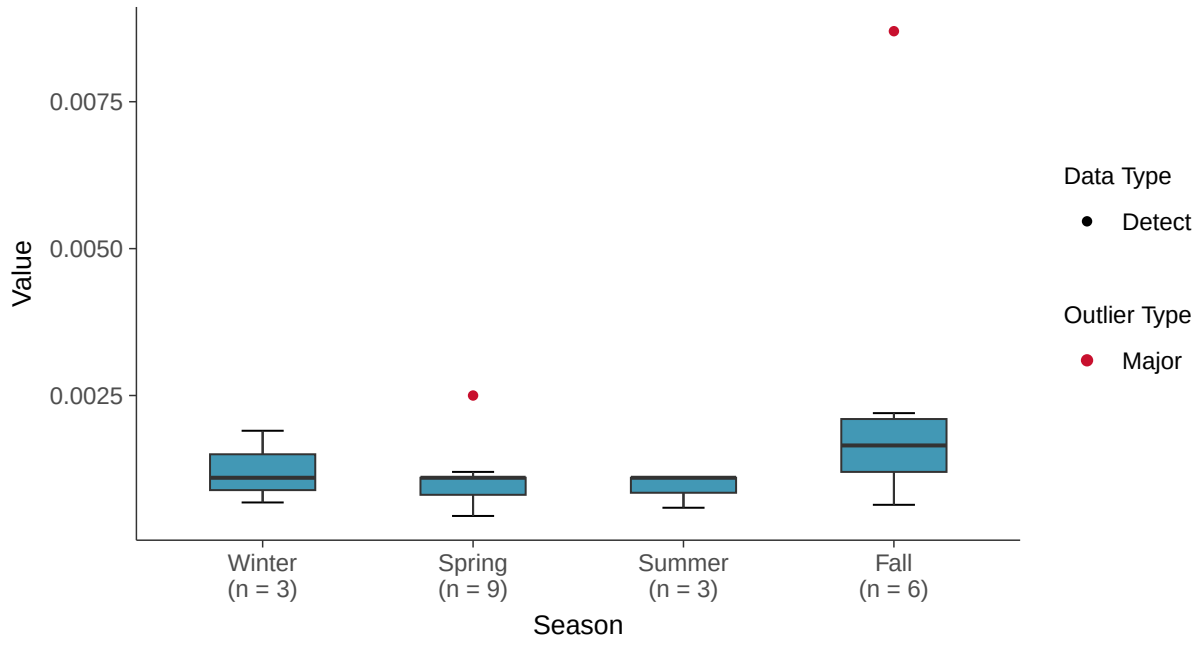
Boxplot

Molybdenum, MW-8 (mg/l)



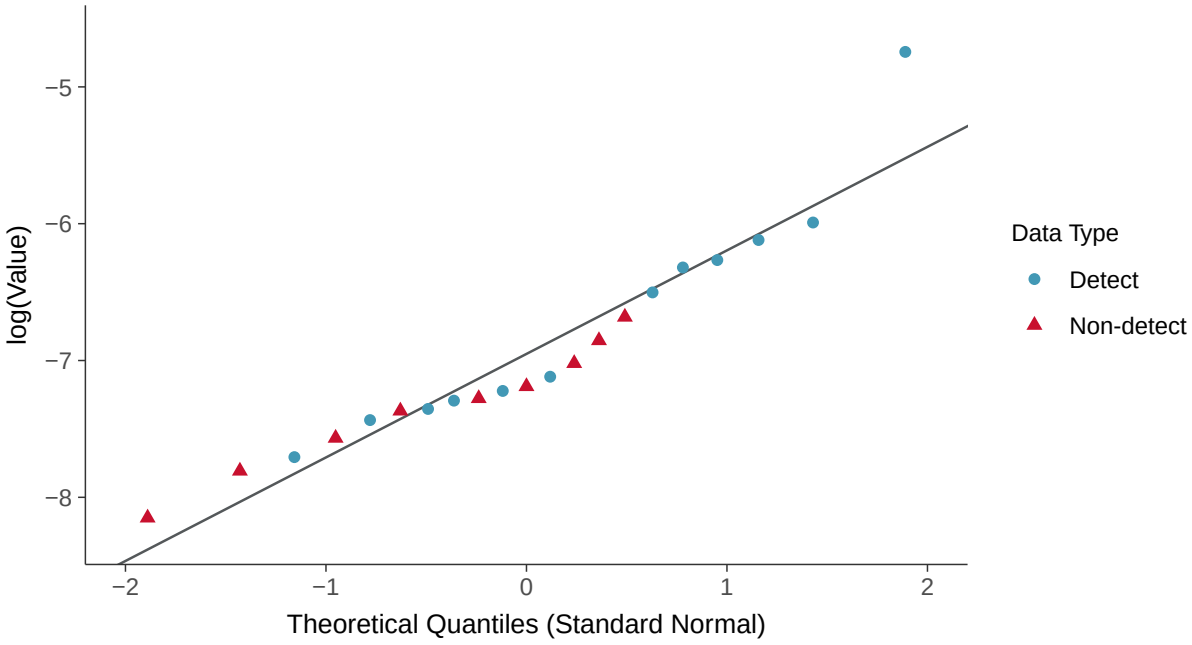
Boxplot by Season

Molybdenum, MW-8 (mg/l)



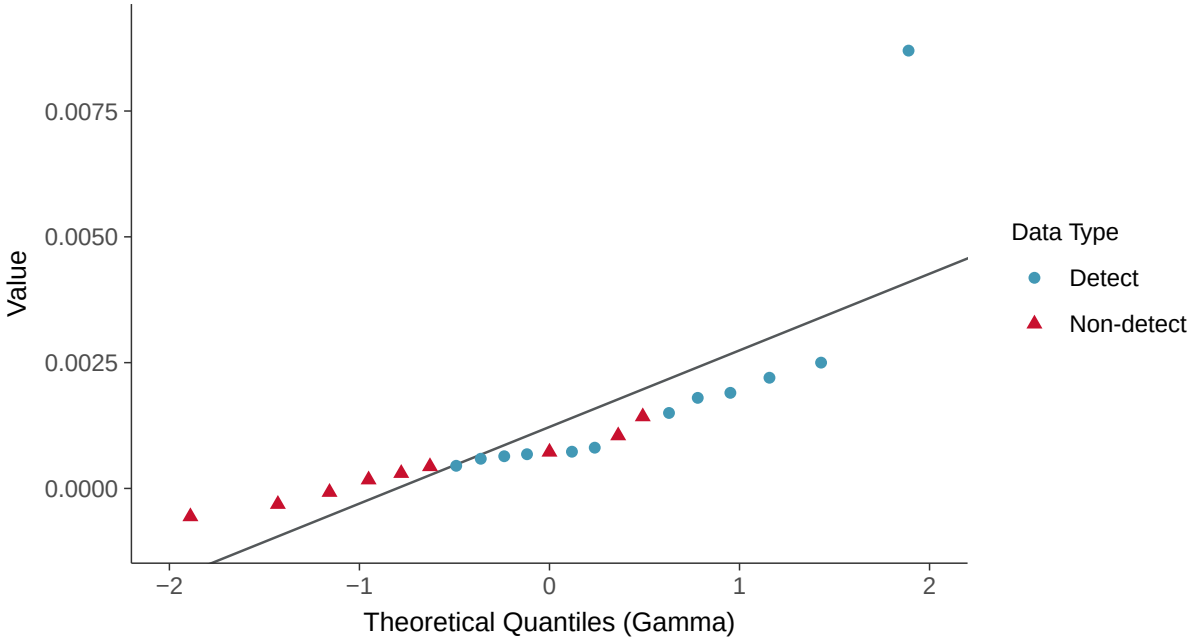
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-8 (mg/l)



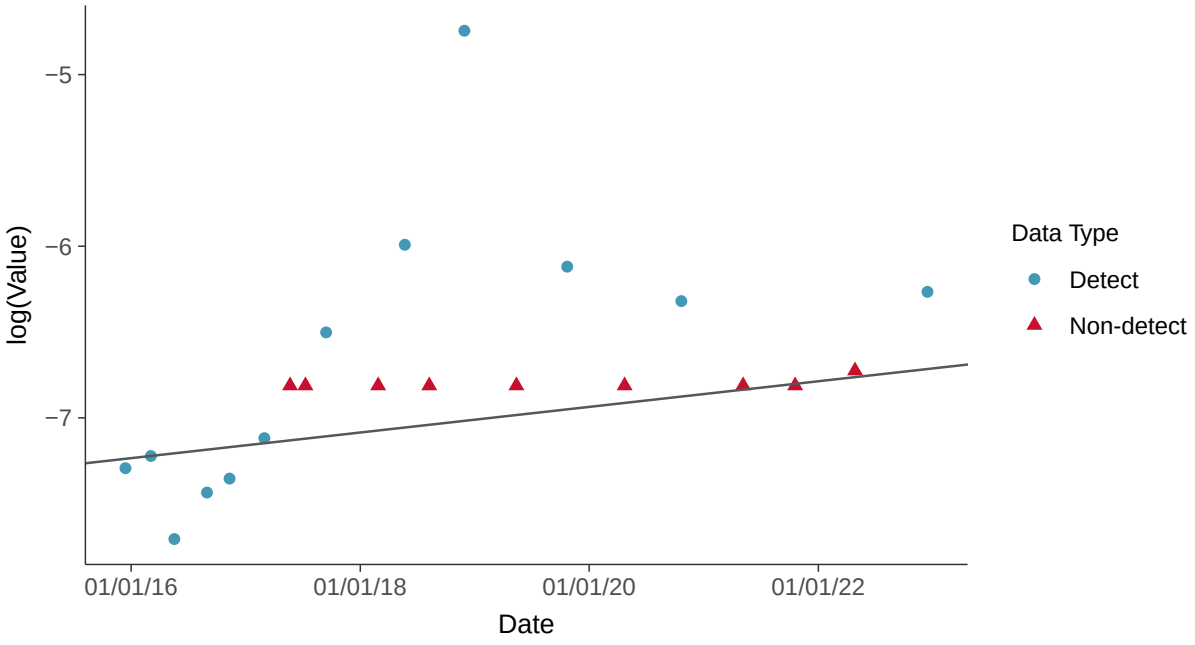
Gamma Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-8 (mg/l)



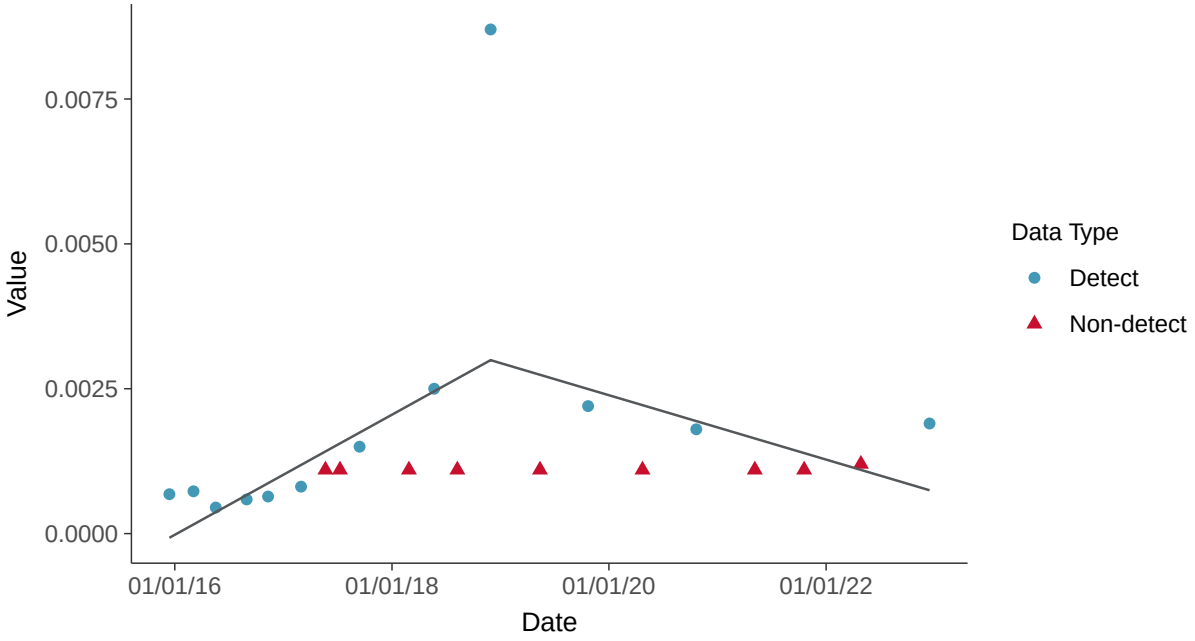
Trend Regression: Lognormal MLE

Molybdenum, MW-8 (mg/l)



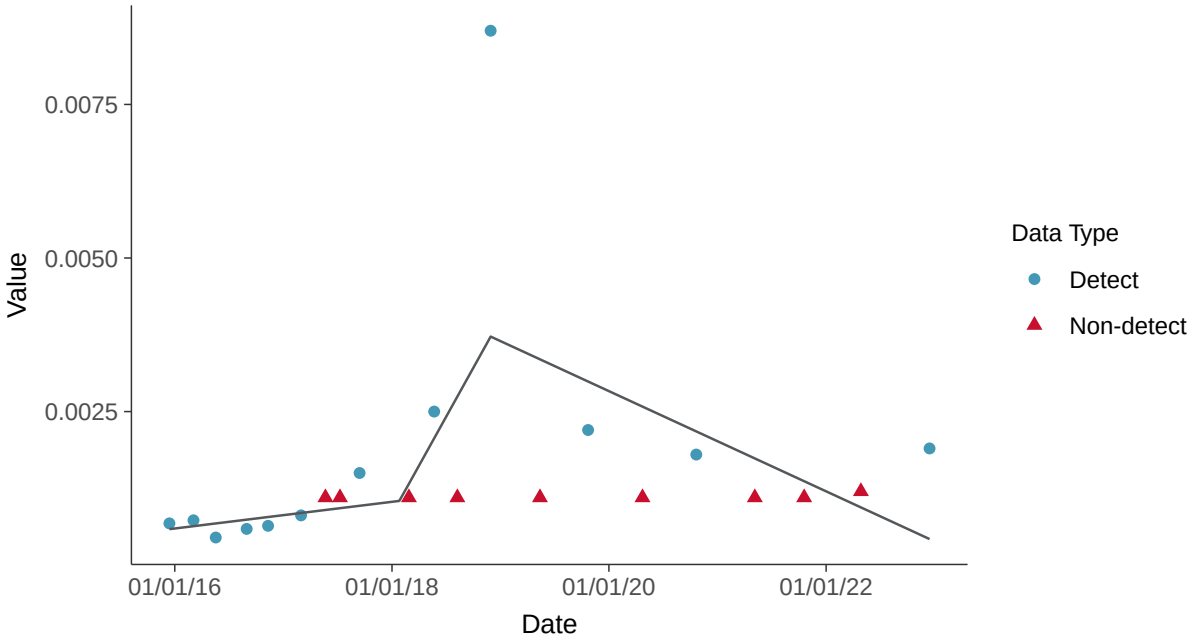
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-8 (mg/l)

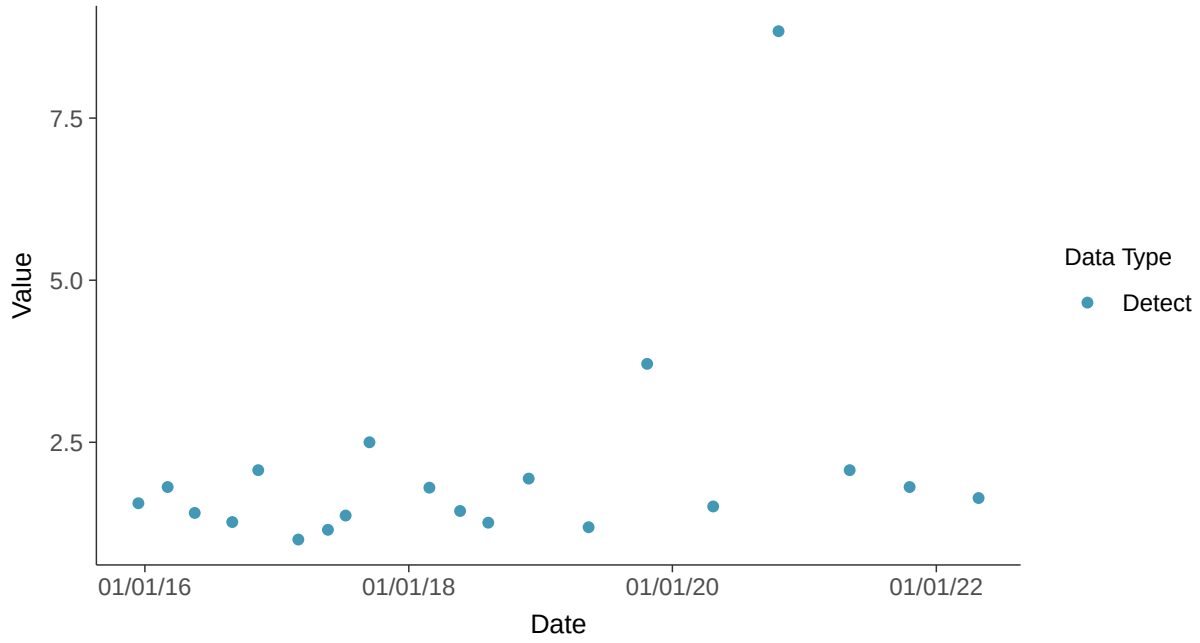


Appendix IV: Radium-226+228, MW-8

ID: 37_2_127

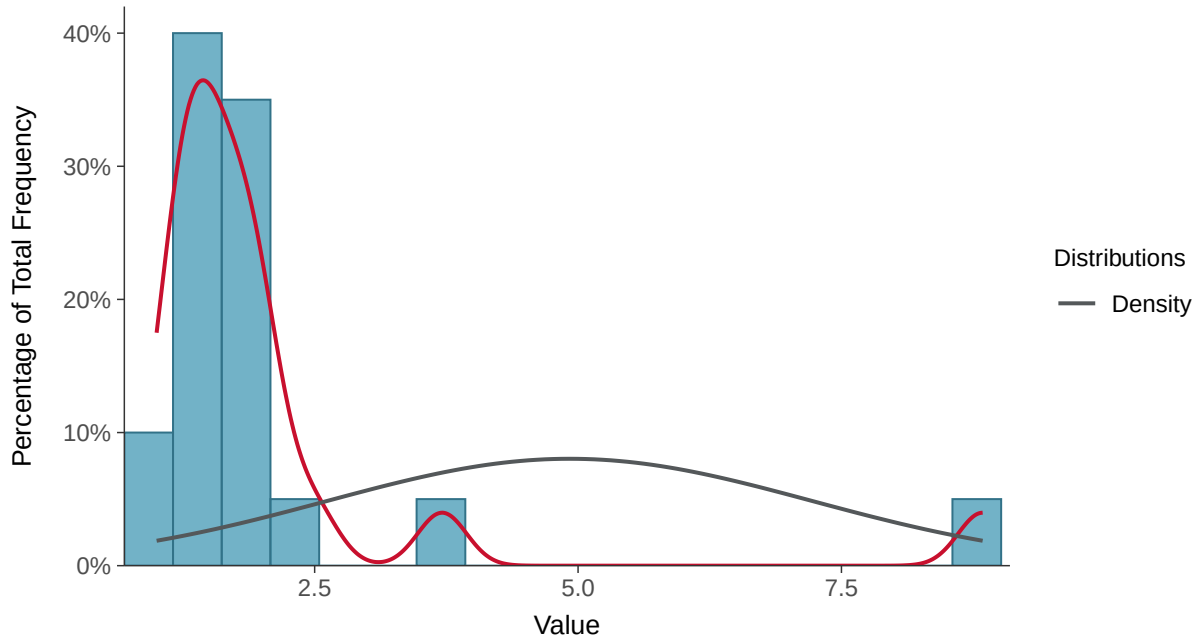
Scatter Plot

Radium-226+228, MW-8 (pci/l)



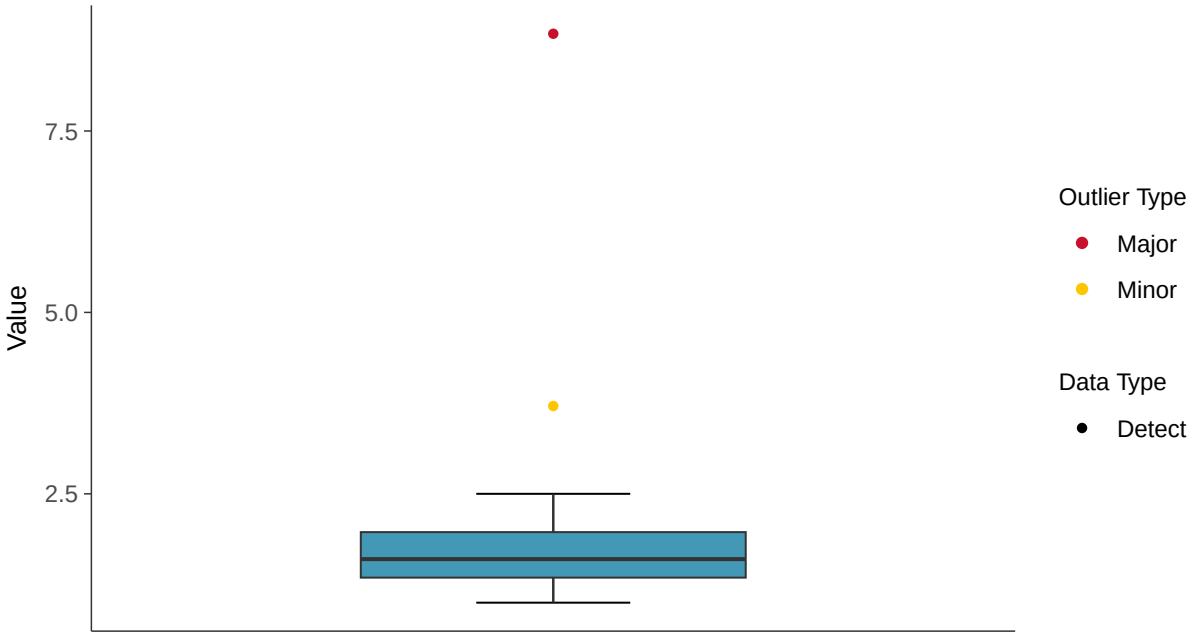
Histogram

Radium-226+228, MW-8 (pci/l)



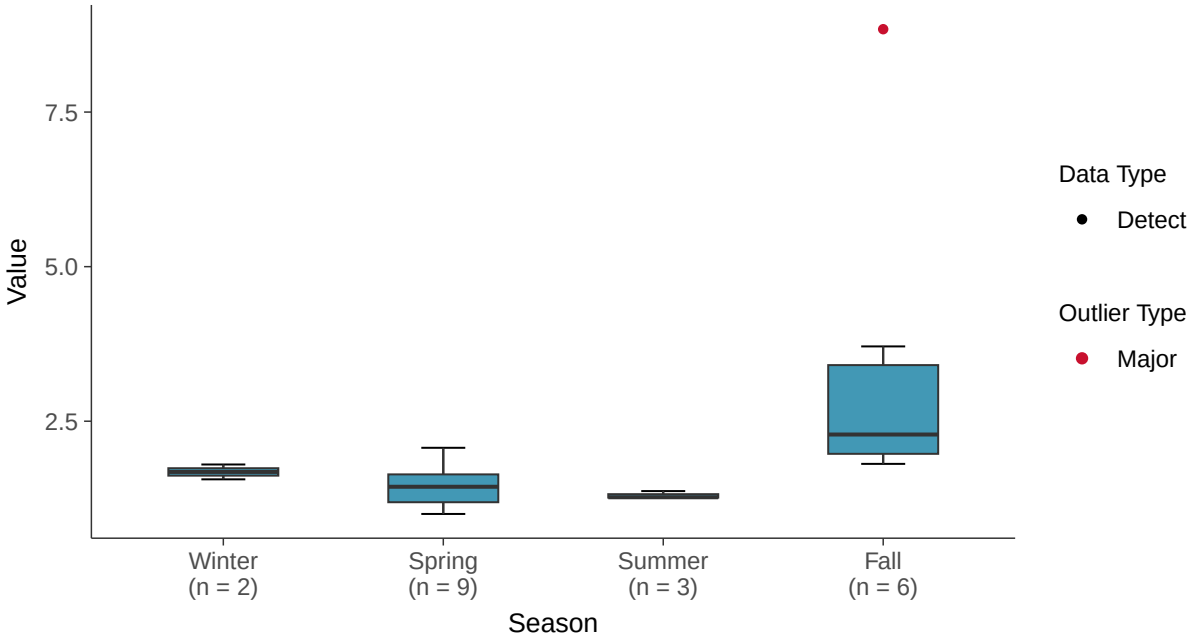
Boxplot

Radium-226+228, MW-8 (pci/l)



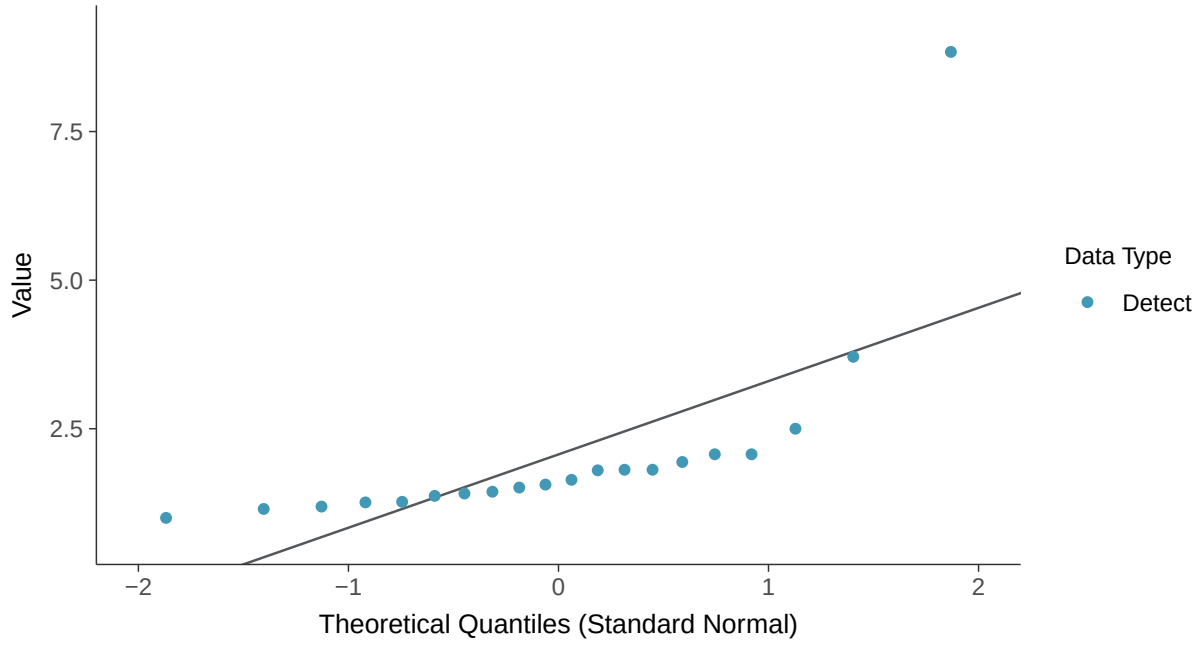
Boxplot by Season

Radium-226+228, MW-8 (pci/l)



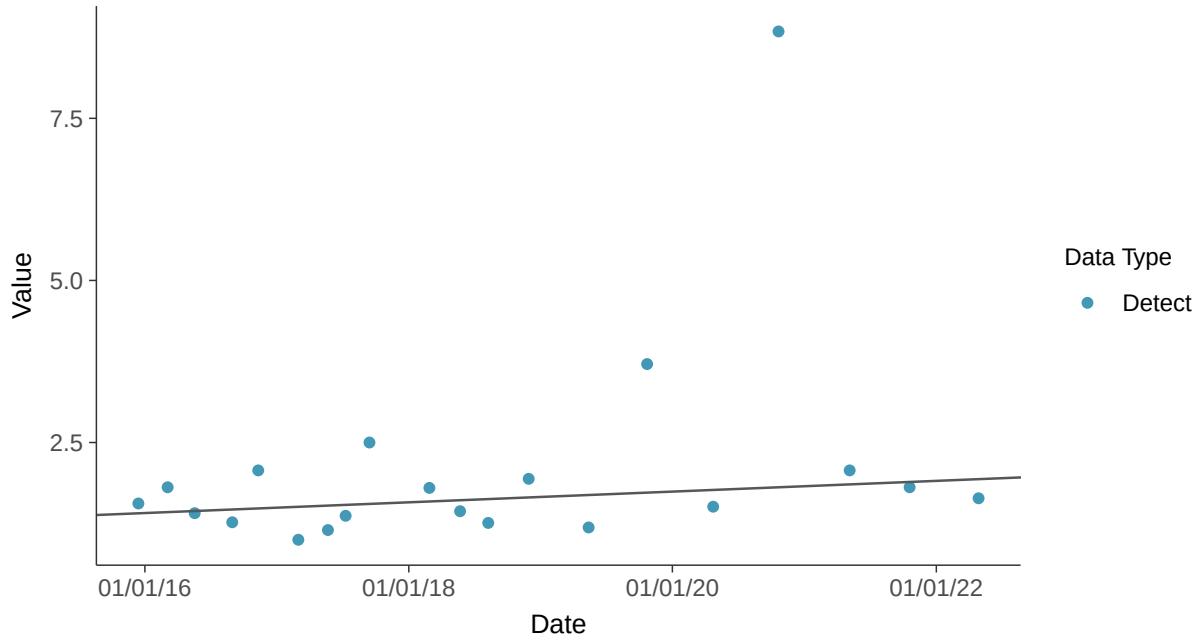
Normal Q-Q plot

Radium-226+228, MW-8 (pci/l)



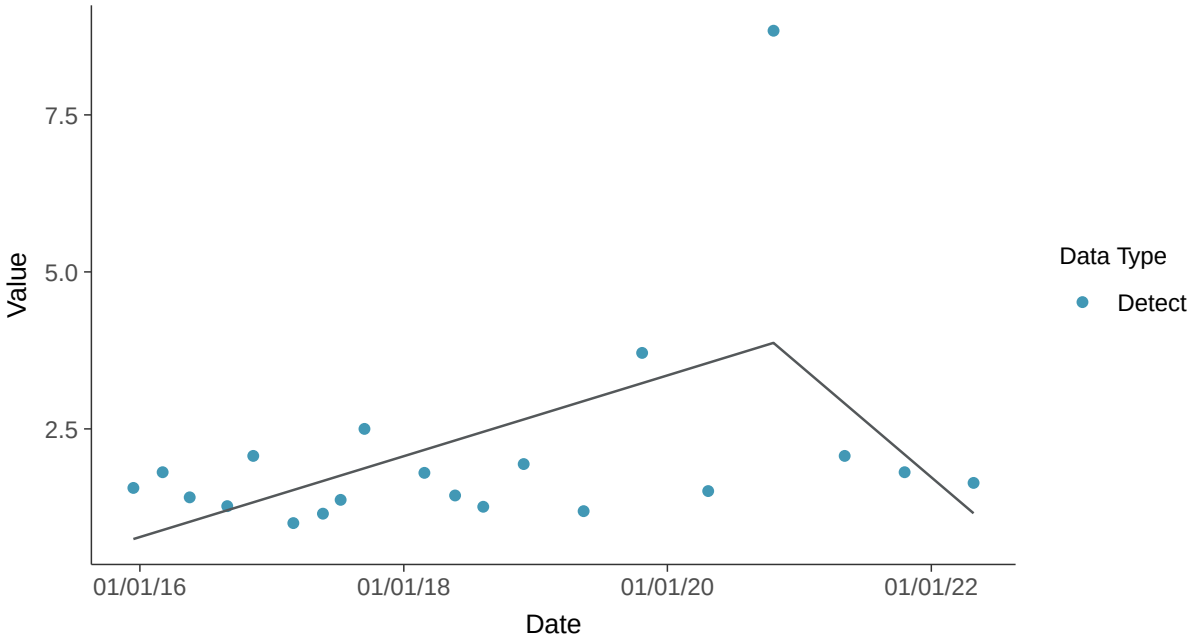
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Radium-226+228, MW-8 (pci/l)



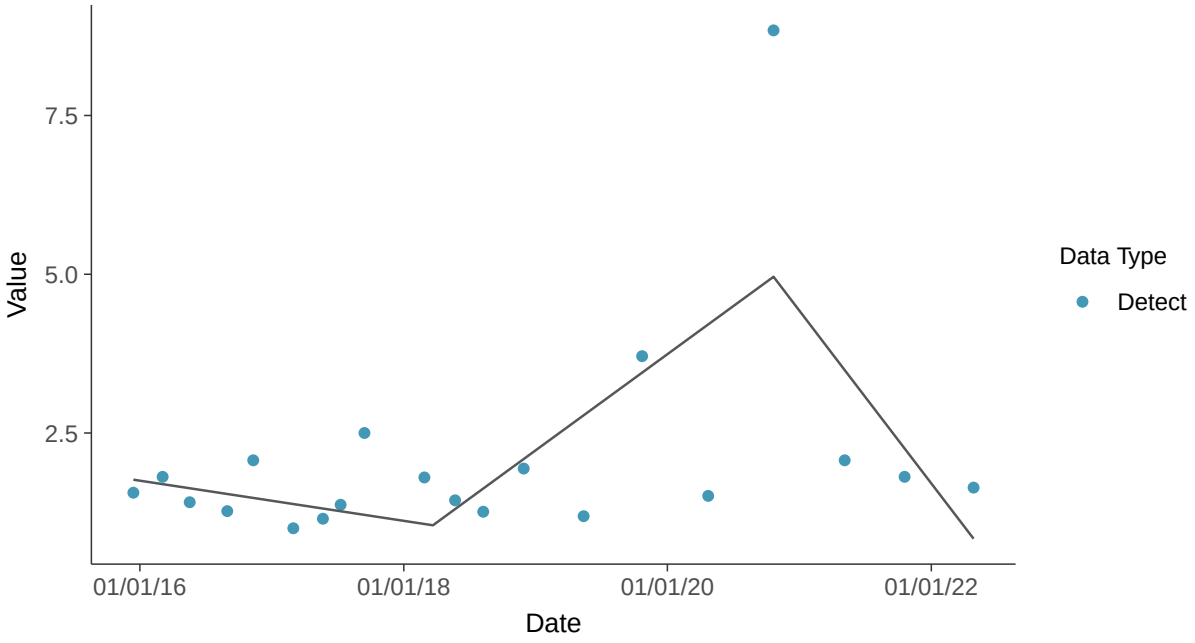
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-8 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-8 (pci/l)

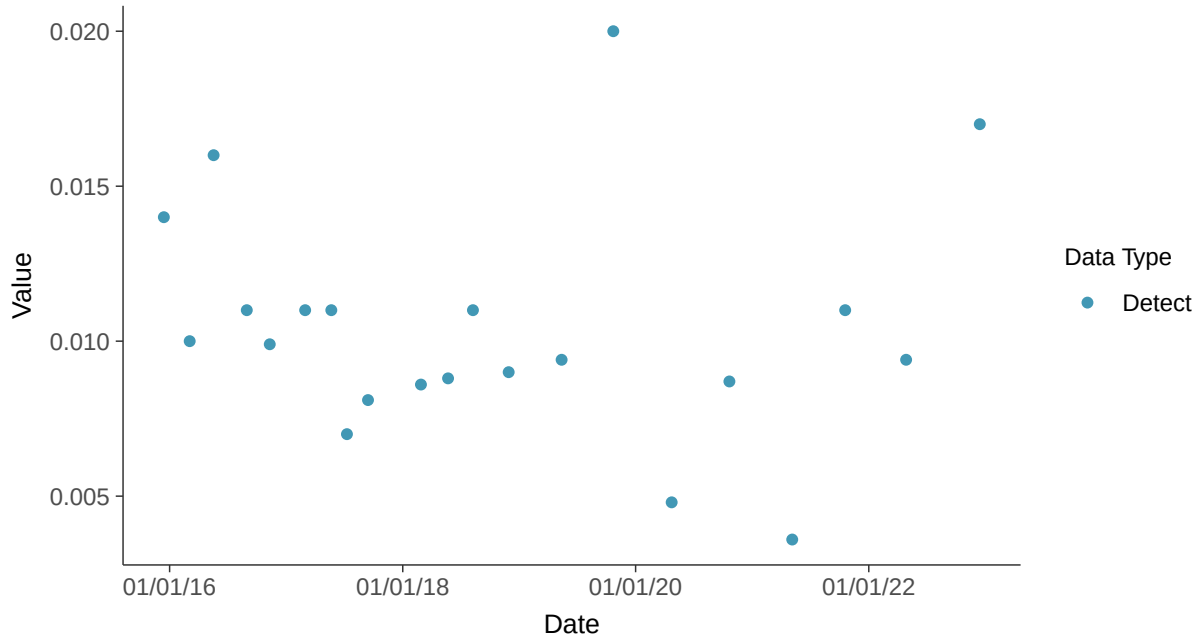


Appendix IV: Selenium, MW-8

ID: 37_2_129

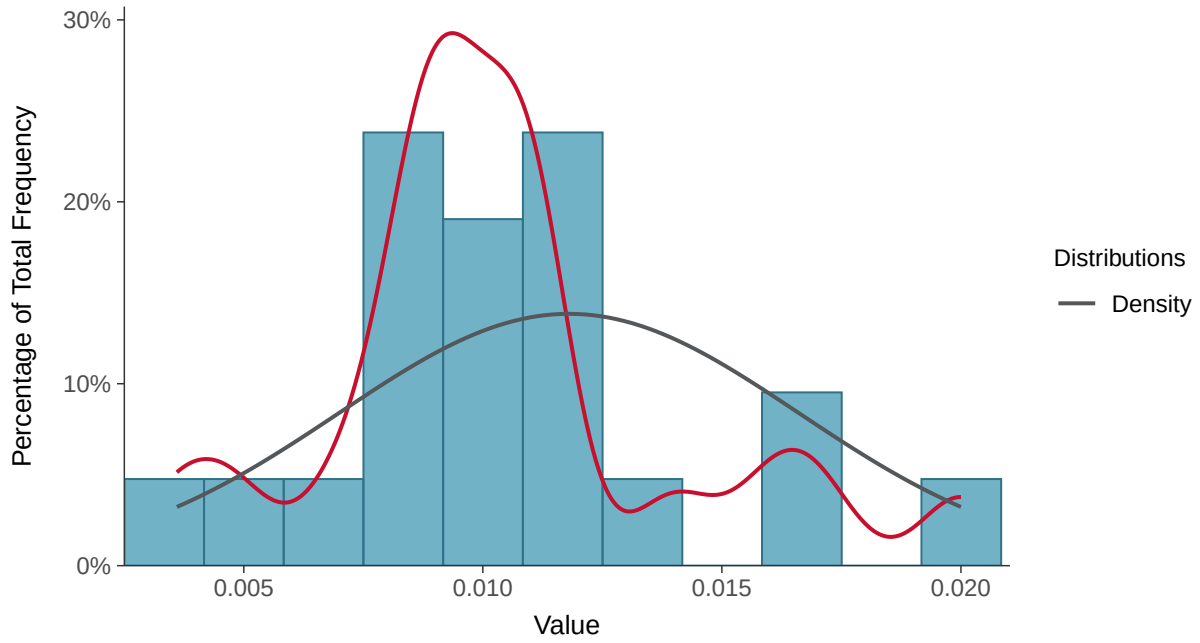
Scatter Plot

Selenium, MW-8 (mg/l)



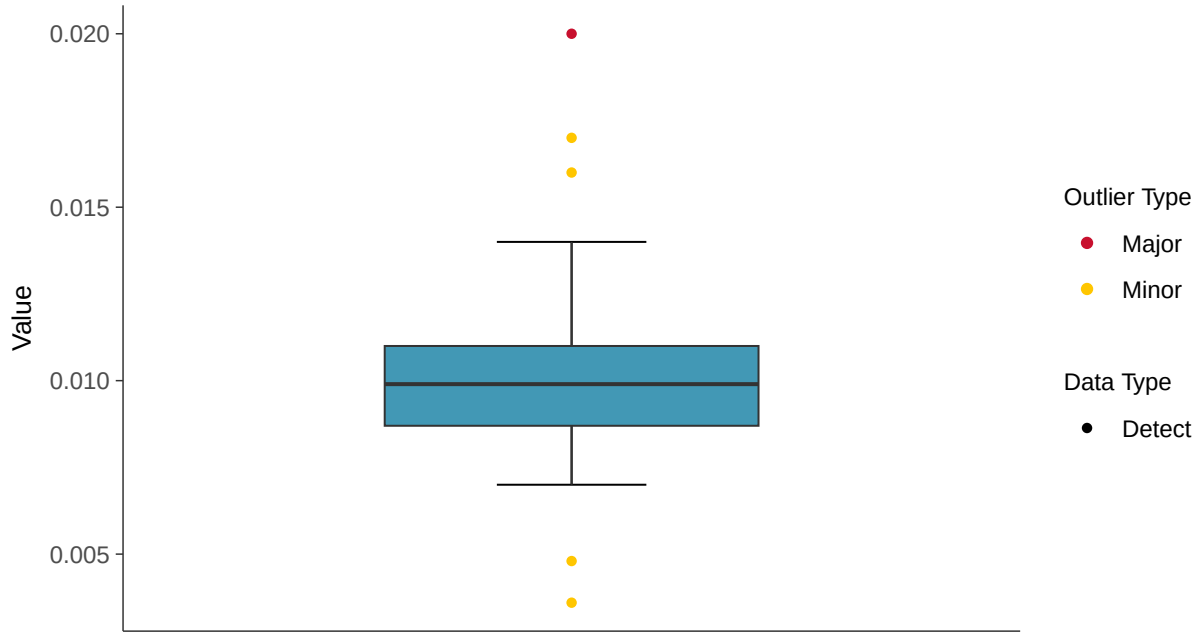
Histogram

Selenium, MW-8 (mg/l)



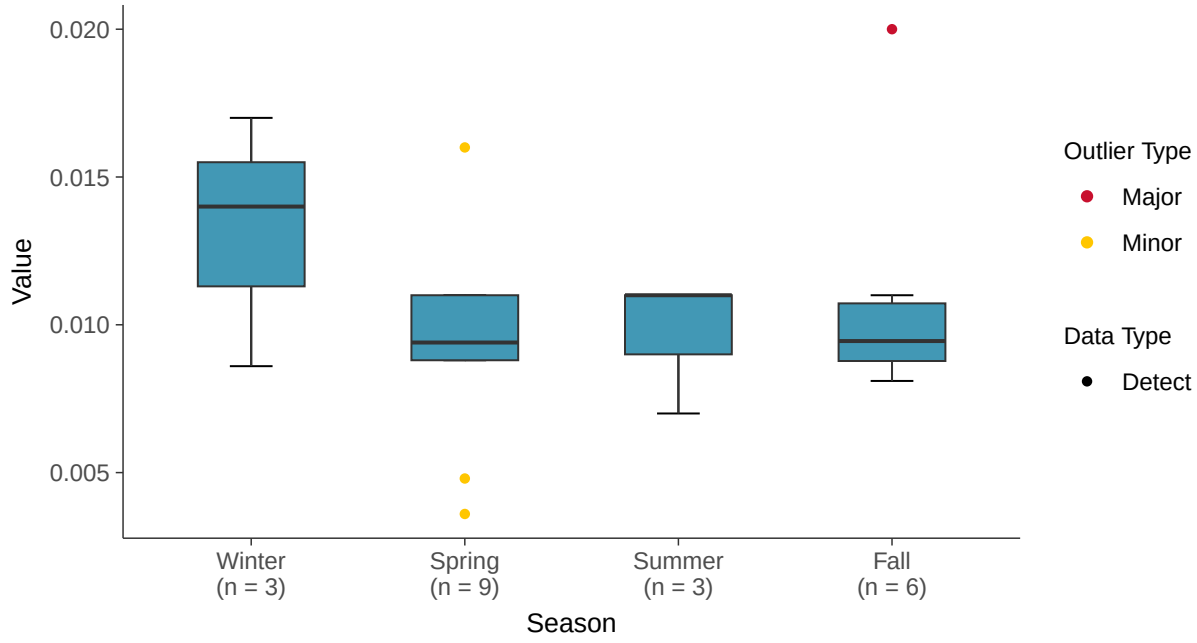
Boxplot

Selenium, MW-8 (mg/l)



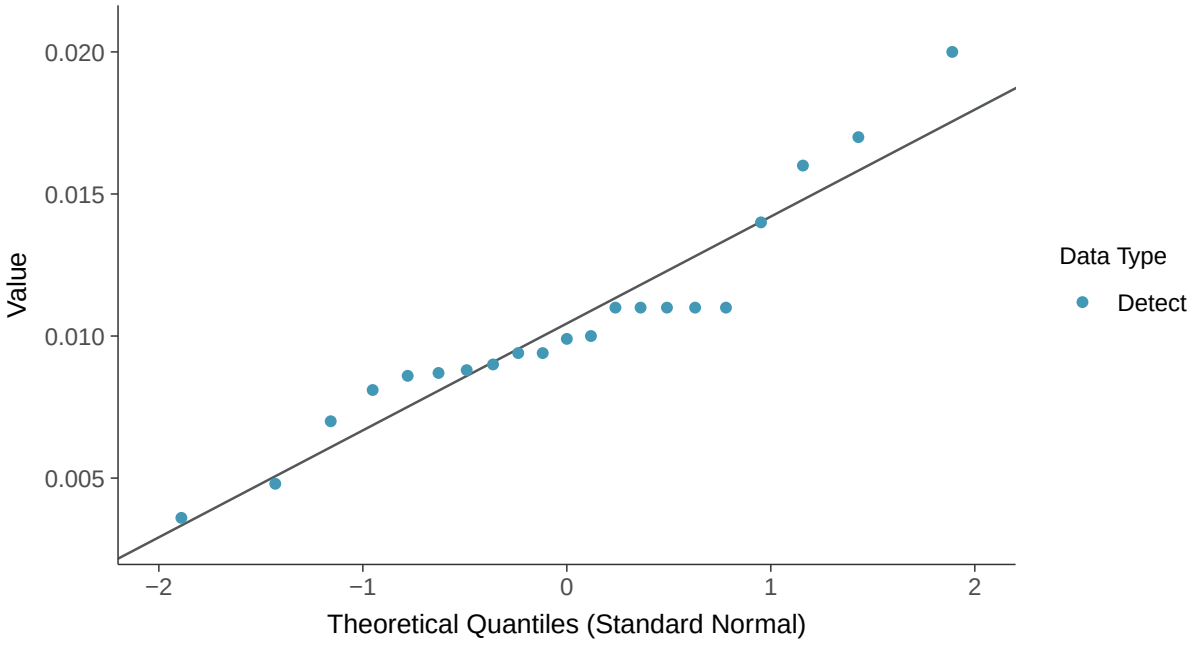
Boxplot by Season

Selenium, MW-8 (mg/l)



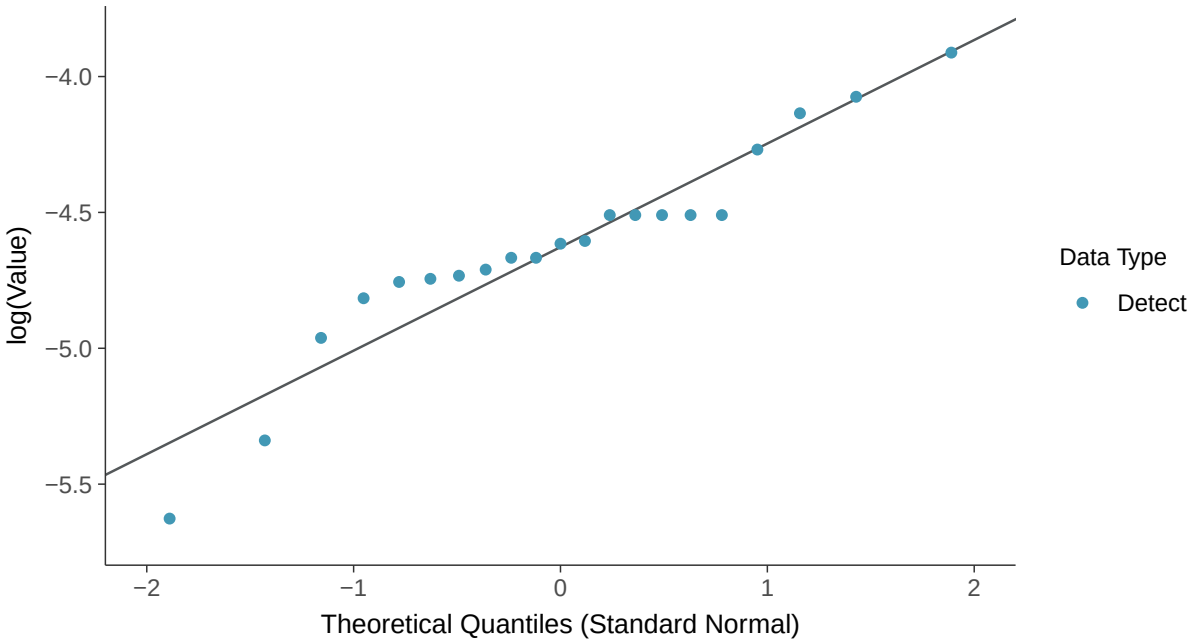
Normal Q-Q plot

Selenium, MW-8 (mg/l)



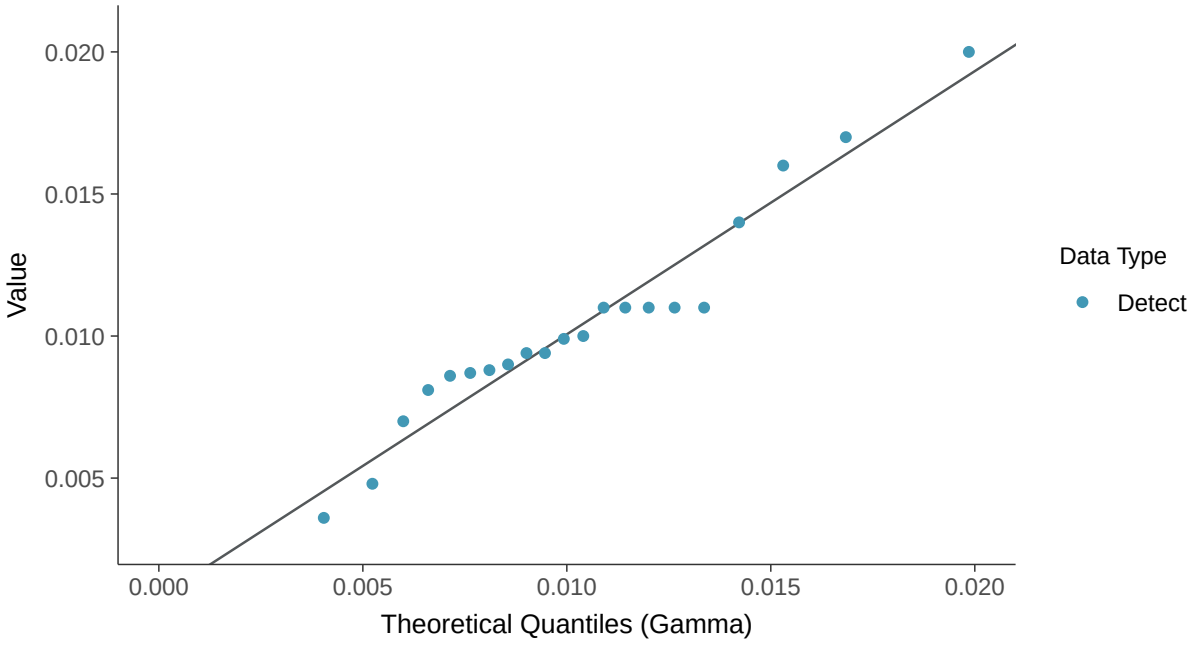
Lognormal Q-Q plot

Selenium, MW-8 (mg/l)



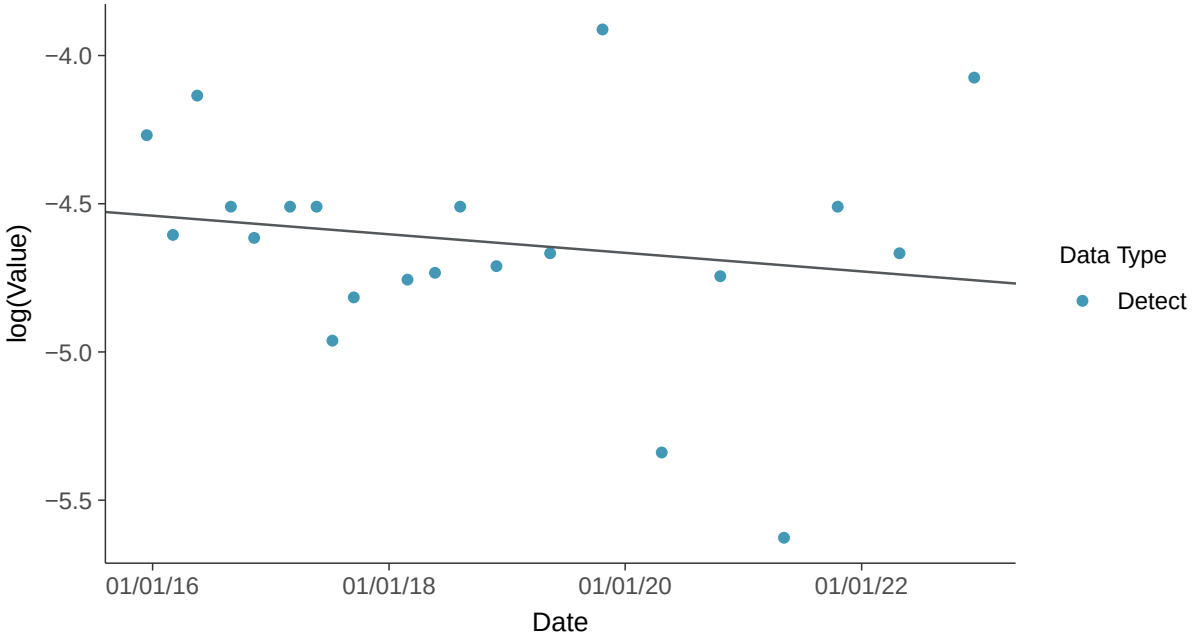
Gamma Q-Q plot

Selenium, MW-8 (mg/l)



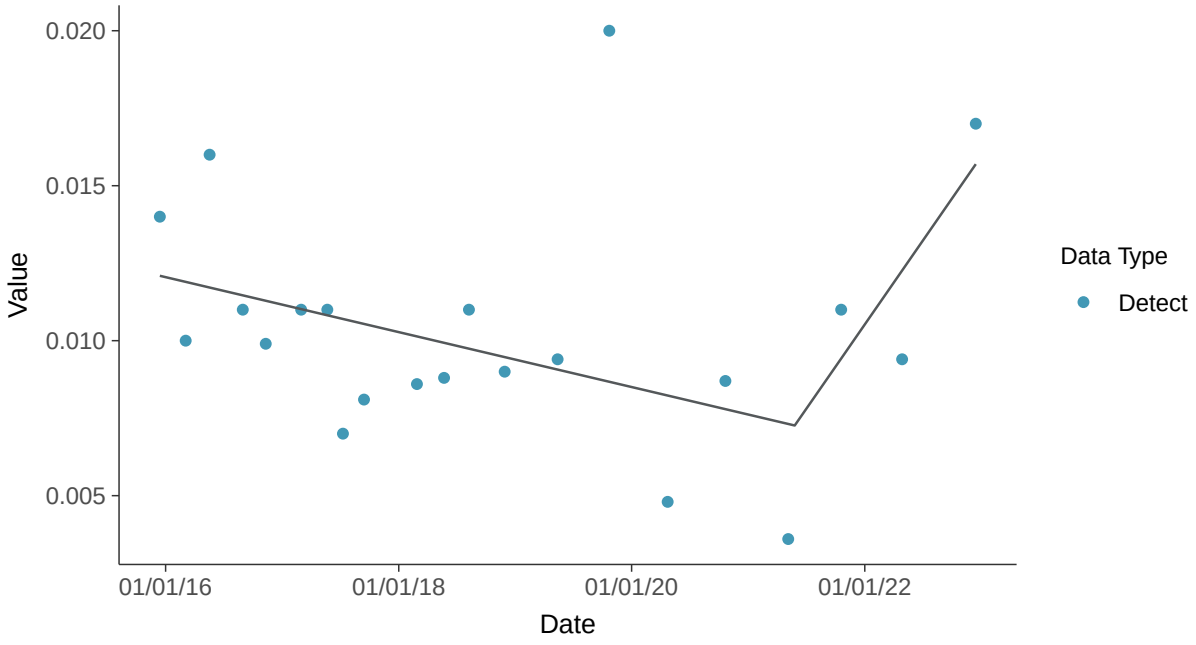
Trend Regression: Lognormal MLE

Selenium, MW-8 (mg/l)



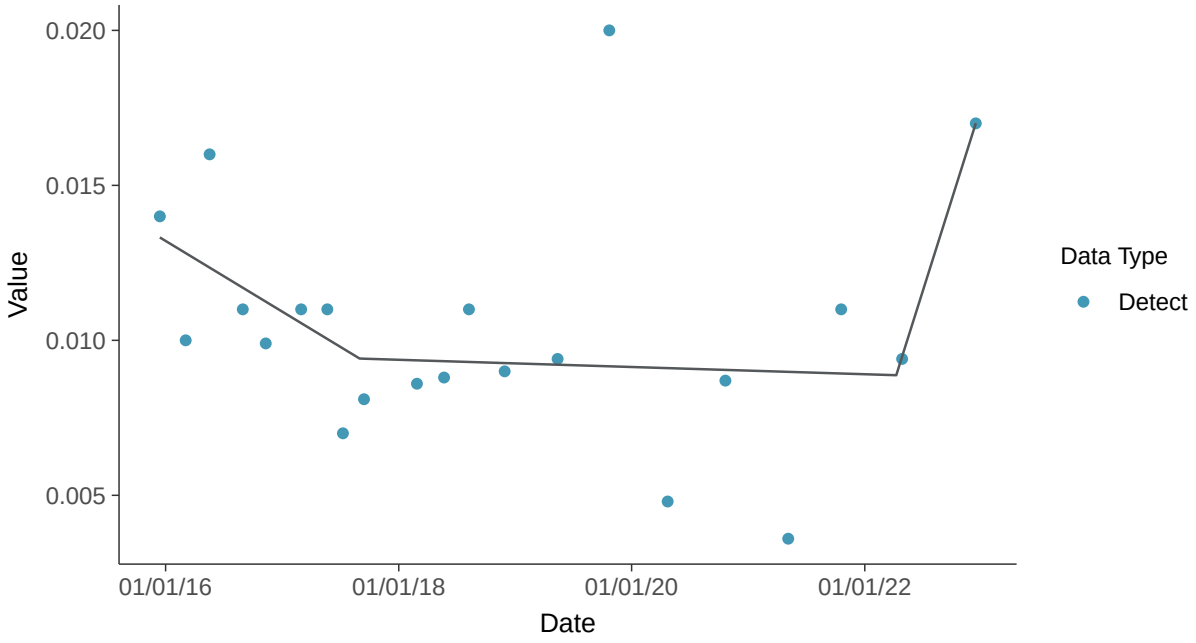
Trend Regression: Piecewise Linear-Linear

Selenium, MW-8 (mg/l)



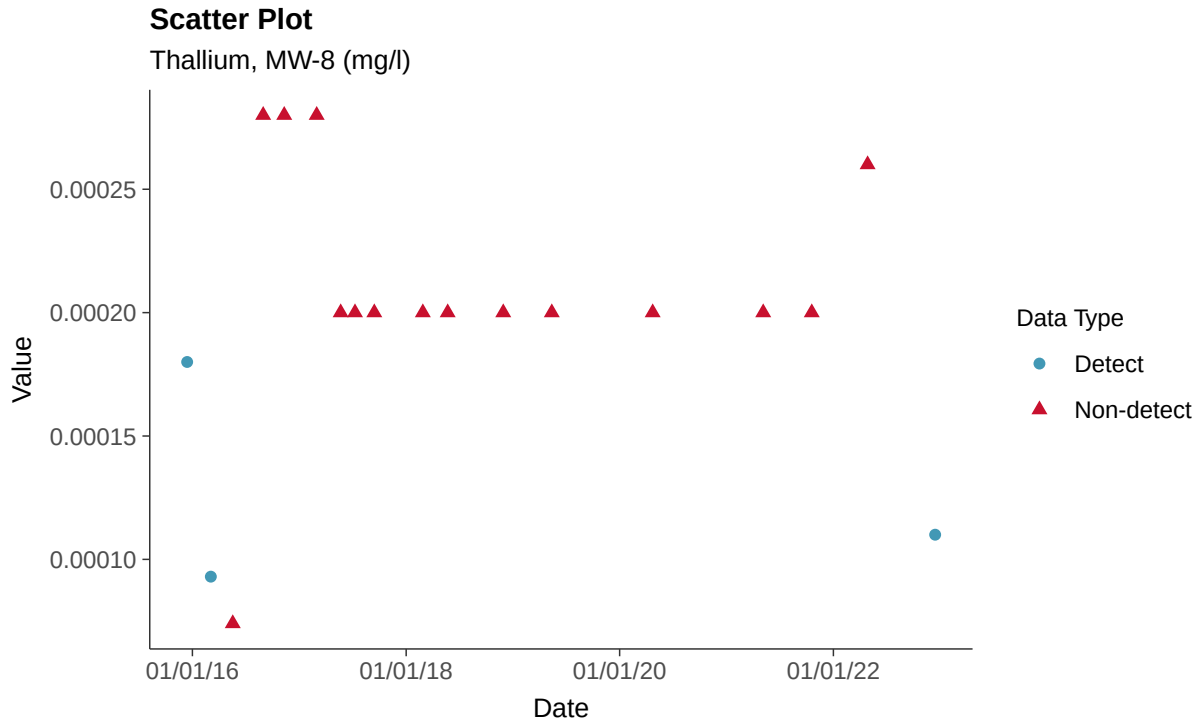
Trend Regression: Piecewise Linear-Linear-Linear

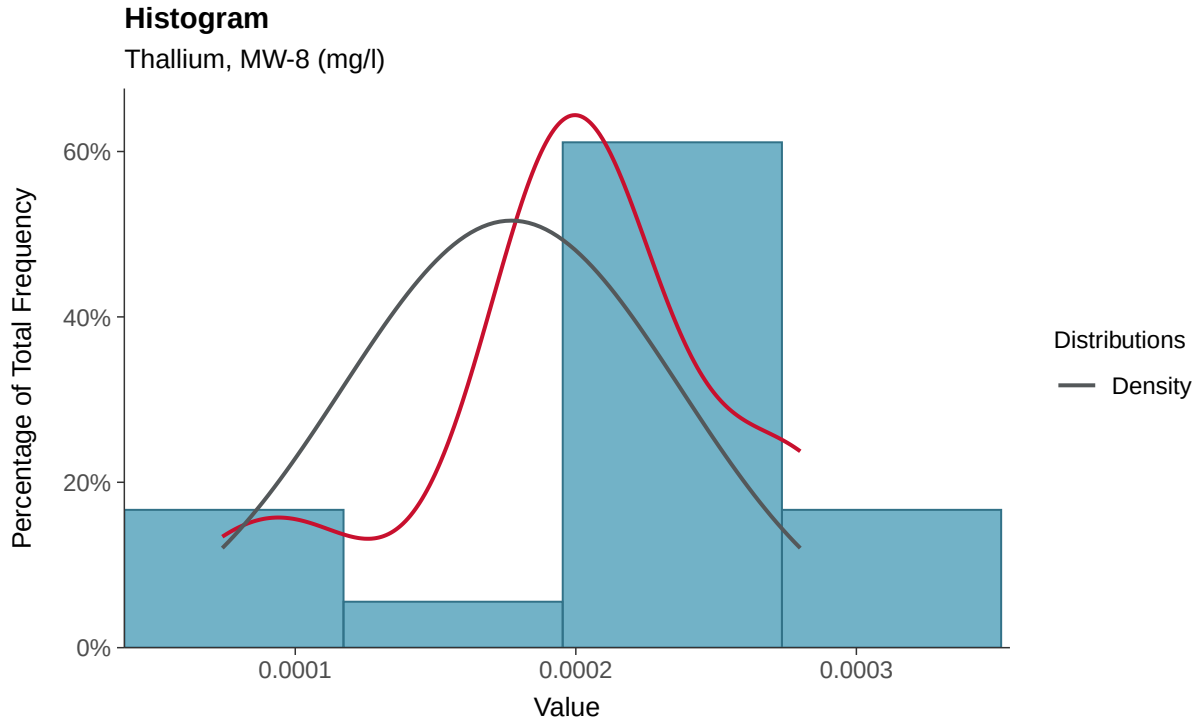
Selenium, MW-8 (mg/l)



Appendix IV: Thallium, MW-8

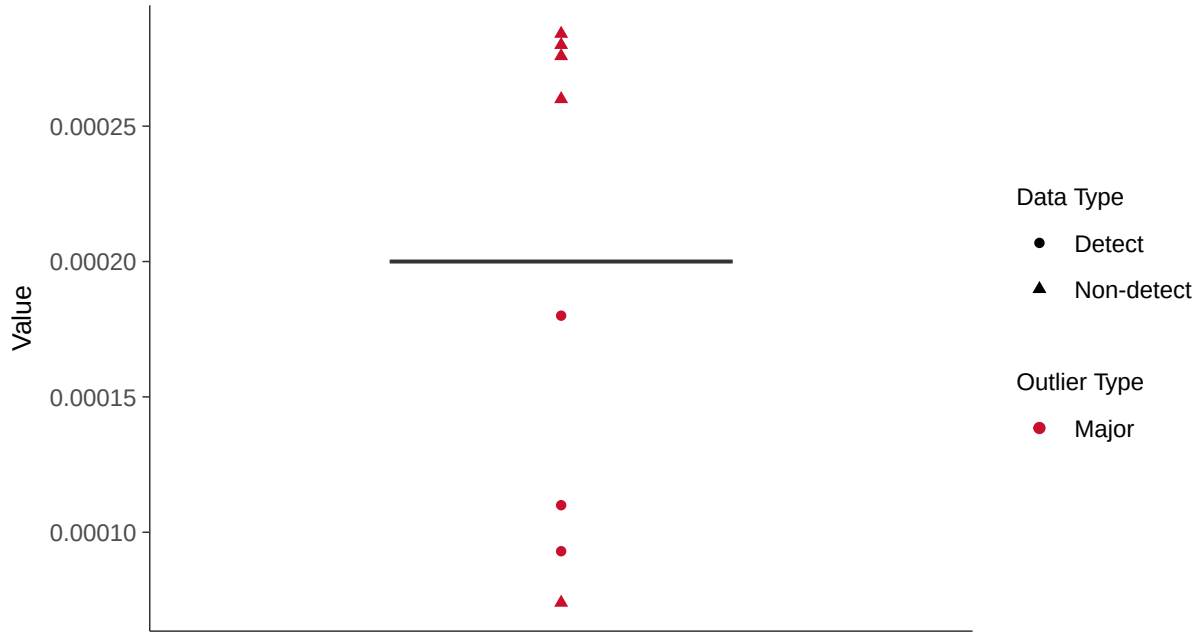
ID: 37_2_134





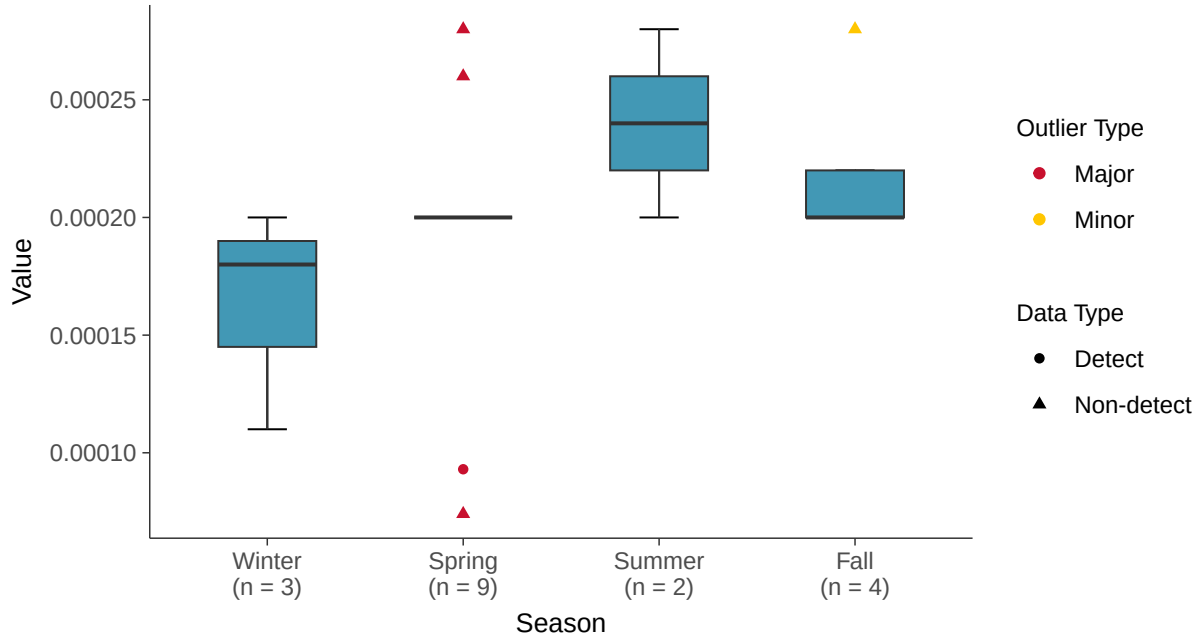
Boxplot

Thallium, MW-8 (mg/l)



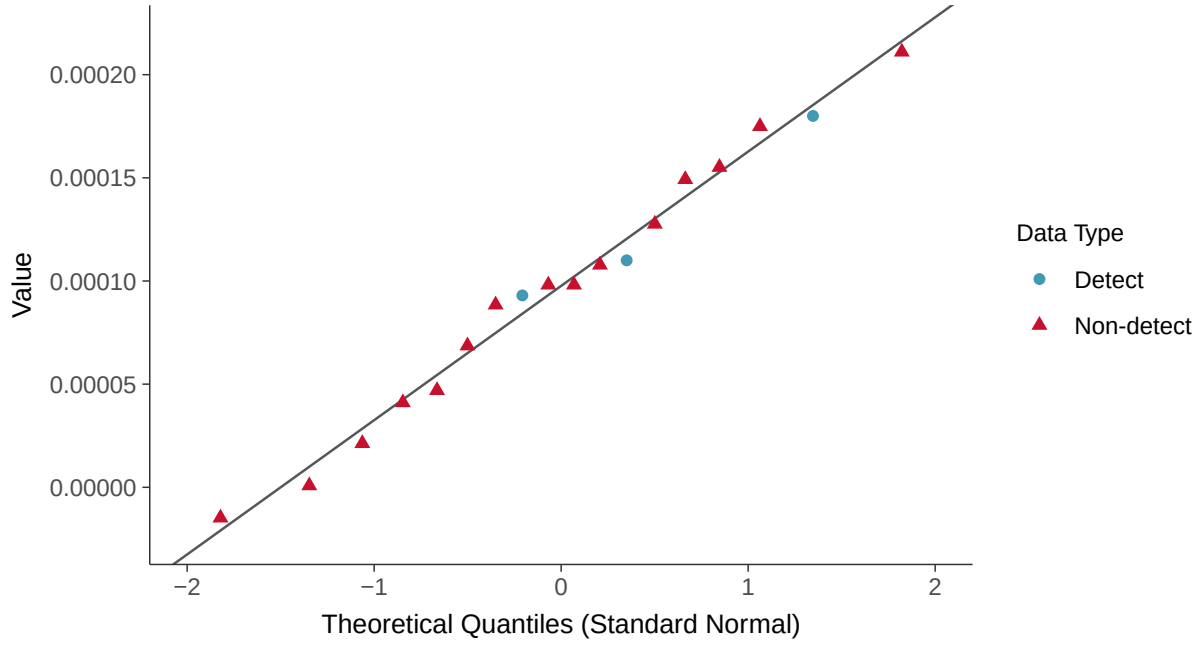
Boxplot by Season

Thallium, MW-8 (mg/l)



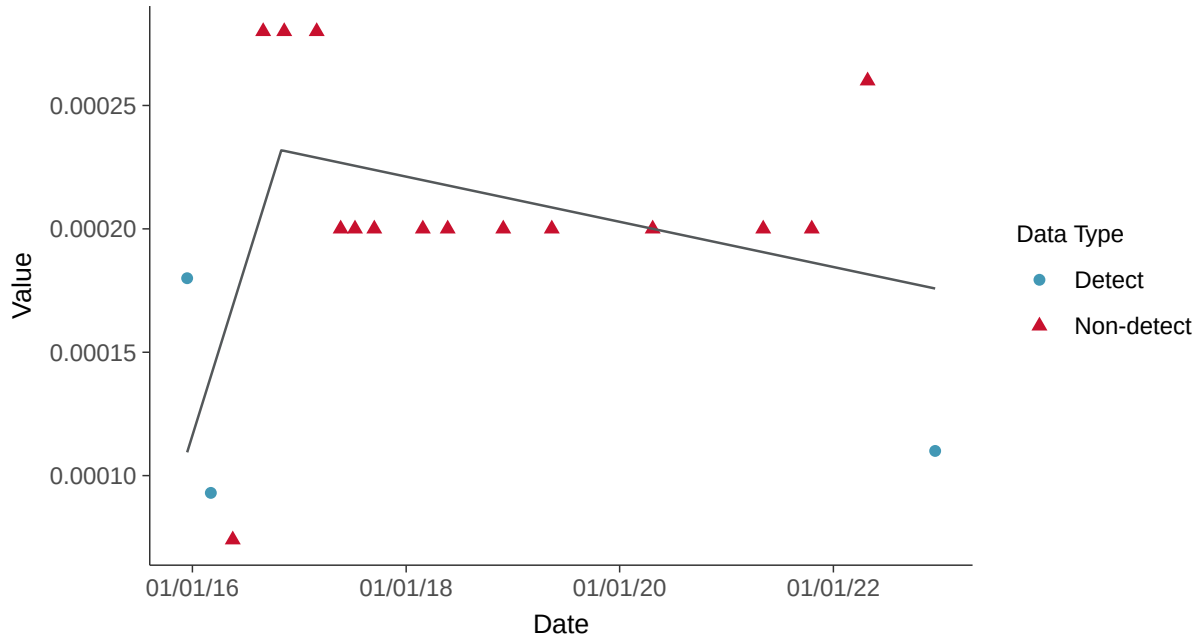
Normal Q-Q plot using ROS Imputed Estimates

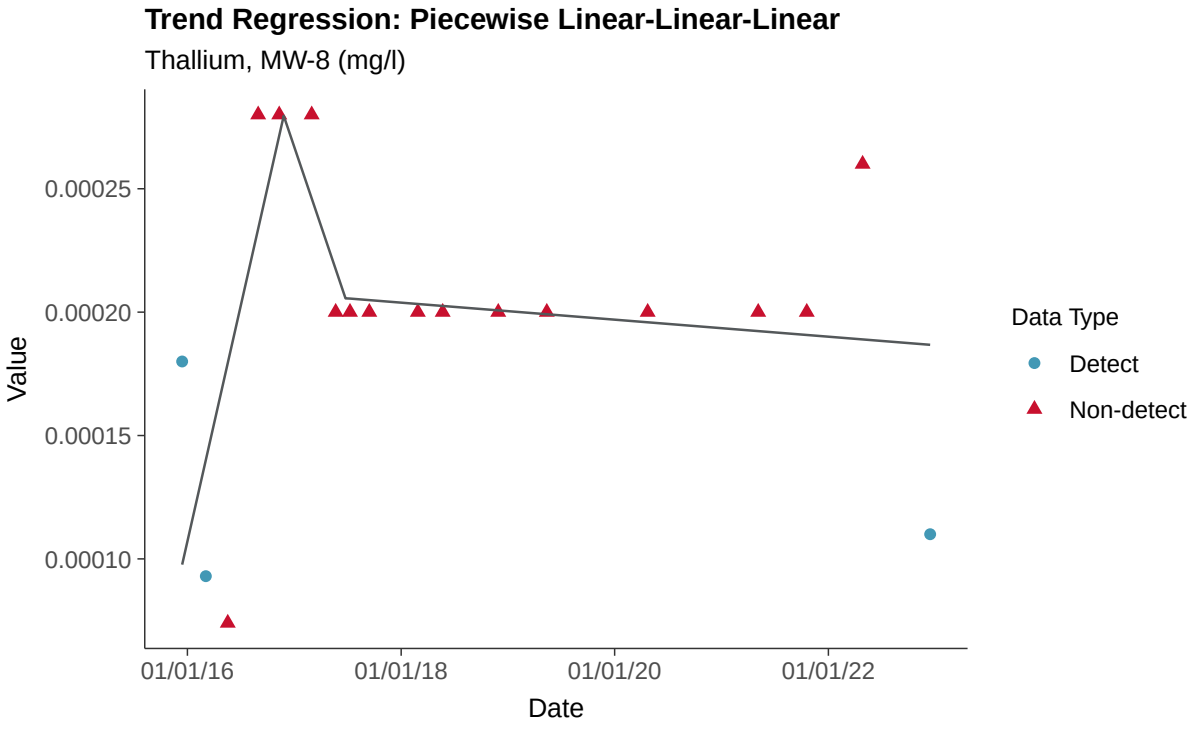
Thallium, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

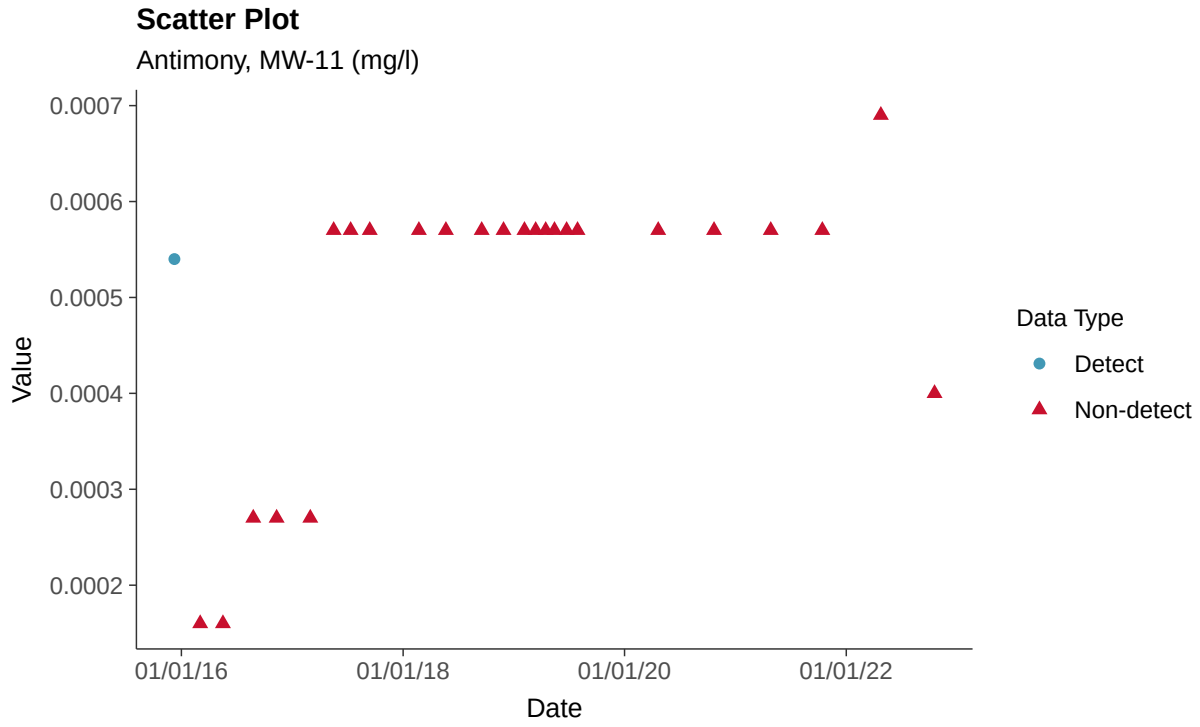
Thallium, MW-8 (mg/l)

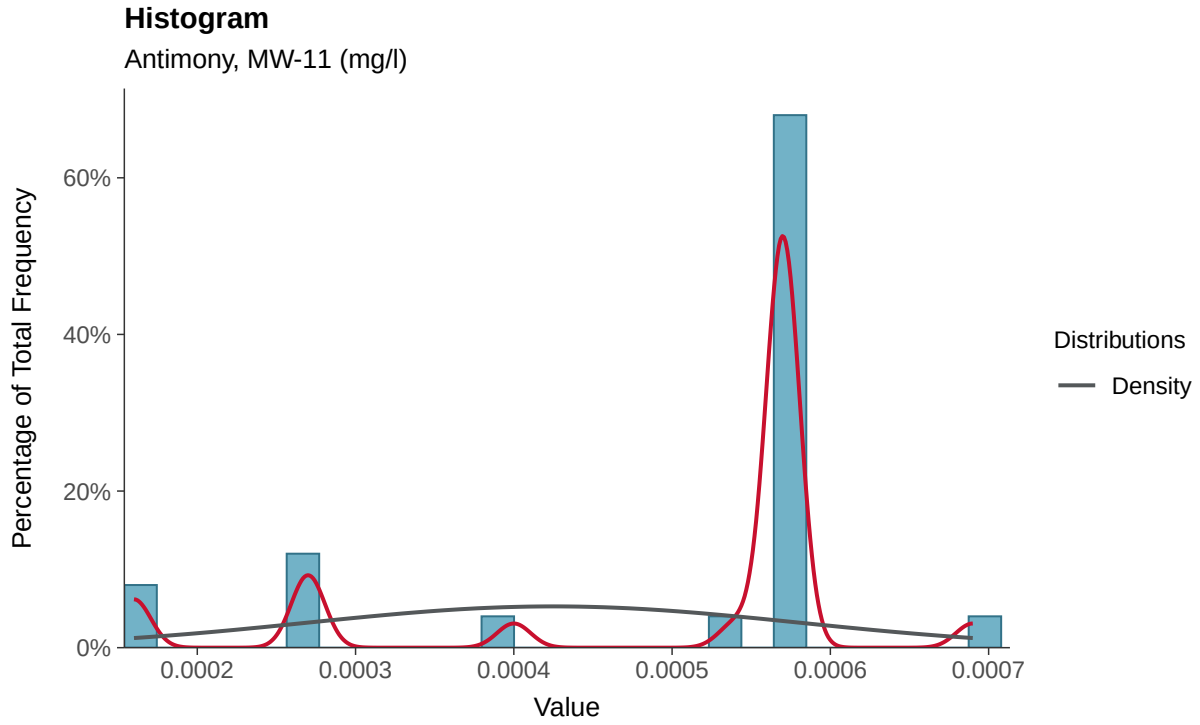



Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-8 (mg/l)
Value
0.00025
0.00020
0.00015
0.00010
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-11

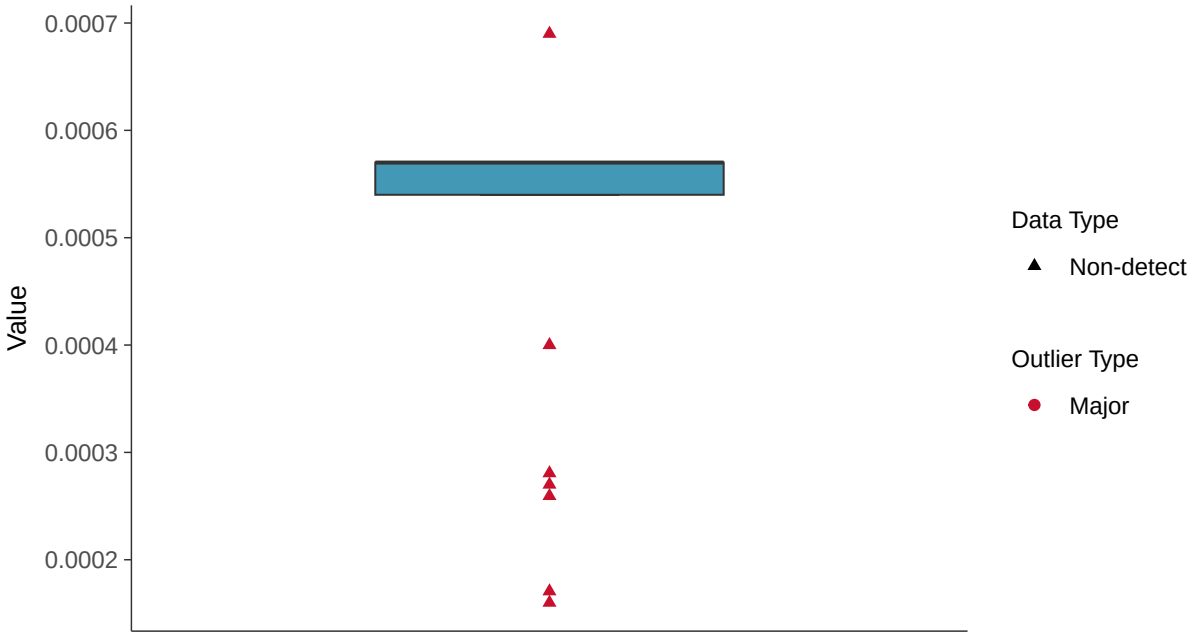
ID: 11_2_104





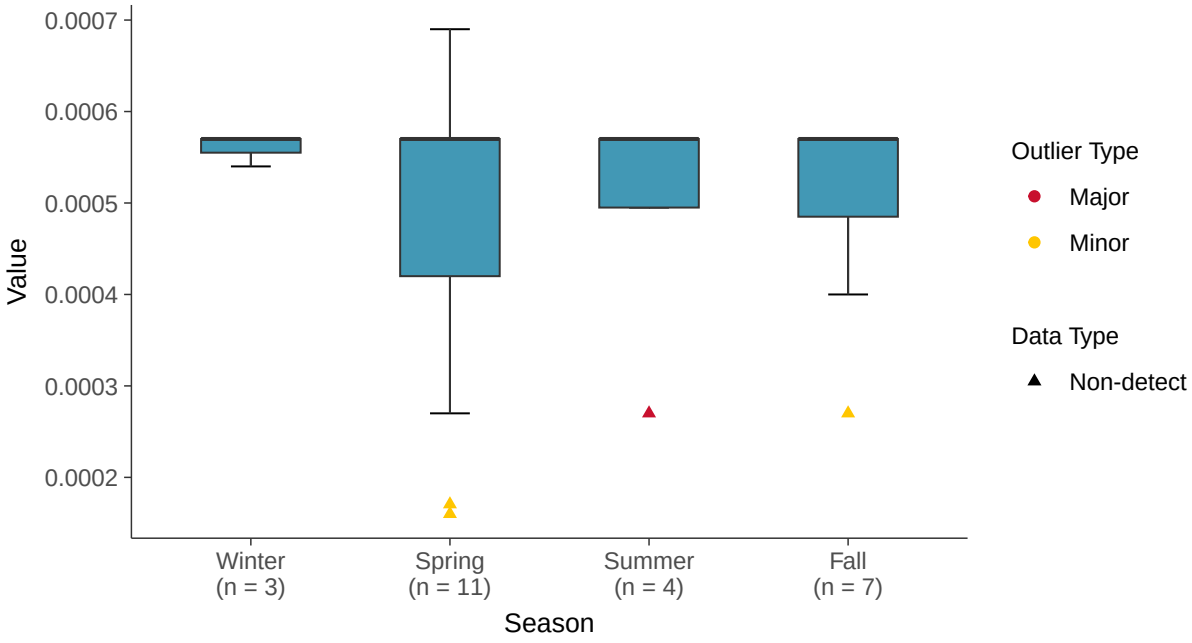
Boxplot

Antimony, MW-11 (mg/l)



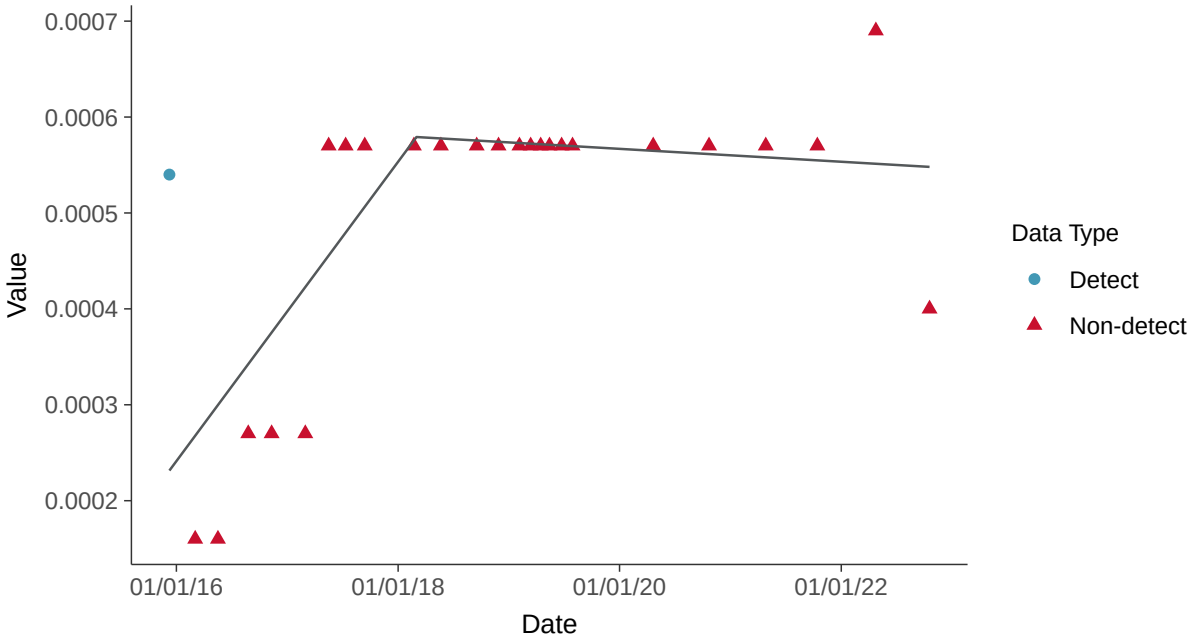
Boxplot by Season

Antimony, MW-11 (mg/l)



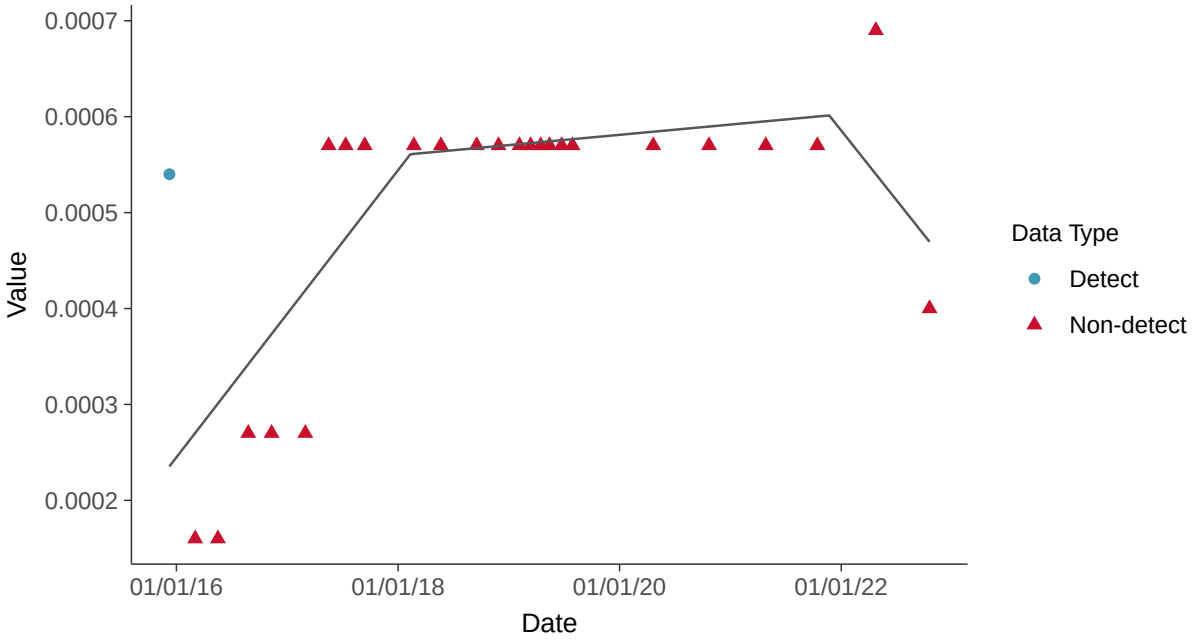
Trend Regression: Piecewise Linear-Linear

Antimony, MW-11 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-11 (mg/l)

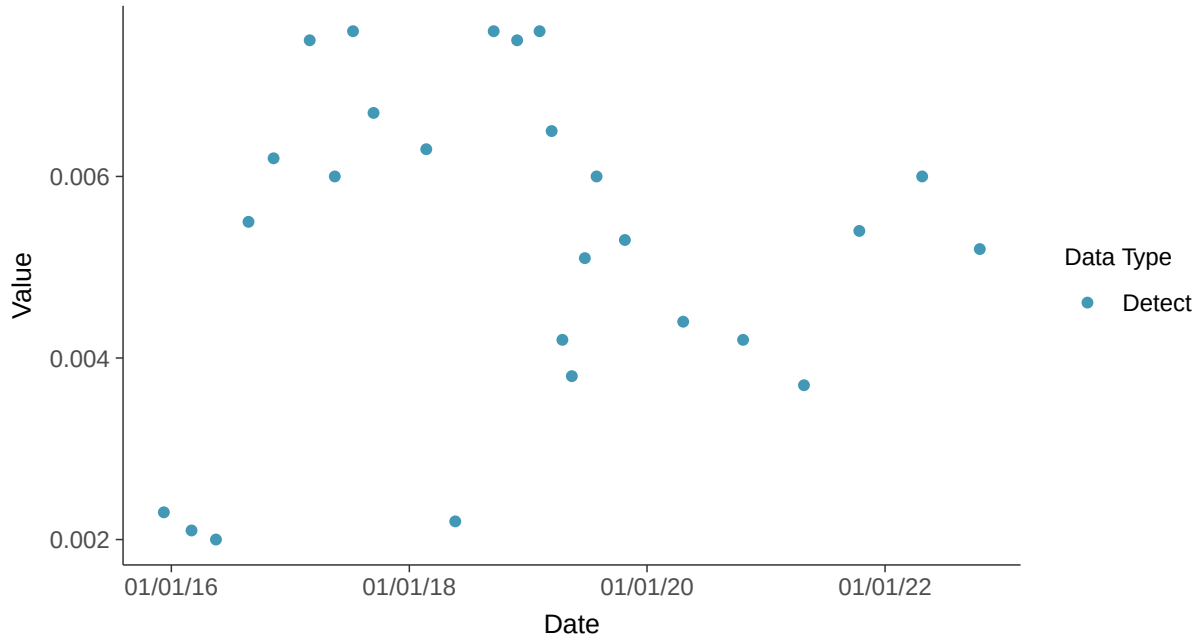


Appendix IV: Arsenic, MW-11

ID: 11_2_105

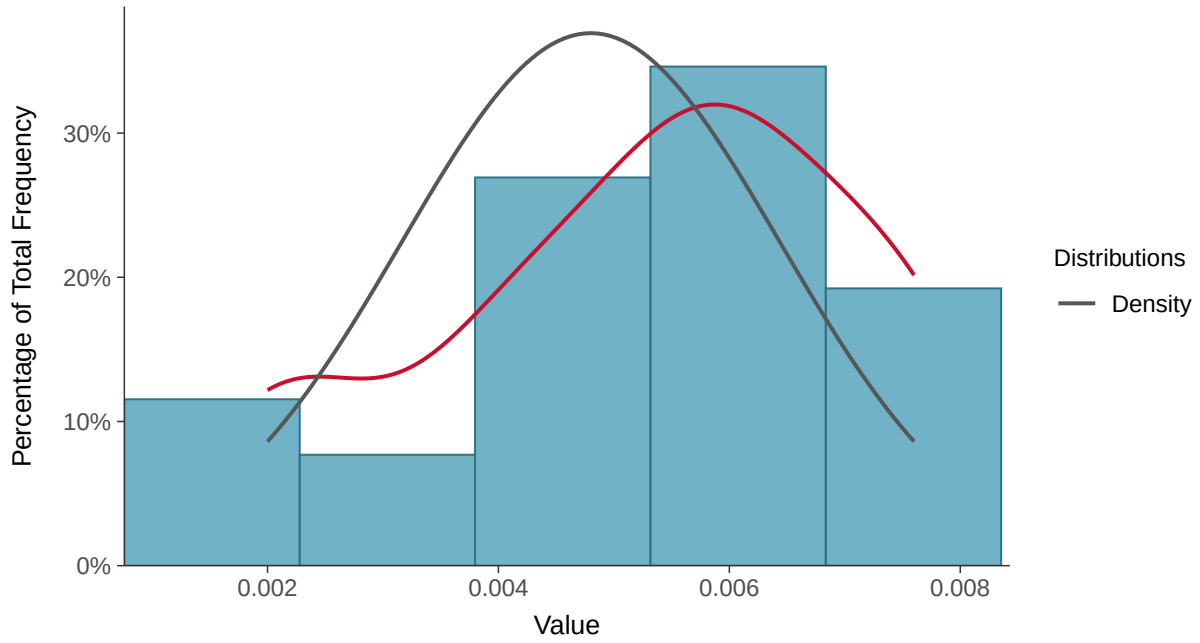
Scatter Plot

Arsenic, MW-11 (mg/l)



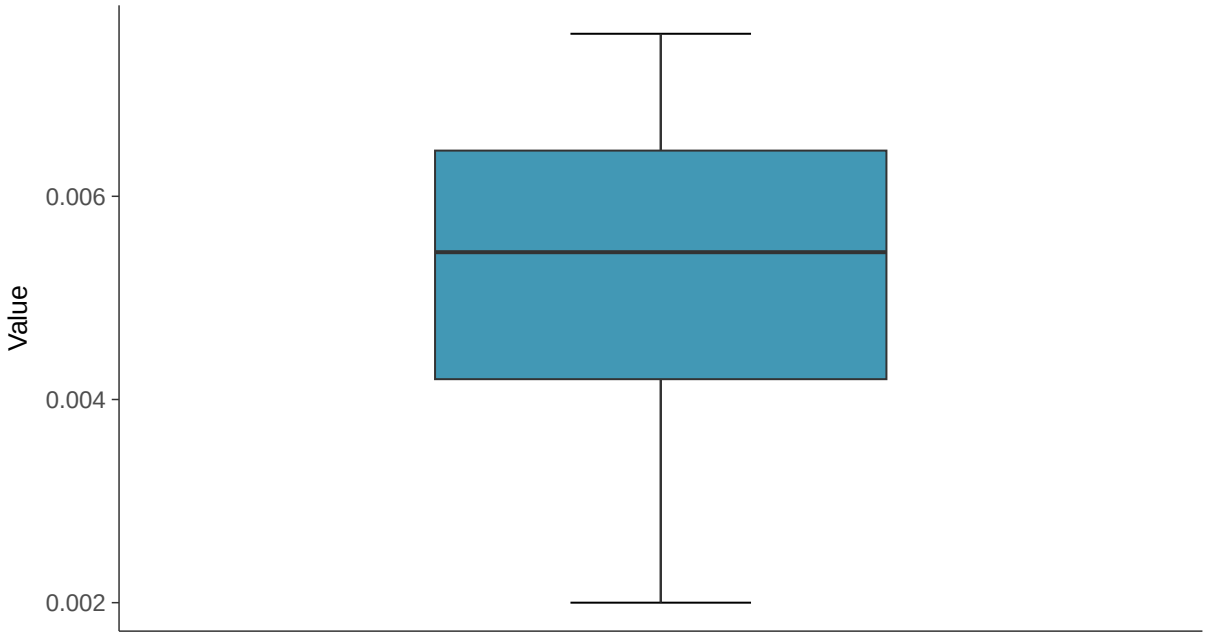
Histogram

Arsenic, MW-11 (mg/l)



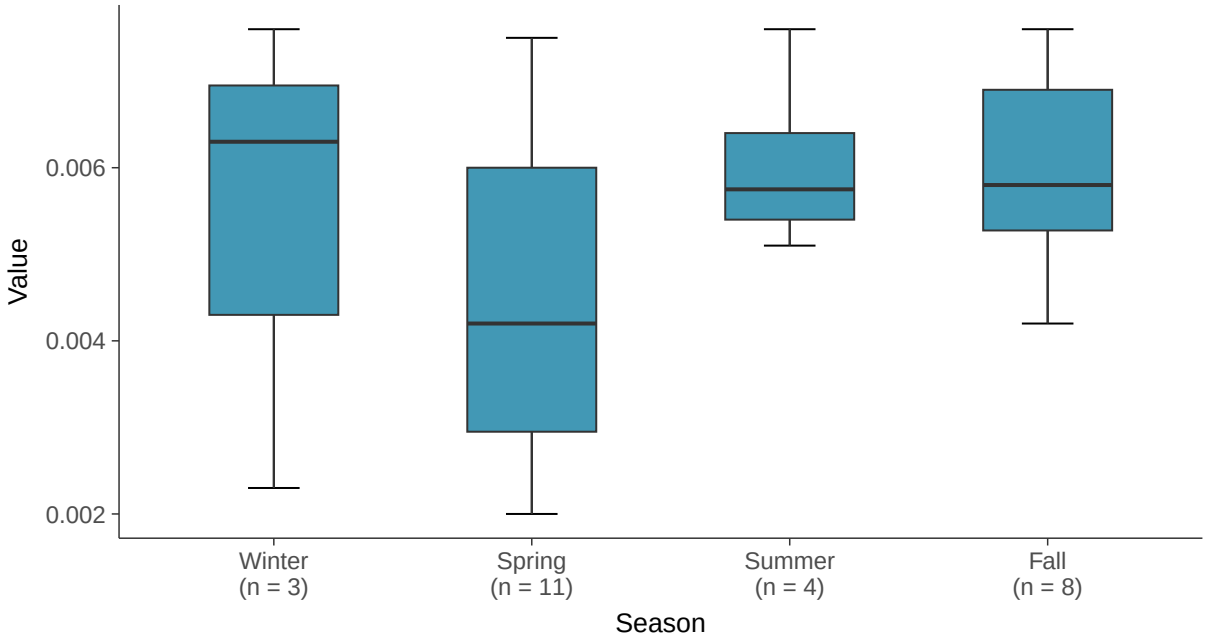
Boxplot

Arsenic, MW-11 (mg/l)



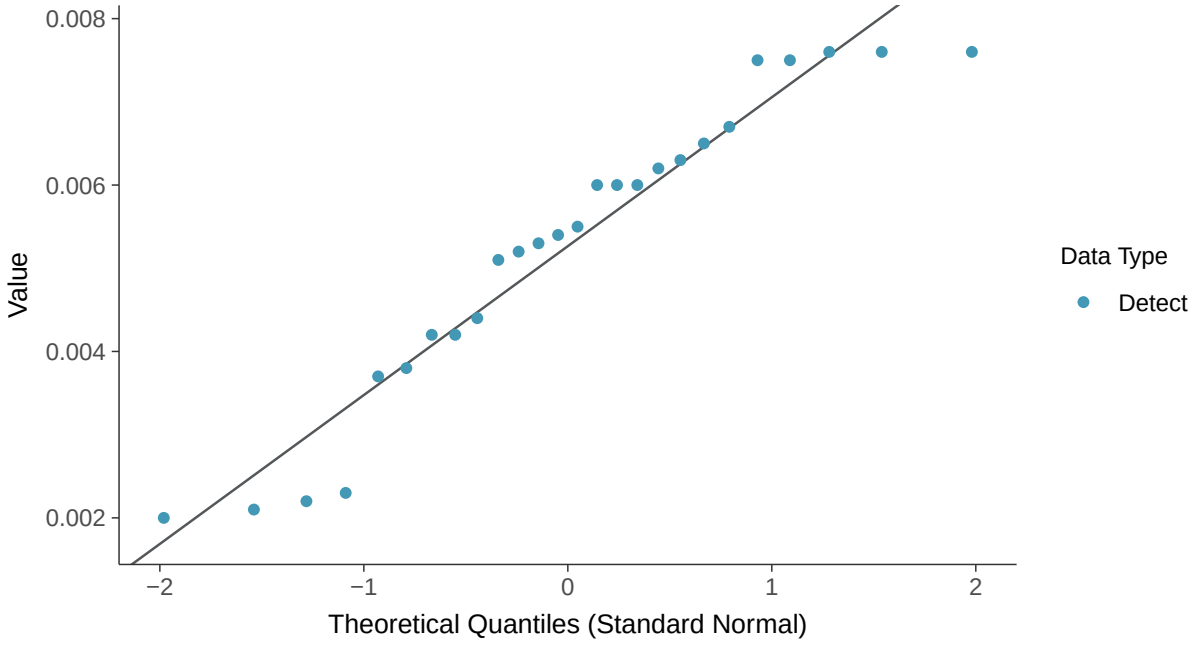
Boxplot by Season

Arsenic, MW-11 (mg/l)



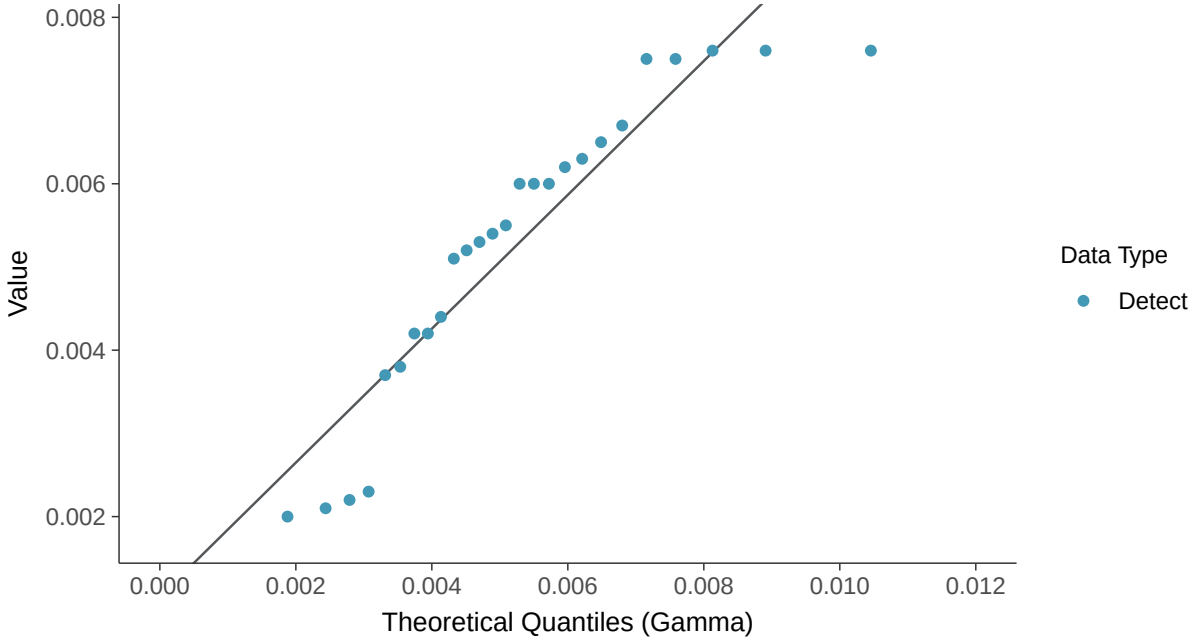
Normal Q-Q plot

Arsenic, MW-11 (mg/l)



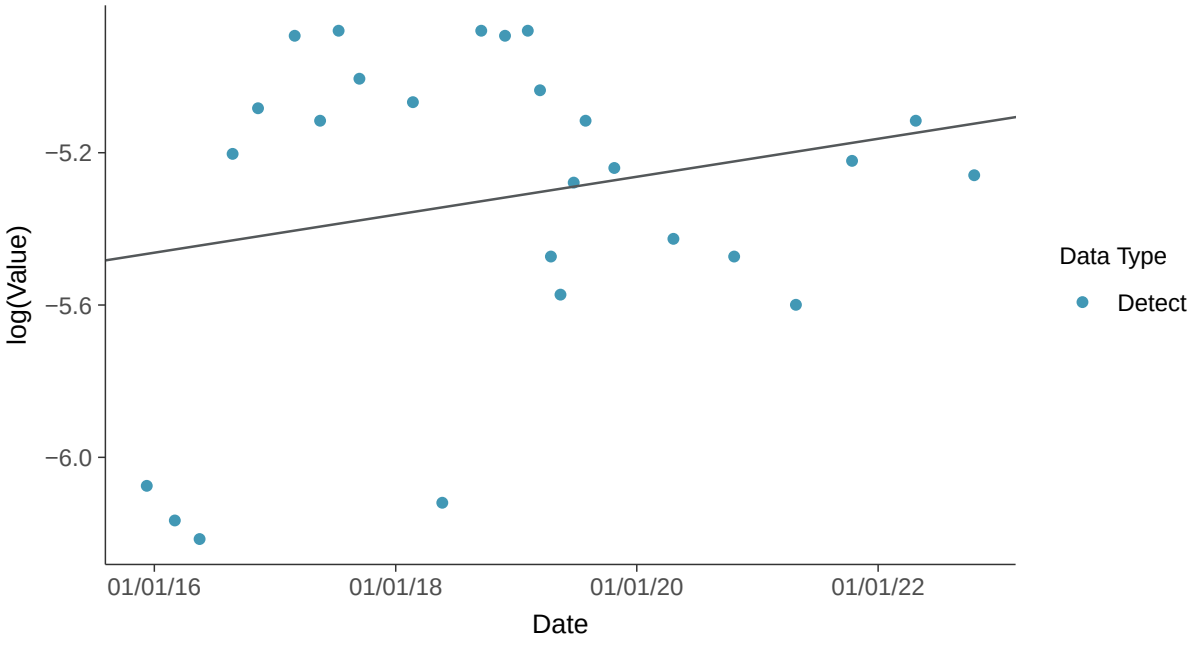
Gamma Q-Q plot

Arsenic, MW-11 (mg/l)



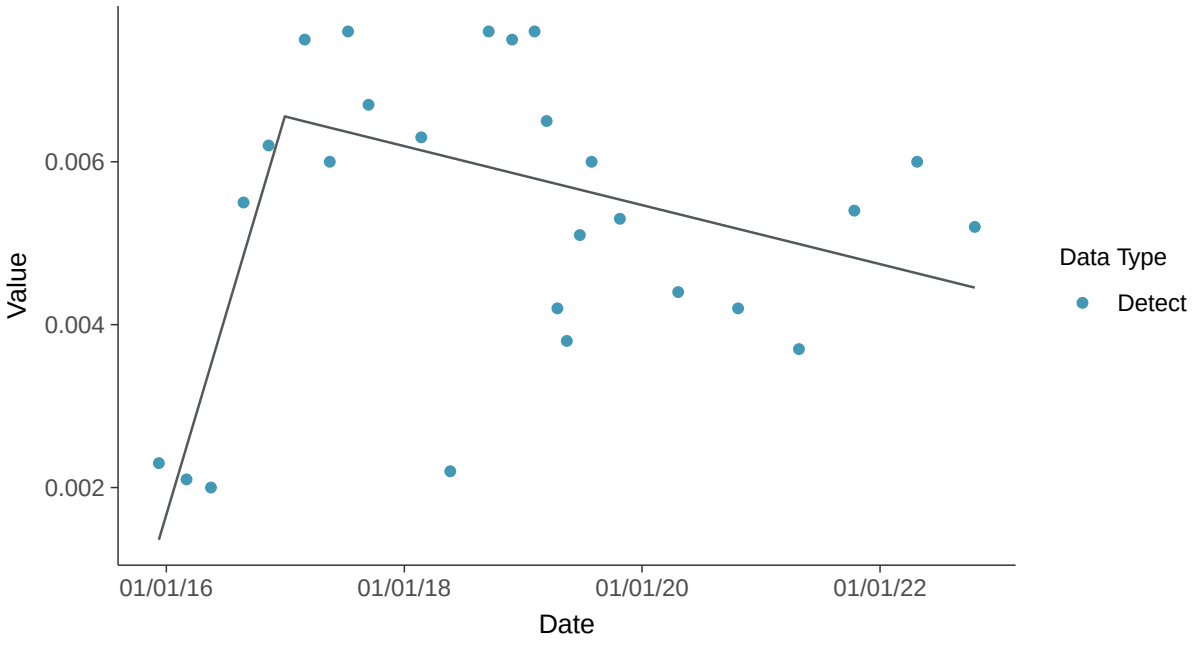
Trend Regression: Lognormal MLE

Arsenic, MW-11 (mg/l)



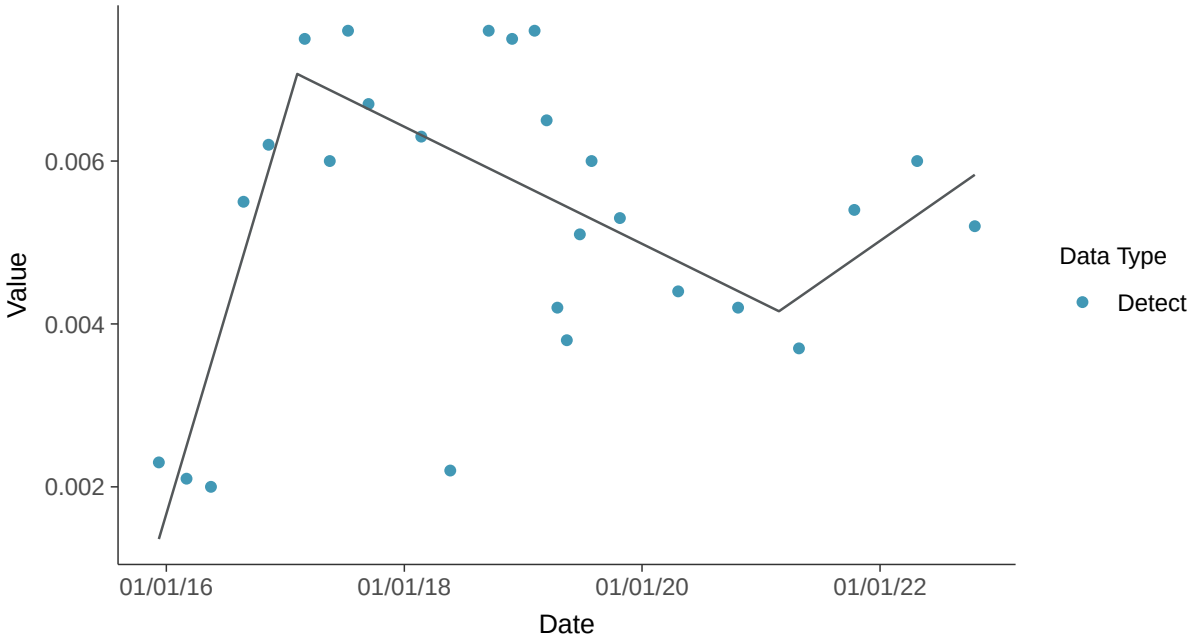
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-11 (mg/l)



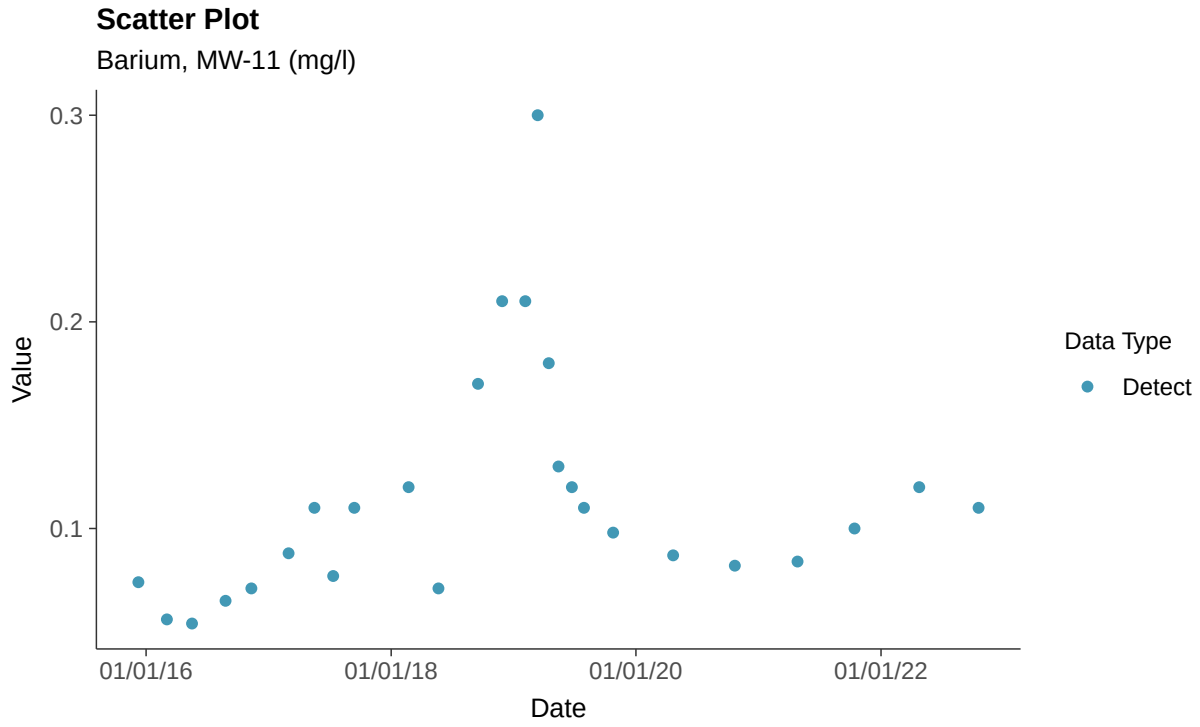
Trend Regression: Piecewise Linear-Linear-Linear

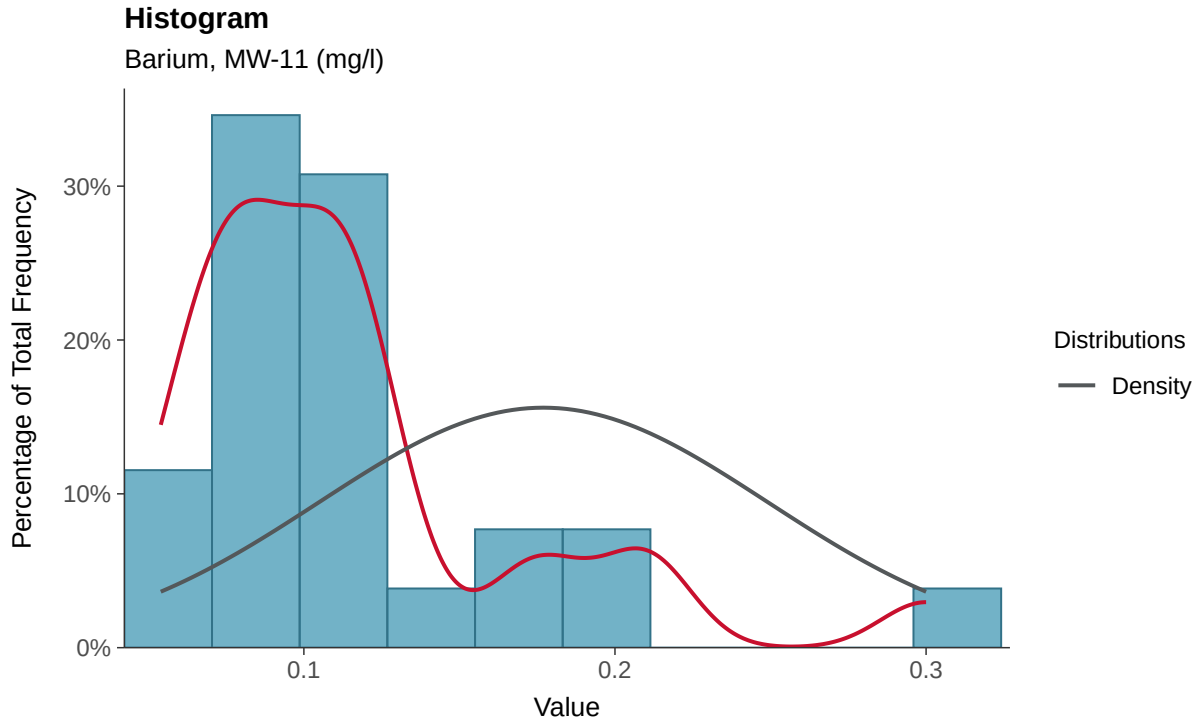
Arsenic, MW-11 (mg/l)



Appendix IV: Barium, MW-11

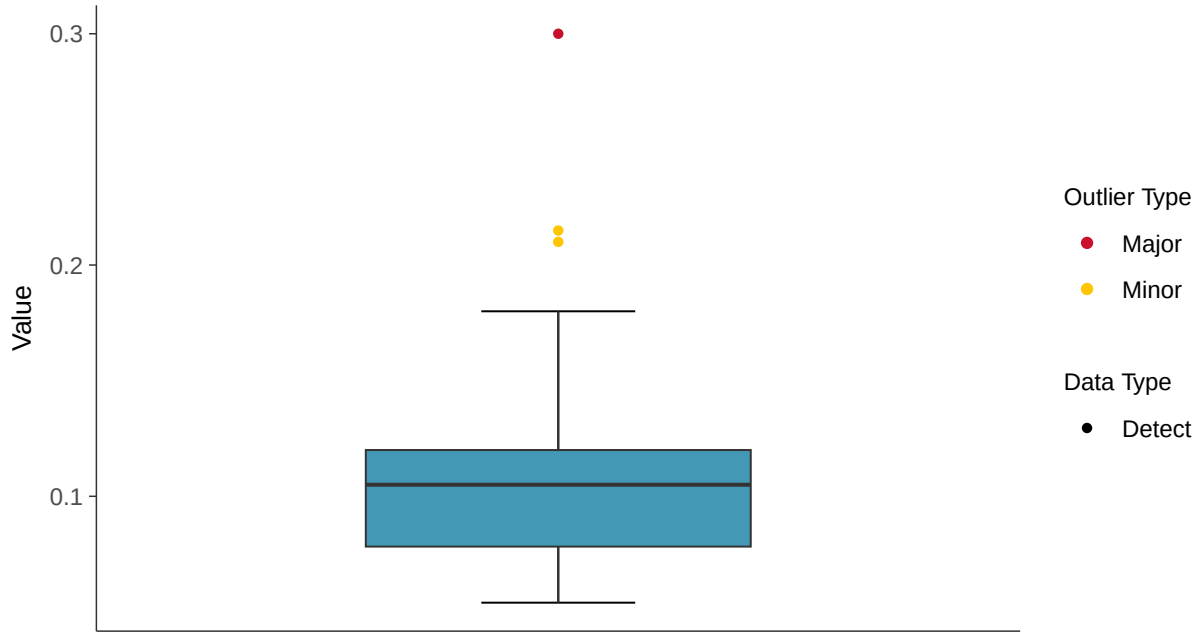
ID: 11_2_106





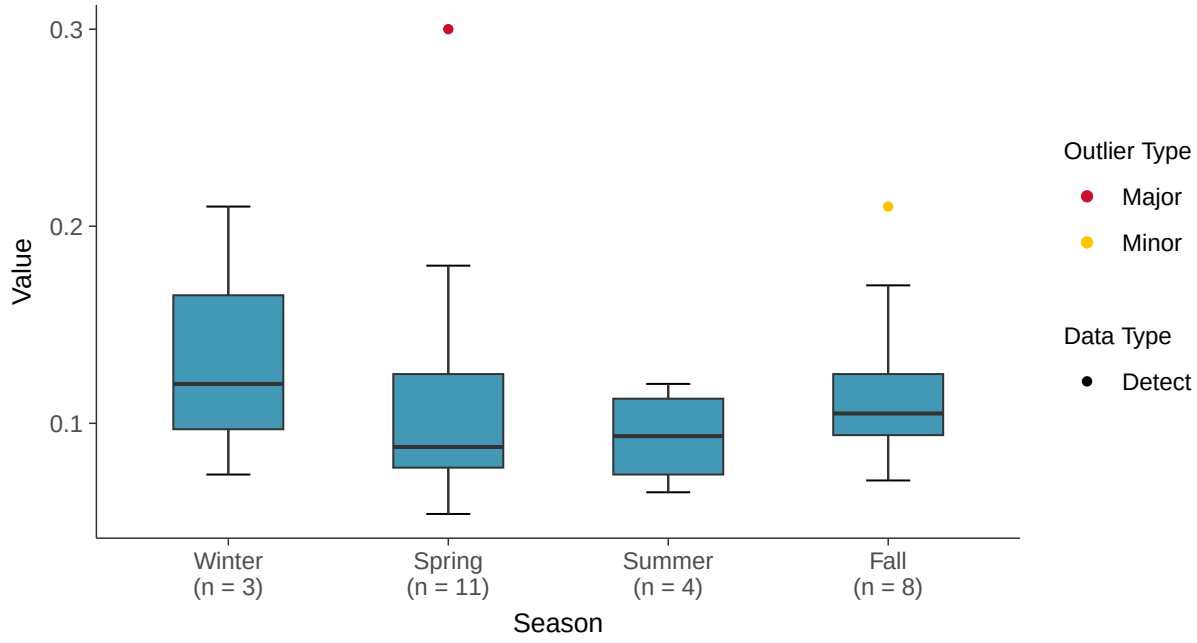
Boxplot

Barium, MW-11 (mg/l)



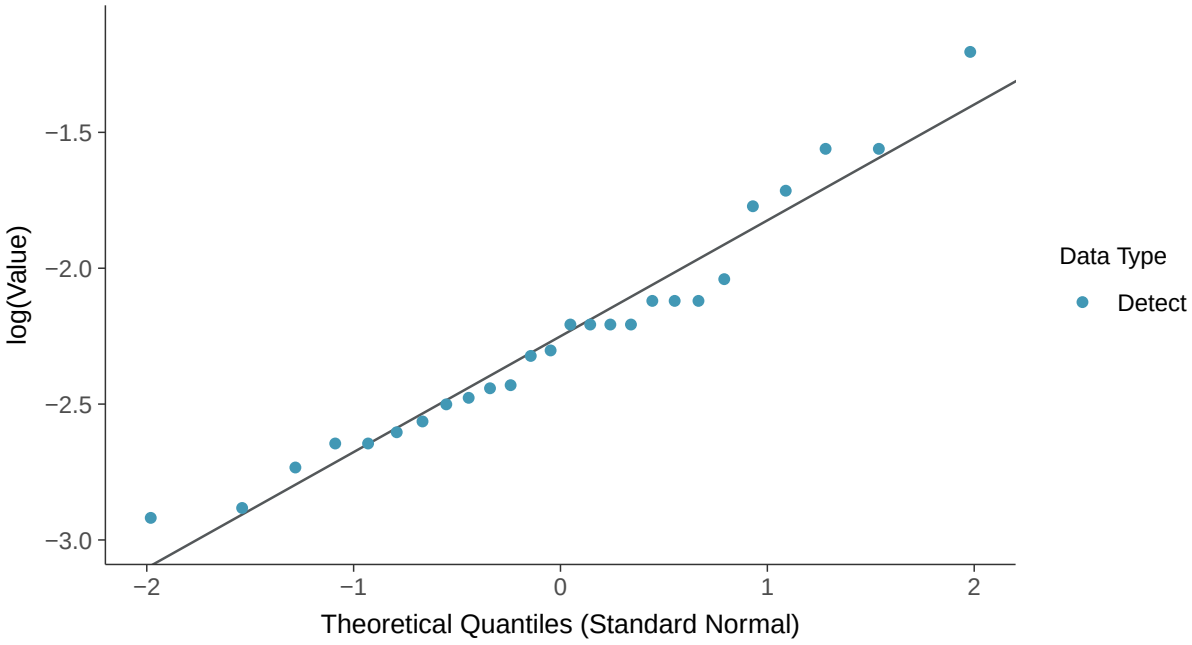
Boxplot by Season

Barium, MW-11 (mg/l)



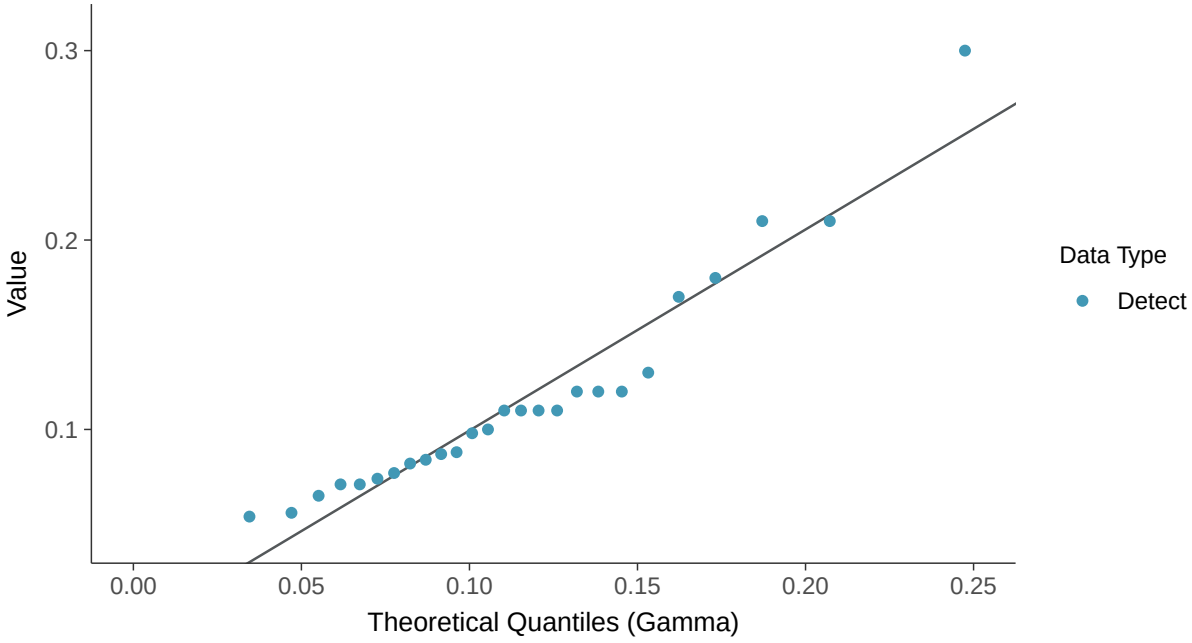
Lognormal Q-Q plot

Barium, MW-11 (mg/l)



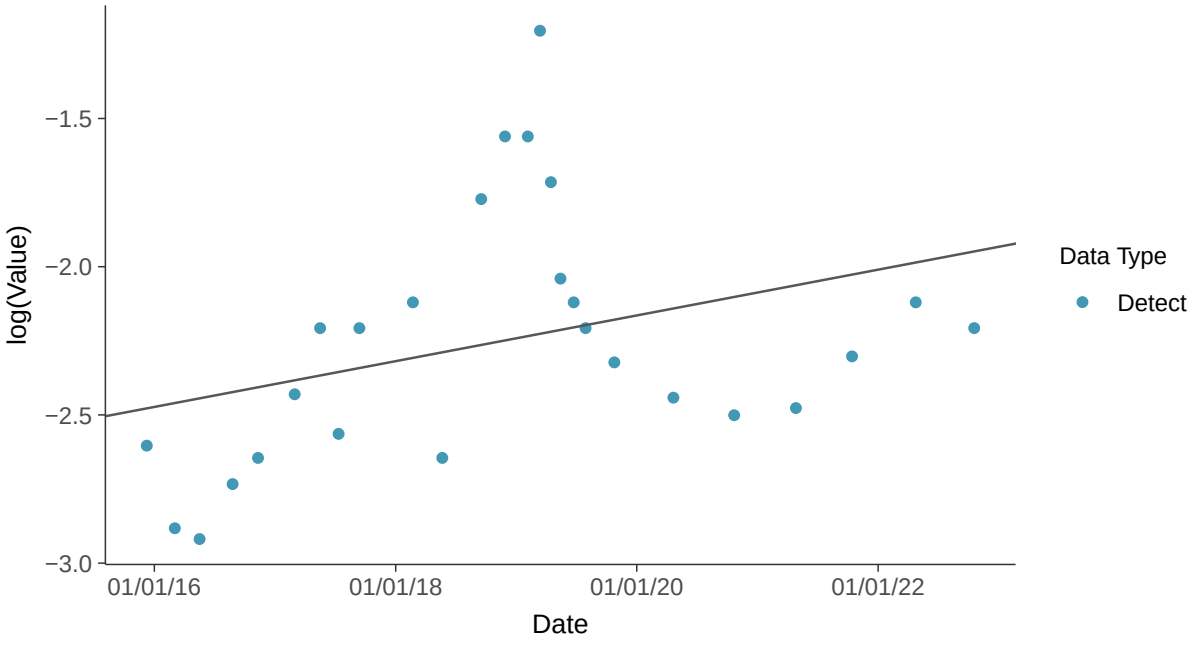
Gamma Q-Q plot

Barium, MW-11 (mg/l)



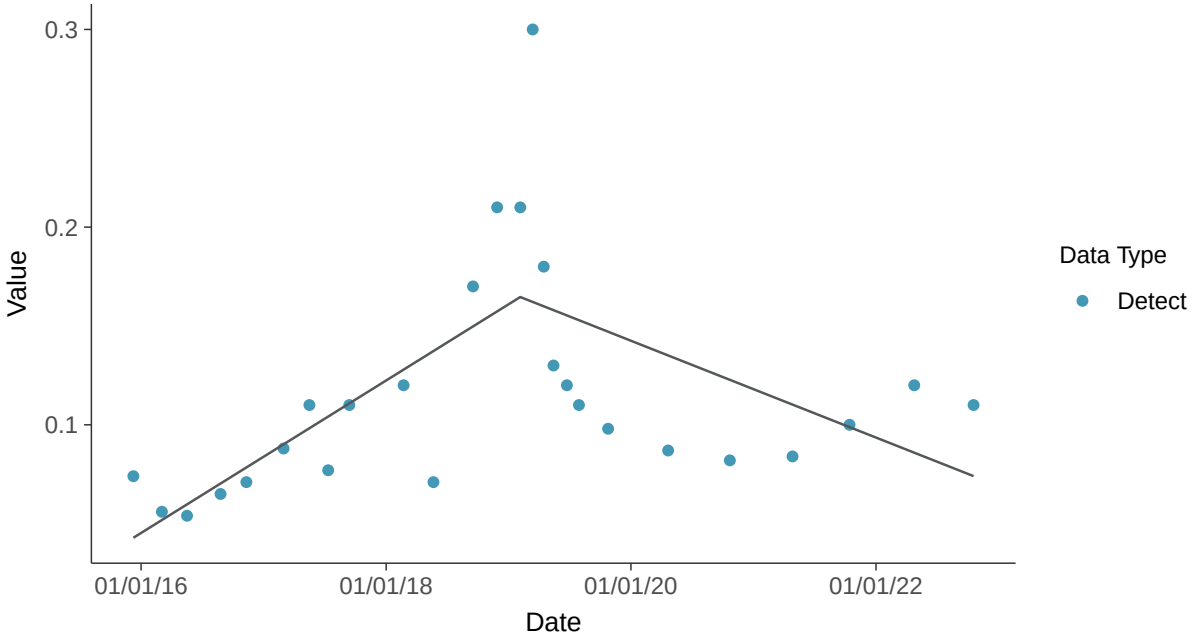
Trend Regression: Lognormal MLE

Barium, MW-11 (mg/l)



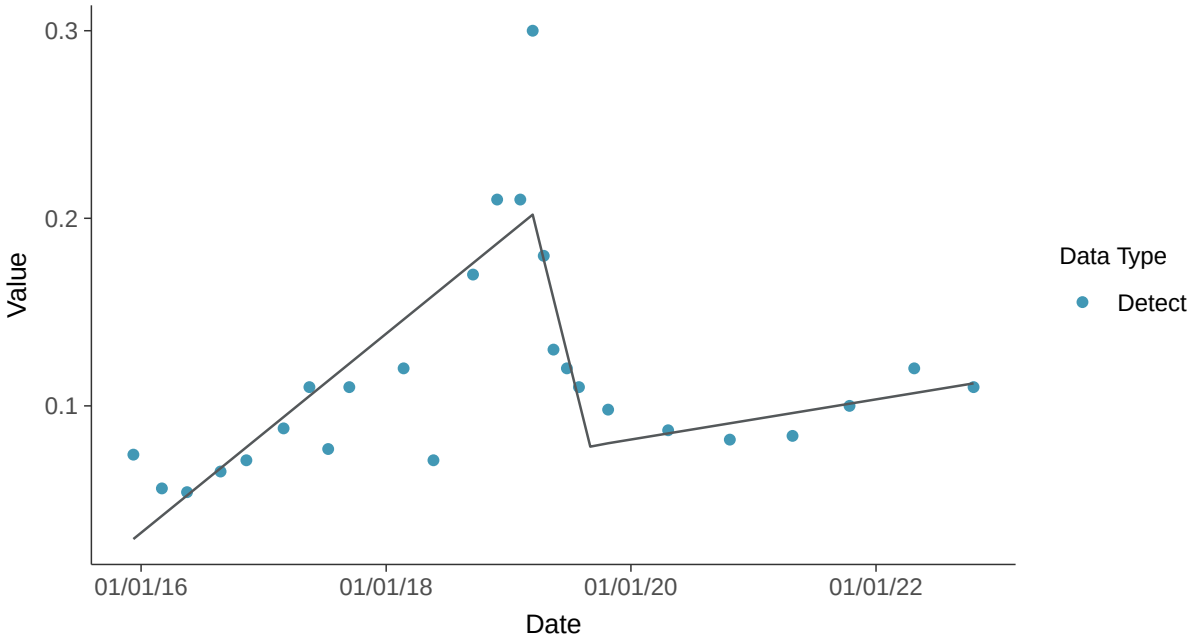
Trend Regression: Piecewise Linear-Linear

Barium, MW-11 (mg/l)



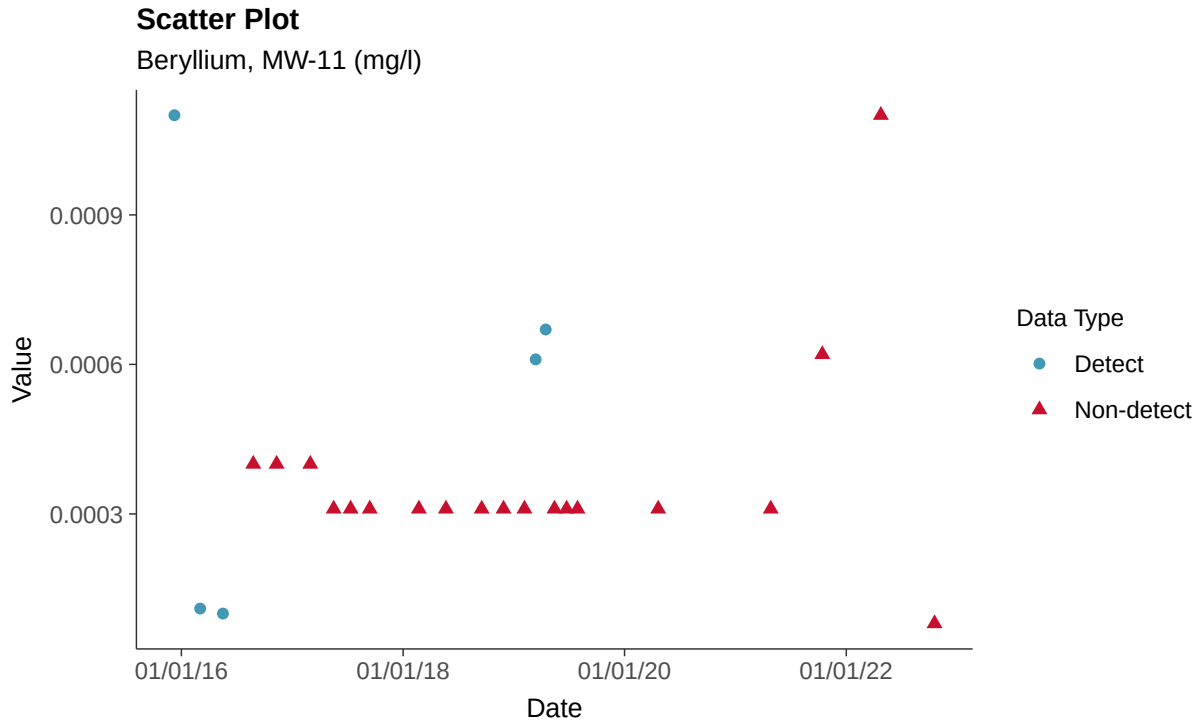
Trend Regression: Piecewise Linear-Linear-Linear

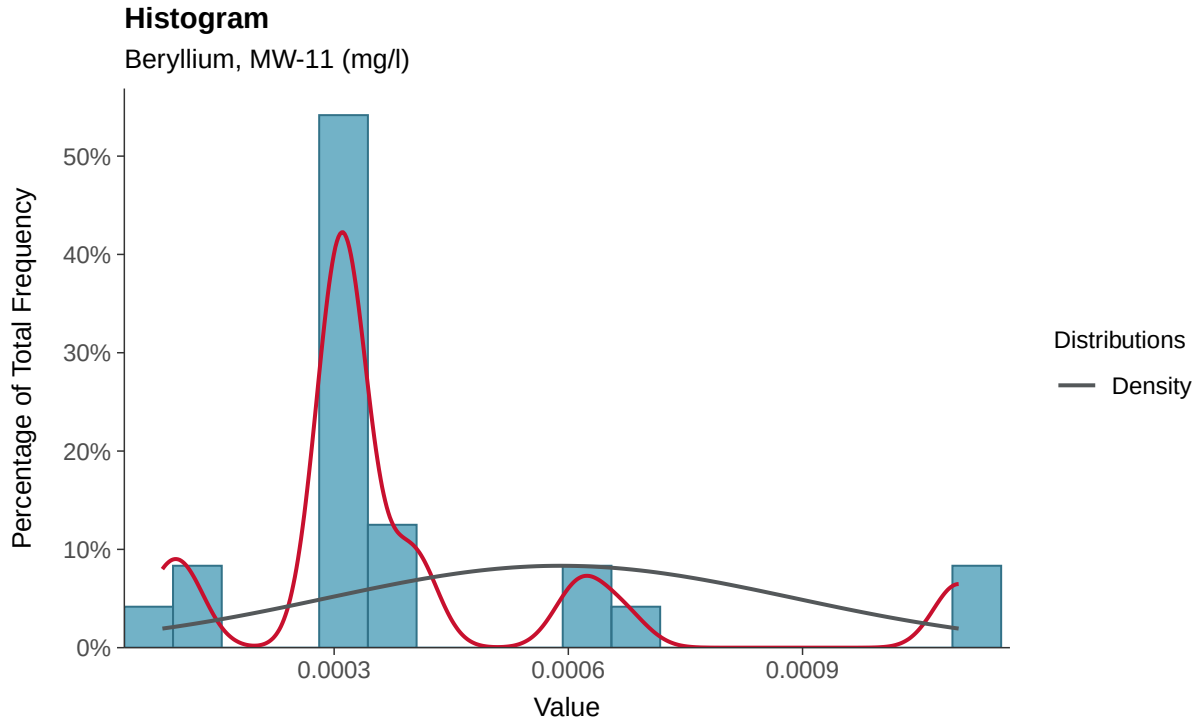
Barium, MW-11 (mg/l)



Appendix IV: Beryllium, MW-11

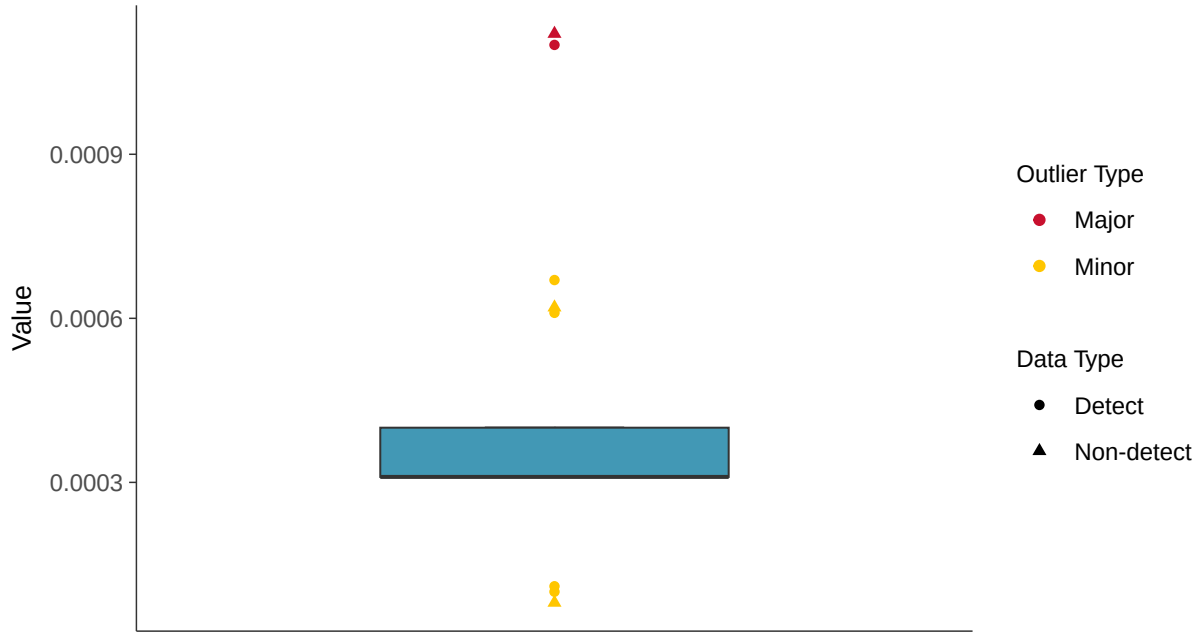
ID: 11_2_107





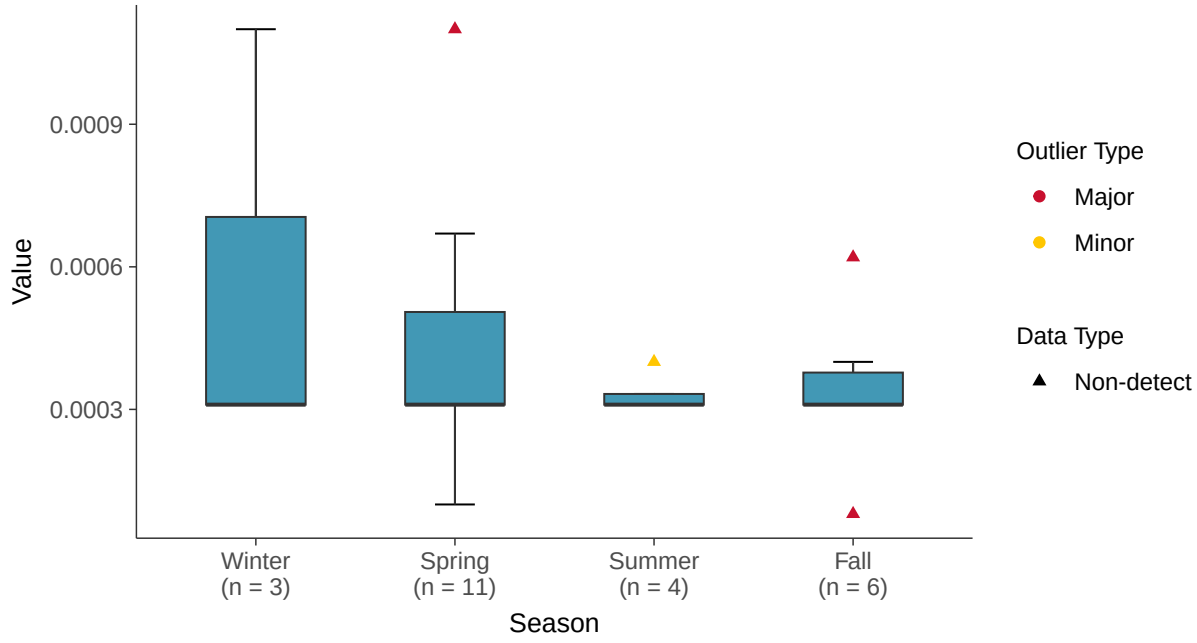
Boxplot

Beryllium, MW-11 (mg/l)



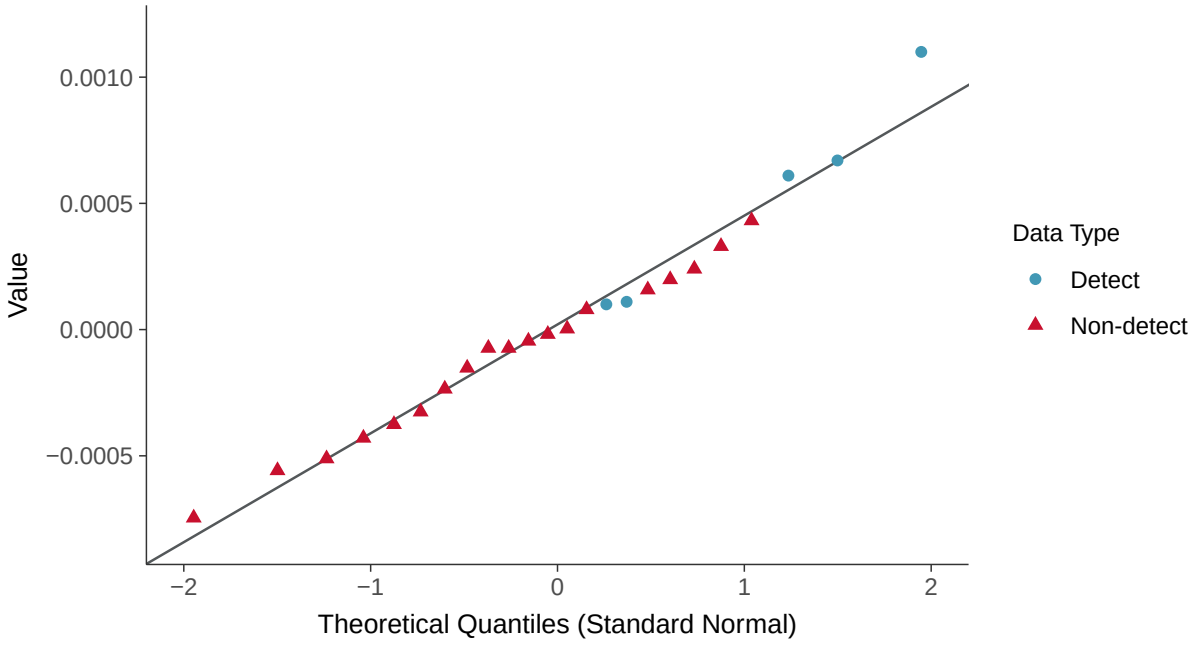
Boxplot by Season

Beryllium, MW-11 (mg/l)



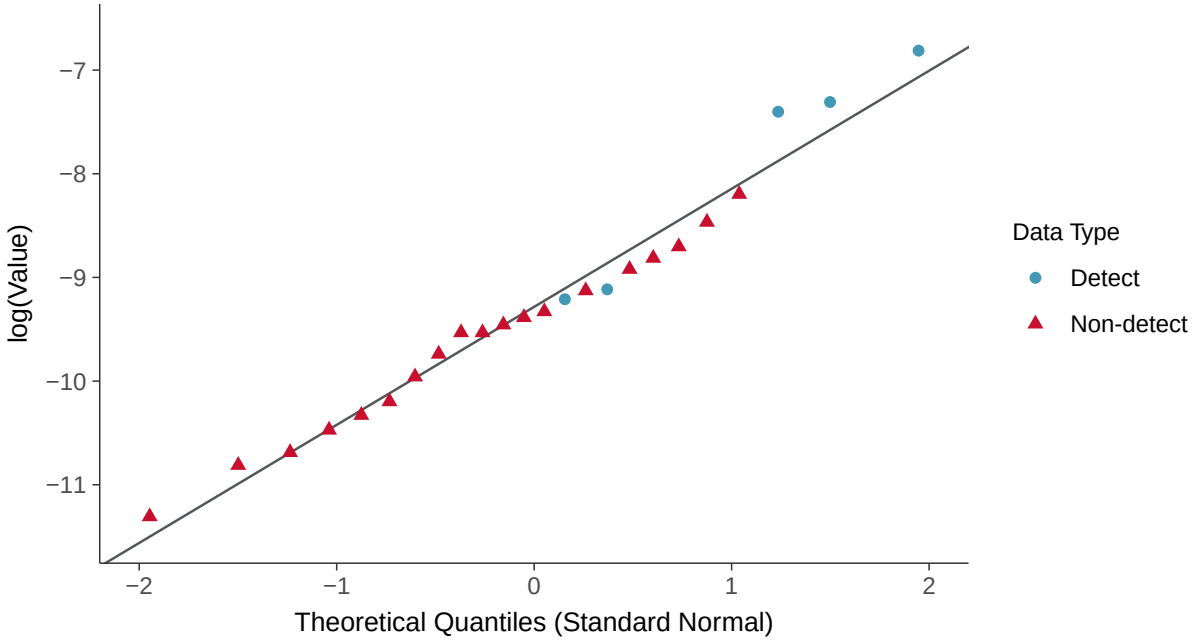
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-11 (mg/l)



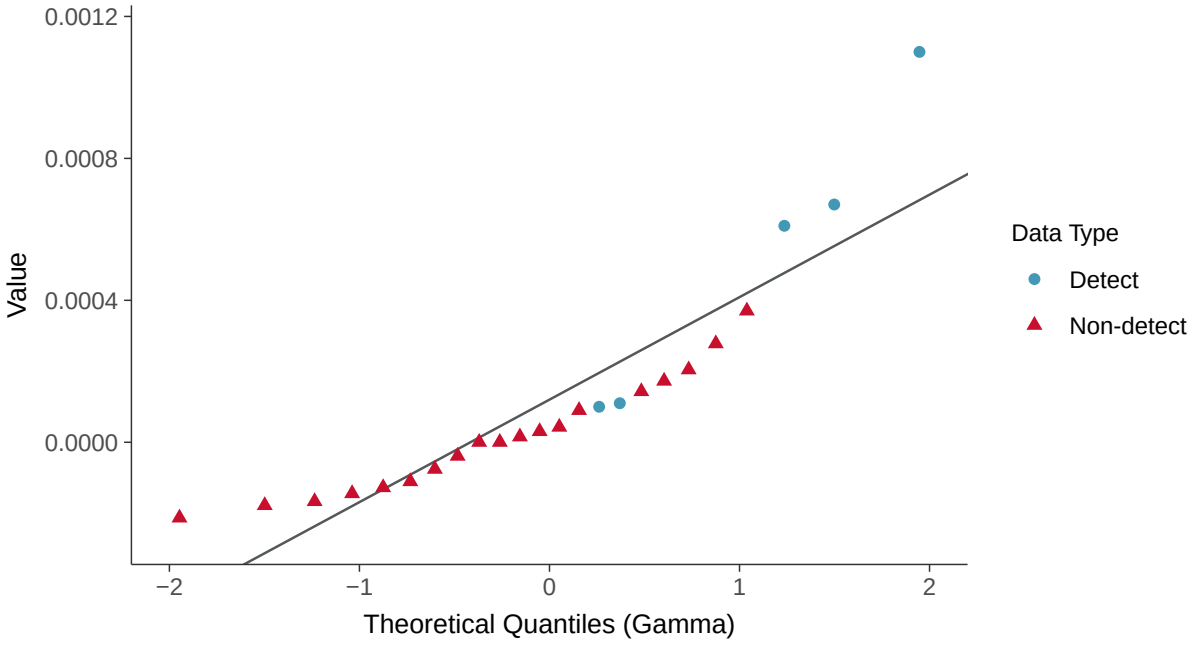
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-11 (mg/l)



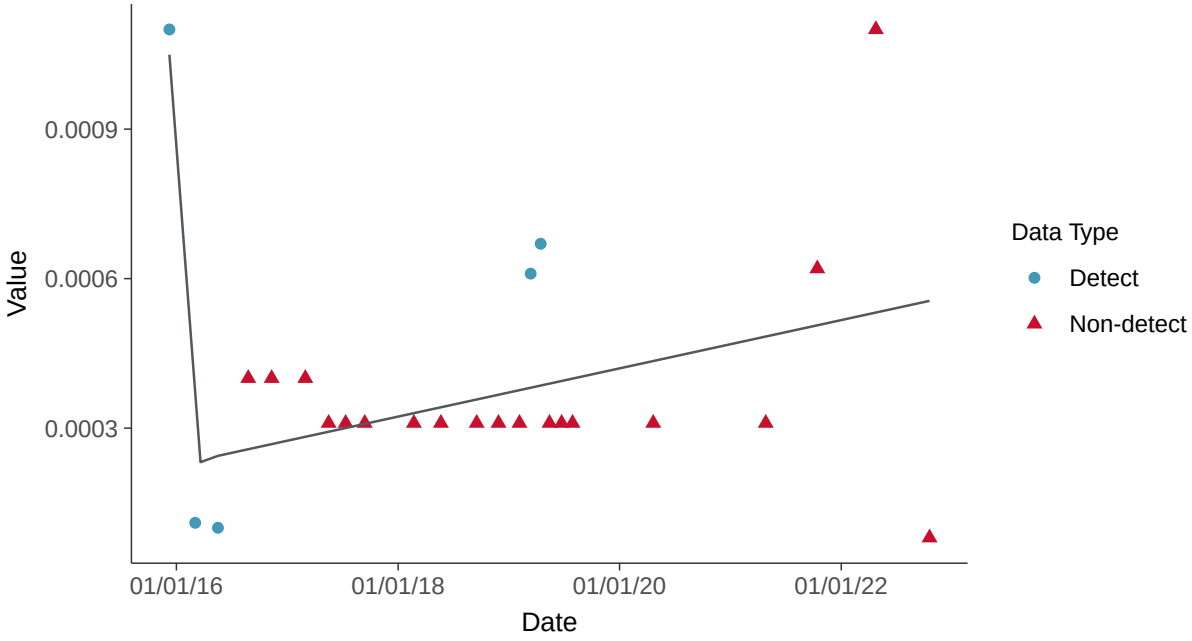
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-11 (mg/l)



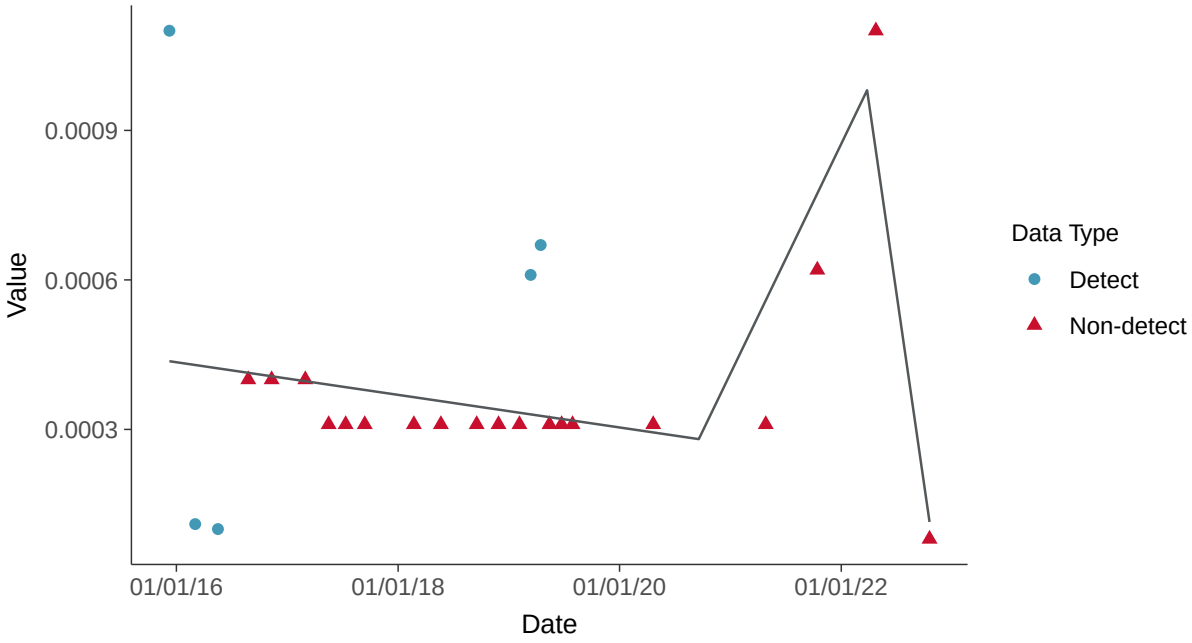
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-11 (mg/l)



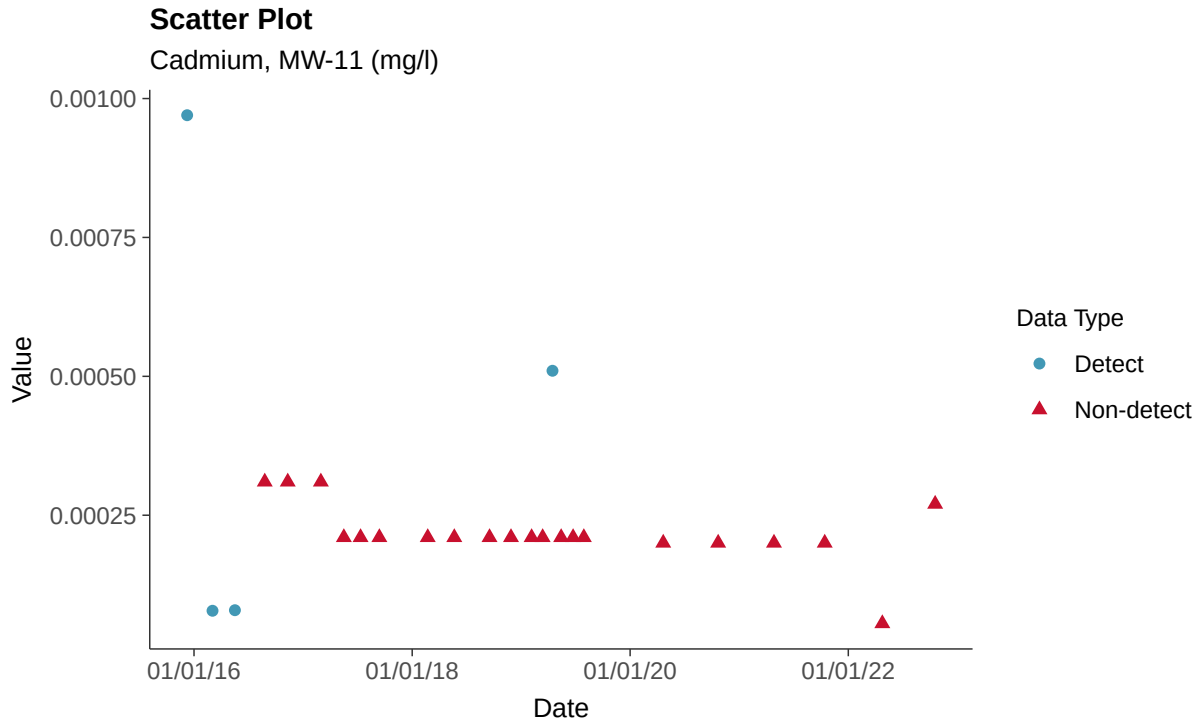
Trend Regression: Piecewise Linear-Linear-Linear

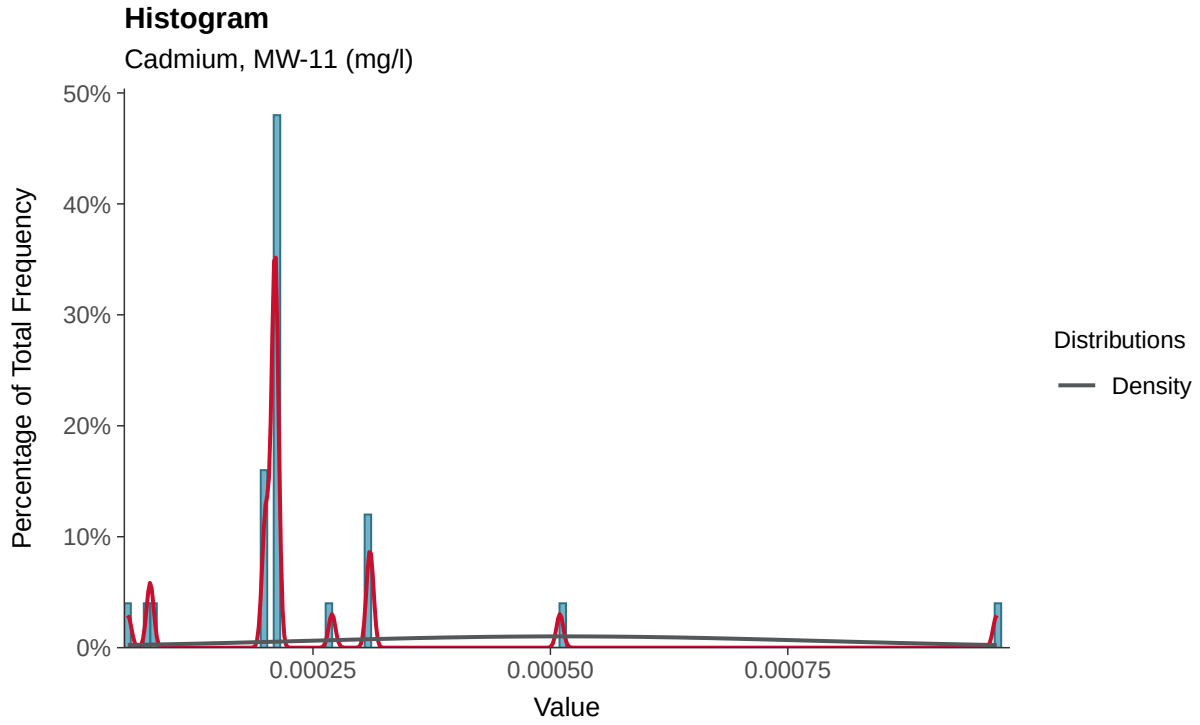
Beryllium, MW-11 (mg/l)



Appendix IV: Cadmium, MW-11

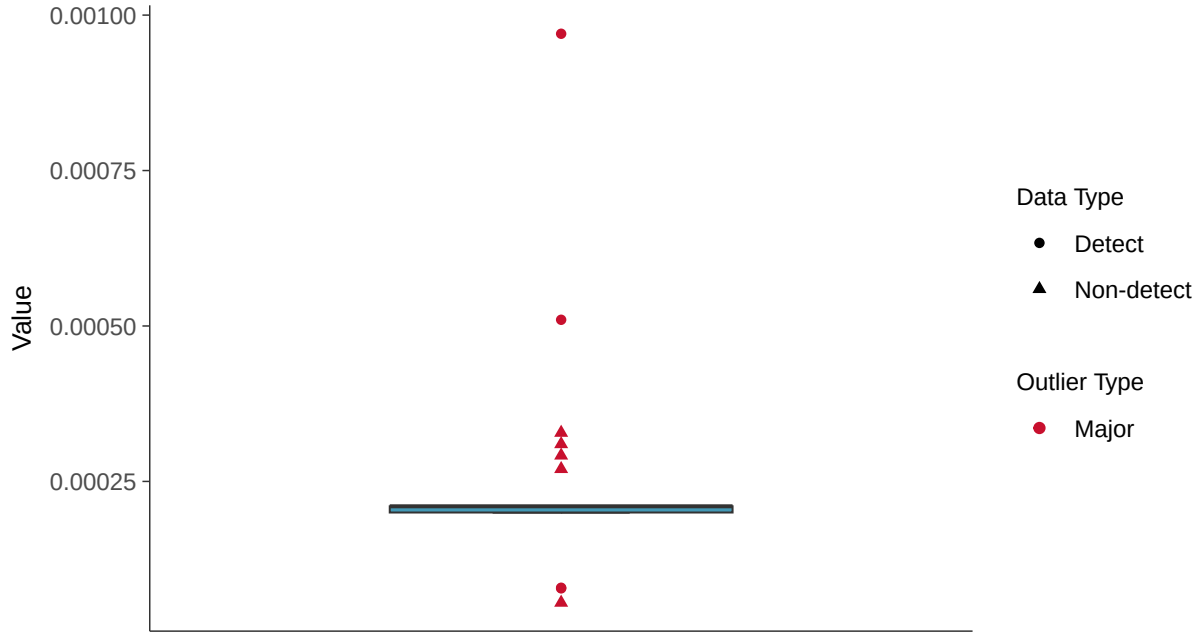
ID: 11_2_109





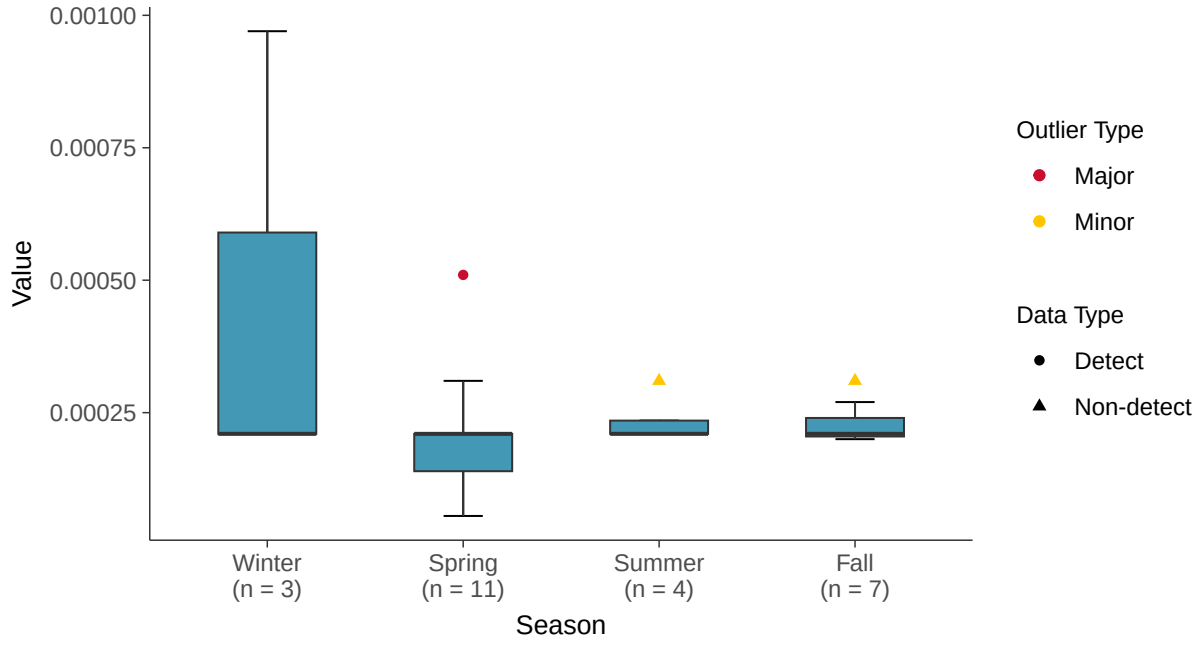
Boxplot

Cadmium, MW-11 (mg/l)



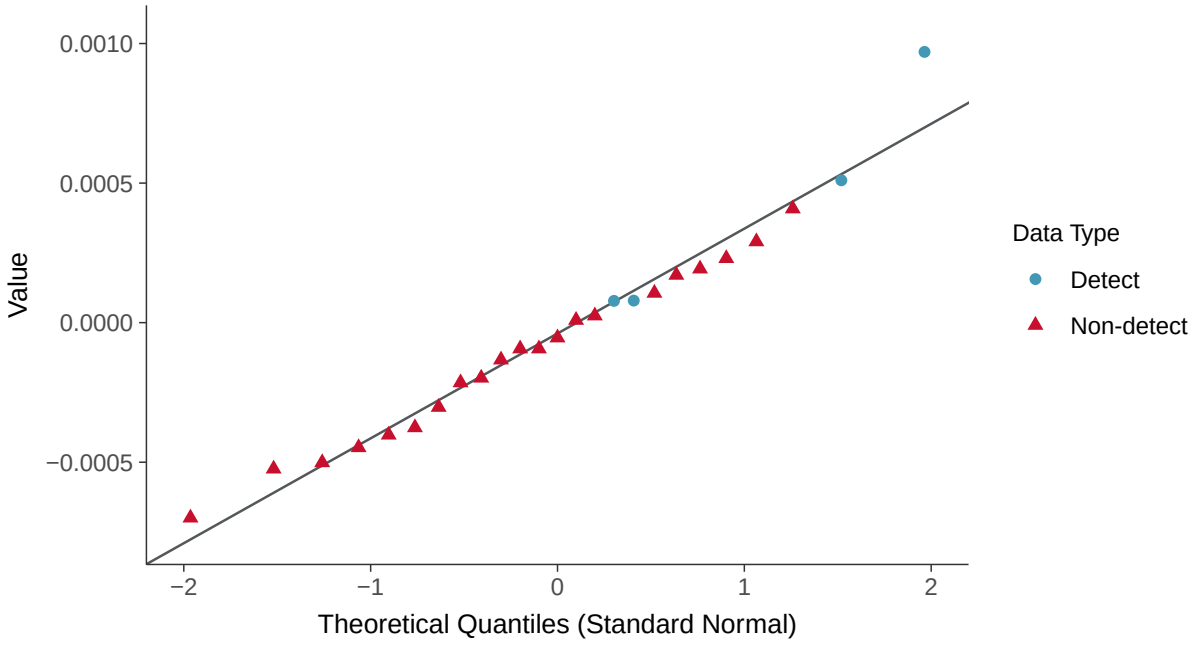
Boxplot by Season

Cadmium, MW-11 (mg/l)



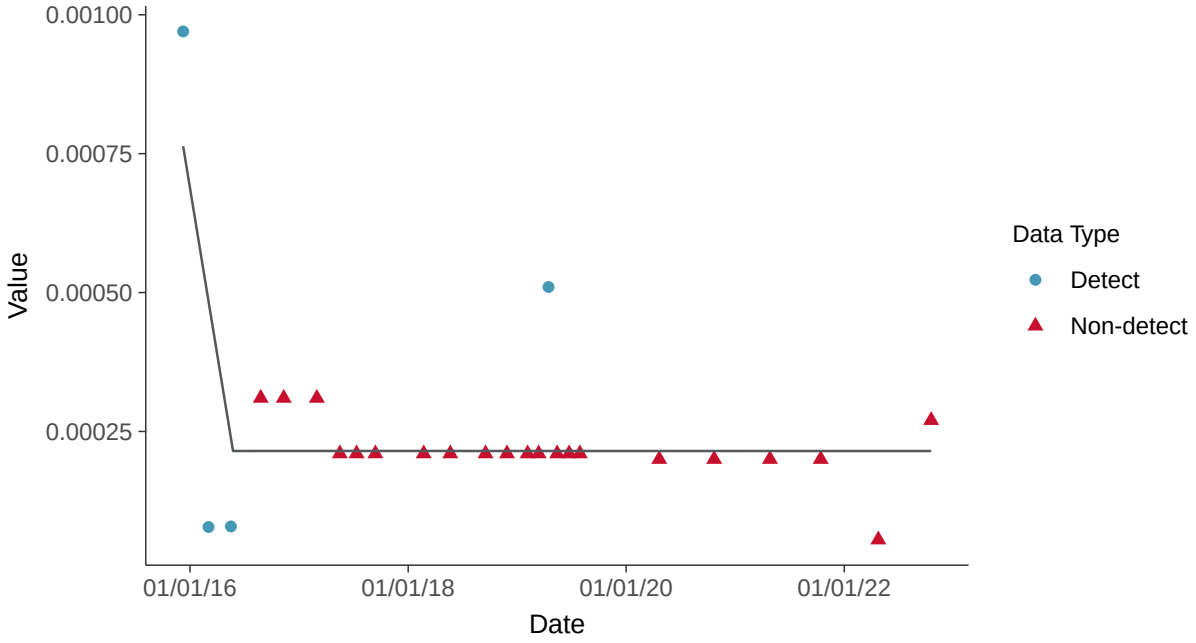
Normal Q-Q plot using ROS Imputed Estimates

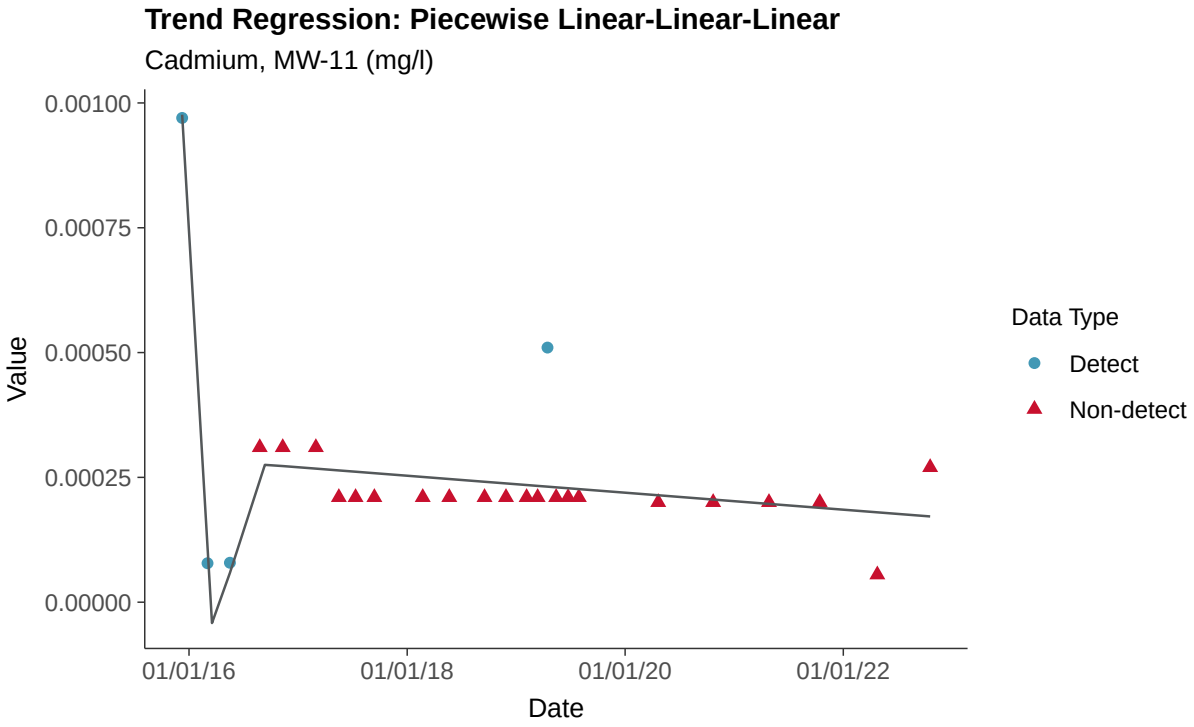
Cadmium, MW-11 (mg/l)



Trend Regression: Piecewise Linear-Linear

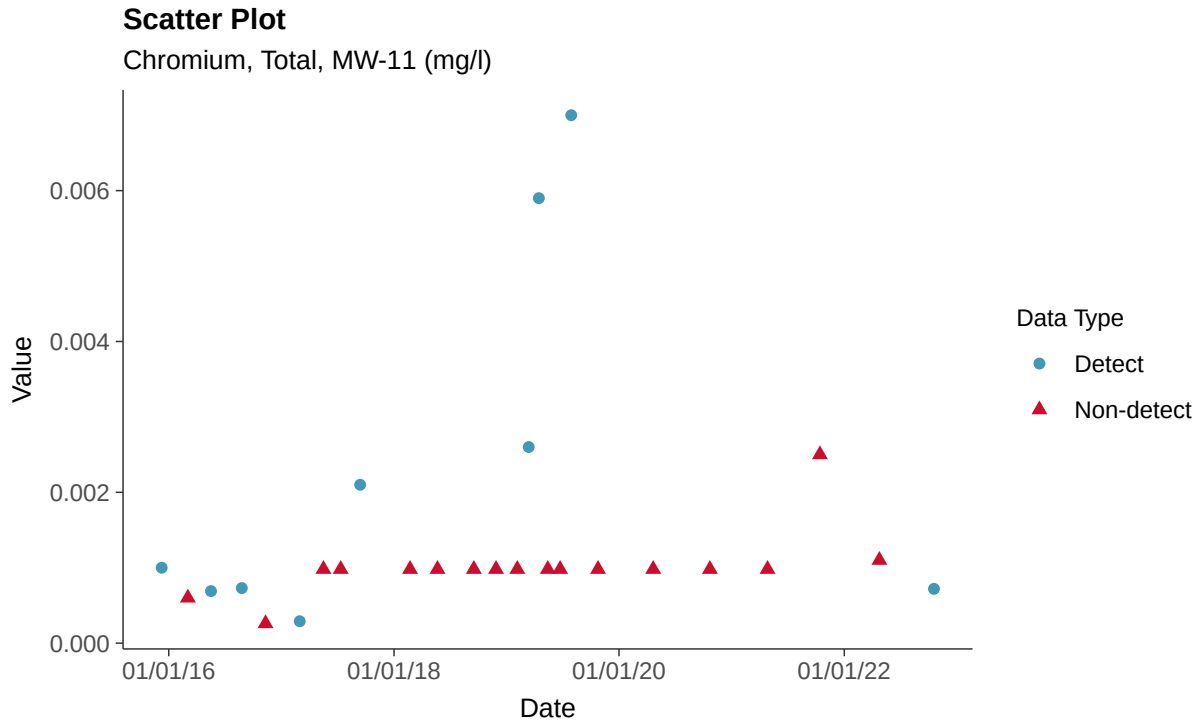
Cadmium, MW-11 (mg/l)

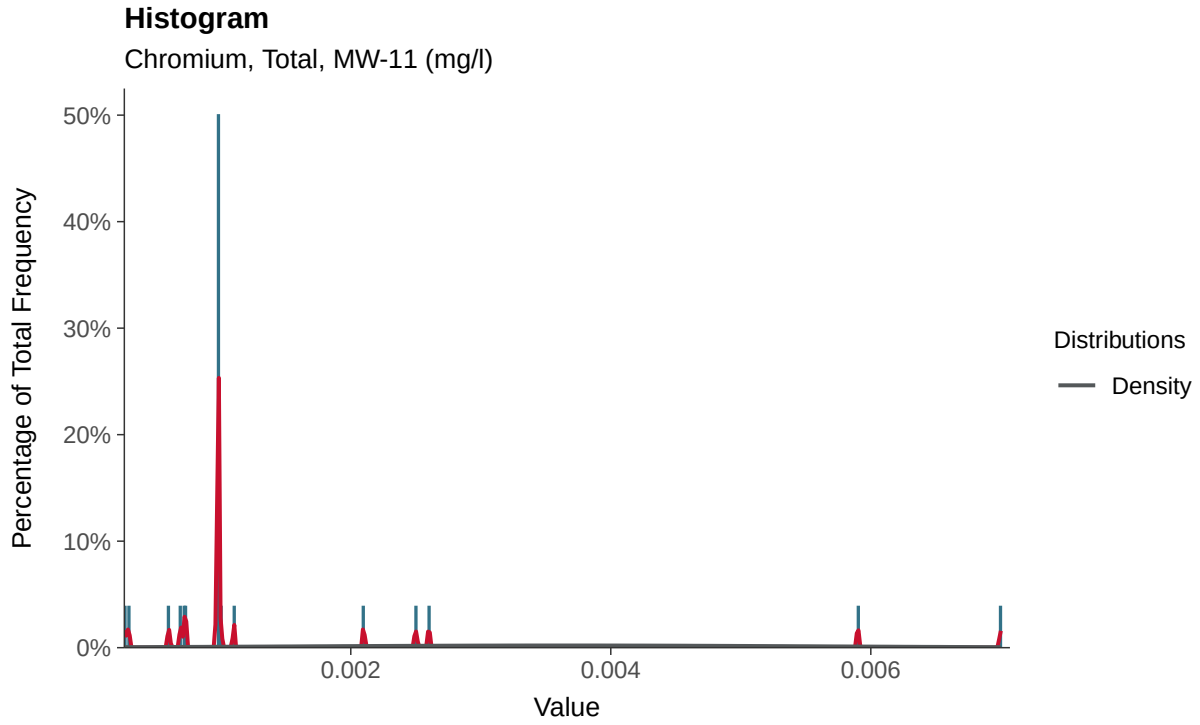



Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-11 (mg/l)
0.00100
0.00075
0.00050
0.00025
0.00000
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-11

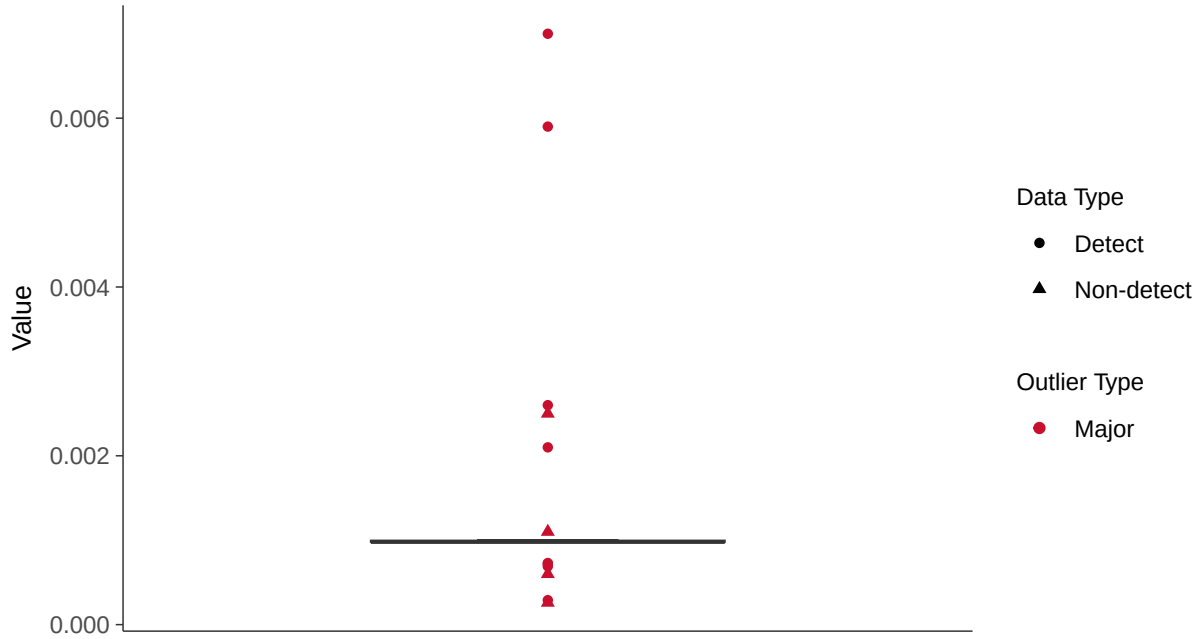
ID: 11_2_112





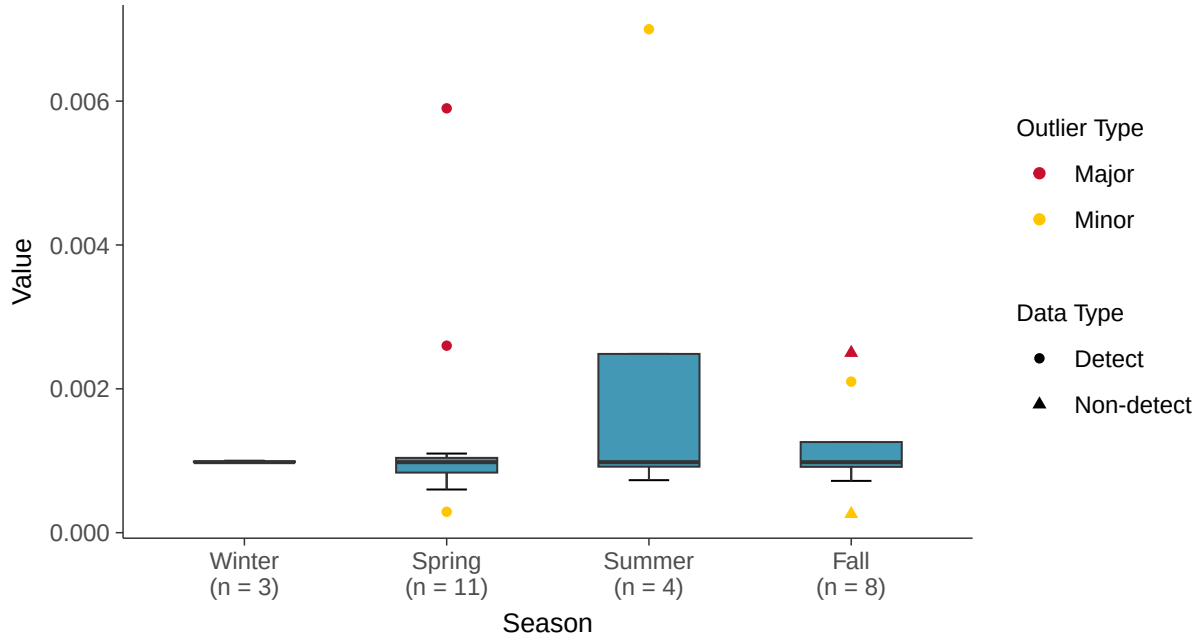
Boxplot

Chromium, Total, MW-11 (mg/l)



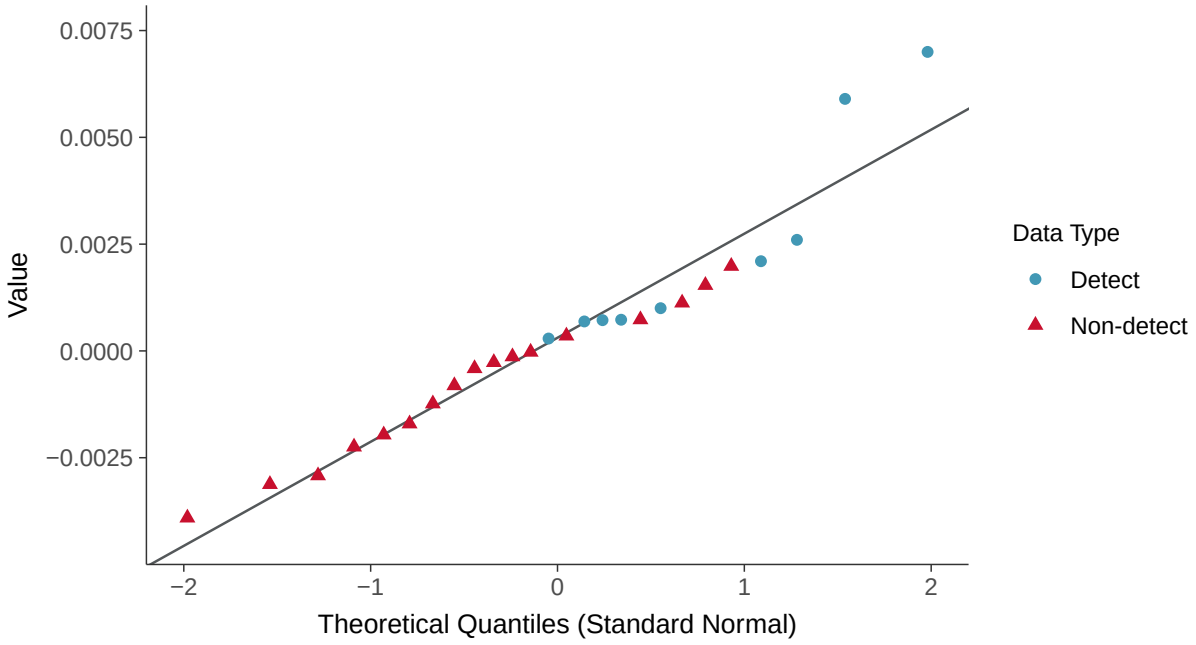
Boxplot by Season

Chromium, Total, MW-11 (mg/l)



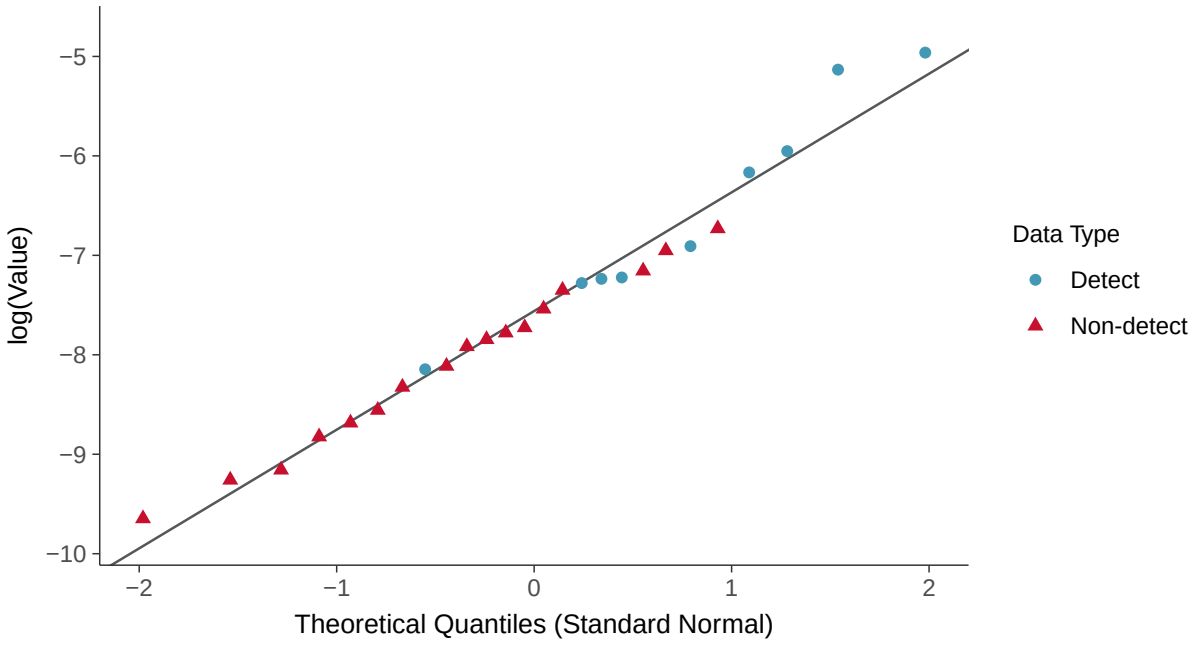
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-11 (mg/l)



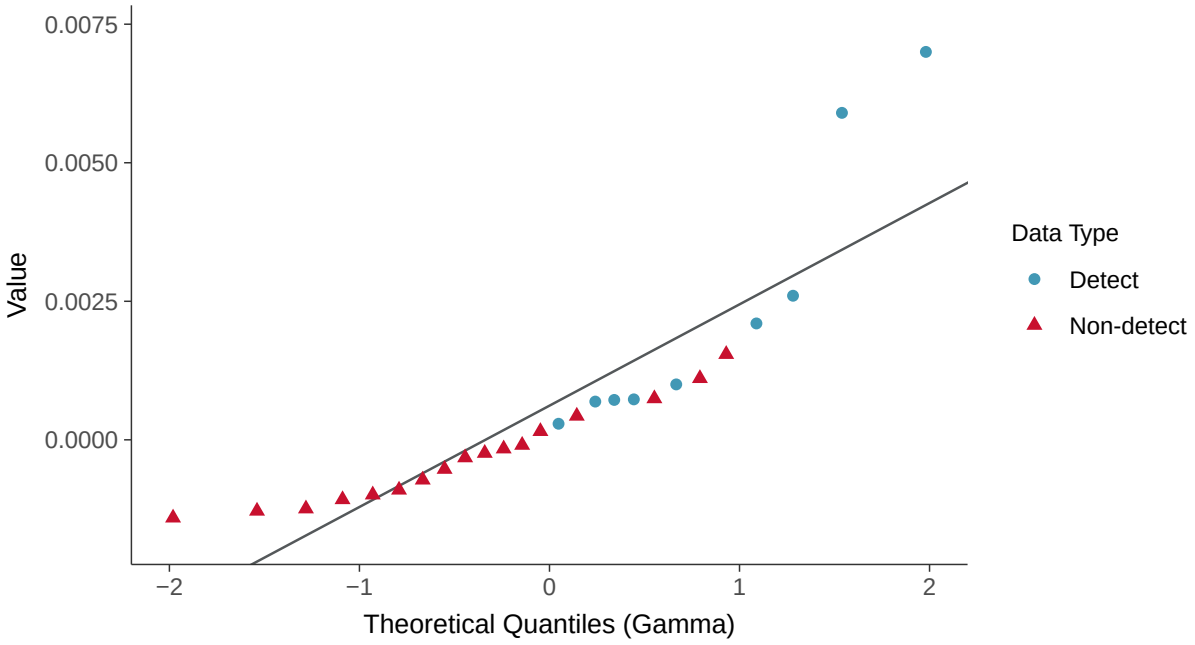
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-11 (mg/l)



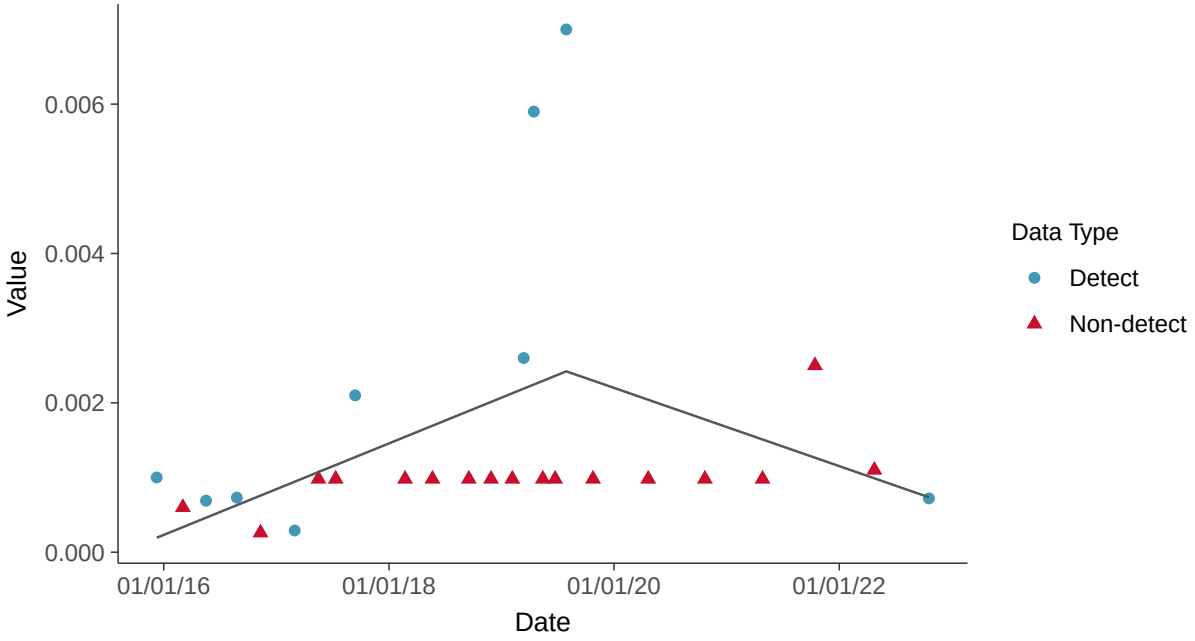
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-11 (mg/l)



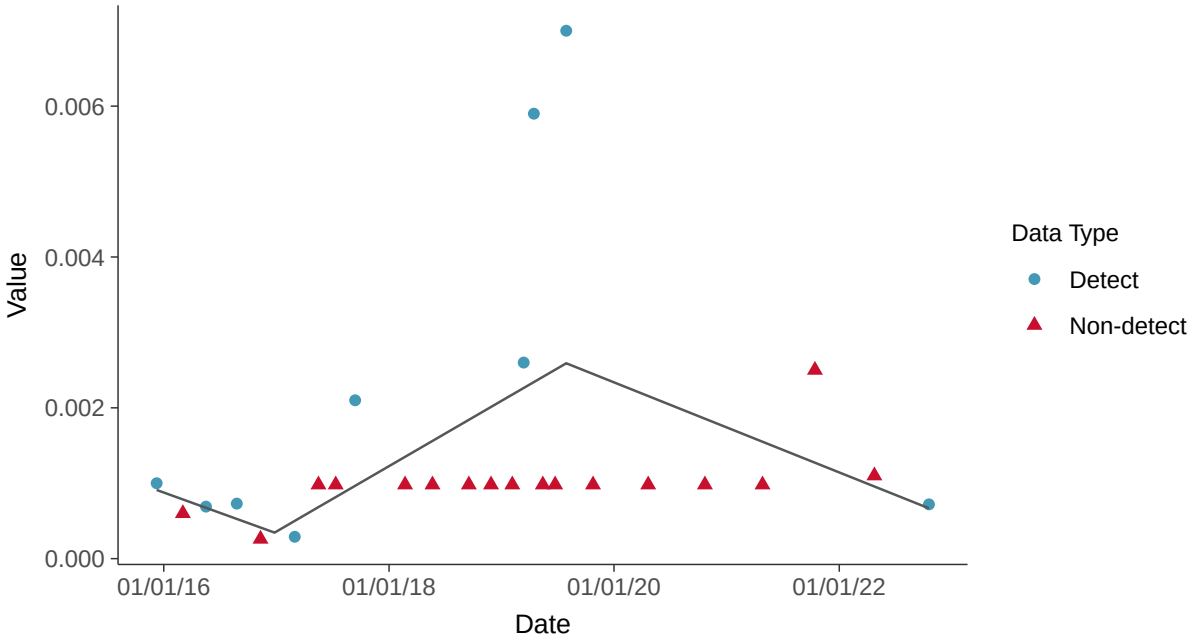
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-11 (mg/l)



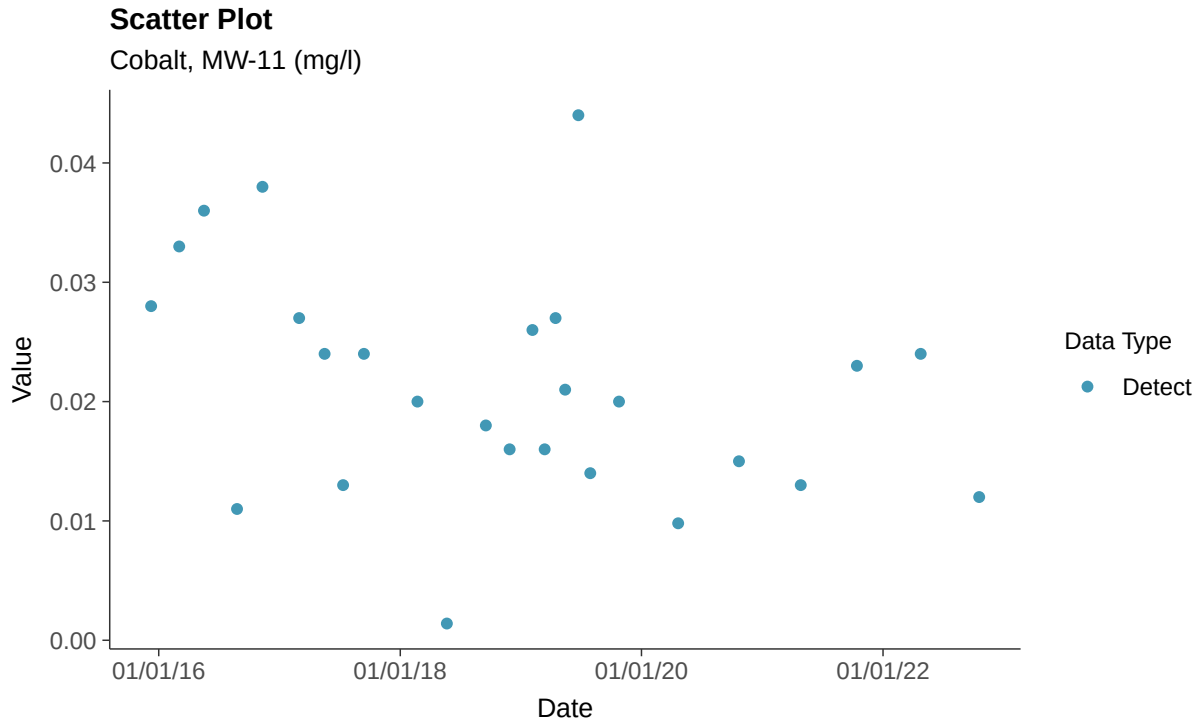
Trend Regression: Piecewise Linear-Linear-Linear

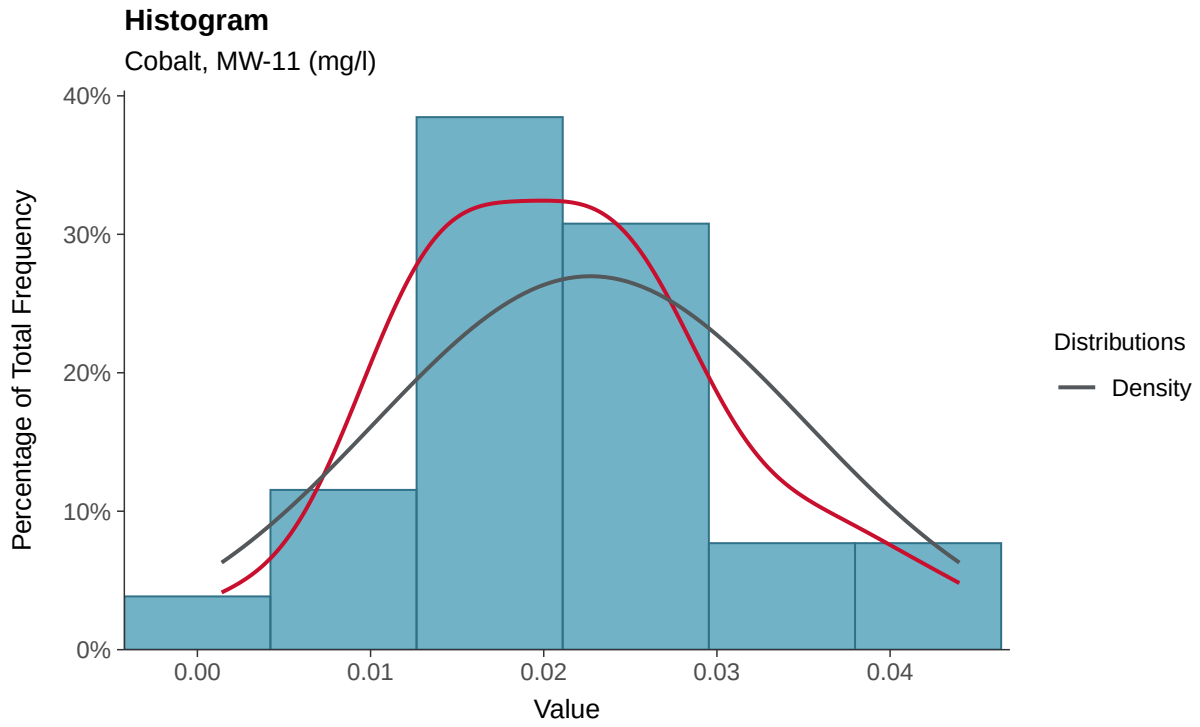
Chromium, Total, MW-11 (mg/l)



Appendix IV: Cobalt, MW-11

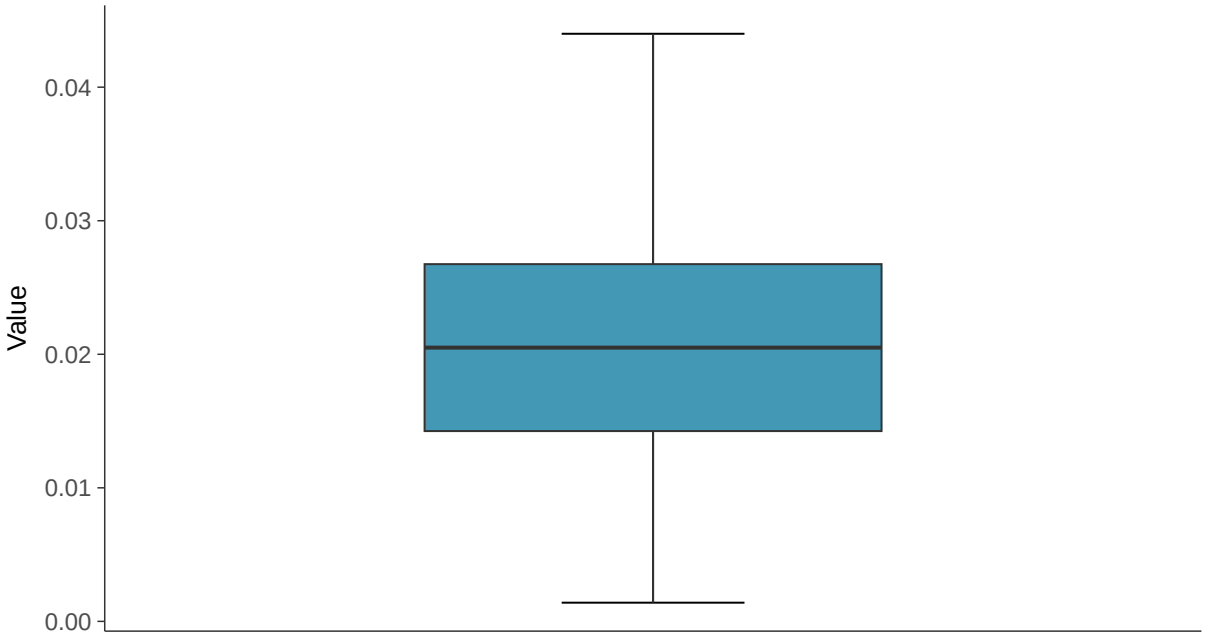
ID: 11_2_113





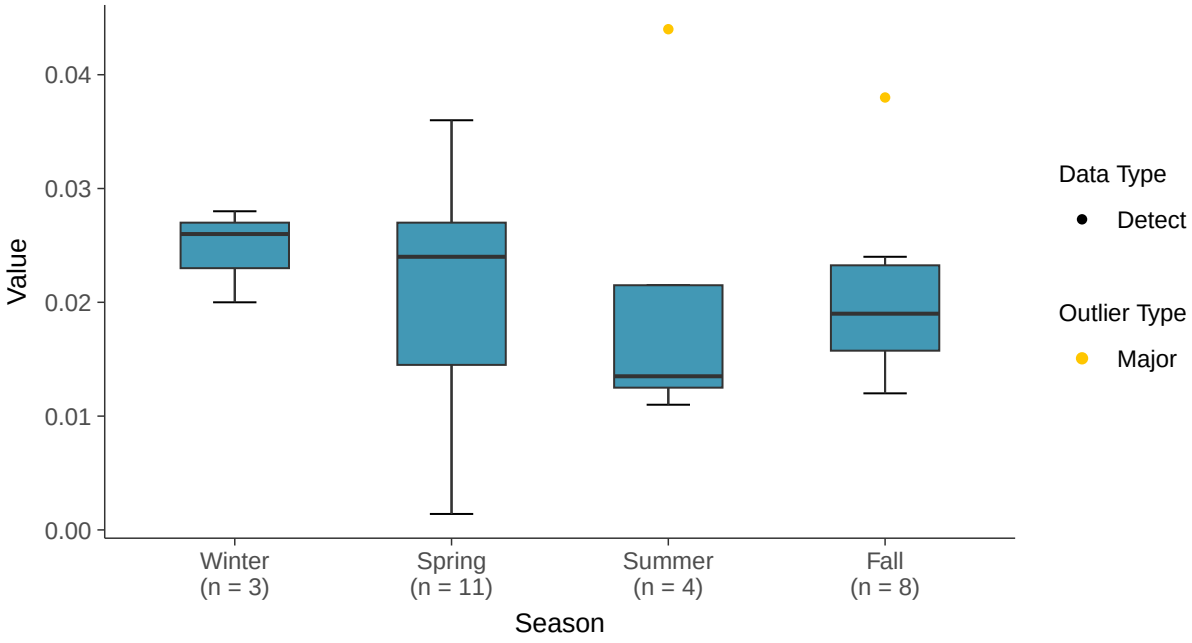
Boxplot

Cobalt, MW-11 (mg/l)



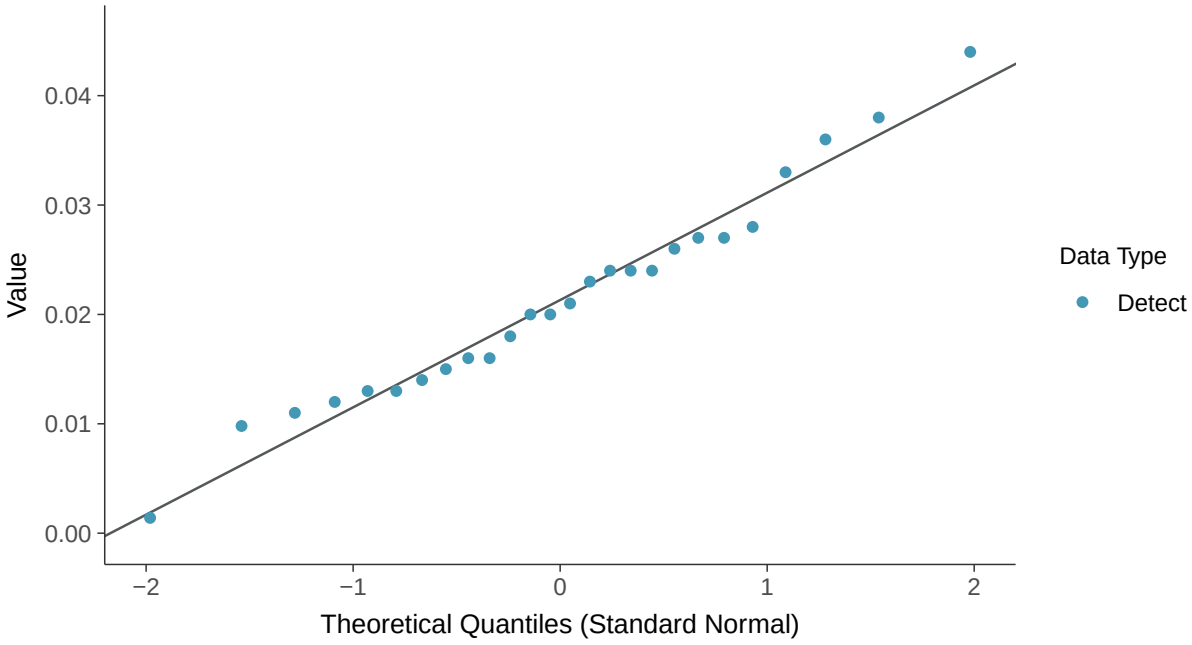
Boxplot by Season

Cobalt, MW-11 (mg/l)



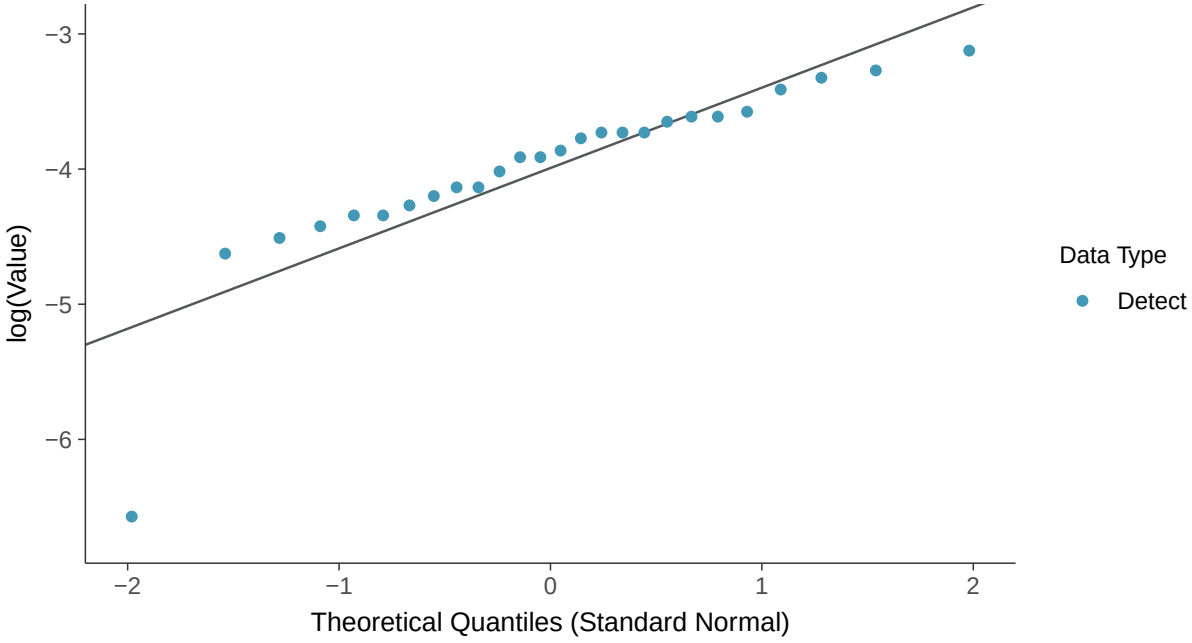
Normal Q-Q plot

Cobalt, MW-11 (mg/l)



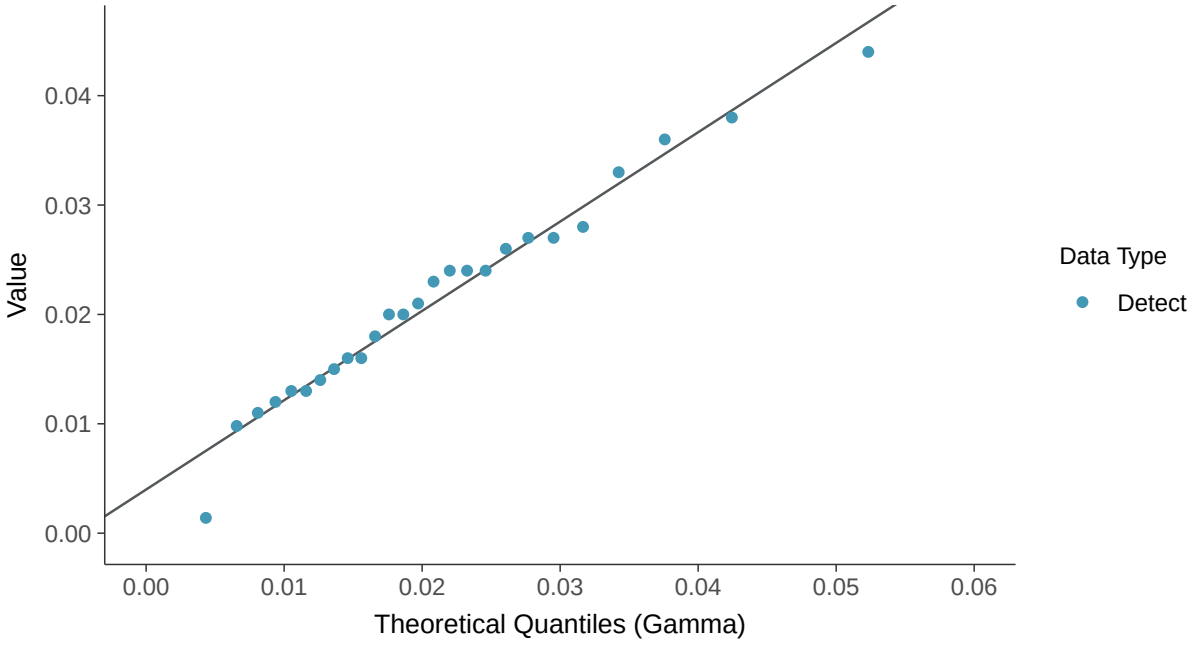
Lognormal Q-Q plot

Cobalt, MW-11 (mg/l)



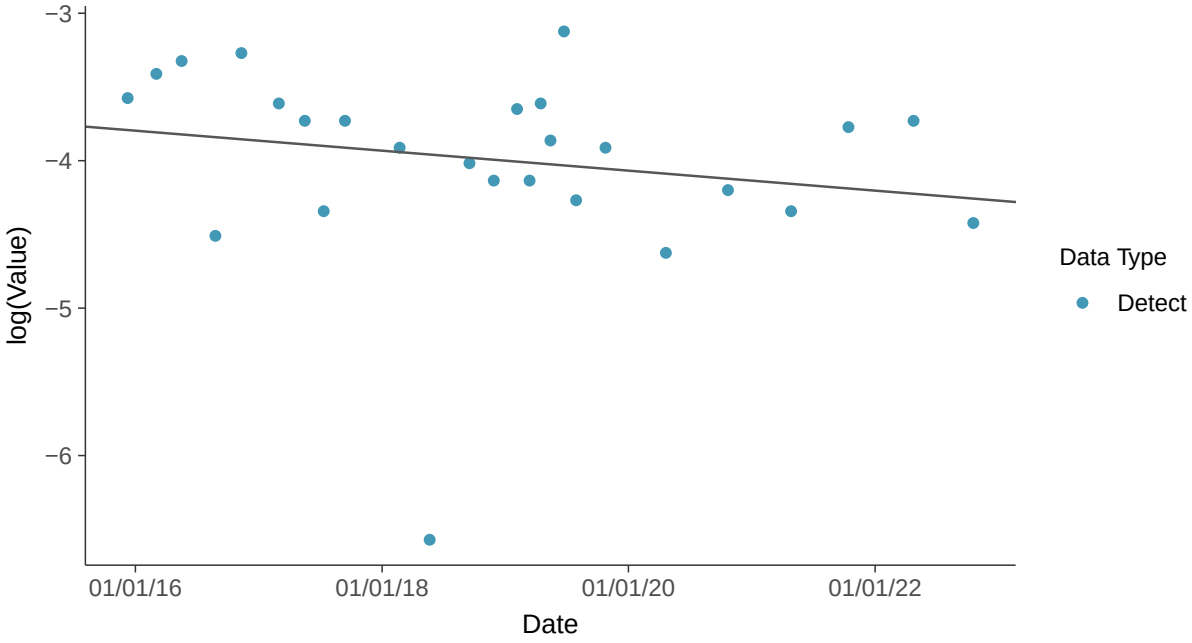
Gamma Q-Q plot

Cobalt, MW-11 (mg/l)



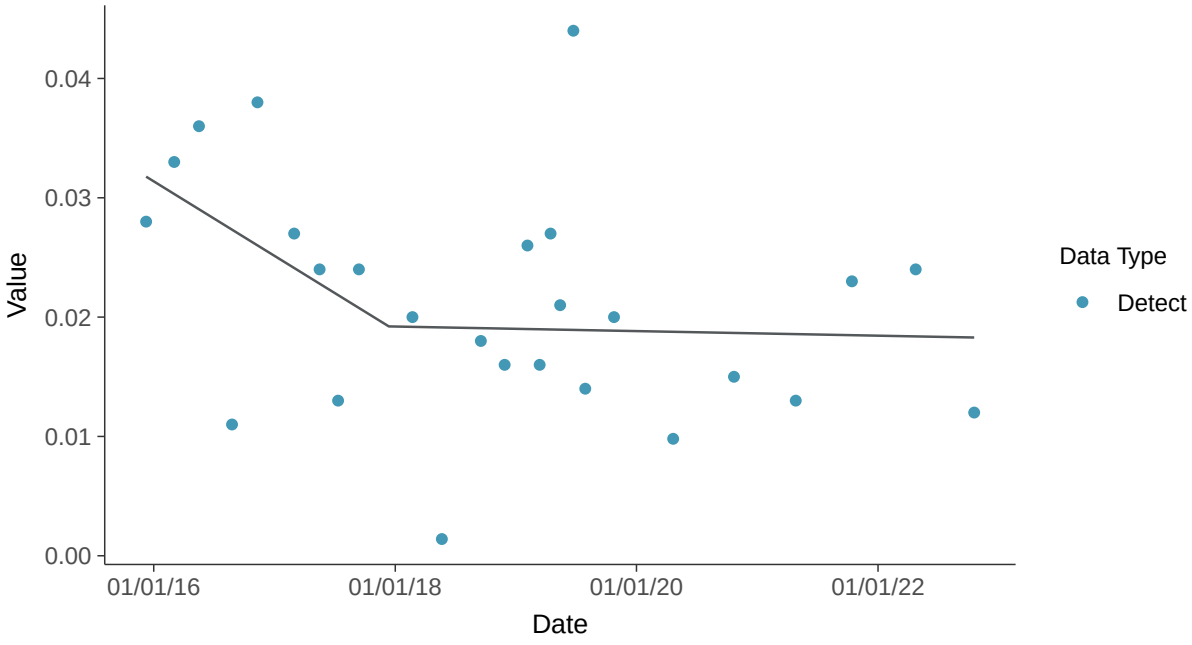
Trend Regression: Lognormal MLE

Cobalt, MW-11 (mg/l)



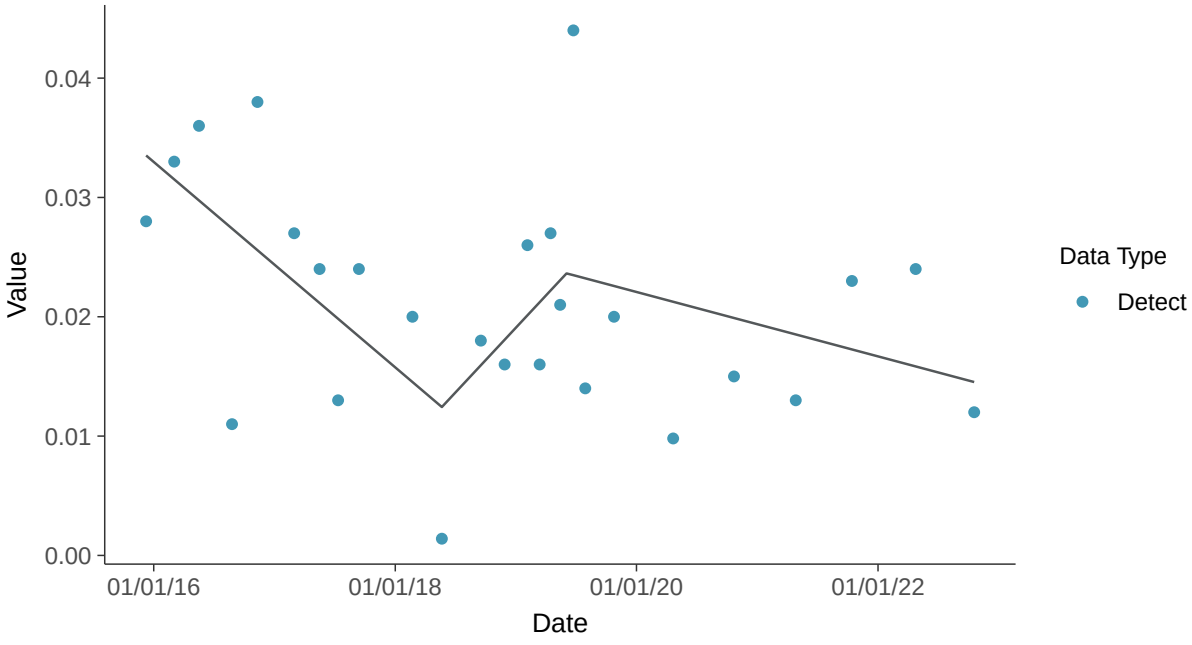
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-11 (mg/l)



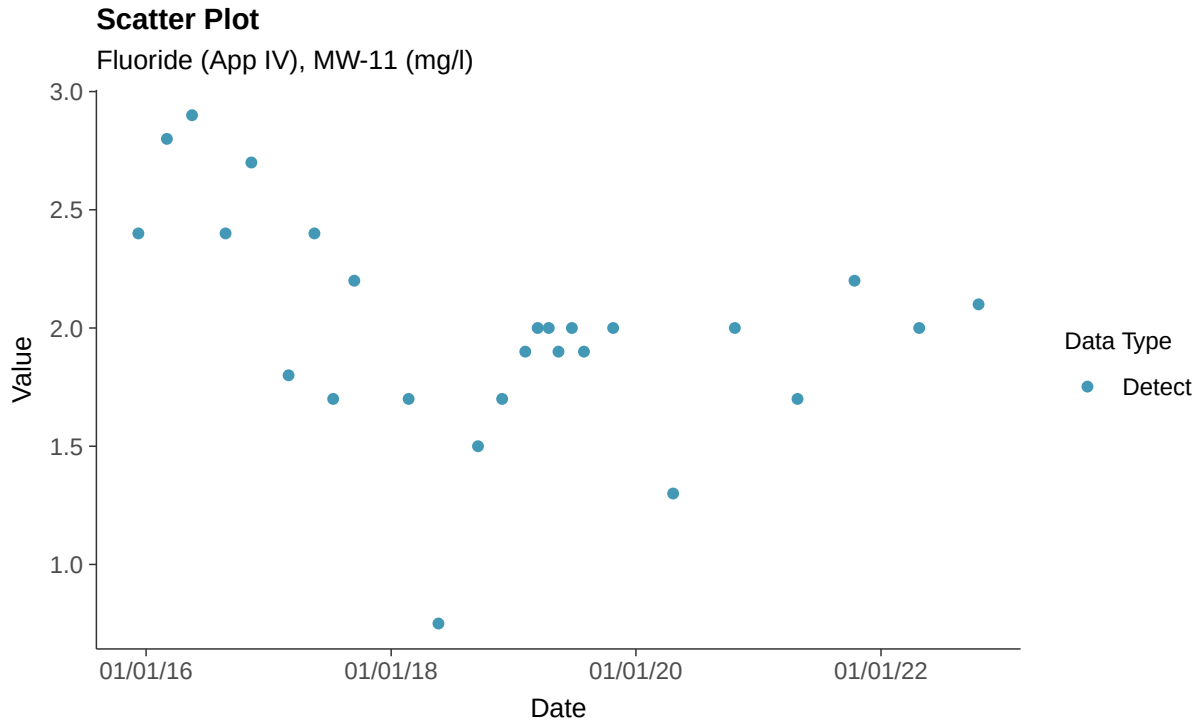
Trend Regression: Piecewise Linear-Linear-Linear

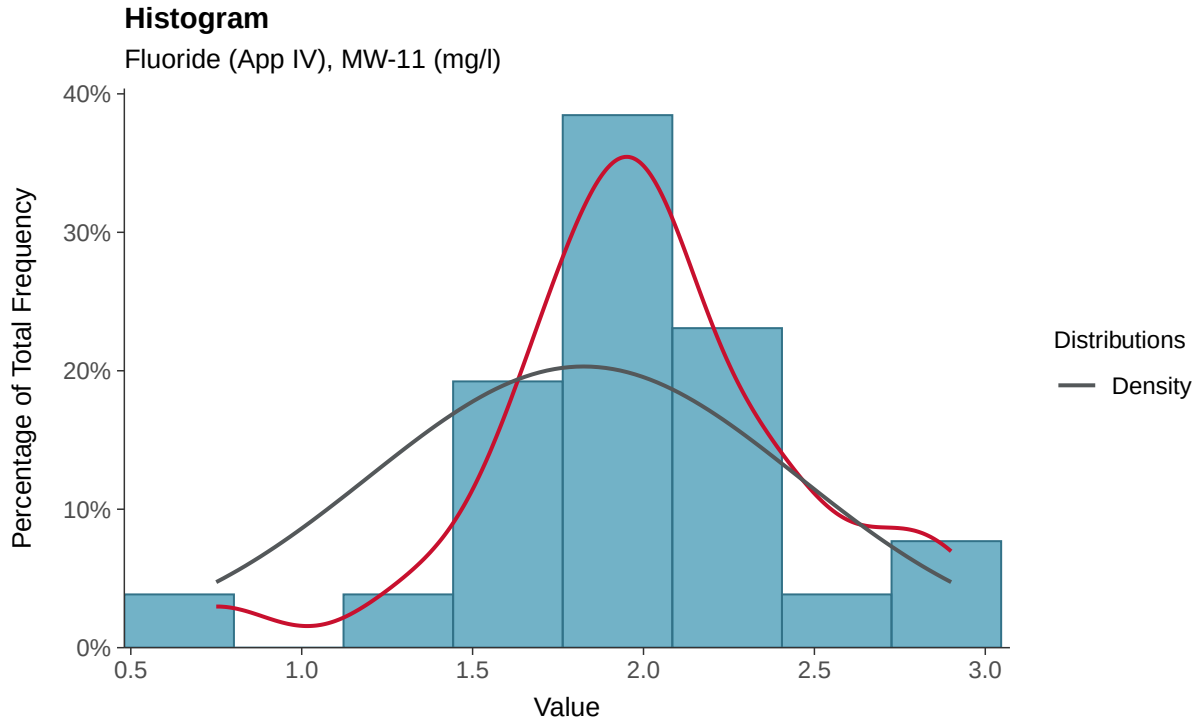
Cobalt, MW-11 (mg/l)



Appendix IV: Fluoride (App IV), MW-11

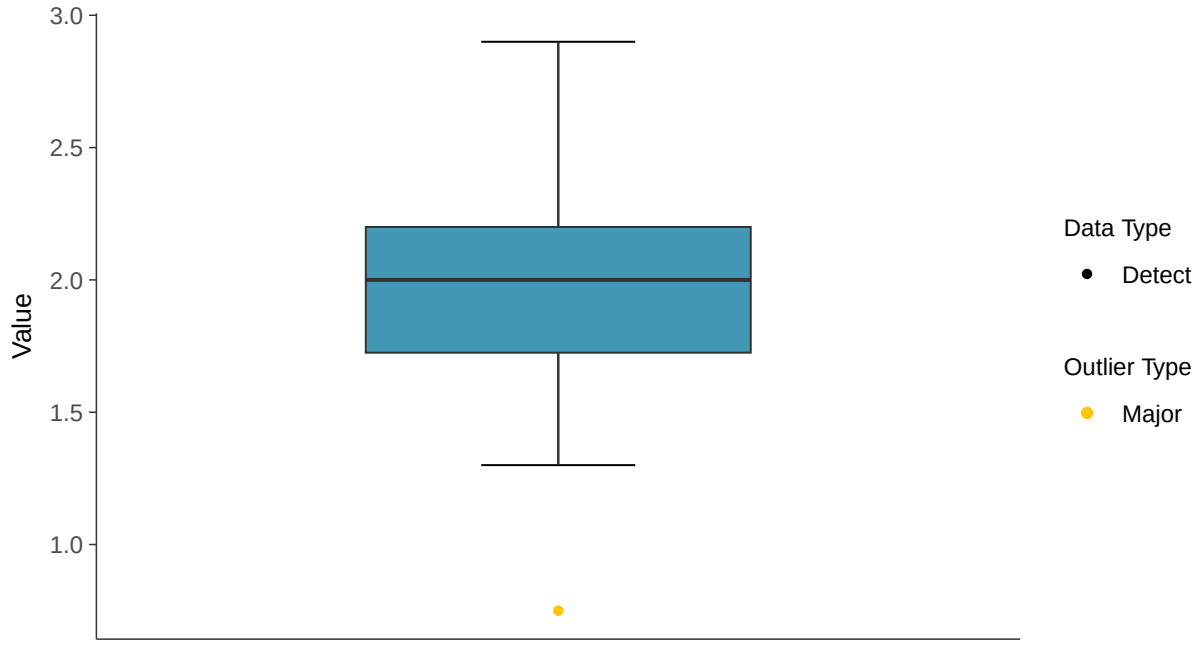
ID: 11_2_116





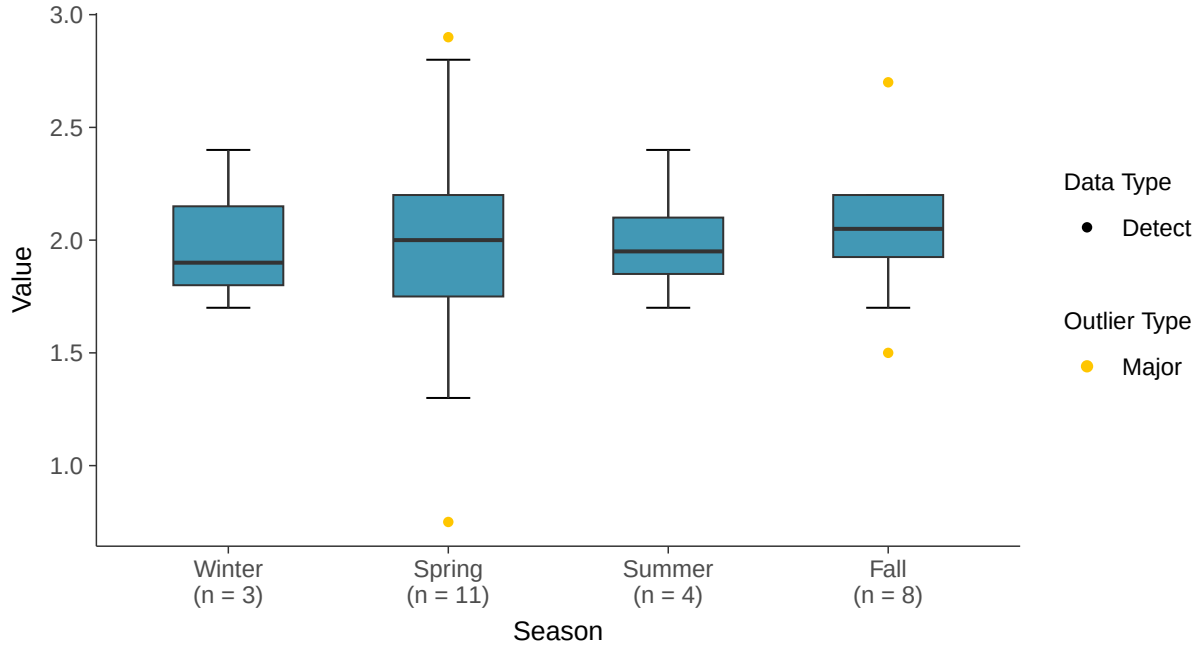
Boxplot

Fluoride (App IV), MW-11 (mg/l)



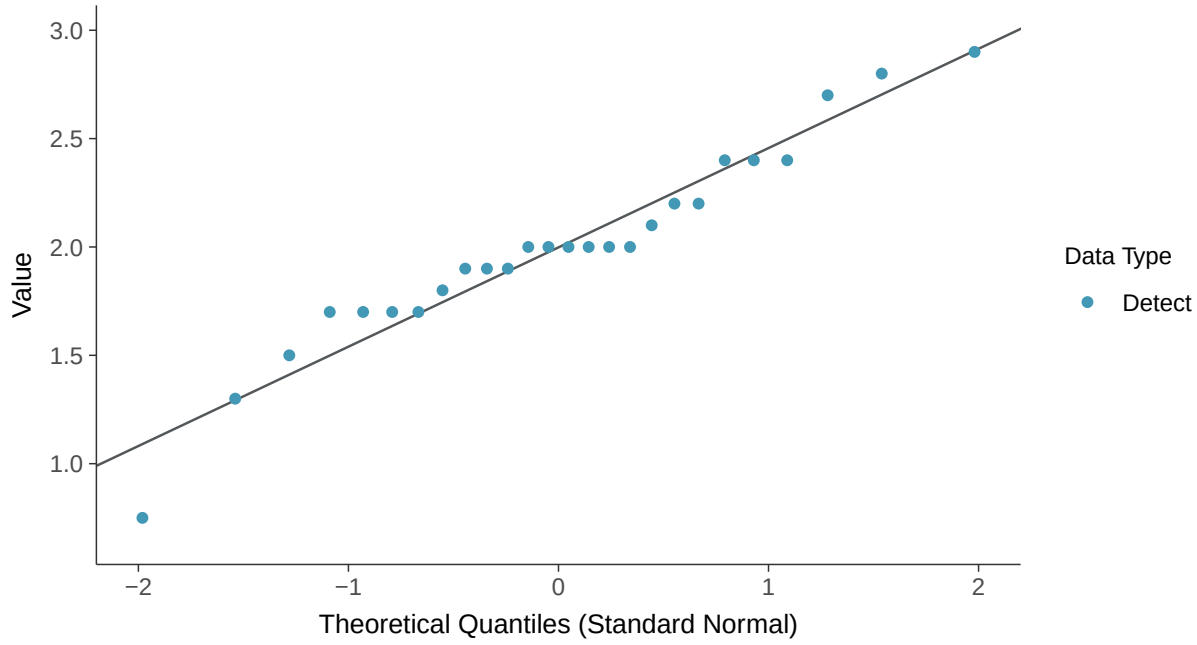
Boxplot by Season

Fluoride (App IV), MW-11 (mg/l)



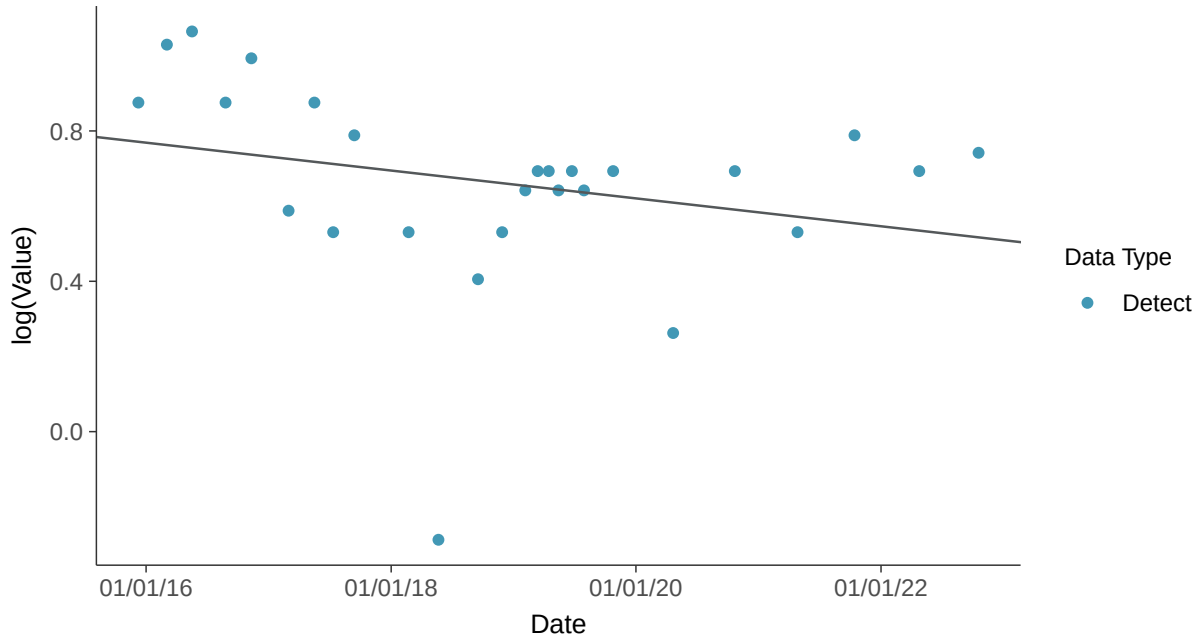
Normal Q-Q plot

Fluoride (App IV), MW-11 (mg/l)



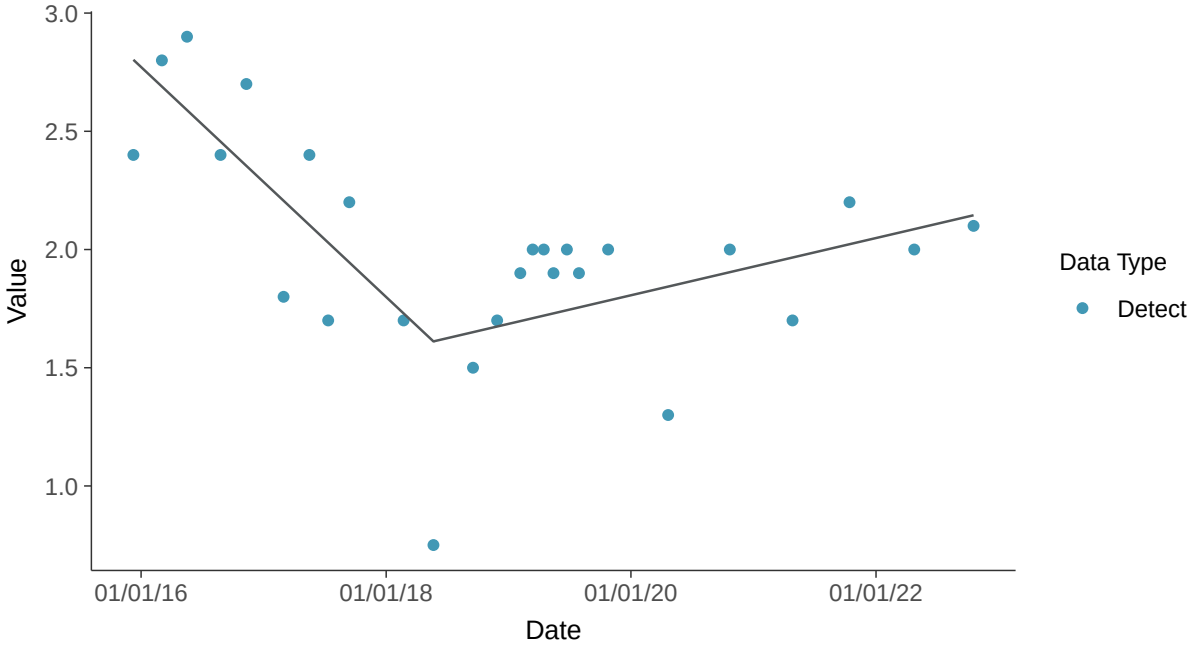
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-11 (mg/l)



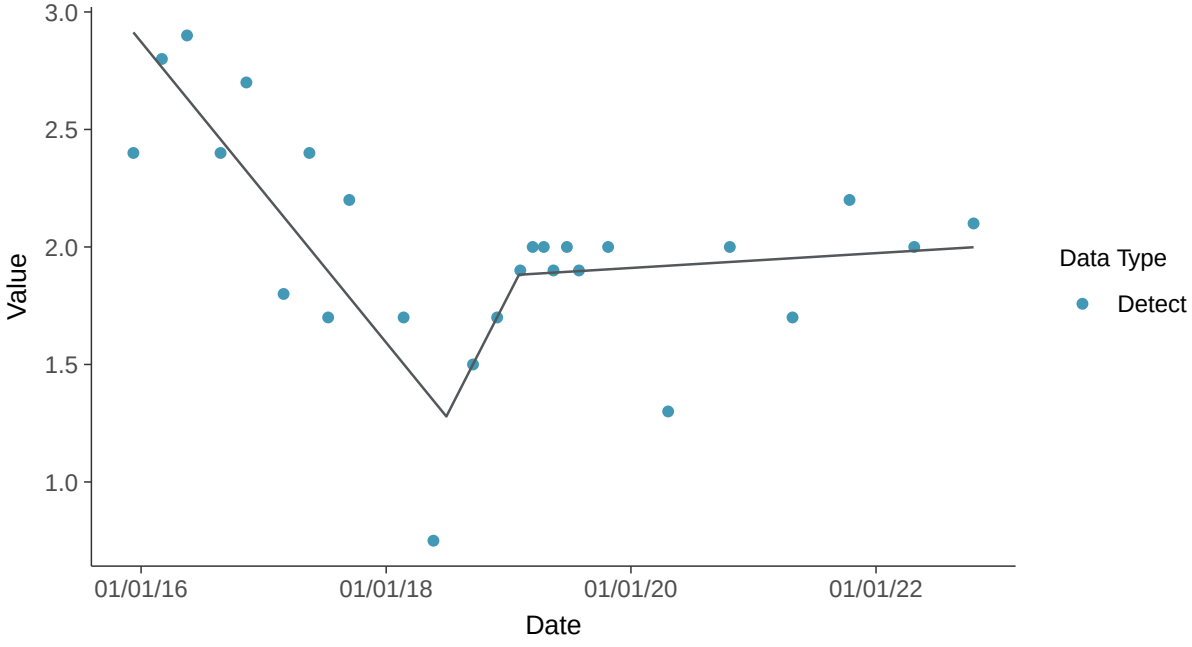
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-11 (mg/l)



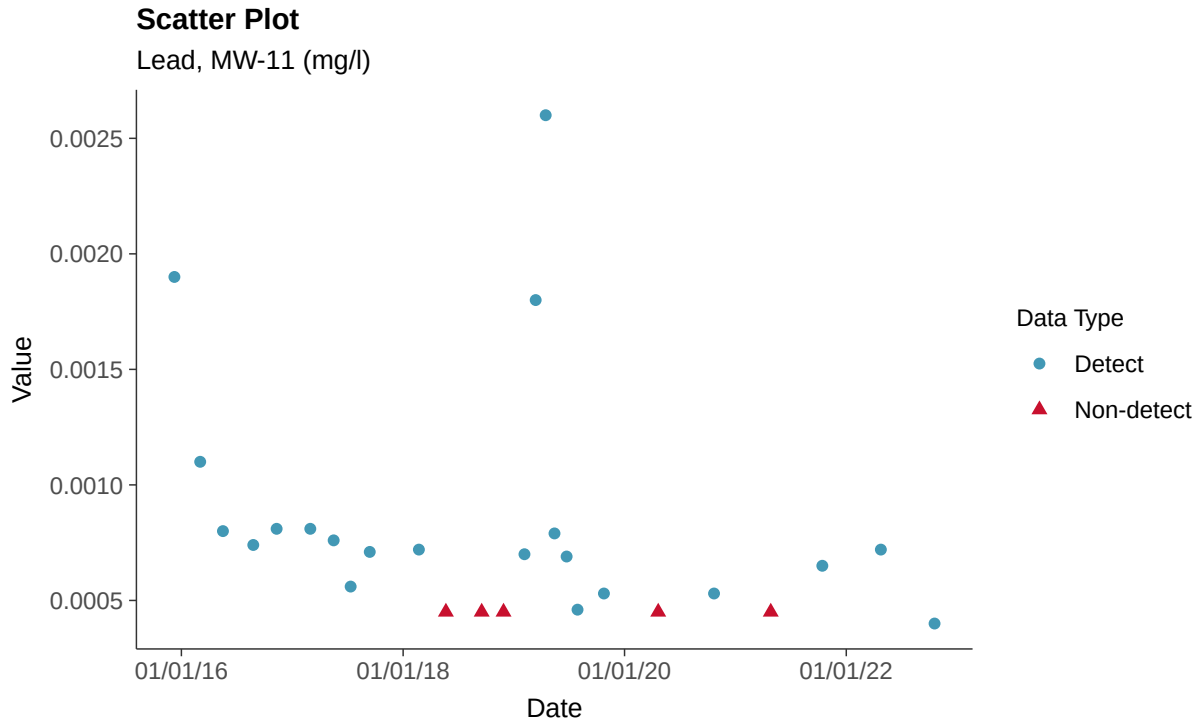
Trend Regression: Piecewise Linear-Linear-Linear

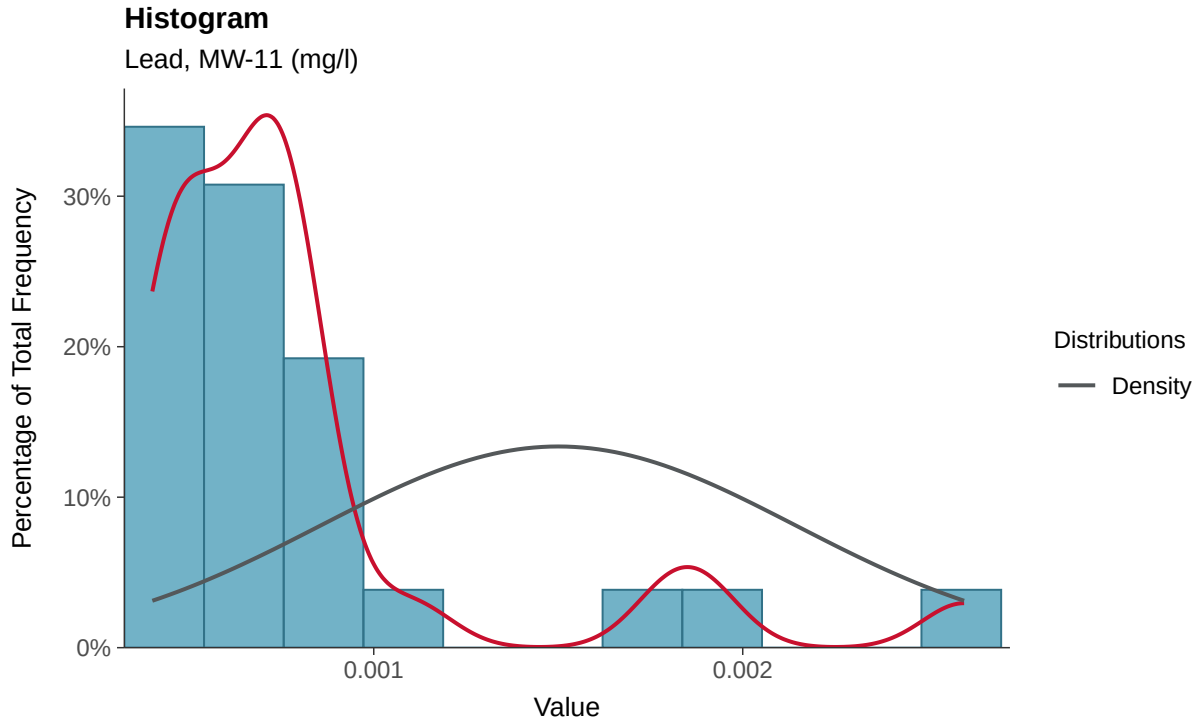
Fluoride (App IV), MW-11 (mg/l)



Appendix IV: Lead, MW-11

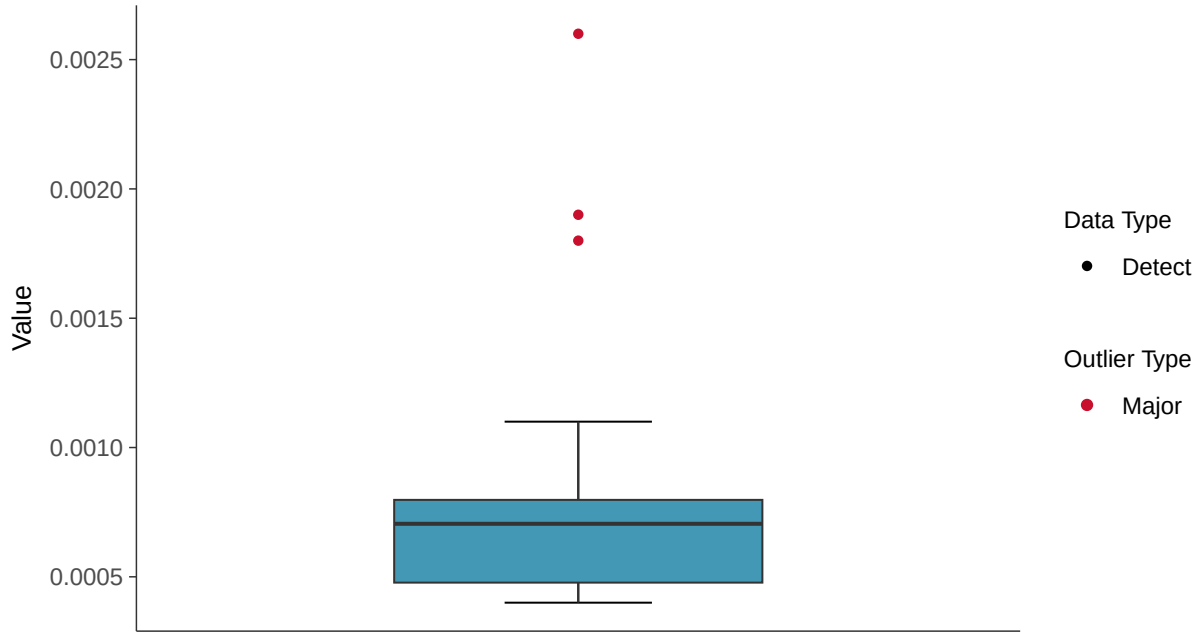
ID: 11_2_117





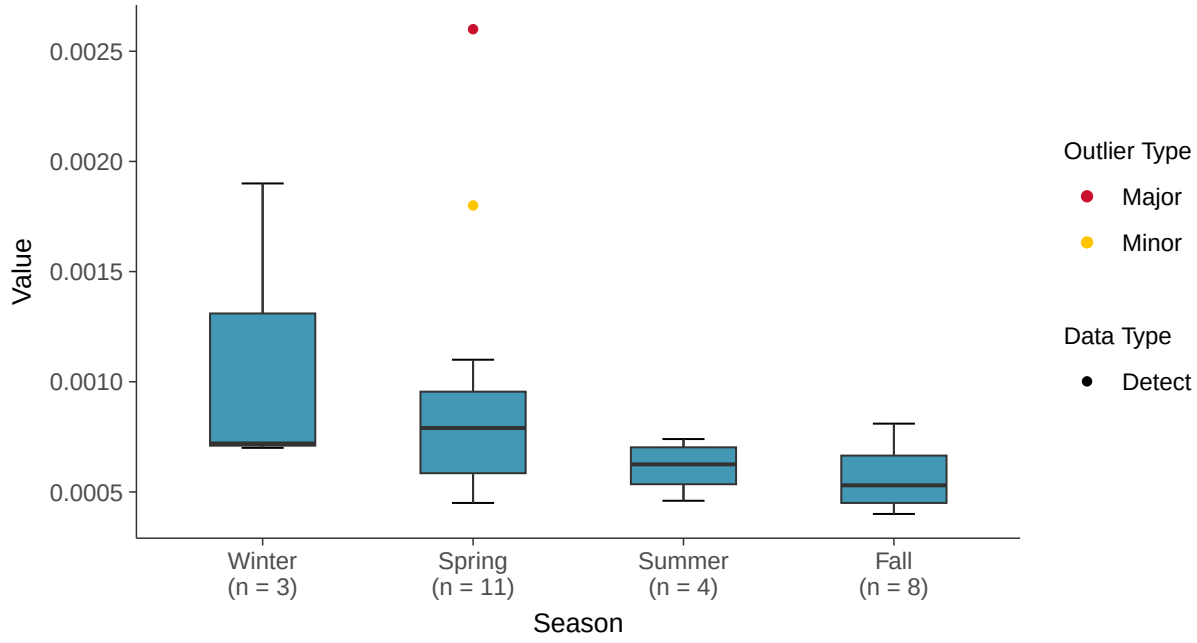
Boxplot

Lead, MW-11 (mg/l)



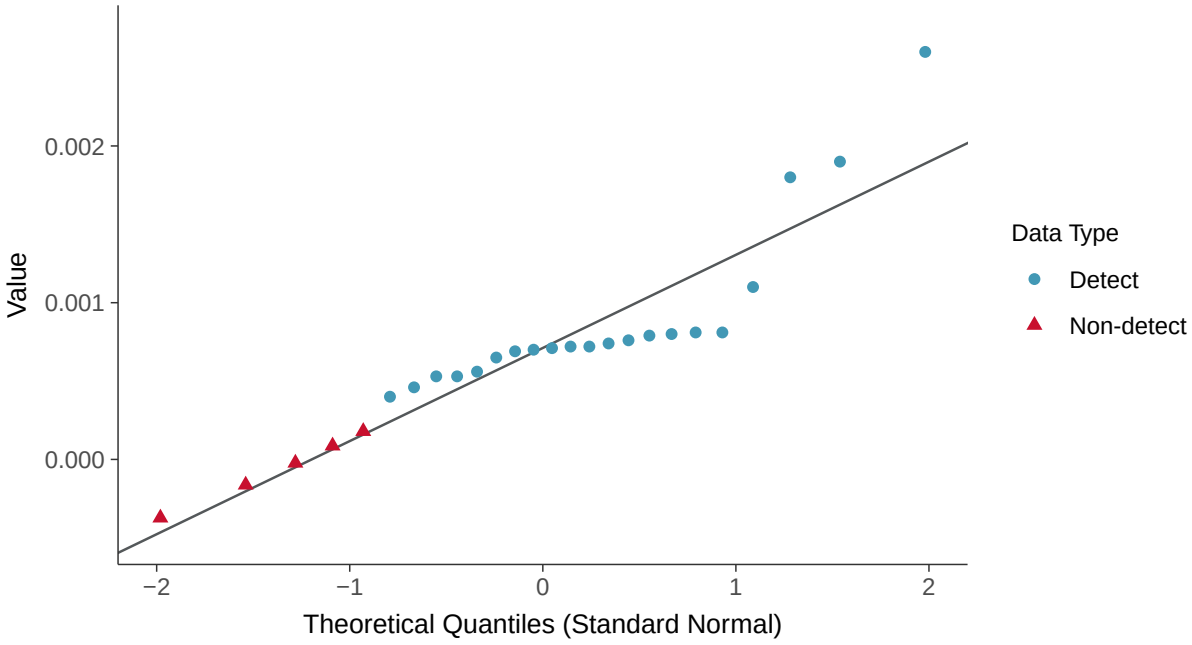
Boxplot by Season

Lead, MW-11 (mg/l)



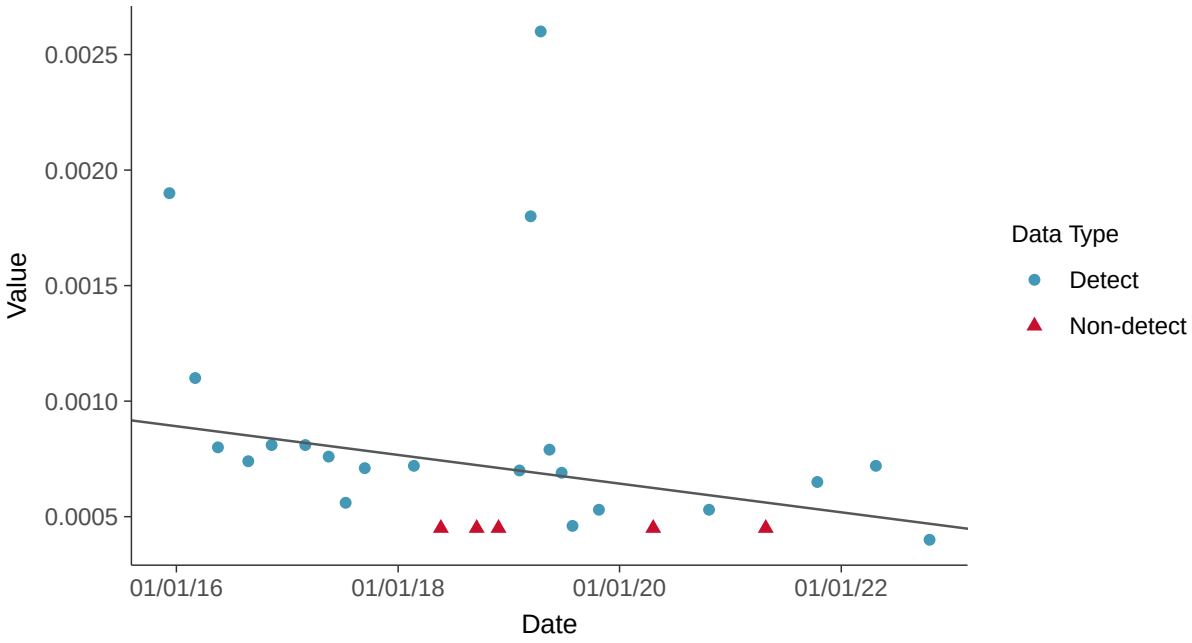
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-11 (mg/l)



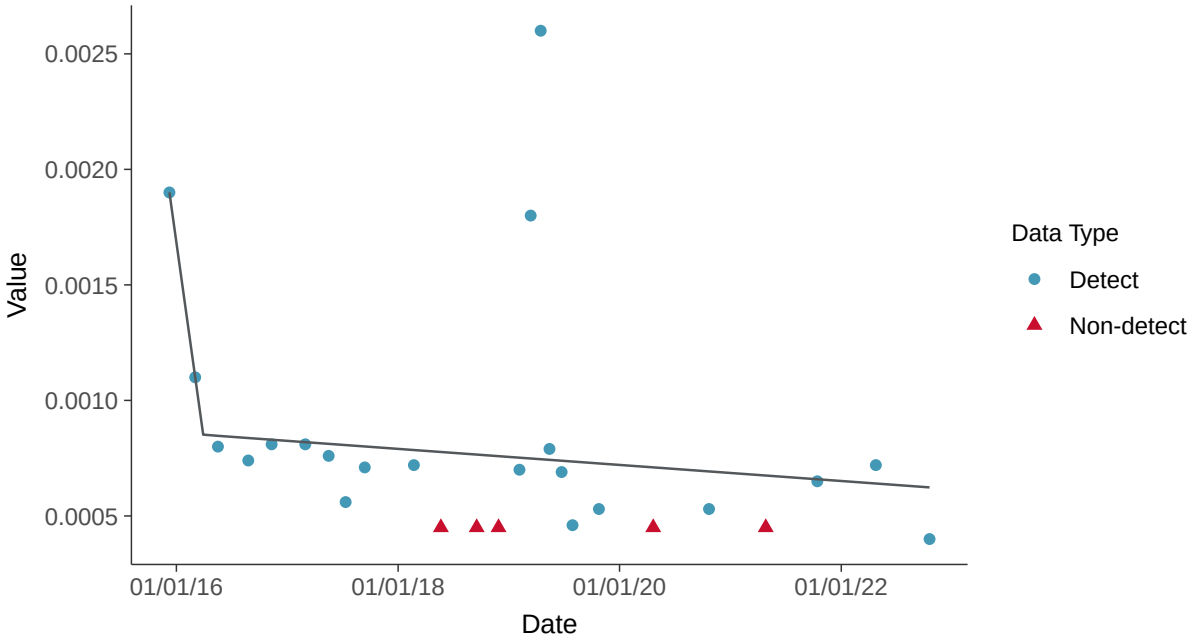
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lead, MW-11 (mg/l)



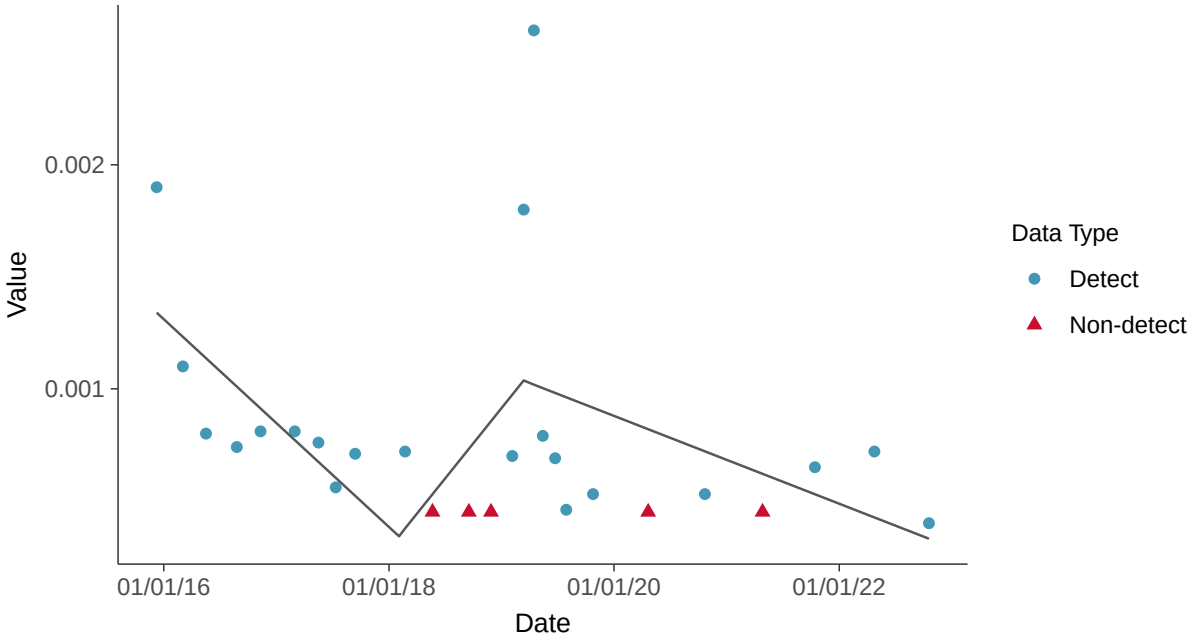
Trend Regression: Piecewise Linear-Linear

Lead, MW-11 (mg/l)



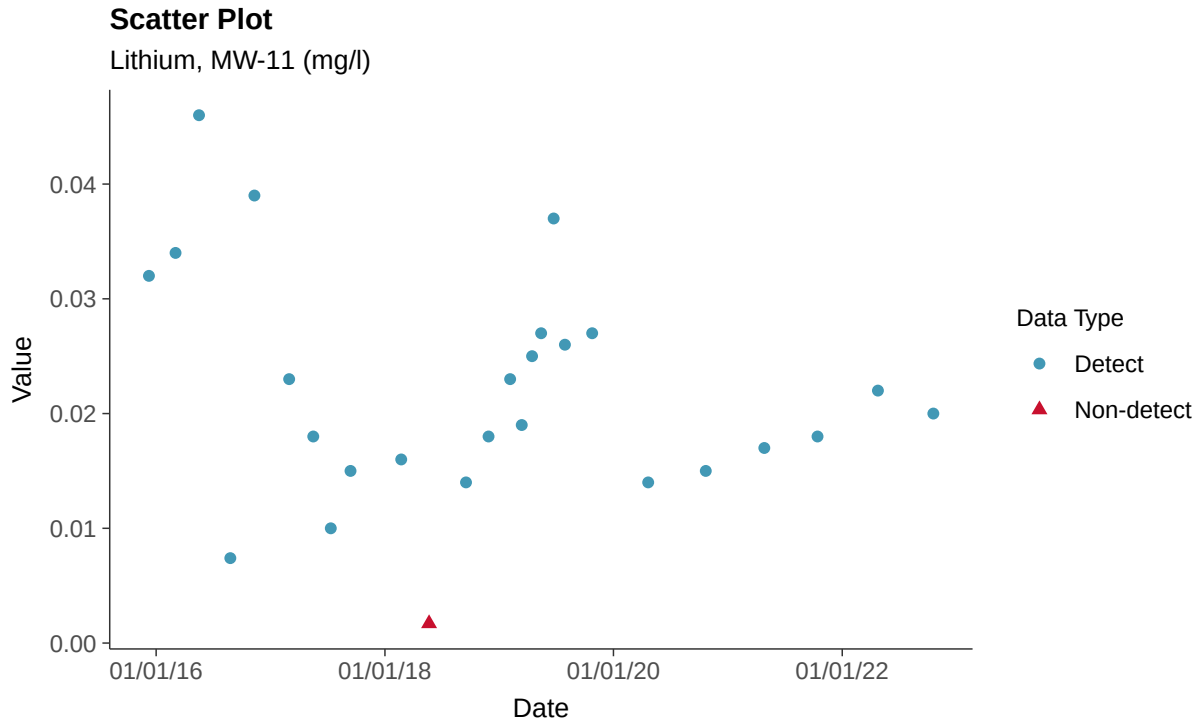
Trend Regression: Piecewise Linear-Linear-Linear

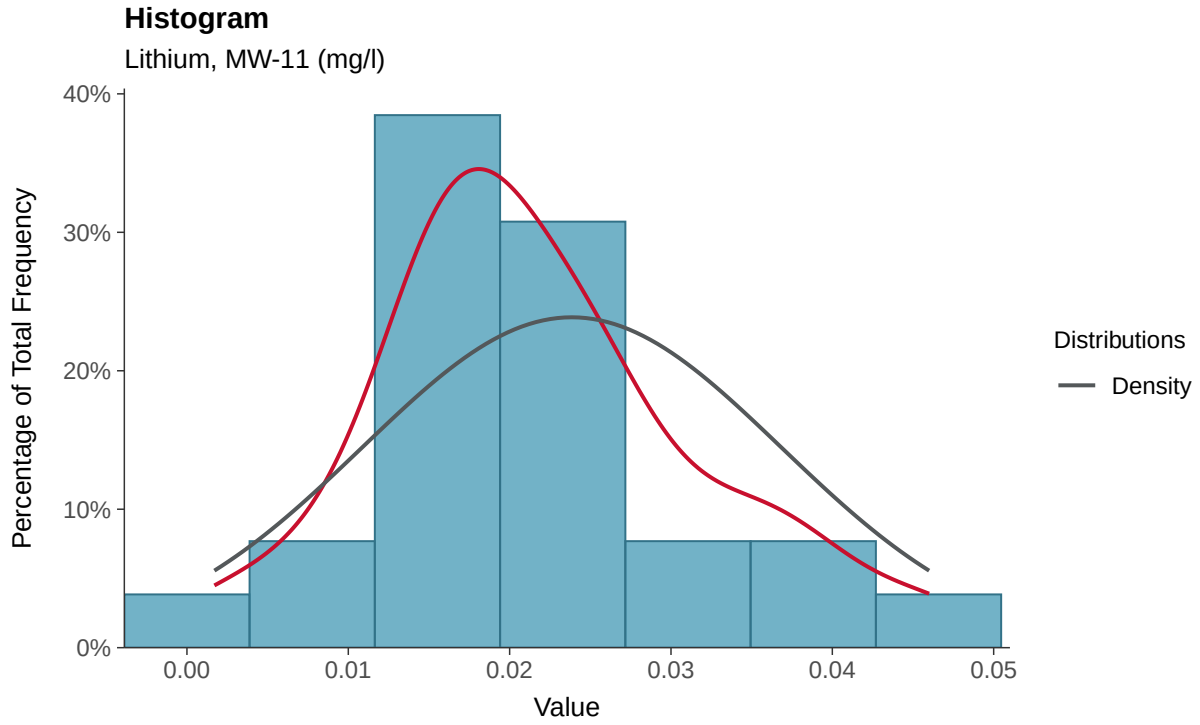
Lead, MW-11 (mg/l)



Appendix IV: Lithium, MW-11

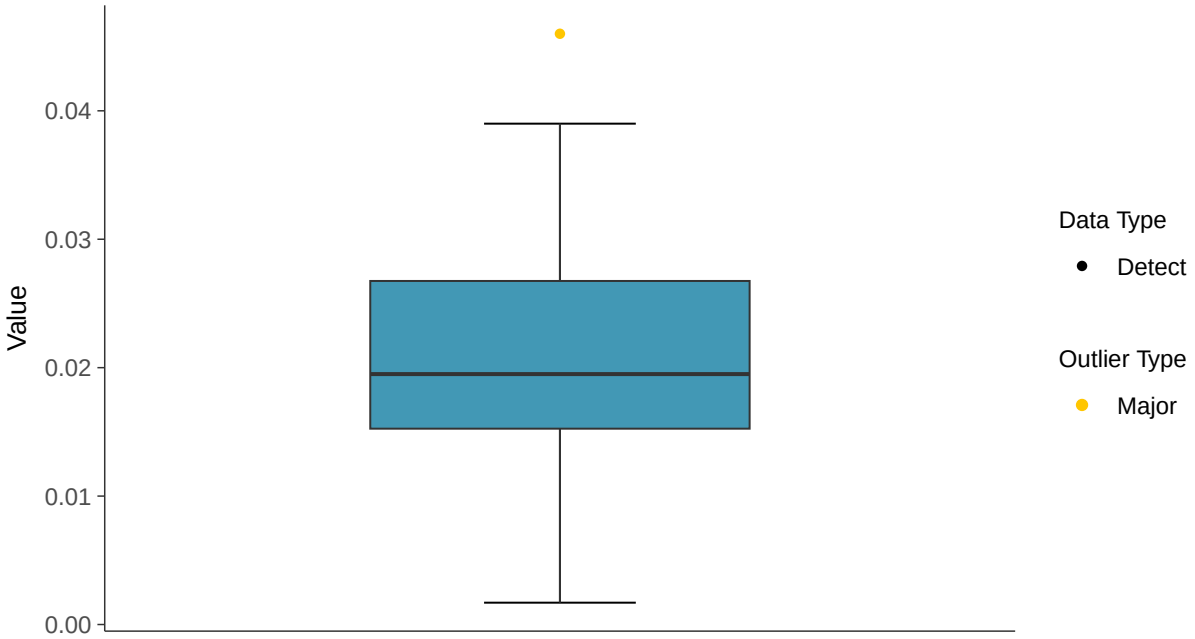
ID: 11_2_118





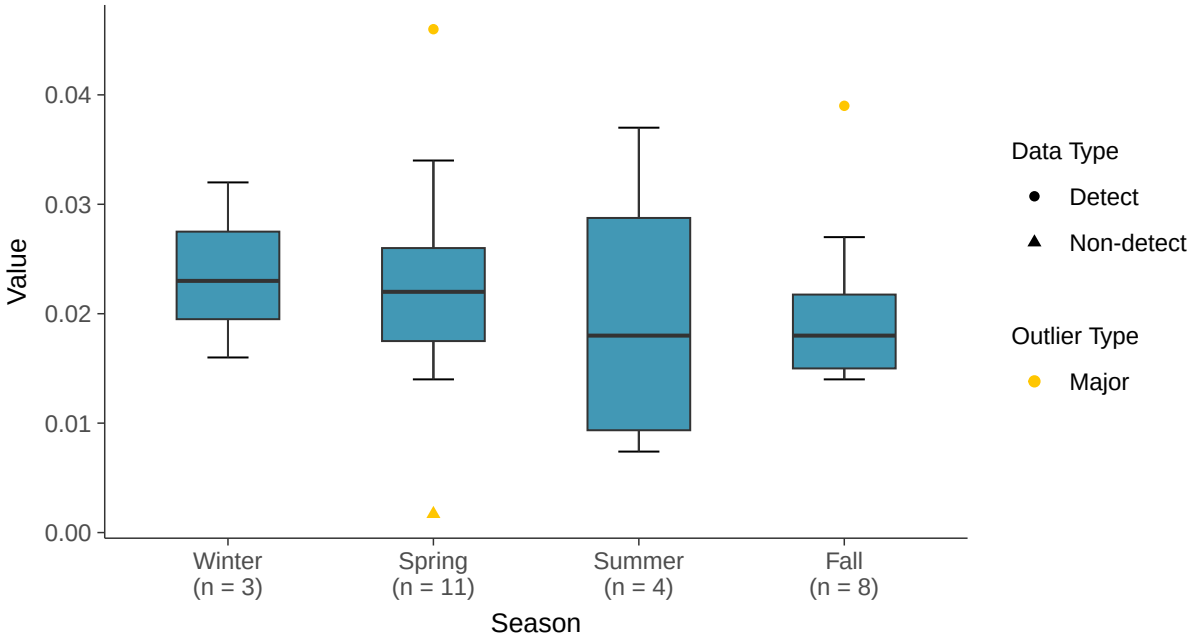
Boxplot

Lithium, MW-11 (mg/l)



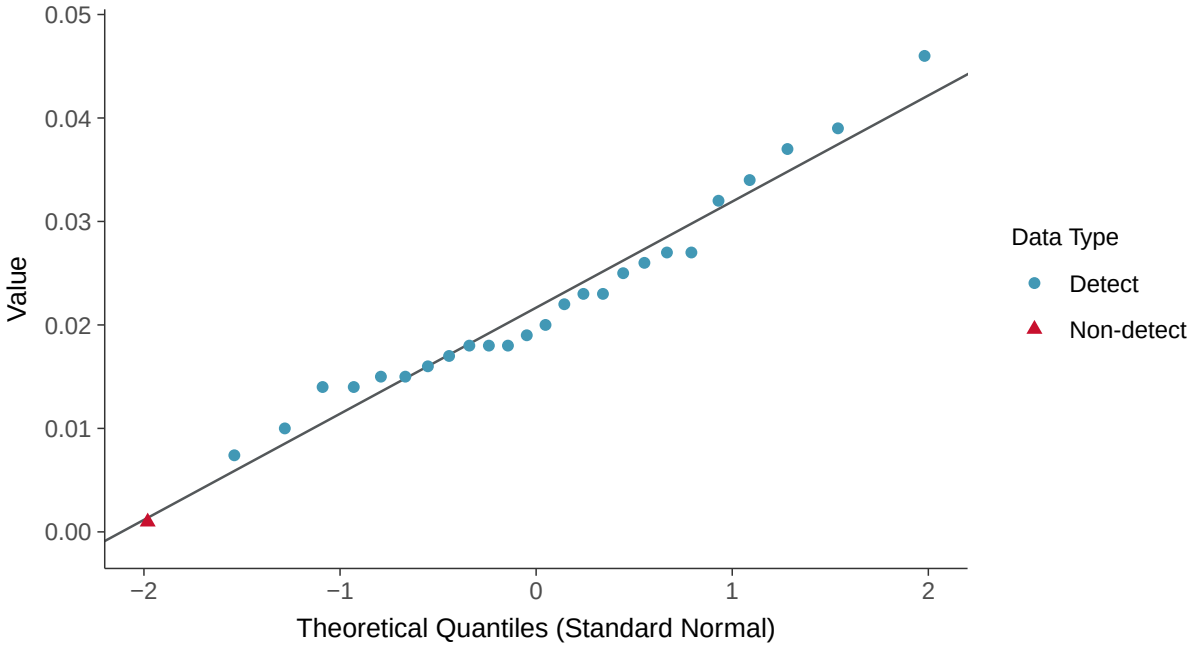
Boxplot by Season

Lithium, MW-11 (mg/l)



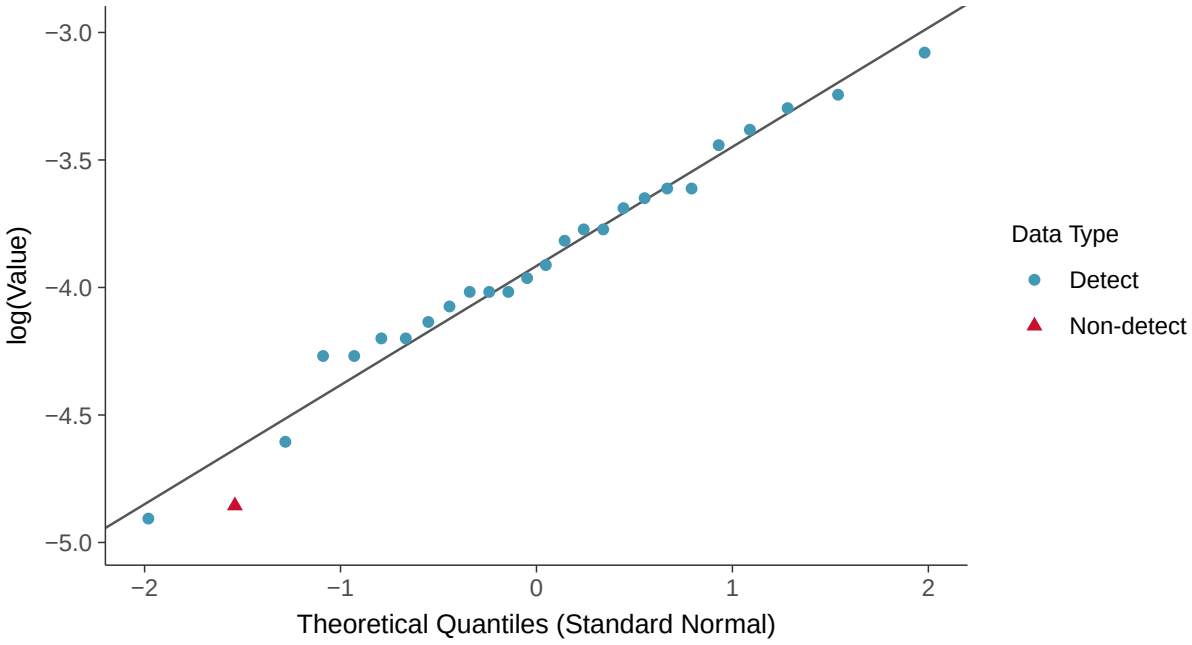
Normal Q-Q plot using ROS Imputed Estimates

Lithium, MW-11 (mg/l)



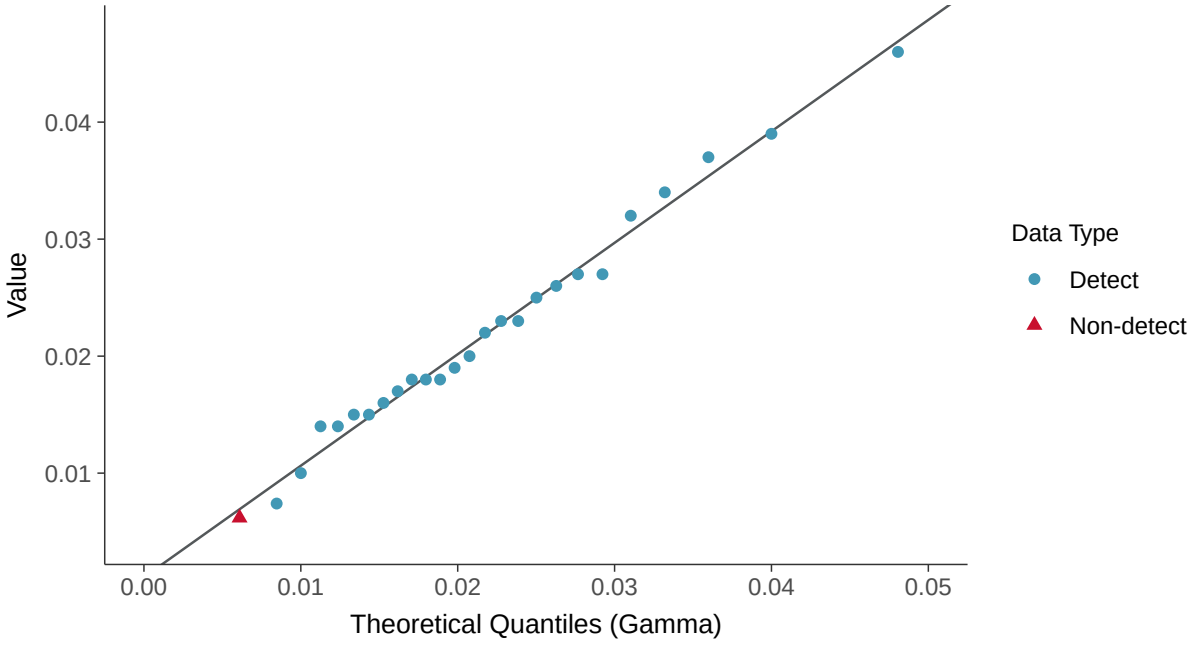
Lognormal Q-Q plot using ROS Imputed Estimates

Lithium, MW-11 (mg/l)



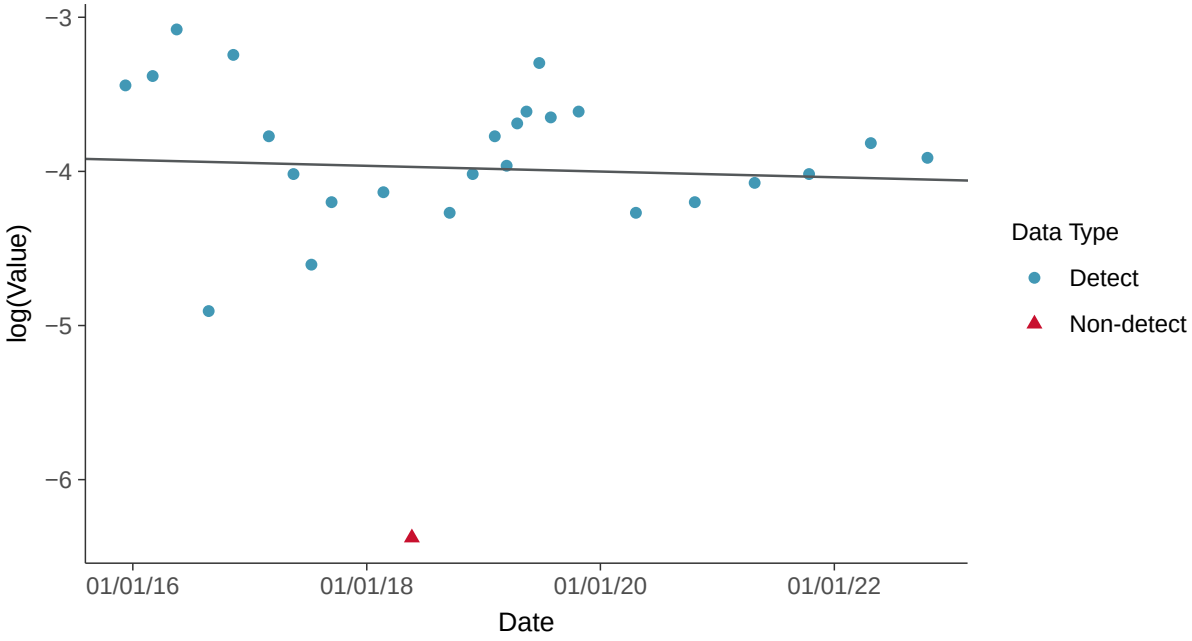
Gamma Q-Q plot using ROS Imputed Estimates

Lithium, MW-11 (mg/l)



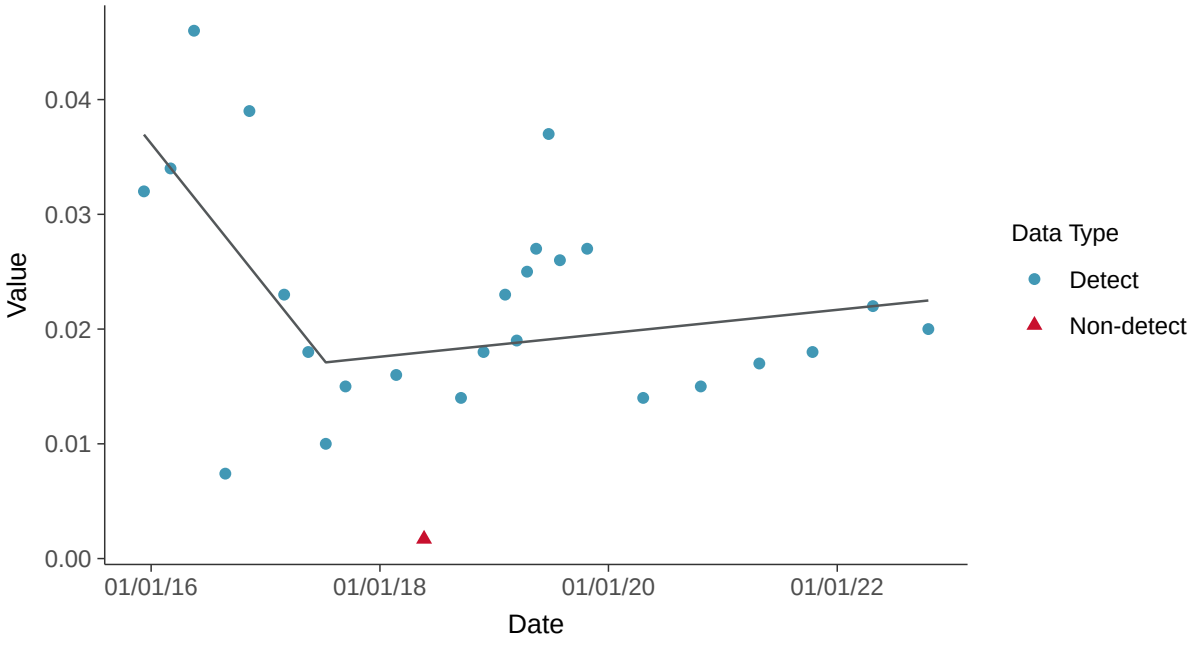
Trend Regression: Lognormal MLE

Lithium, MW-11 (mg/l)



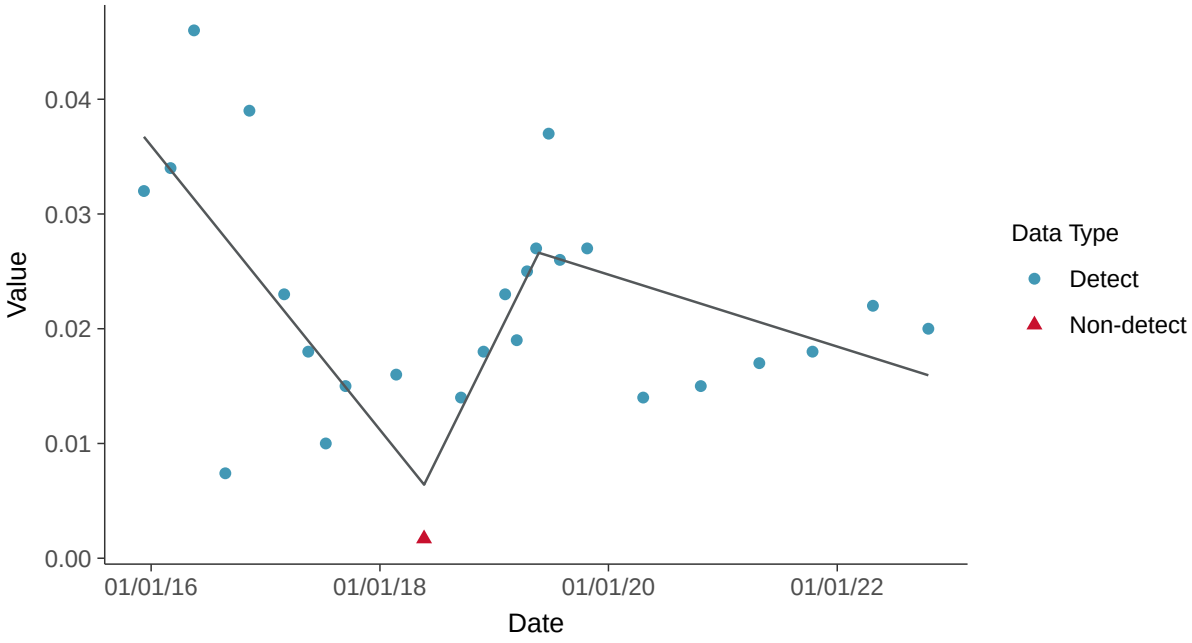
Trend Regression: Piecewise Linear-Linear

Lithium, MW-11 (mg/l)



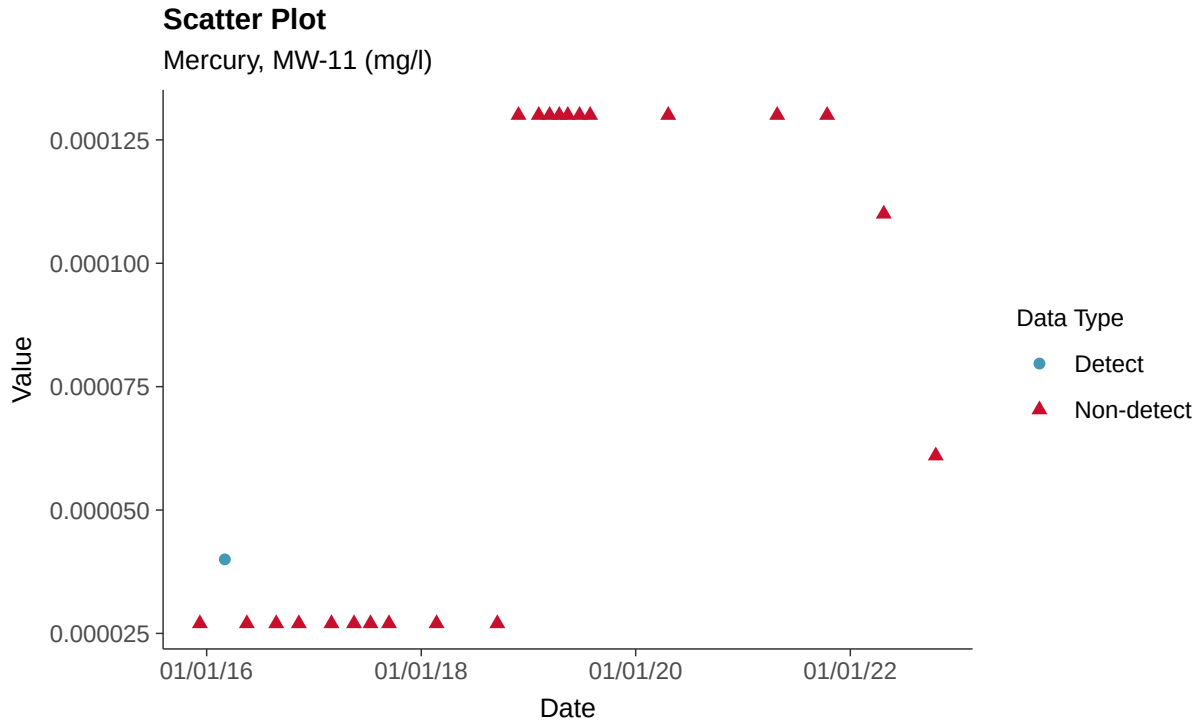
Trend Regression: Piecewise Linear-Linear-Linear

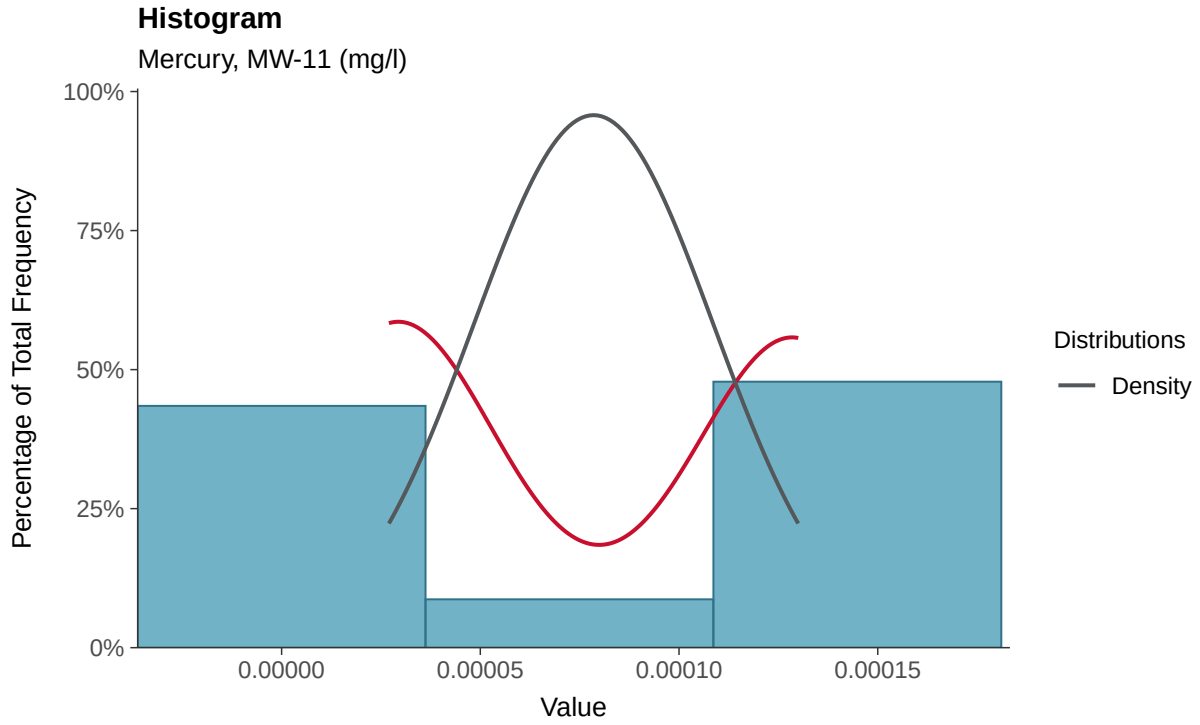
Lithium, MW-11 (mg/l)



Appendix IV: Mercury, MW-11

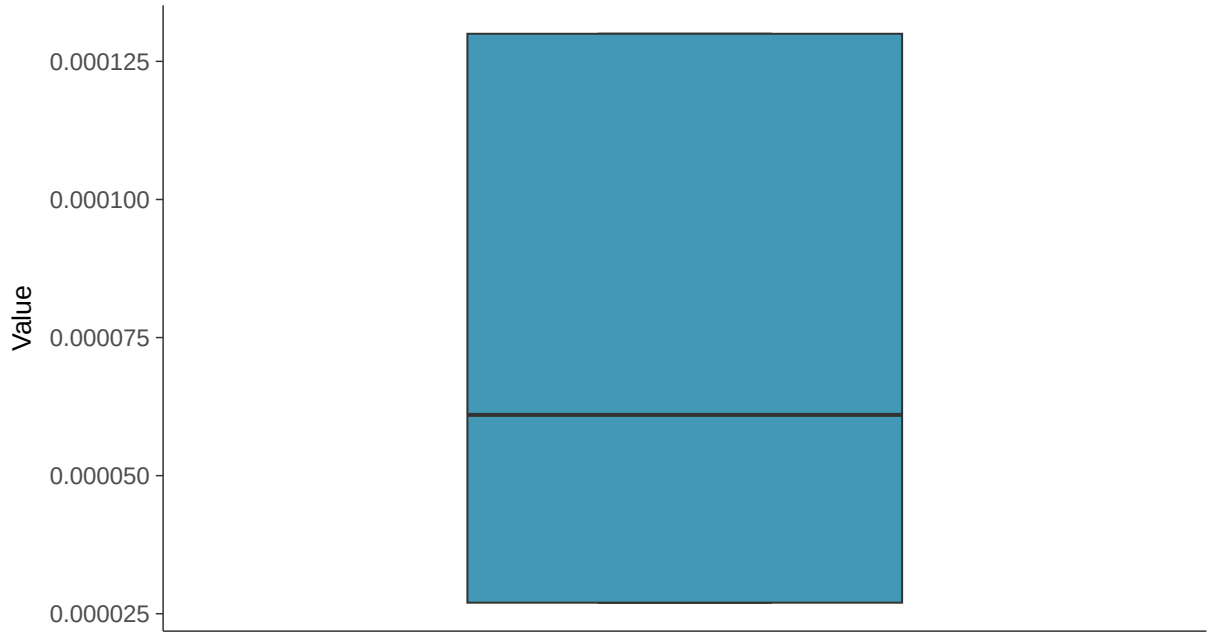
ID: 11_2_120





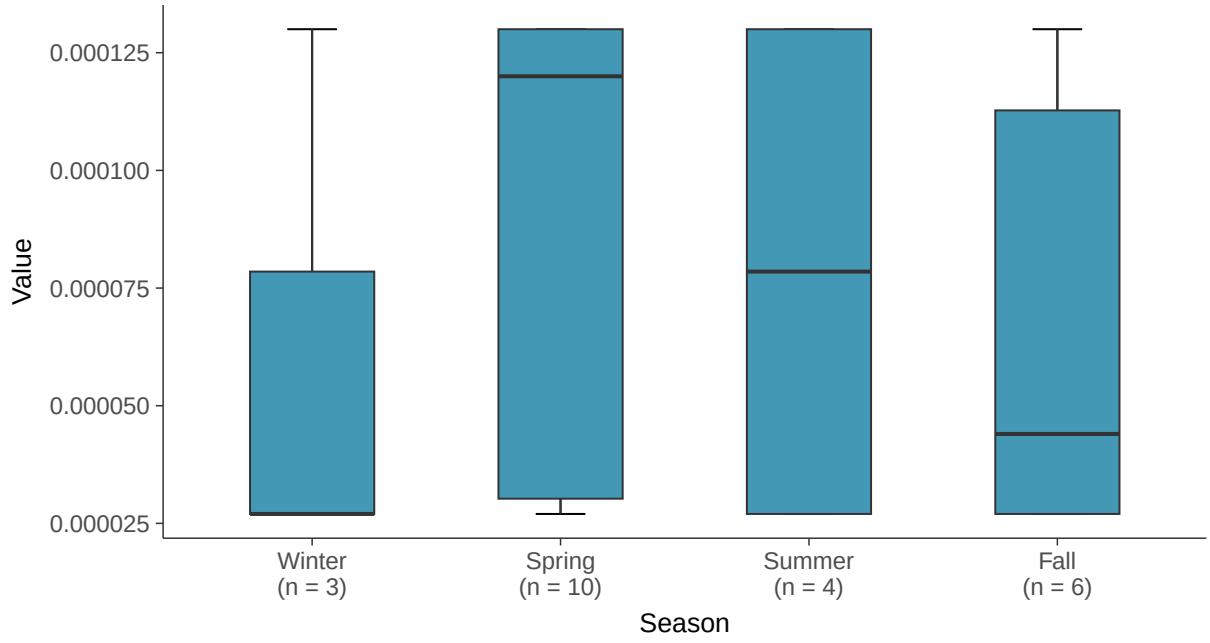
Boxplot

Mercury, MW-11 (mg/l)



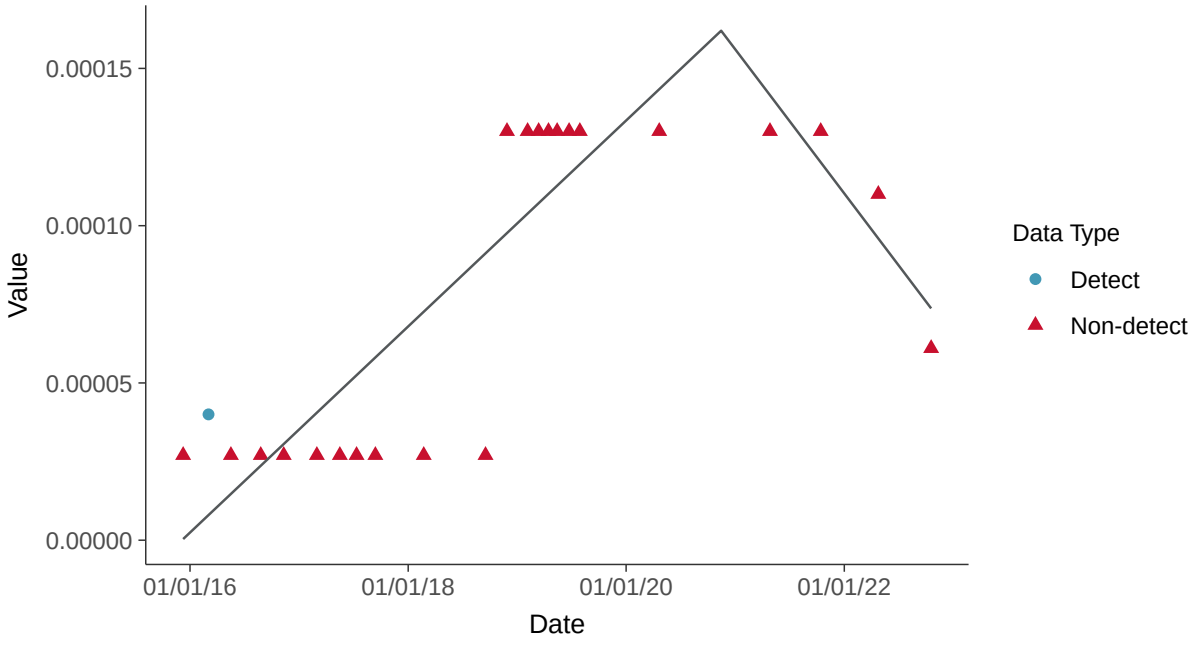
Boxplot by Season

Mercury, MW-11 (mg/l)



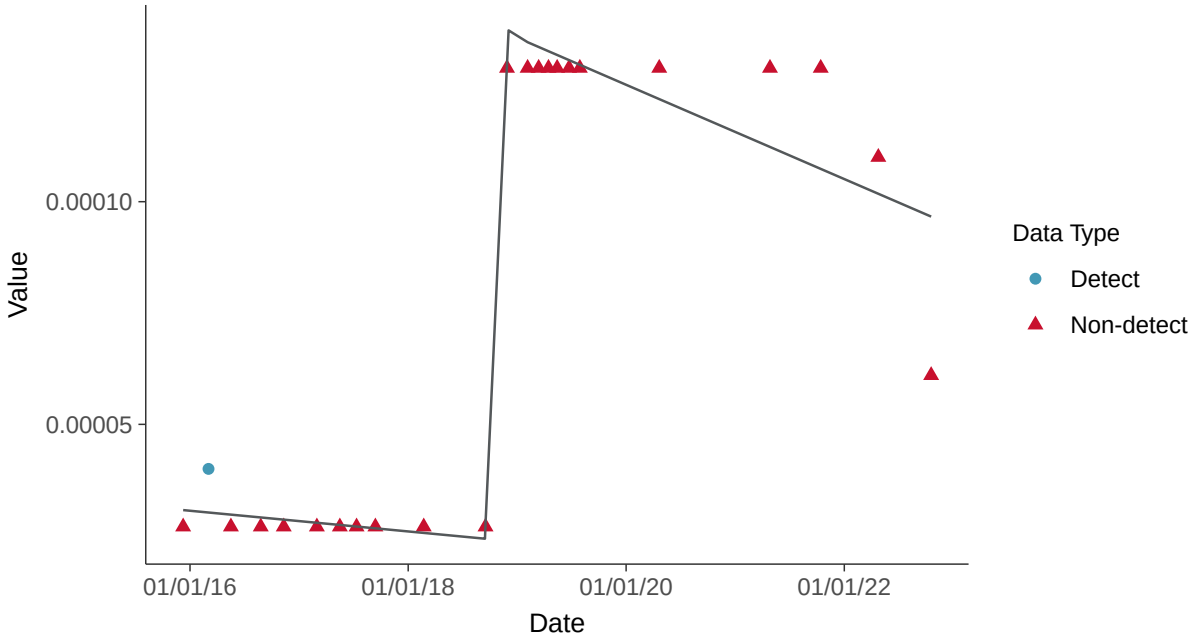
Trend Regression: Piecewise Linear-Linear

Mercury, MW-11 (mg/l)



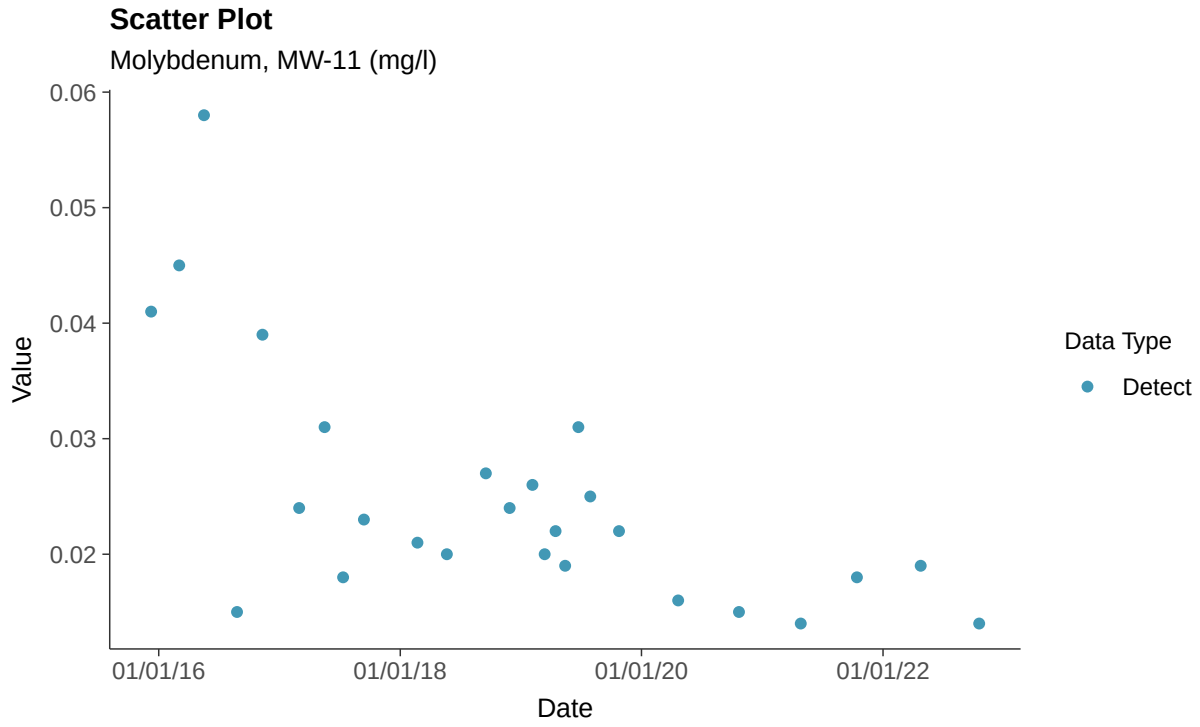
Trend Regression: Piecewise Linear-Linear-Linear

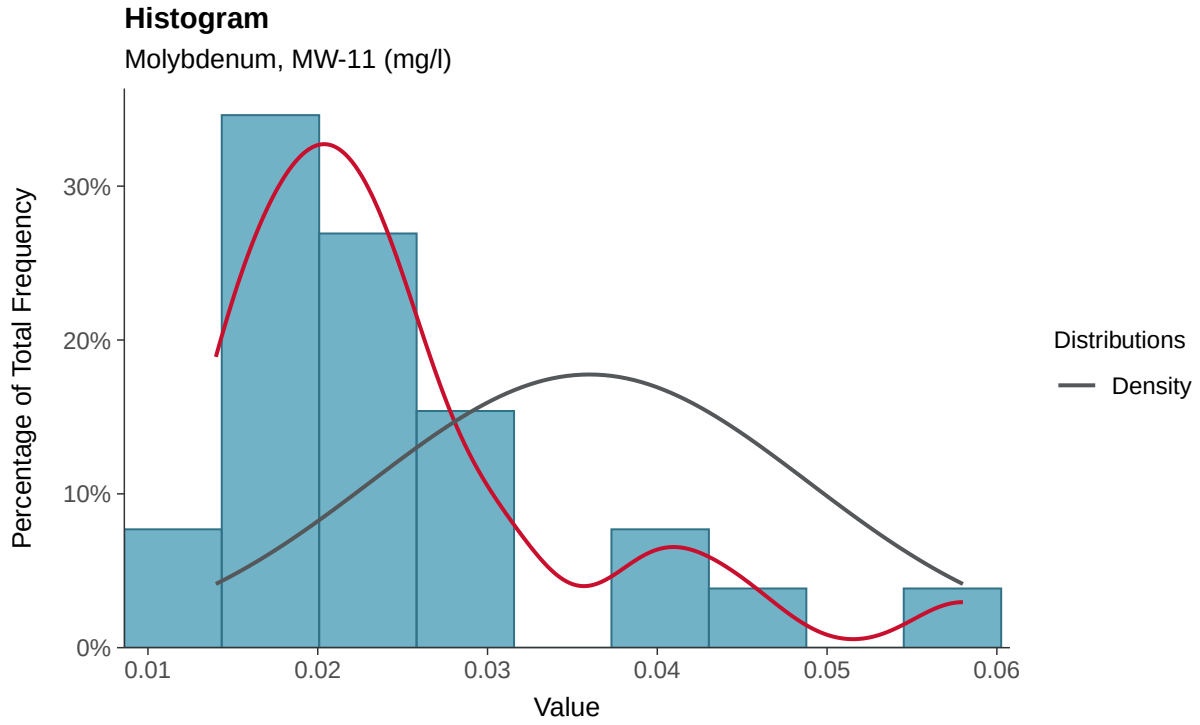
Mercury, MW-11 (mg/l)



Appendix IV: Molybdenum, MW-11

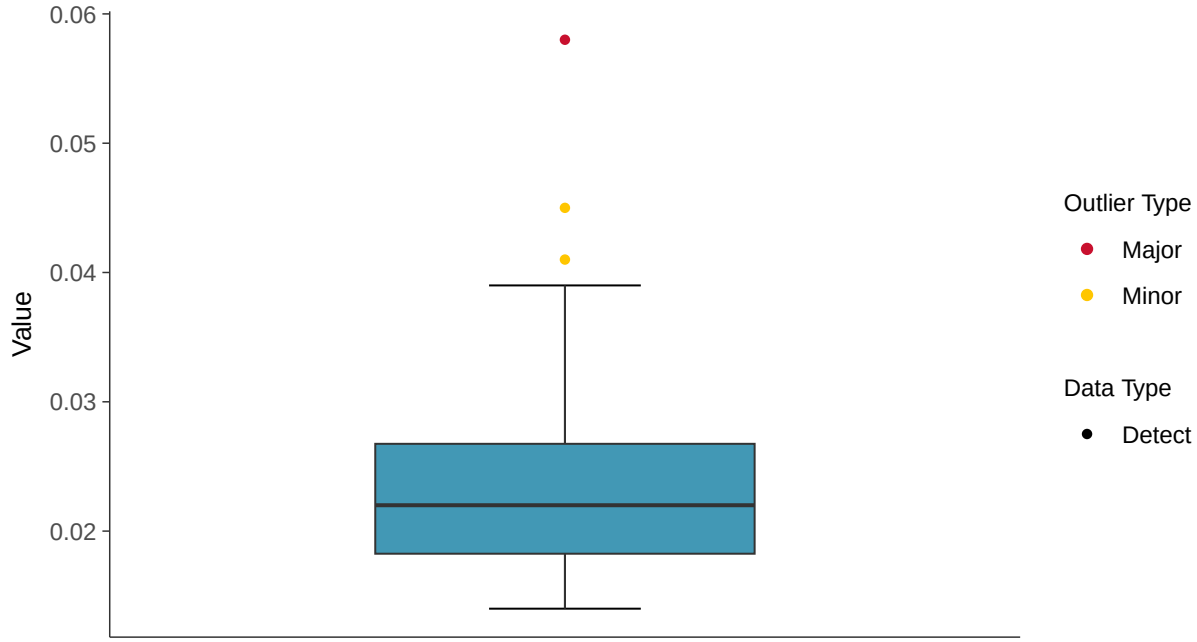
ID: 11_2_121





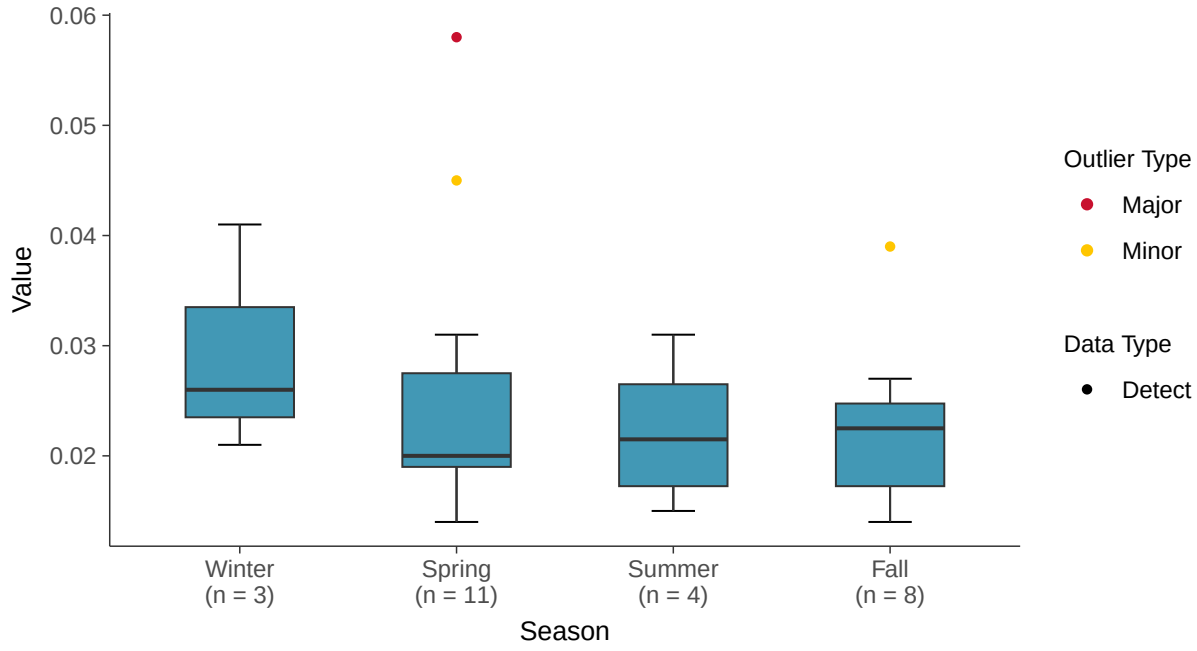
Boxplot

Molybdenum, MW-11 (mg/l)



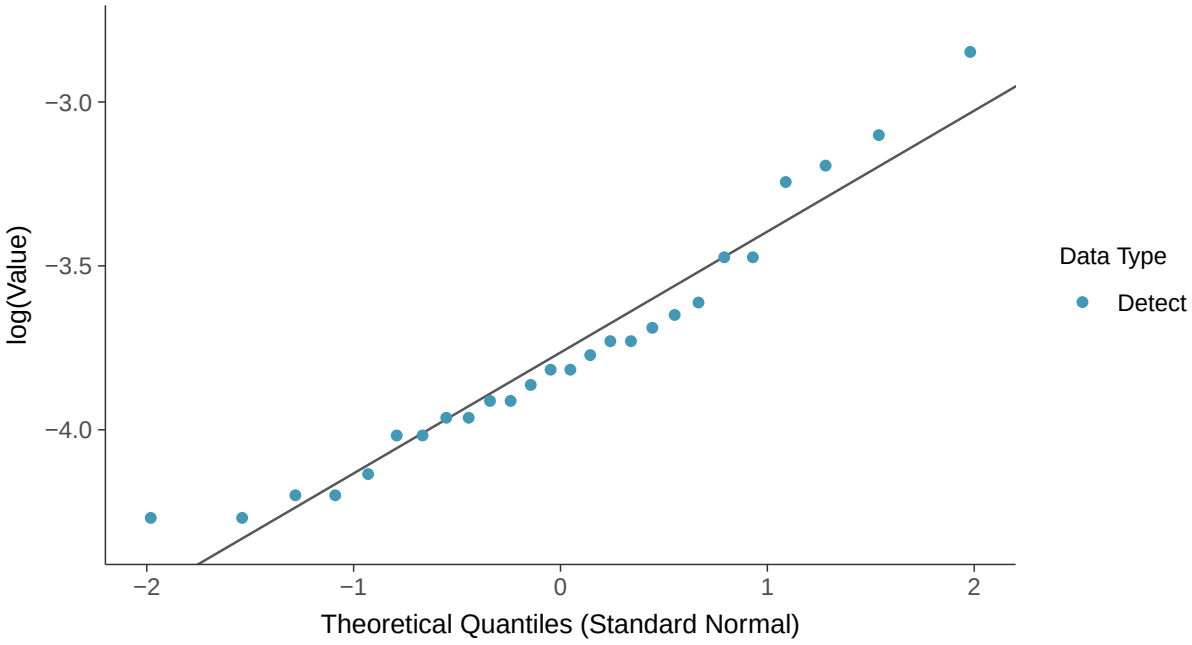
Boxplot by Season

Molybdenum, MW-11 (mg/l)



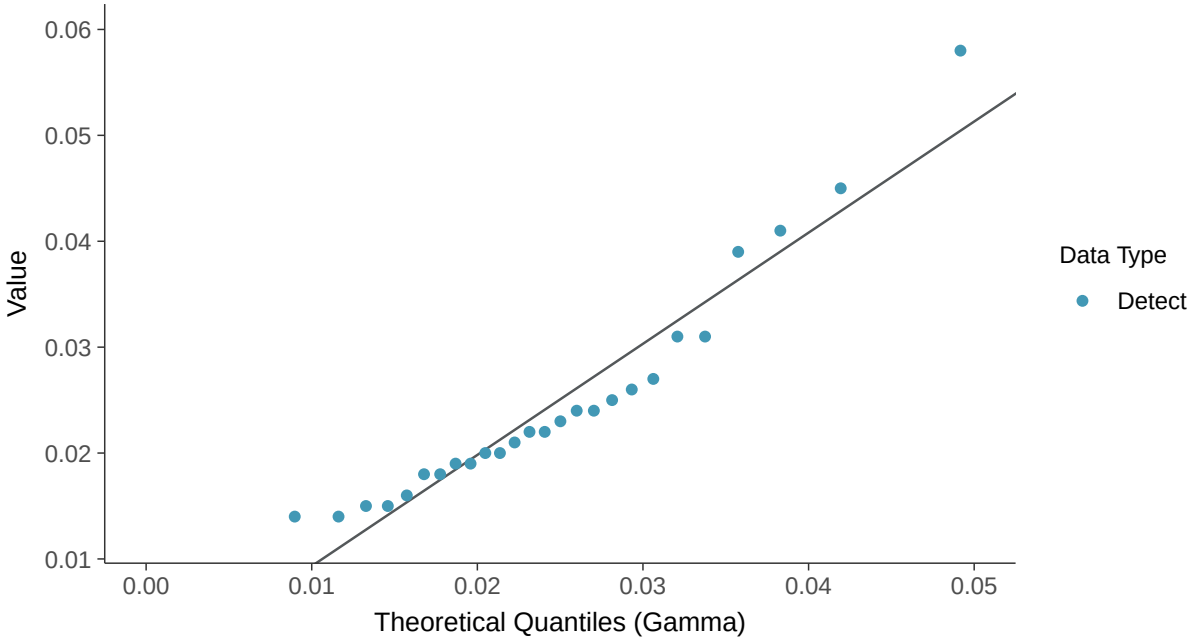
Lognormal Q-Q plot

Molybdenum, MW-11 (mg/l)



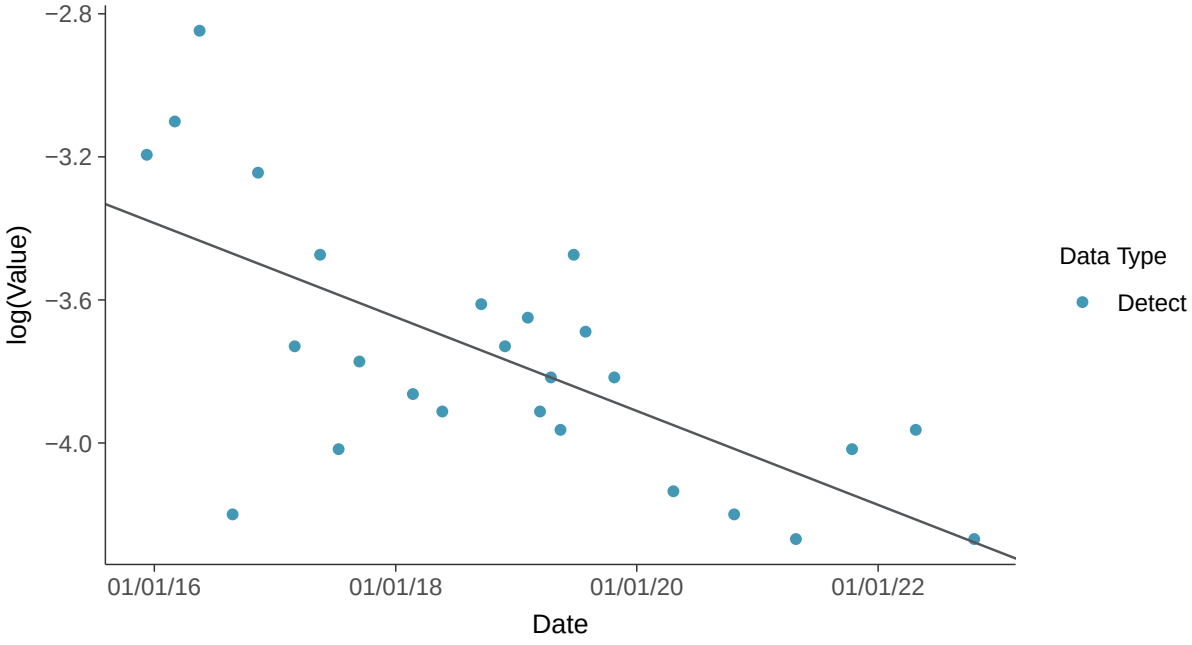
Gamma Q-Q plot

Molybdenum, MW-11 (mg/l)



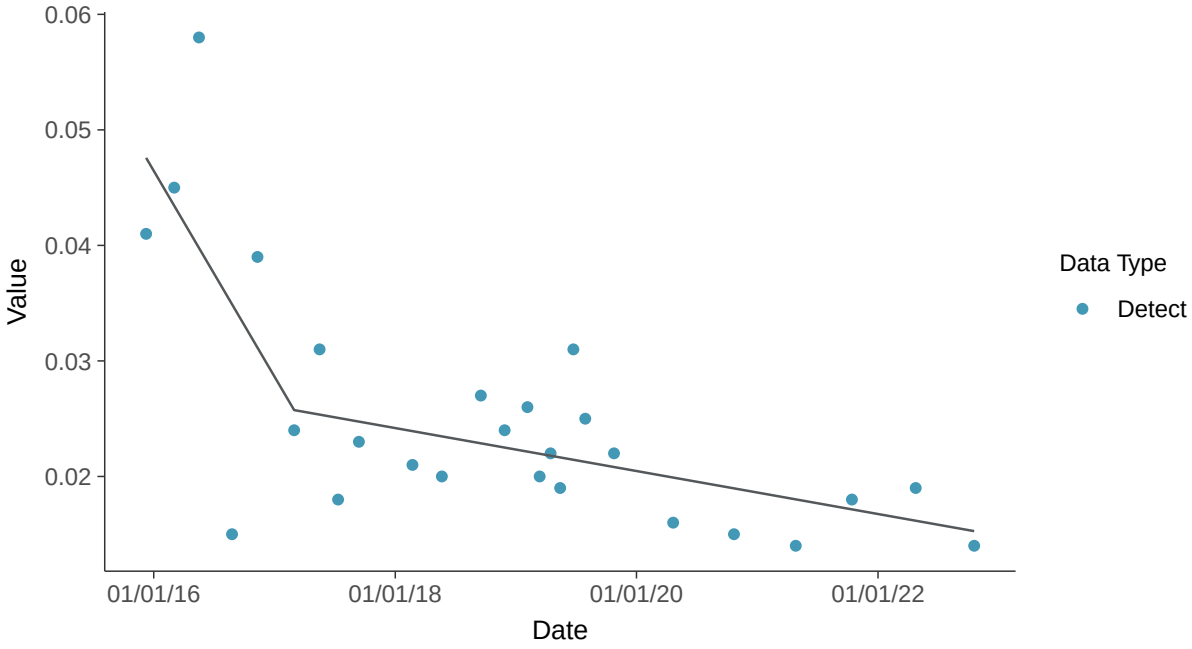
Trend Regression: Lognormal MLE

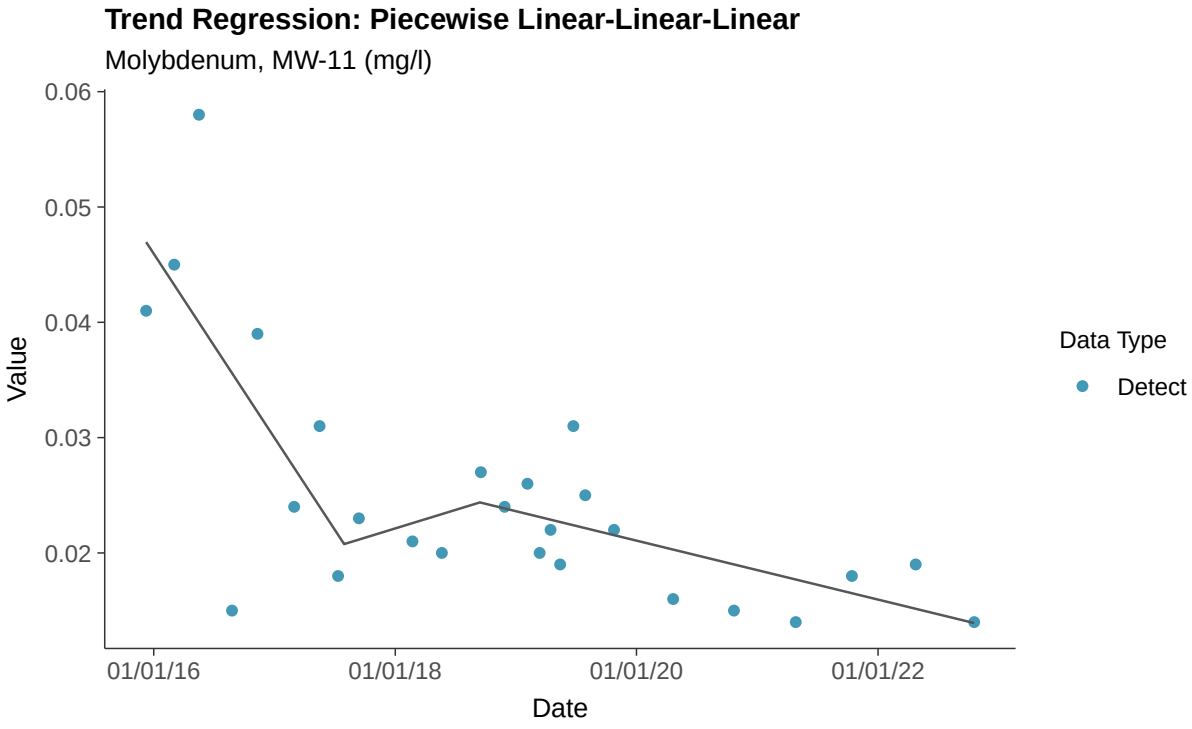
Molybdenum, MW-11 (mg/l)



Trend Regression: Piecewise Linear-Linear

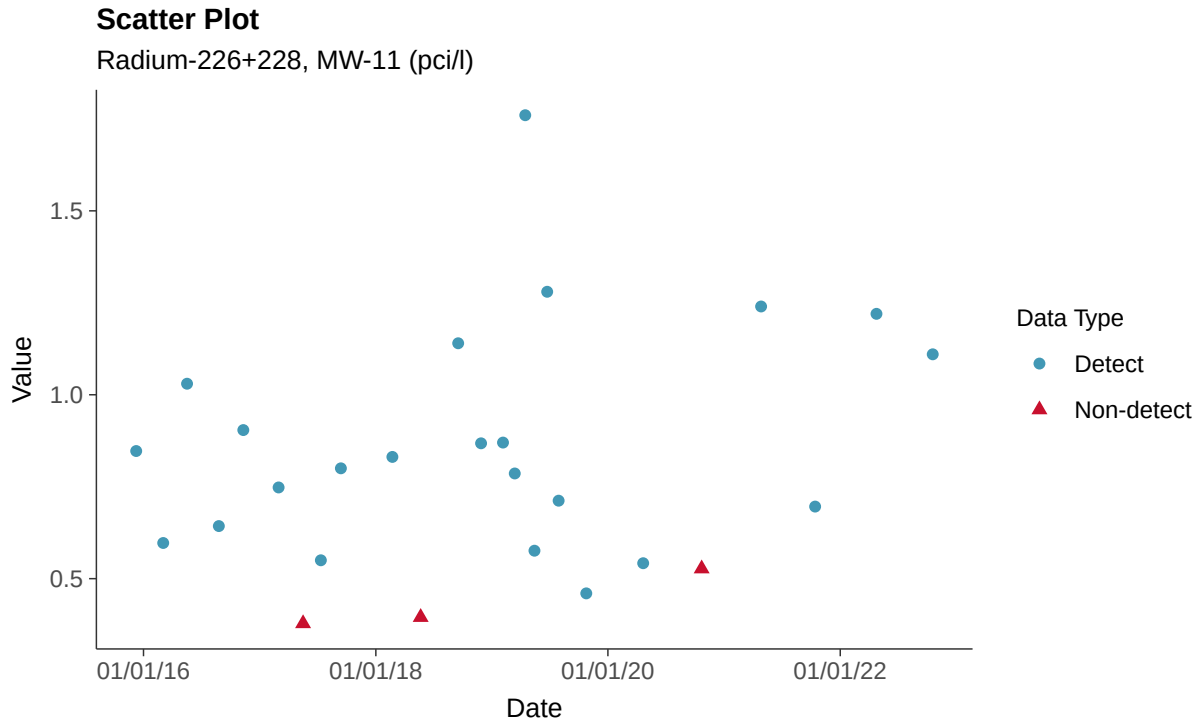
Molybdenum, MW-11 (mg/l)

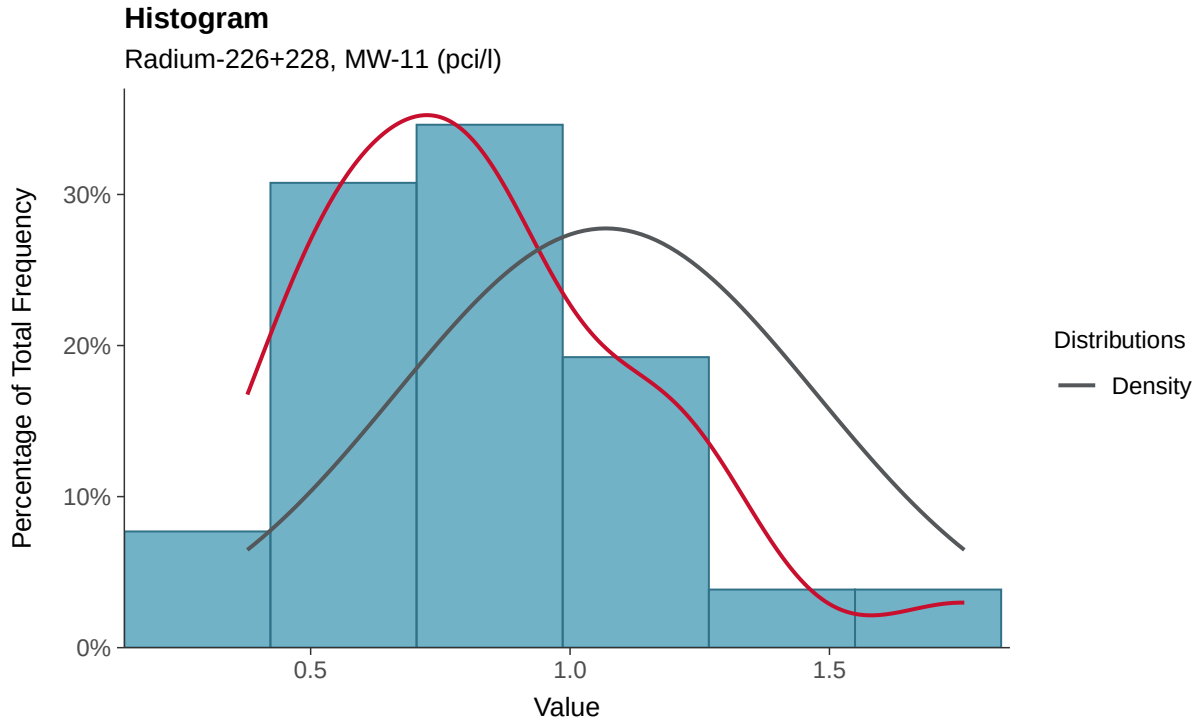



Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-11 (mg/l)
Value
0.06
0.05
0.04
0.03
0.02
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect

Appendix IV: Radium-226+228, MW-11

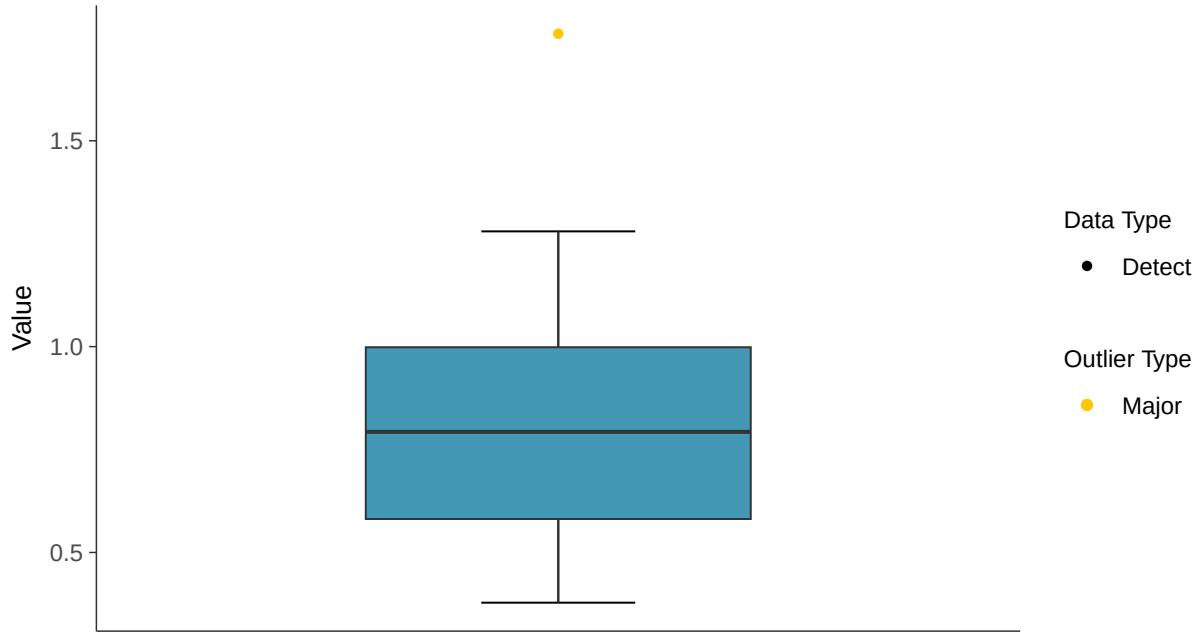
ID: 11_2_127





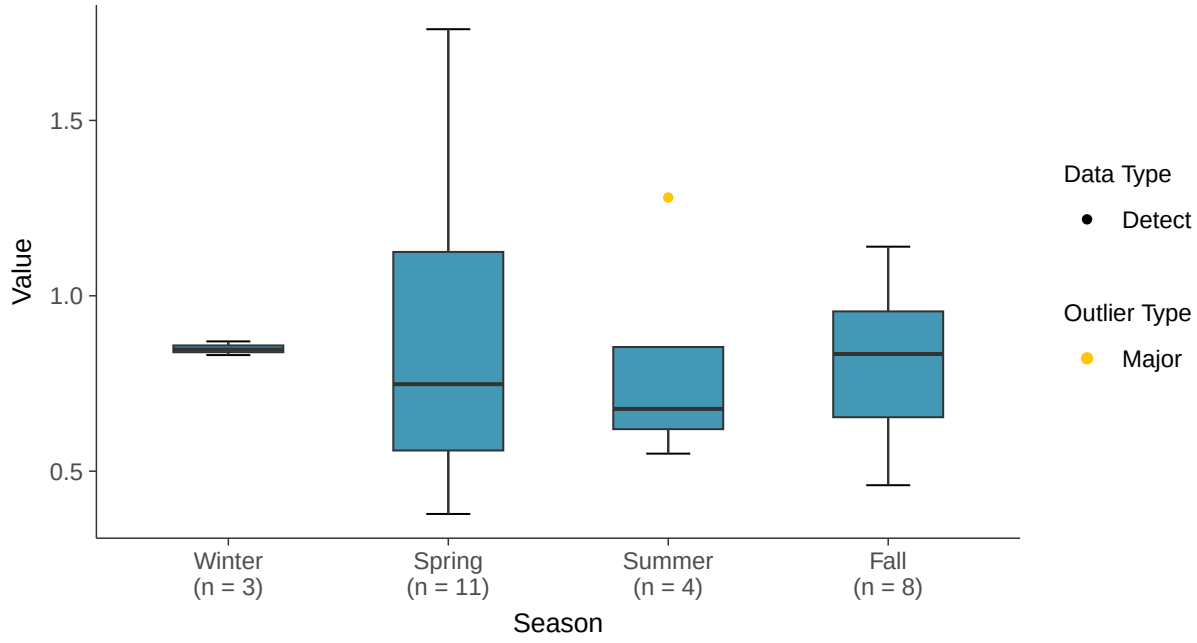
Boxplot

Radium-226+228, MW-11 (pci/l)



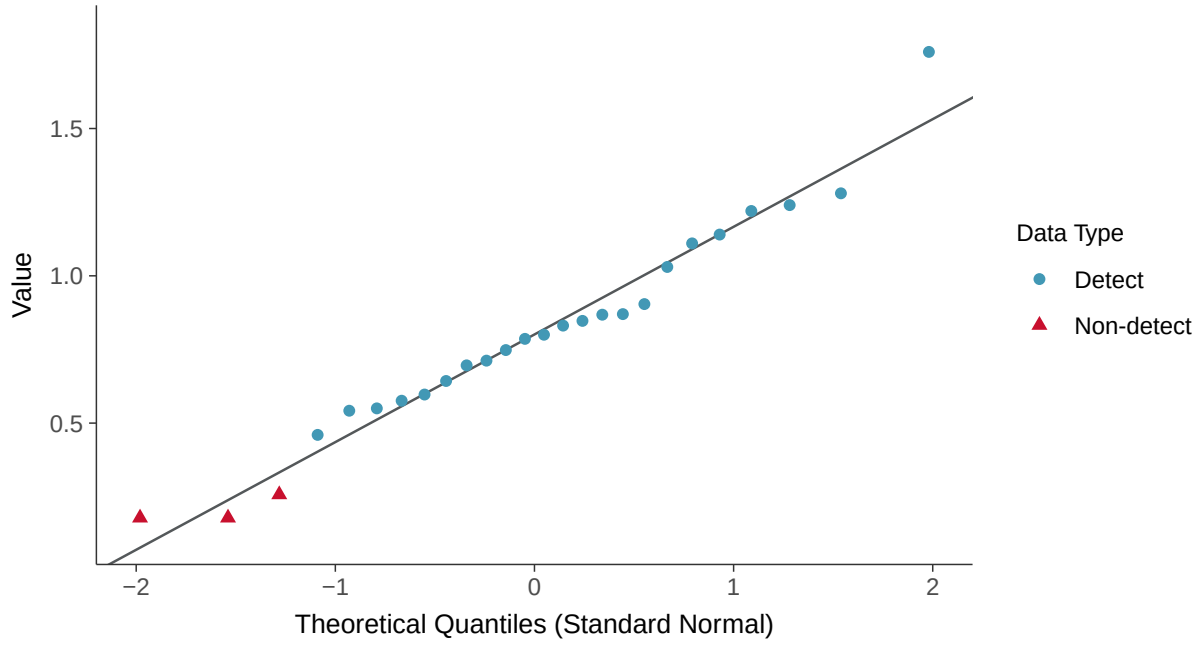
Boxplot by Season

Radium-226+228, MW-11 (pci/l)



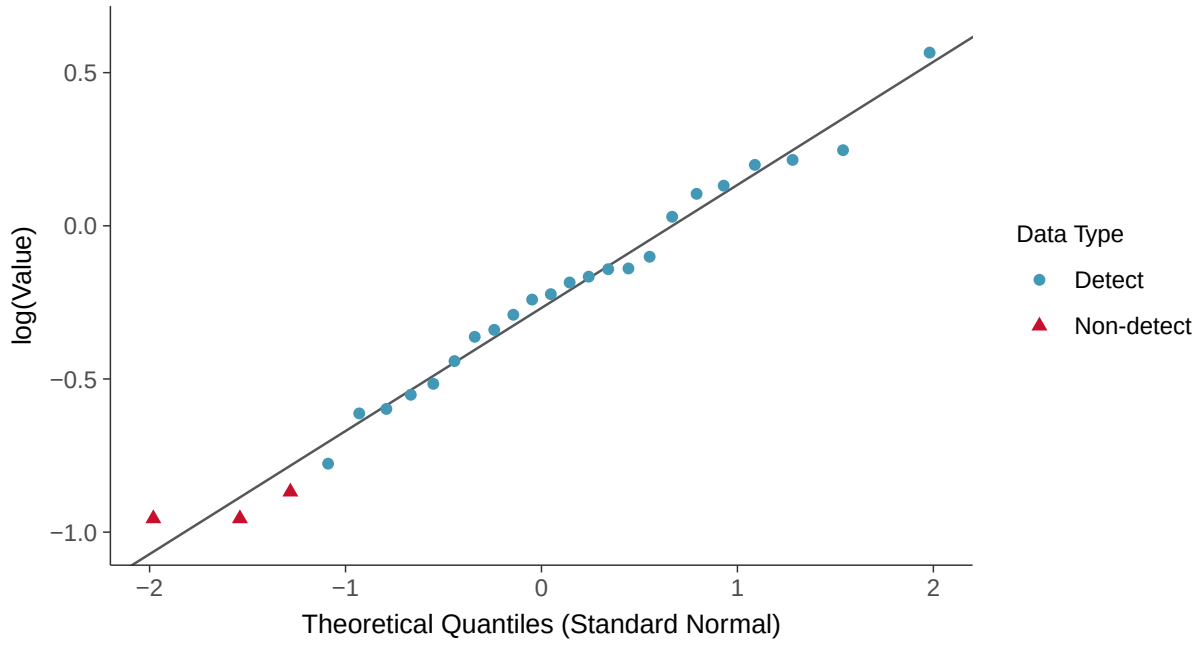
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-11 (pci/l)



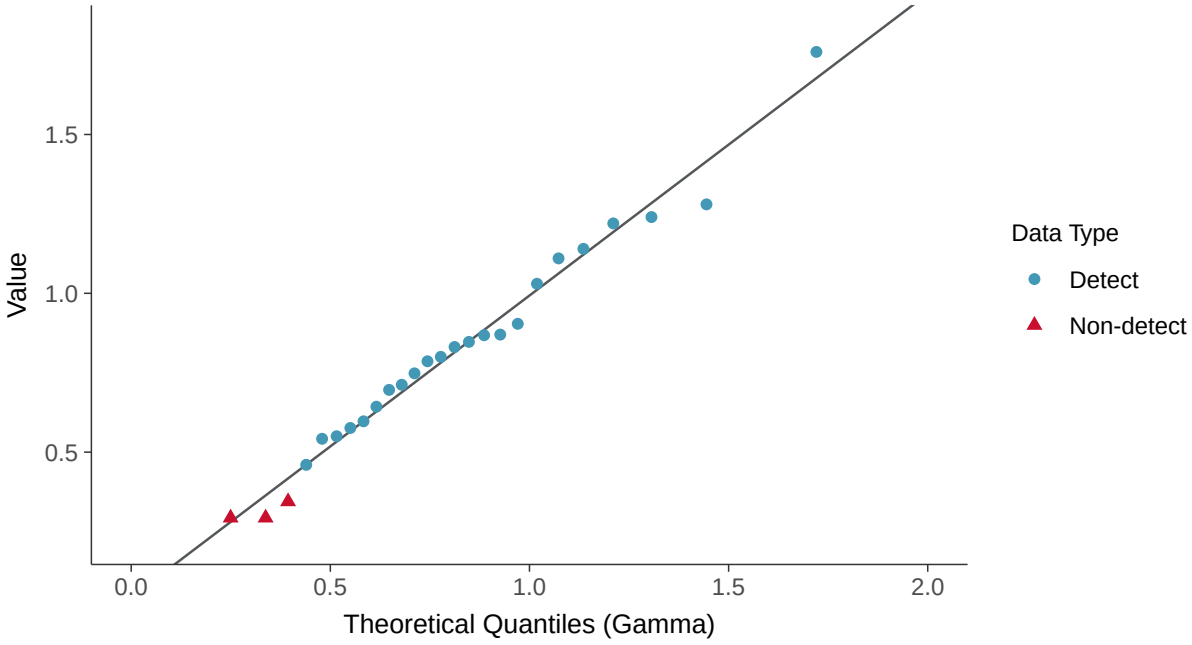
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-11 (pci/l)



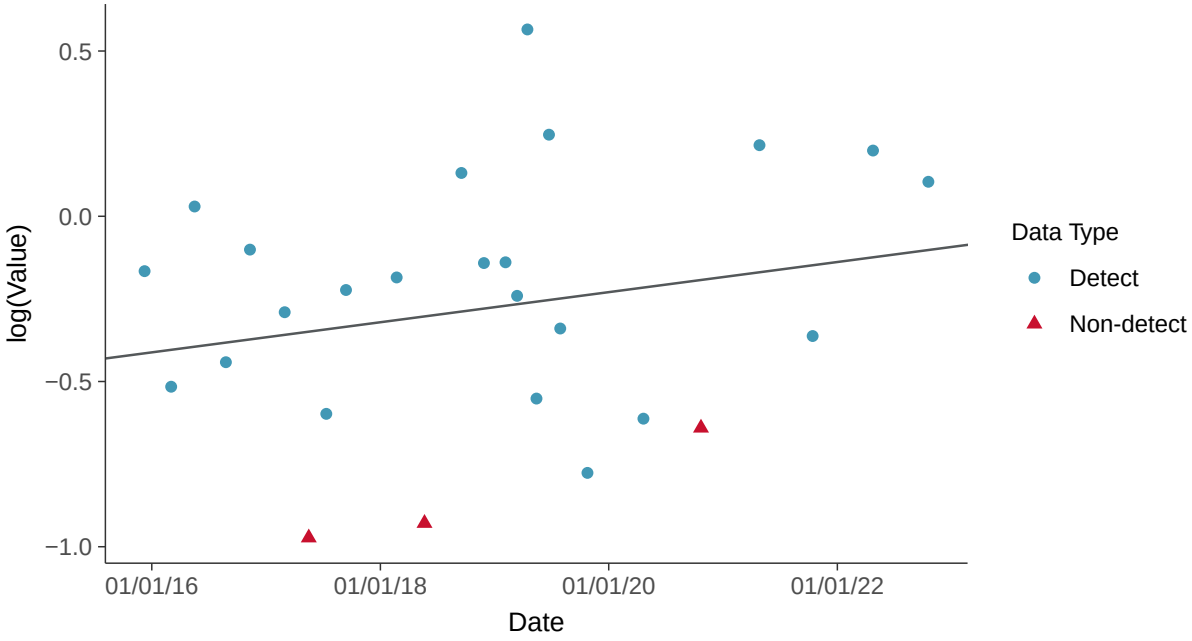
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-11 (pci/l)



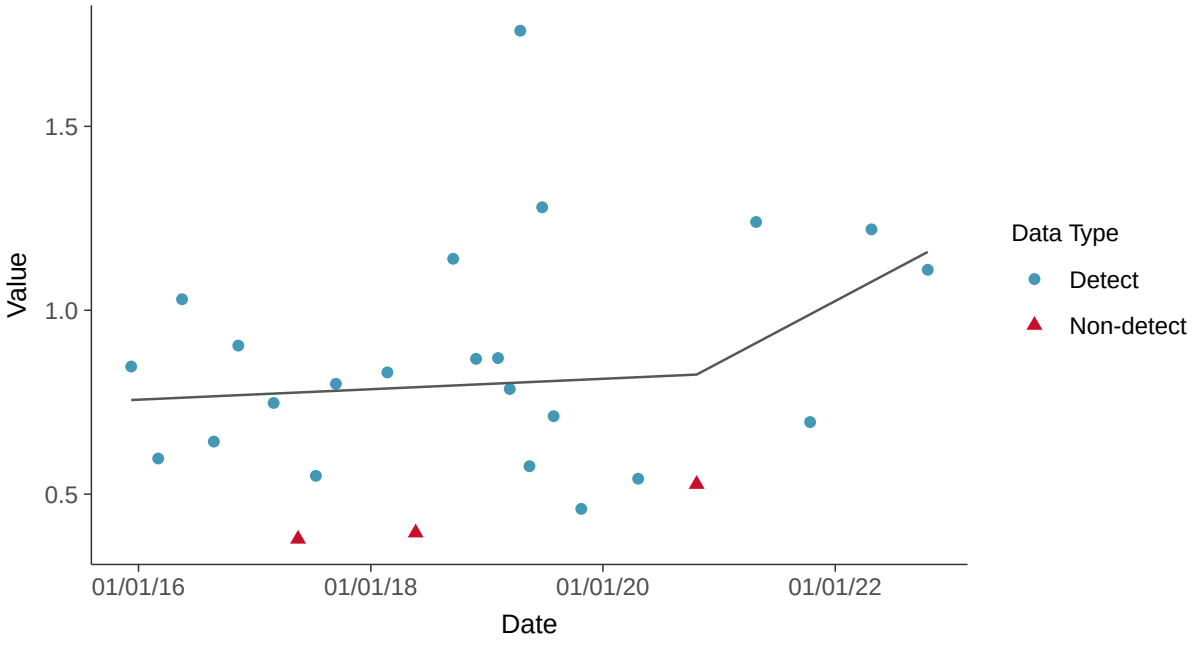
Trend Regression: Lognormal MLE

Radium-226+228, MW-11 (pci/l)



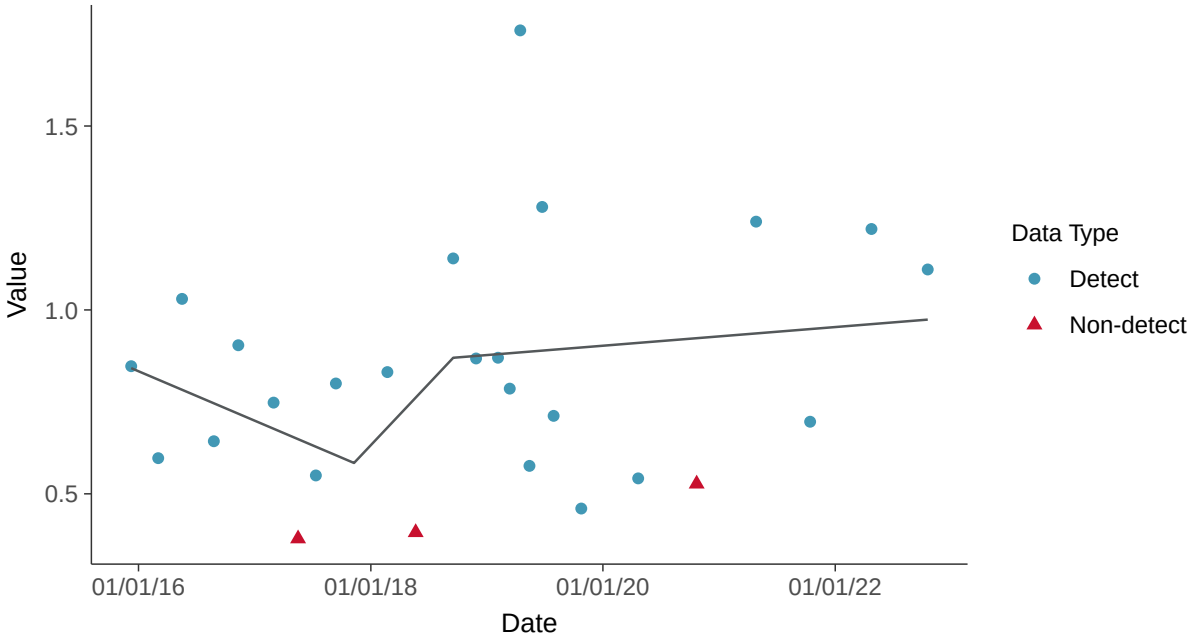
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-11 (pci/l)



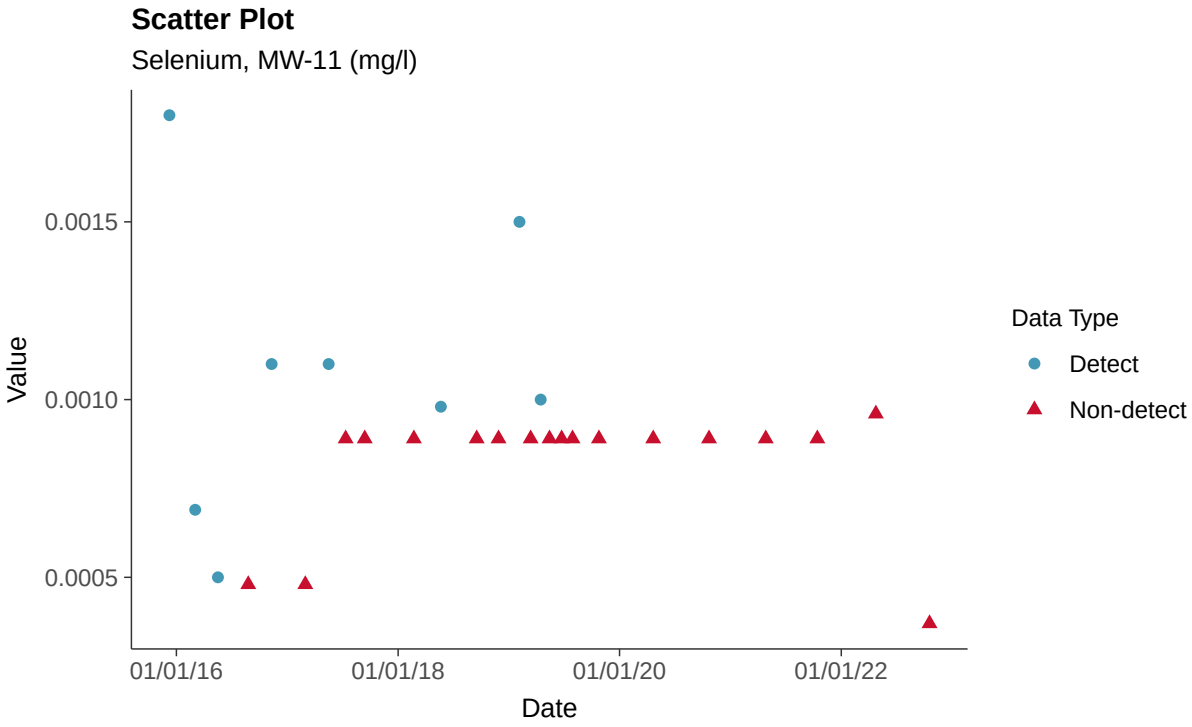
Trend Regression: Piecewise Linear-Linear-Linear

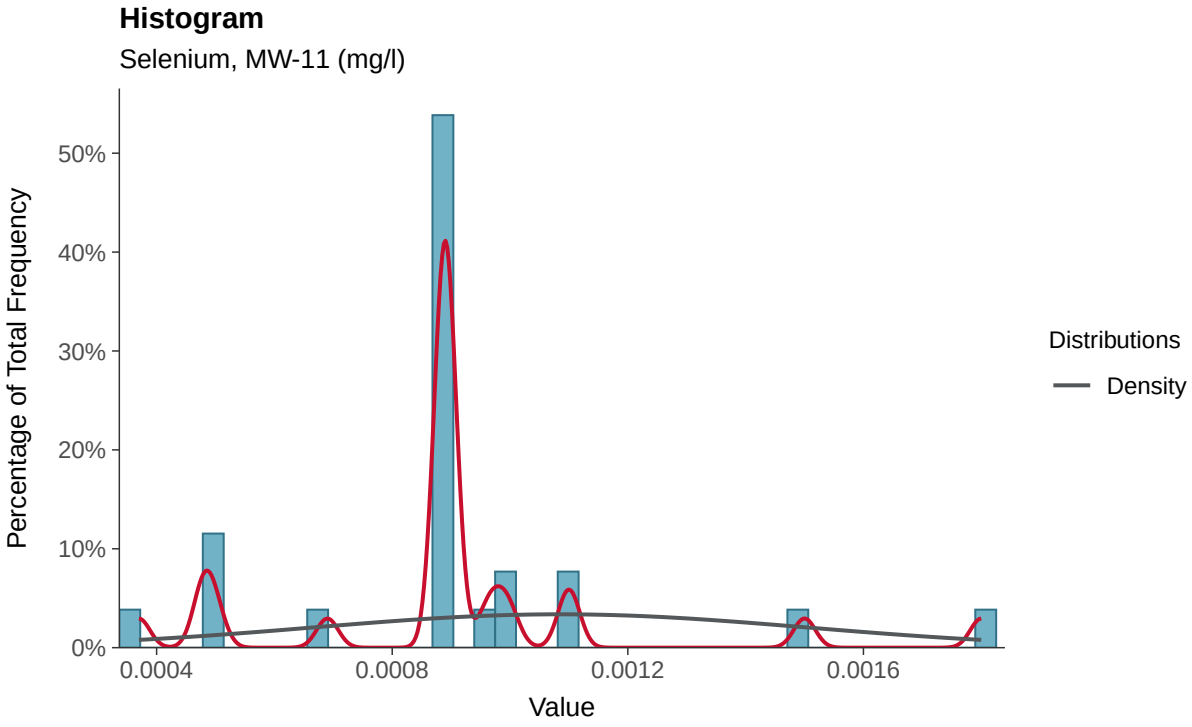
Radium-226+228, MW-11 (pci/l)



Appendix IV: Selenium, MW-11

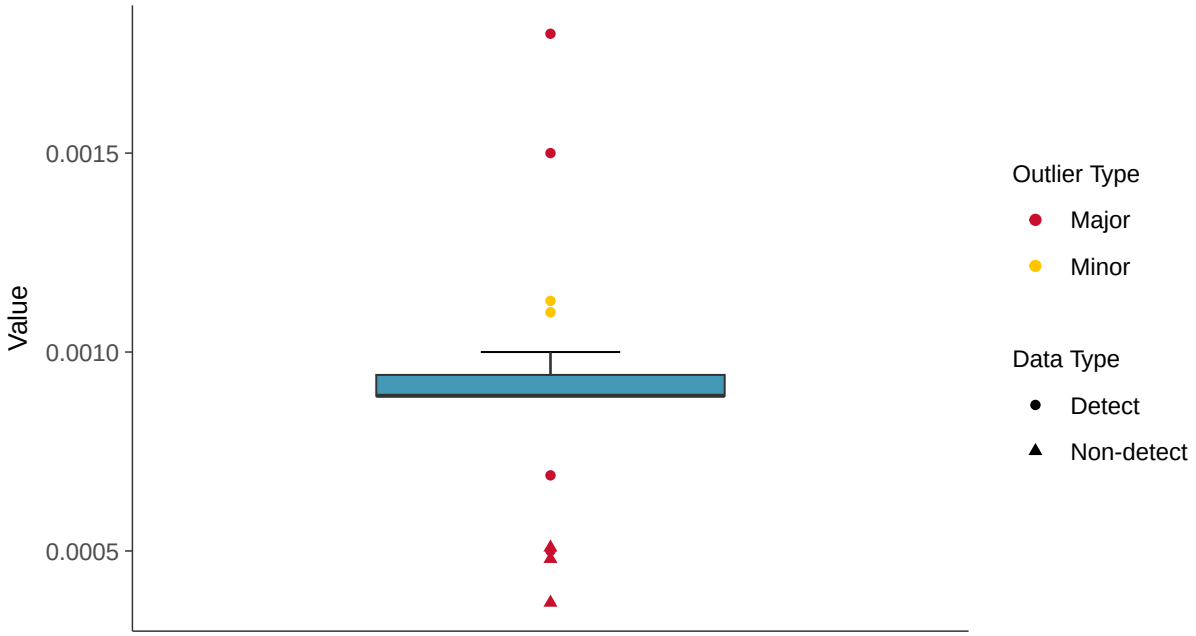
ID: 11_2_129





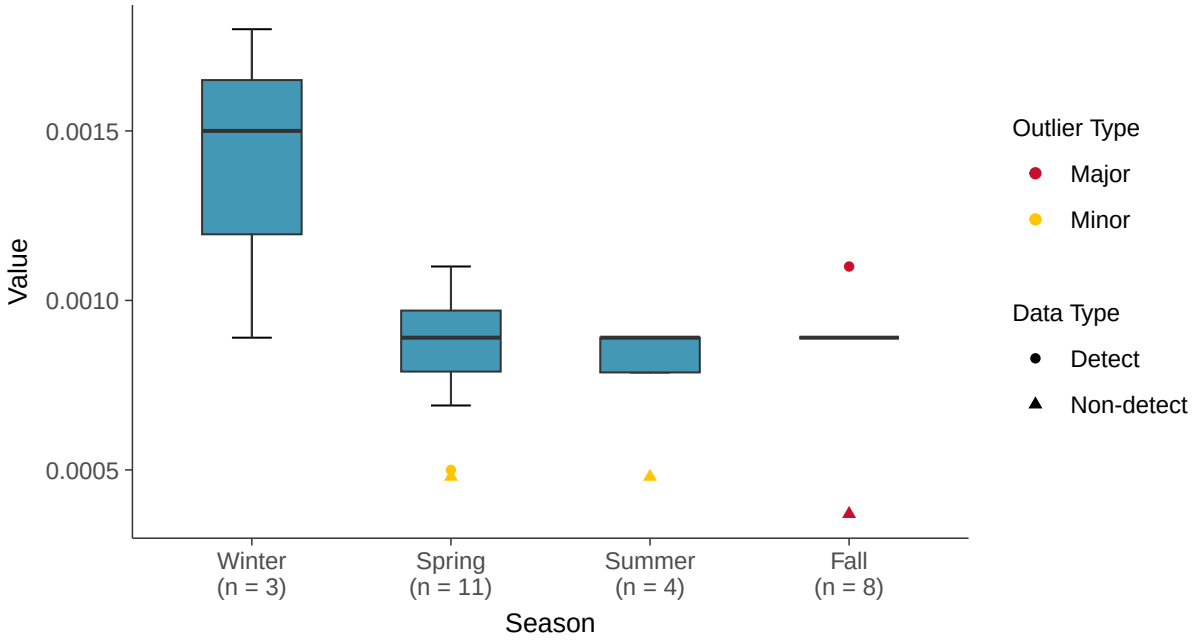
Boxplot

Selenium, MW-11 (mg/l)



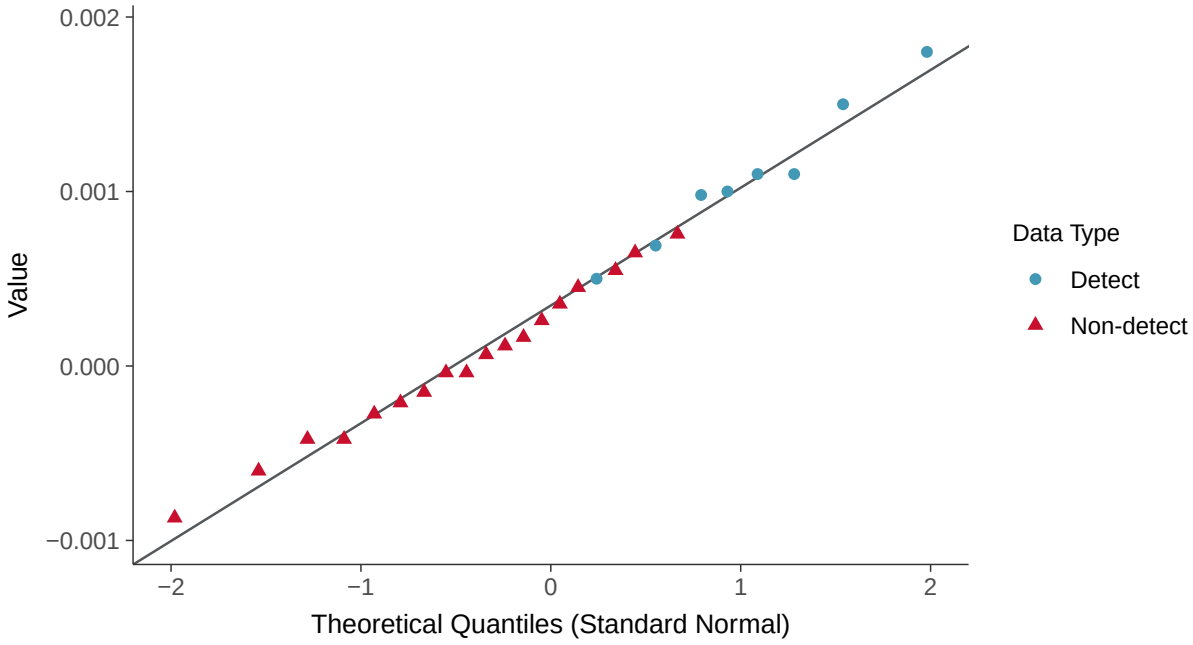
Boxplot by Season

Selenium, MW-11 (mg/l)



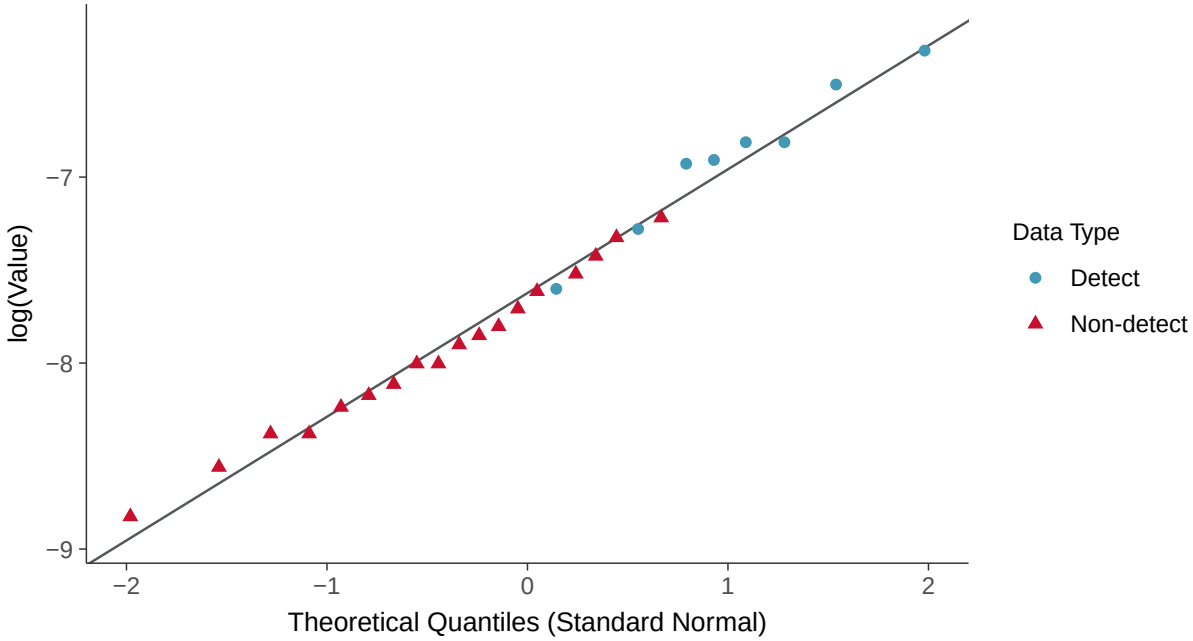
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-11 (mg/l)



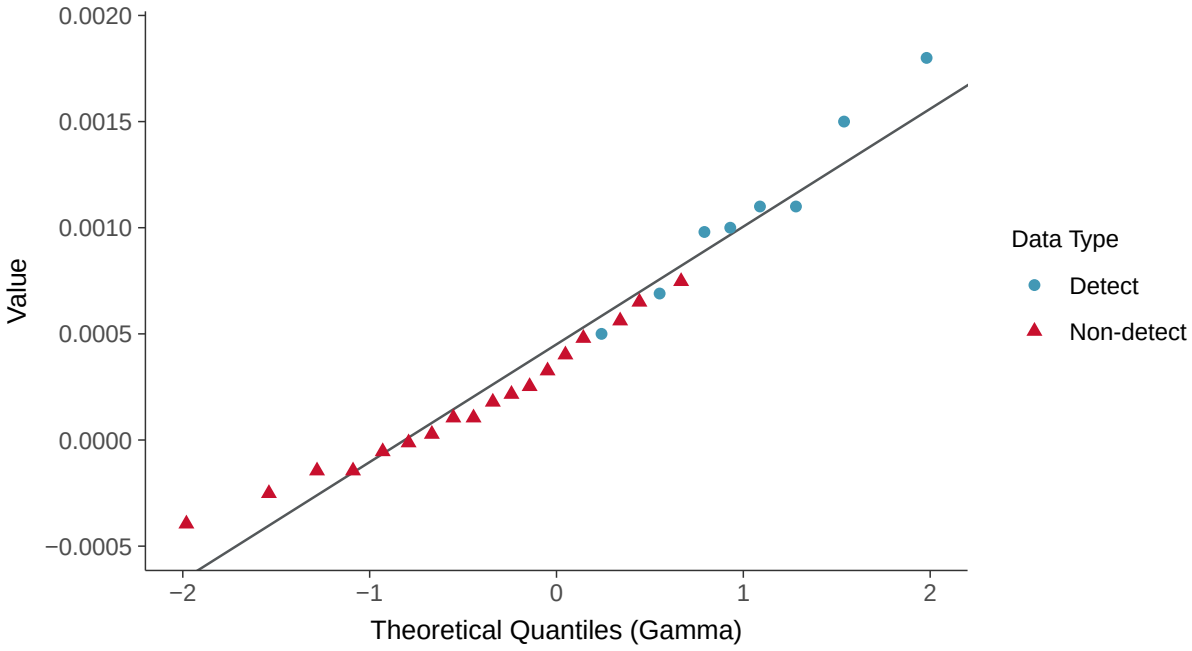
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-11 (mg/l)



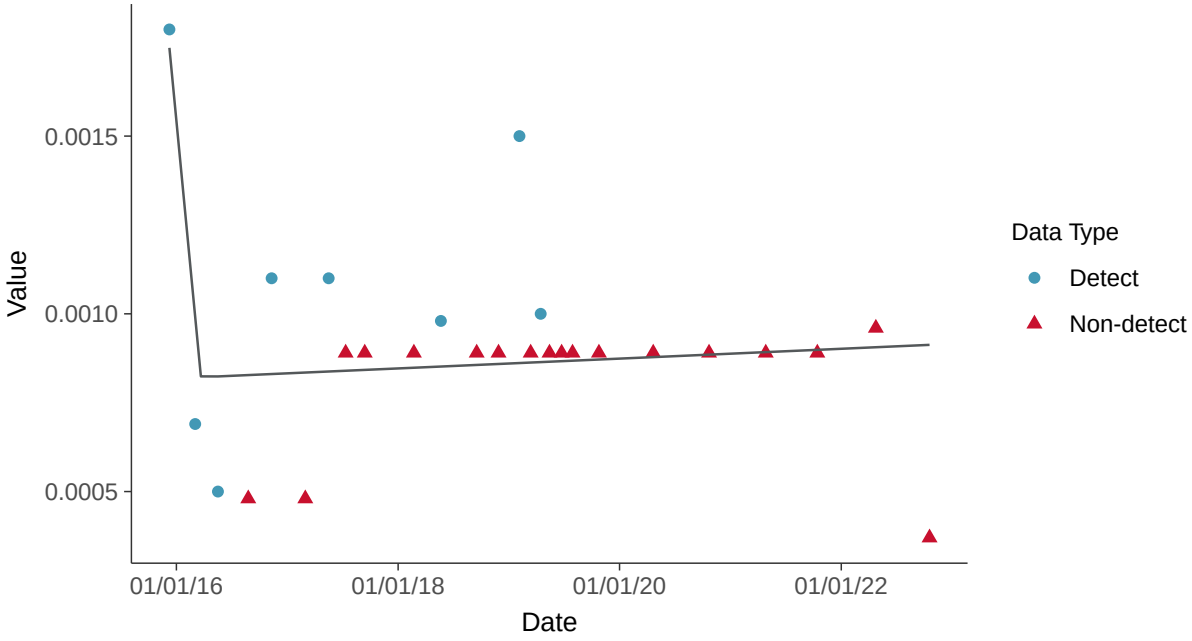
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-11 (mg/l)



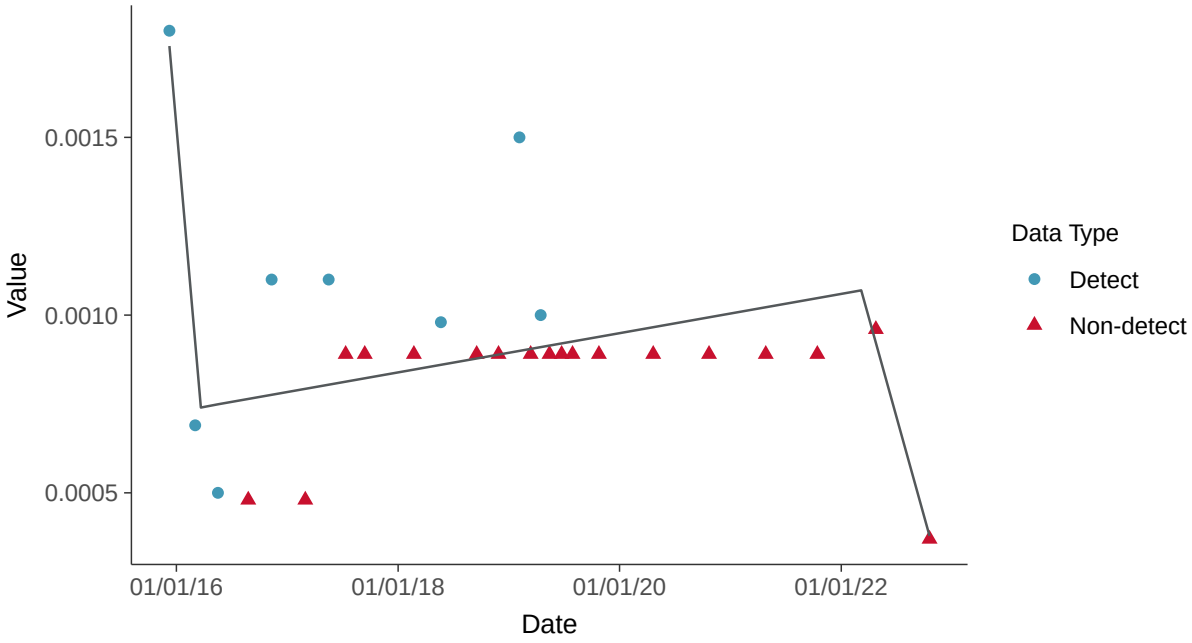
Trend Regression: Piecewise Linear-Linear

Selenium, MW-11 (mg/l)



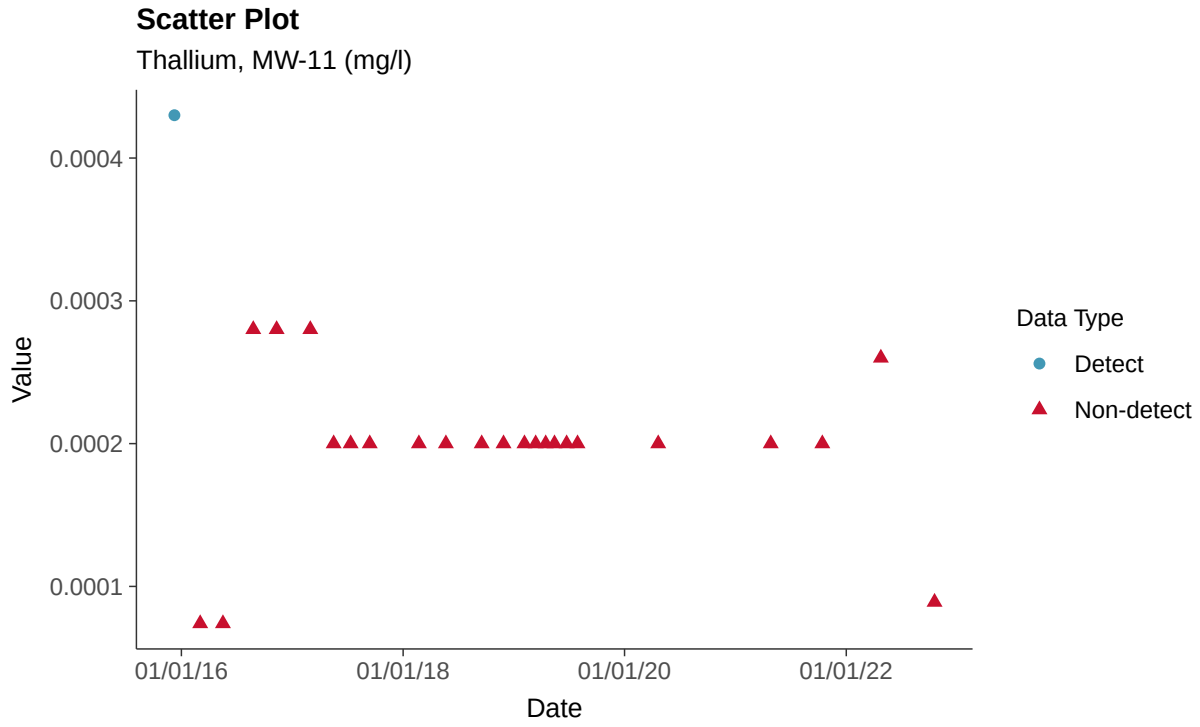
Trend Regression: Piecewise Linear-Linear-Linear

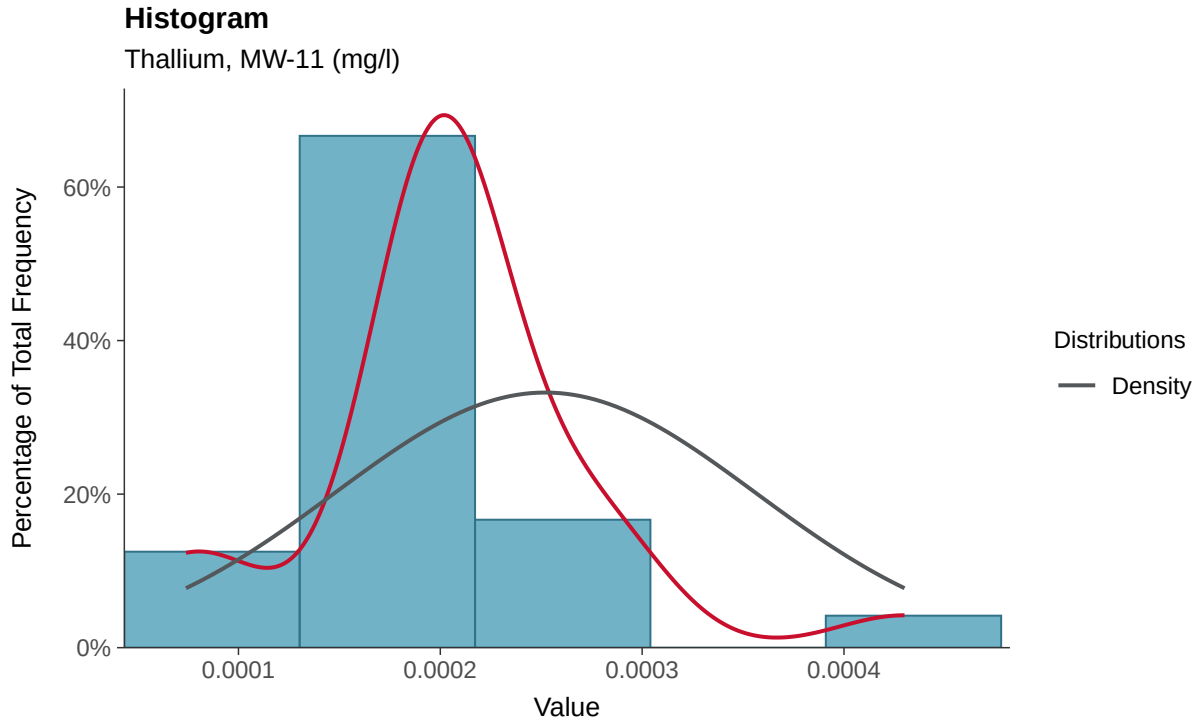
Selenium, MW-11 (mg/l)



Appendix IV: Thallium, MW-11

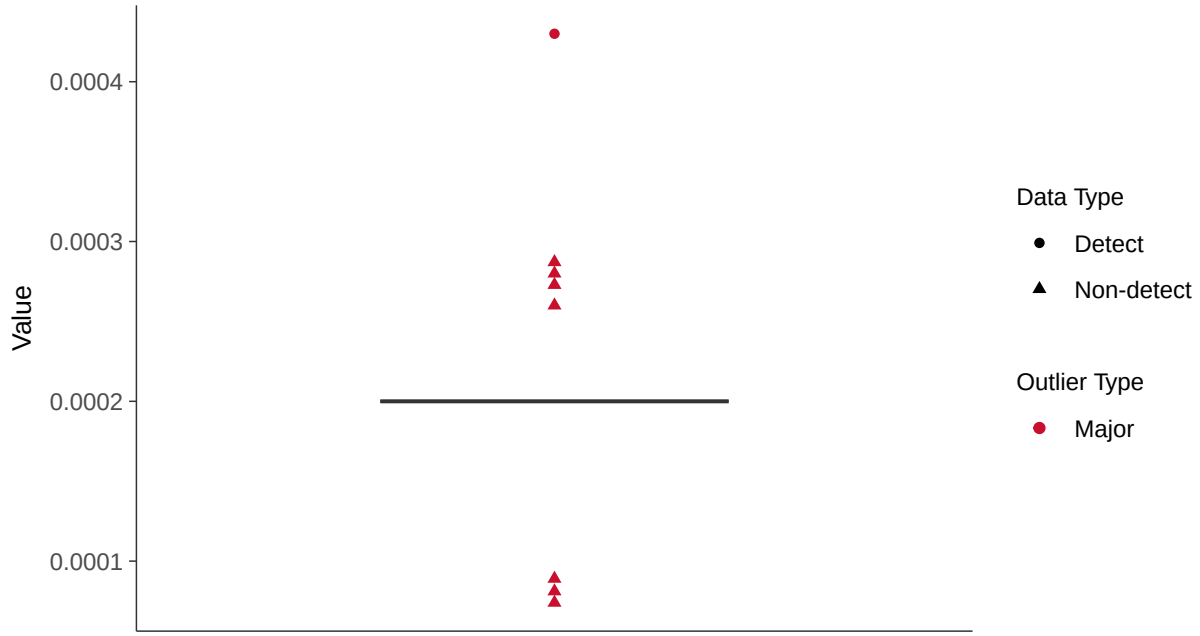
ID: 11_2_134





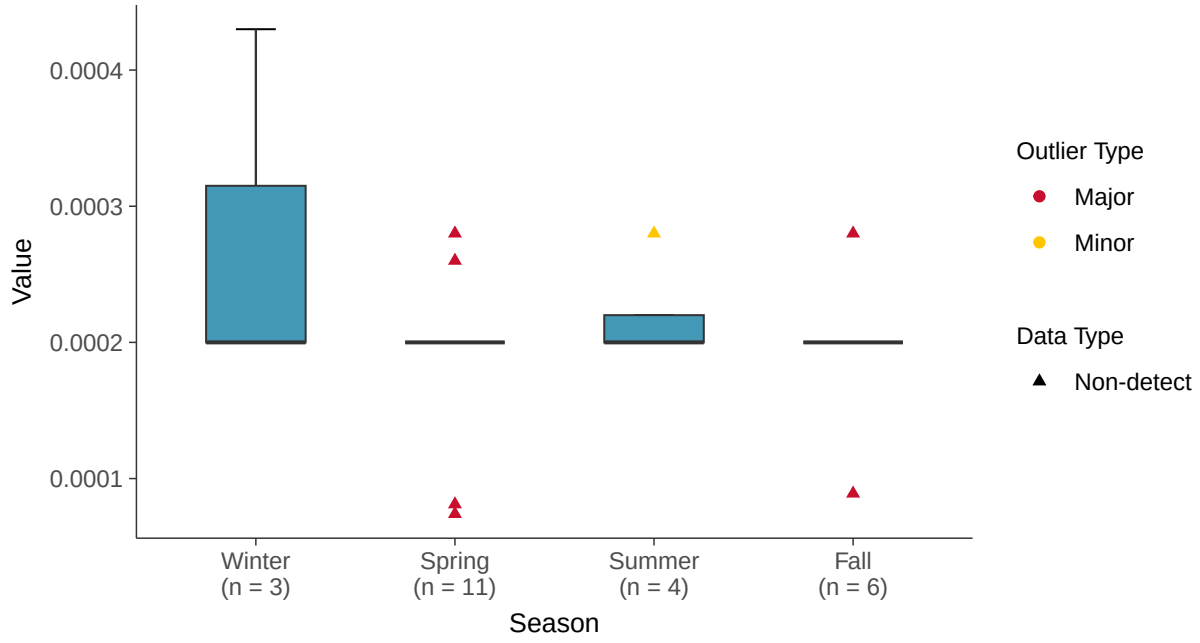
Boxplot

Thallium, MW-11 (mg/l)



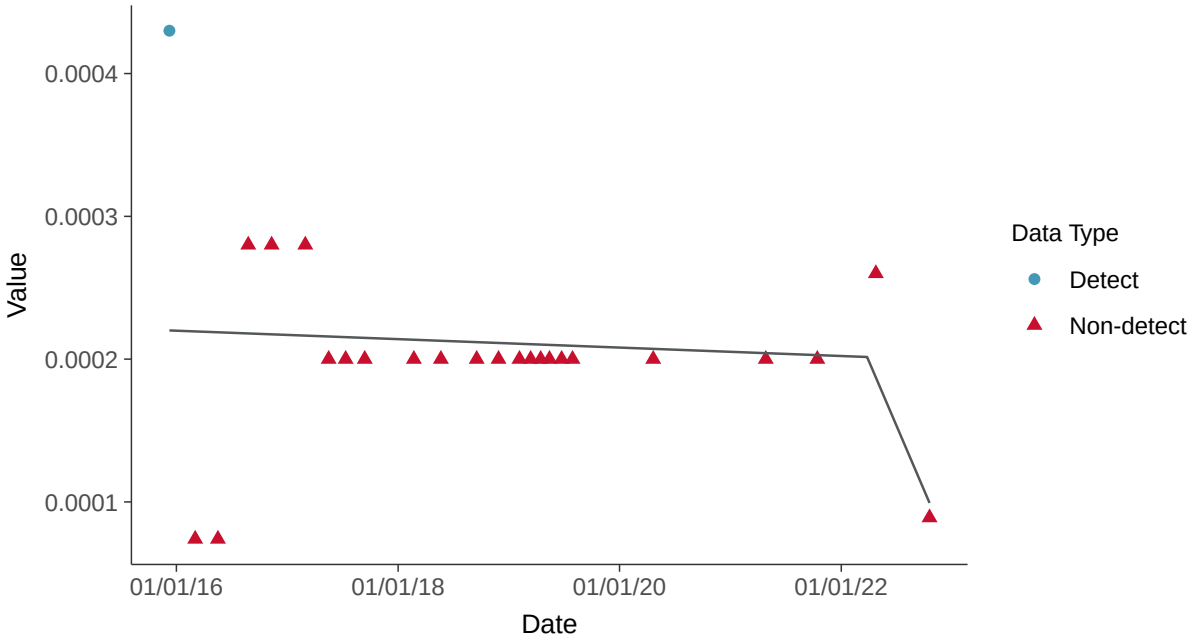
Boxplot by Season

Thallium, MW-11 (mg/l)



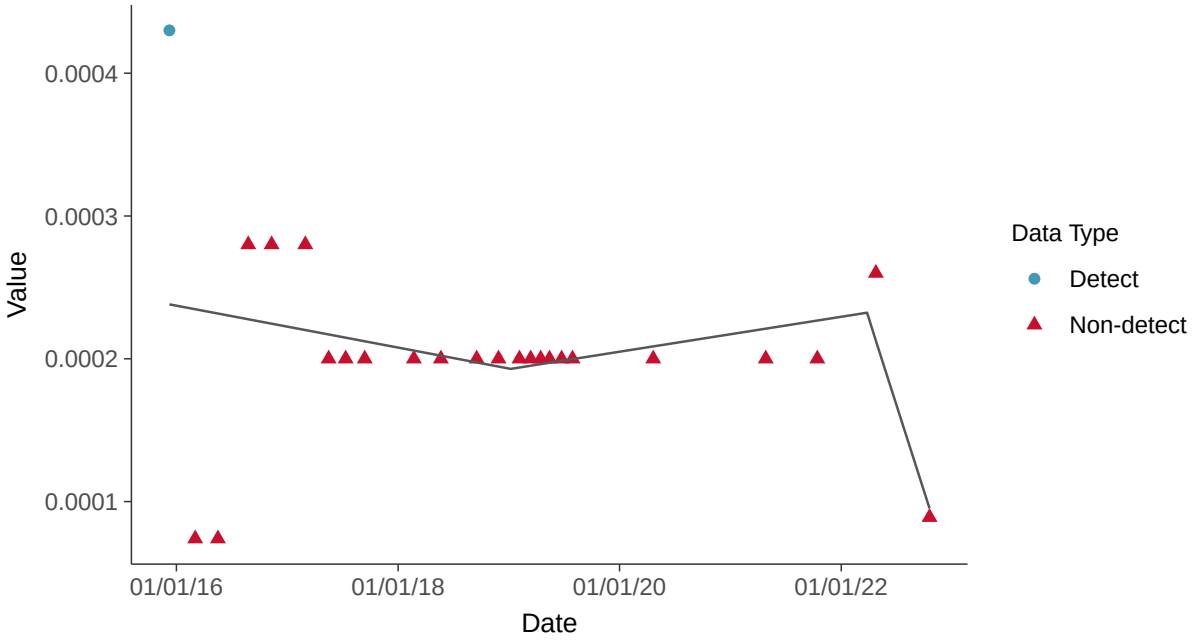
Trend Regression: Piecewise Linear-Linear

Thallium, MW-11 (mg/l)



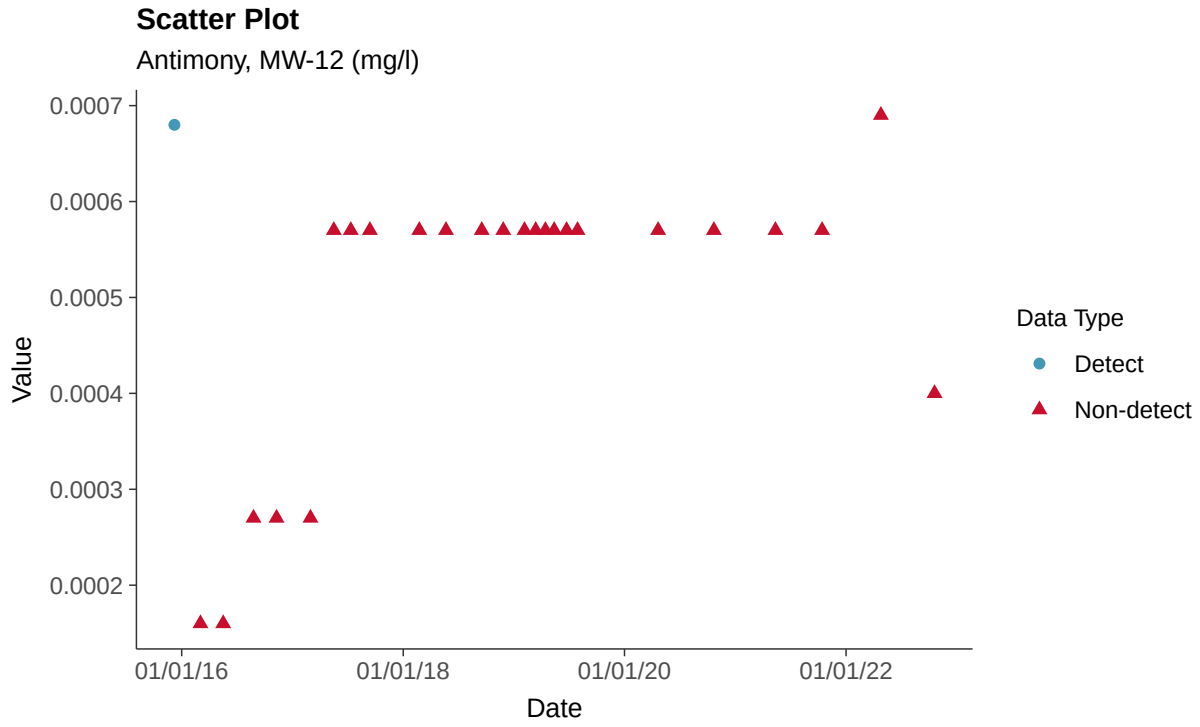
Trend Regression: Piecewise Linear-Linear-Linear

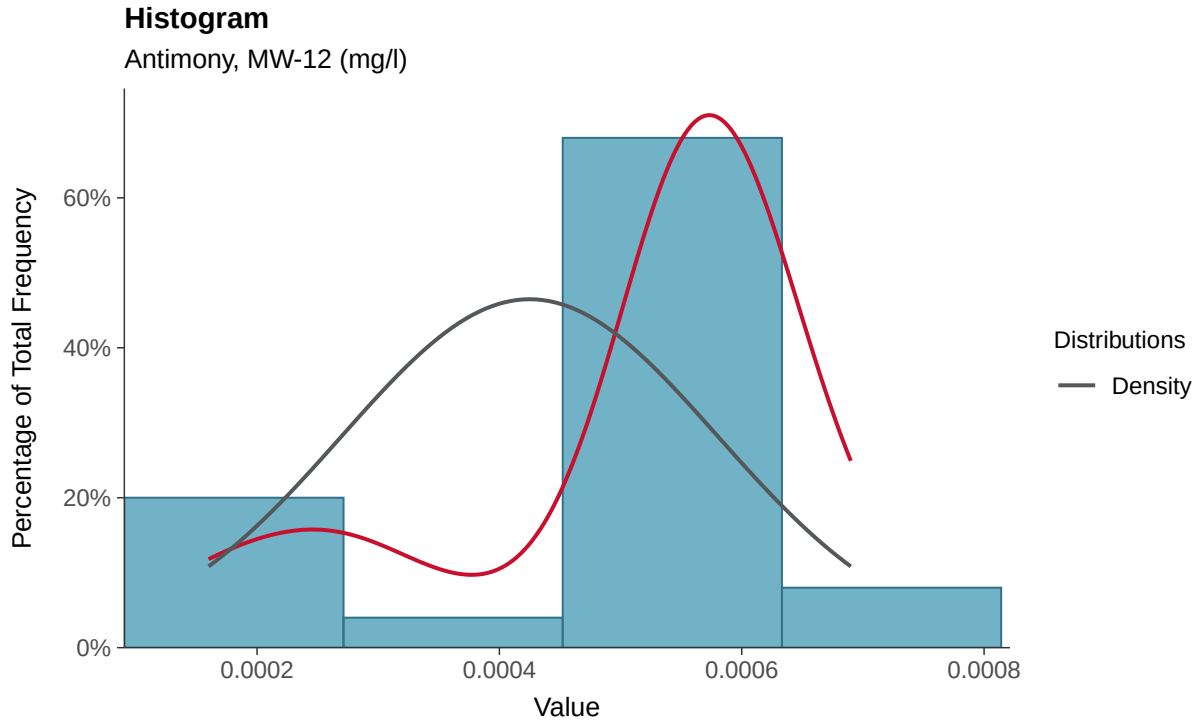
Thallium, MW-11 (mg/l)



Appendix IV: Antimony, MW-12

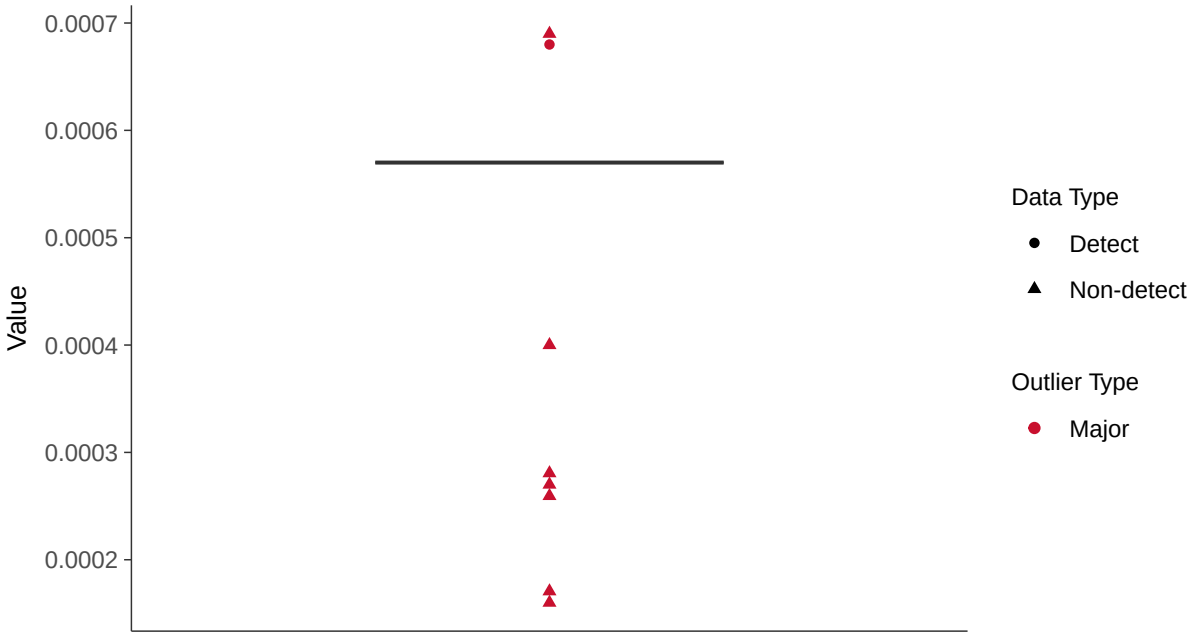
ID: 12_2_104





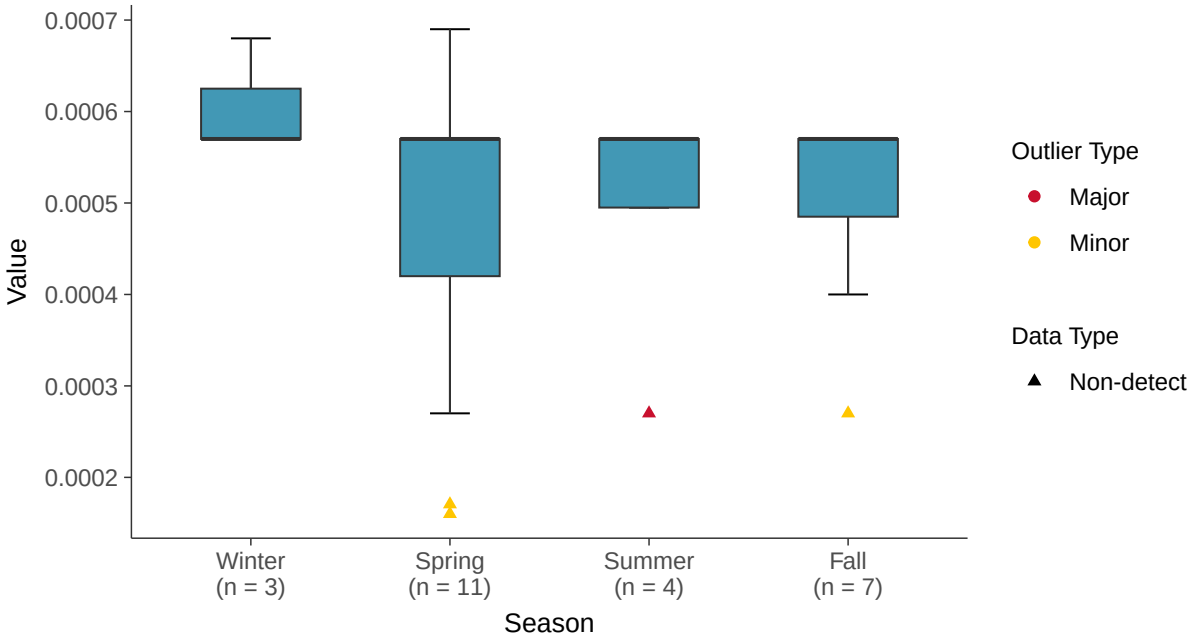
Boxplot

Antimony, MW-12 (mg/l)



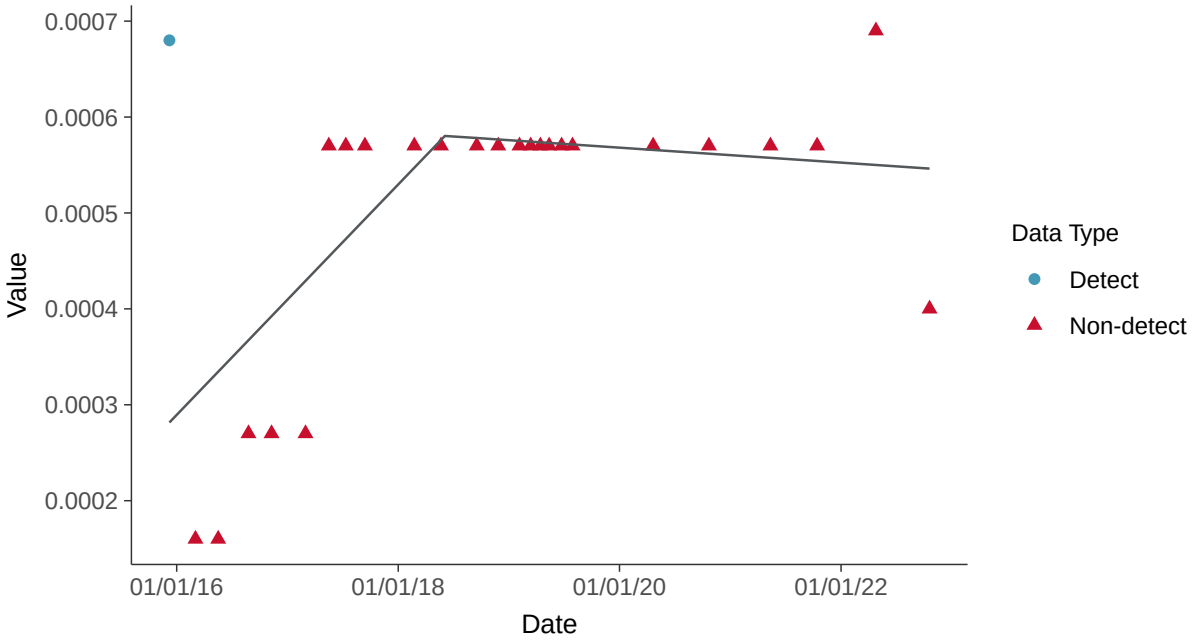
Boxplot by Season

Antimony, MW-12 (mg/l)



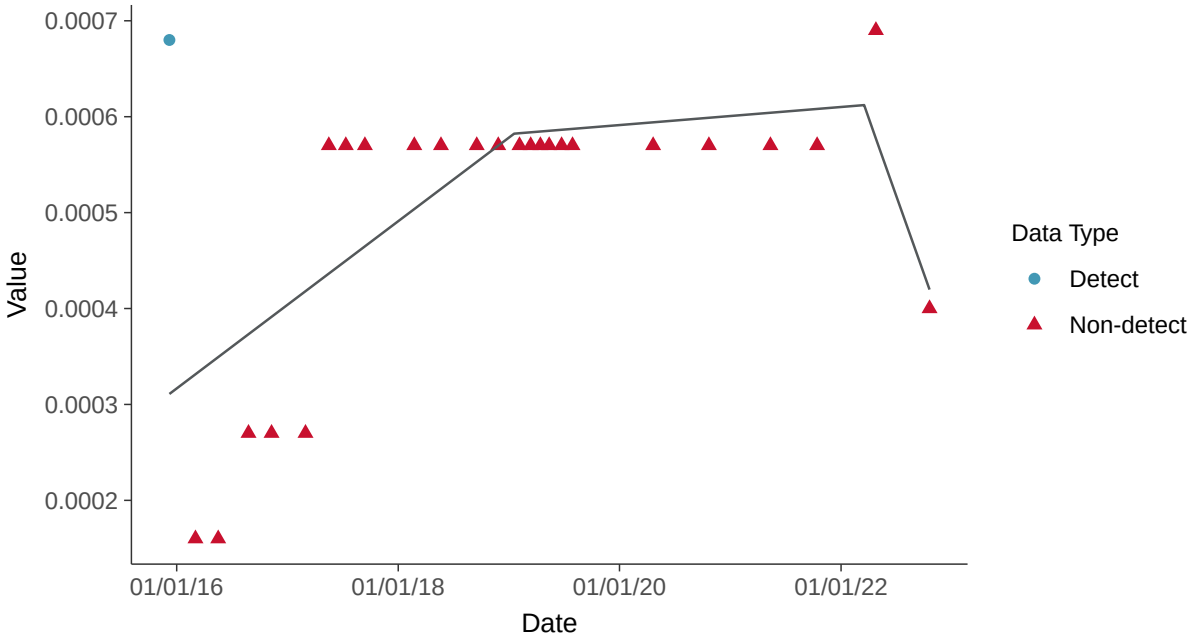
Trend Regression: Piecewise Linear-Linear

Antimony, MW-12 (mg/l)



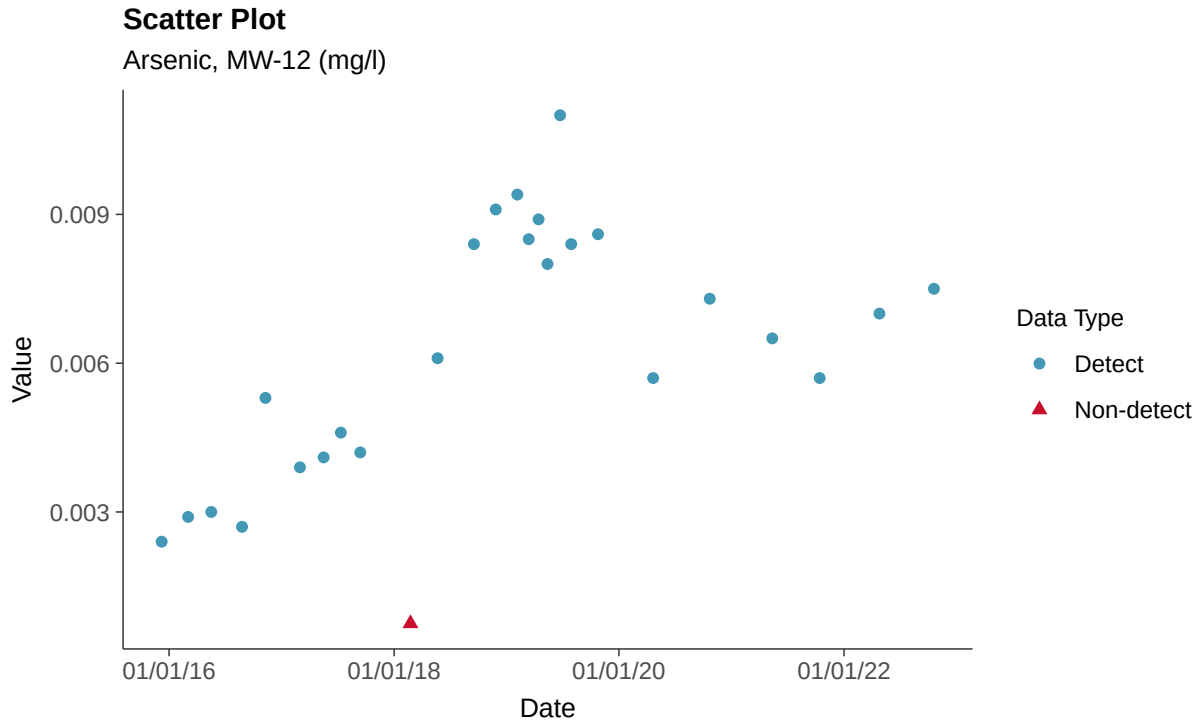
Trend Regression: Piecewise Linear-Linear-Linear

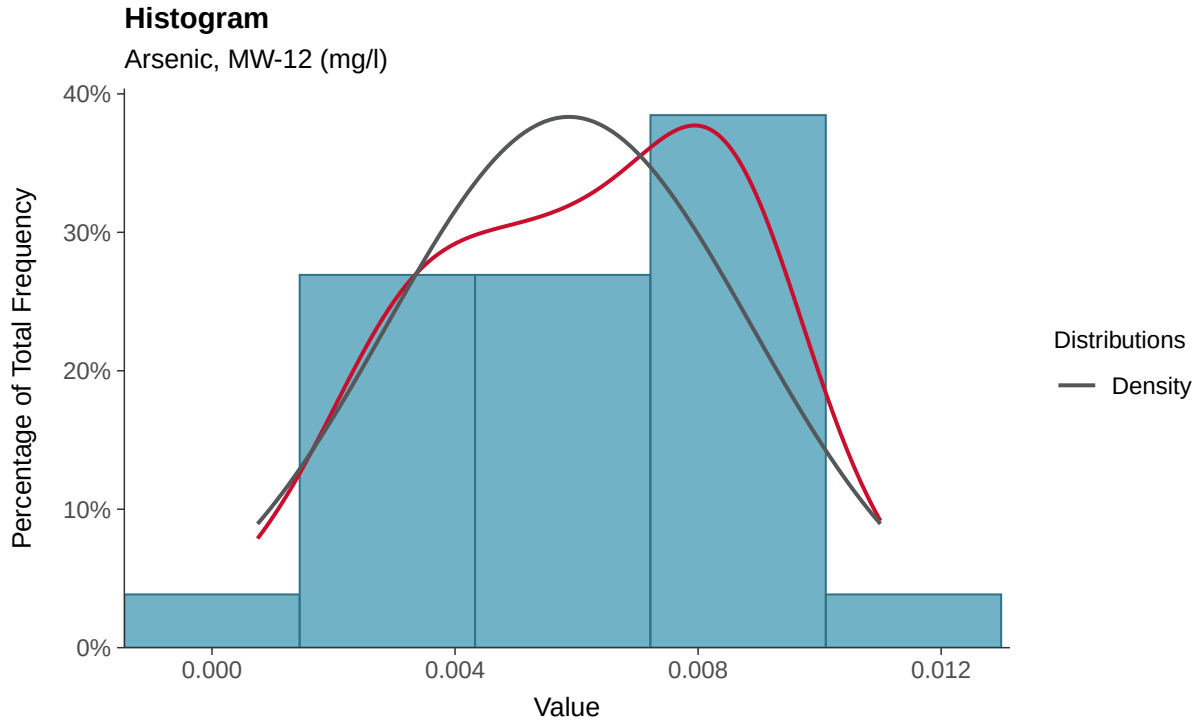
Antimony, MW-12 (mg/l)



Appendix IV: Arsenic, MW-12

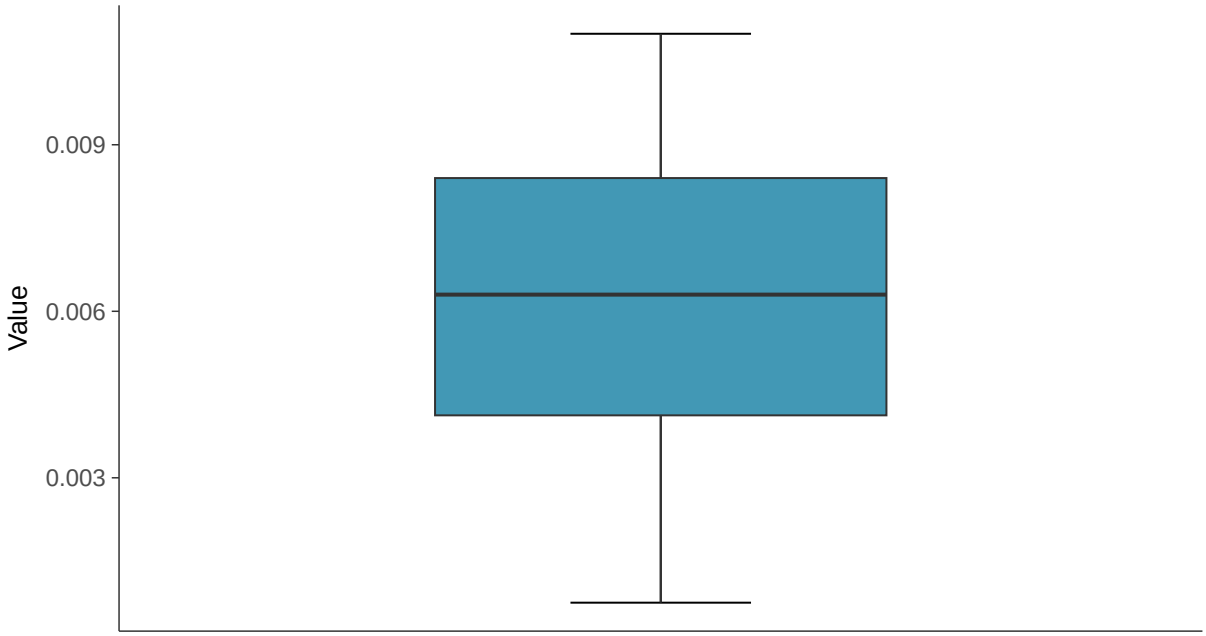
ID: 12_2_105





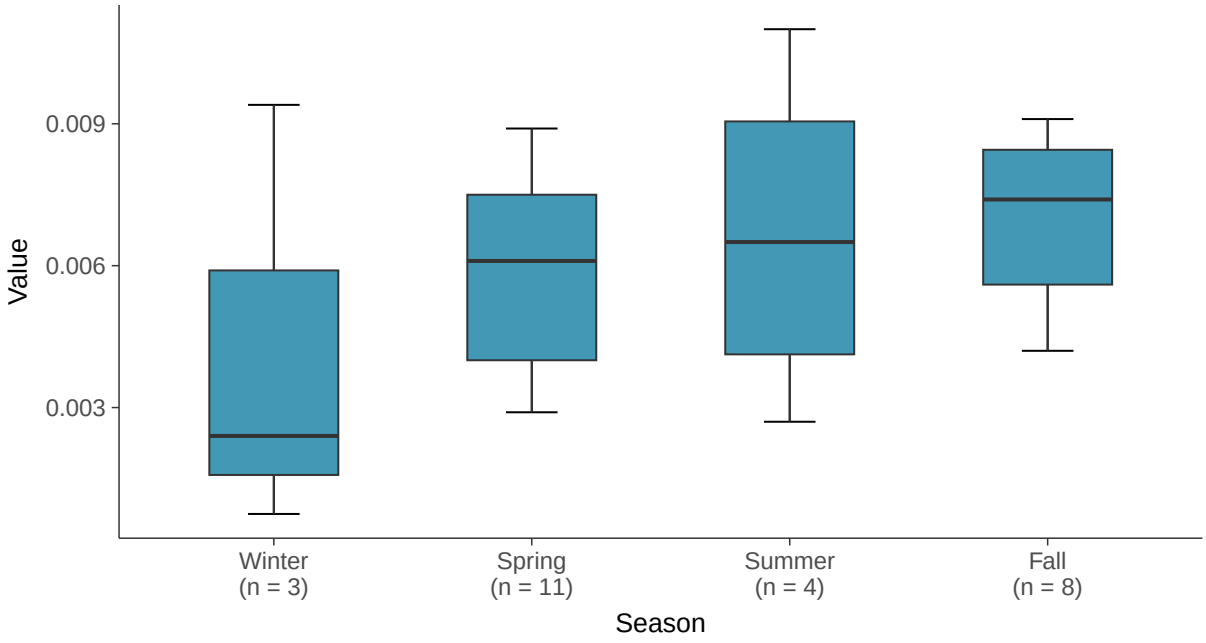
Boxplot

Arsenic, MW-12 (mg/l)



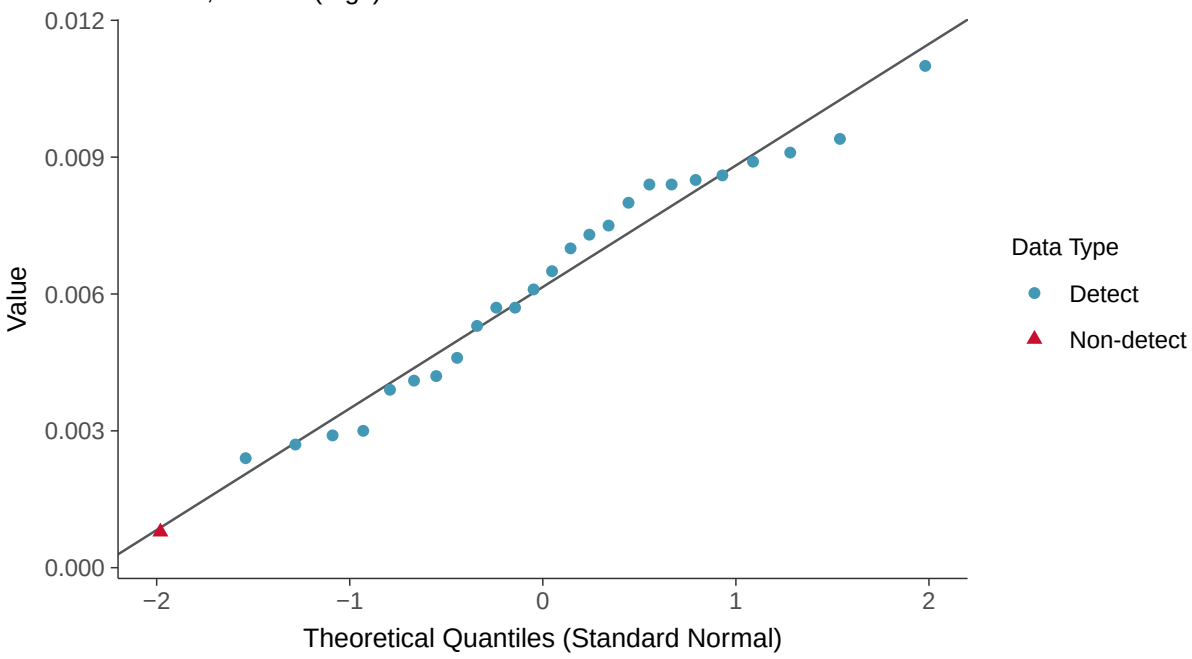
Boxplot by Season

Arsenic, MW-12 (mg/l)



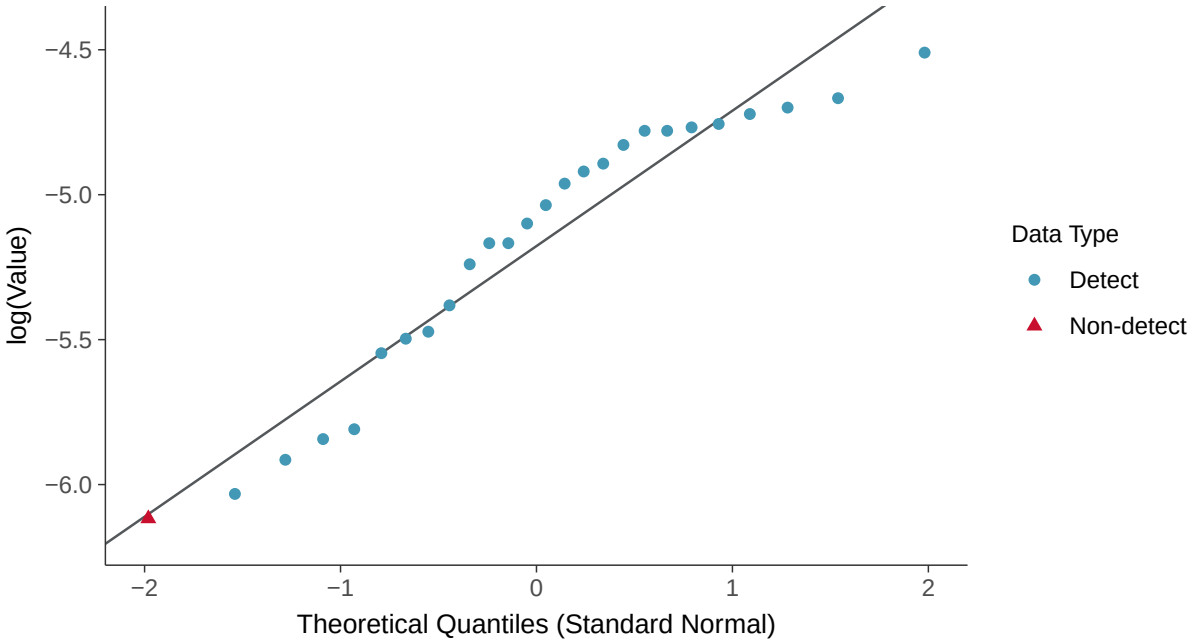
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-12 (mg/l)



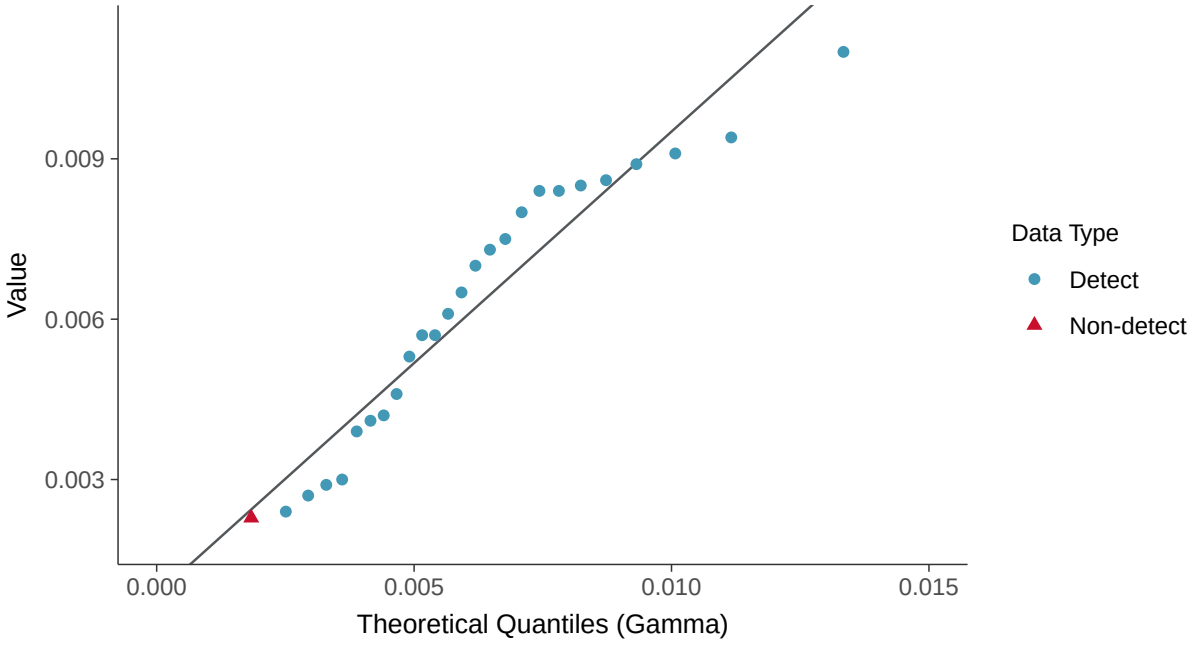
Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-12 (mg/l)



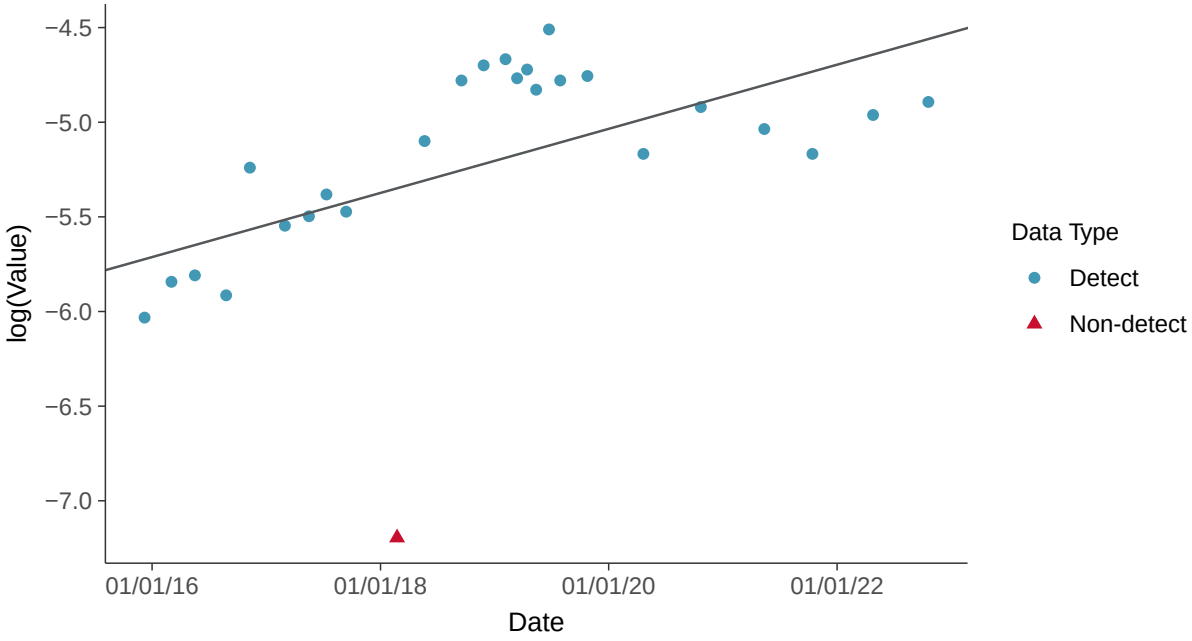
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-12 (mg/l)



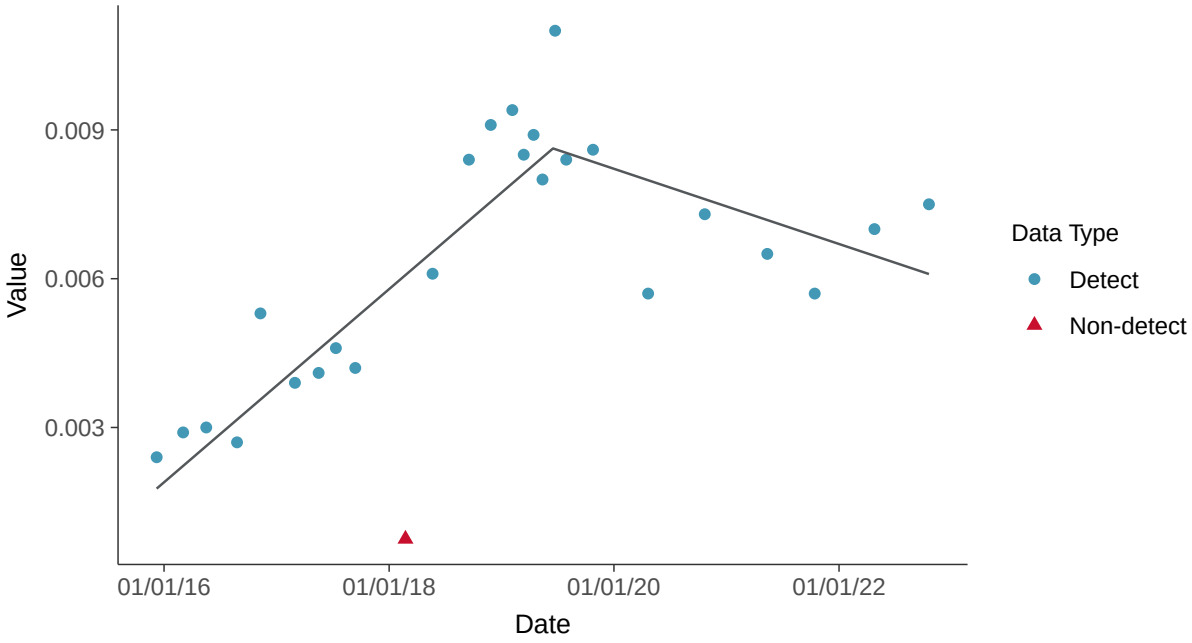
Trend Regression: Lognormal MLE

Arsenic, MW-12 (mg/l)



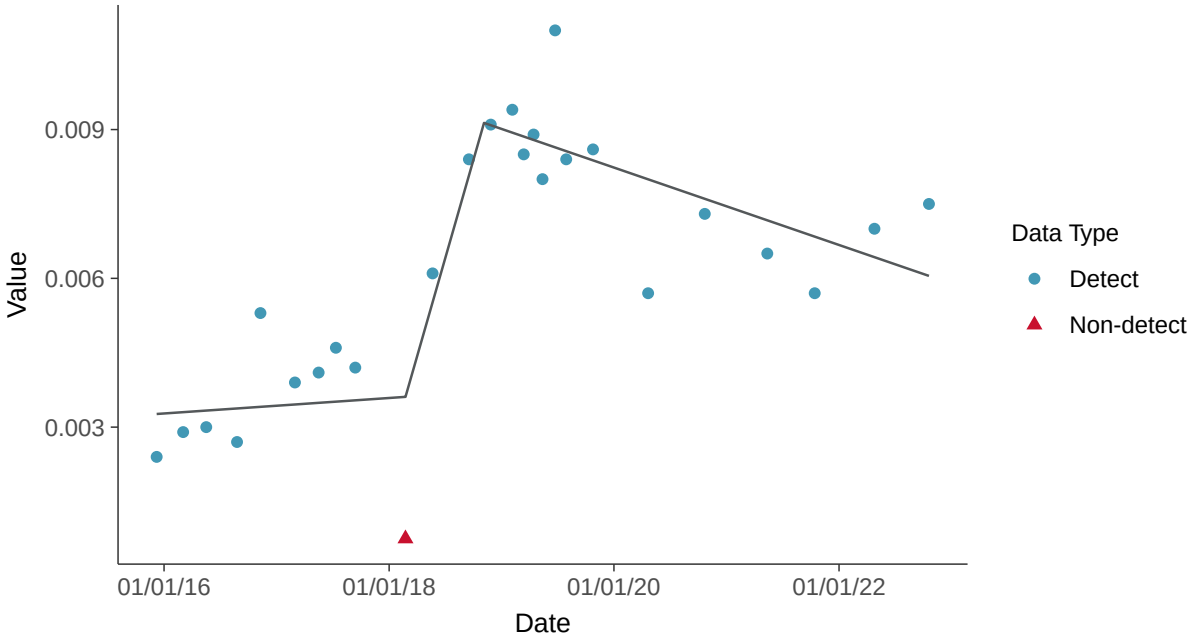
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-12 (mg/l)

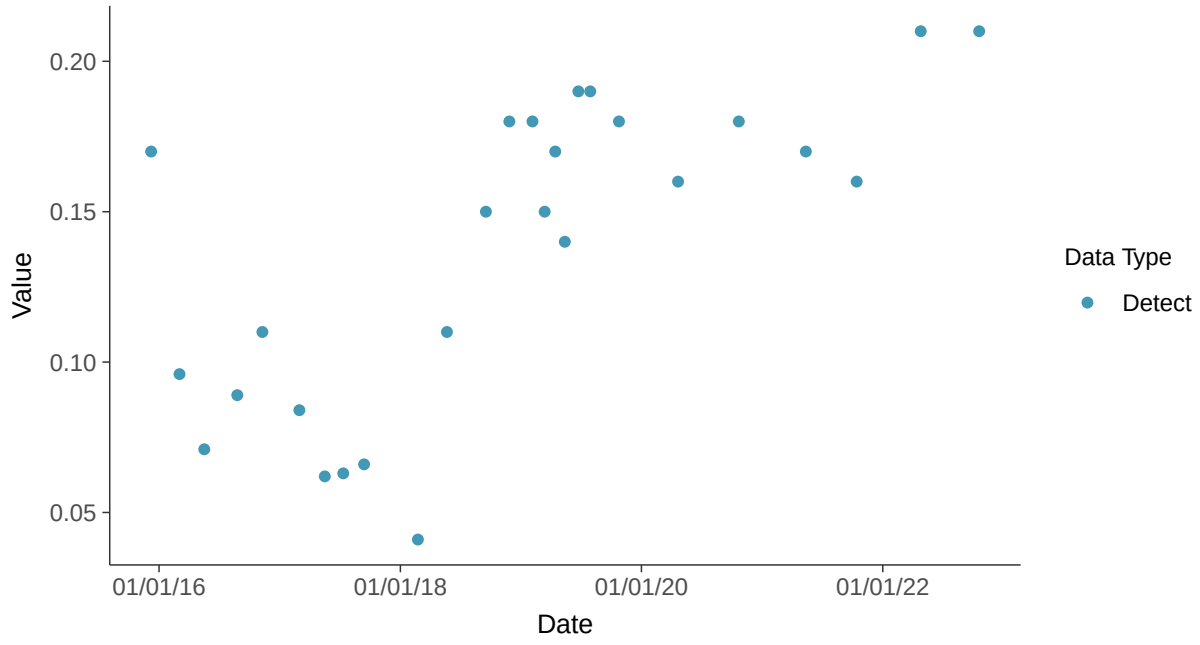


Appendix IV: Barium, MW-12

ID: 12_2_106

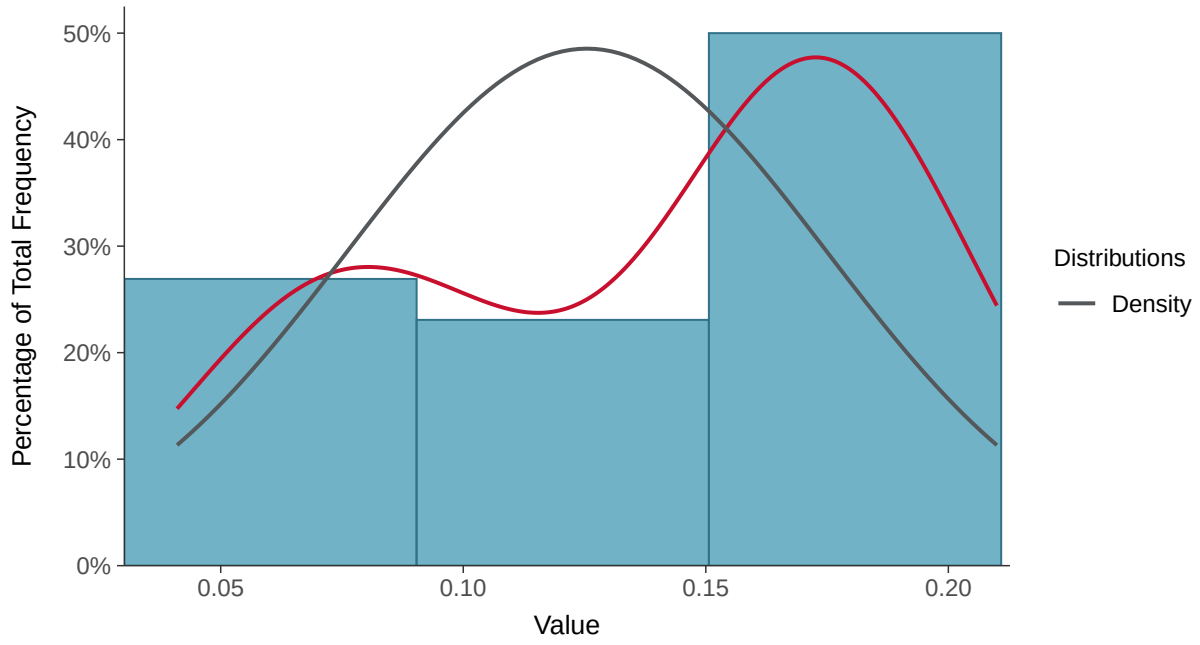
Scatter Plot

Barium, MW-12 (mg/l)



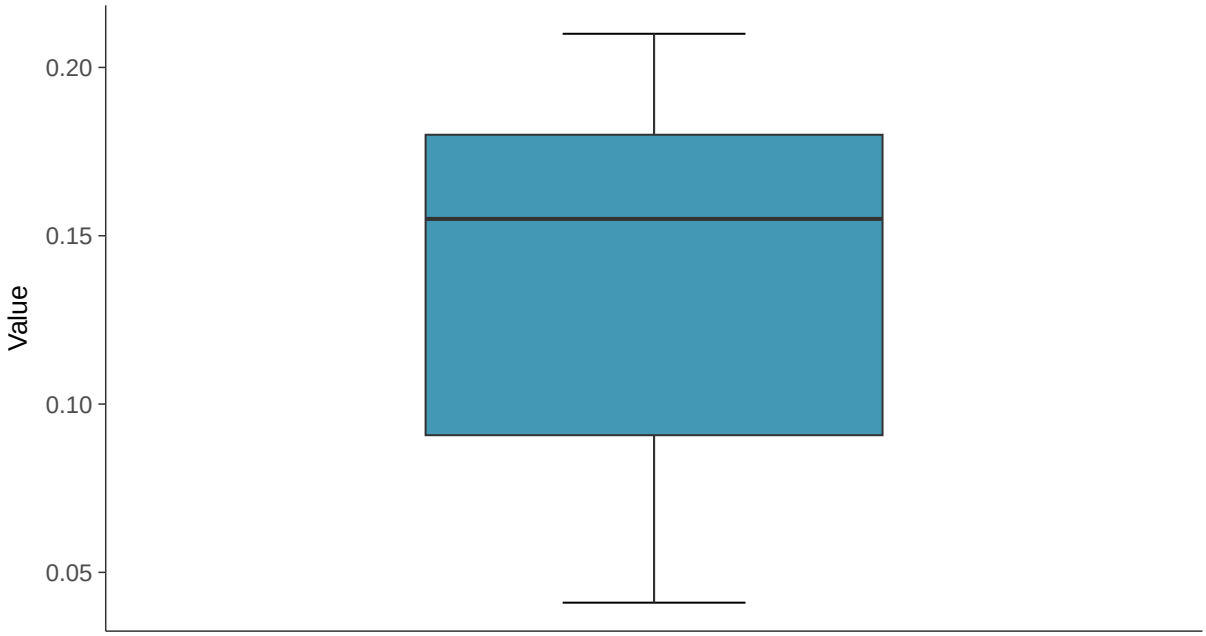
Histogram

Barium, MW-12 (mg/l)



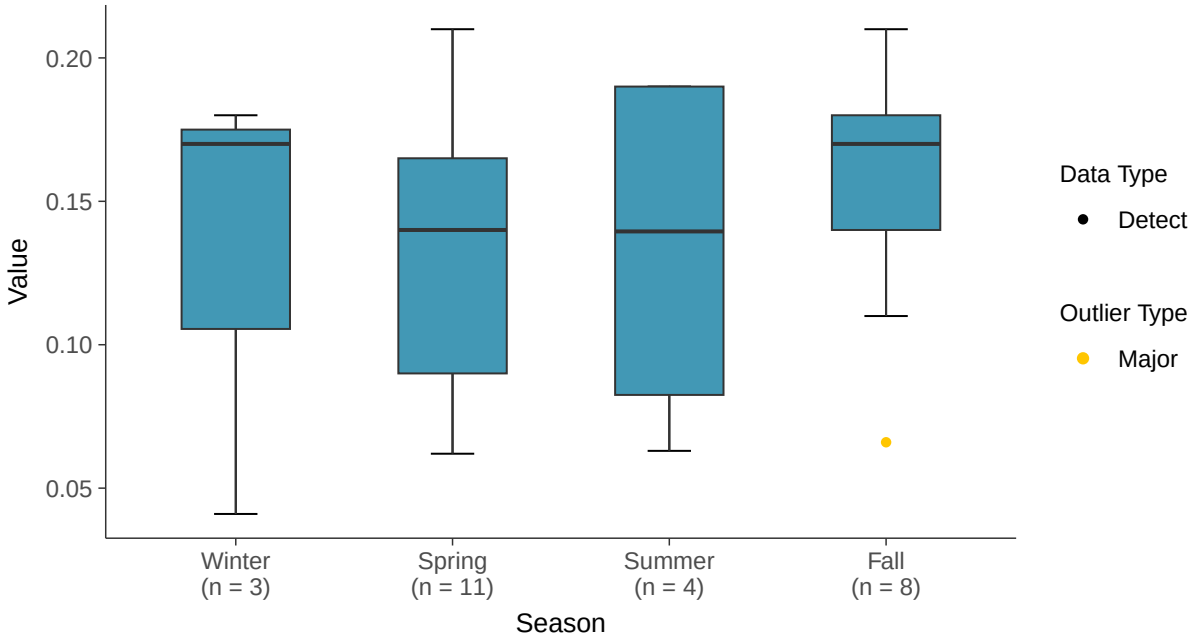
Boxplot

Barium, MW-12 (mg/l)



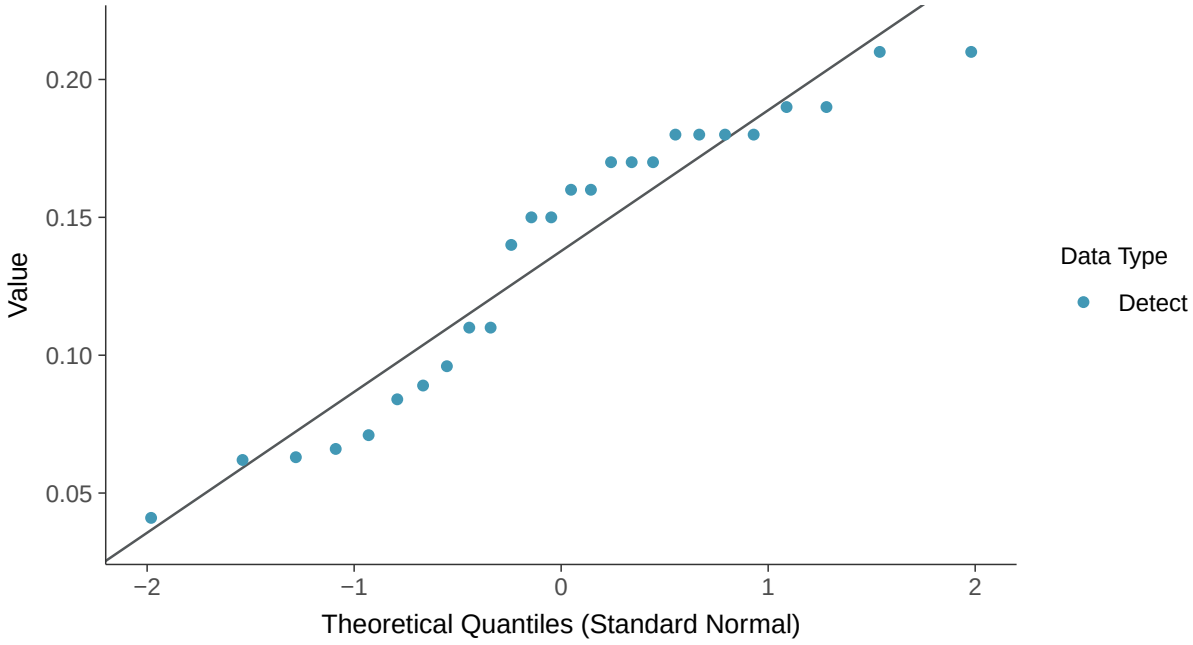
Boxplot by Season

Barium, MW-12 (mg/l)



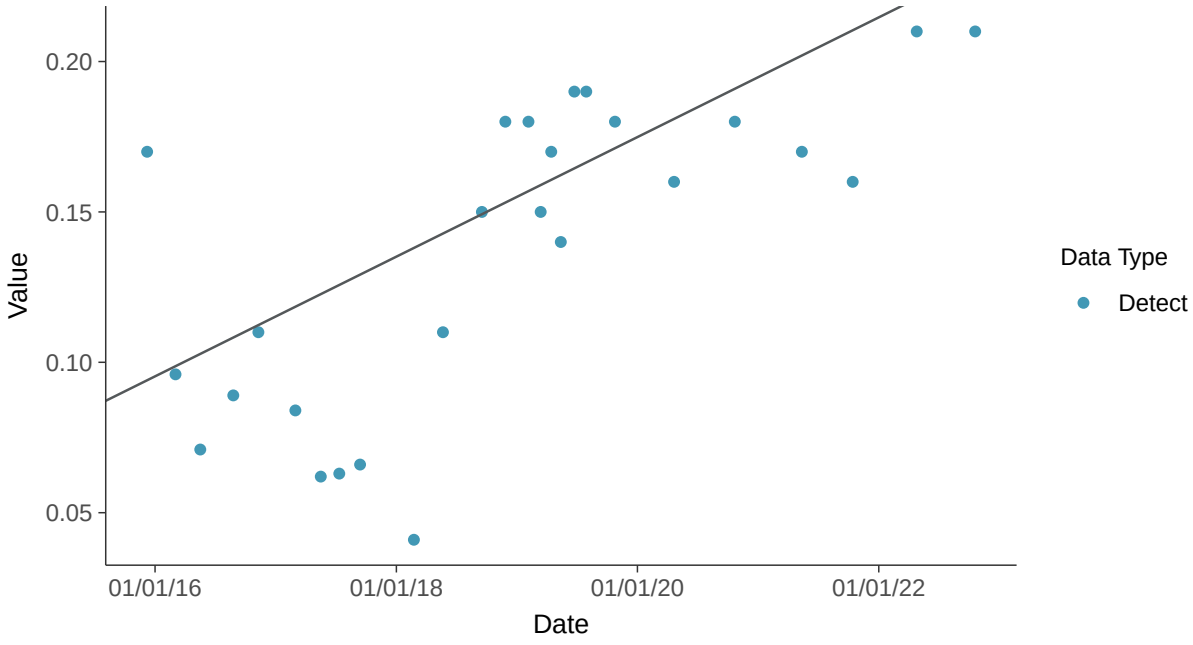
Normal Q-Q plot

Barium, MW-12 (mg/l)



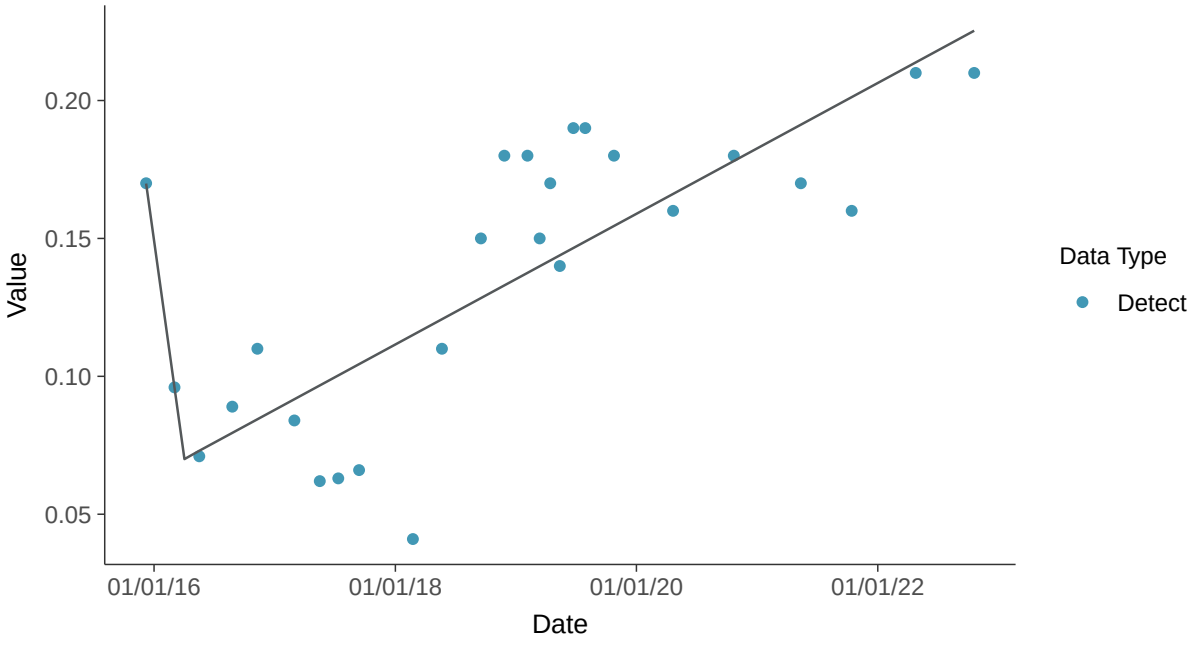
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-12 (mg/l)



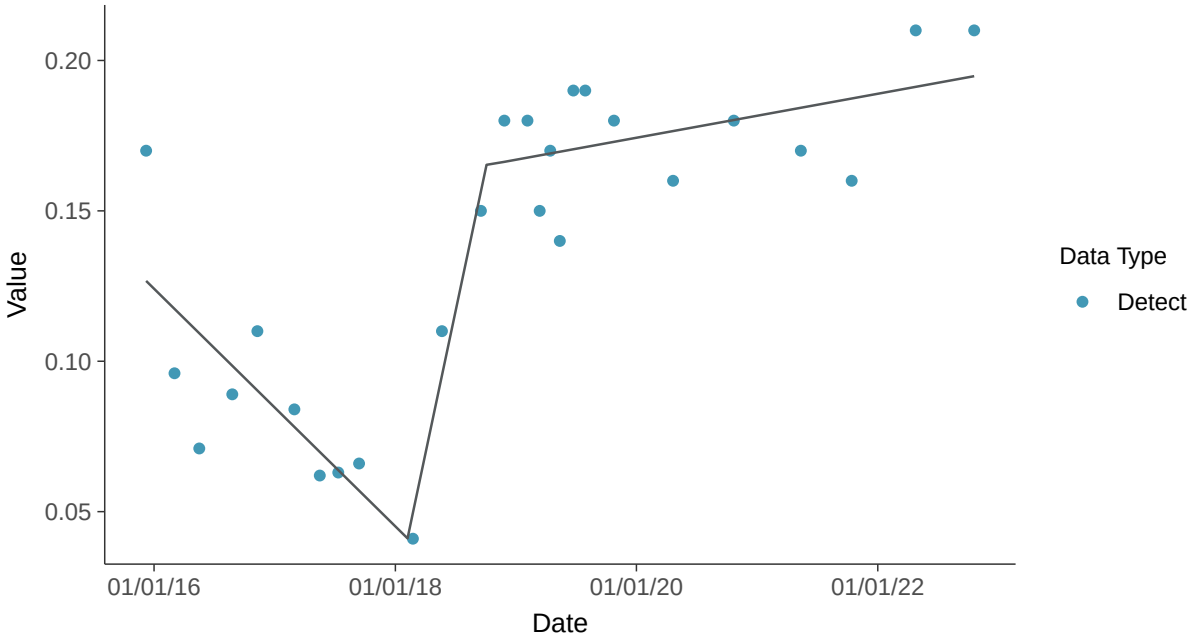
Trend Regression: Piecewise Linear-Linear

Barium, MW-12 (mg/l)



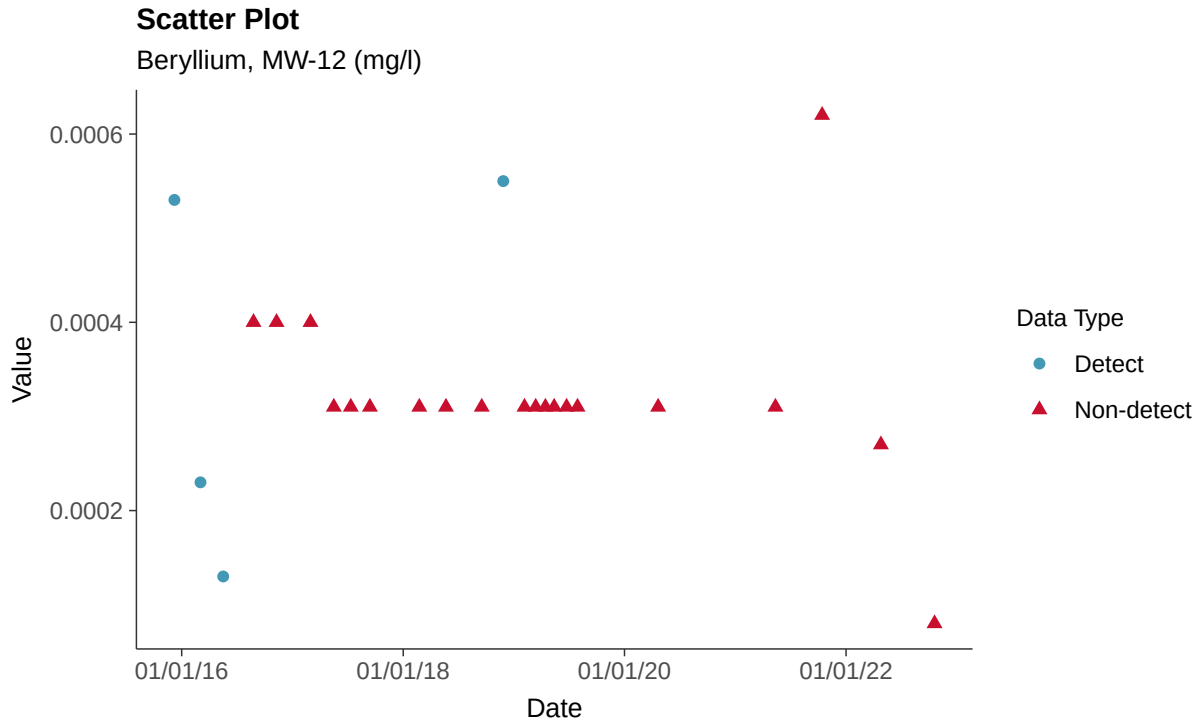
Trend Regression: Piecewise Linear-Linear-Linear

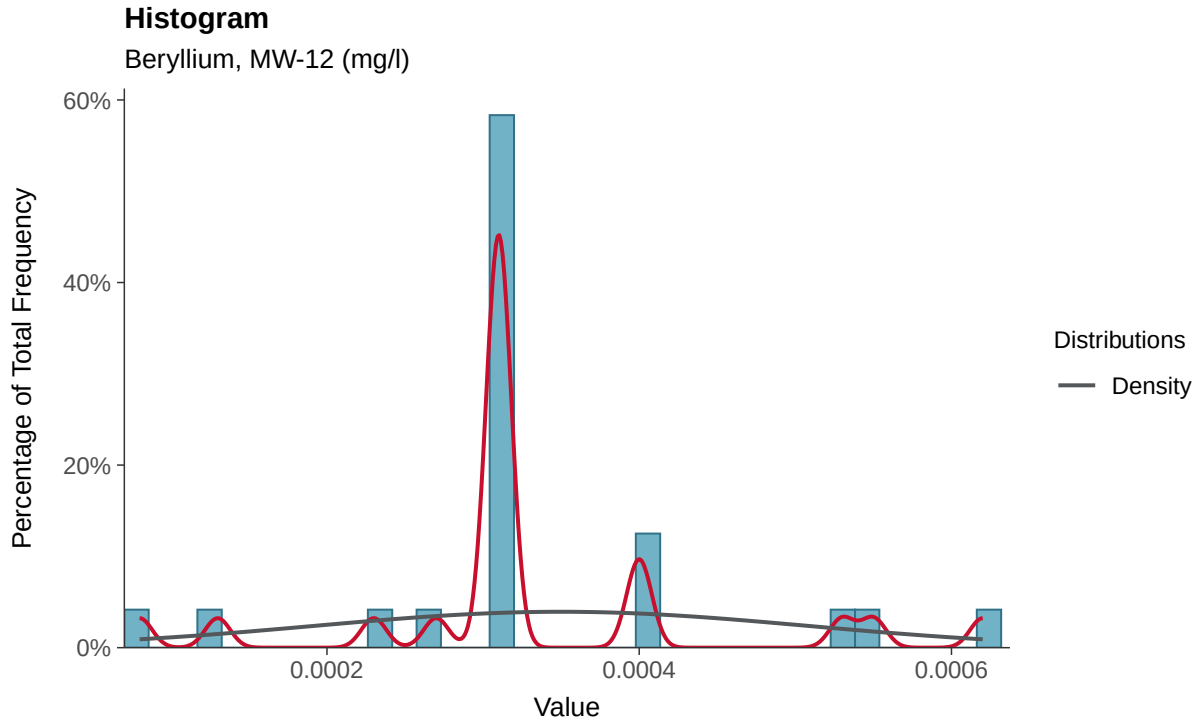
Barium, MW-12 (mg/l)



Appendix IV: Beryllium, MW-12

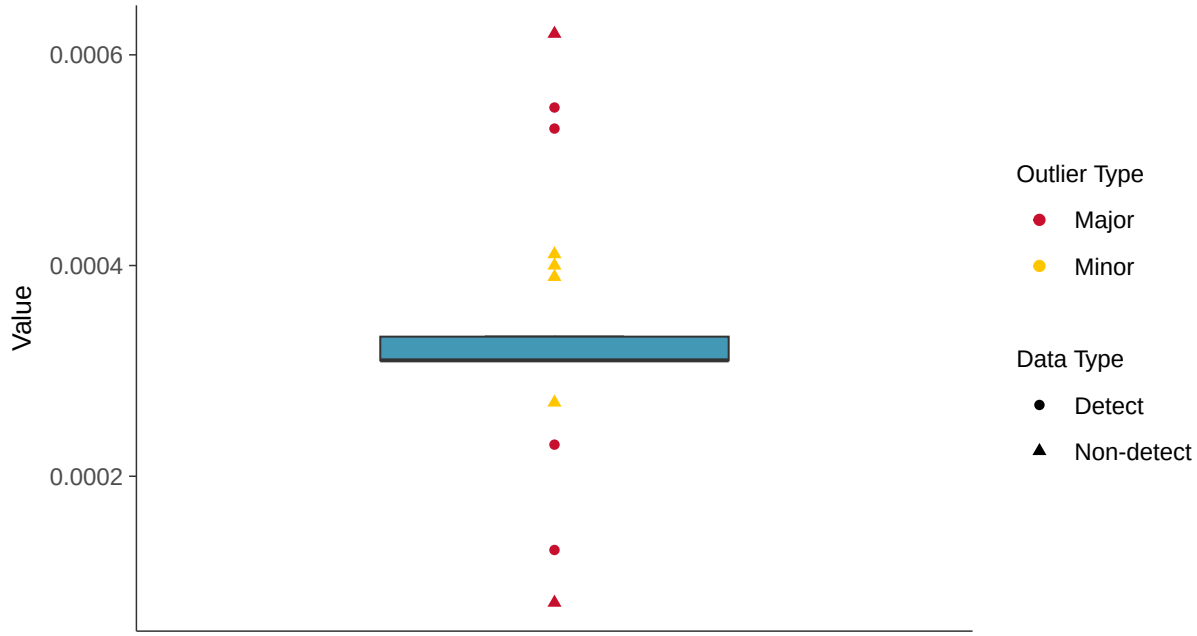
ID: 12_2_107





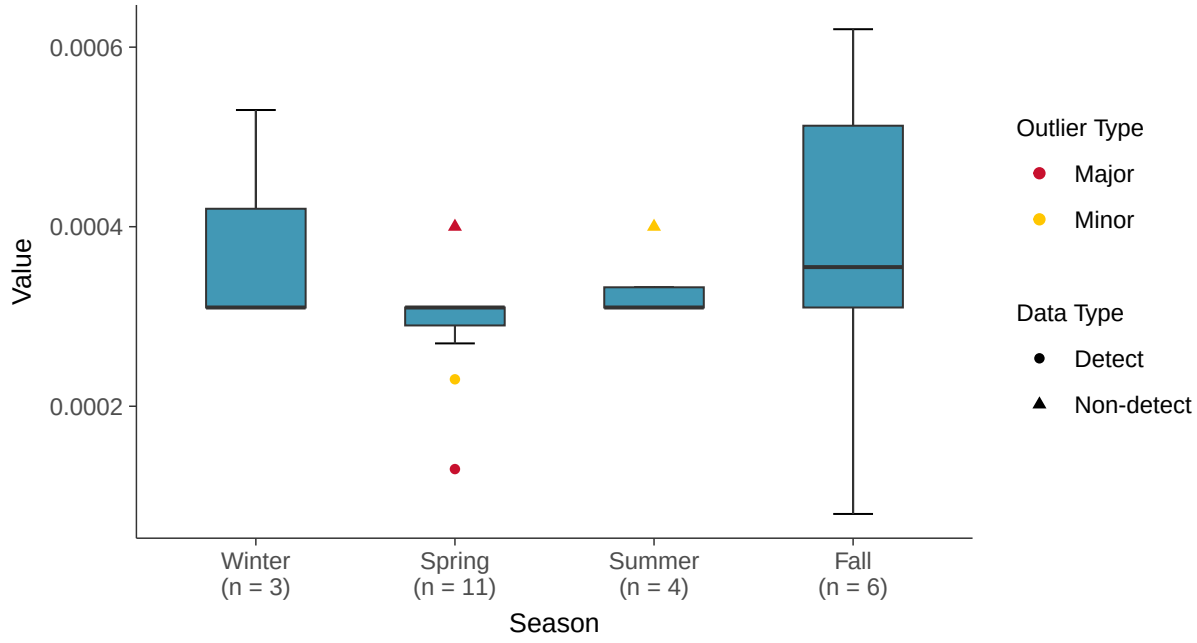
Boxplot

Beryllium, MW-12 (mg/l)



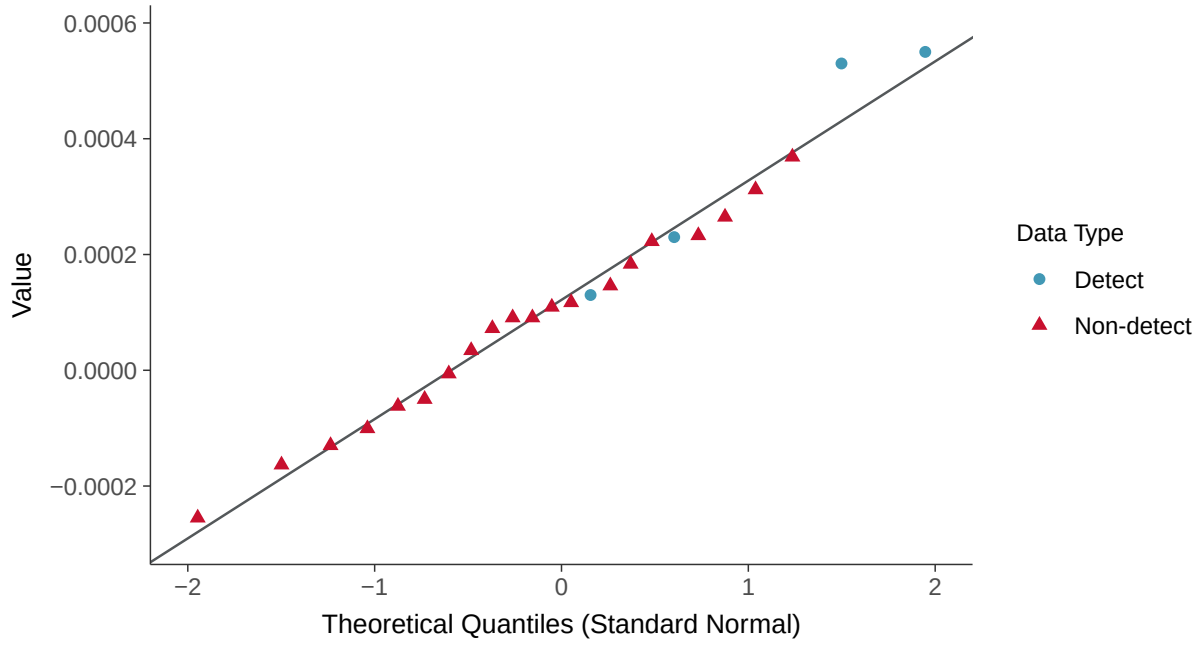
Boxplot by Season

Beryllium, MW-12 (mg/l)



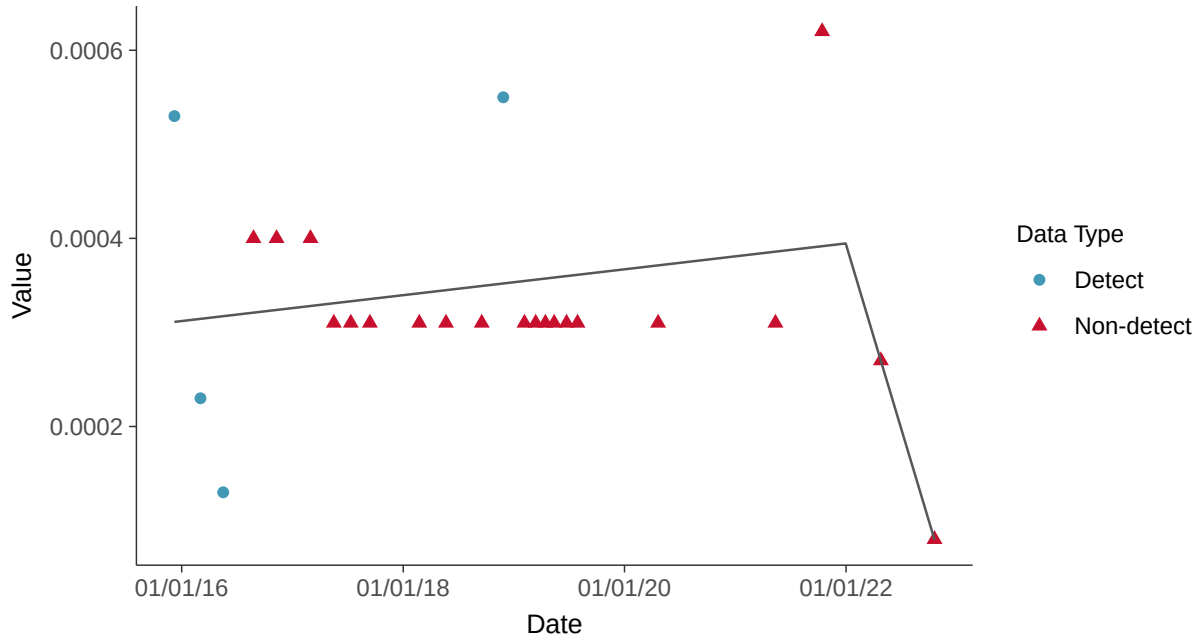
Normal Q-Q plot using ROS Imputed Estimates

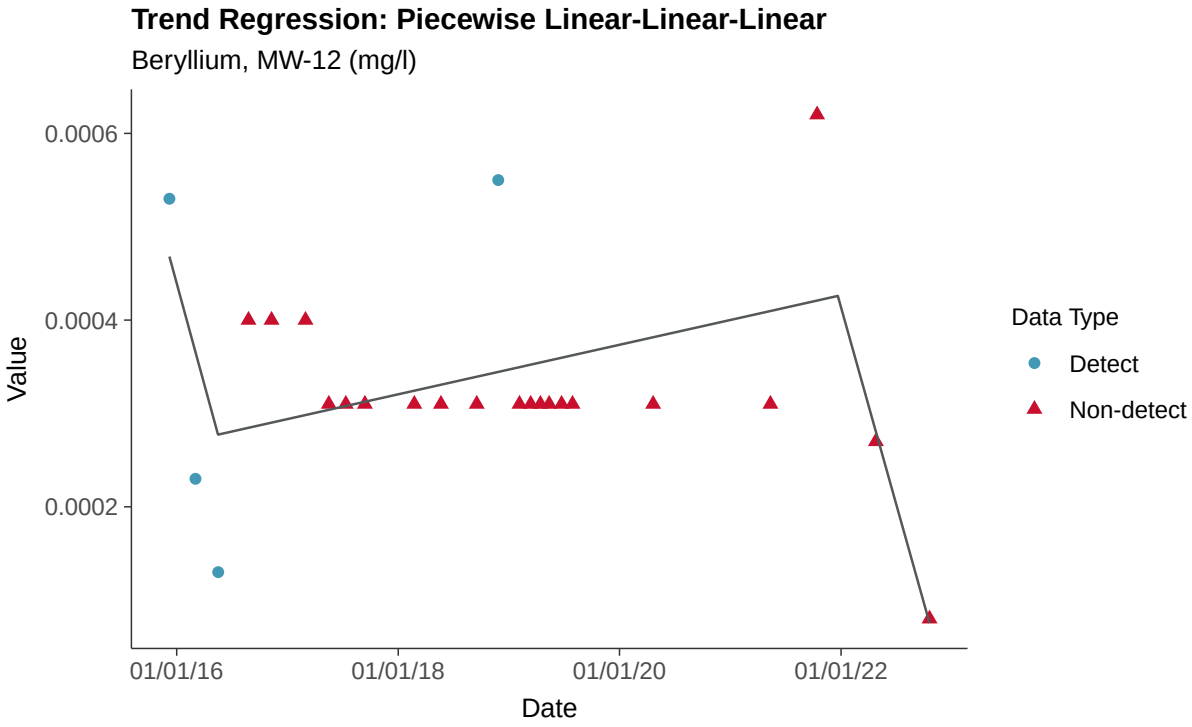
Beryllium, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear

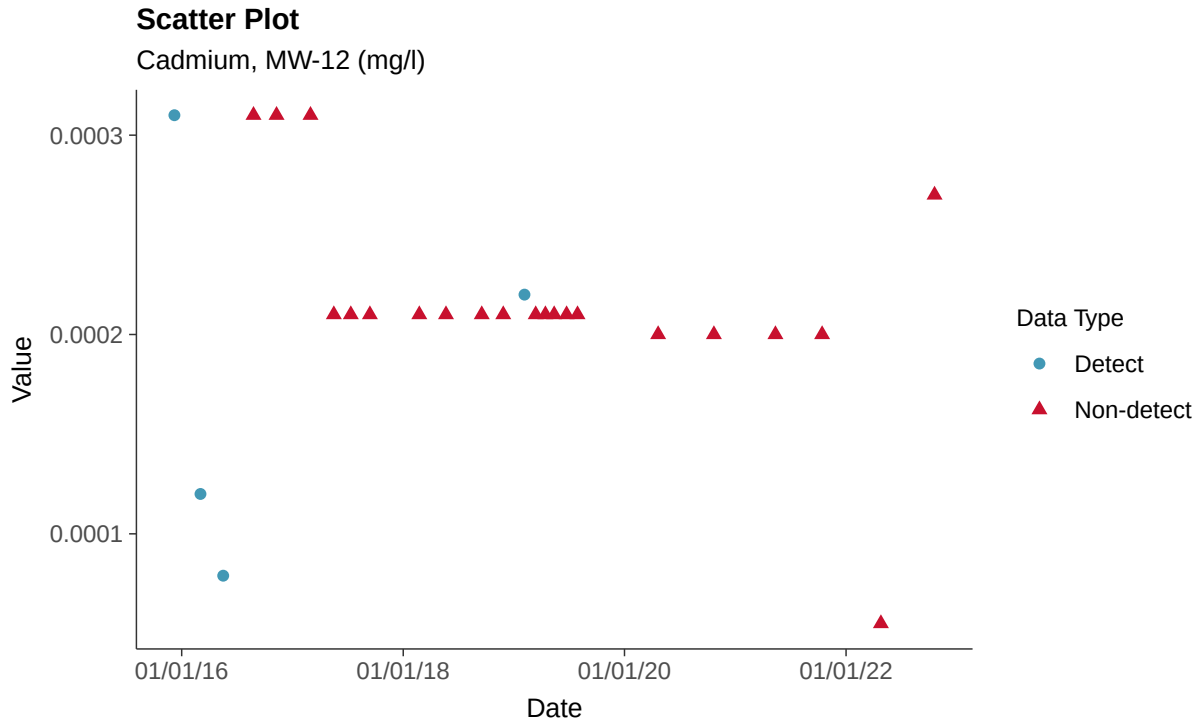
Beryllium, MW-12 (mg/l)

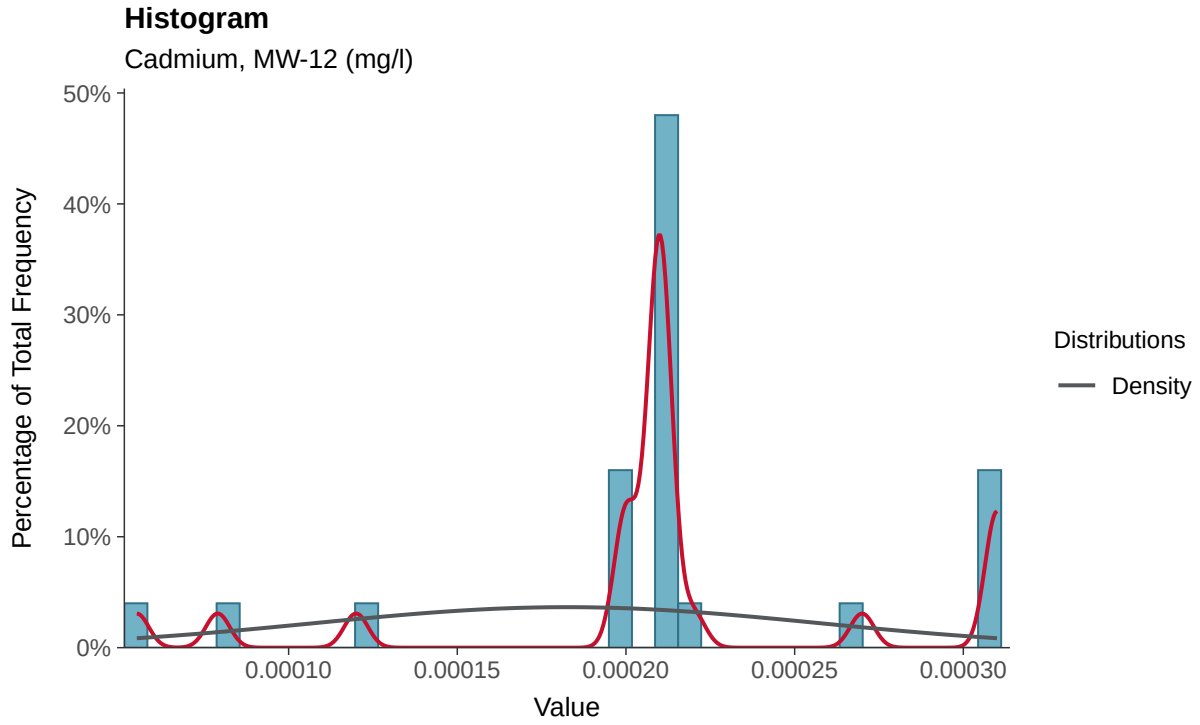



Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-12 (mg/l)
0.0006
0.0004
0.0002
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-12

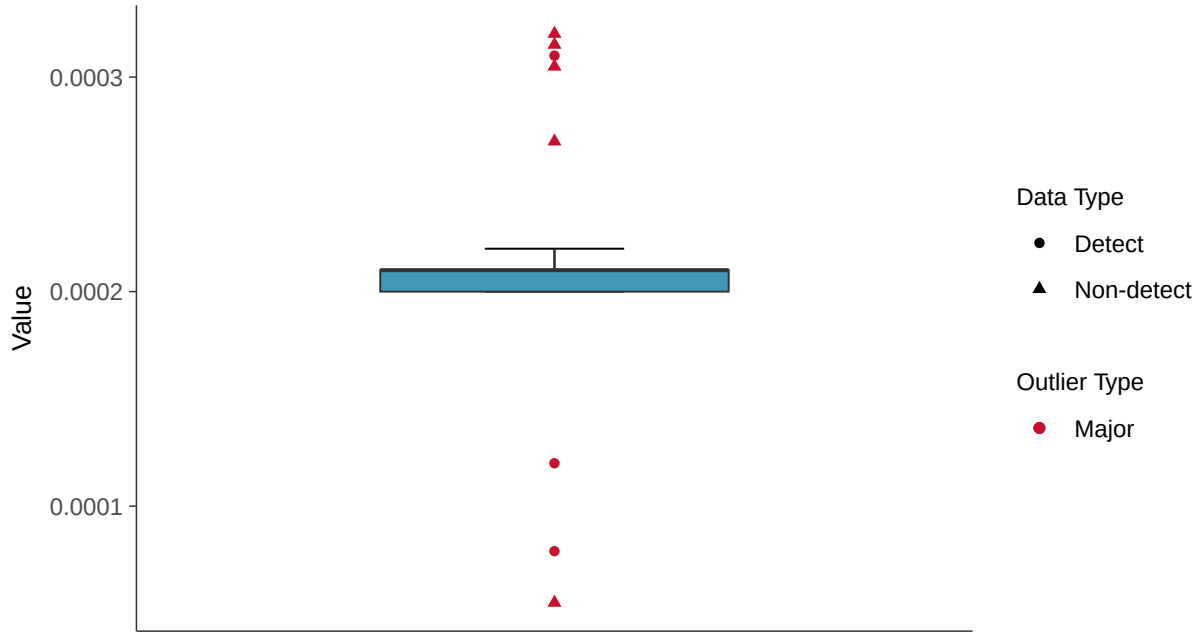
ID: 12_2_109





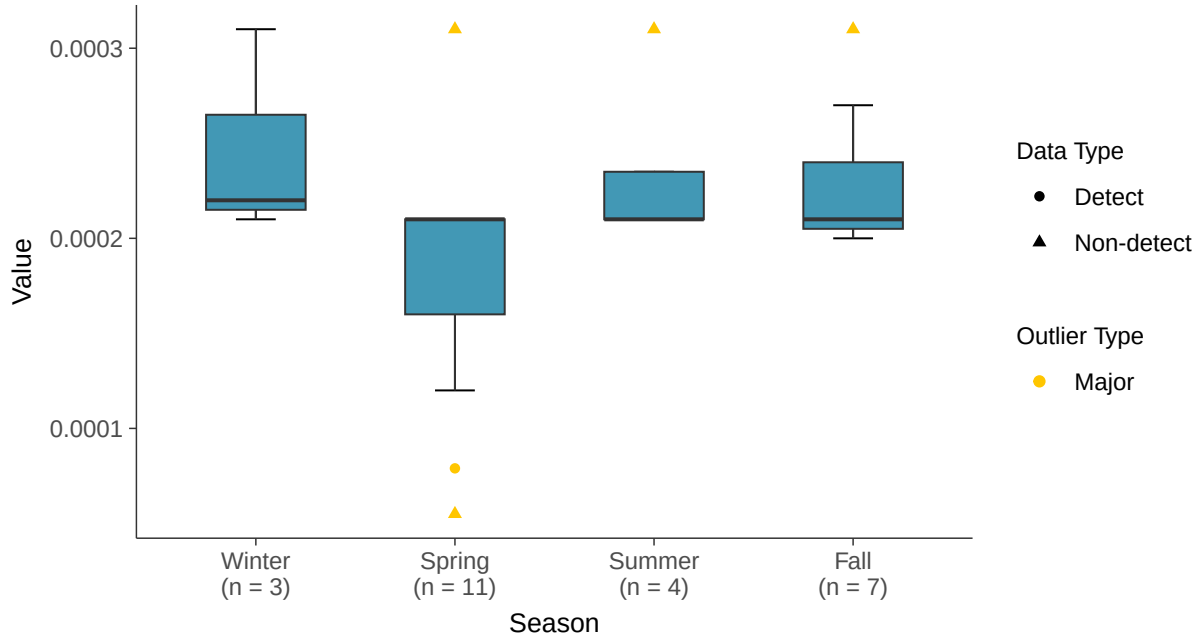
Boxplot

Cadmium, MW-12 (mg/l)



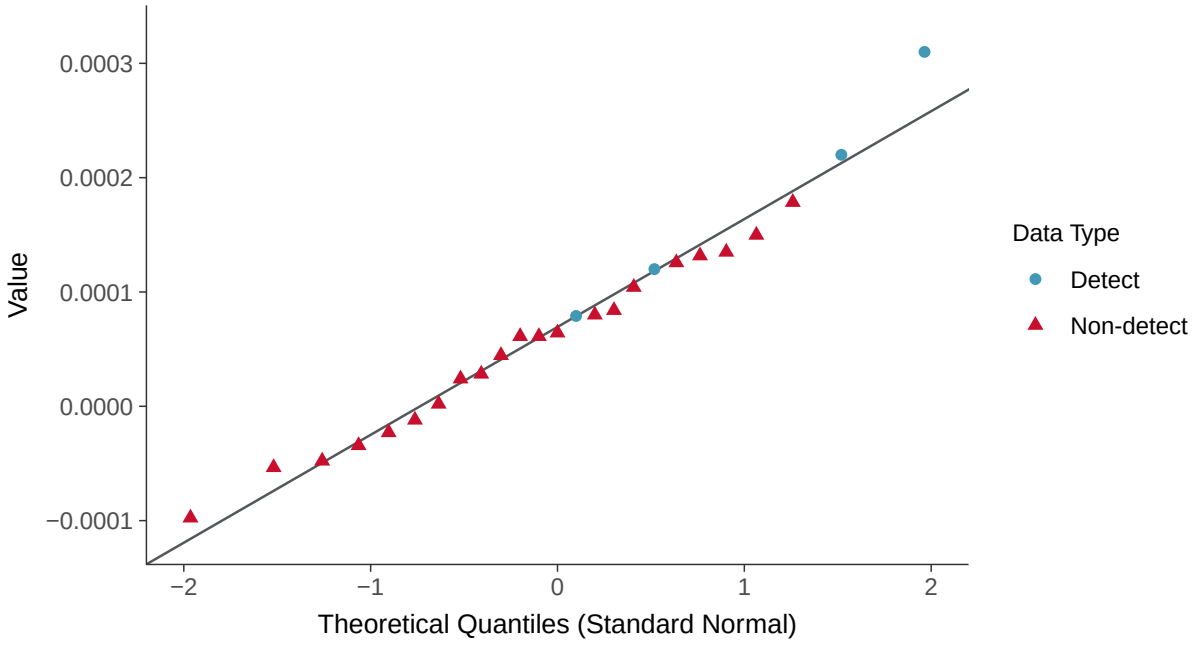
Boxplot by Season

Cadmium, MW-12 (mg/l)



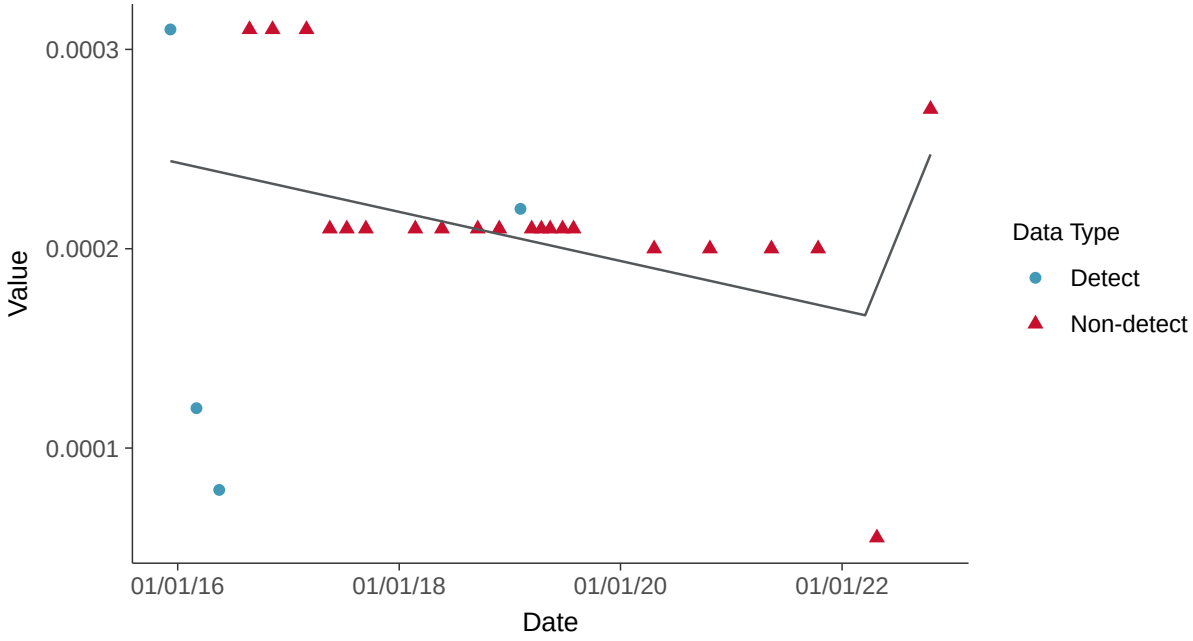
Normal Q-Q plot using ROS Imputed Estimates

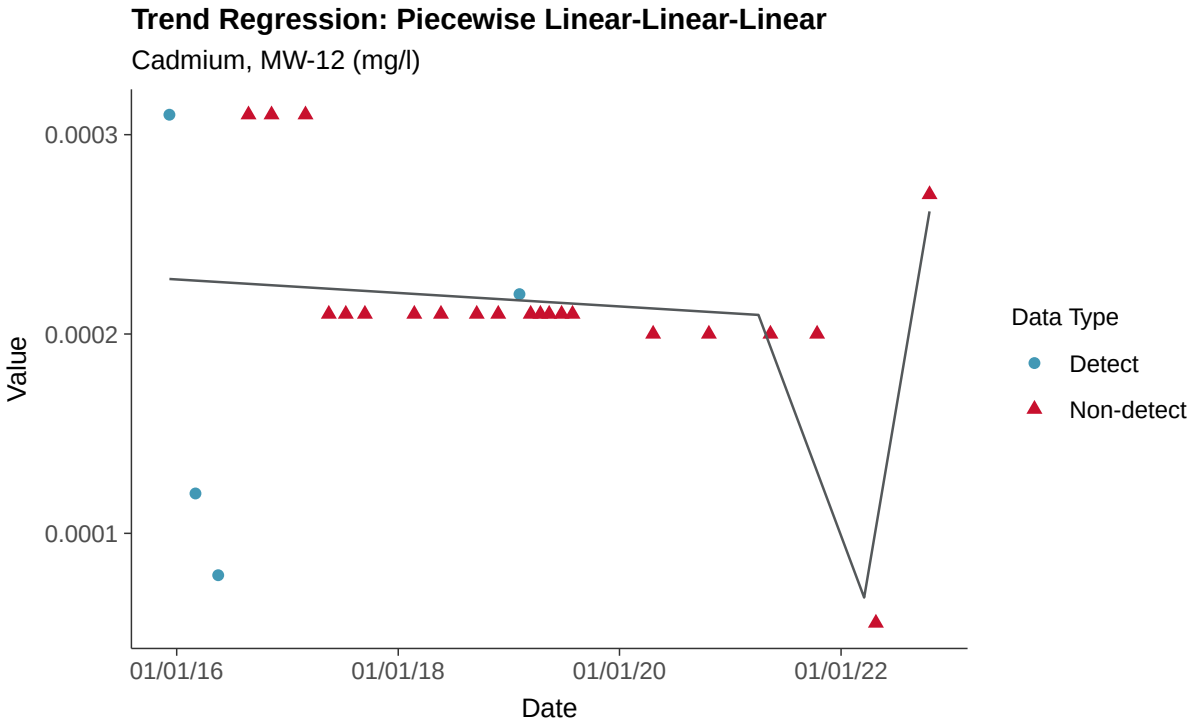
Cadmium, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cadmium, MW-12 (mg/l)



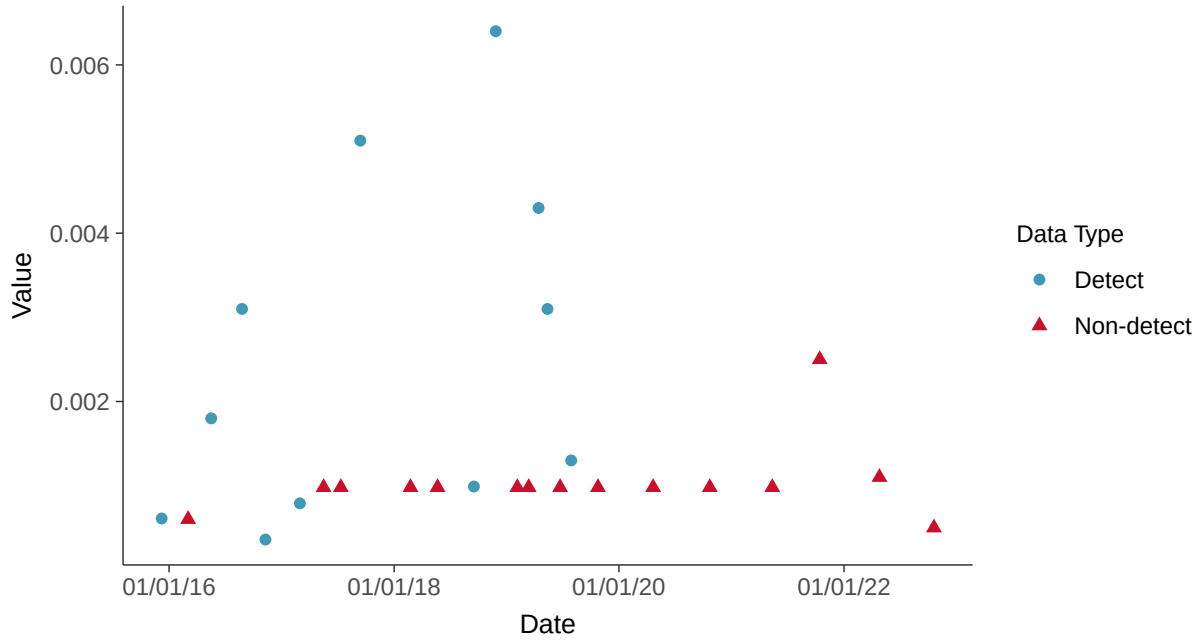

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-12 (mg/l)
0.0003
0.0002
0.0001
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-12

ID: 12_2_112

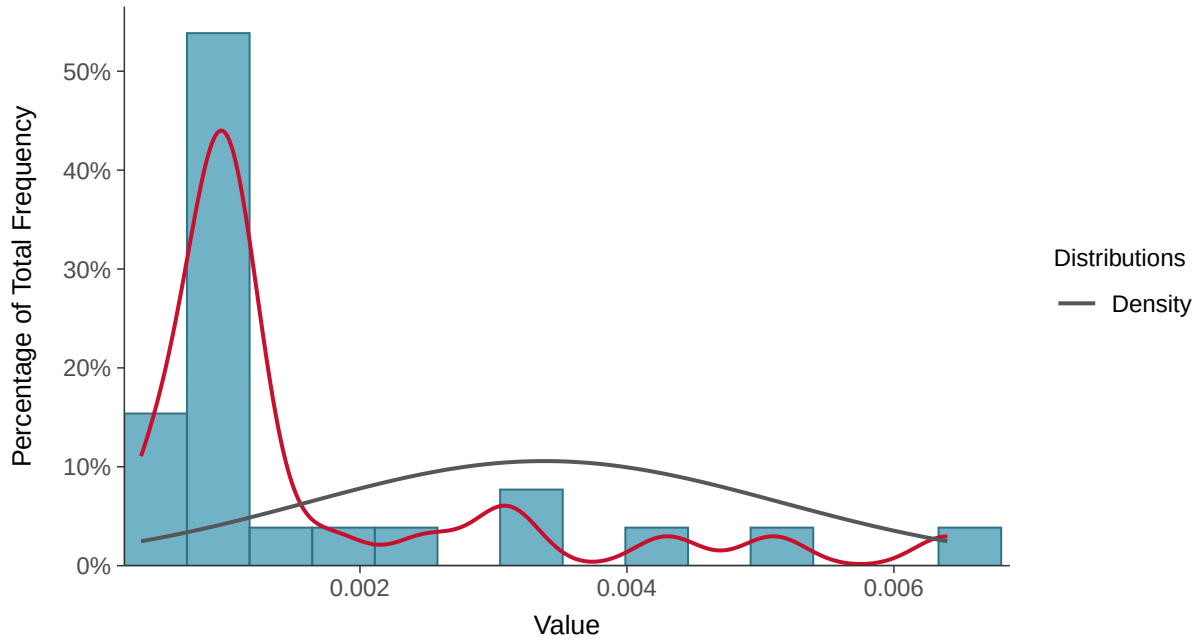
Scatter Plot

Chromium, Total, MW-12 (mg/l)



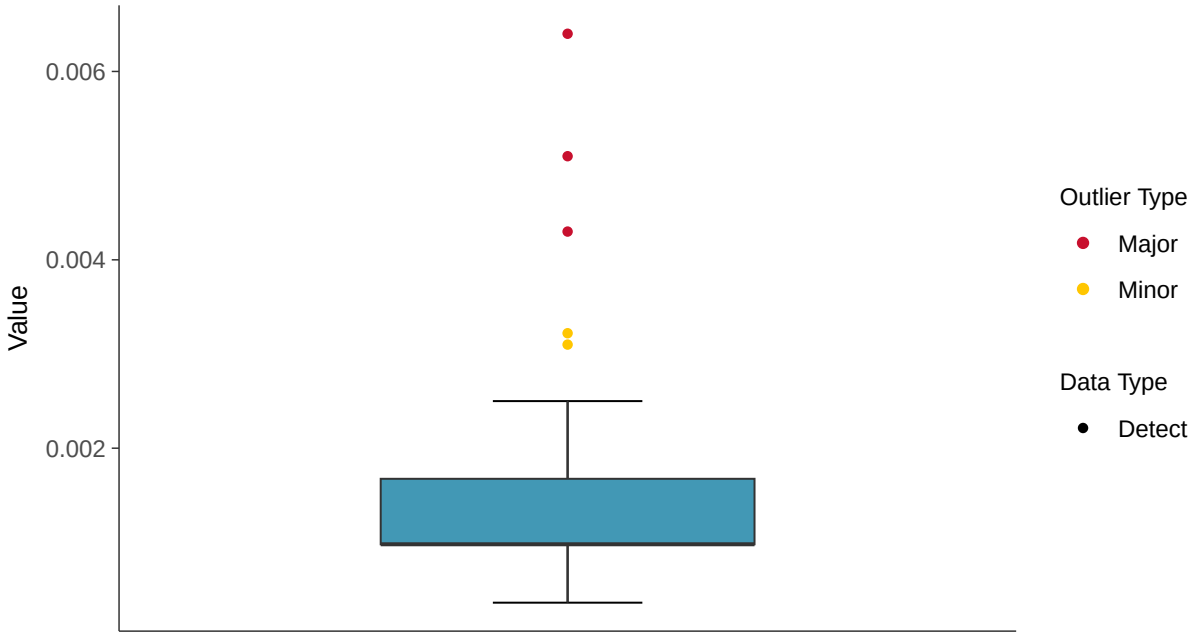
Histogram

Chromium, Total, MW-12 (mg/l)



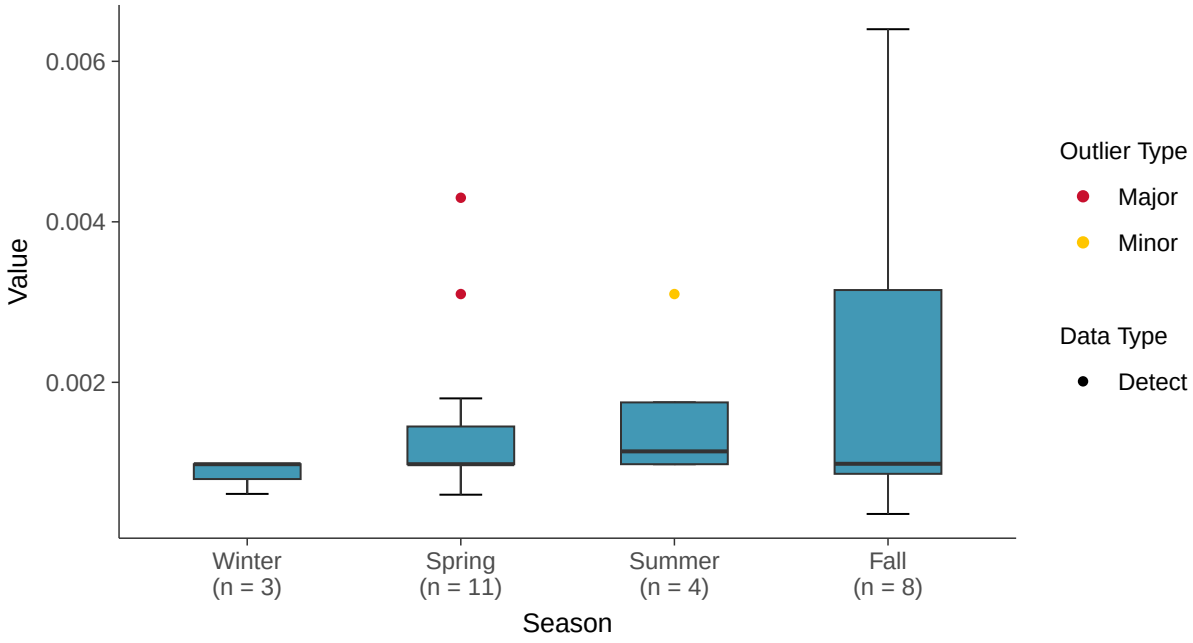
Boxplot

Chromium, Total, MW-12 (mg/l)



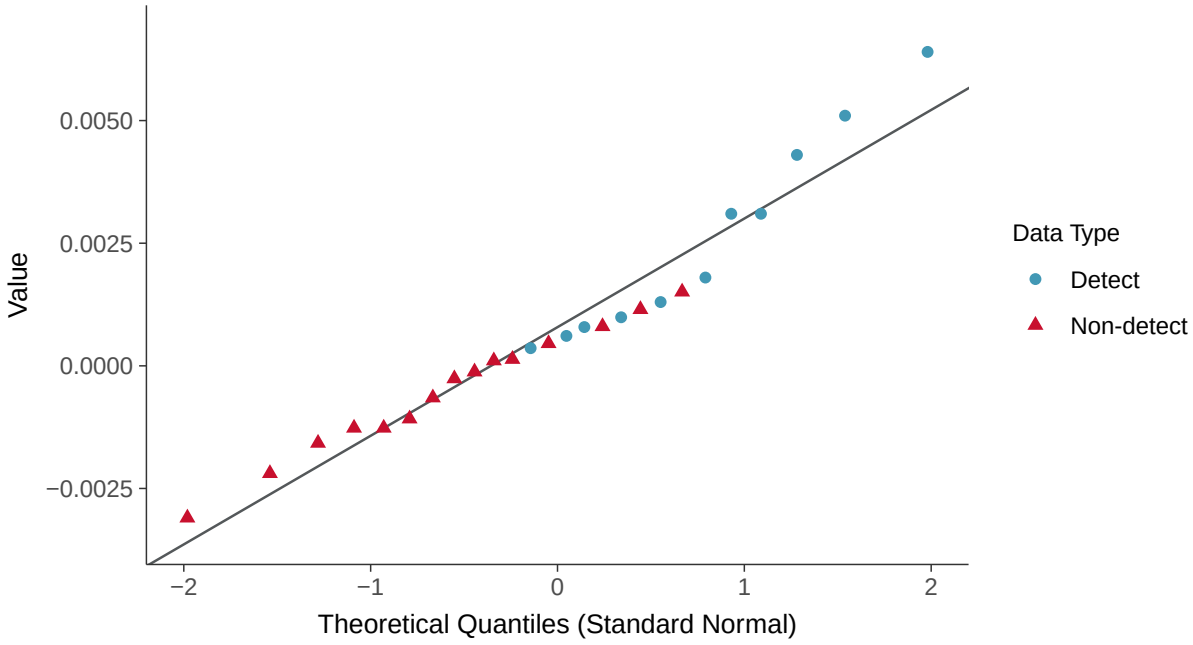
Boxplot by Season

Chromium, Total, MW-12 (mg/l)



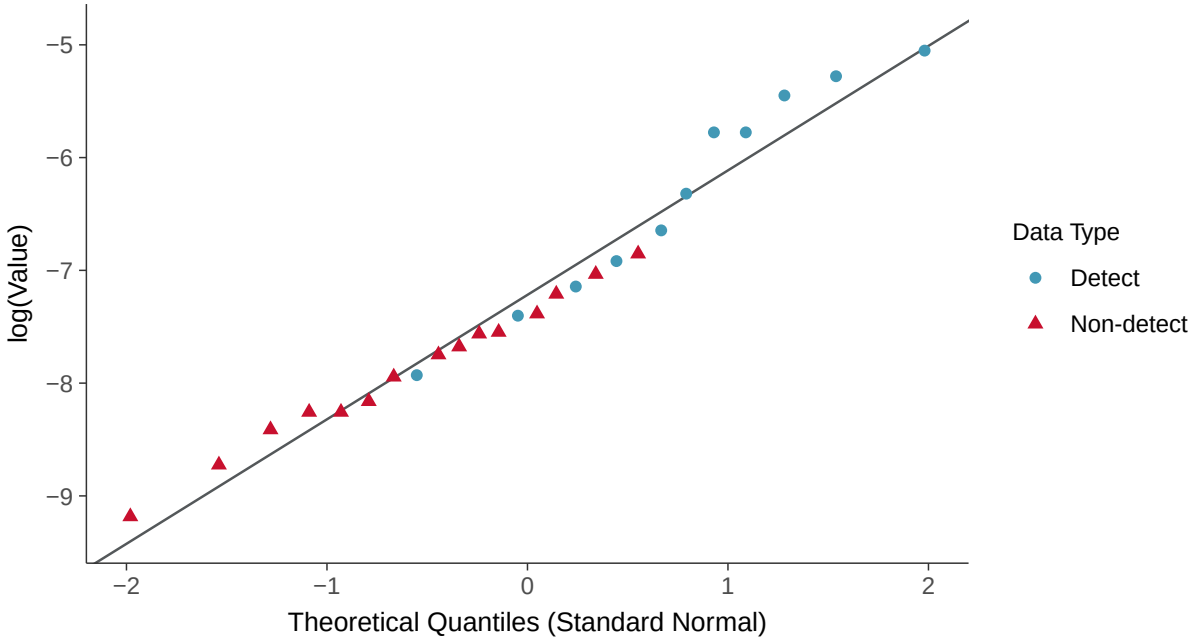
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-12 (mg/l)



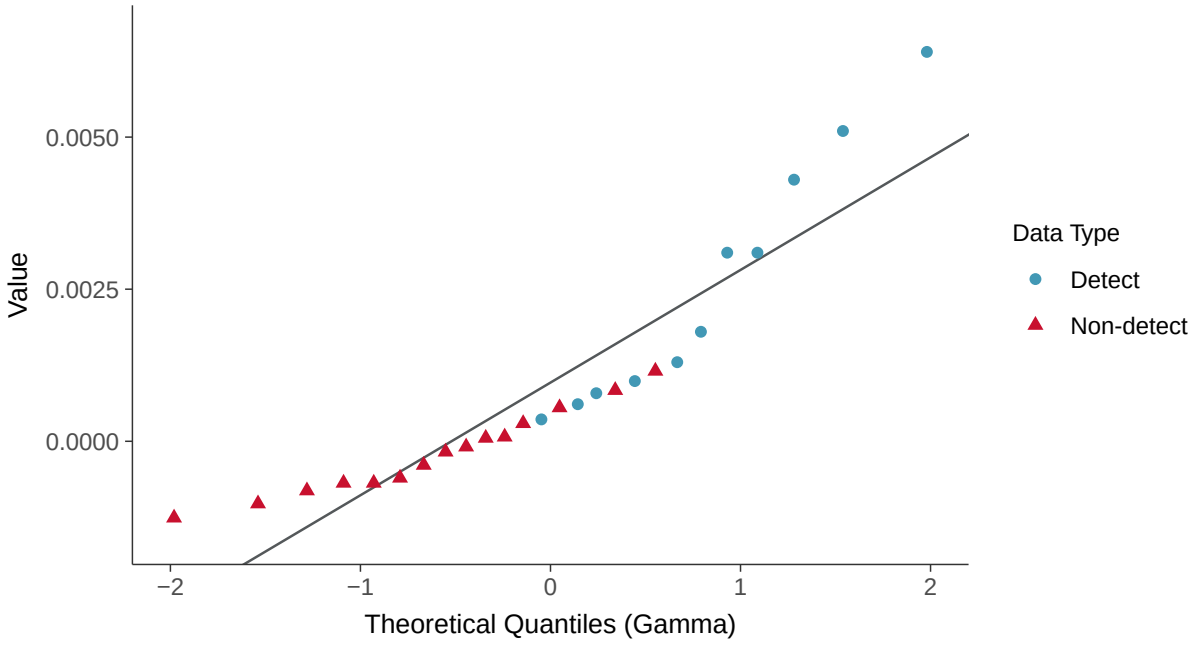
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-12 (mg/l)



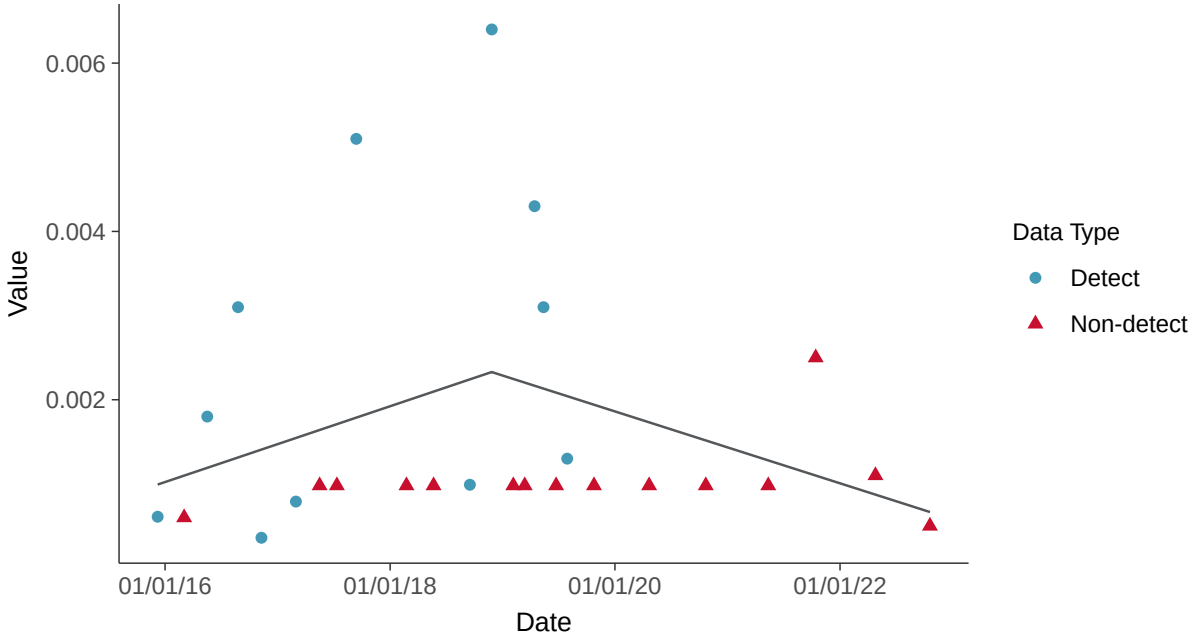
Gamma Q-Q plot using ROS Imputed Estimates

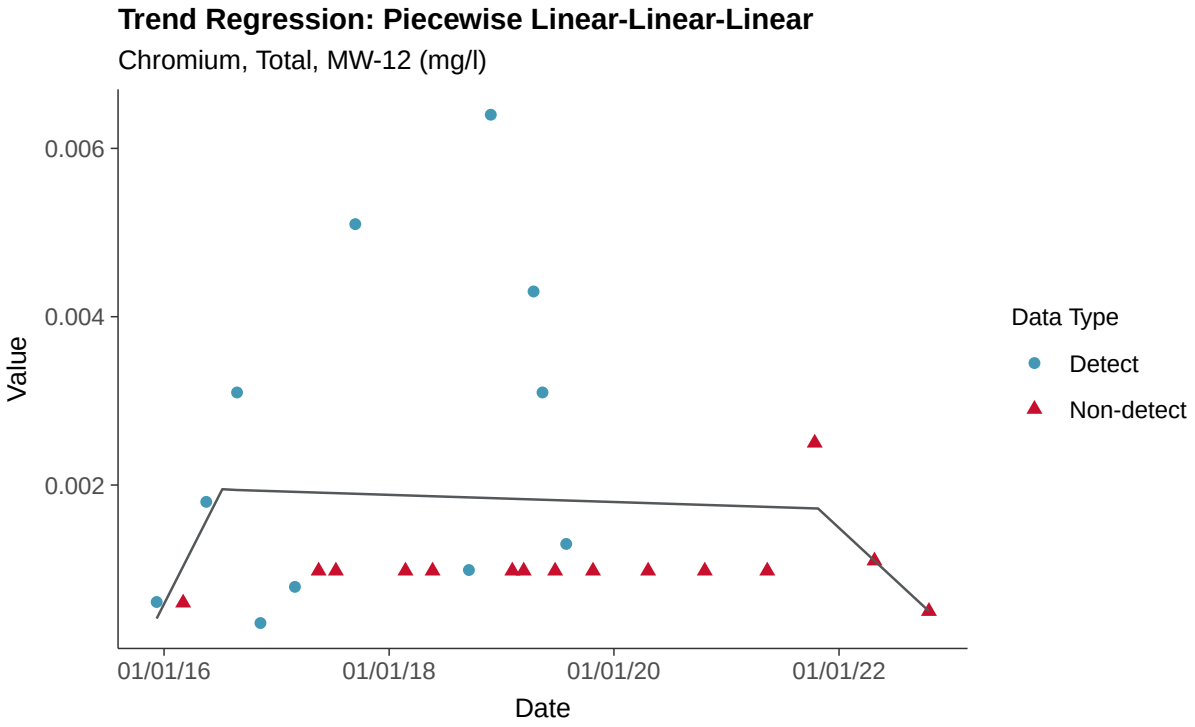
Chromium, Total, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear

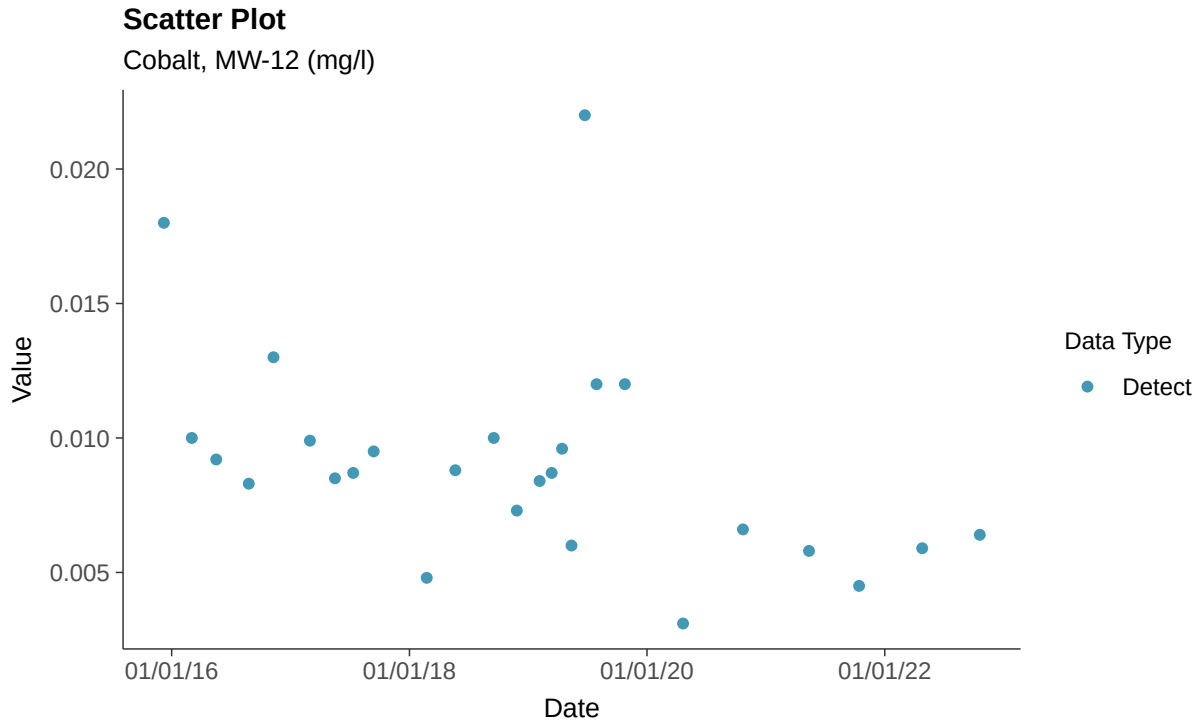
Chromium, Total, MW-12 (mg/l)

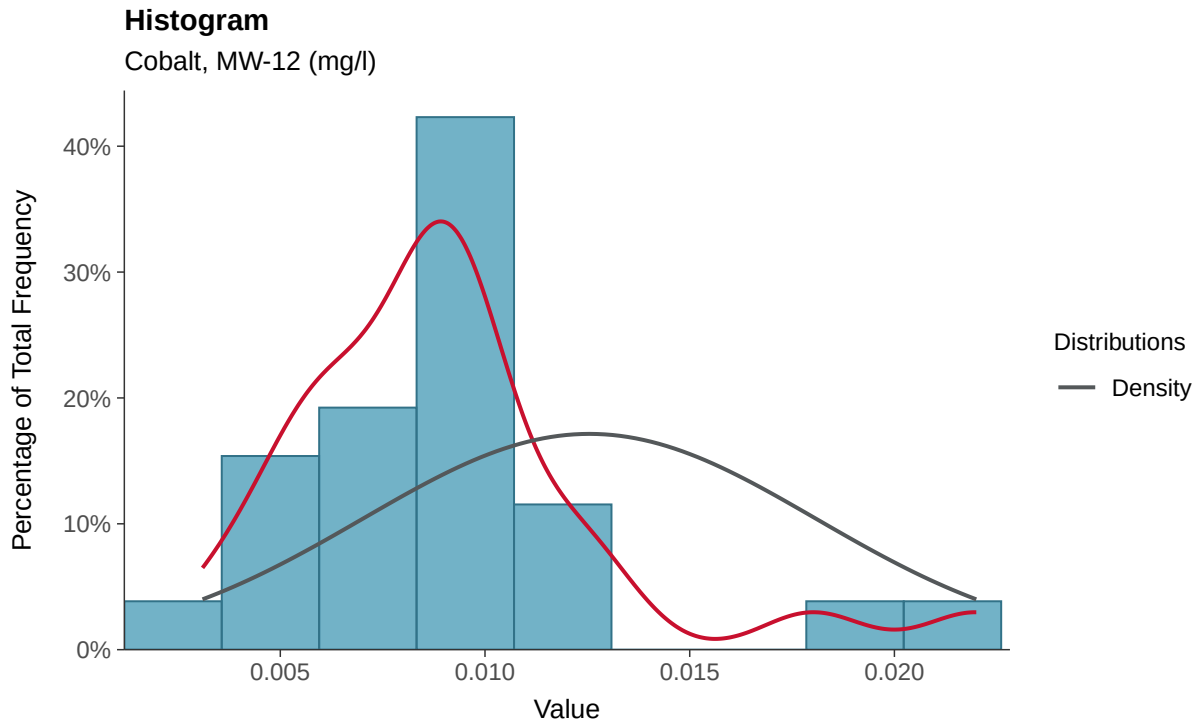



Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-12 (mg/l)
0.006
0.004
0.002
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Cobalt, MW-12

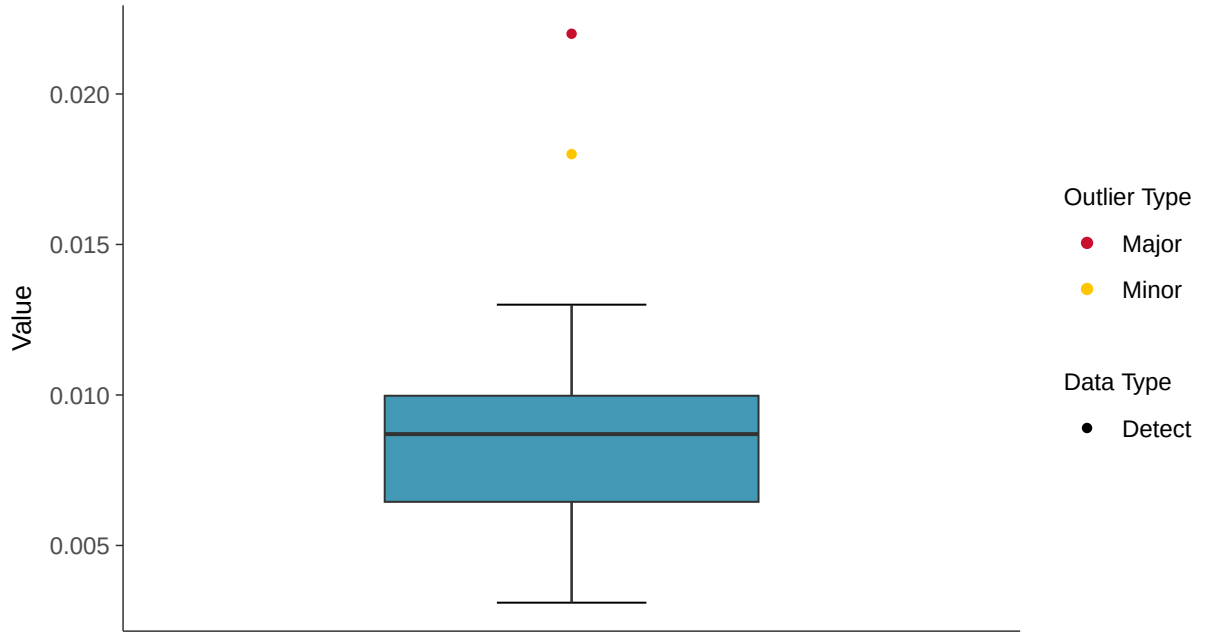
ID: 12_2_113





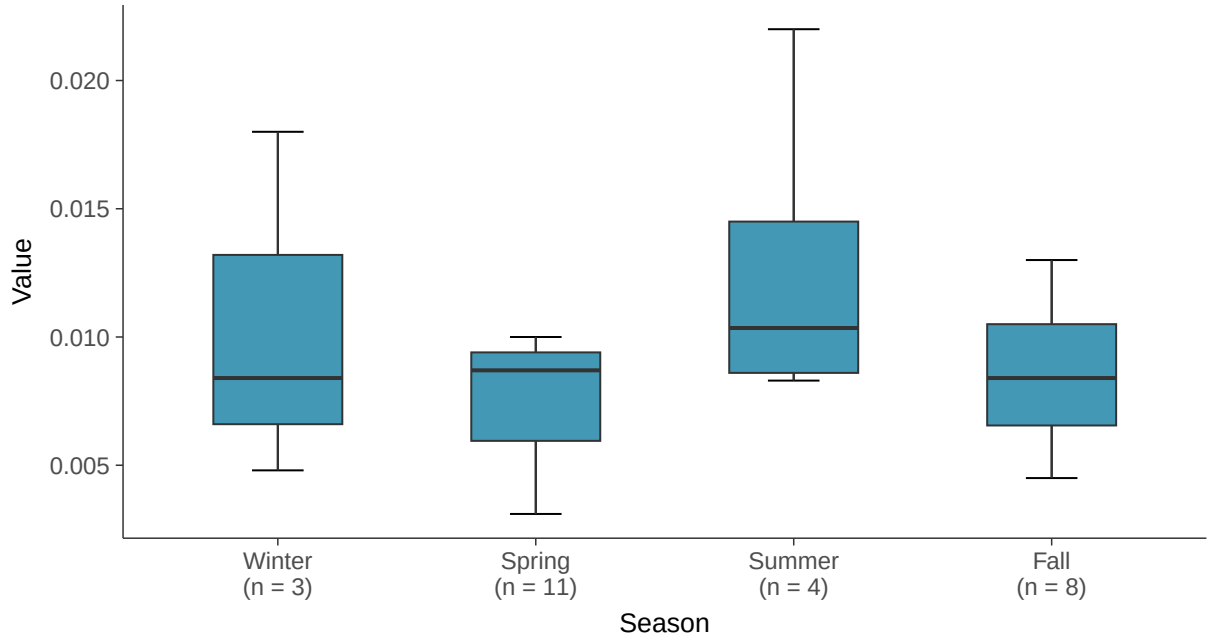
Boxplot

Cobalt, MW-12 (mg/l)



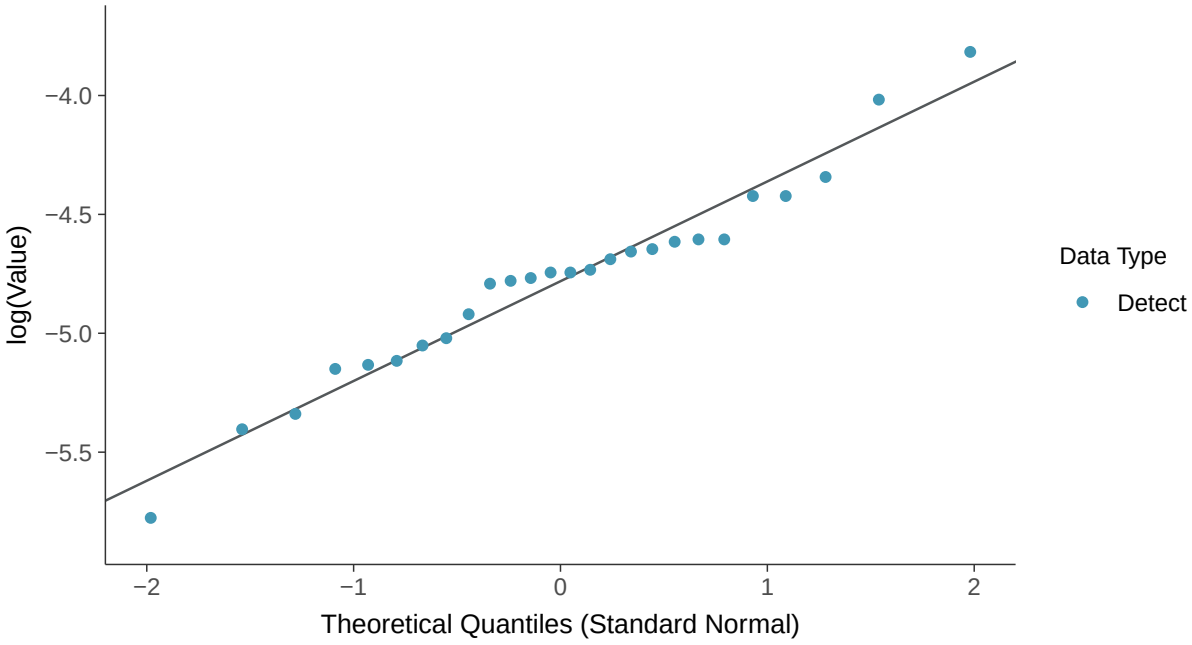
Boxplot by Season

Cobalt, MW-12 (mg/l)



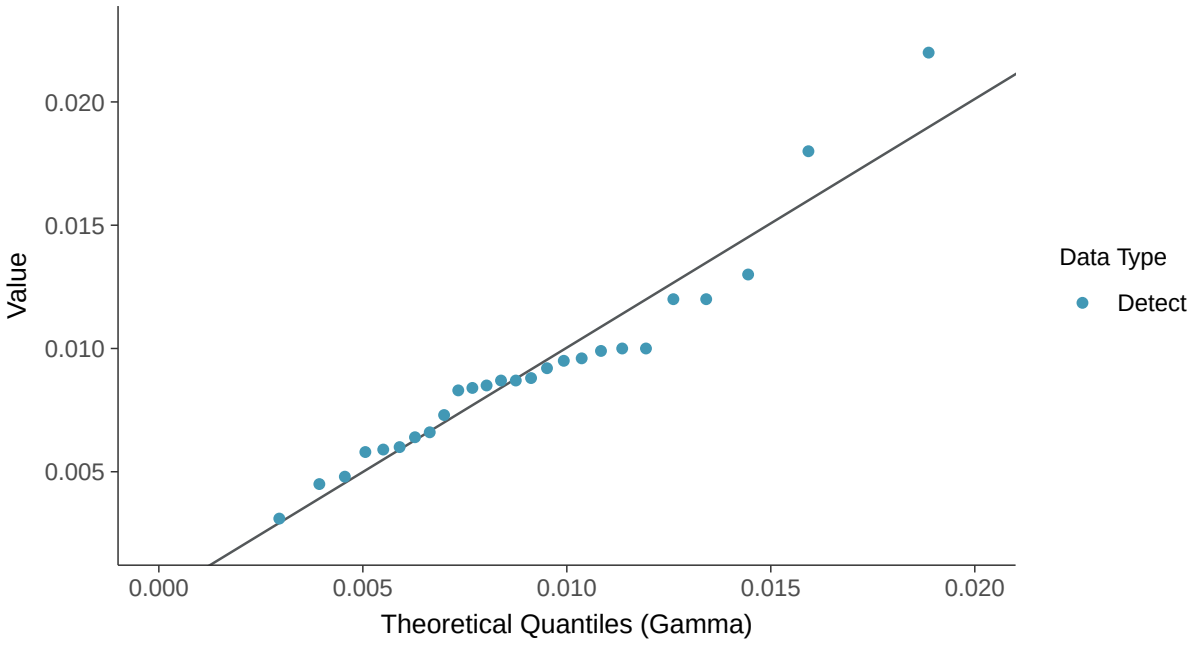
Lognormal Q-Q plot

Cobalt, MW-12 (mg/l)



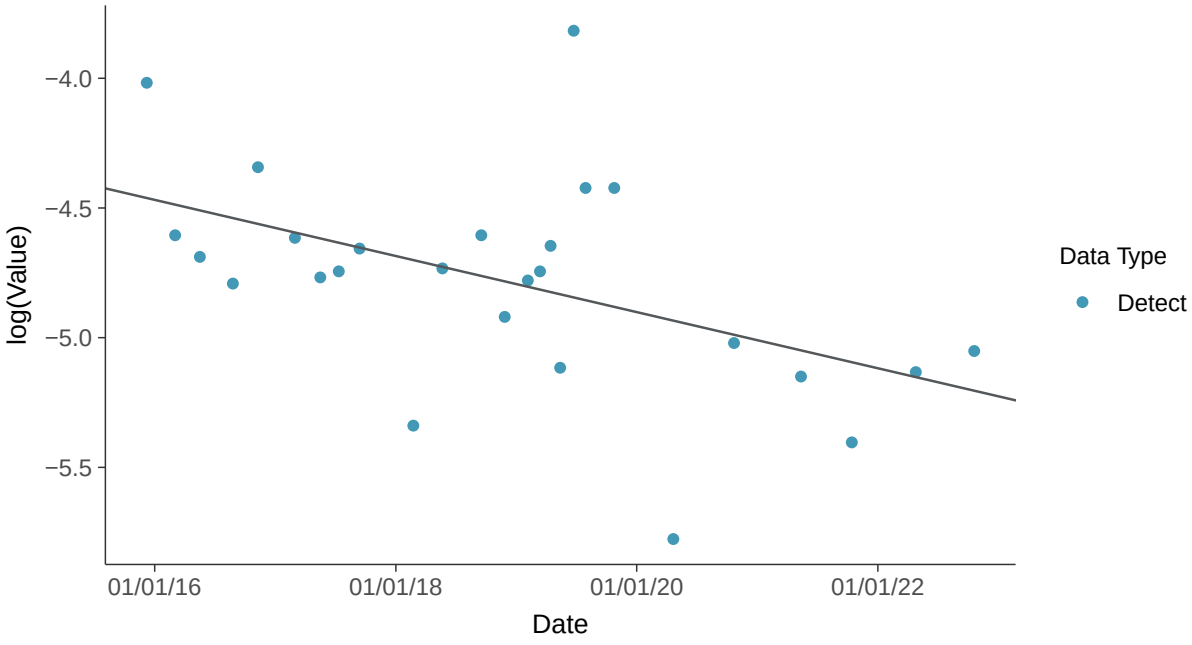
Gamma Q-Q plot

Cobalt, MW-12 (mg/l)



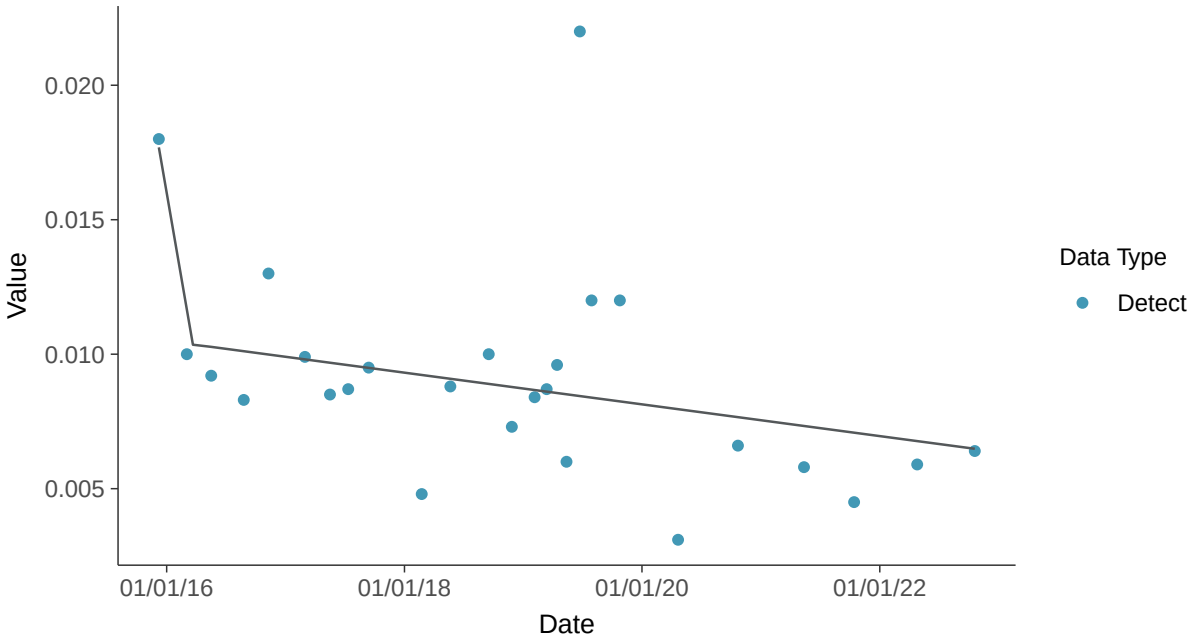
Trend Regression: Lognormal MLE

Cobalt, MW-12 (mg/l)



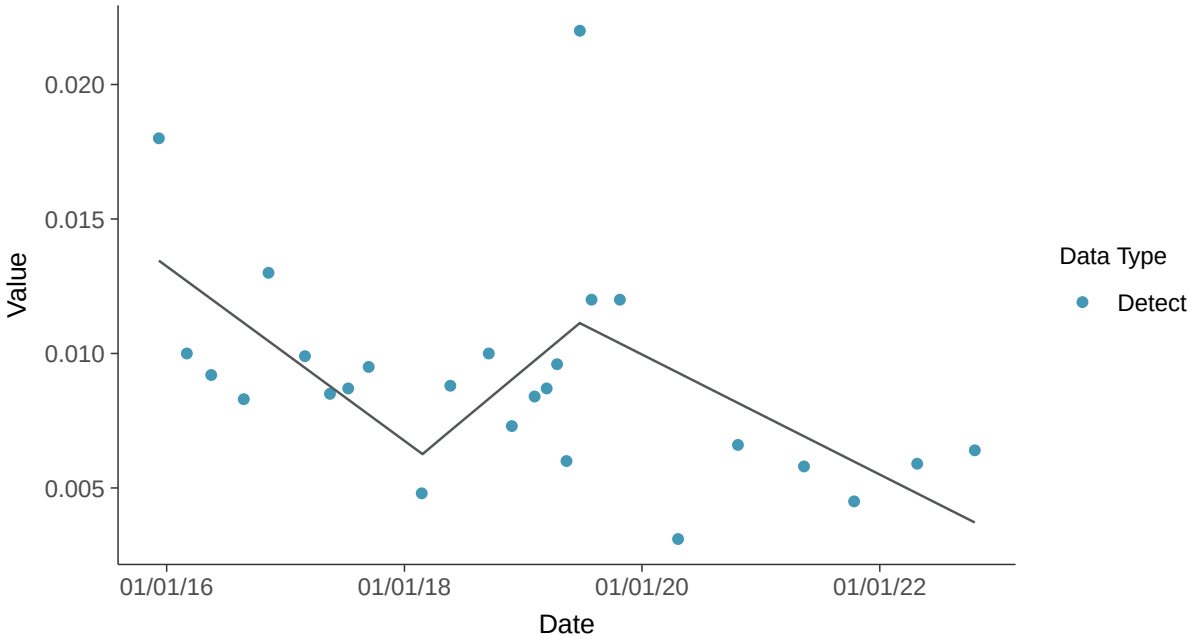
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-12 (mg/l)



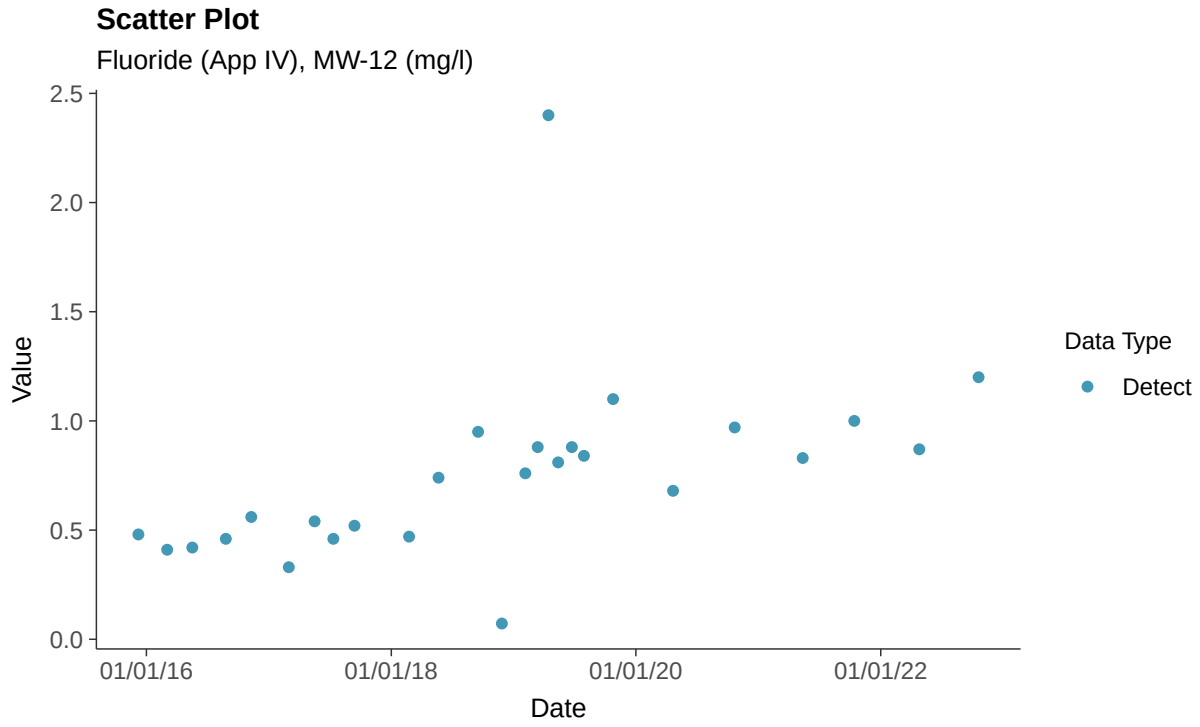
Trend Regression: Piecewise Linear-Linear-Linear

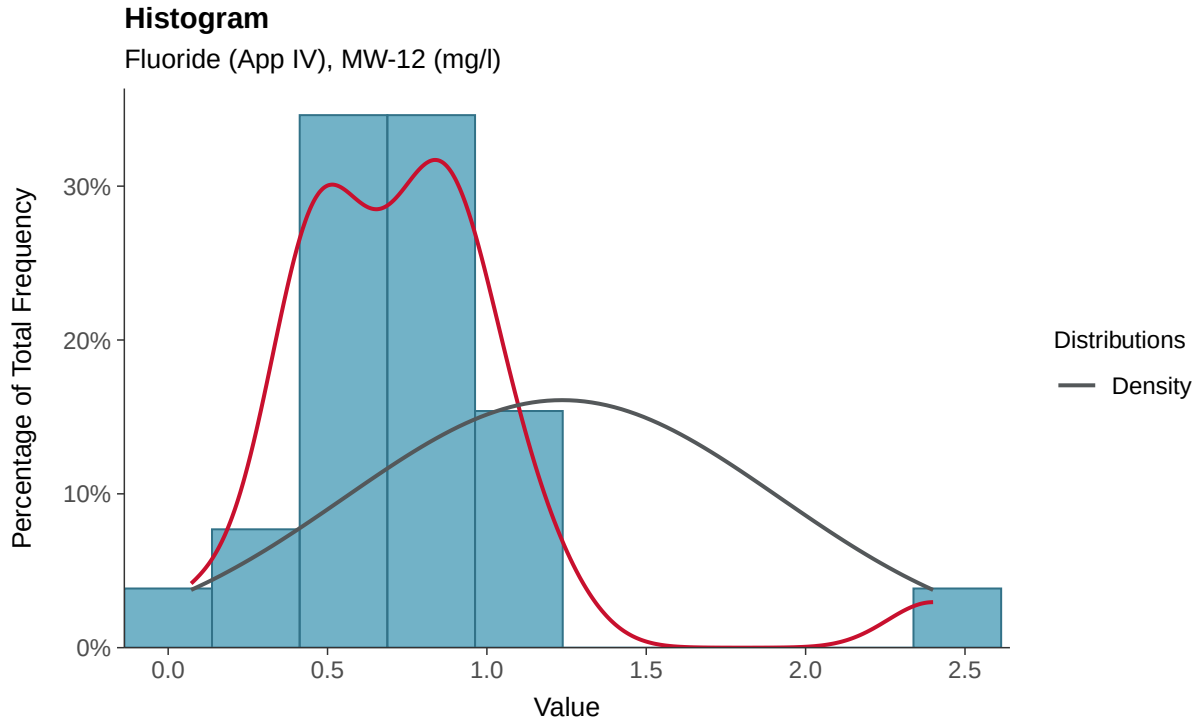
Cobalt, MW-12 (mg/l)



Appendix IV: Fluoride (App IV), MW-12

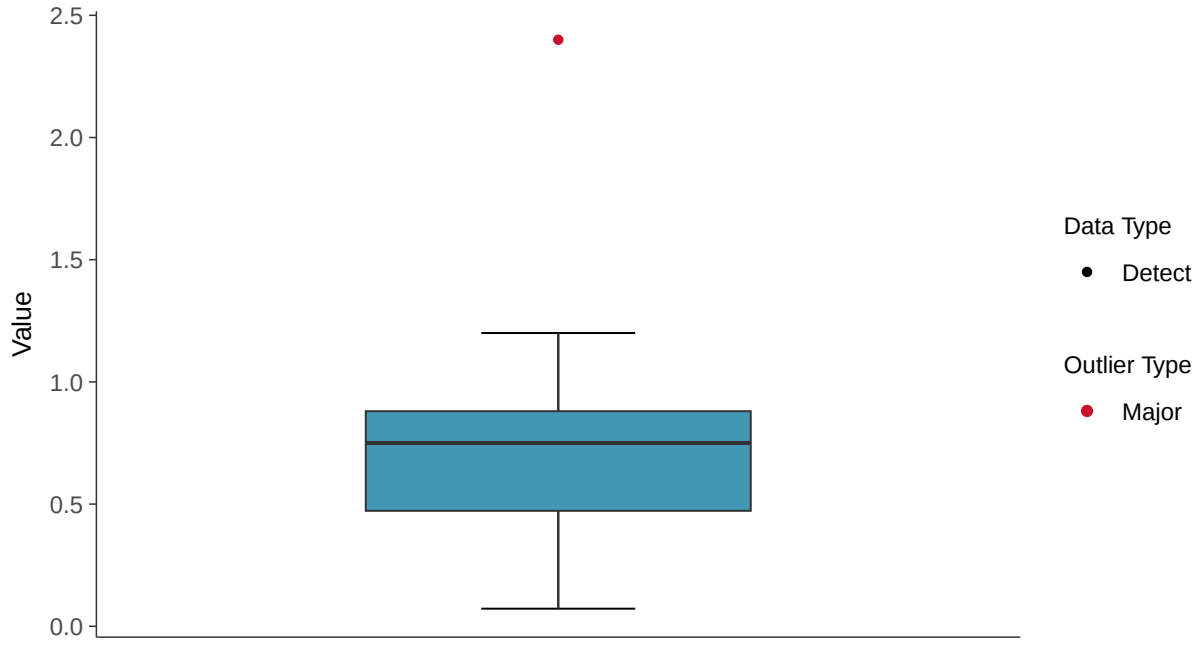
ID: 12_2_116





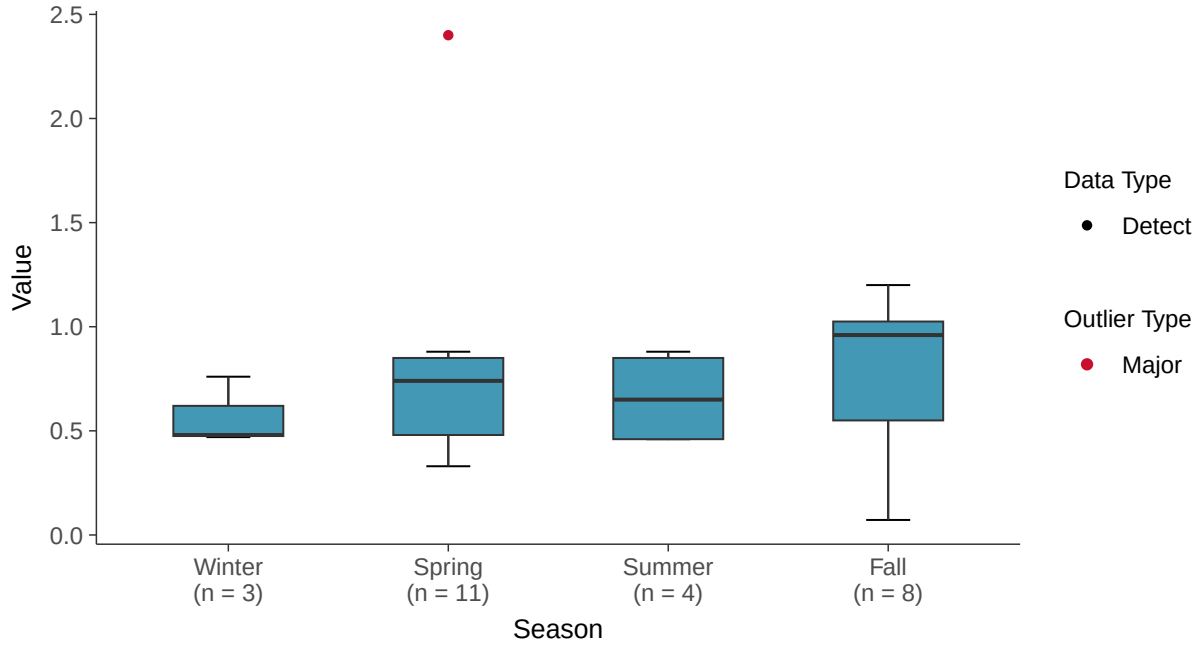
Boxplot

Fluoride (App IV), MW-12 (mg/l)



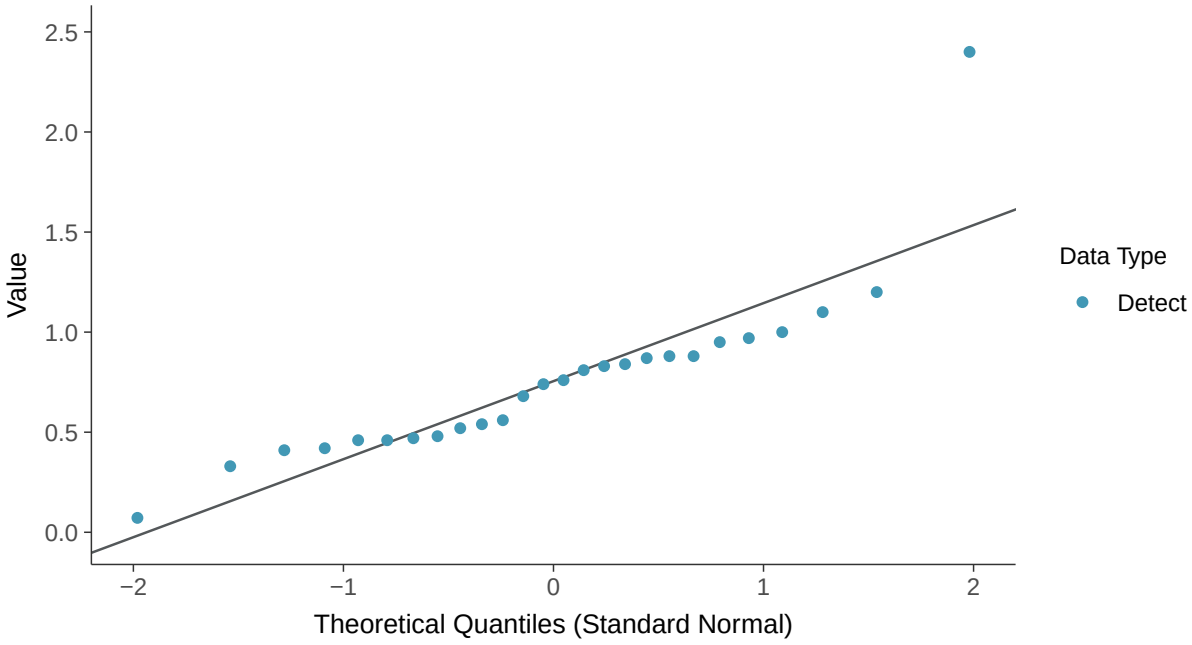
Boxplot by Season

Fluoride (App IV), MW-12 (mg/l)



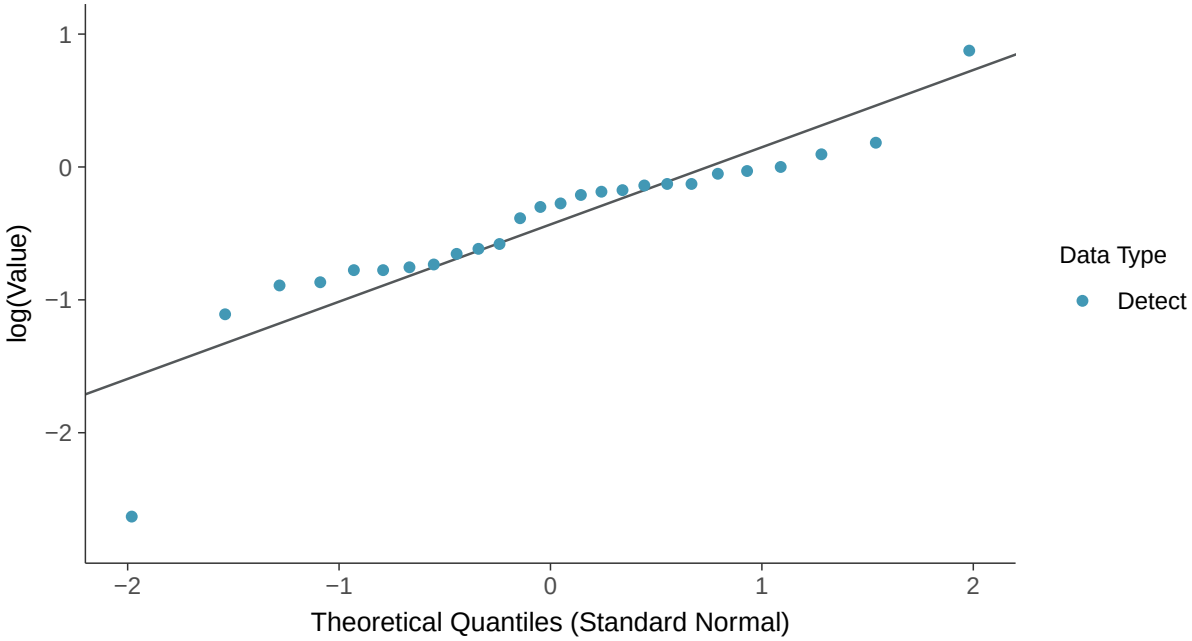
Normal Q-Q plot

Fluoride (App IV), MW-12 (mg/l)



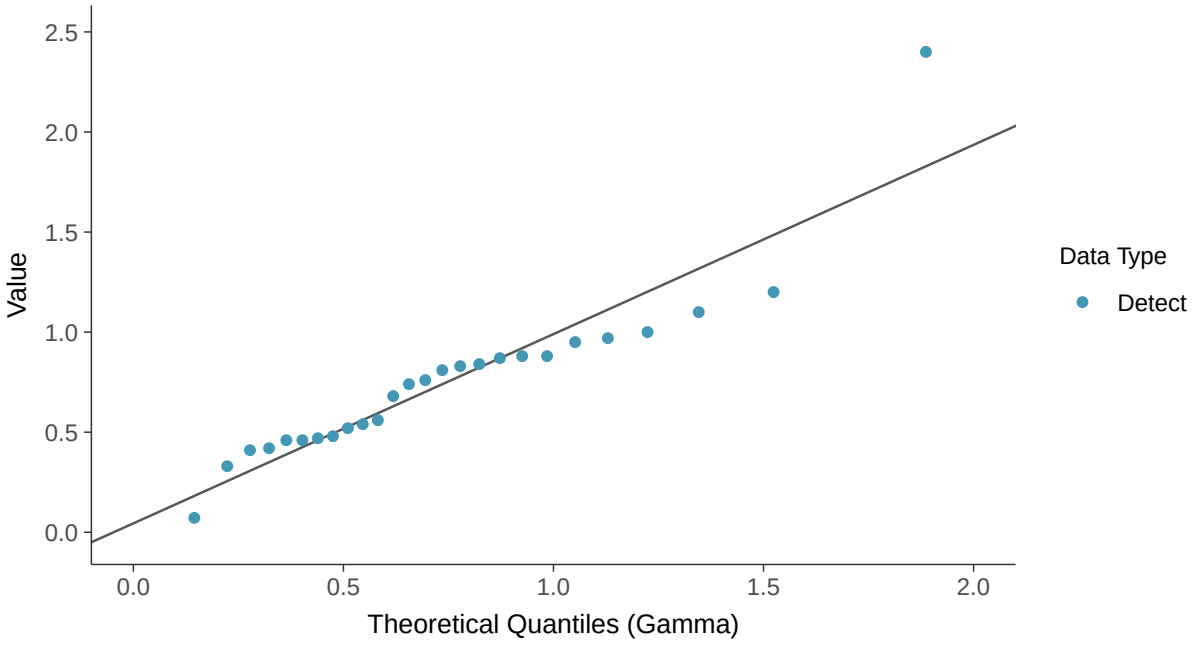
Lognormal Q-Q plot

Fluoride (App IV), MW-12 (mg/l)



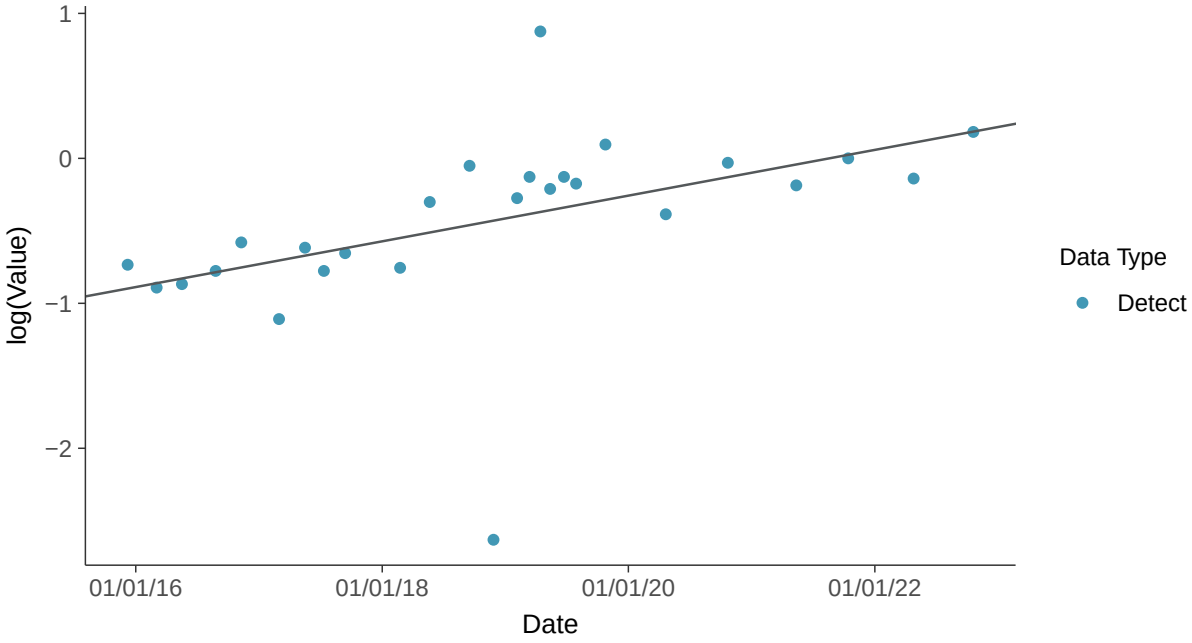
Gamma Q-Q plot

Fluoride (App IV), MW-12 (mg/l)



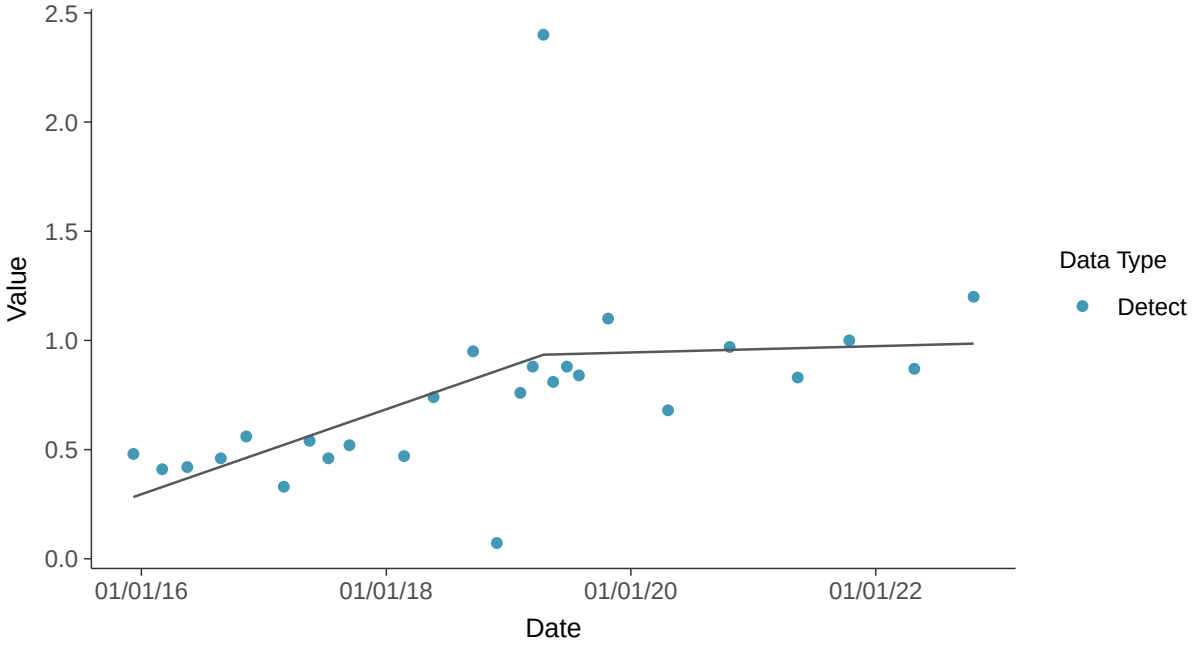
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-12 (mg/l)



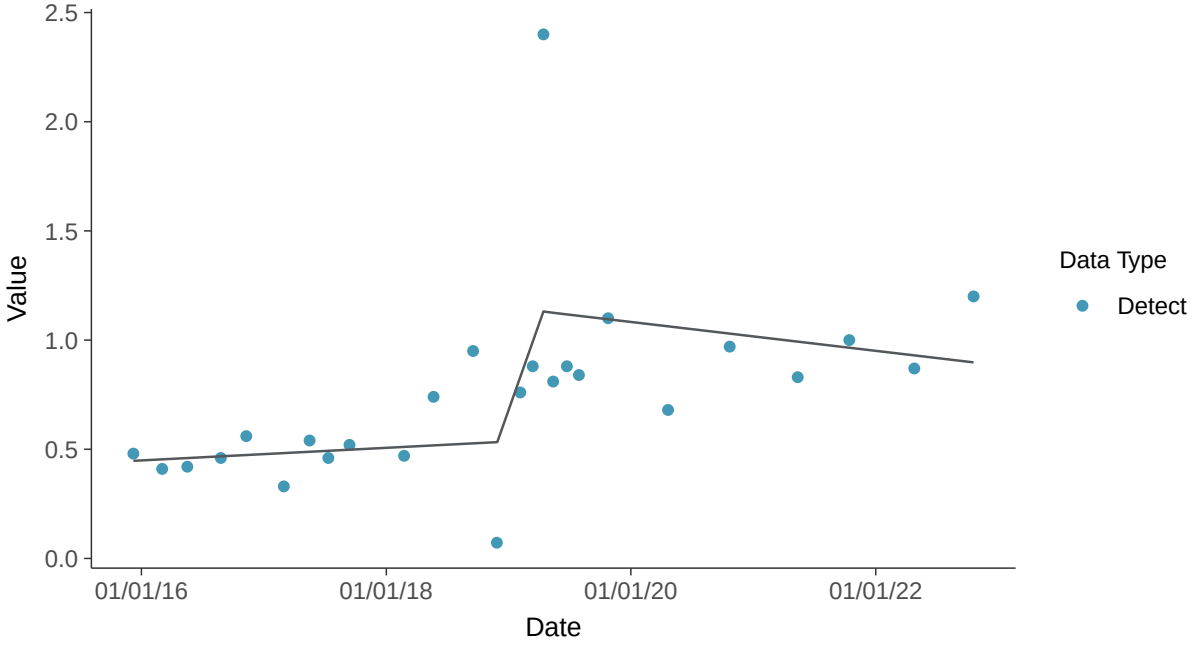
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-12 (mg/l)



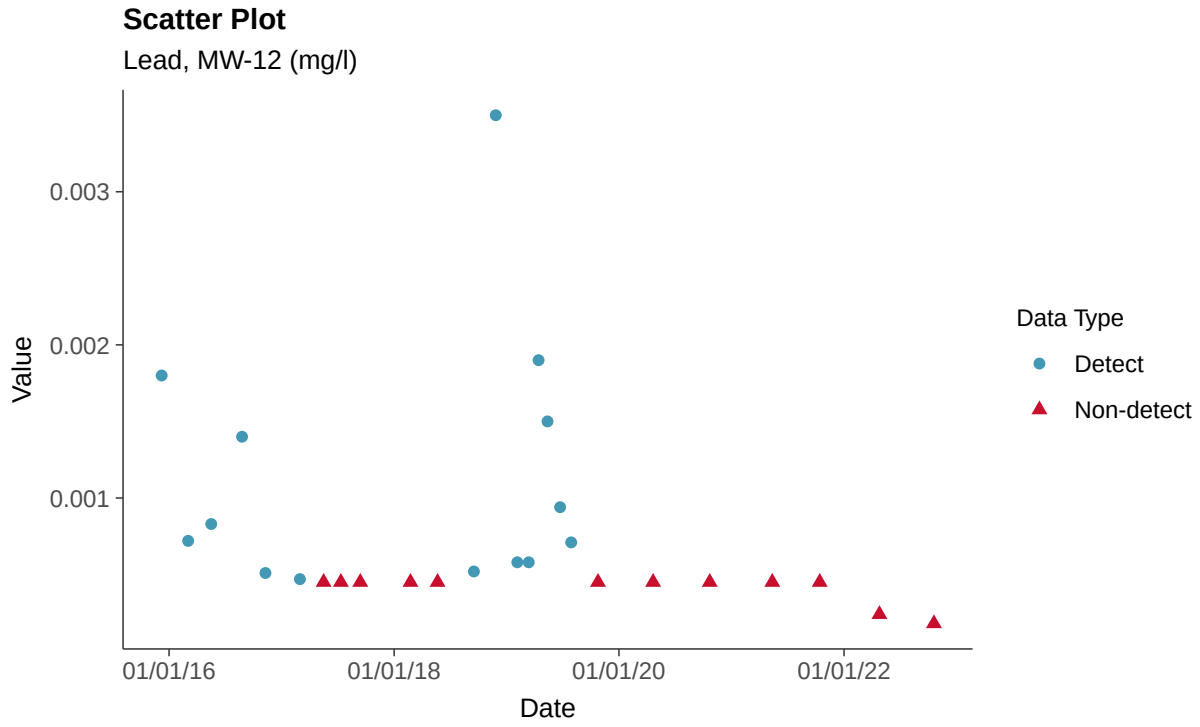
Trend Regression: Piecewise Linear-Linear-Linear

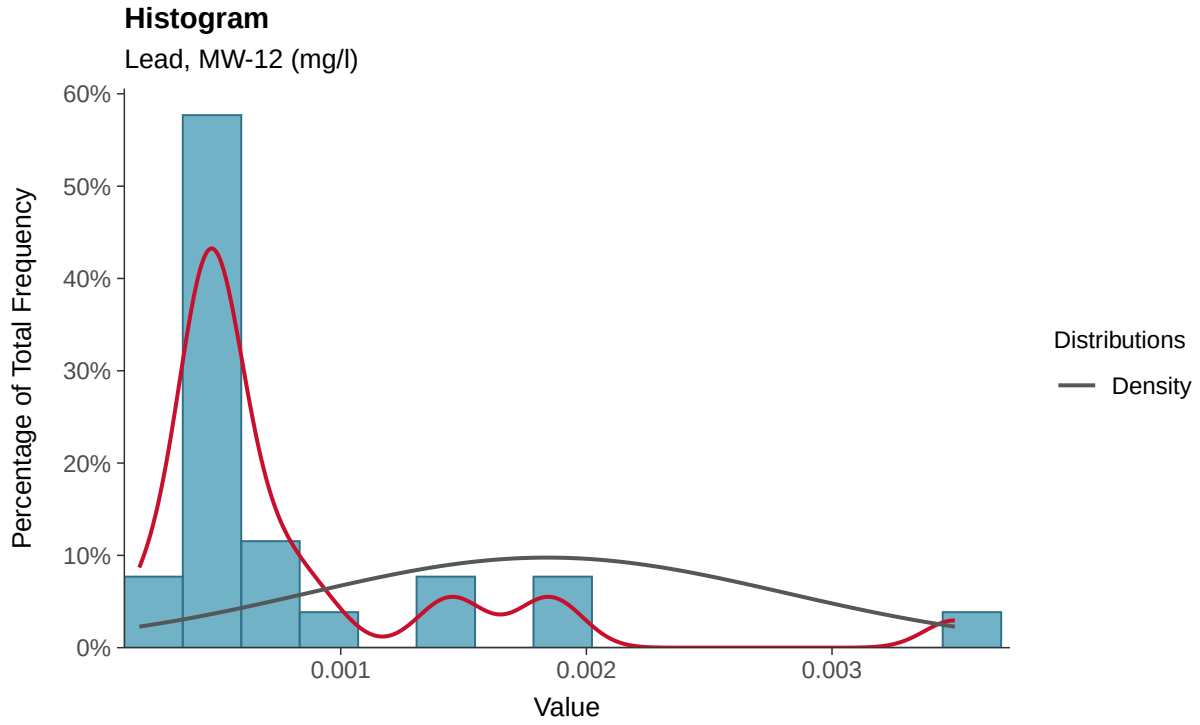
Fluoride (App IV), MW-12 (mg/l)



Appendix IV: Lead, MW-12

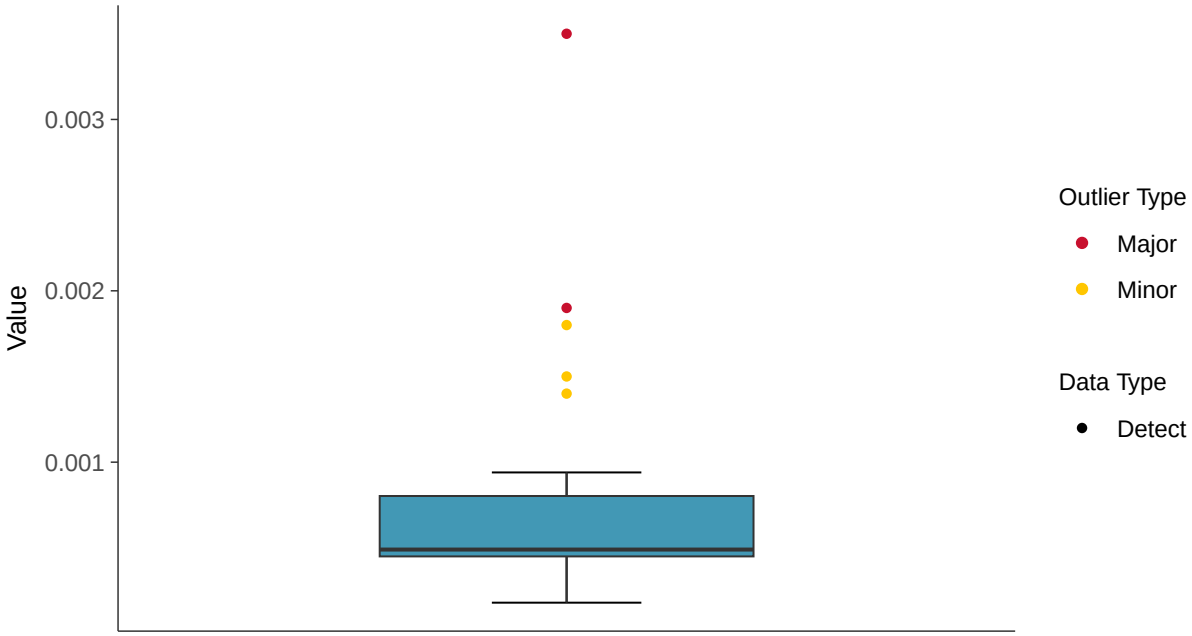
ID: 12_2_117





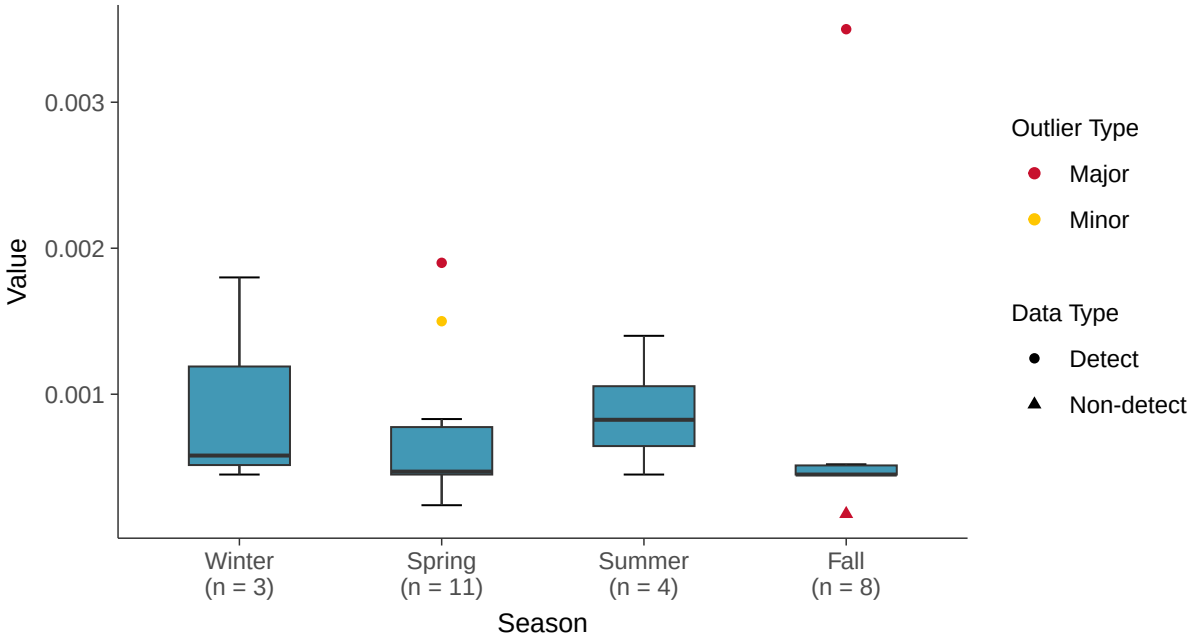
Boxplot

Lead, MW-12 (mg/l)



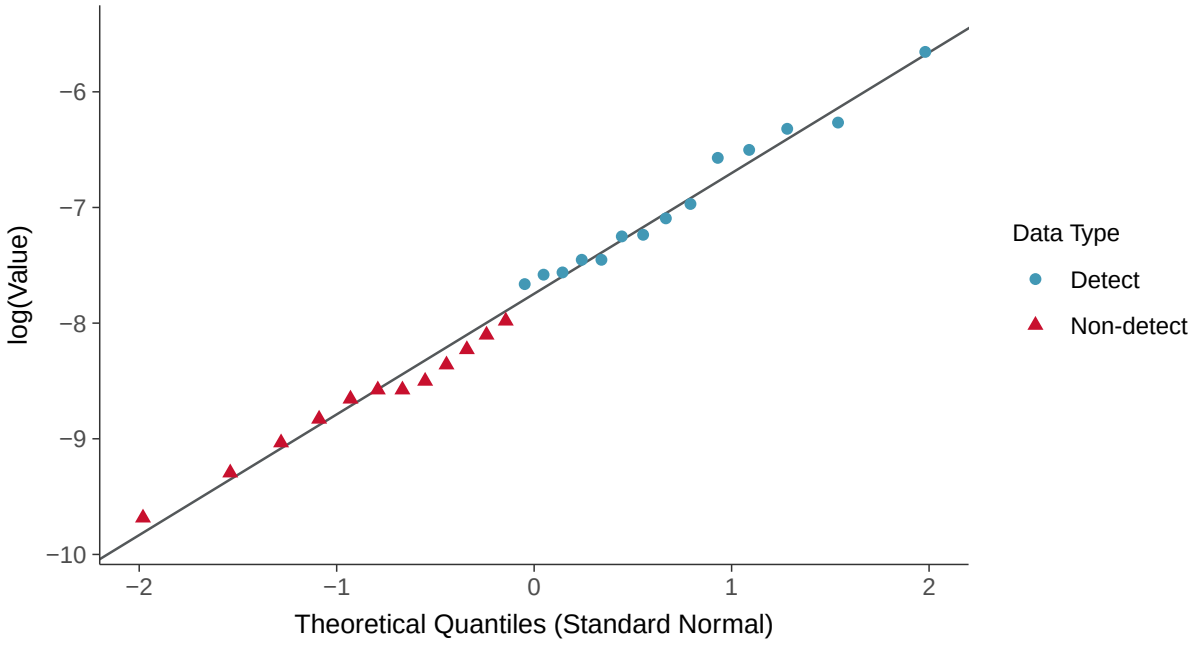
Boxplot by Season

Lead, MW-12 (mg/l)



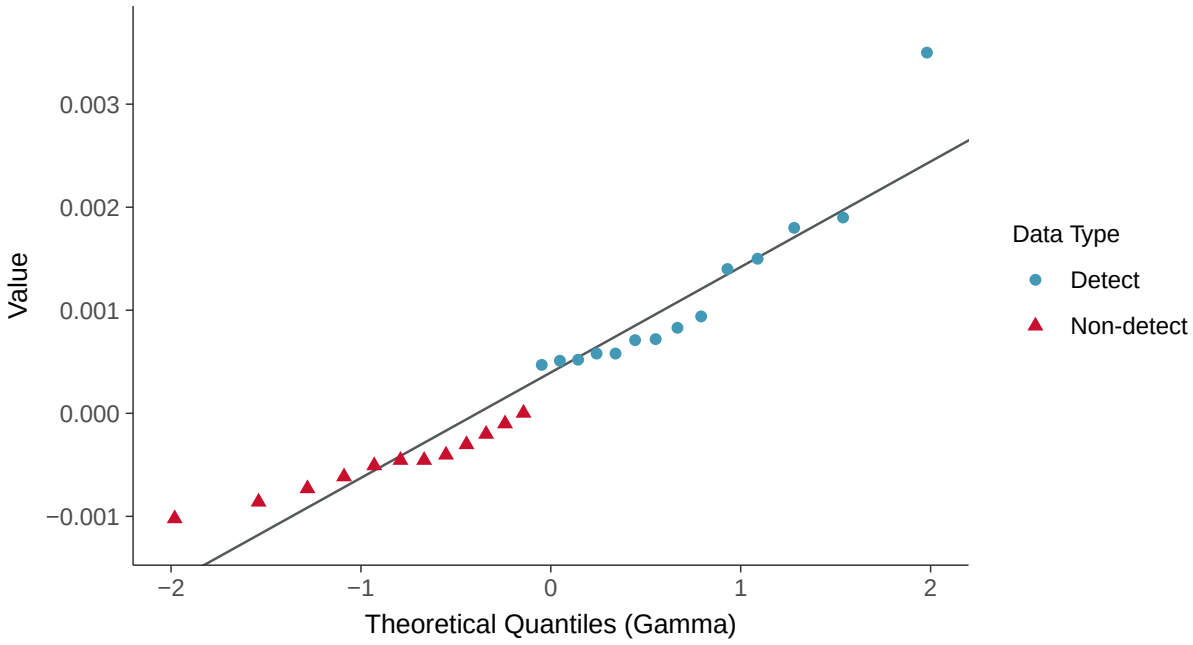
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-12 (mg/l)



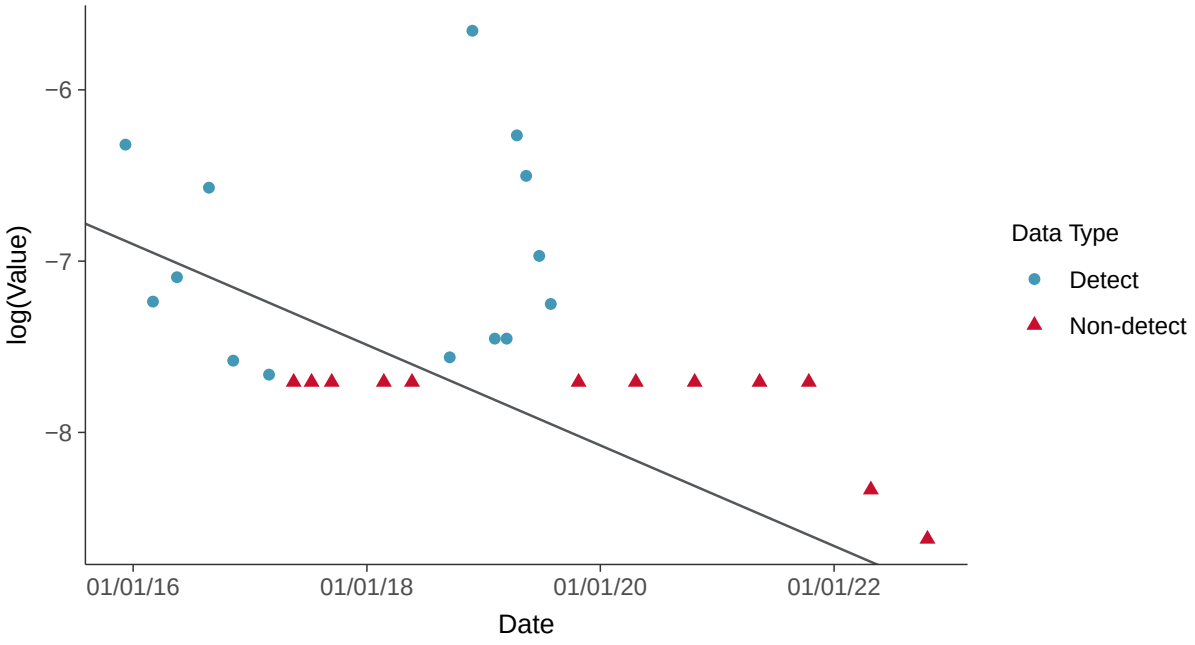
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-12 (mg/l)



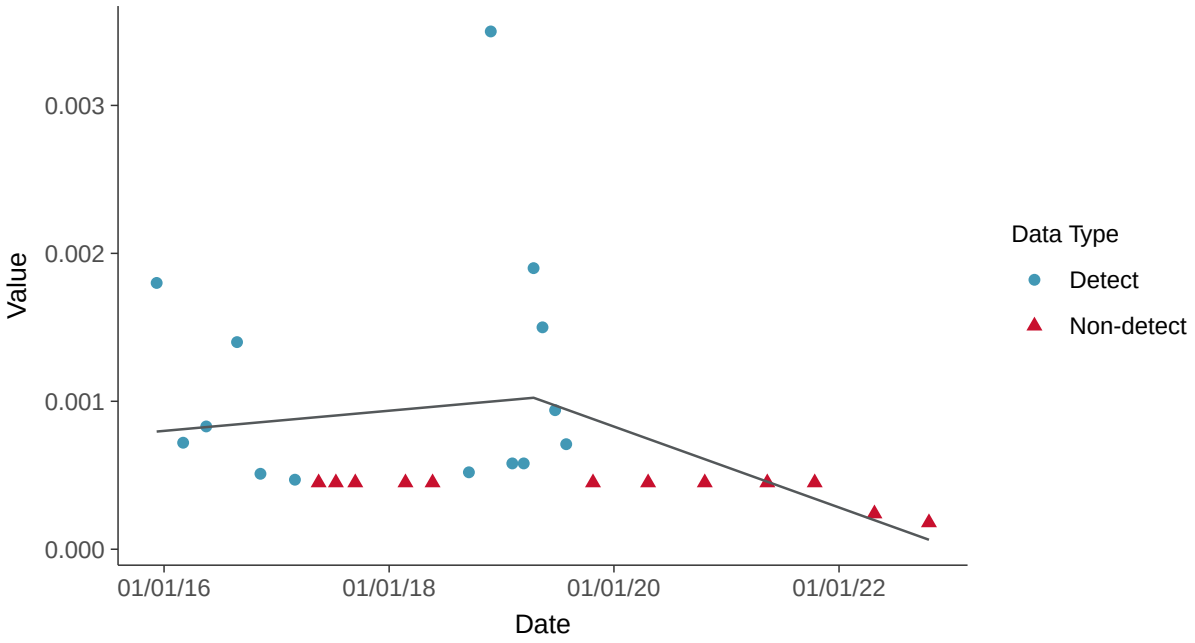
Trend Regression: Lognormal MLE

Lead, MW-12 (mg/l)



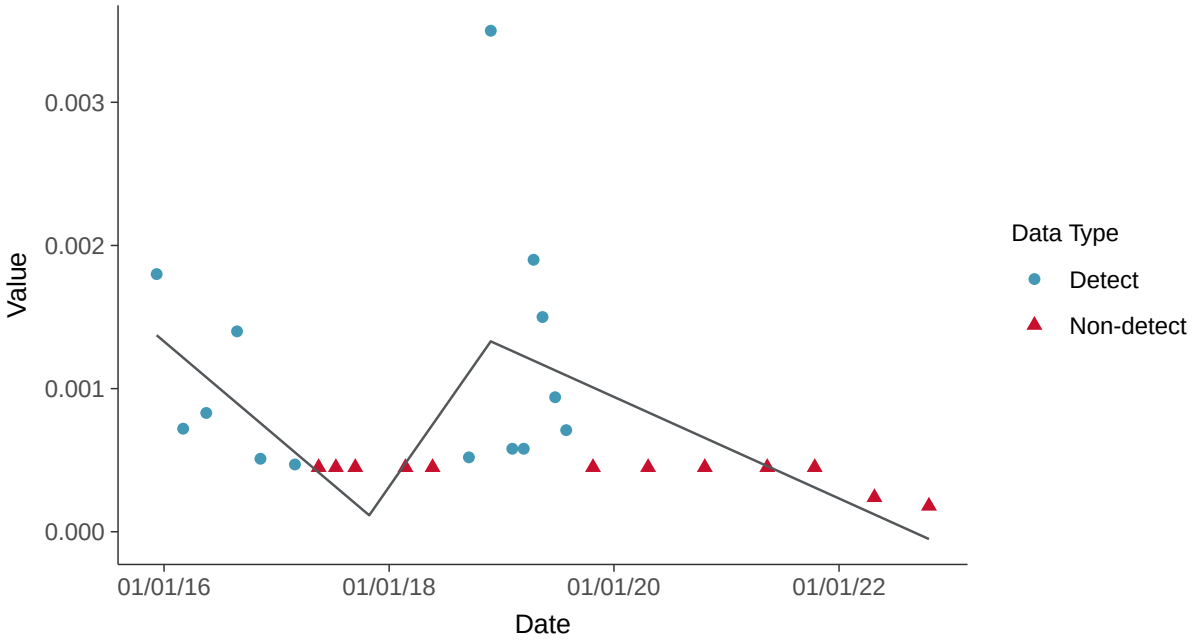
Trend Regression: Piecewise Linear-Linear

Lead, MW-12 (mg/l)



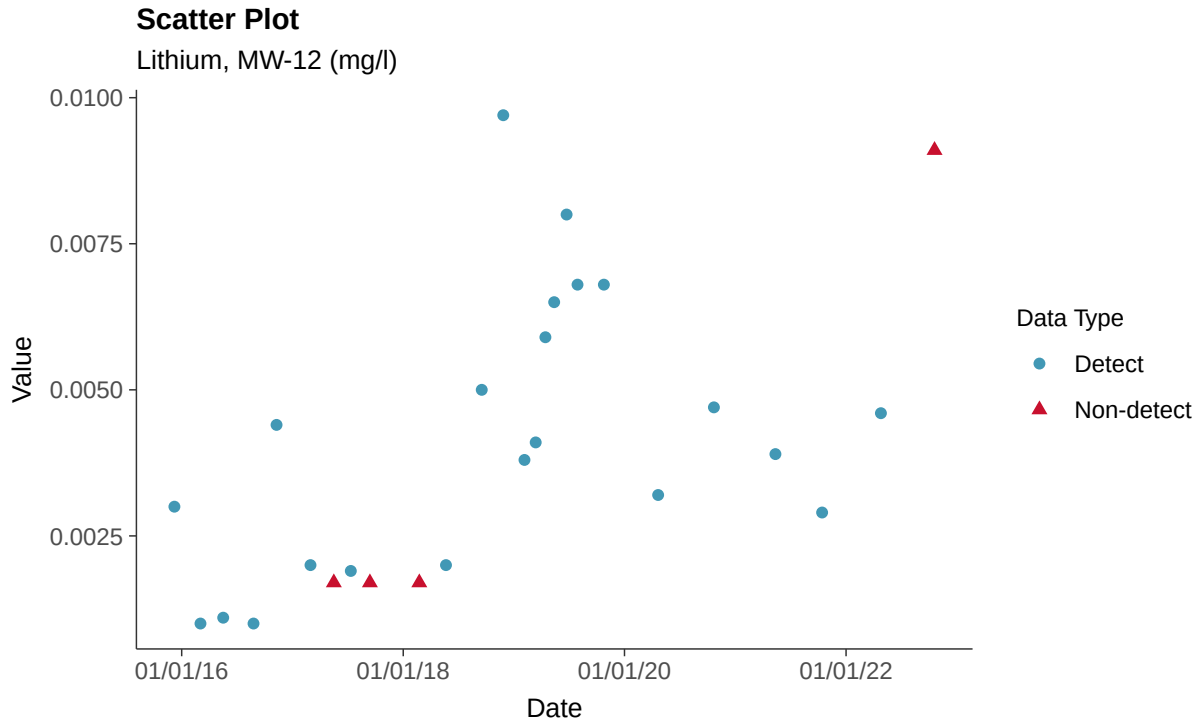
Trend Regression: Piecewise Linear-Linear-Linear

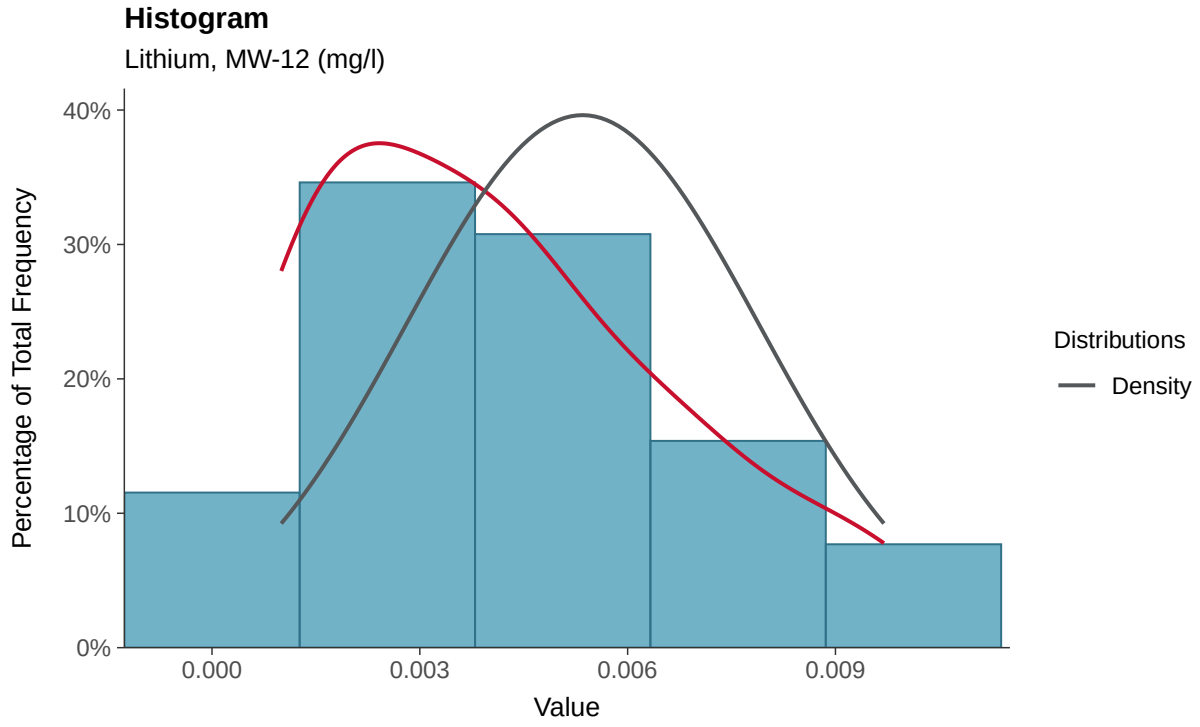
Lead, MW-12 (mg/l)



Appendix IV: Lithium, MW-12

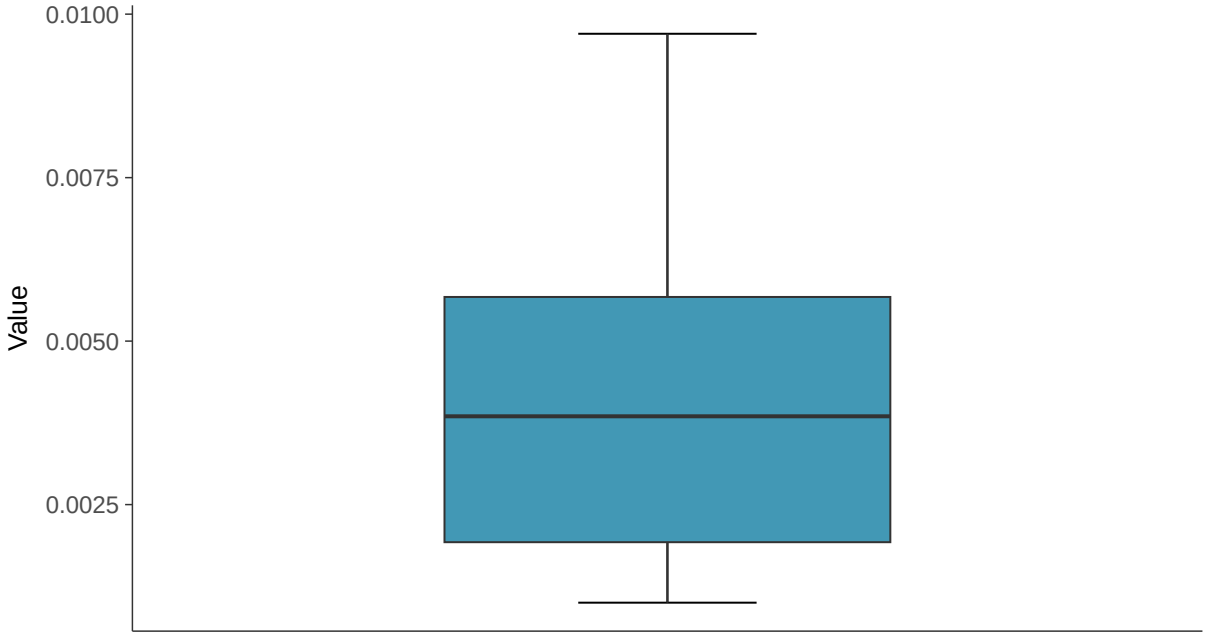
ID: 12_2_118





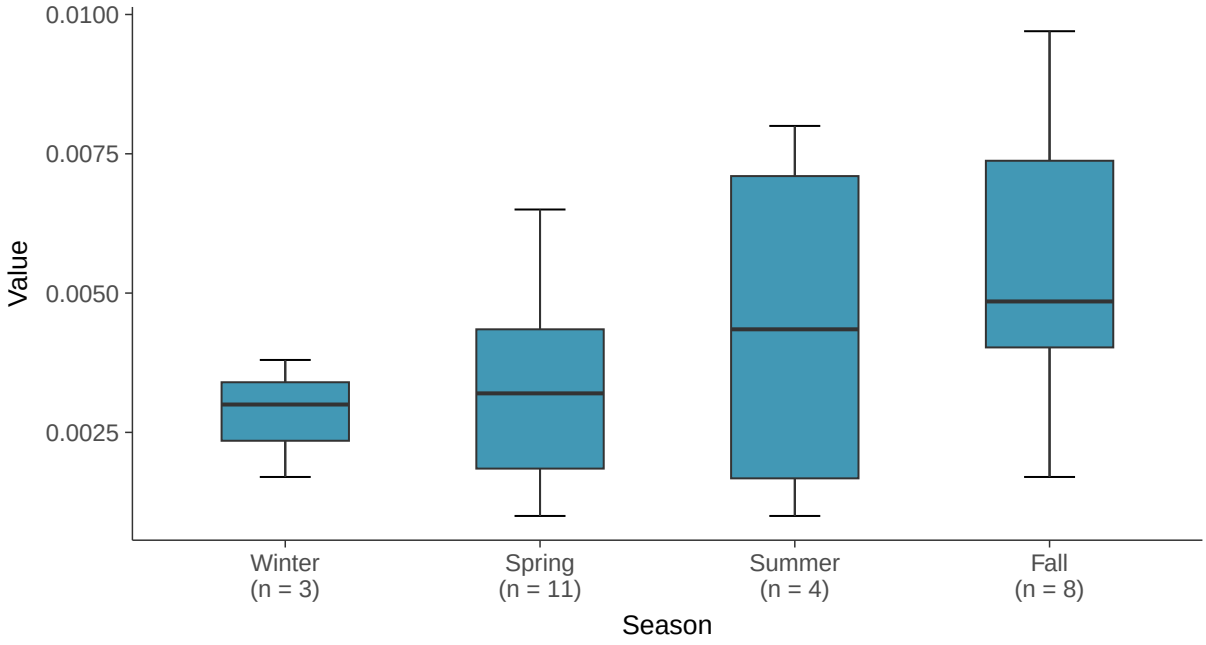
Boxplot

Lithium, MW-12 (mg/l)



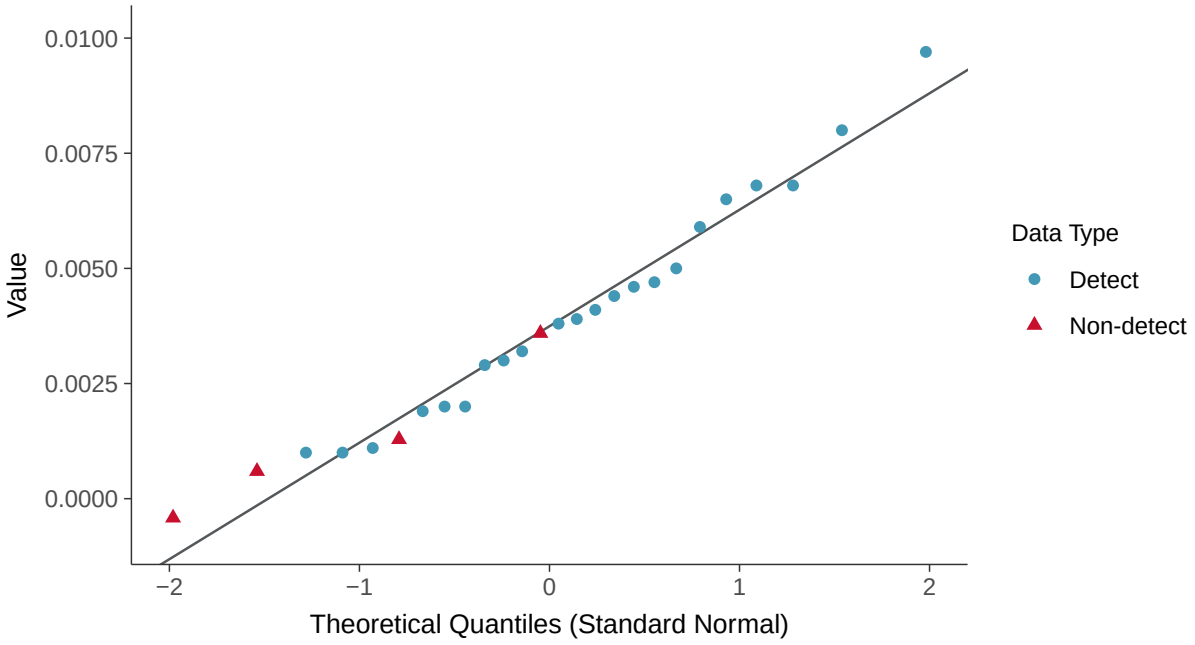
Boxplot by Season

Lithium, MW-12 (mg/l)



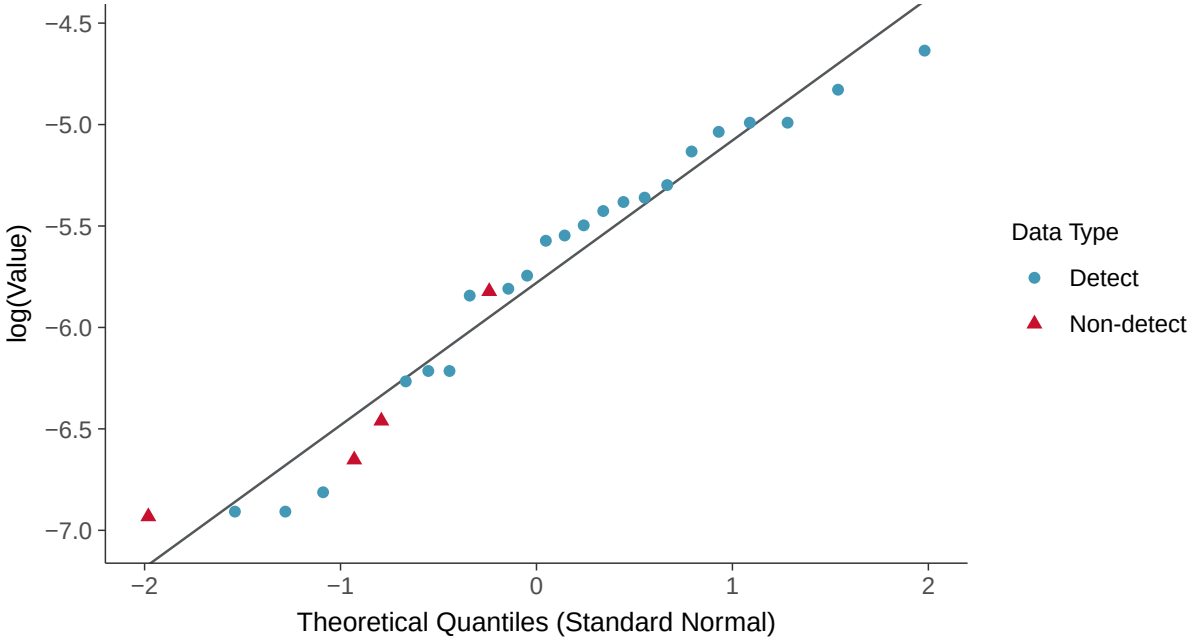
Normal Q-Q plot using ROS Imputed Estimates

Lithium, MW-12 (mg/l)



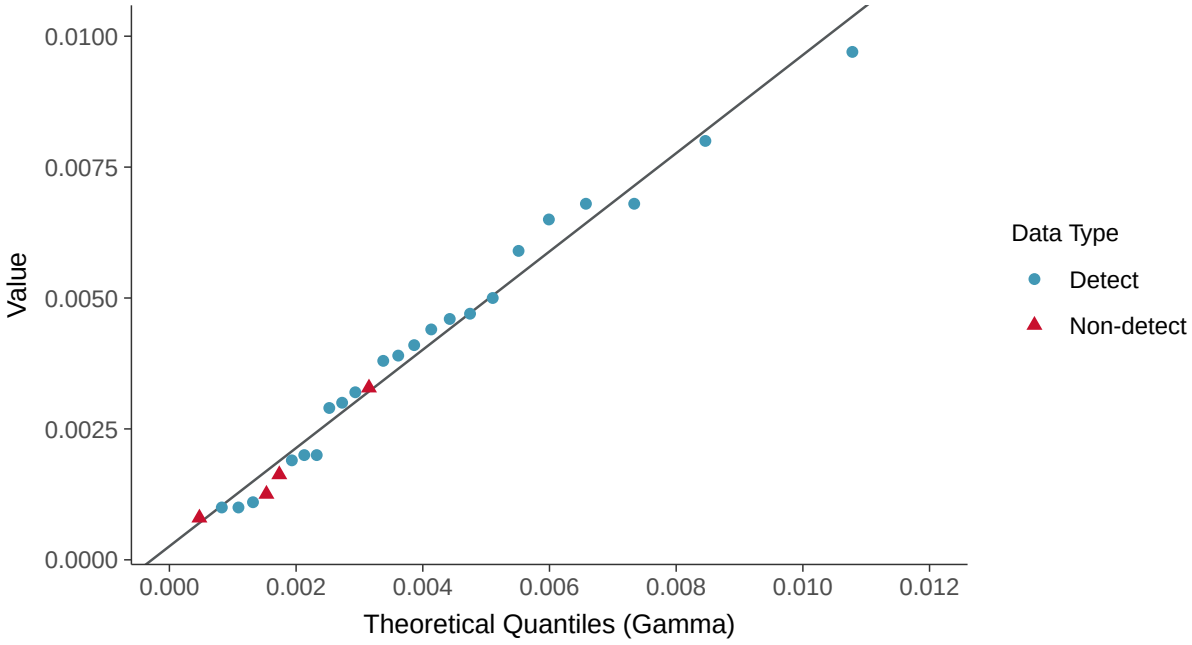
Lognormal Q-Q plot using ROS Imputed Estimates

Lithium, MW-12 (mg/l)



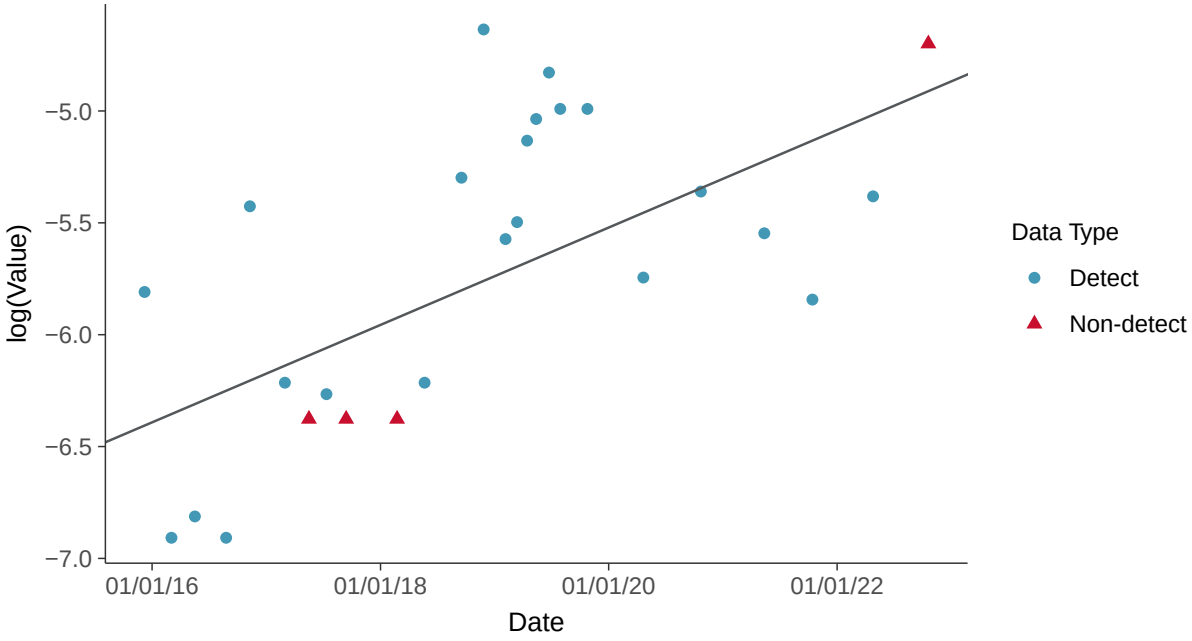
Gamma Q-Q plot using ROS Imputed Estimates

Lithium, MW-12 (mg/l)



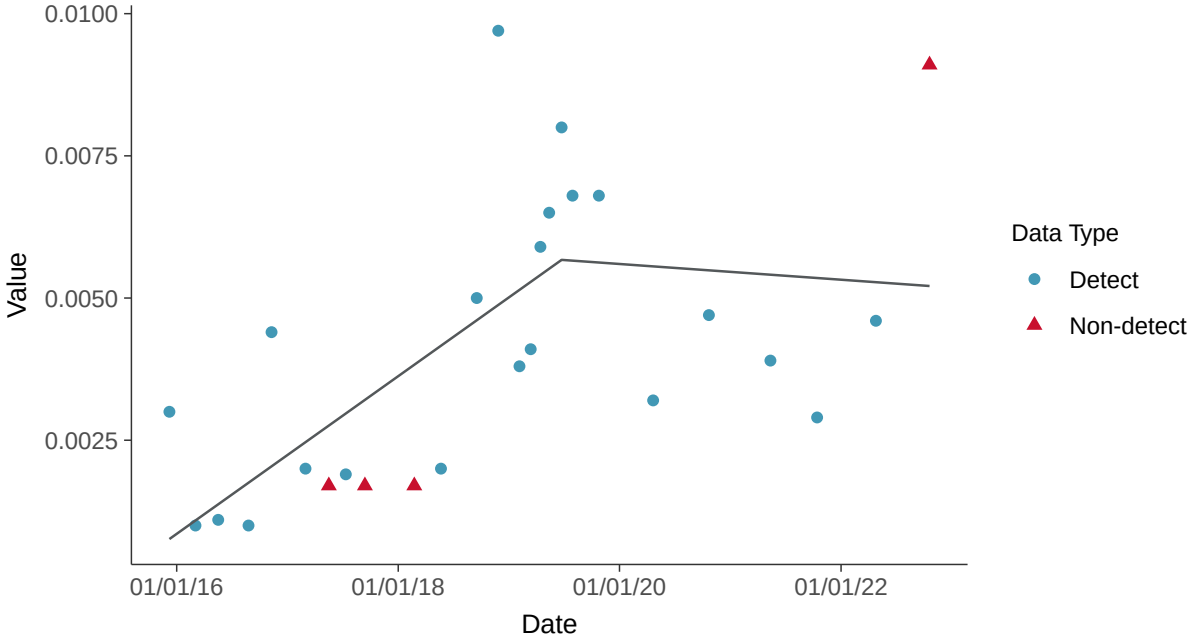
Trend Regression: Lognormal MLE

Lithium, MW-12 (mg/l)



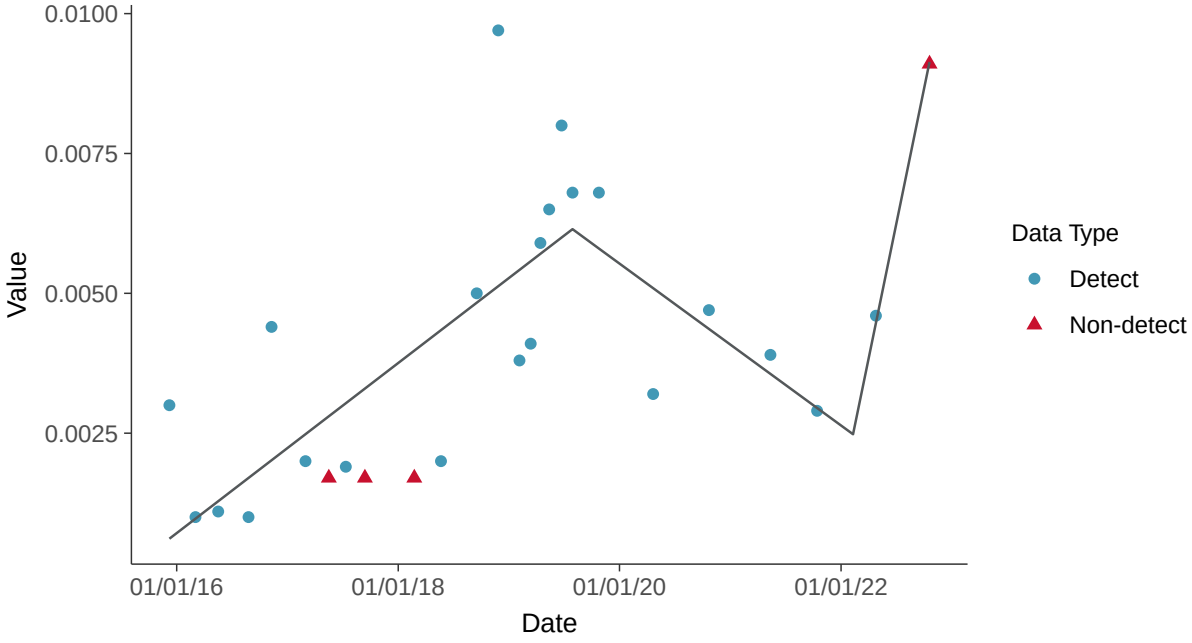
Trend Regression: Piecewise Linear-Linear

Lithium, MW-12 (mg/l)



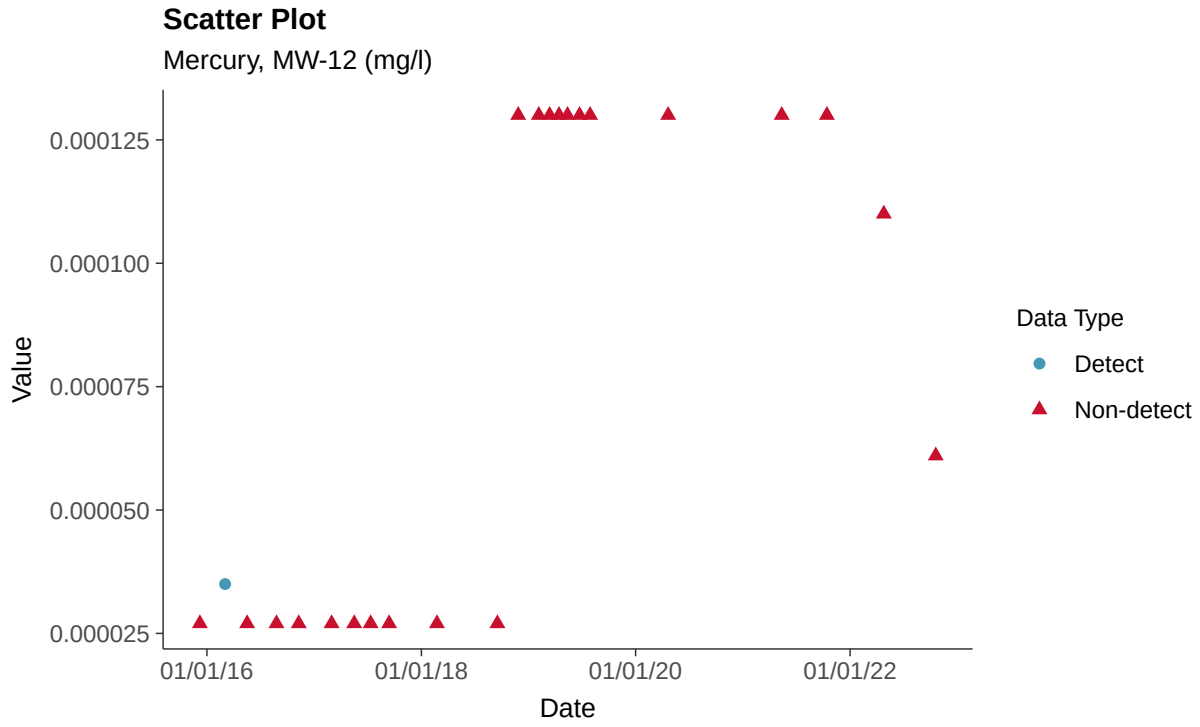
Trend Regression: Piecewise Linear-Linear-Linear

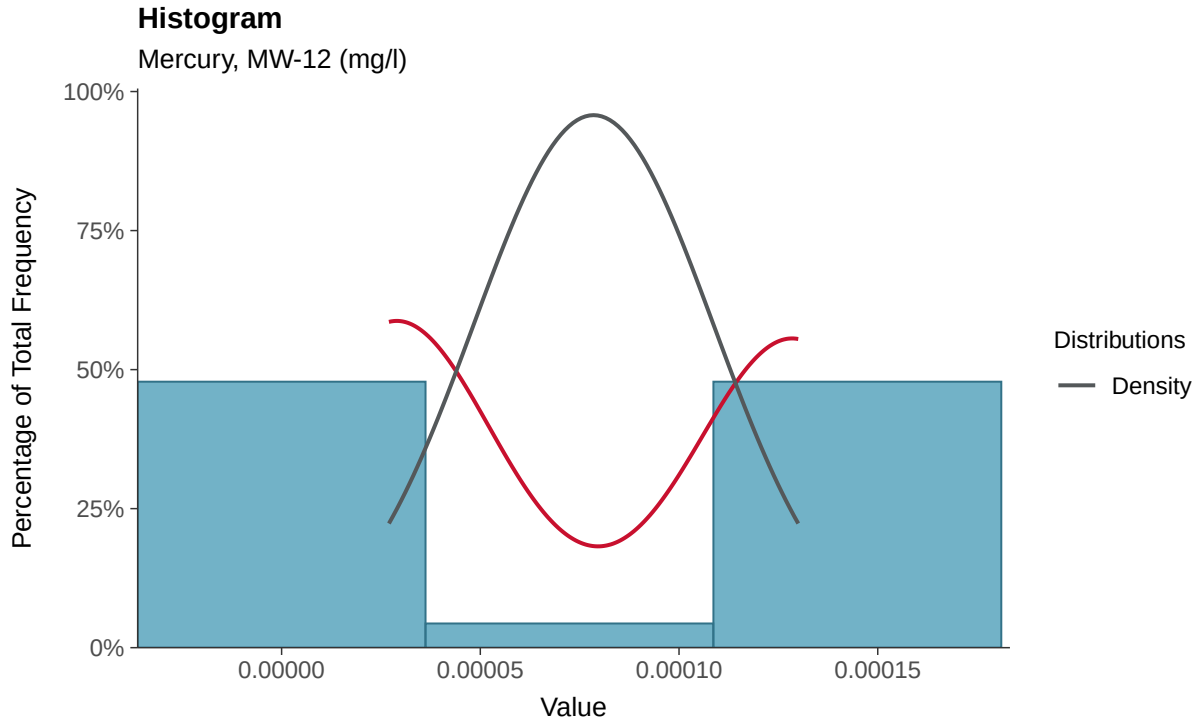
Lithium, MW-12 (mg/l)



Appendix IV: Mercury, MW-12

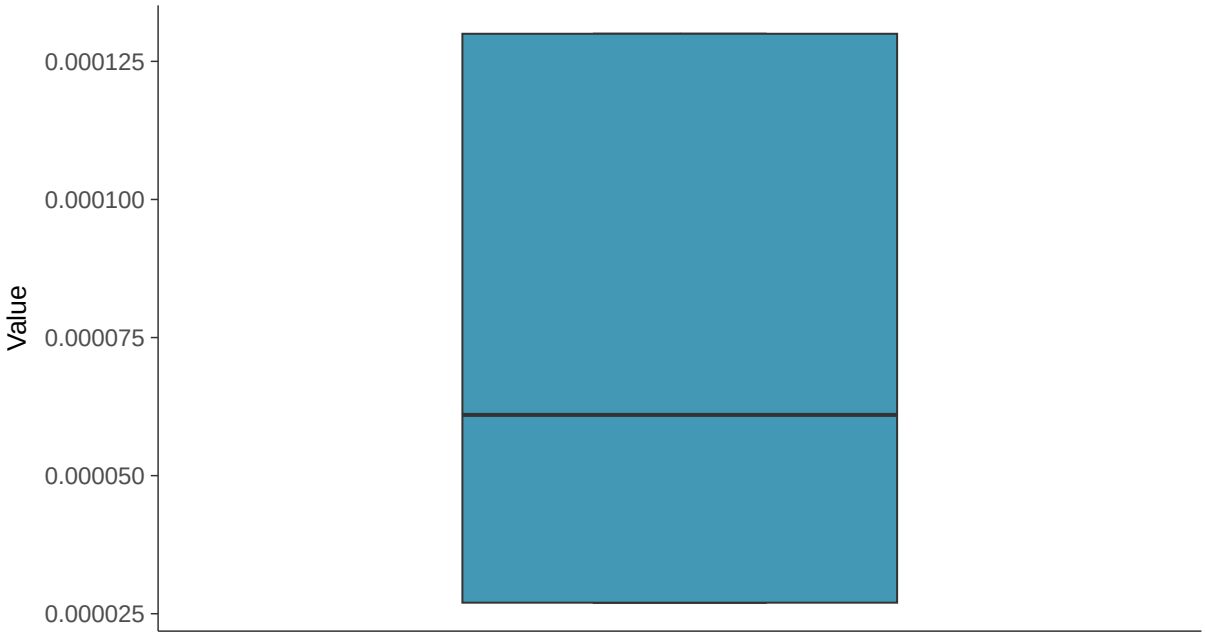
ID: 12_2_120





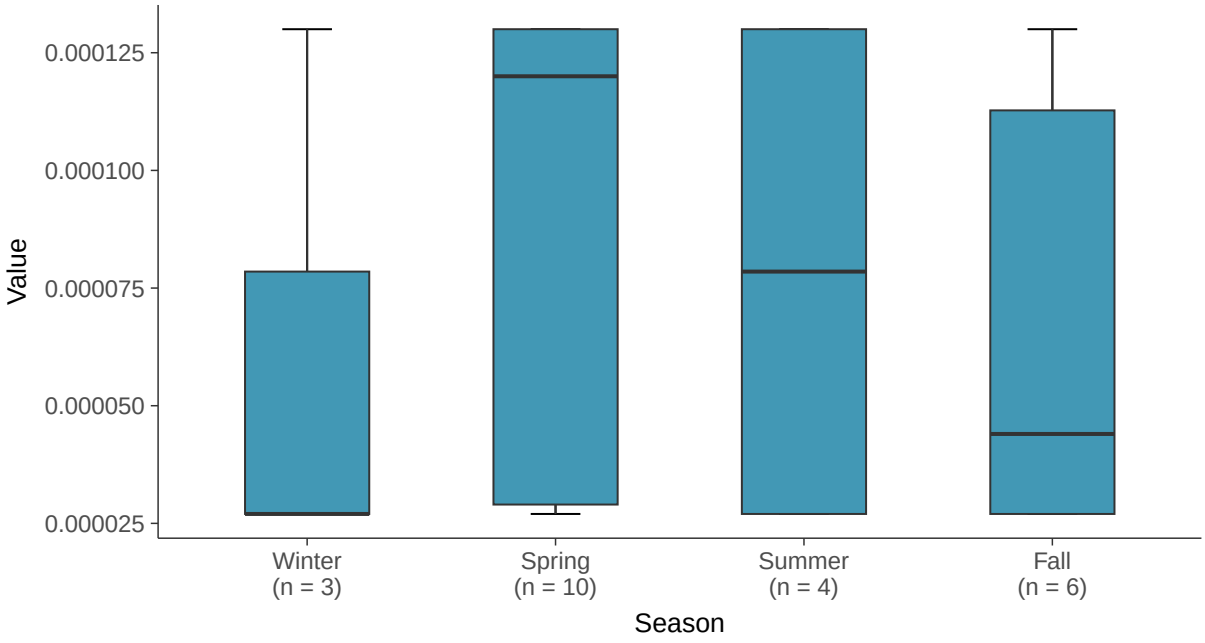
Boxplot

Mercury, MW-12 (mg/l)



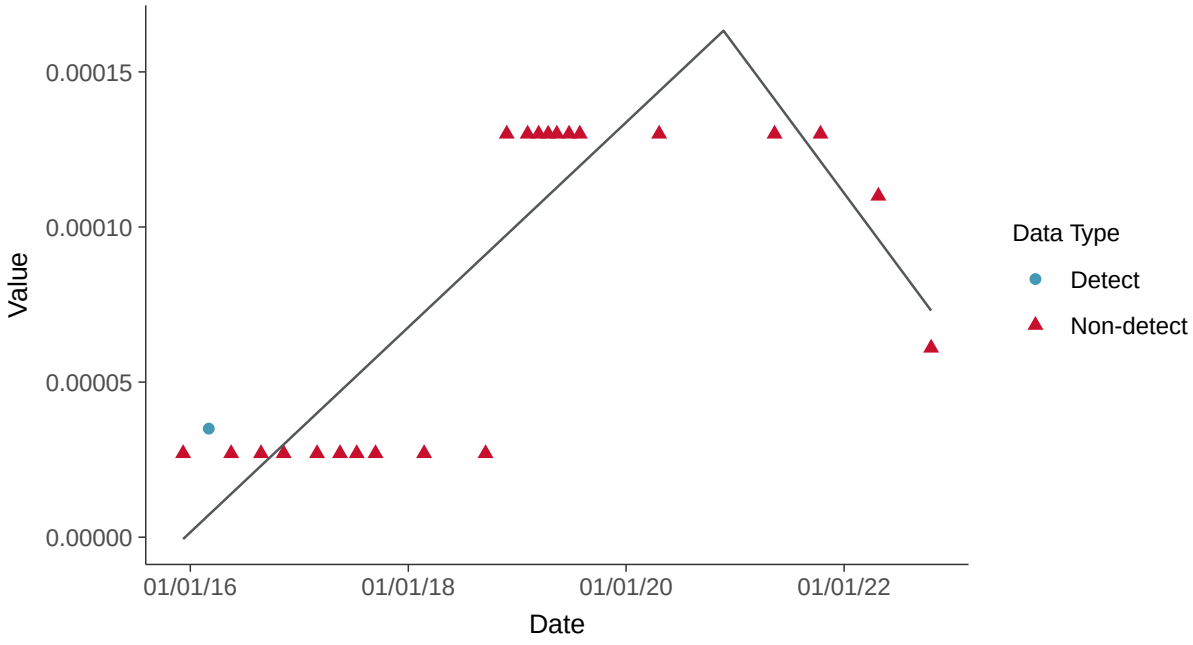
Boxplot by Season

Mercury, MW-12 (mg/l)



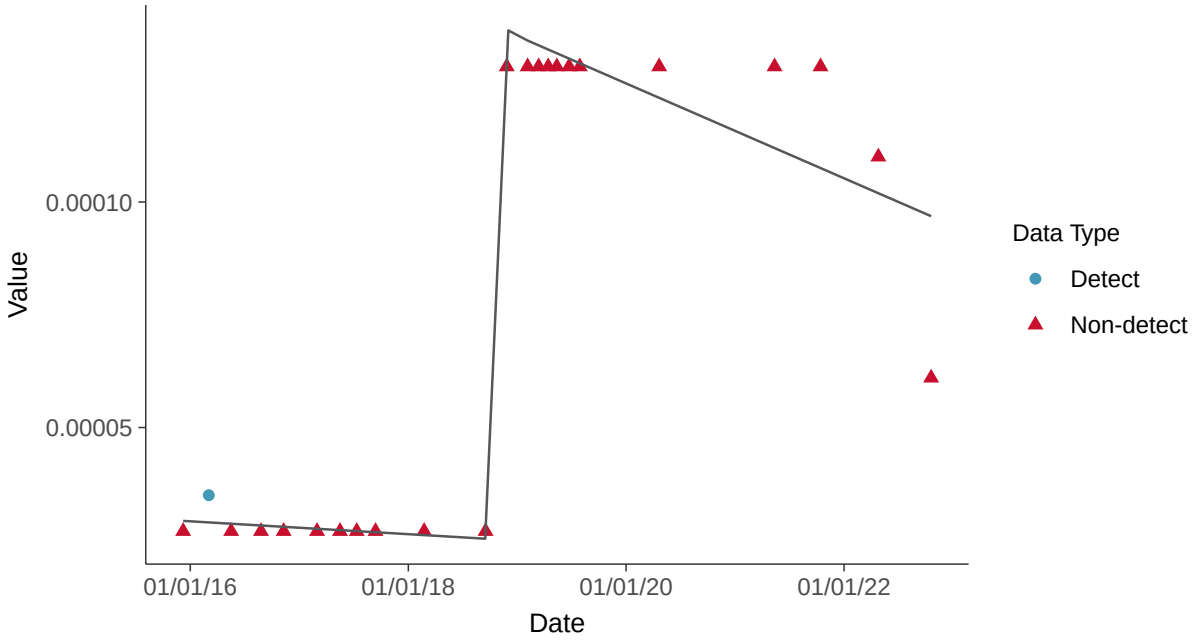
Trend Regression: Piecewise Linear-Linear

Mercury, MW-12 (mg/l)



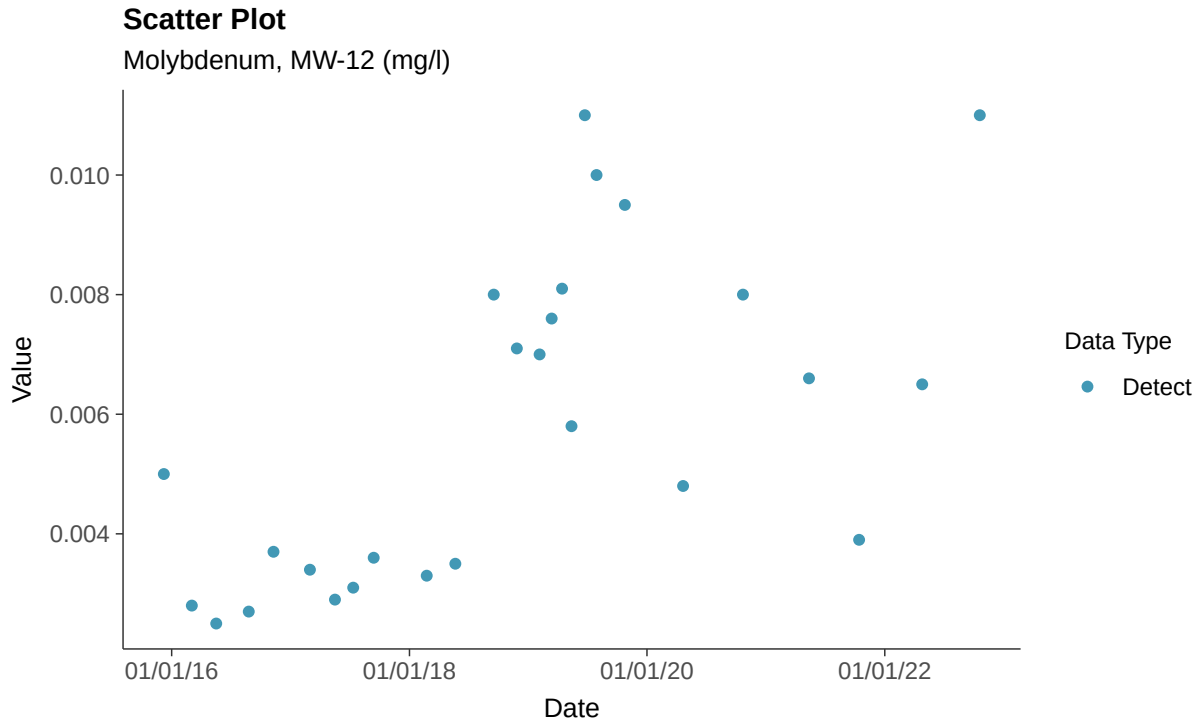
Trend Regression: Piecewise Linear-Linear-Linear

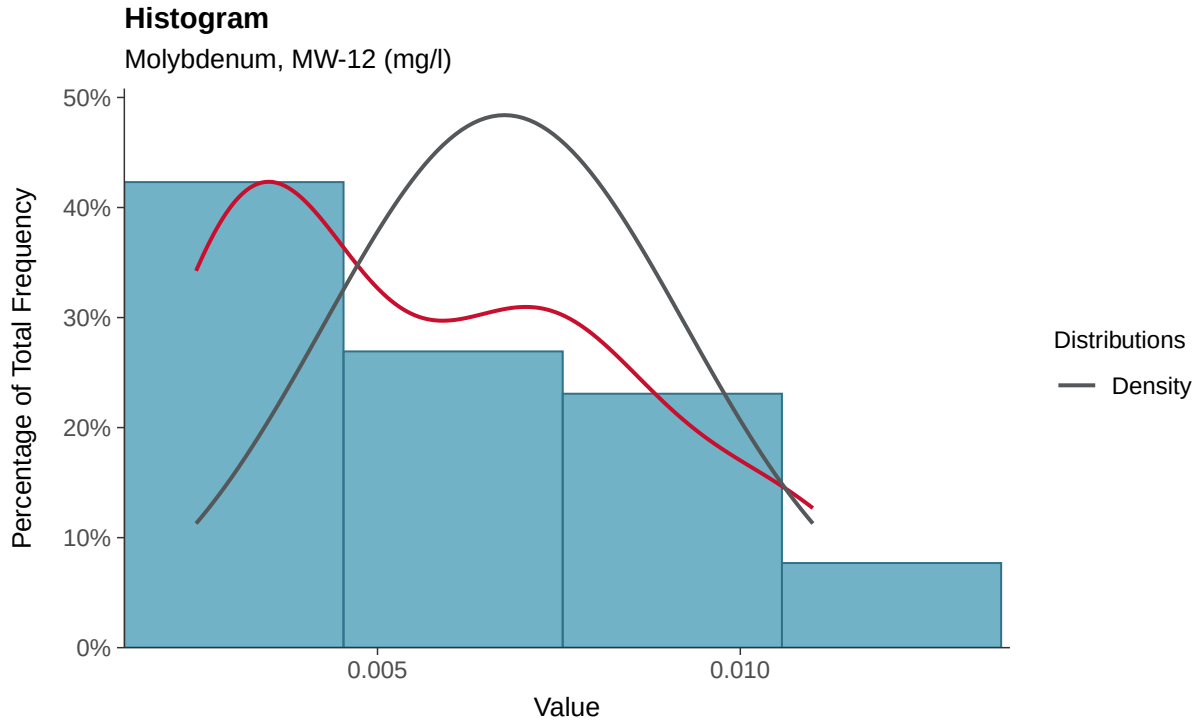
Mercury, MW-12 (mg/l)



Appendix IV: Molybdenum, MW-12

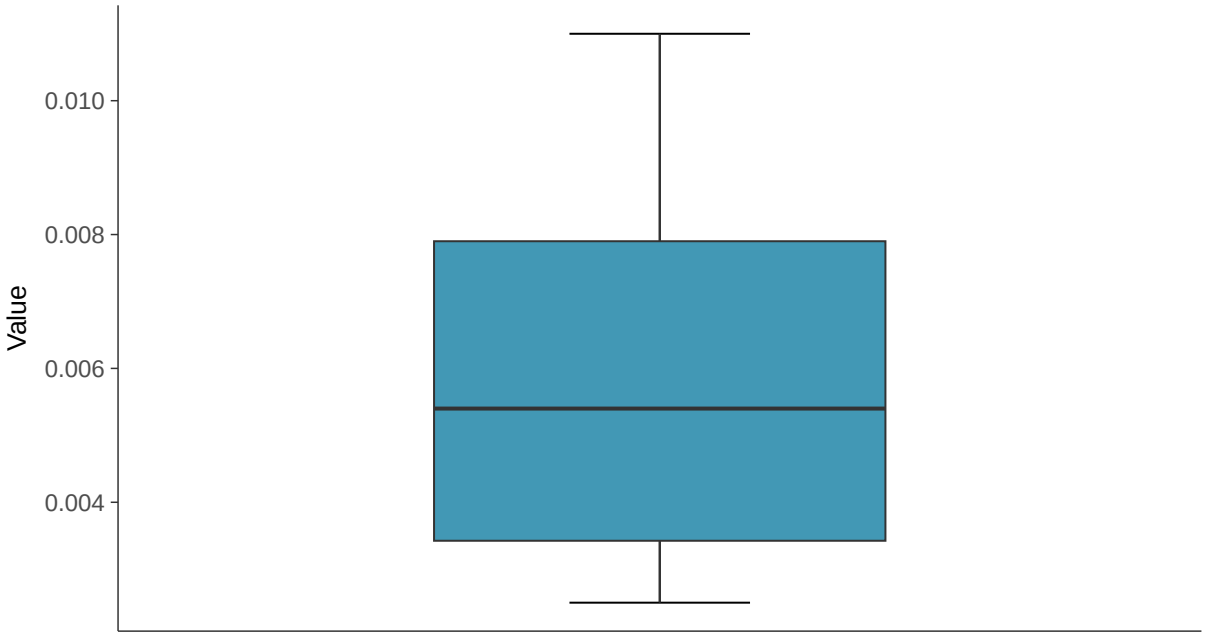
ID: 12_2_121





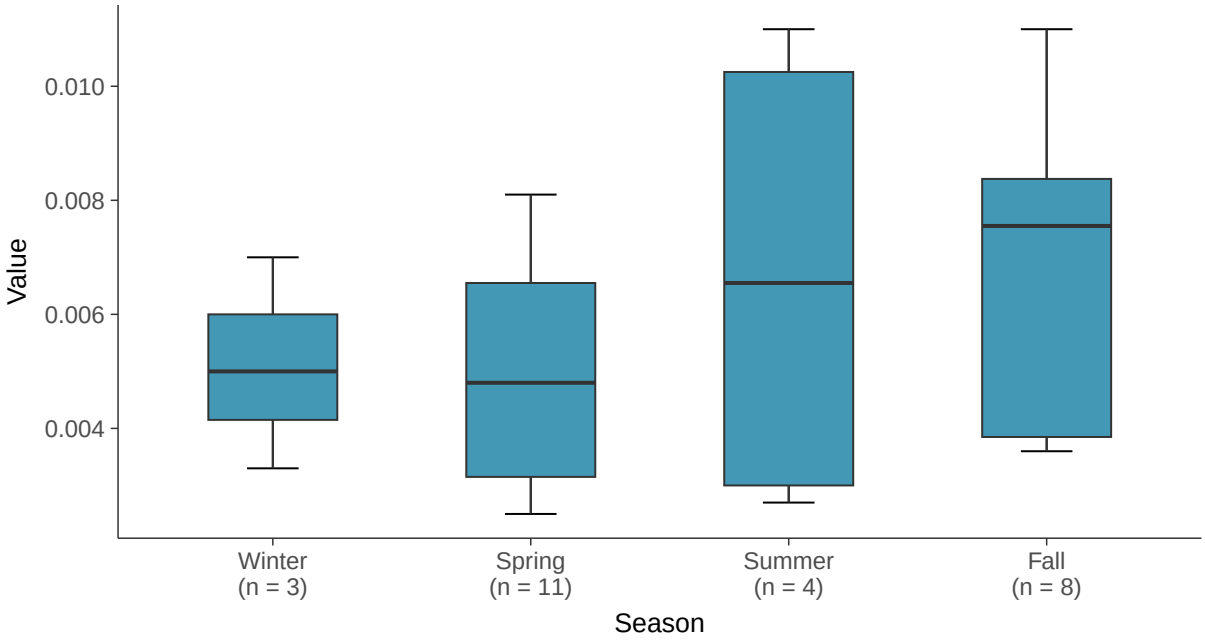
Boxplot

Molybdenum, MW-12 (mg/l)



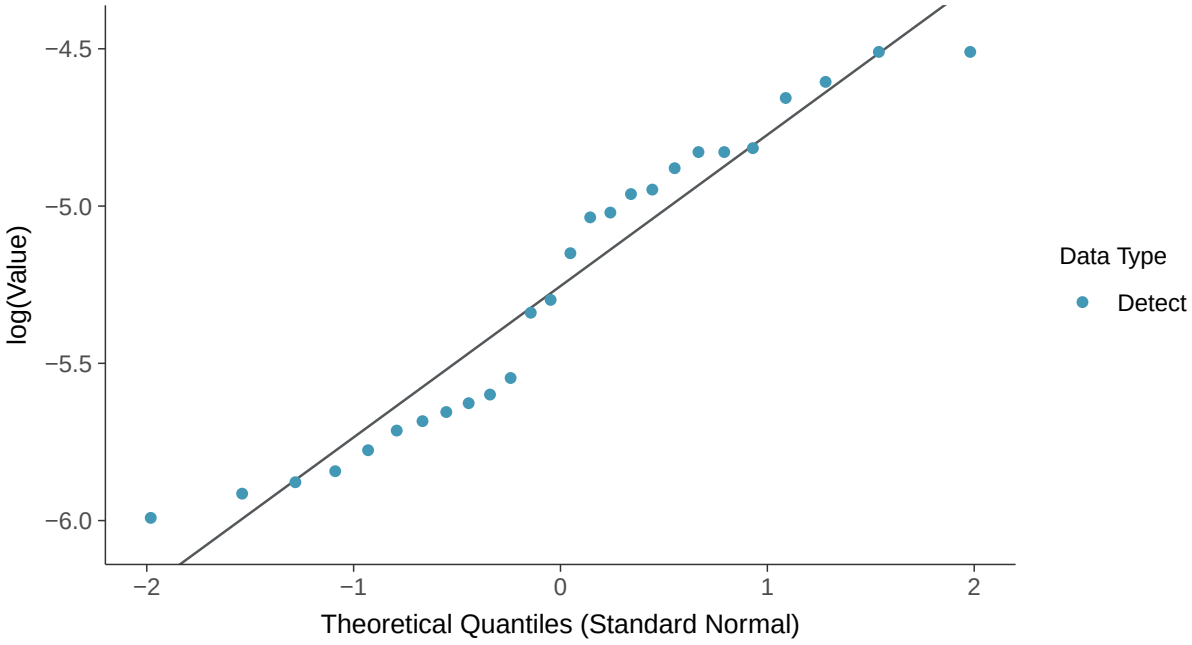
Boxplot by Season

Molybdenum, MW-12 (mg/l)



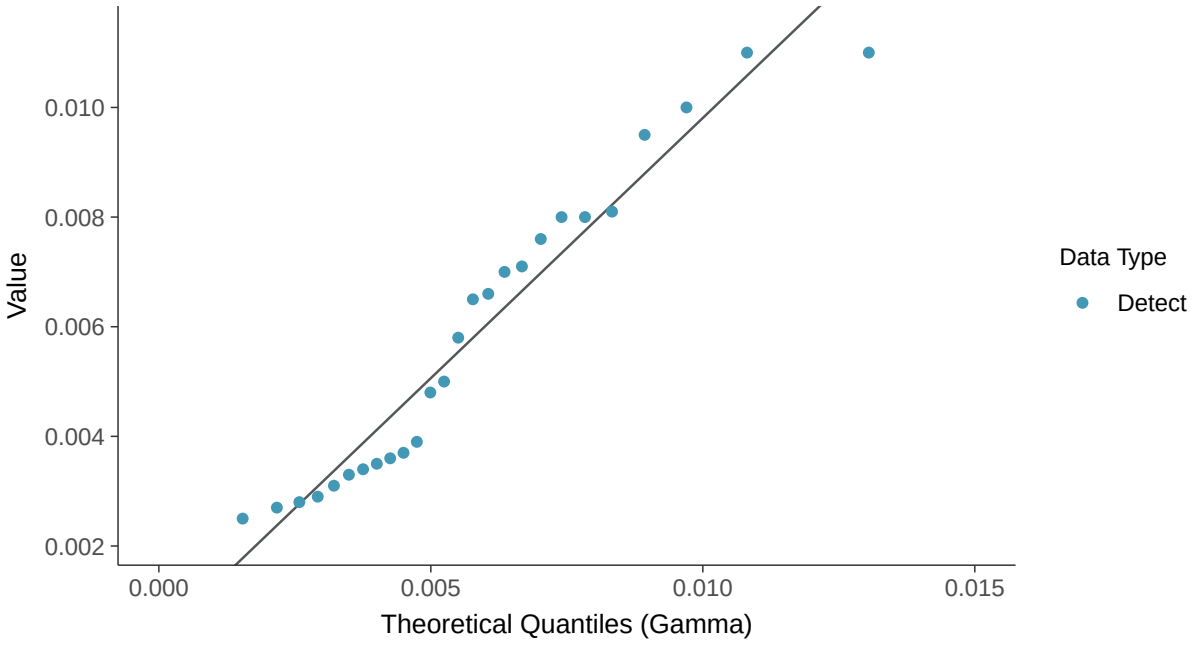
Lognormal Q-Q plot

Molybdenum, MW-12 (mg/l)



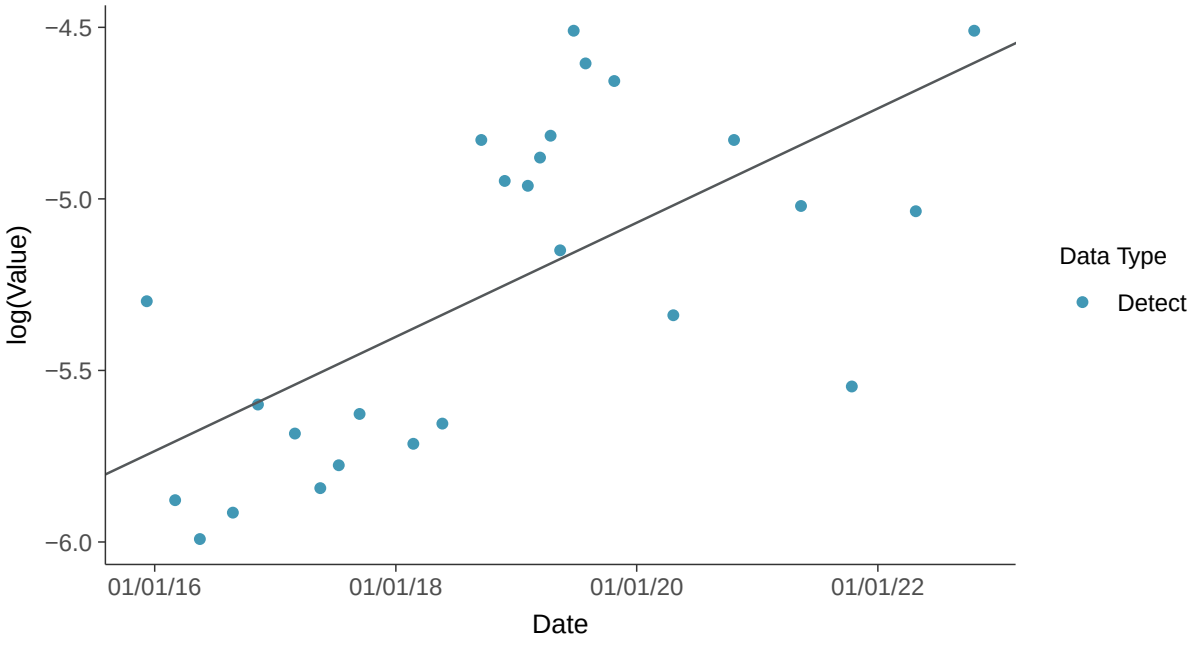
Gamma Q-Q plot

Molybdenum, MW-12 (mg/l)



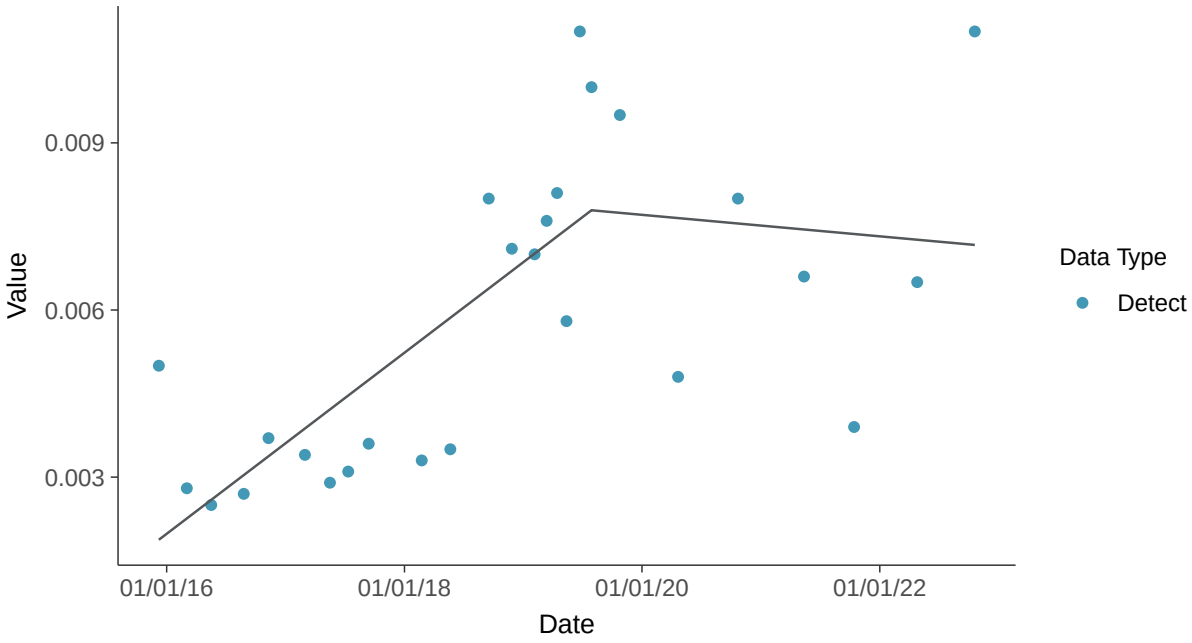
Trend Regression: Lognormal MLE

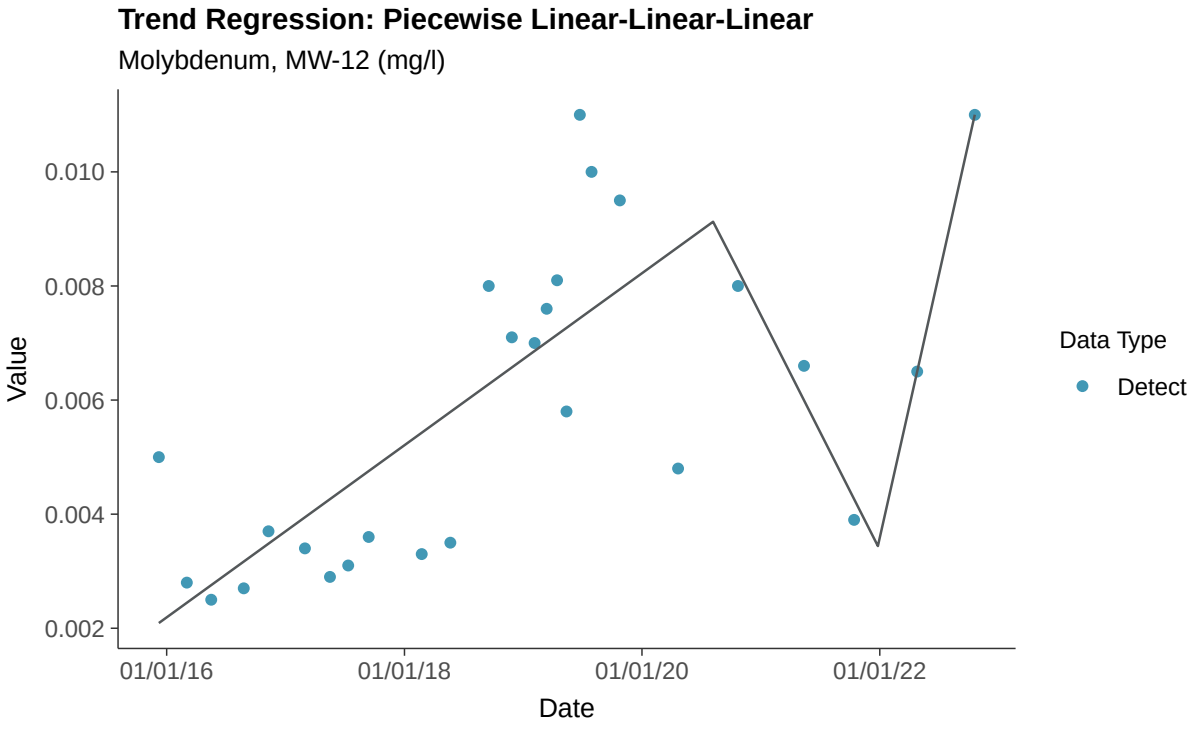
Molybdenum, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-12 (mg/l)



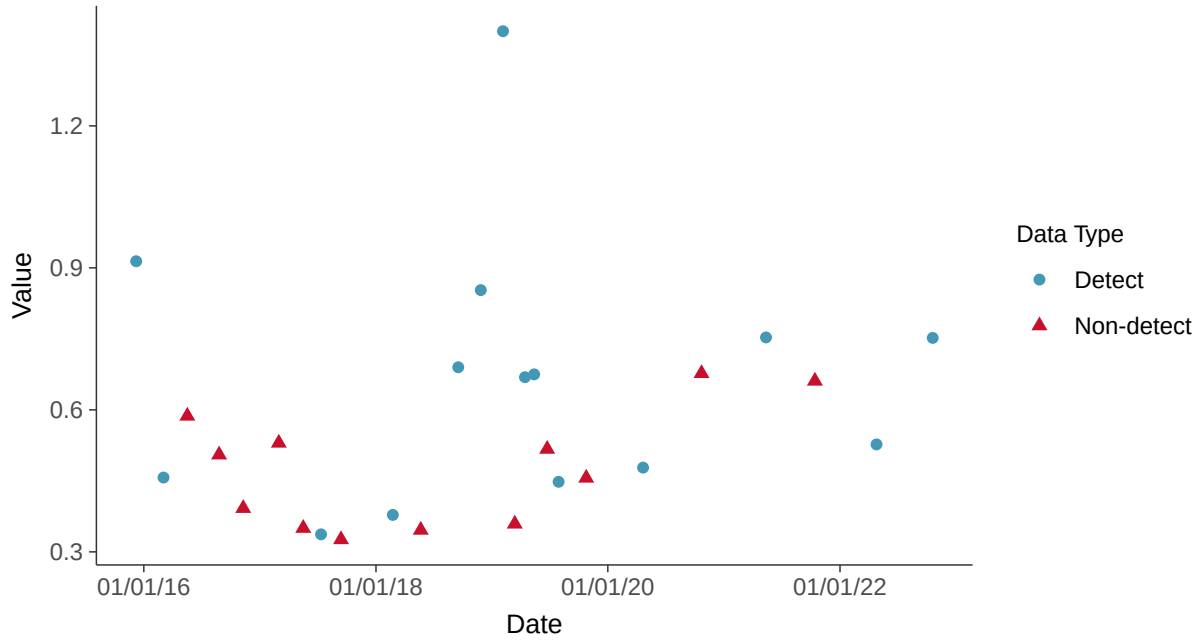

Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-12 (mg/l)
Value
0.010
0.008
0.006
0.004
0.002
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect

Appendix IV: Radium-226+228, MW-12

ID: 12_2_127

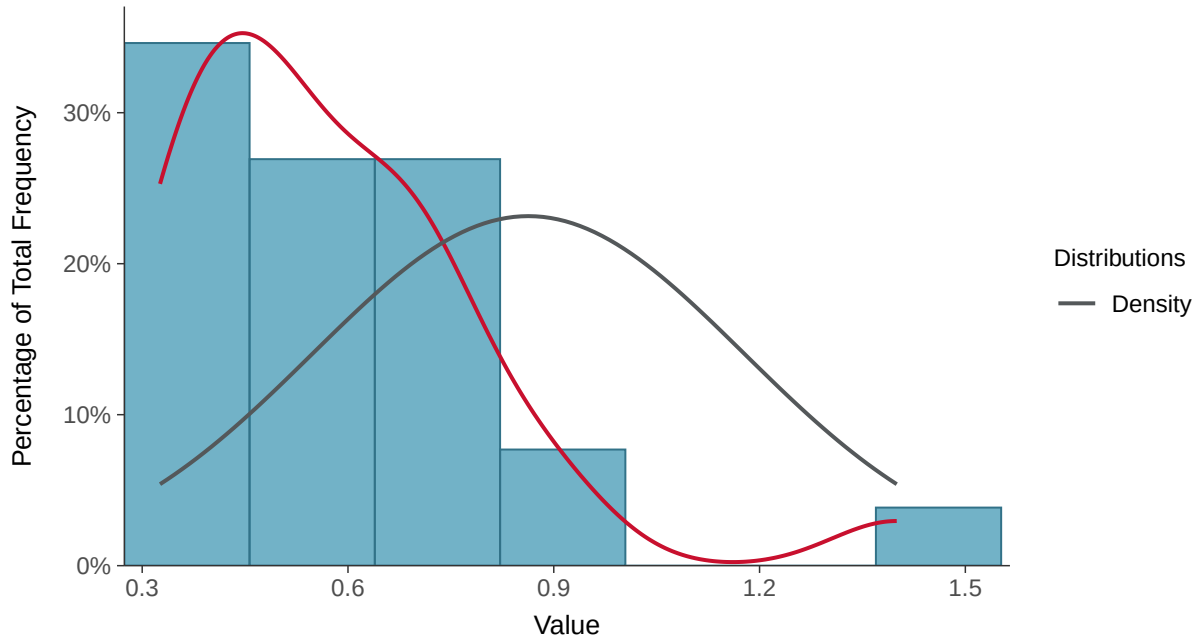
Scatter Plot

Radium-226+228, MW-12 (pci/l)



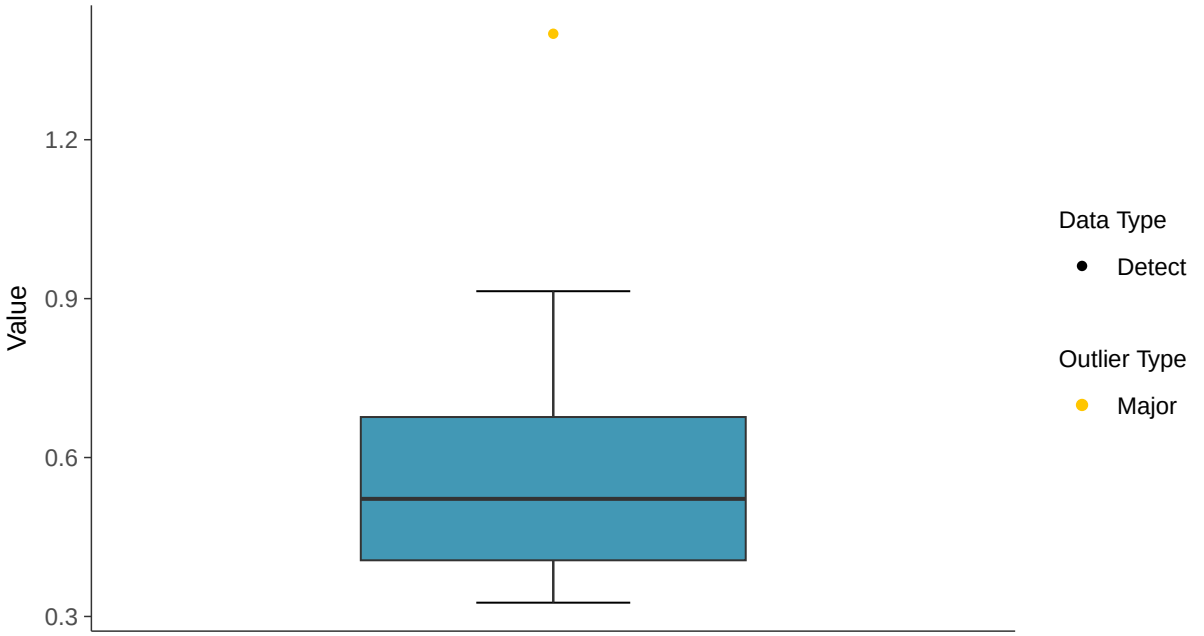
Histogram

Radium-226+228, MW-12 (pci/l)



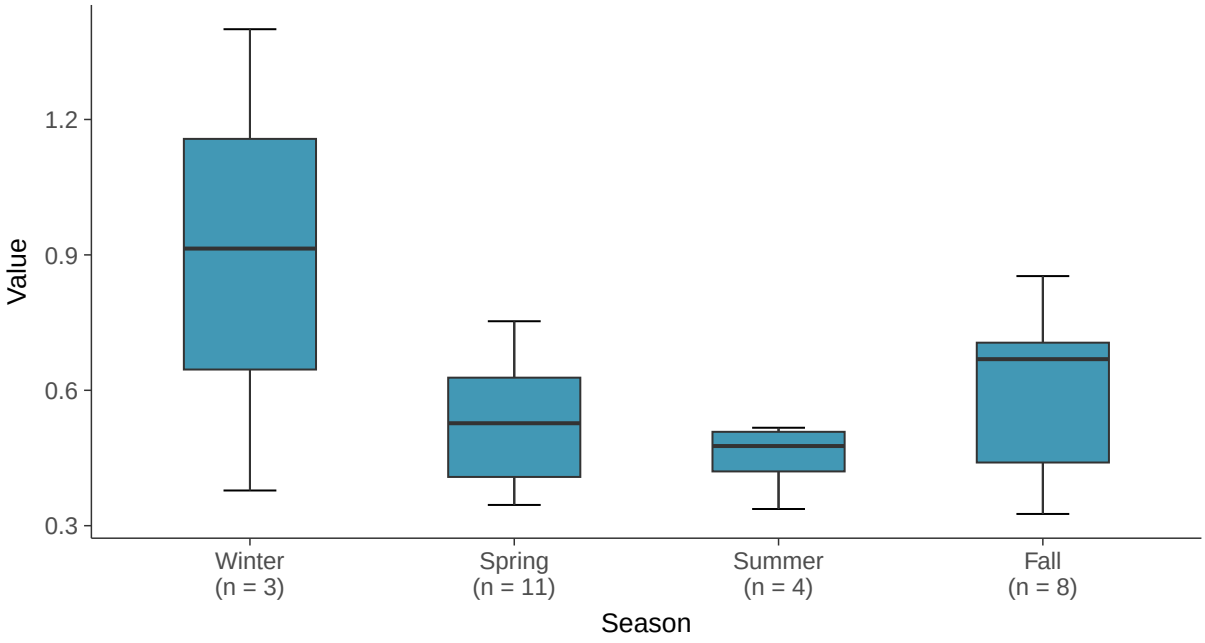
Boxplot

Radium-226+228, MW-12 (pci/l)



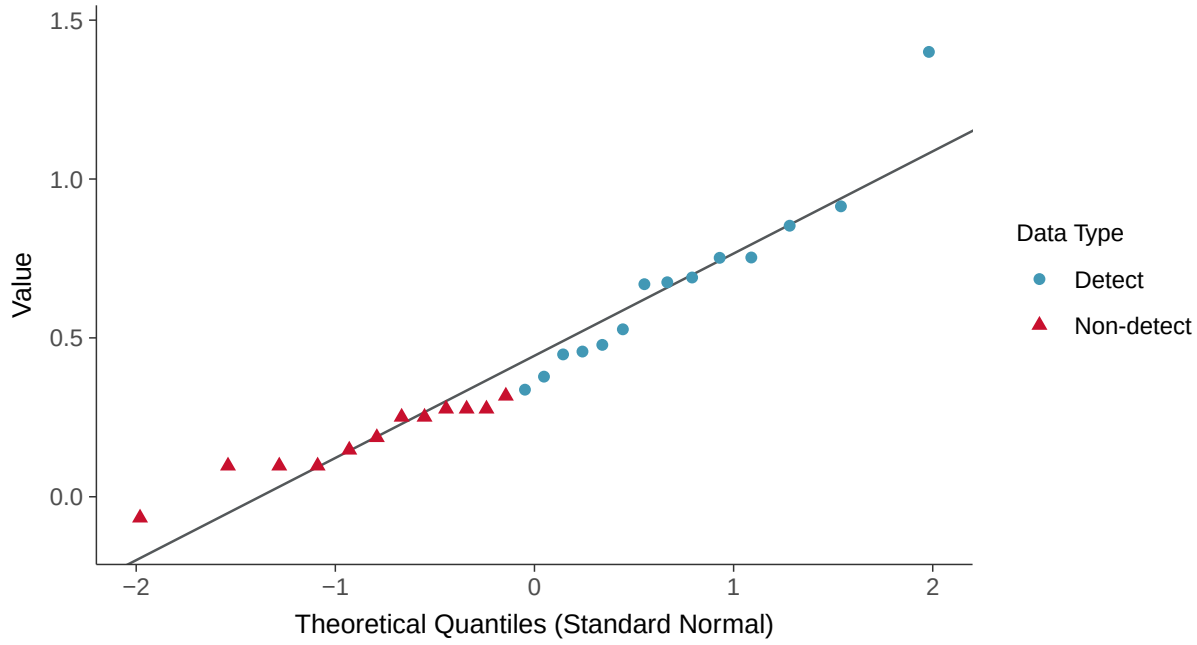
Boxplot by Season

Radium-226+228, MW-12 (pci/l)



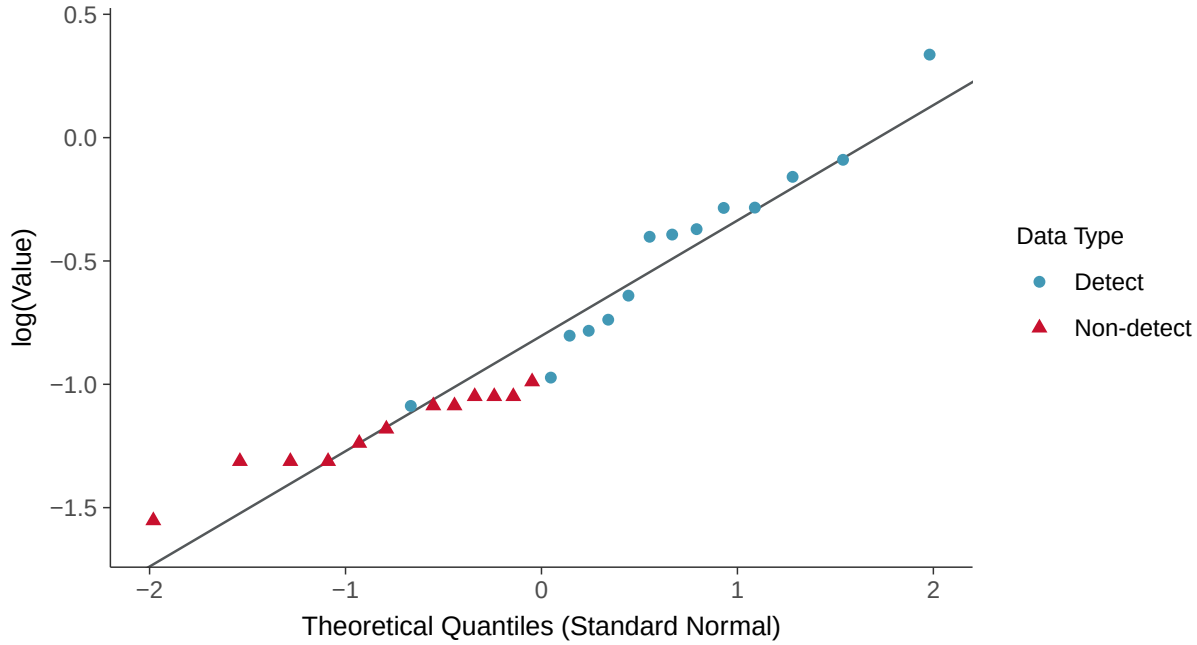
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-12 (pci/l)



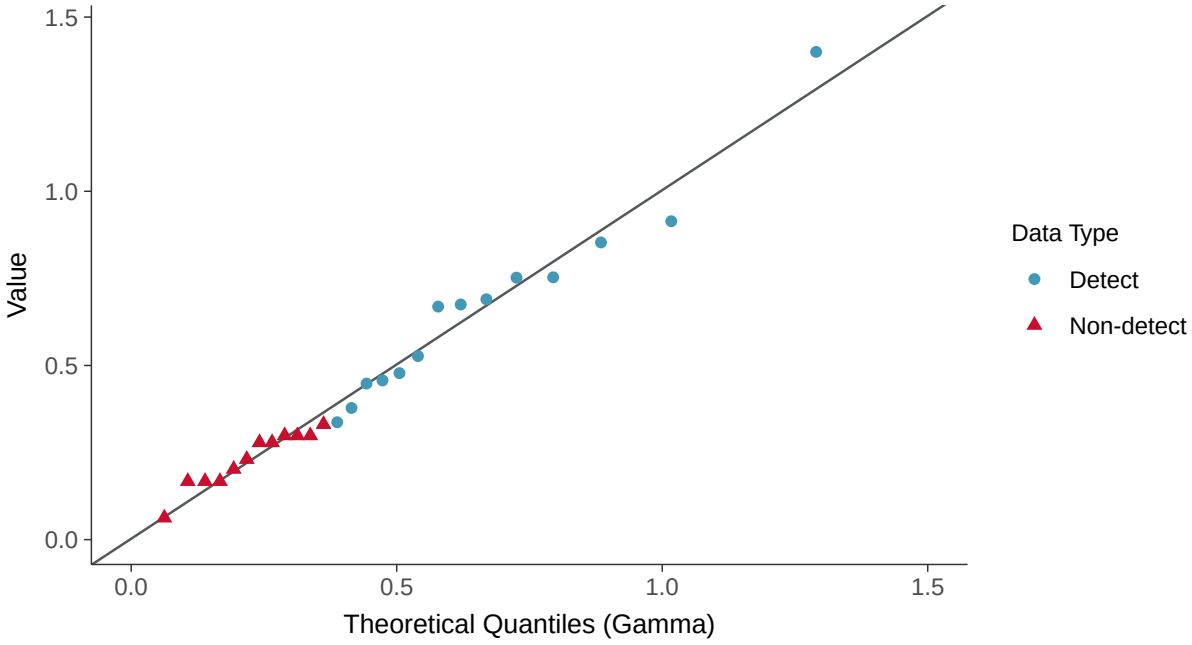
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-12 (pci/l)



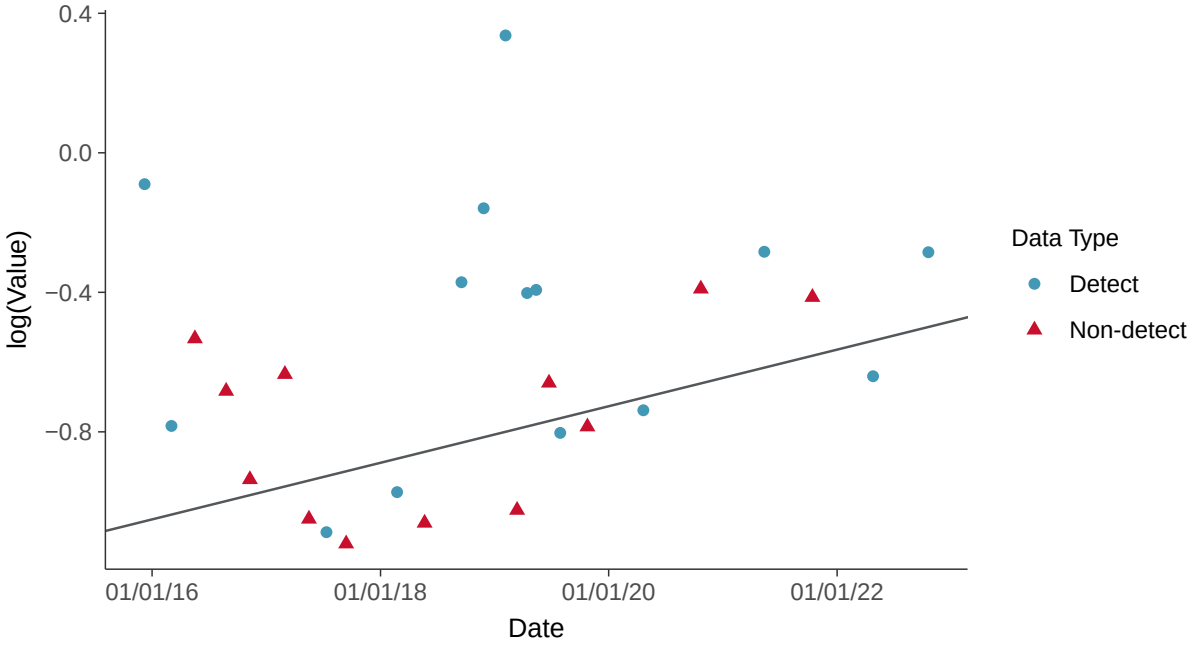
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-12 (pci/l)



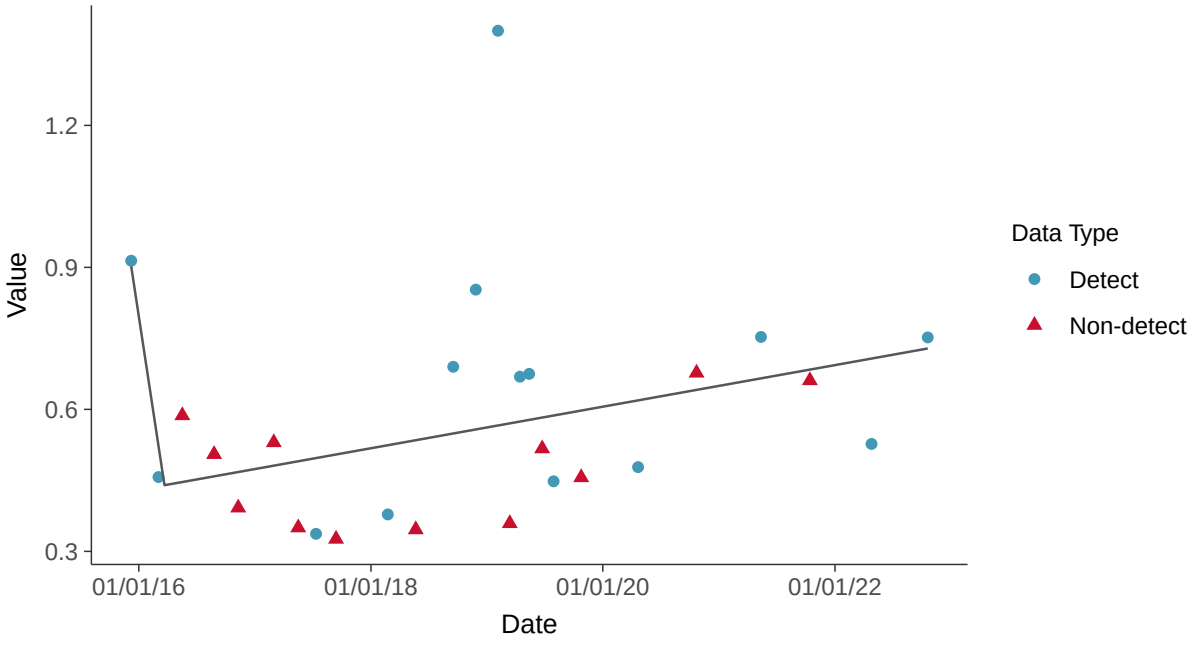
Trend Regression: Lognormal MLE

Radium-226+228, MW-12 (pci/l)



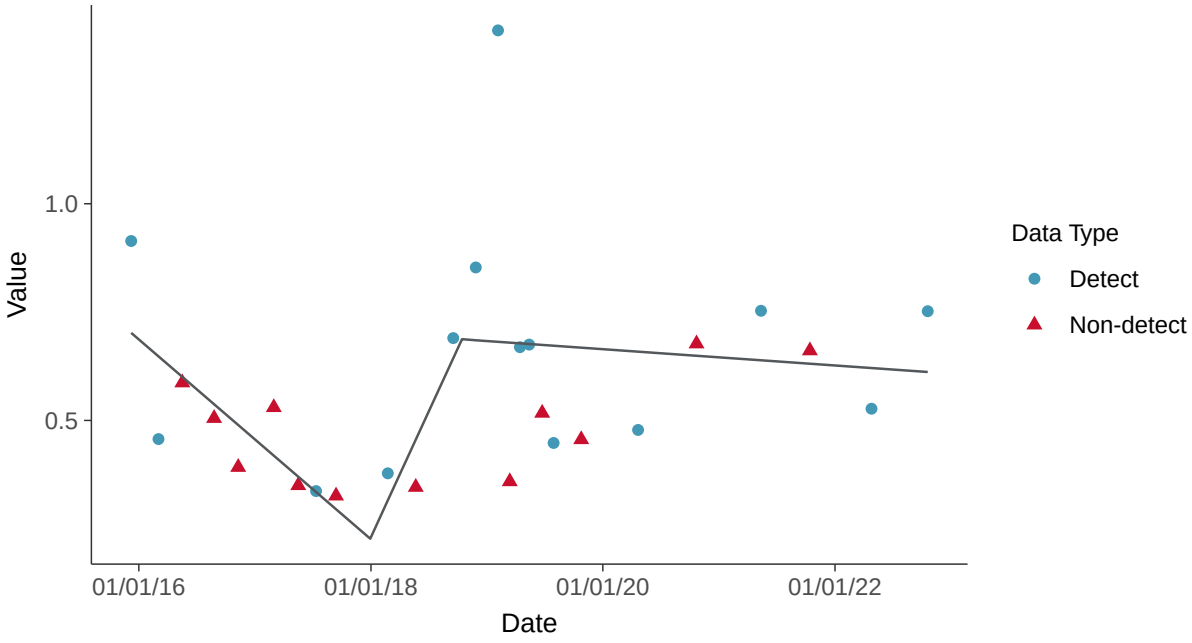
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-12 (pci/l)



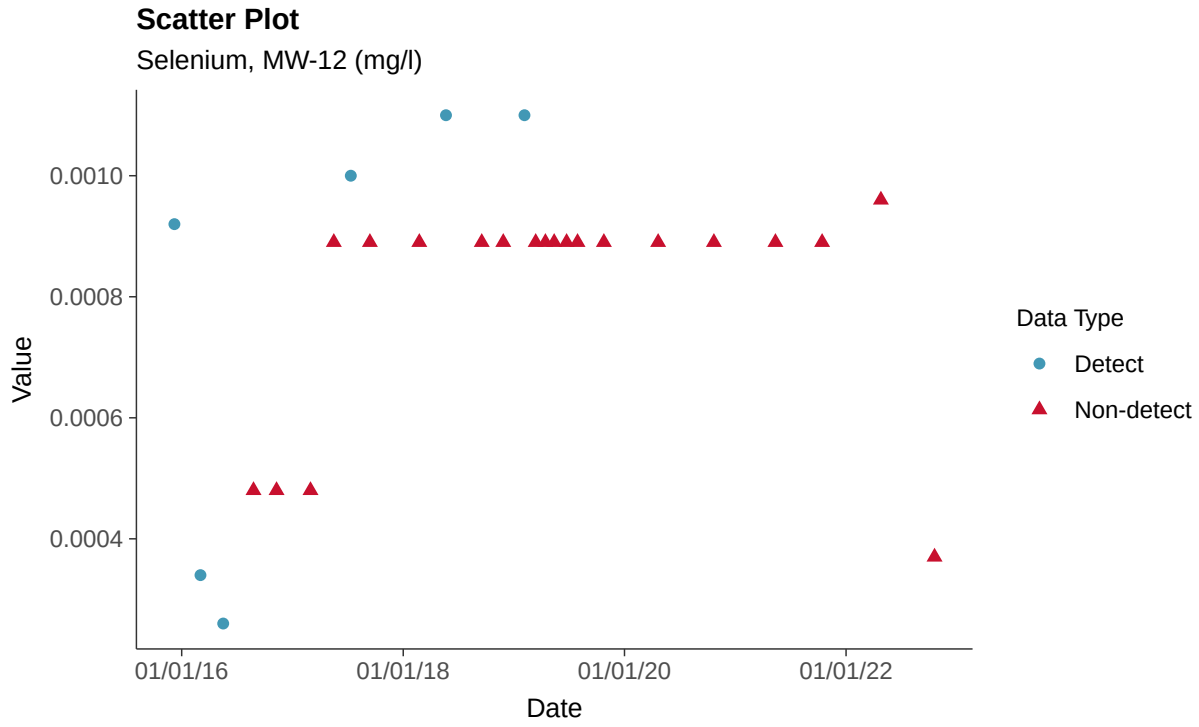
Trend Regression: Piecewise Linear-Linear-Linear

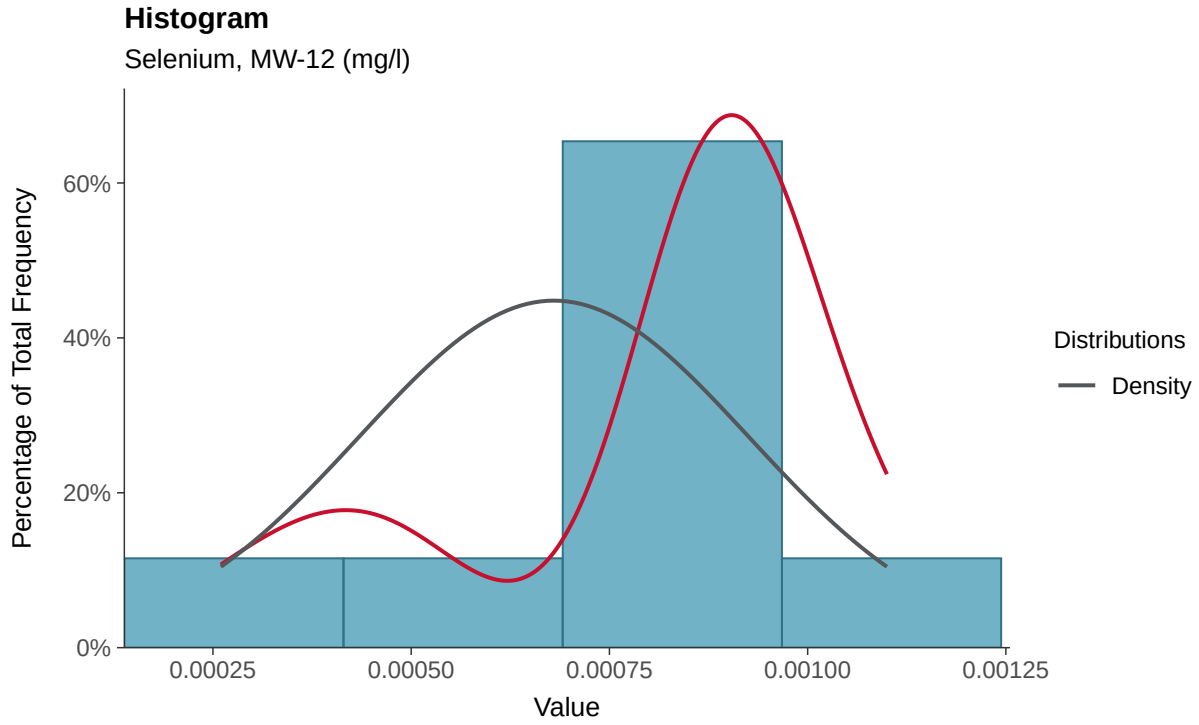
Radium-226+228, MW-12 (pci/l)



Appendix IV: Selenium, MW-12

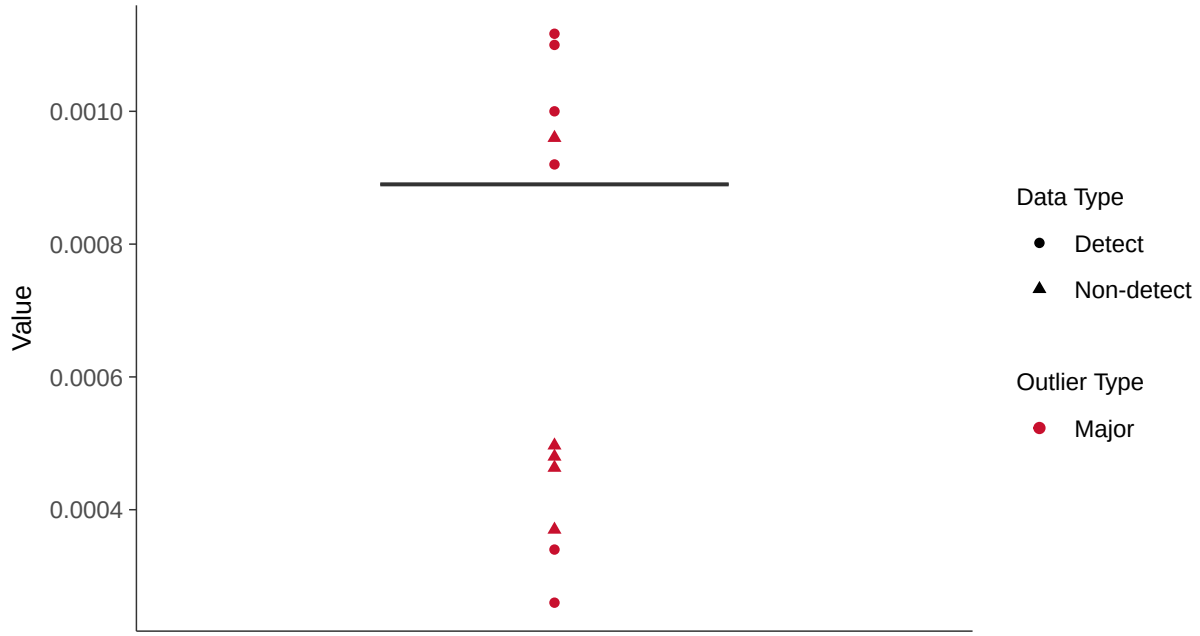
ID: 12_2_129





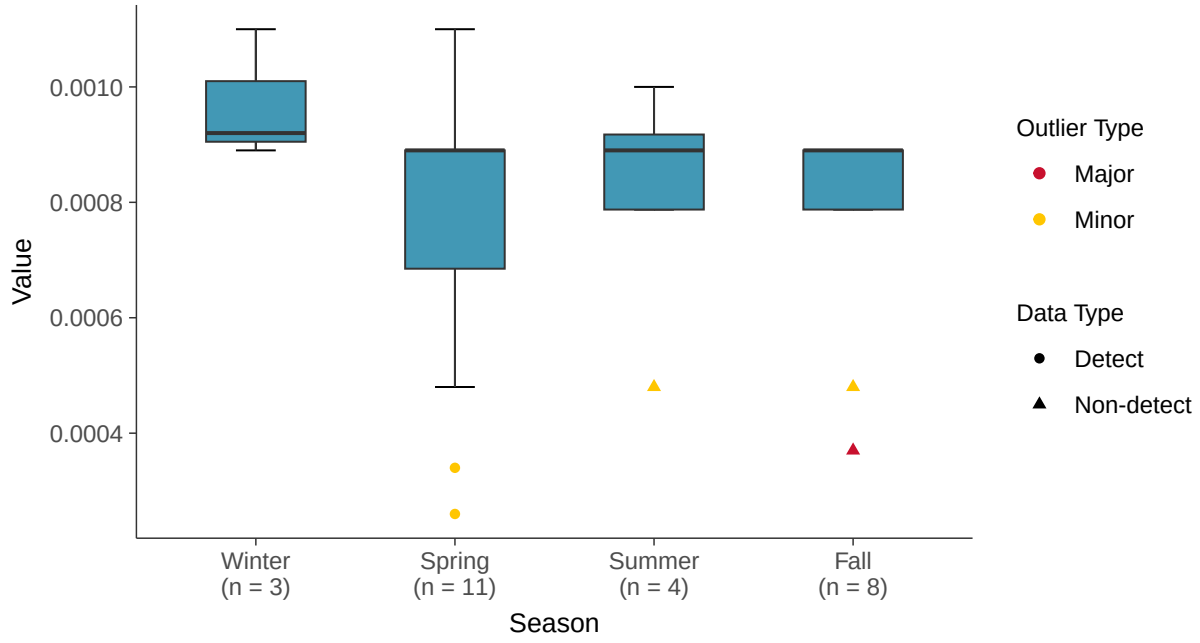
Boxplot

Selenium, MW-12 (mg/l)



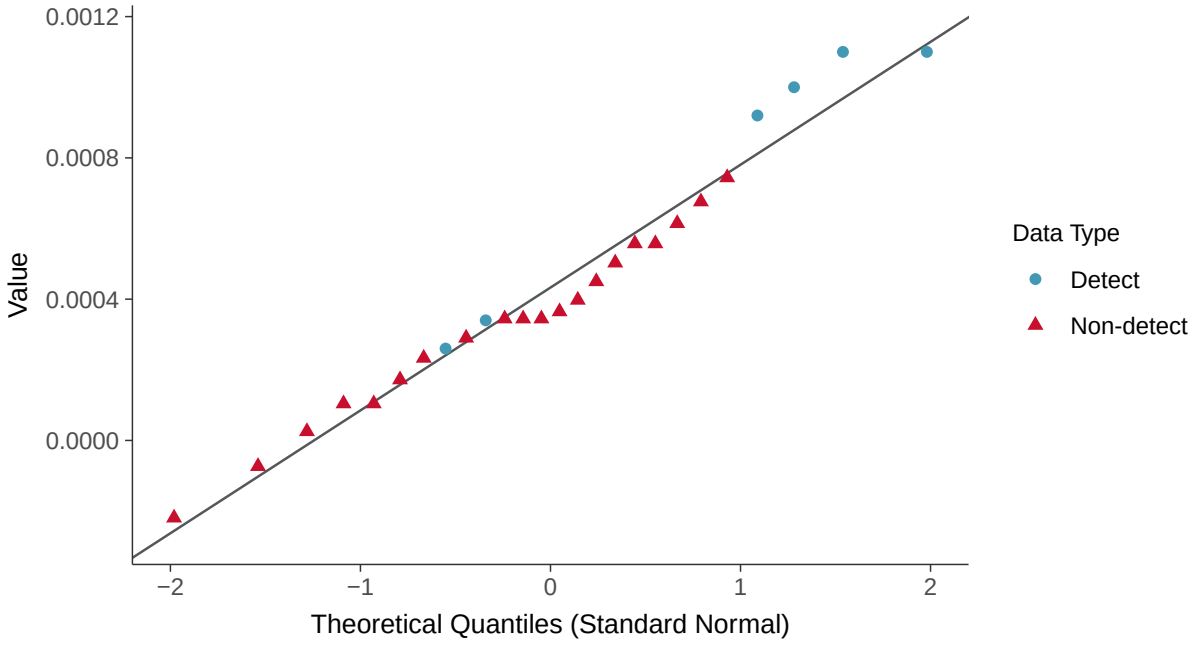
Boxplot by Season

Selenium, MW-12 (mg/l)



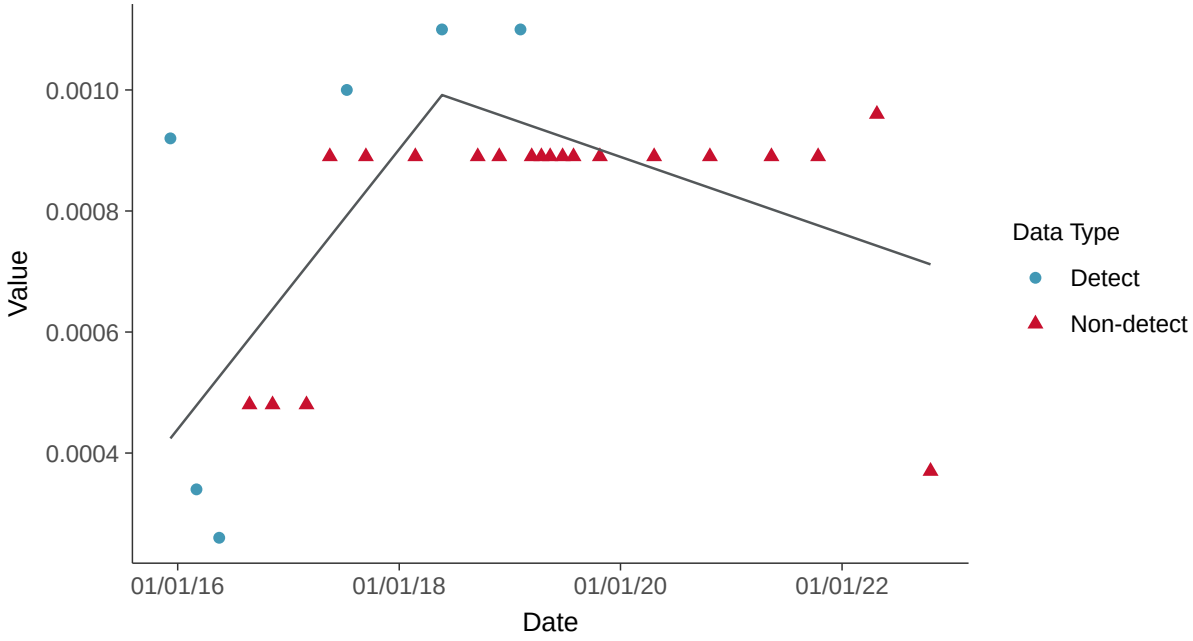
Normal Q-Q plot using ROS Imputed Estimates

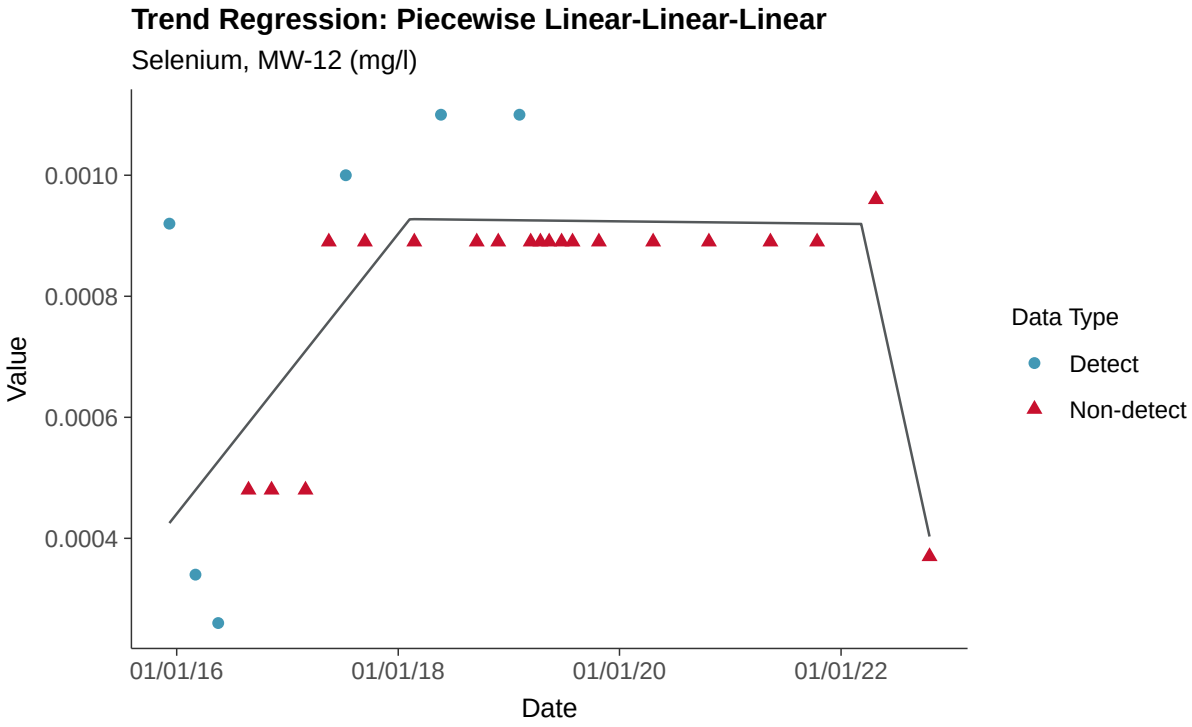
Selenium, MW-12 (mg/l)



Trend Regression: Piecewise Linear-Linear

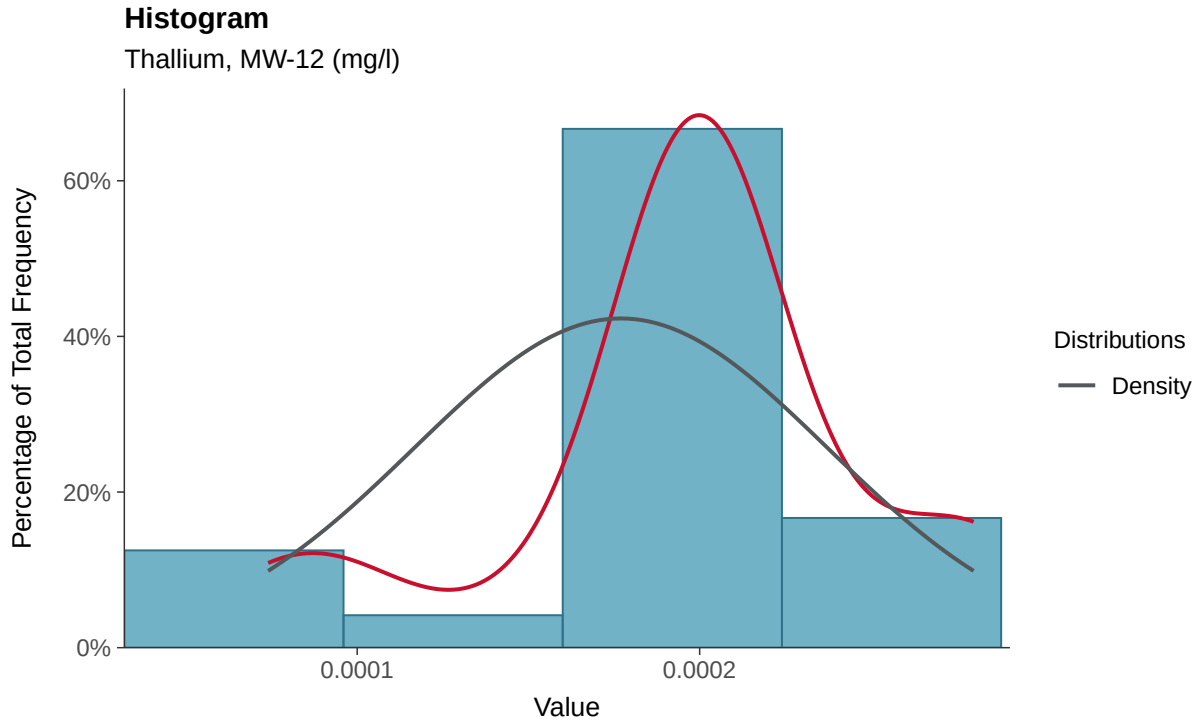
Selenium, MW-12 (mg/l)




Trend Regression: Piecewise Linear-Linear-Linear
Selenium, MW-12 (mg/l)
Value
0.0010
0.0008
0.0006
0.0004
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

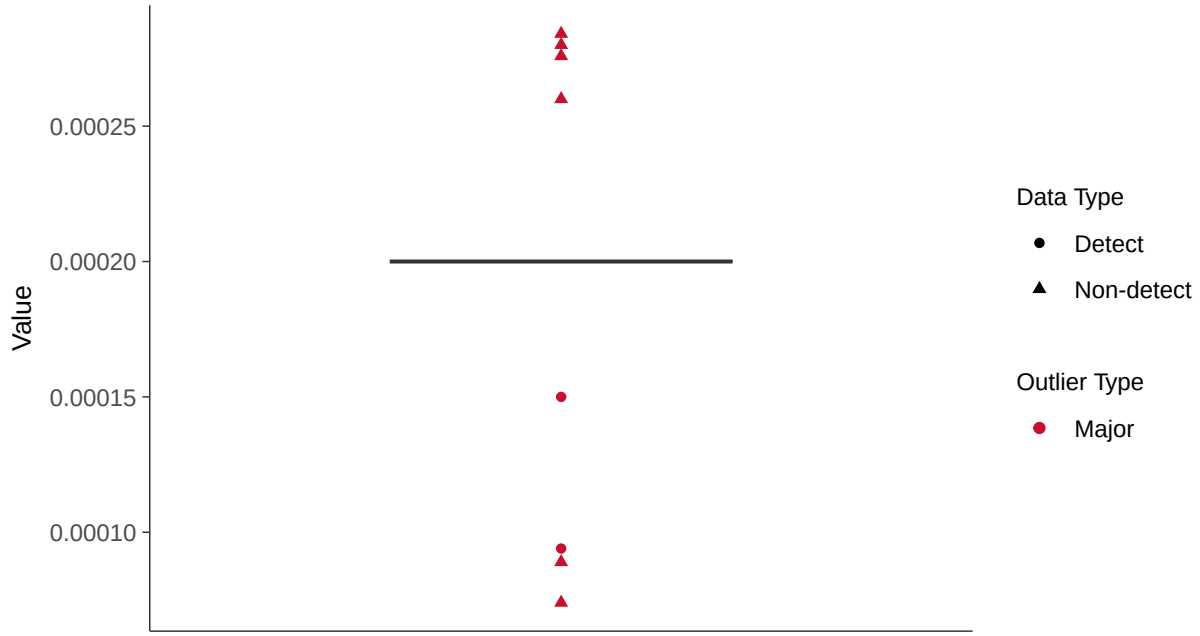
Appendix IV: Thallium, MW-12

ID: 12_2_134



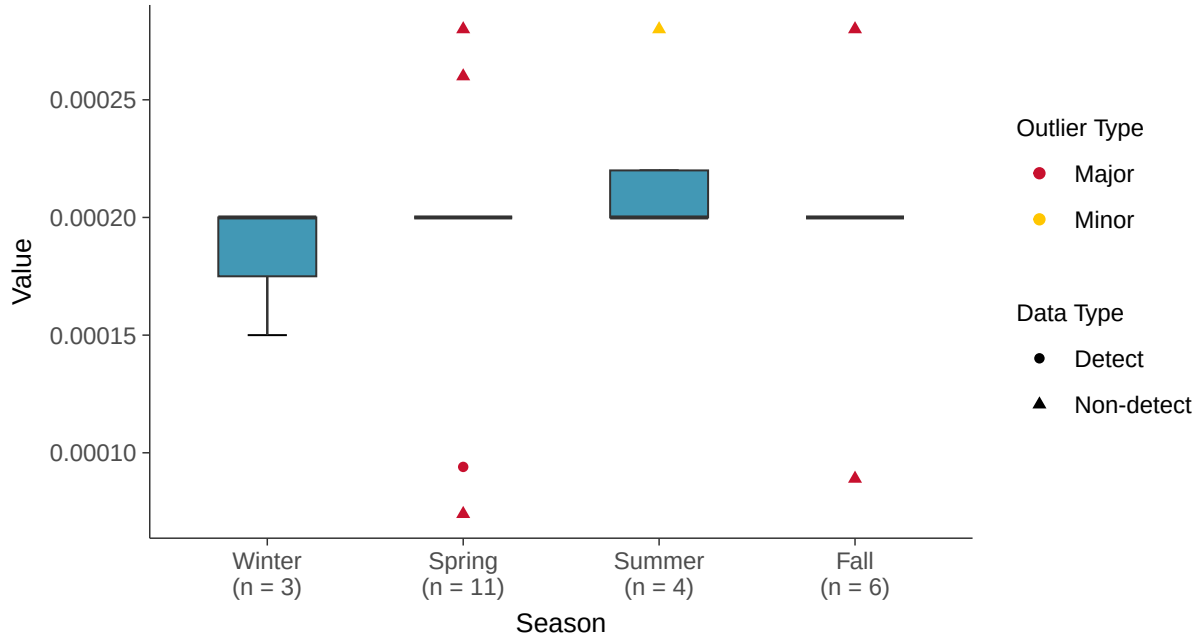
Boxplot

Thallium, MW-12 (mg/l)



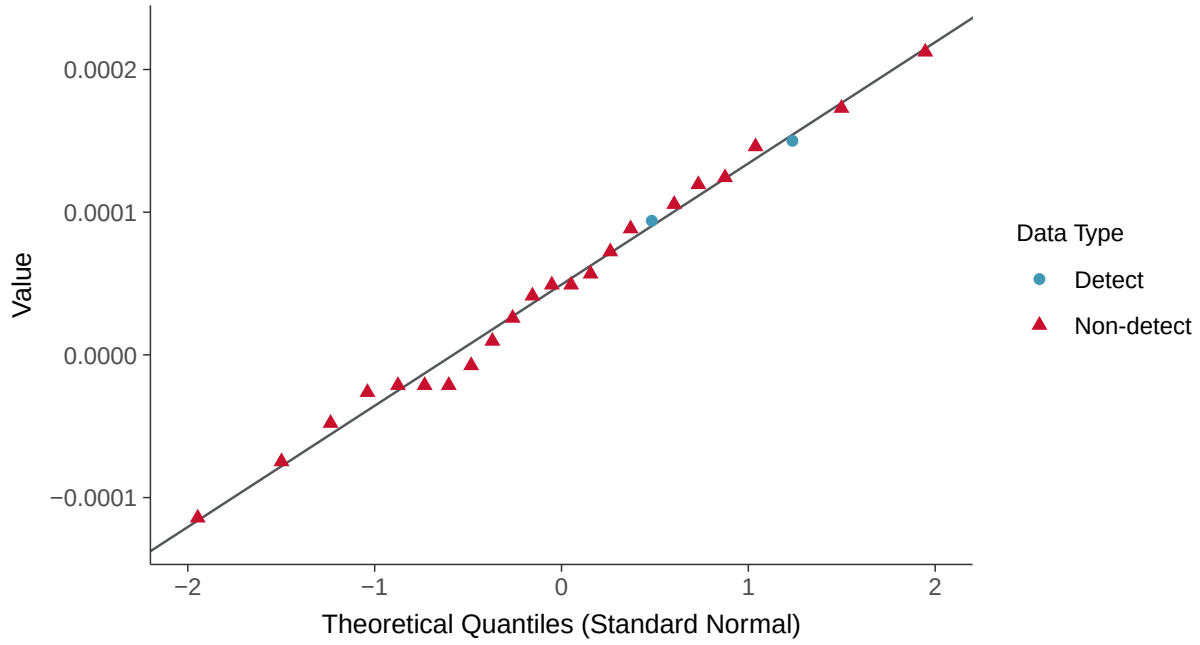
Boxplot by Season

Thallium, MW-12 (mg/l)



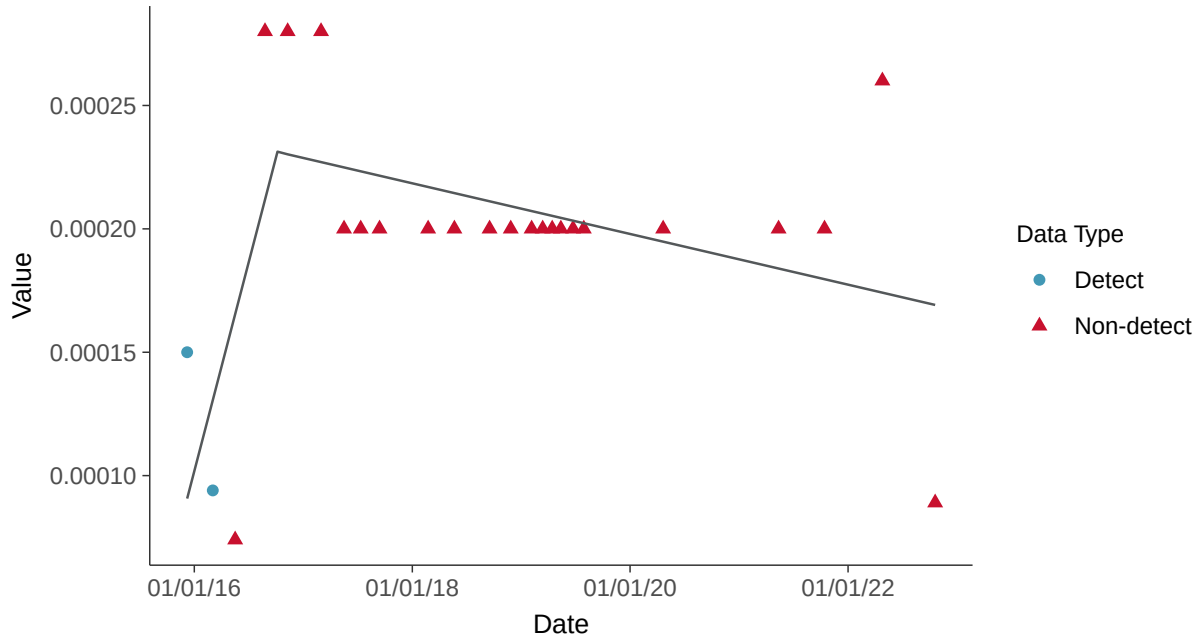
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-12 (mg/l)



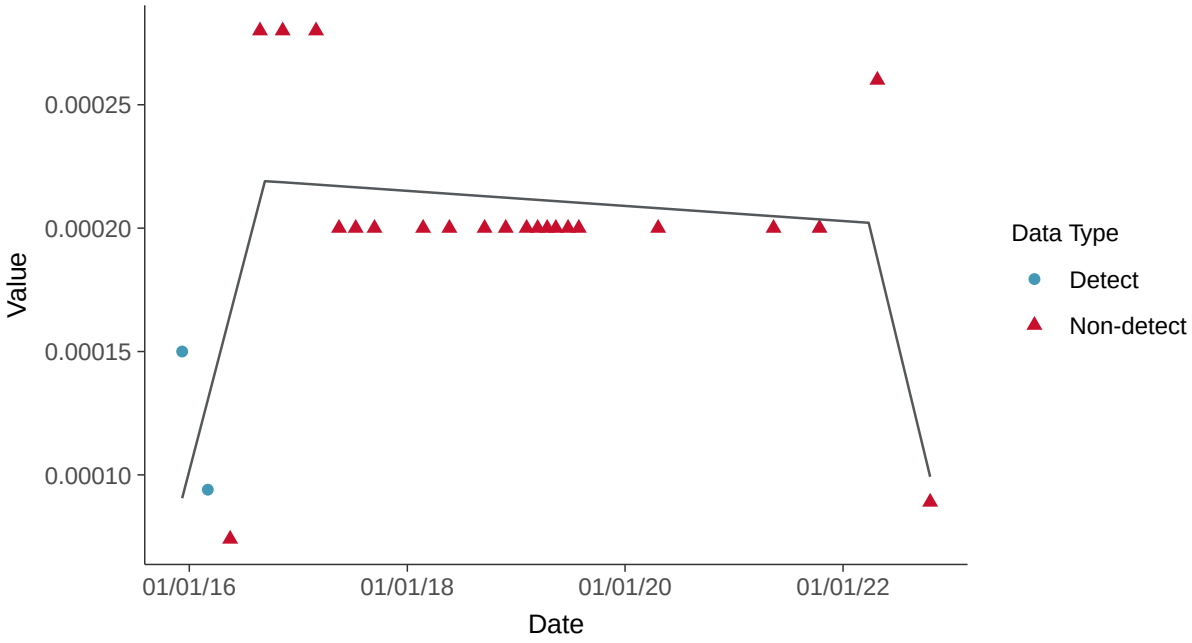
Trend Regression: Piecewise Linear-Linear

Thallium, MW-12 (mg/l)



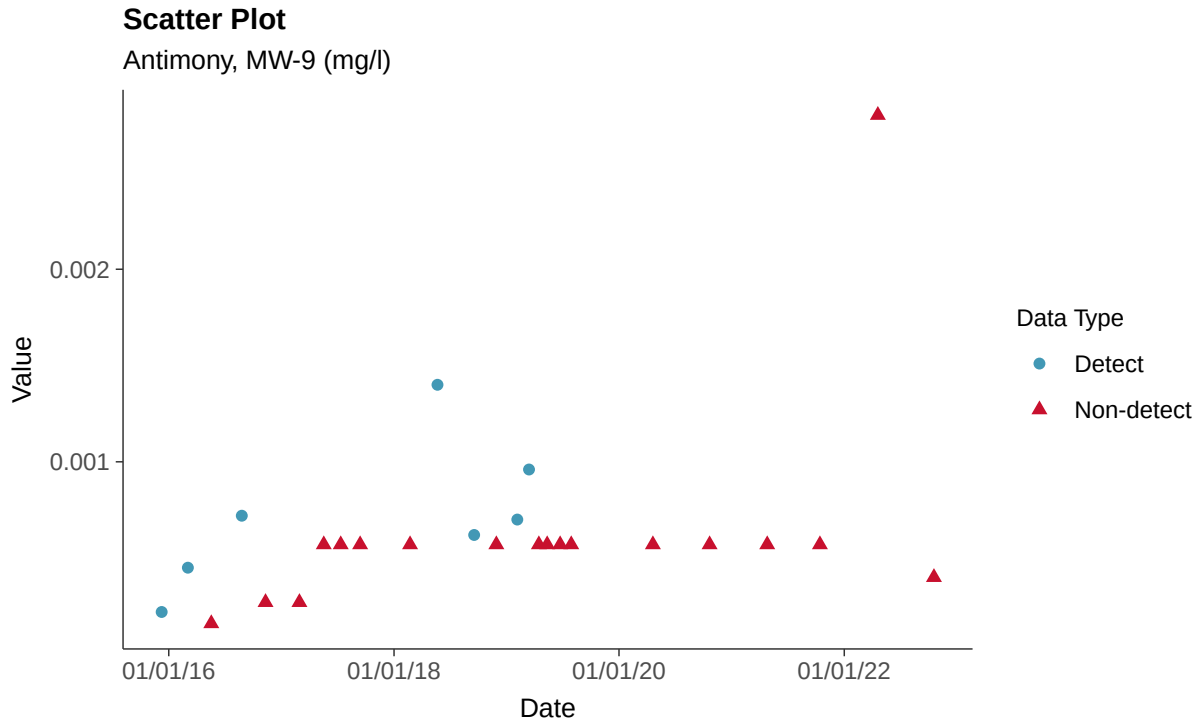
Trend Regression: Piecewise Linear-Linear-Linear

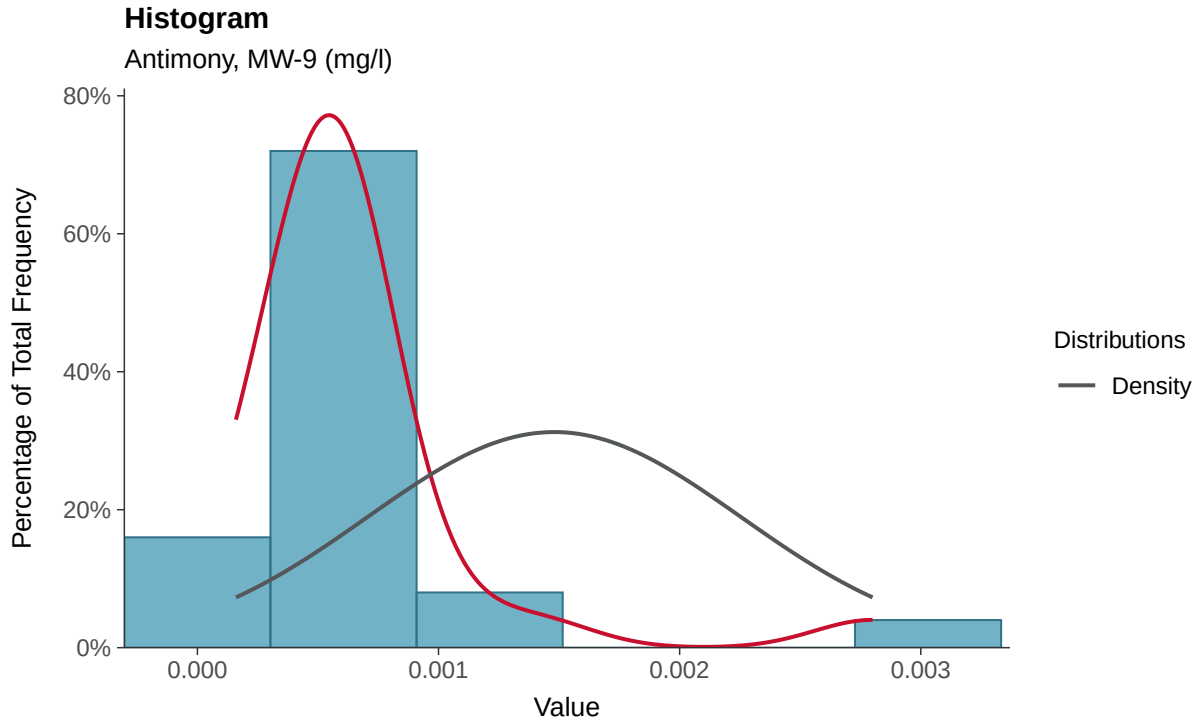
Thallium, MW-12 (mg/l)



Appendix IV: Antimony, MW-9

ID: 13_2_104



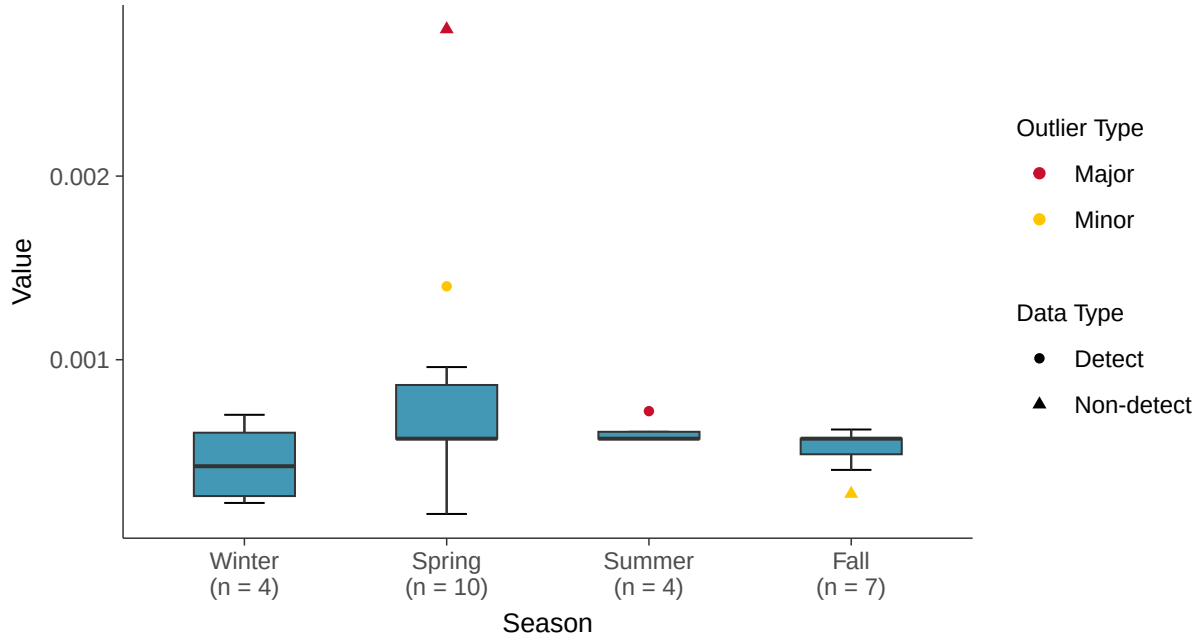


Boxplot

Antimony, MW-9 (mg/l)

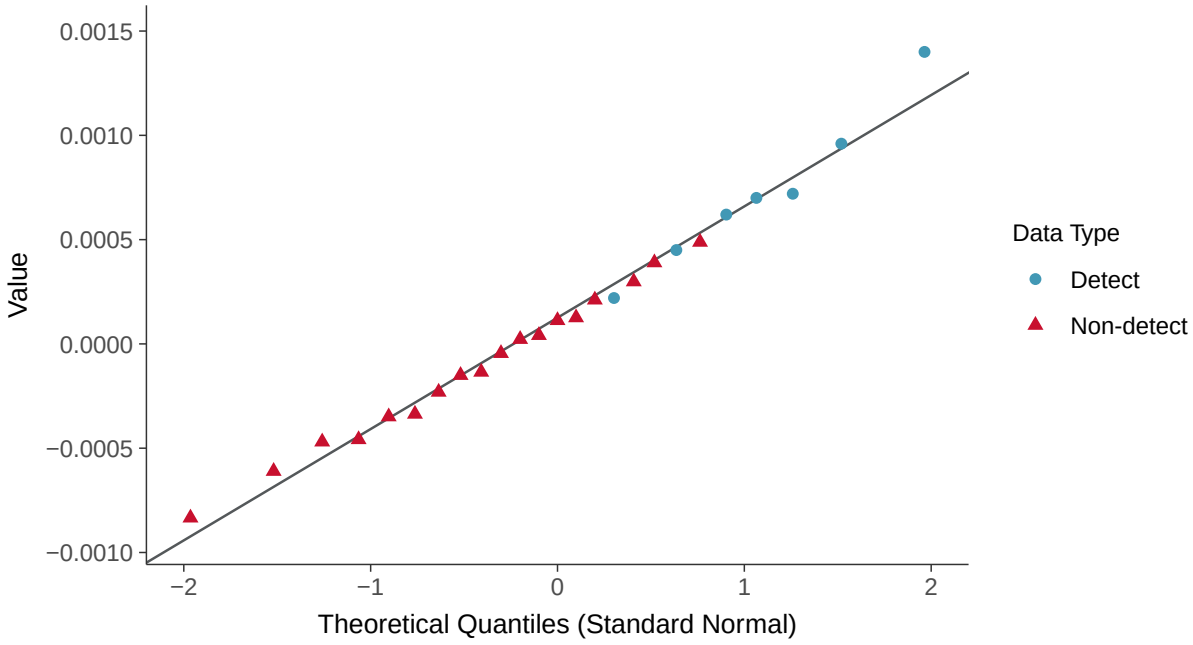
Boxplot by Season

Antimony, MW-9 (mg/l)



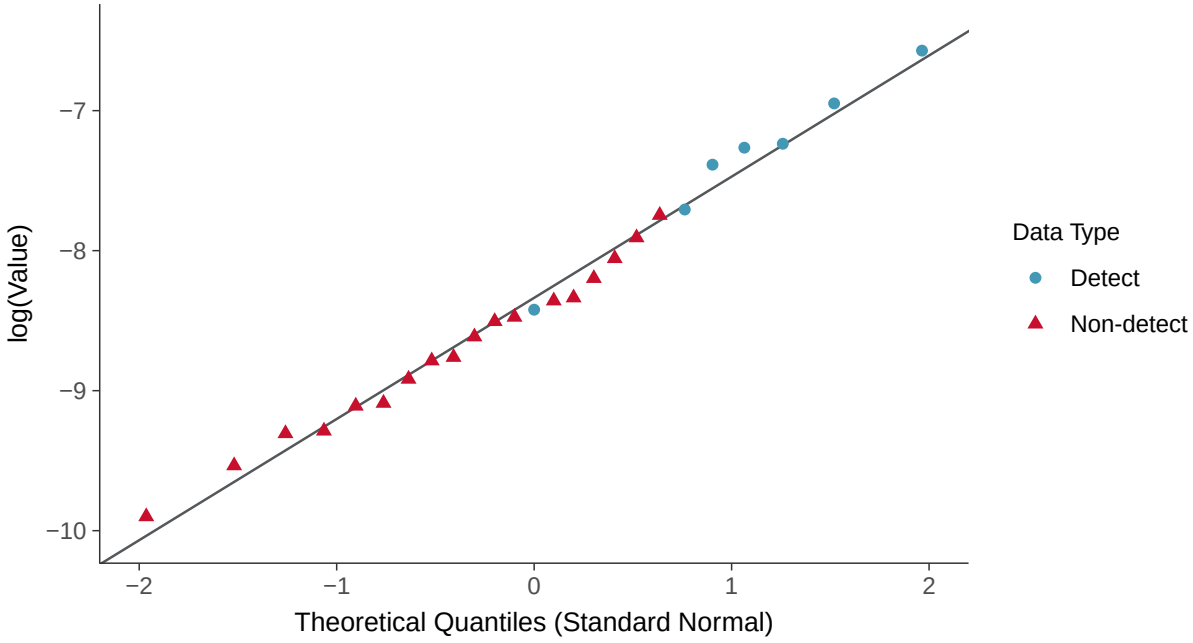
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-9 (mg/l)



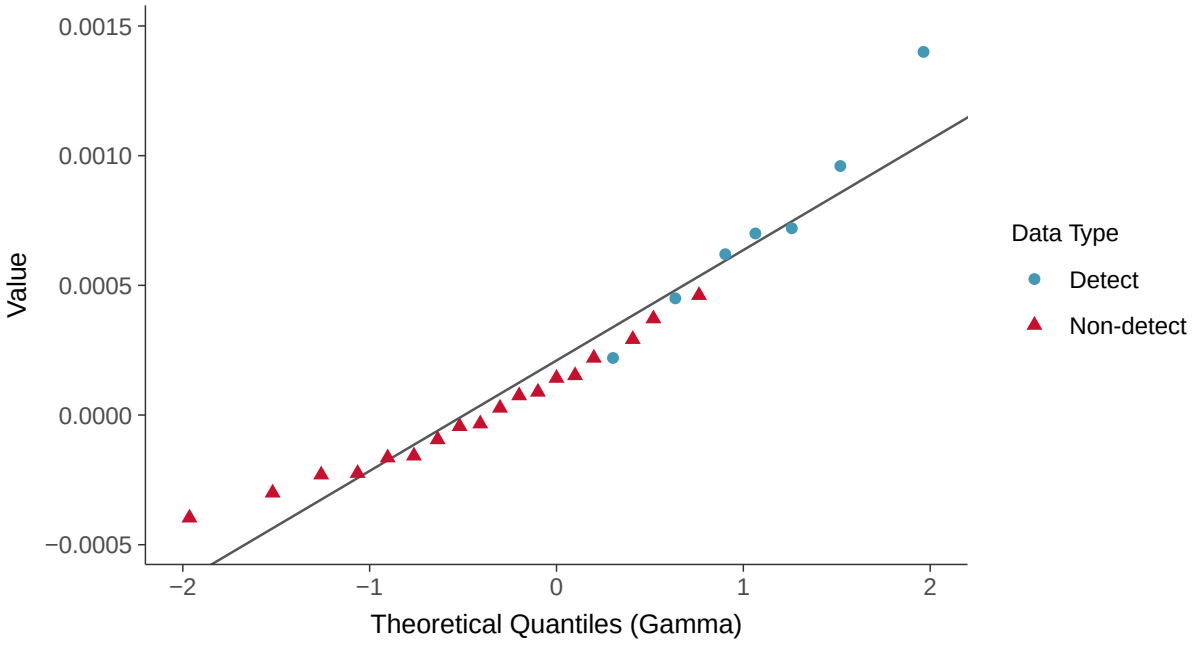
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-9 (mg/l)



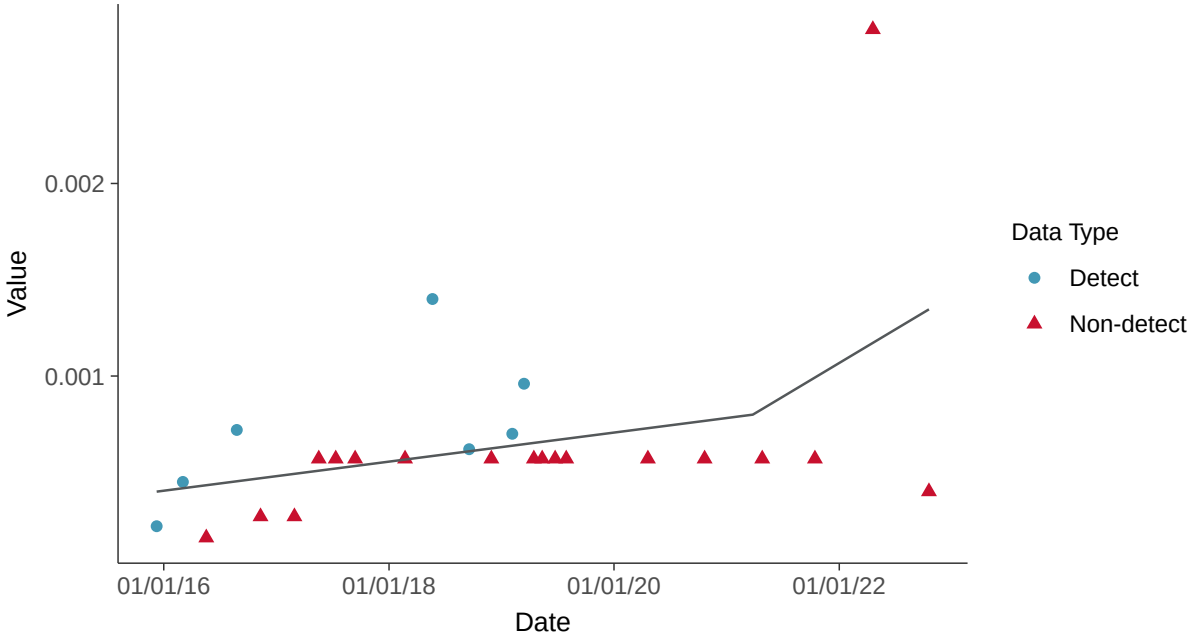
Gamma Q-Q plot using ROS Imputed Estimates

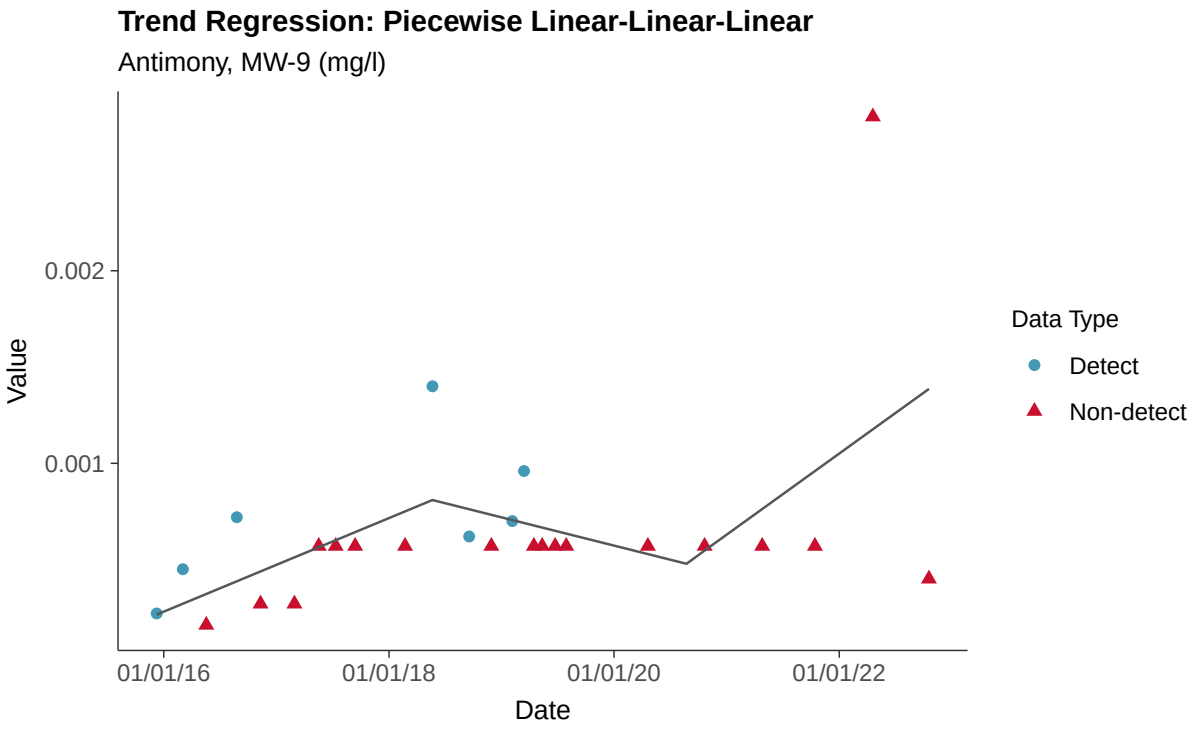
Antimony, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

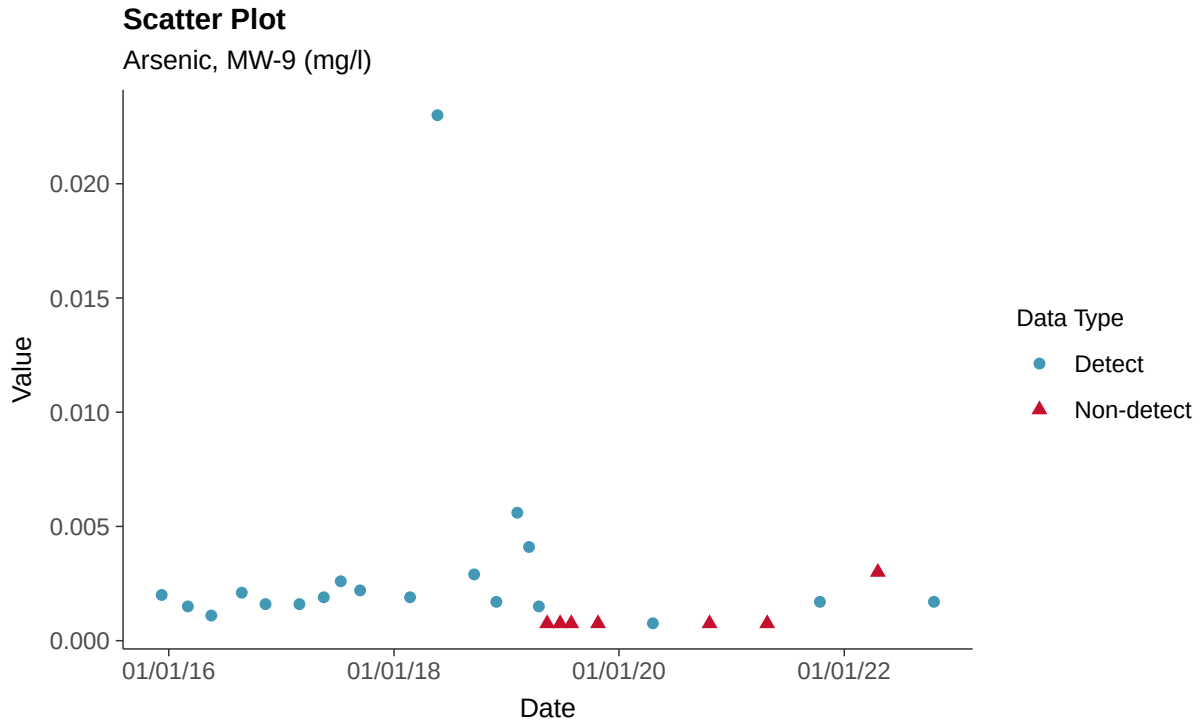
Antimony, MW-9 (mg/l)

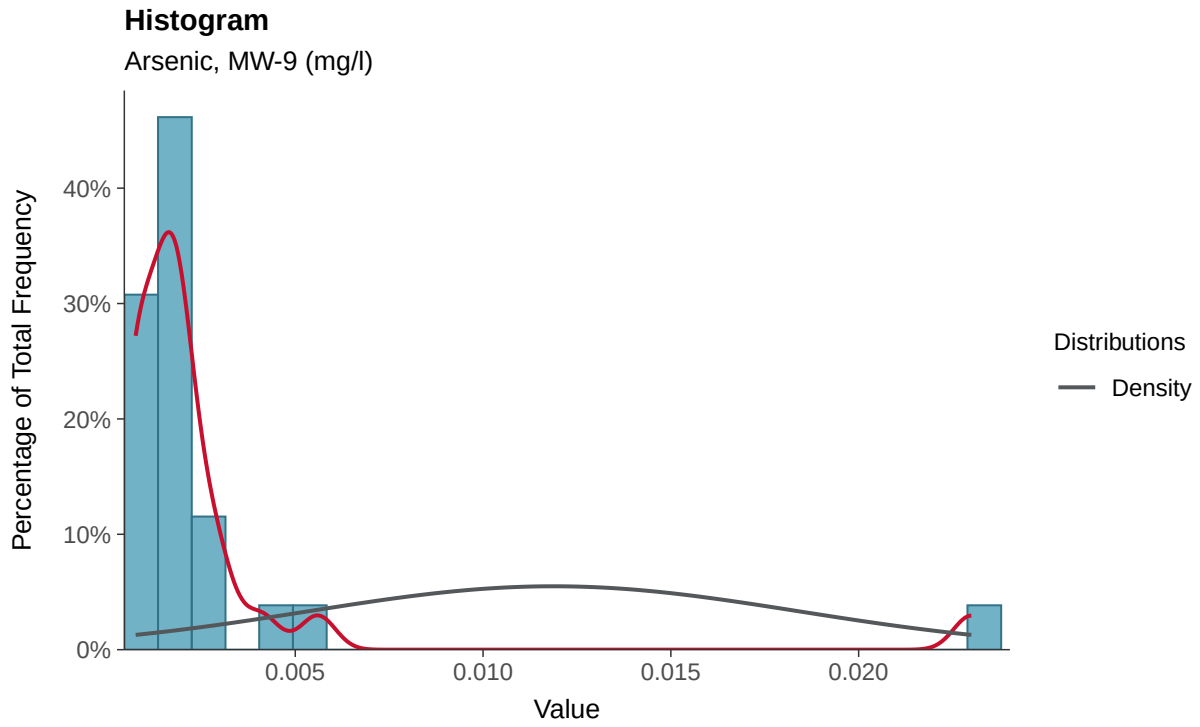



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-9 (mg/l)
Value
0.002
0.001
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-9

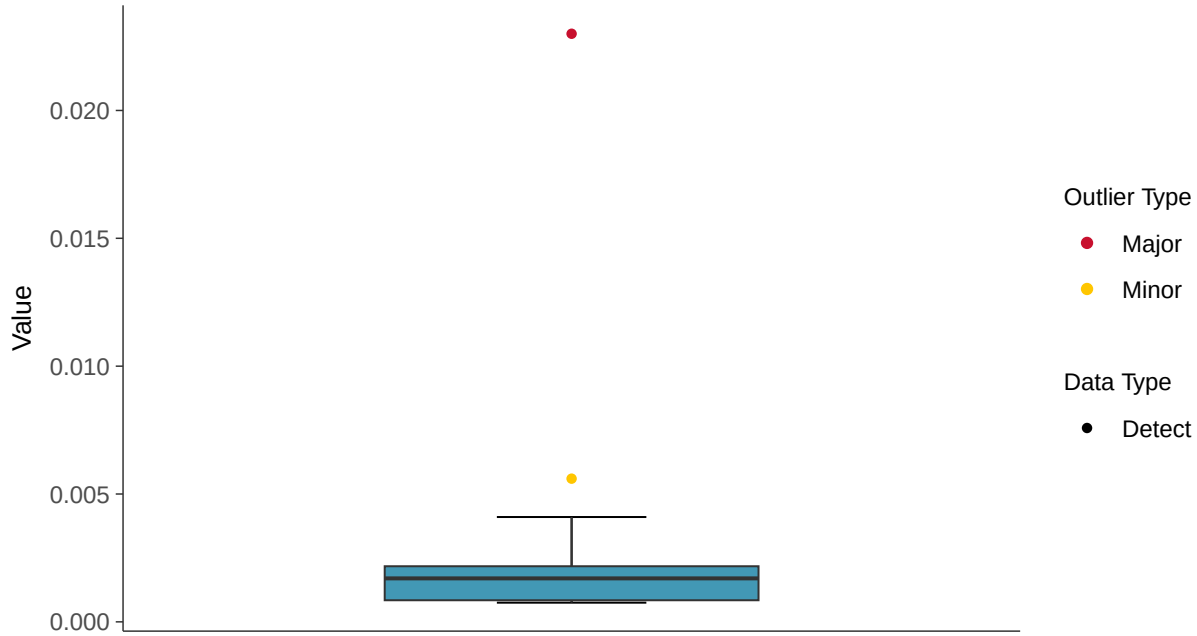
ID: 13_2_105





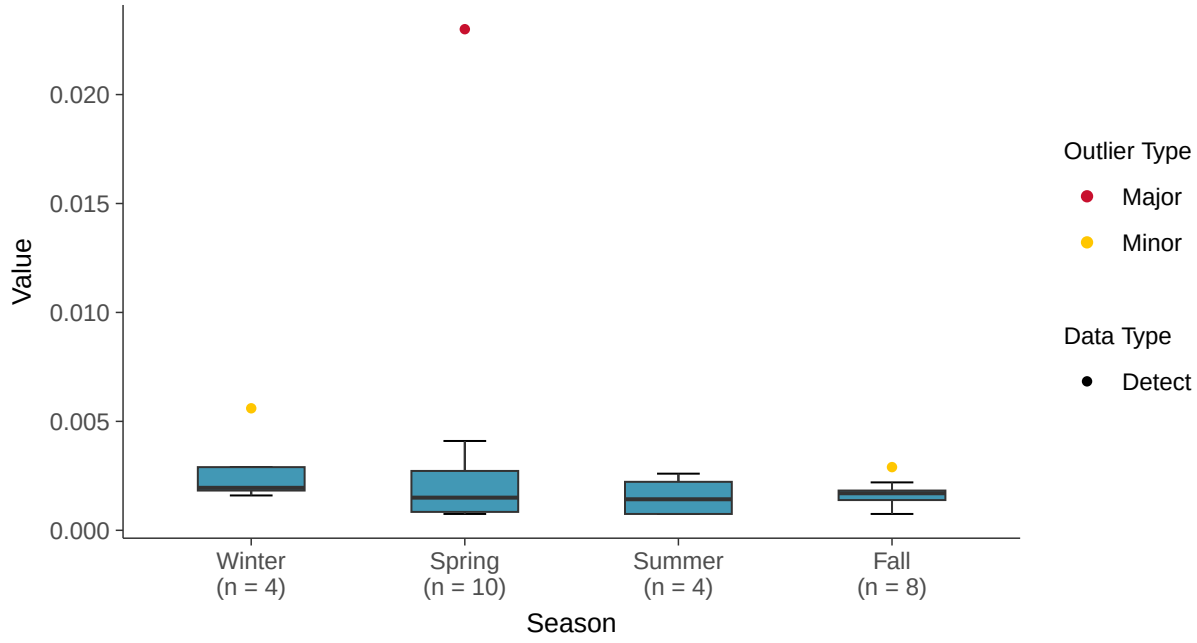
Boxplot

Arsenic, MW-9 (mg/l)



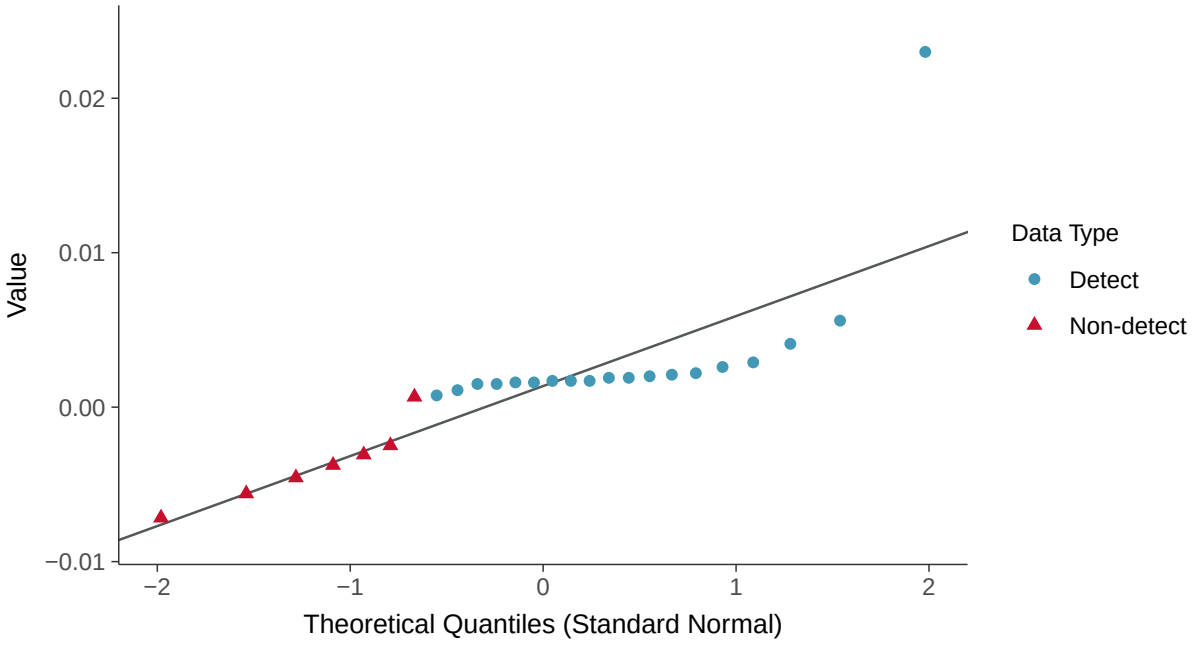
Boxplot by Season

Arsenic, MW-9 (mg/l)



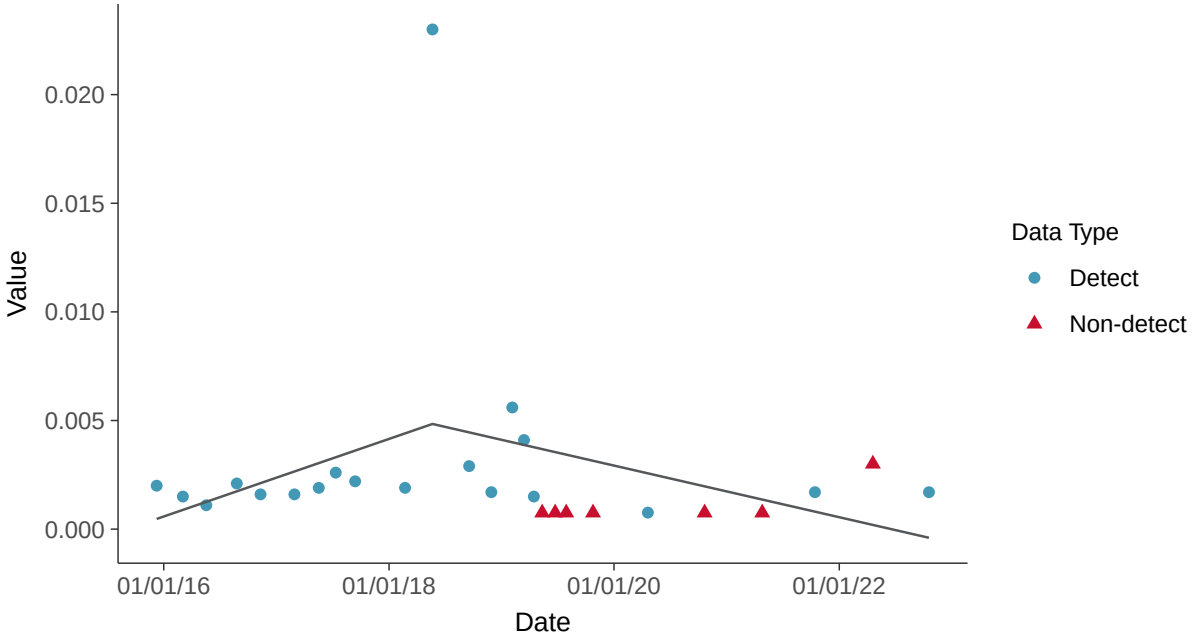
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-9 (mg/l)



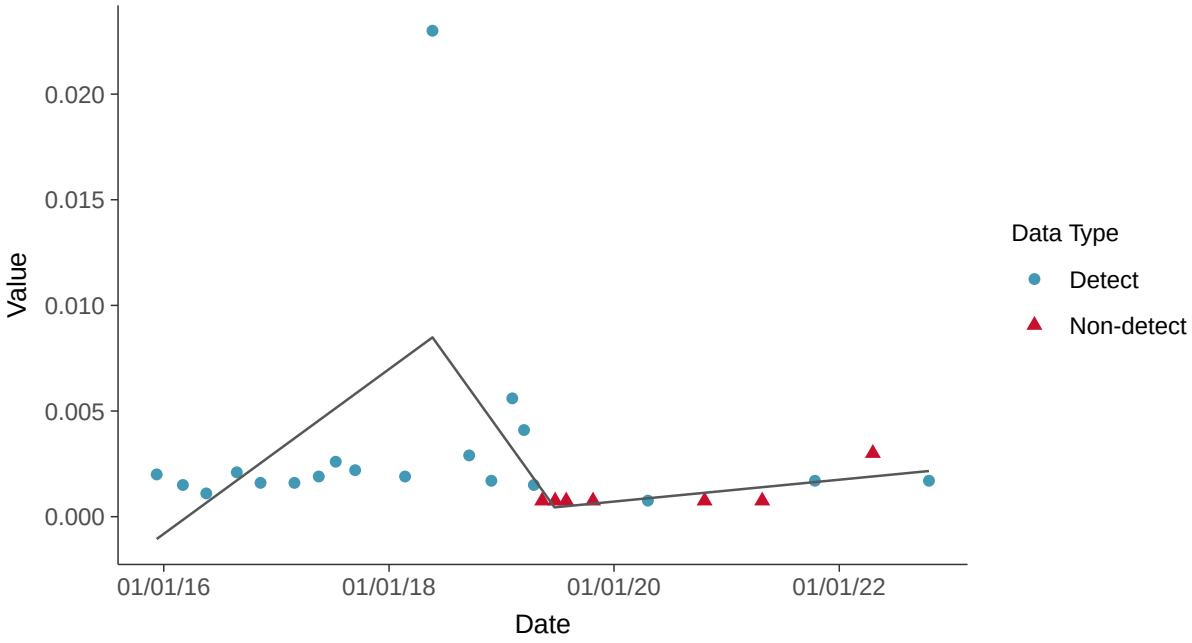
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-9 (mg/l)



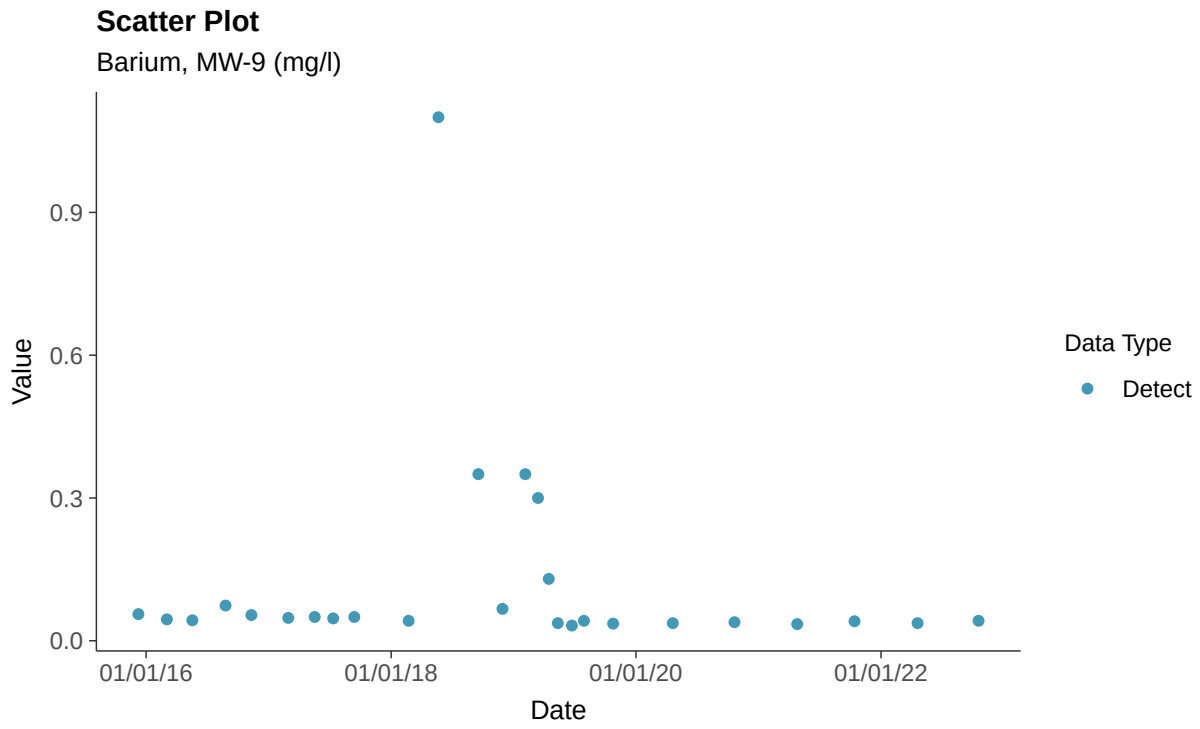
Trend Regression: Piecewise Linear-Linear-Linear

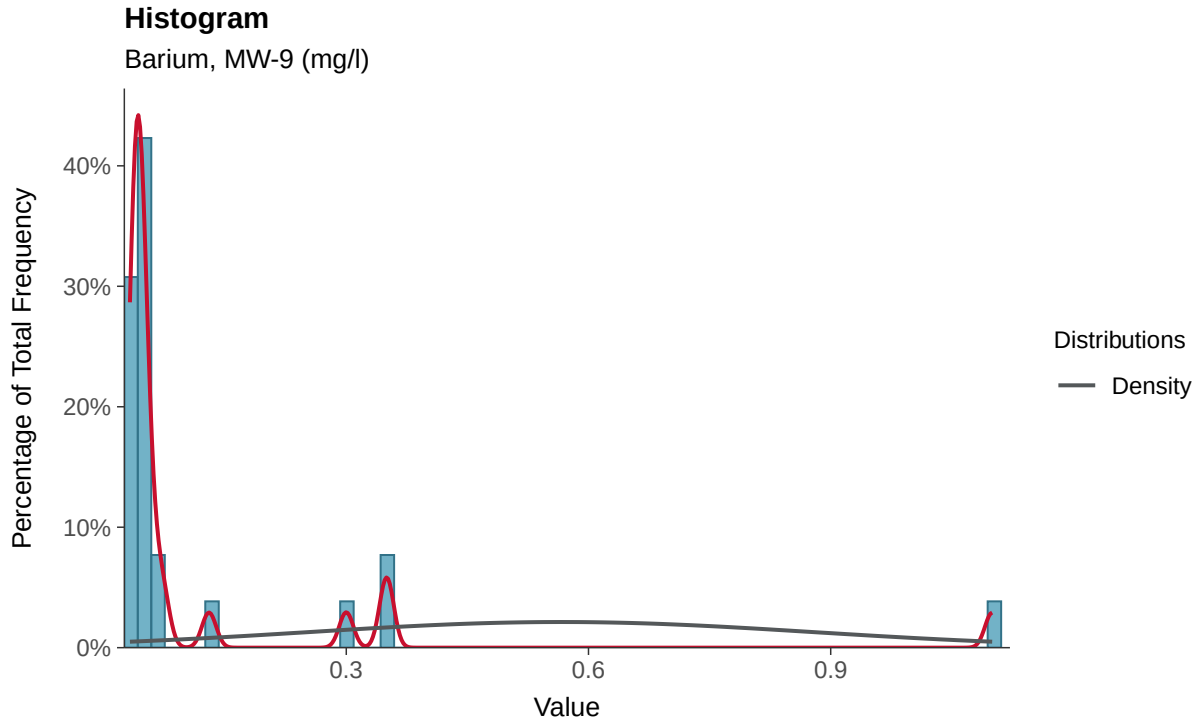
Arsenic, MW-9 (mg/l)



Appendix IV: Barium, MW-9

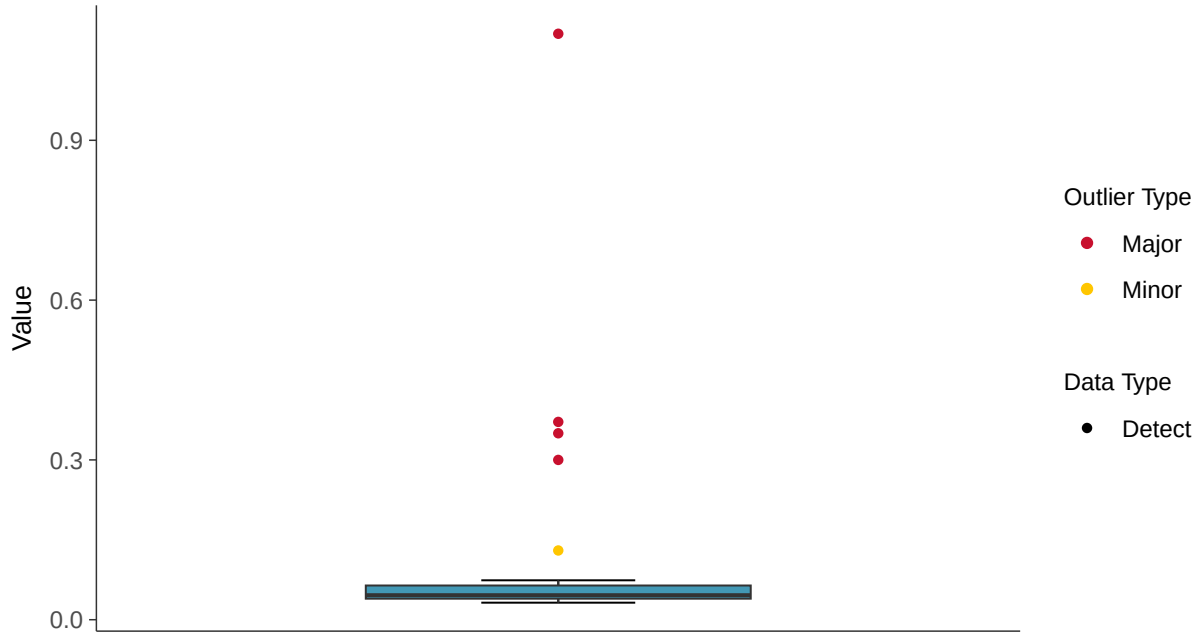
ID: 13_2_106





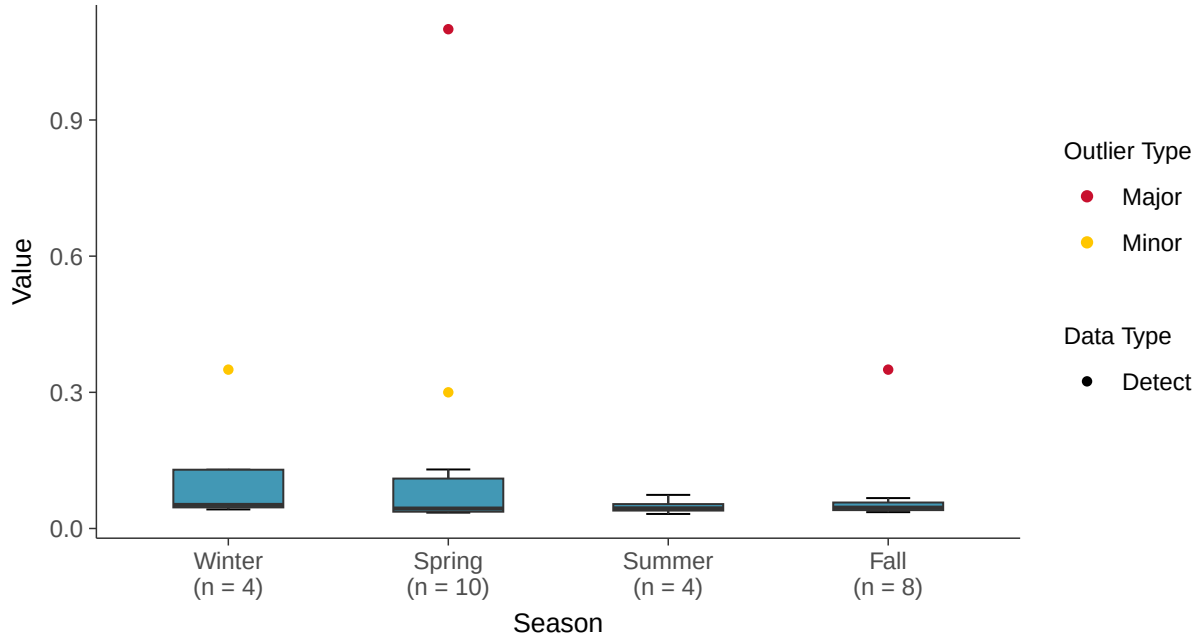
Boxplot

Barium, MW-9 (mg/l)



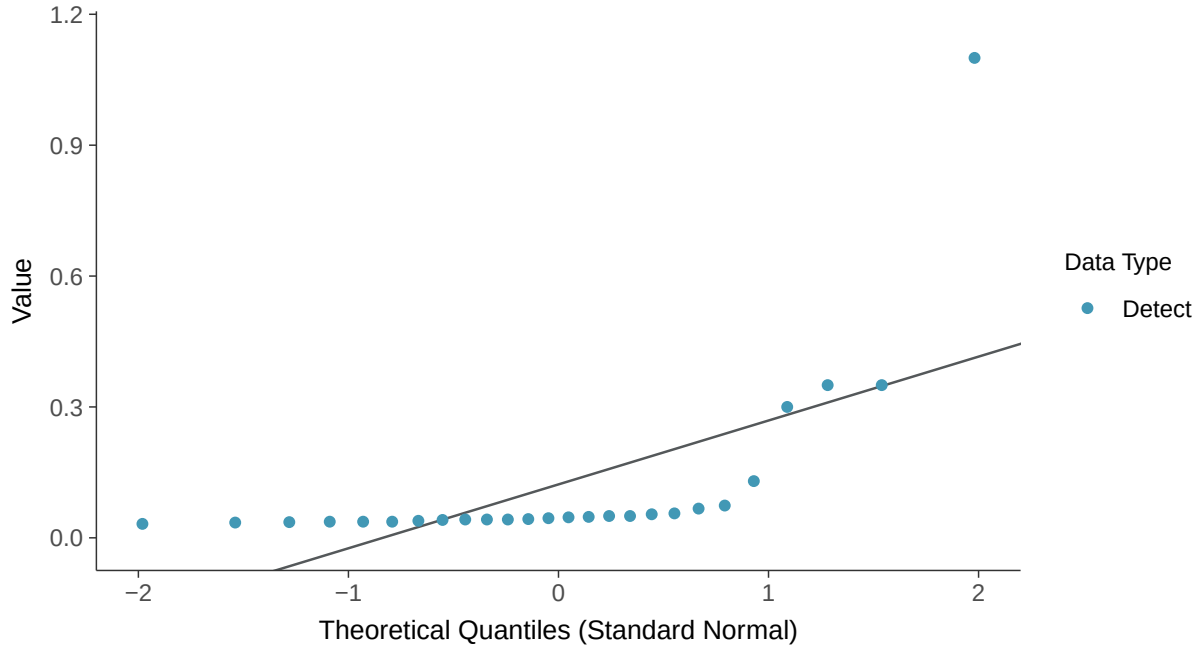
Boxplot by Season

Barium, MW-9 (mg/l)



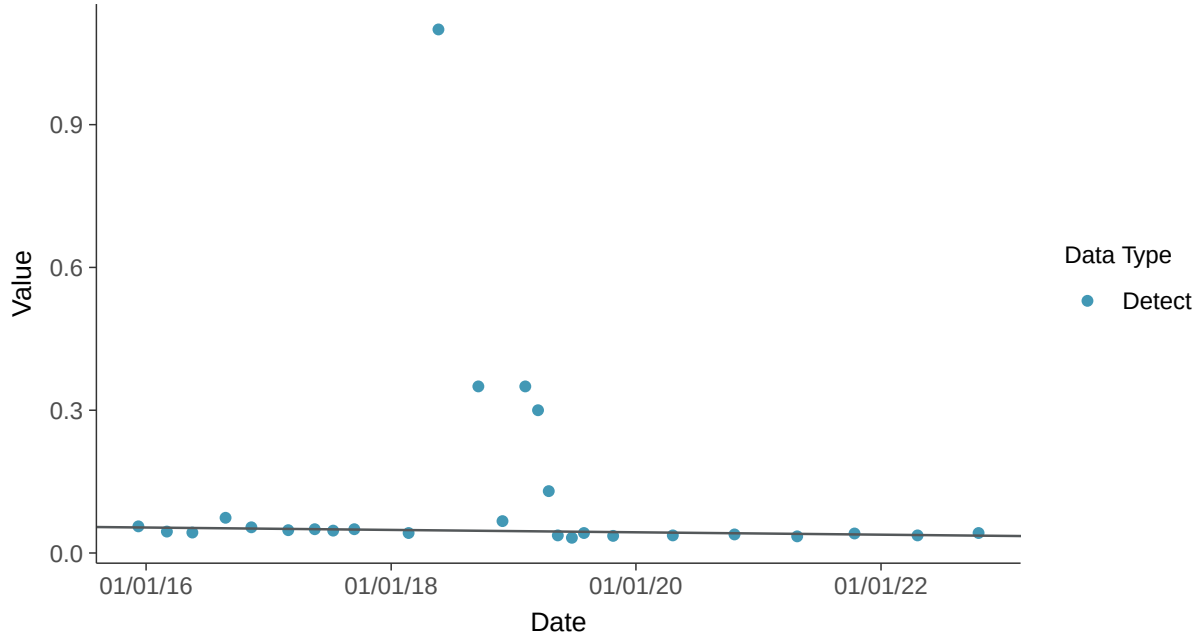
Normal Q-Q plot

Barium, MW-9 (mg/l)



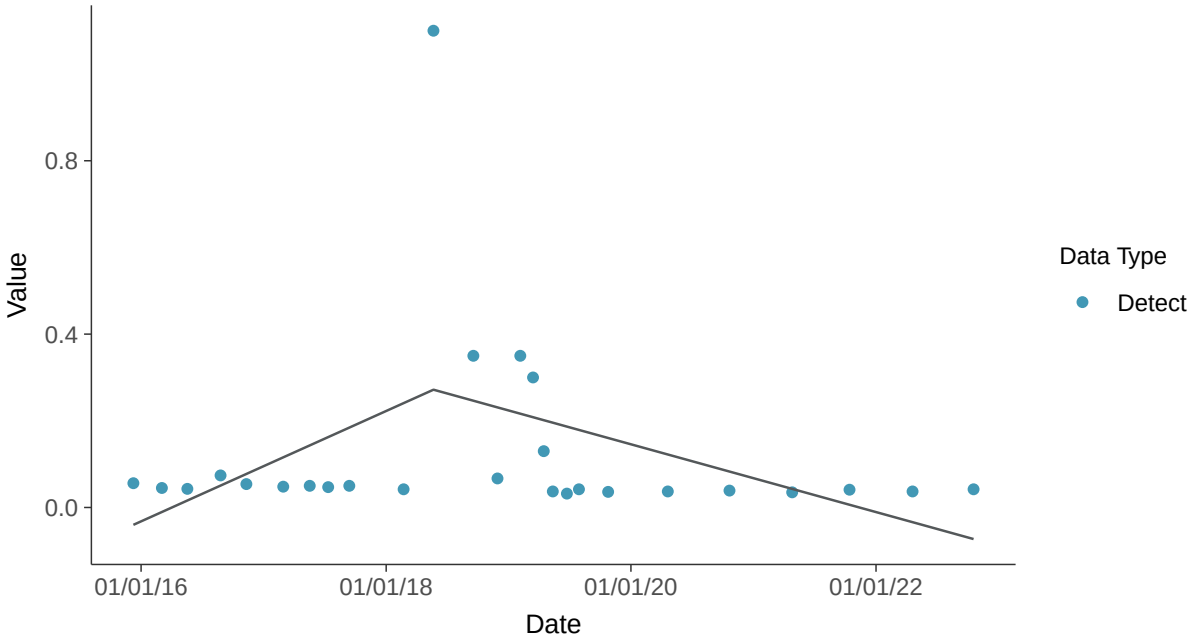
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-9 (mg/l)



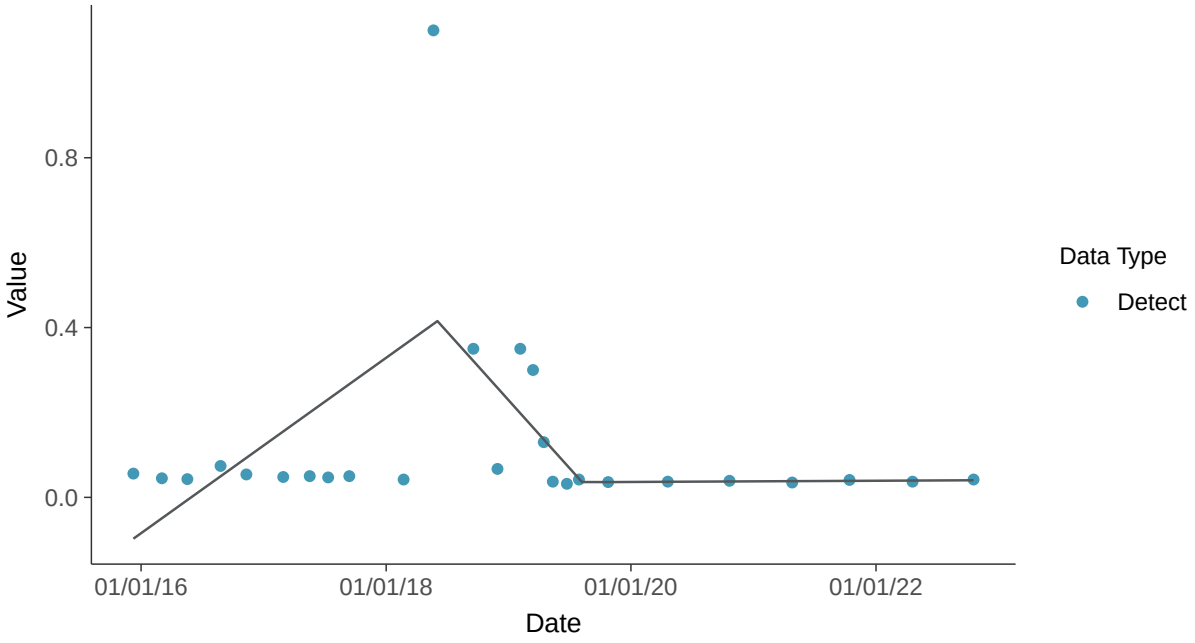
Trend Regression: Piecewise Linear-Linear

Barium, MW-9 (mg/l)



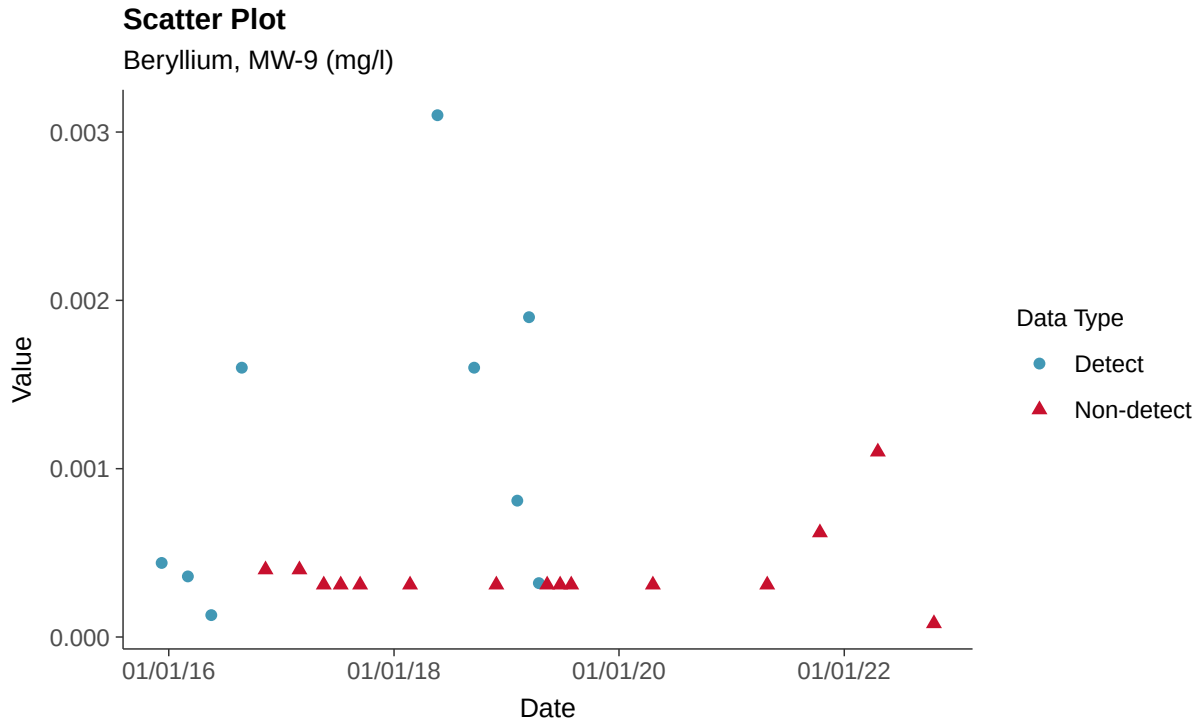
Trend Regression: Piecewise Linear-Linear-Linear

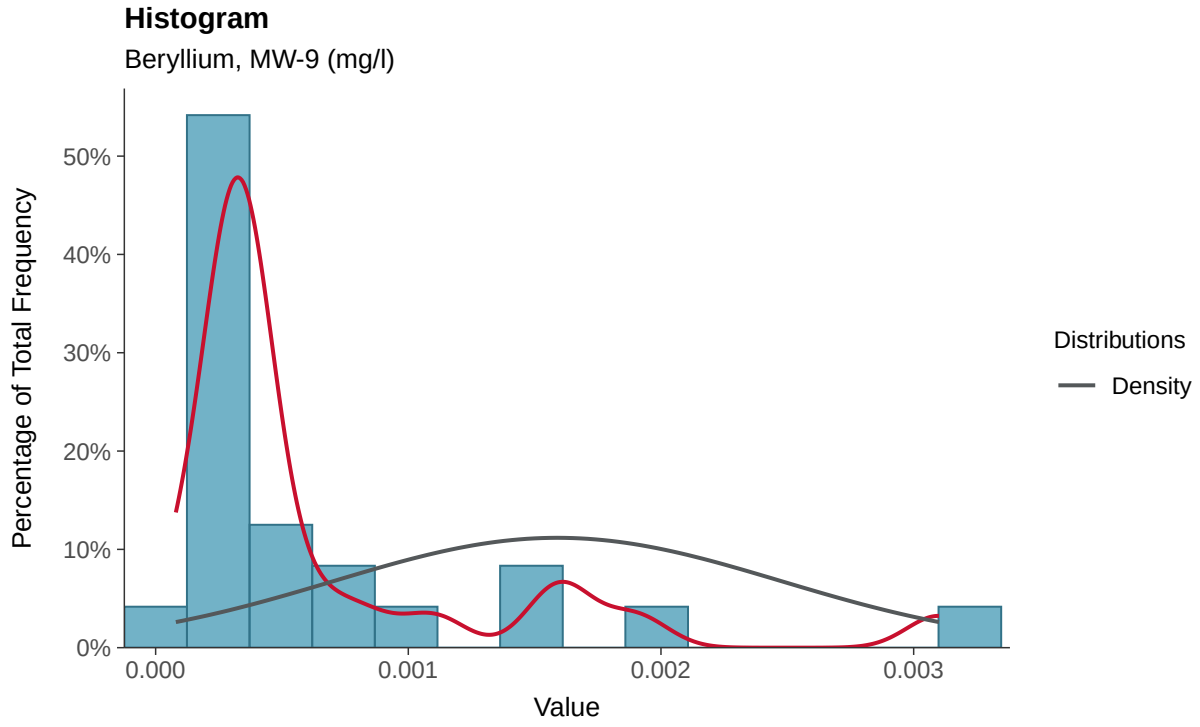
Barium, MW-9 (mg/l)



Appendix IV: Beryllium, MW-9

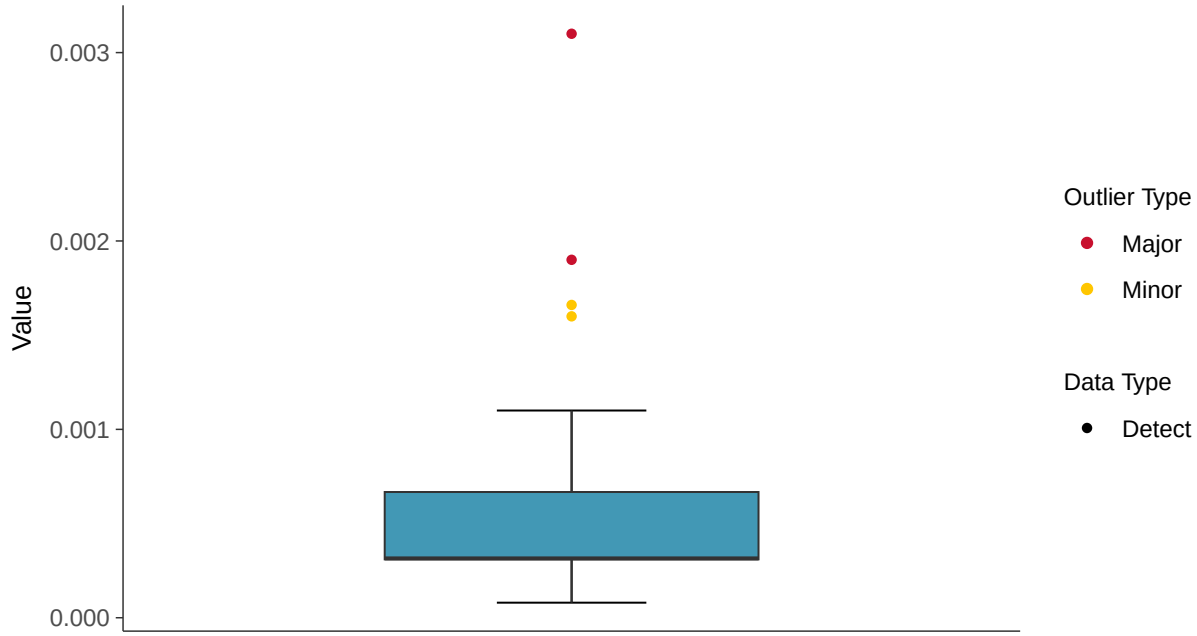
ID: 13_2_107





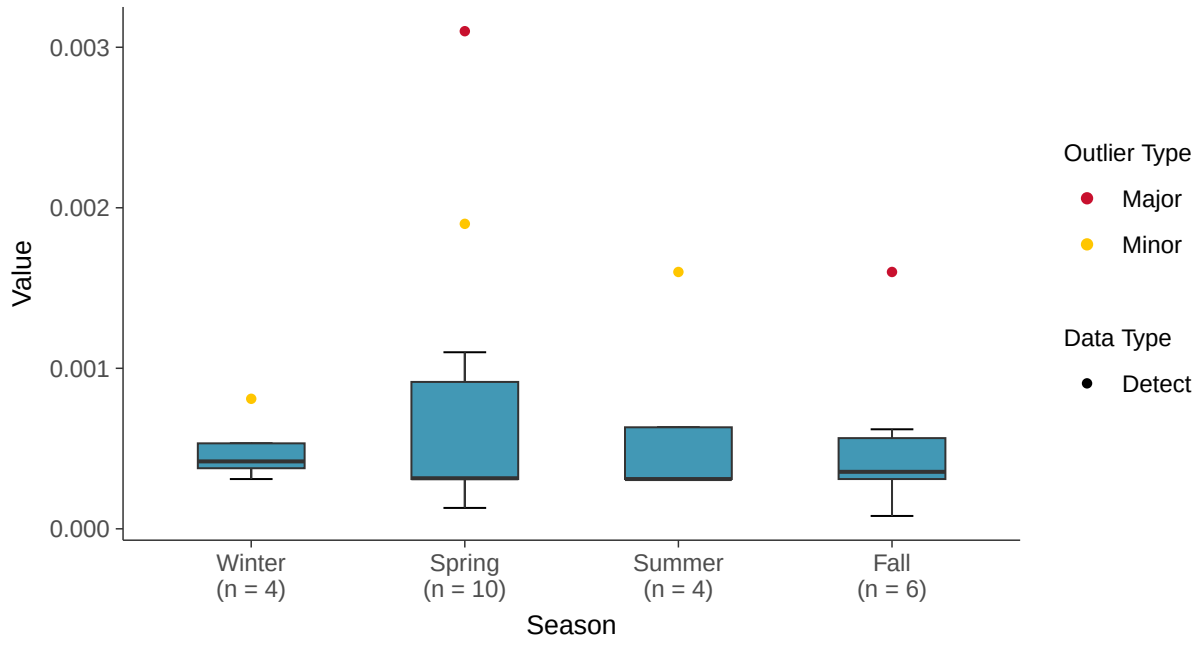
Boxplot

Beryllium, MW-9 (mg/l)



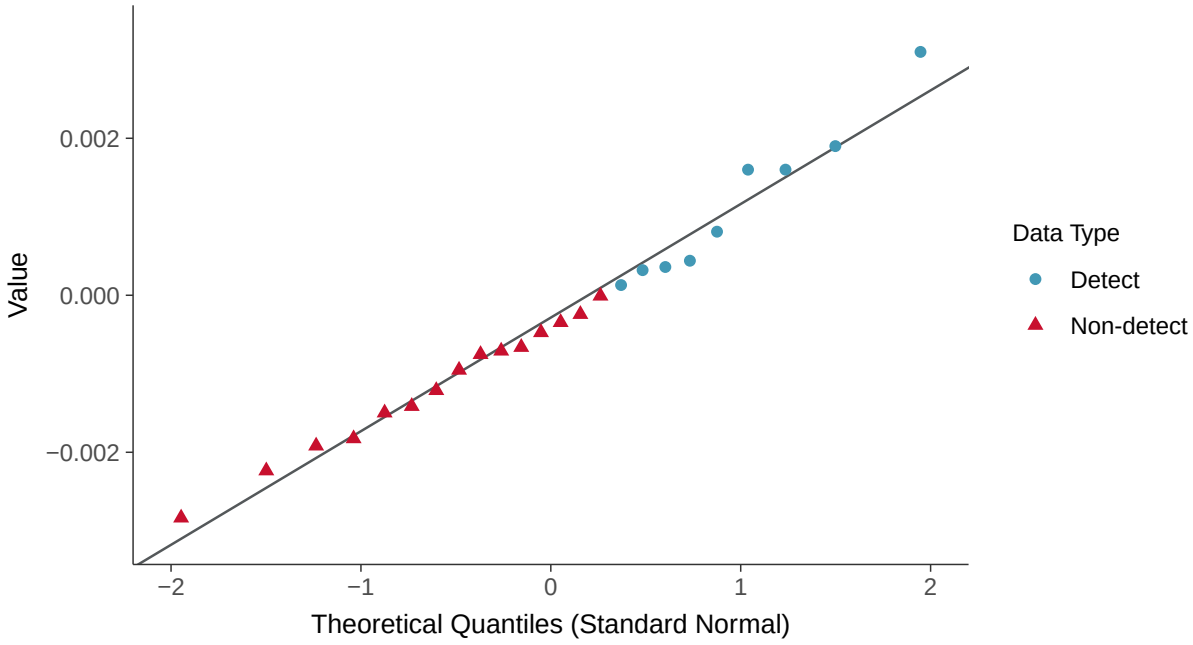
Boxplot by Season

Beryllium, MW-9 (mg/l)



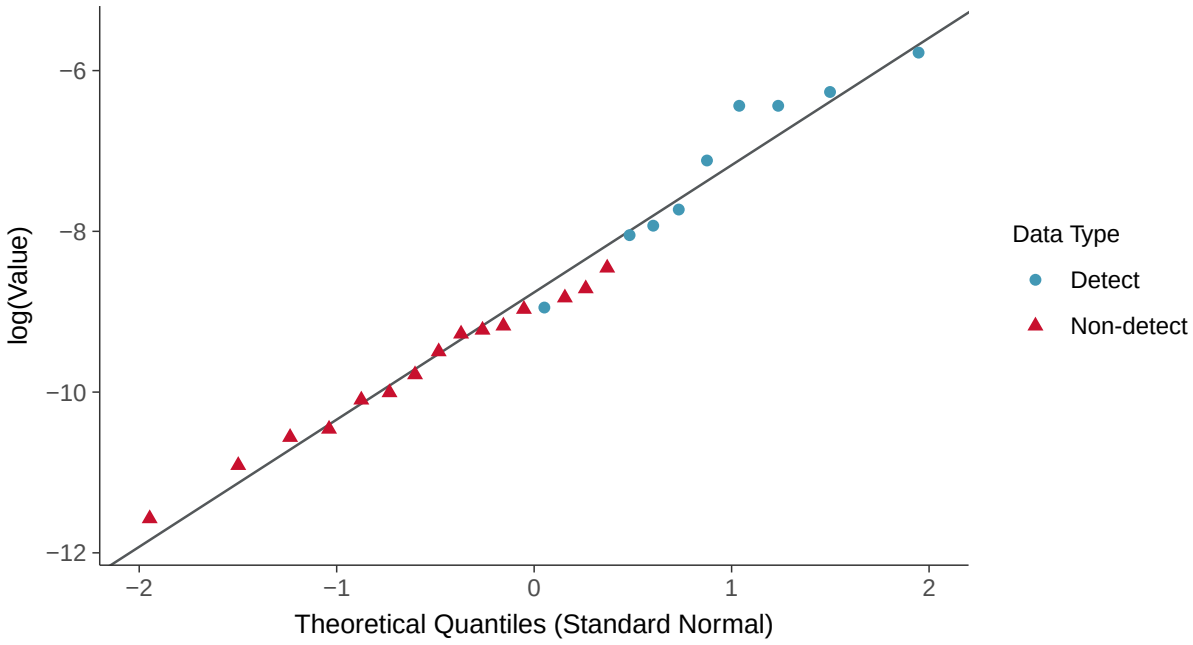
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-9 (mg/l)



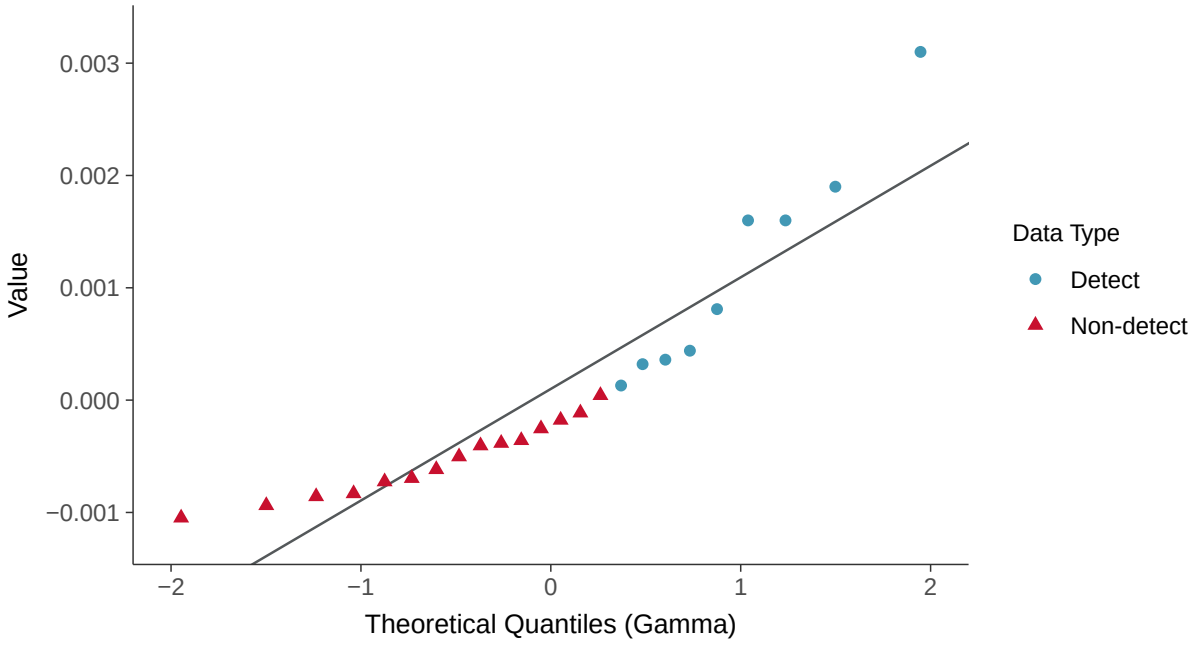
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-9 (mg/l)



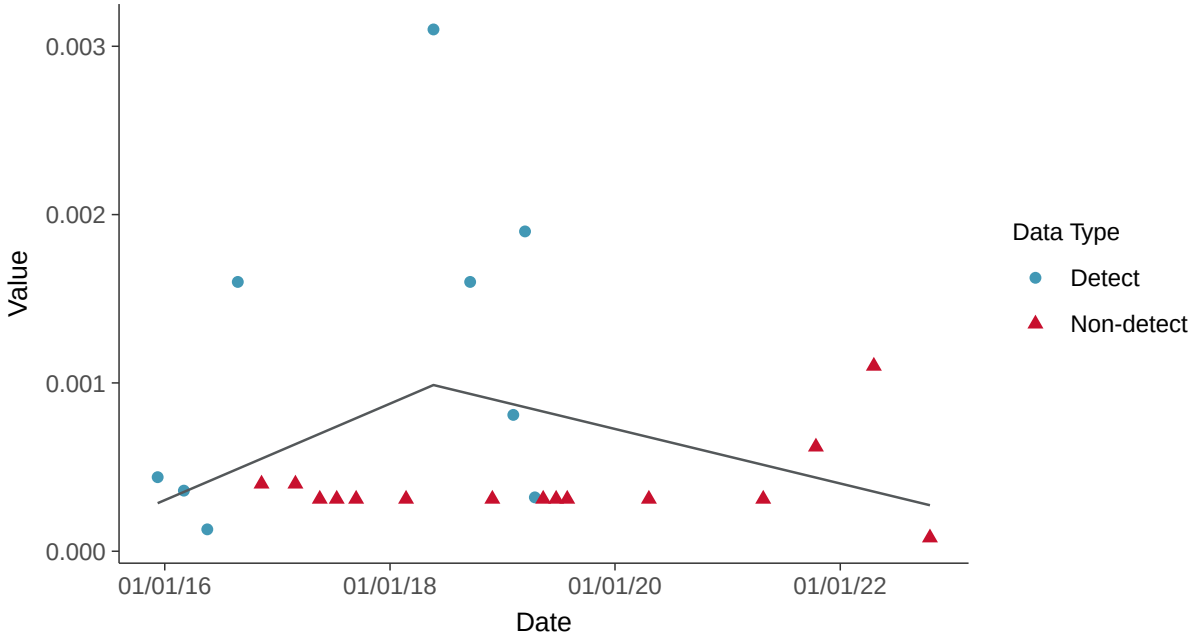
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-9 (mg/l)



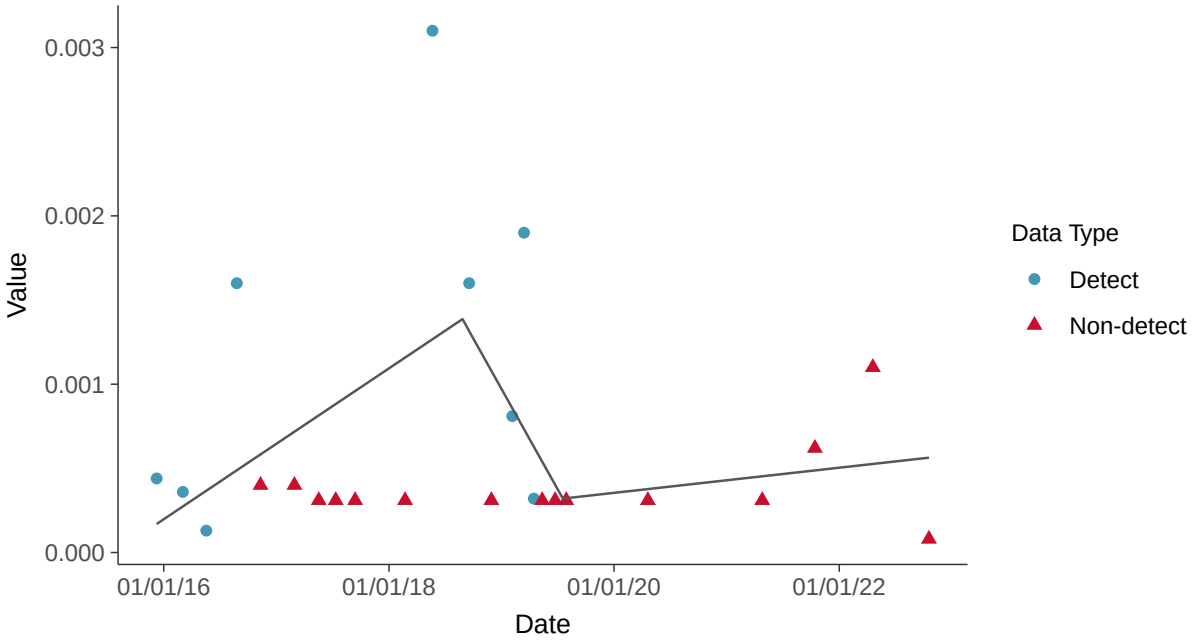
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-9 (mg/l)



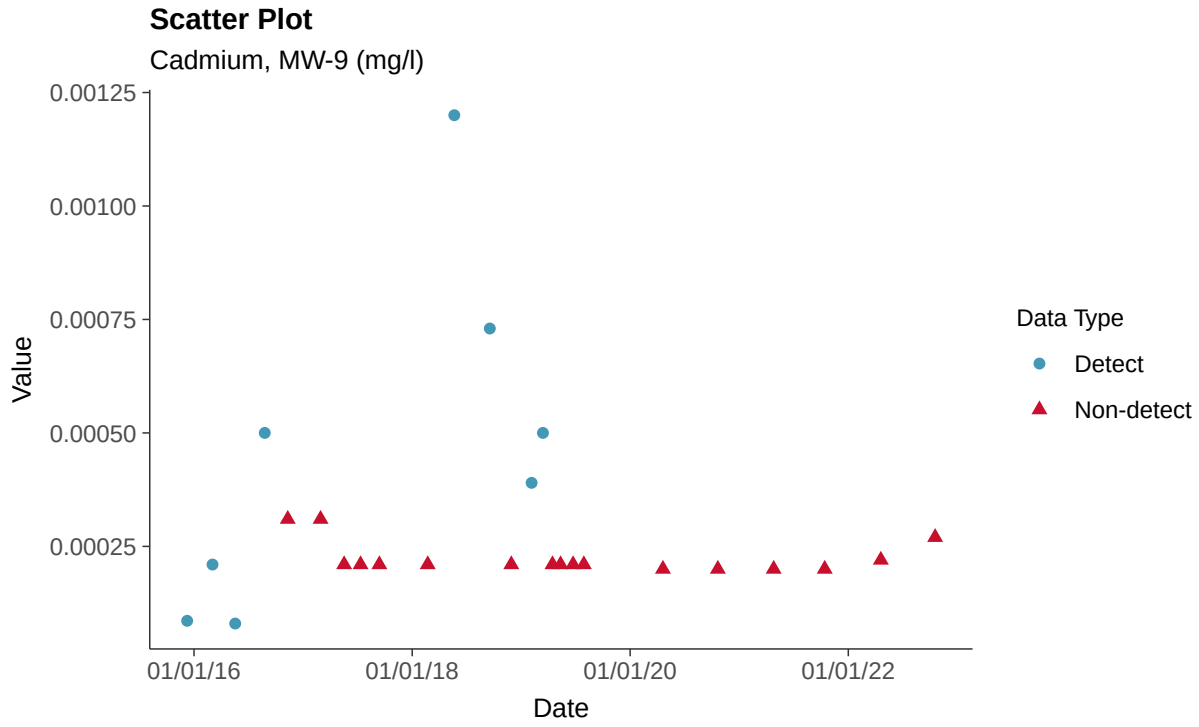
Trend Regression: Piecewise Linear-Linear-Linear

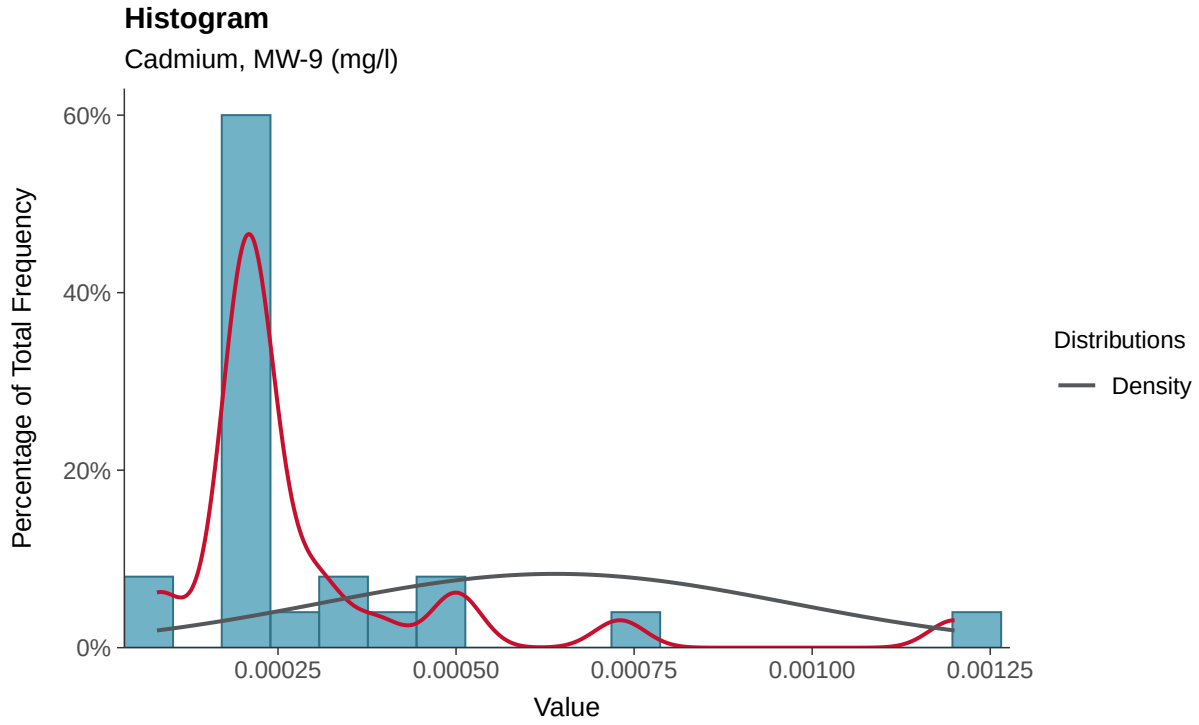
Beryllium, MW-9 (mg/l)



Appendix IV: Cadmium, MW-9

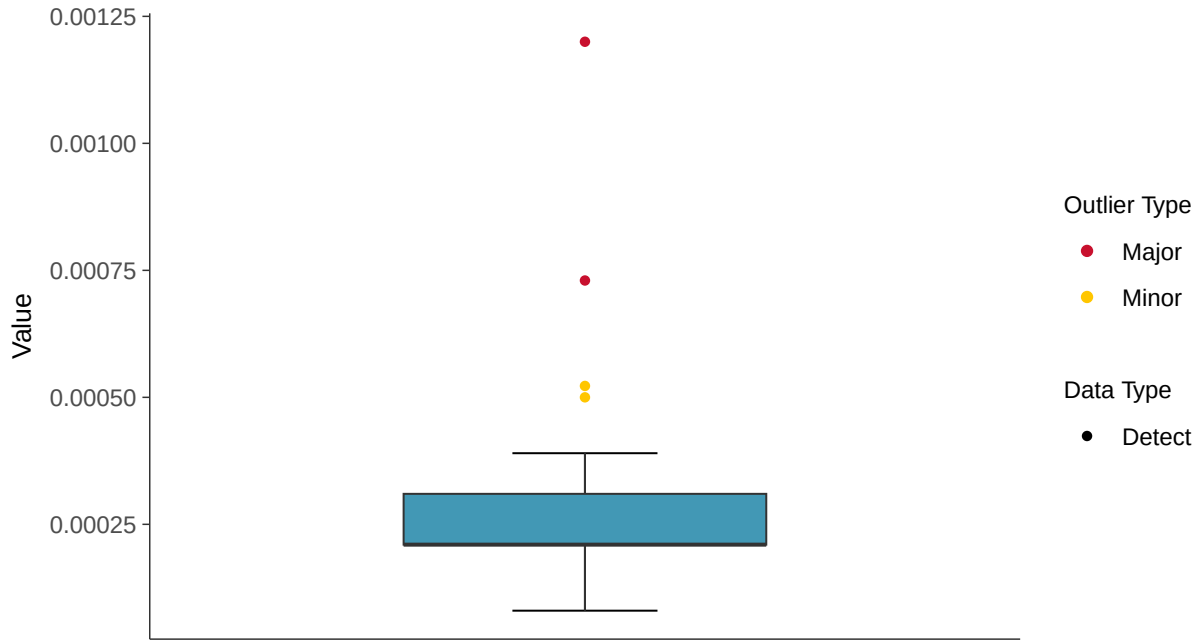
ID: 13_2_109





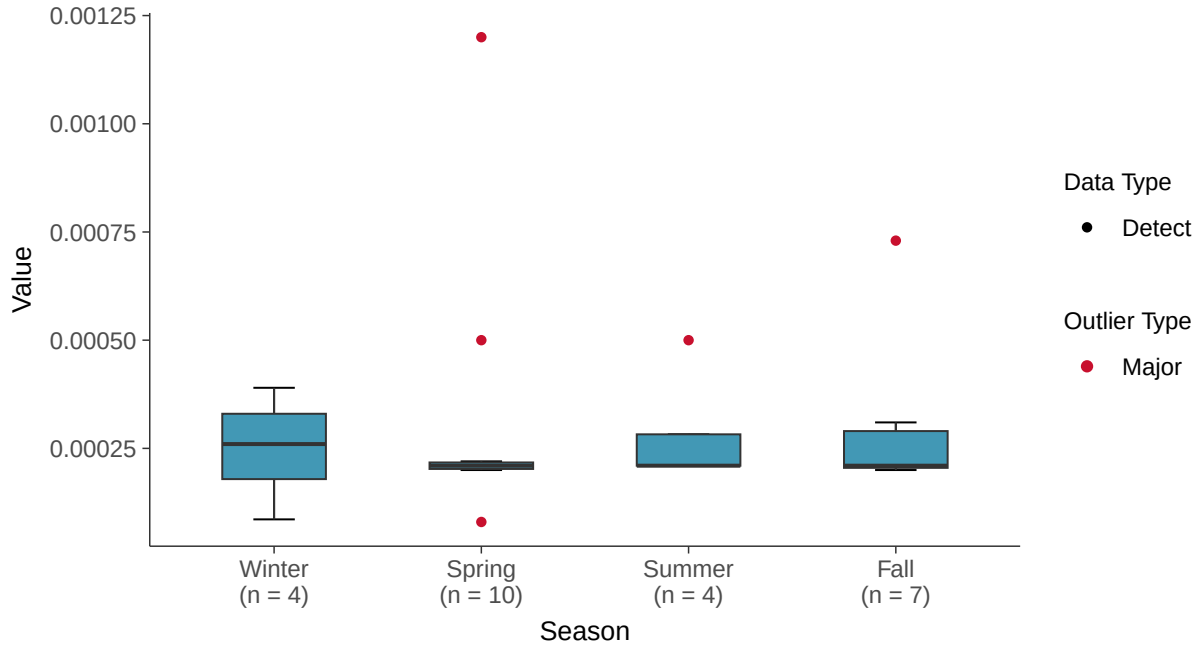
Boxplot

Cadmium, MW-9 (mg/l)



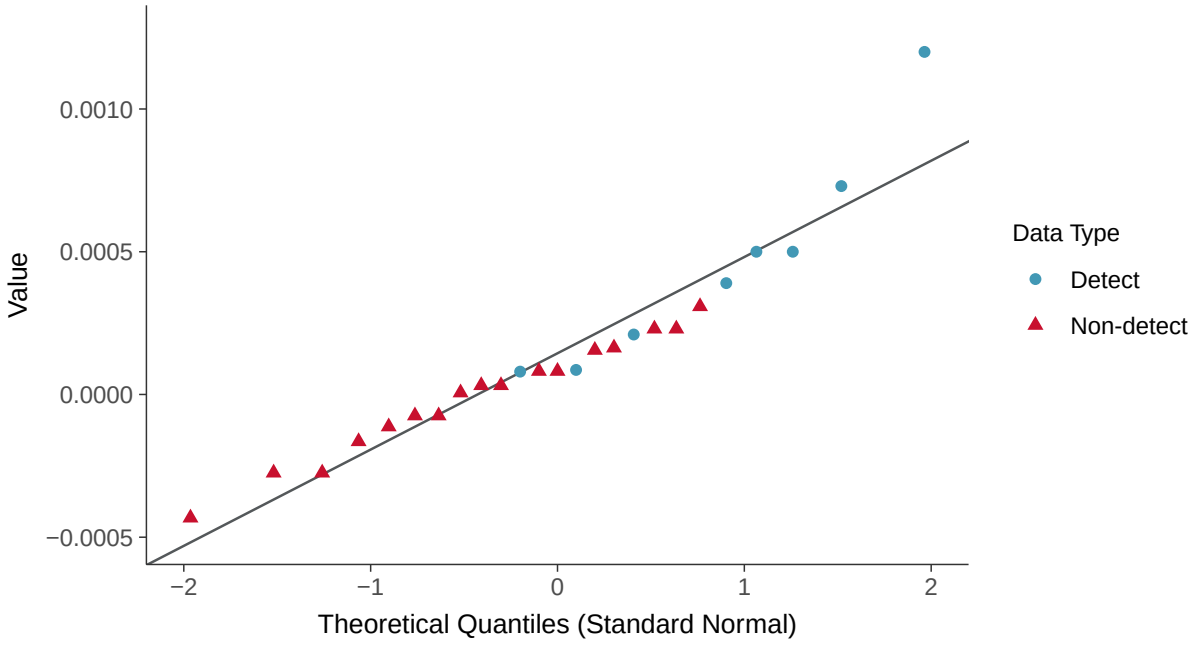
Boxplot by Season

Cadmium, MW-9 (mg/l)



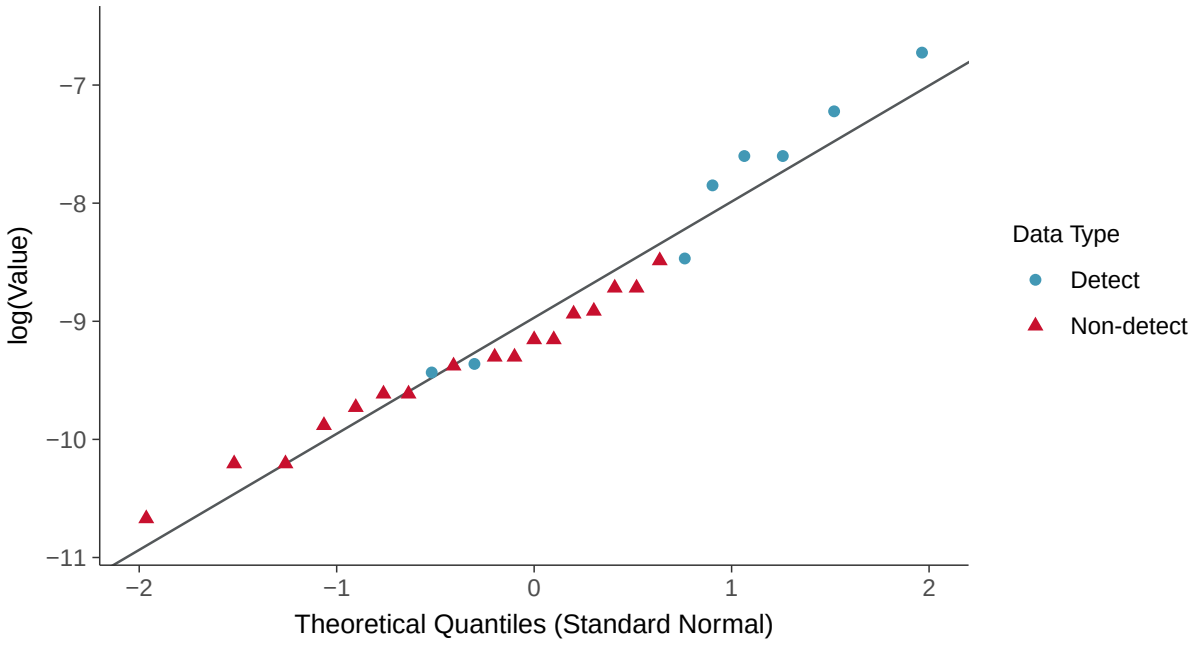
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-9 (mg/l)



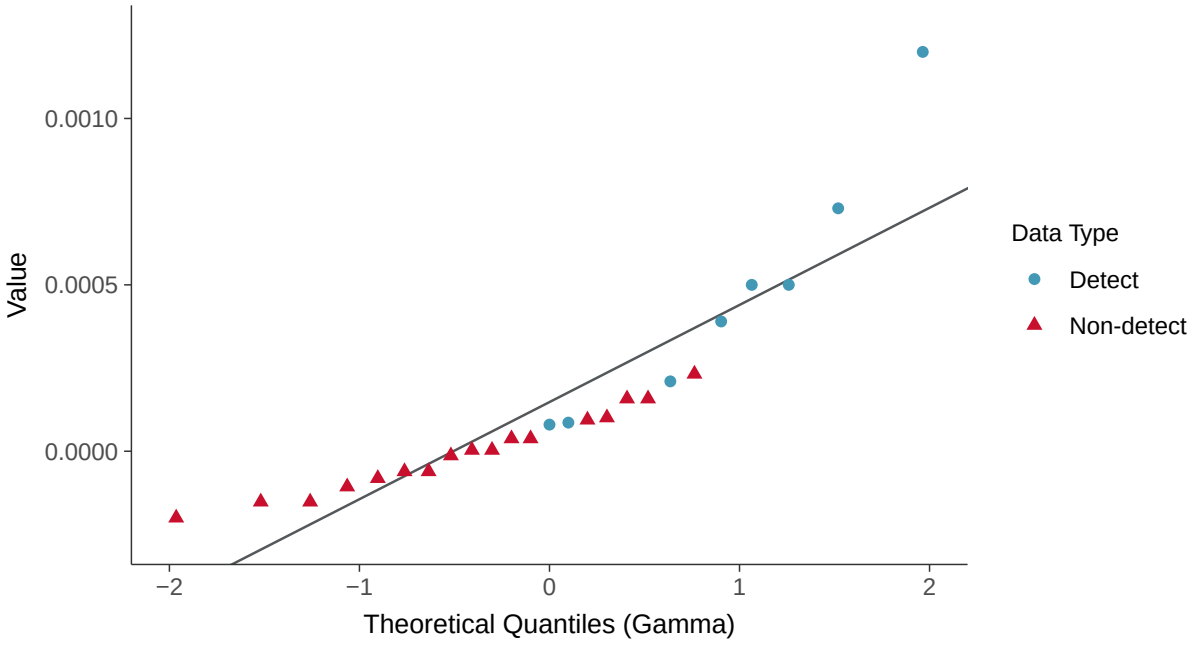
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-9 (mg/l)



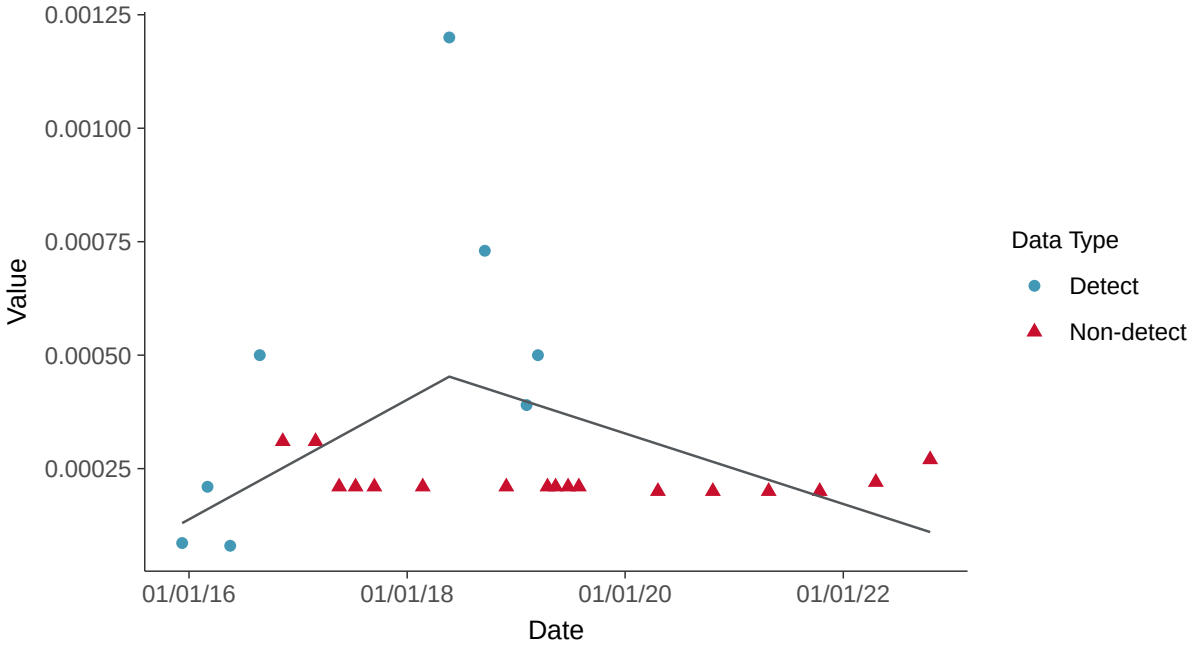
Gamma Q-Q plot using ROS Imputed Estimates

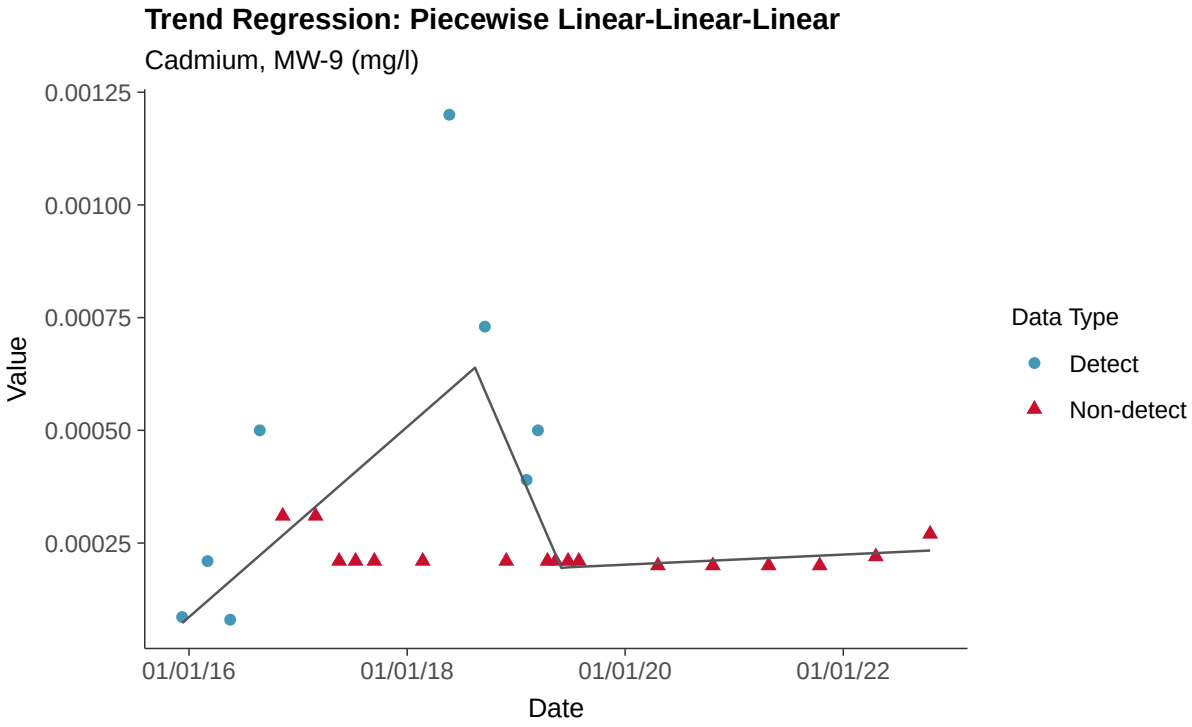
Cadmium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cadmium, MW-9 (mg/l)



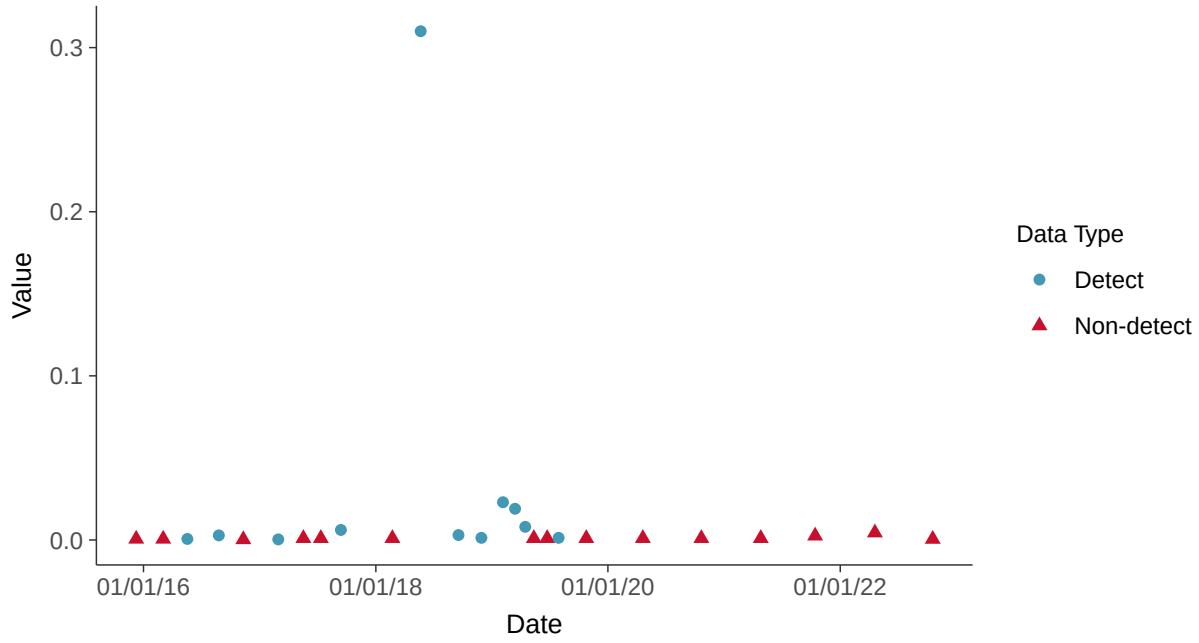

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-9 (mg/l)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-9

ID: 13_2_112

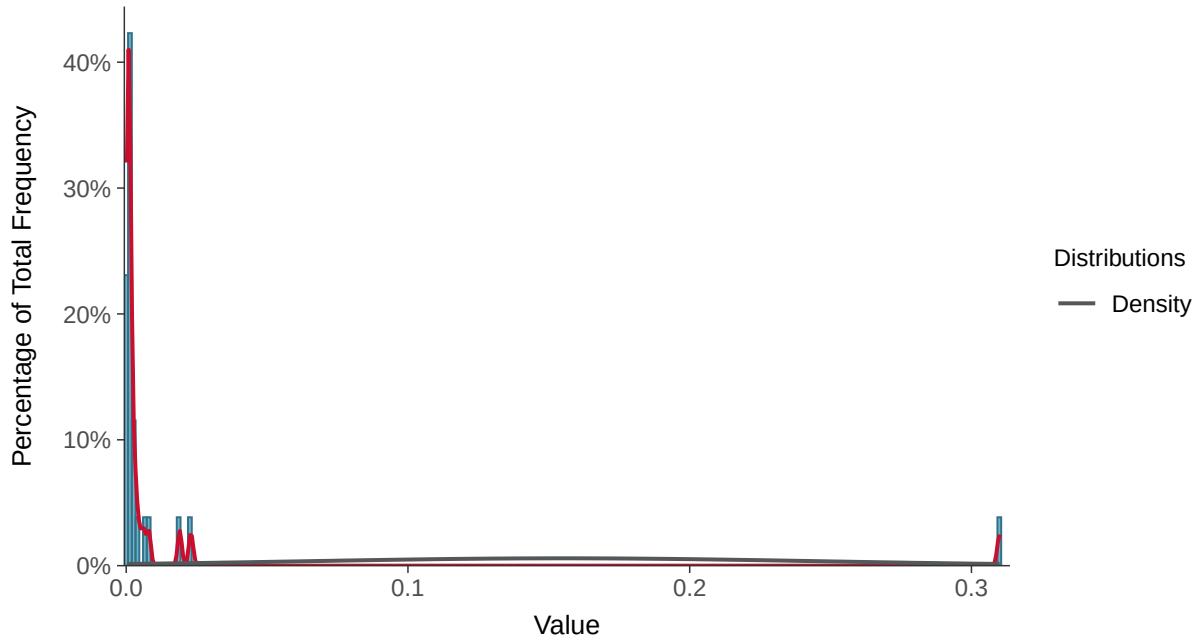
Scatter Plot

Chromium, Total, MW-9 (mg/l)



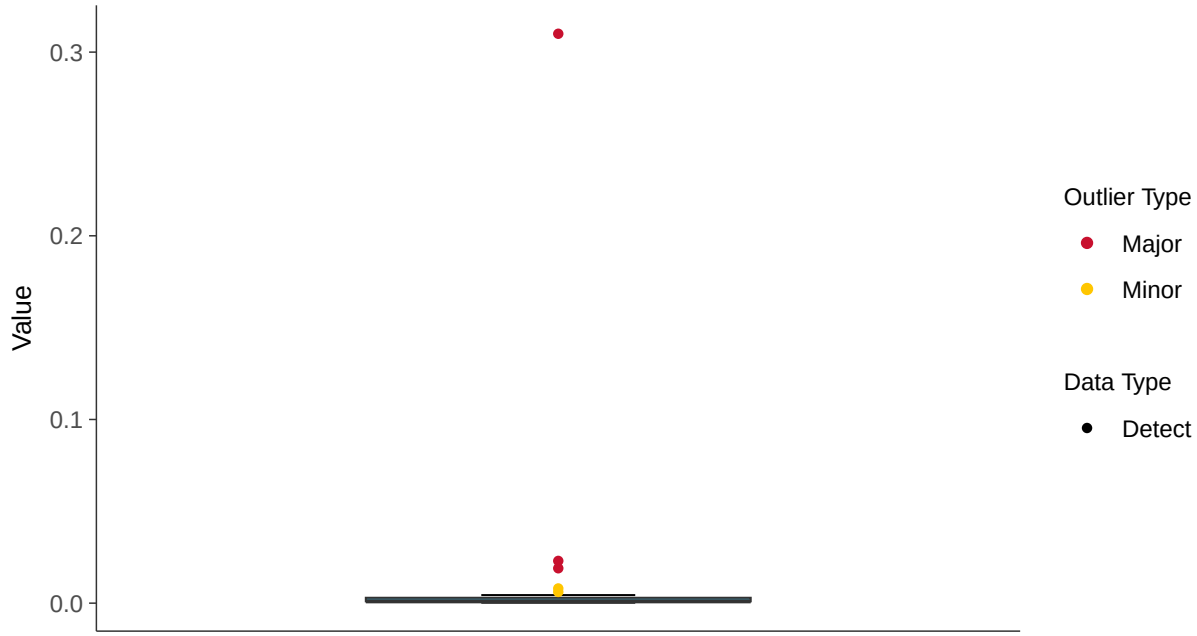
Histogram

Chromium, Total, MW-9 (mg/l)



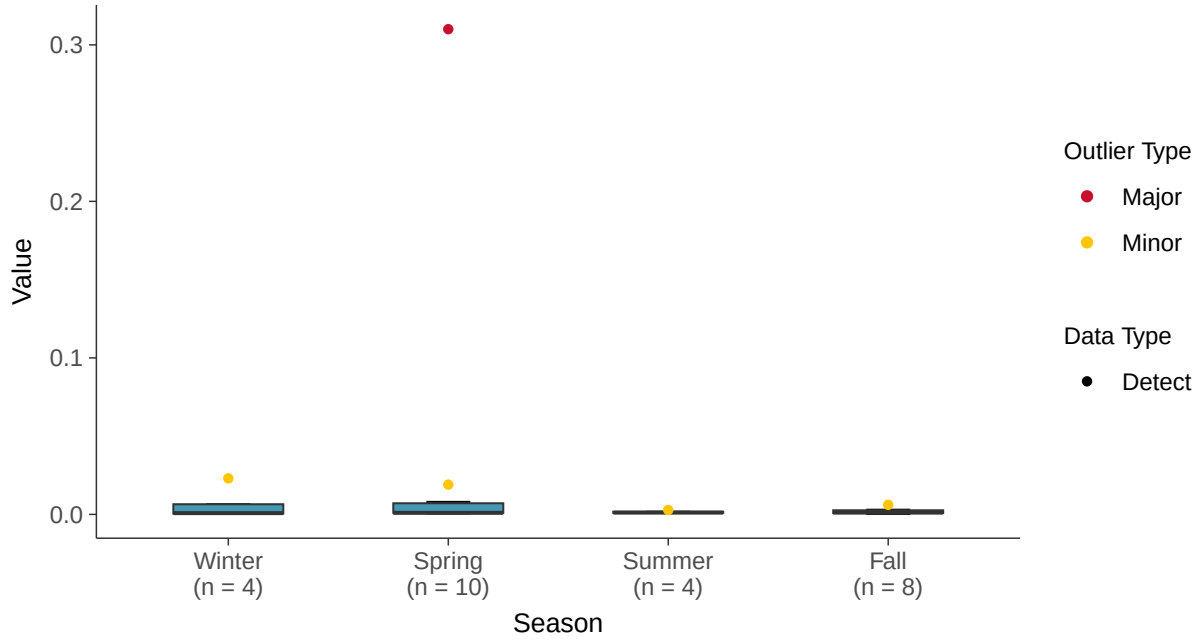
Boxplot

Chromium, Total, MW-9 (mg/l)



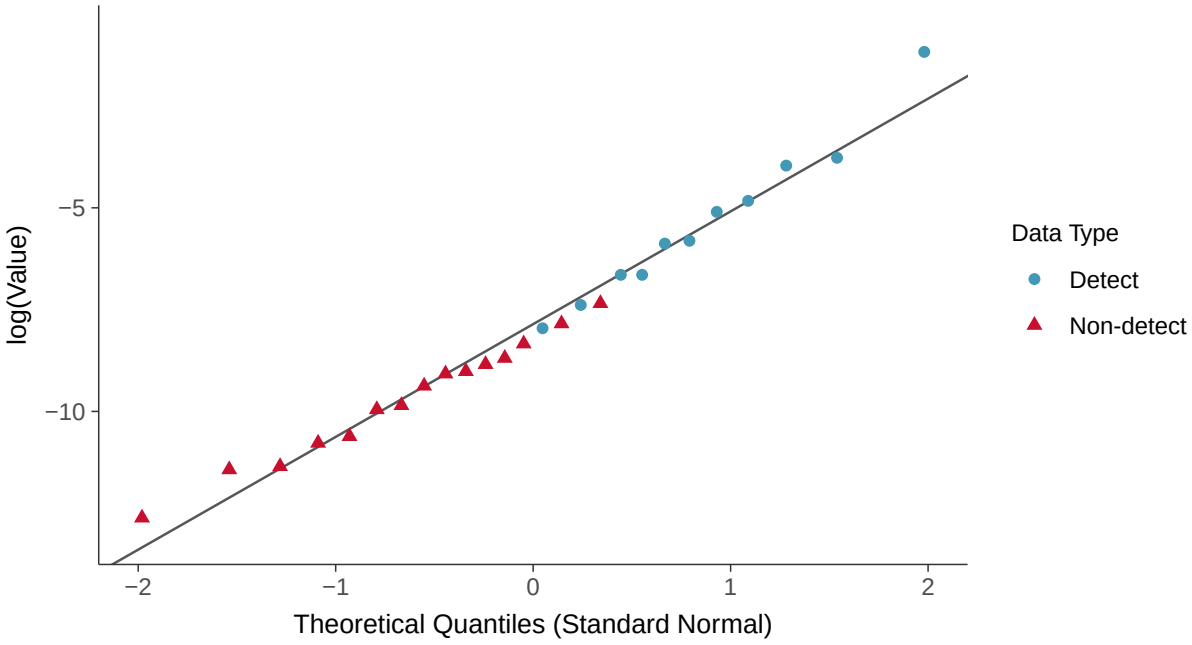
Boxplot by Season

Chromium, Total, MW-9 (mg/l)



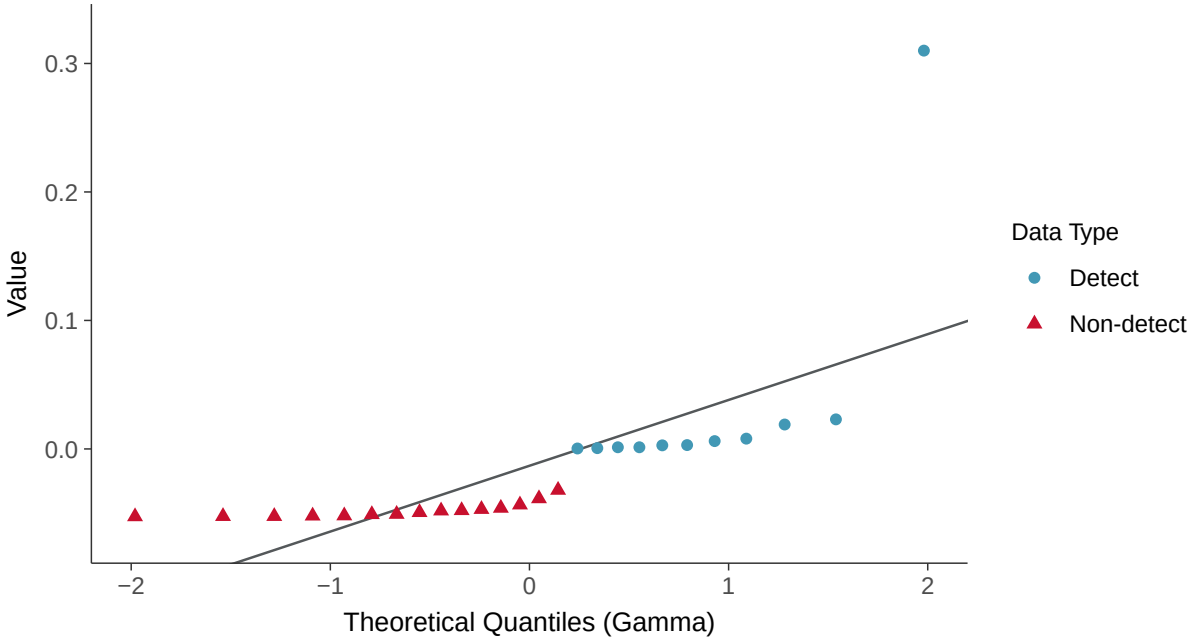
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-9 (mg/l)



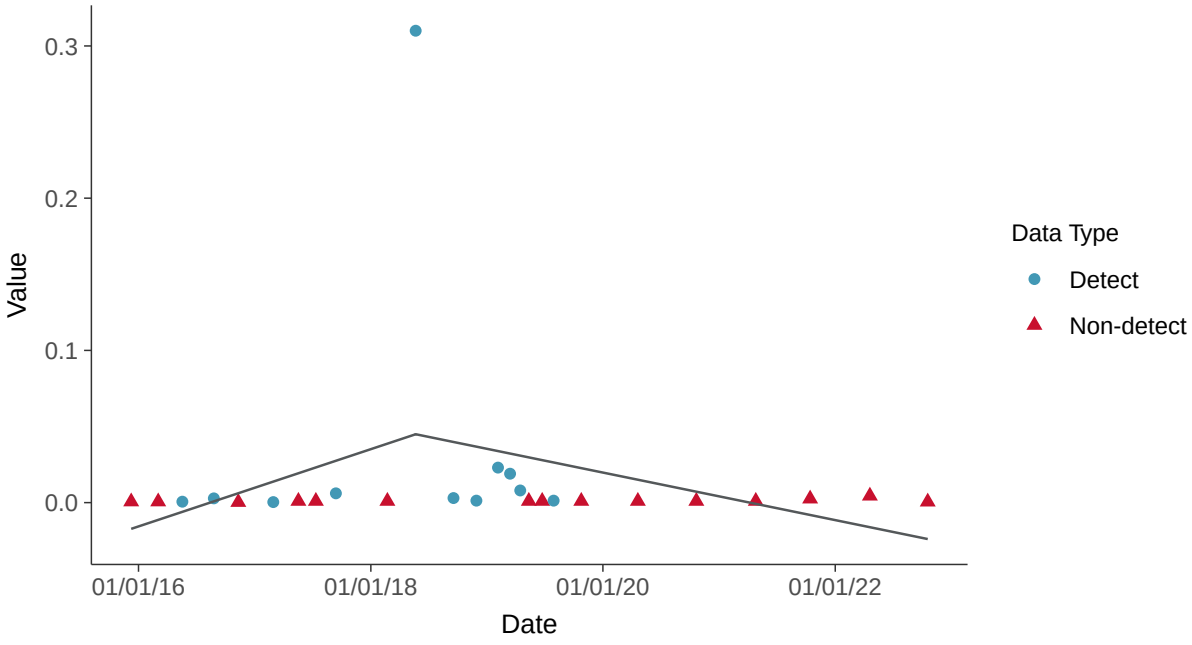
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-9 (mg/l)



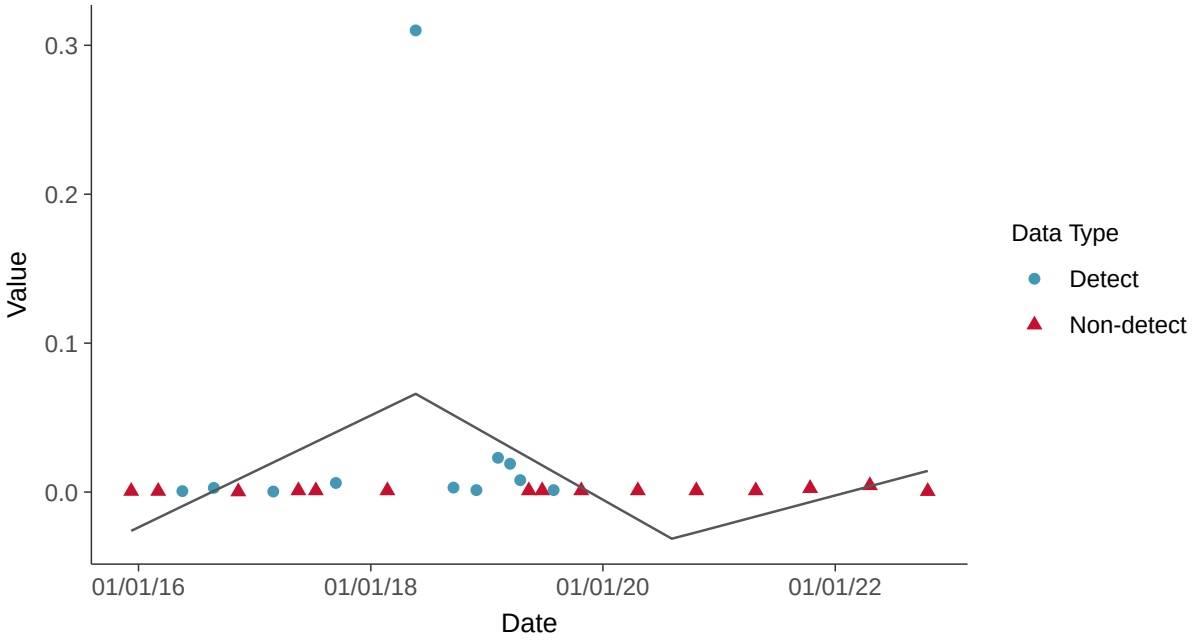
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-9 (mg/l)



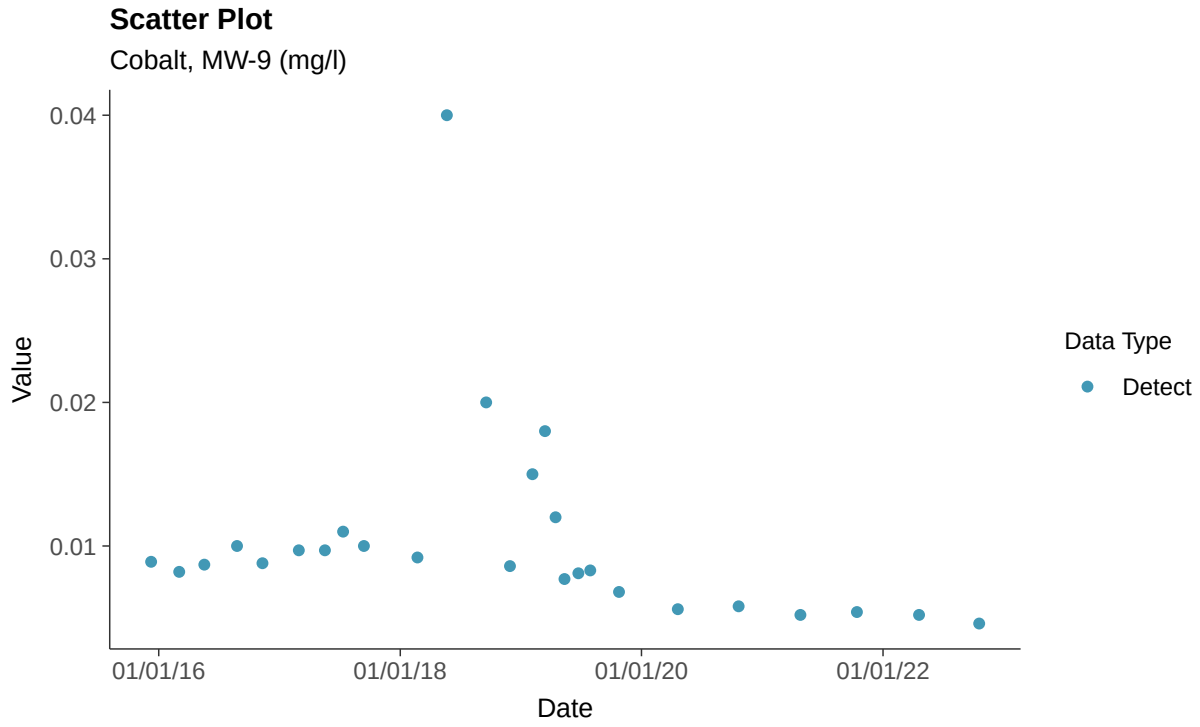
Trend Regression: Piecewise Linear-Linear-Linear

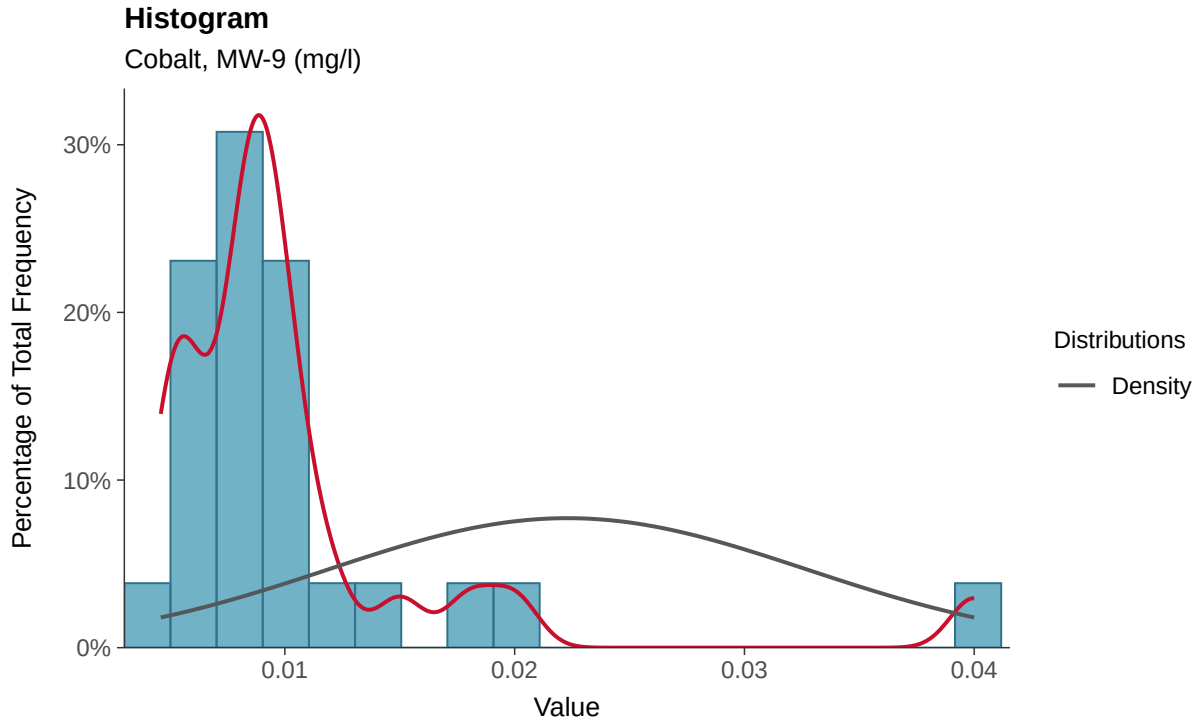
Chromium, Total, MW-9 (mg/l)



Appendix IV: Cobalt, MW-9

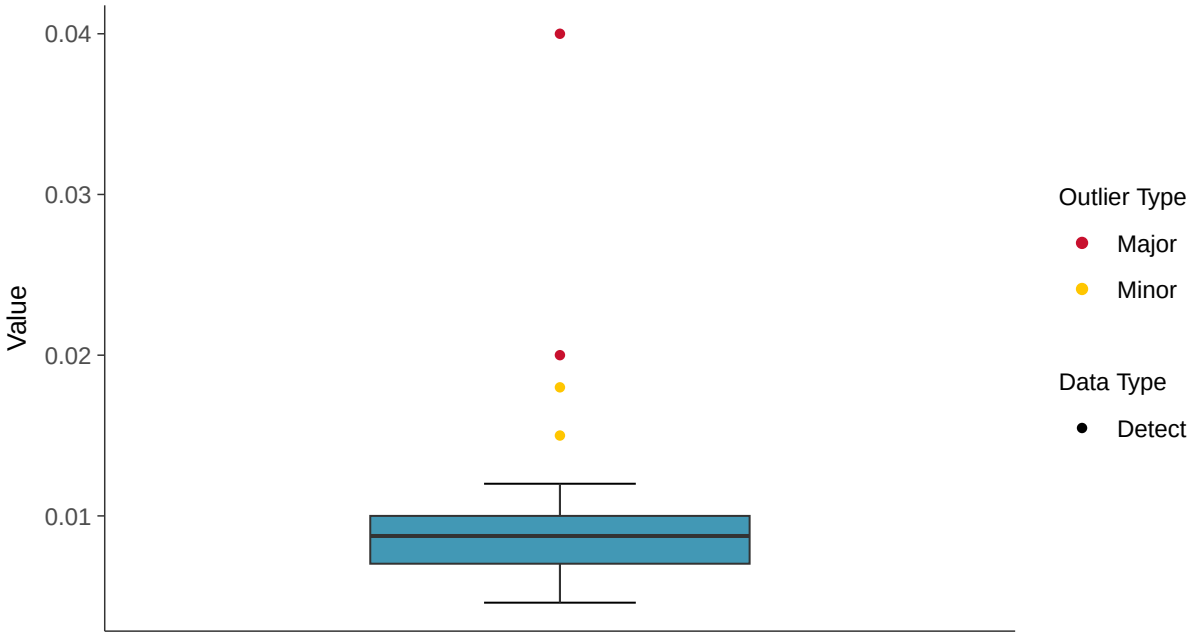
ID: 13_2_113





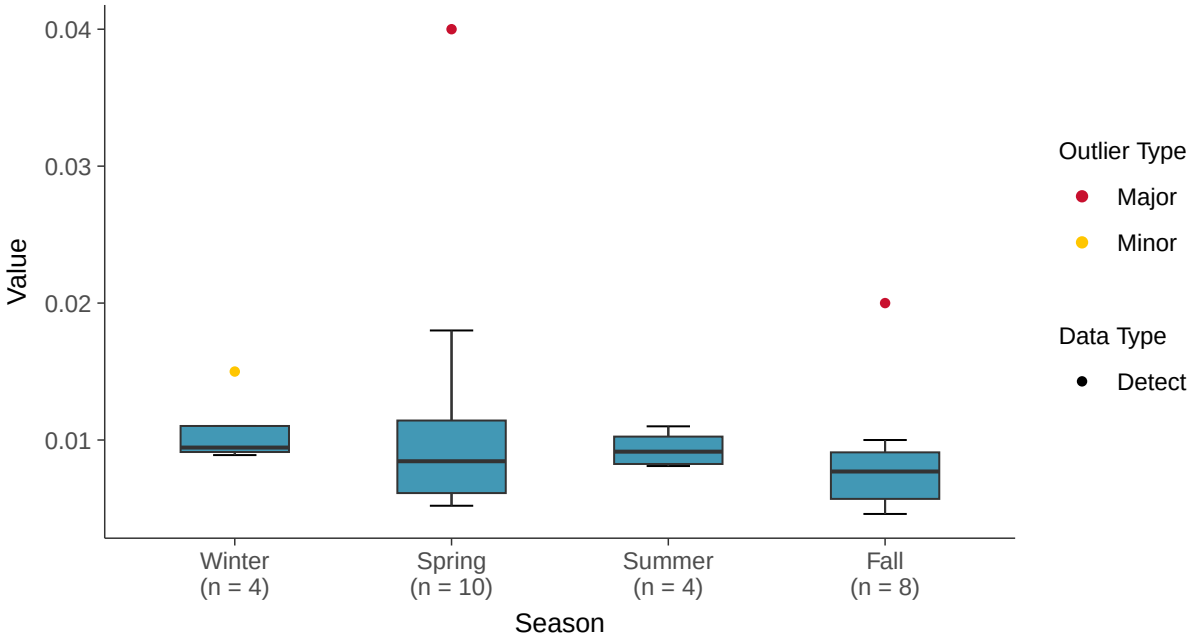
Boxplot

Cobalt, MW-9 (mg/l)



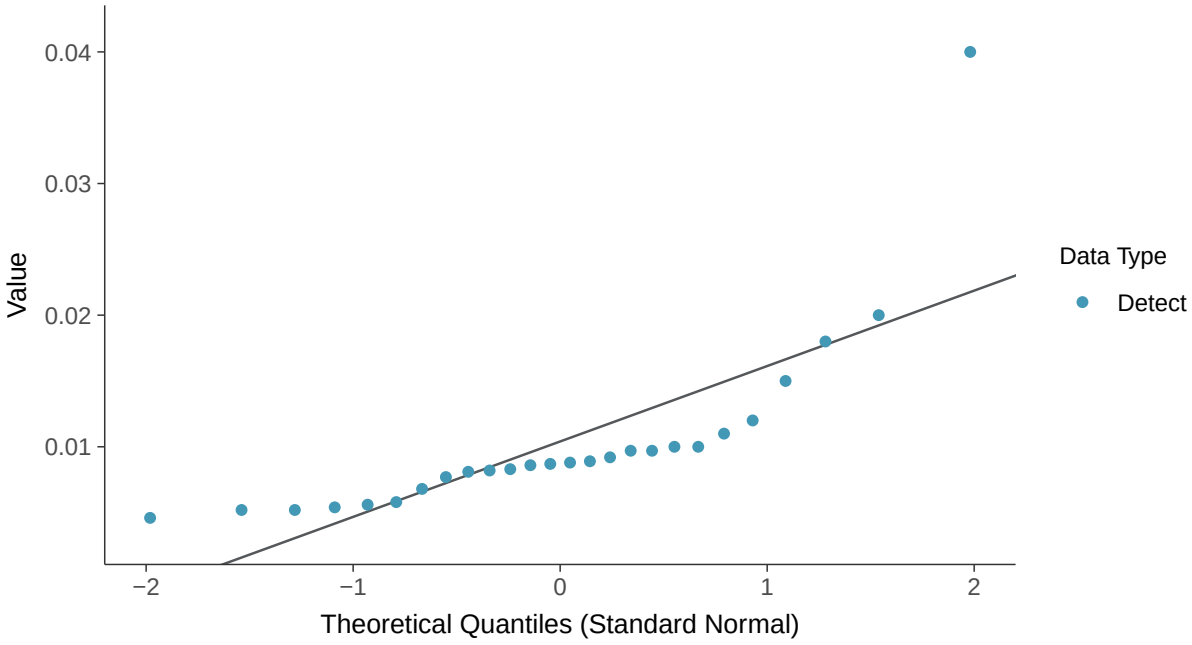
Boxplot by Season

Cobalt, MW-9 (mg/l)



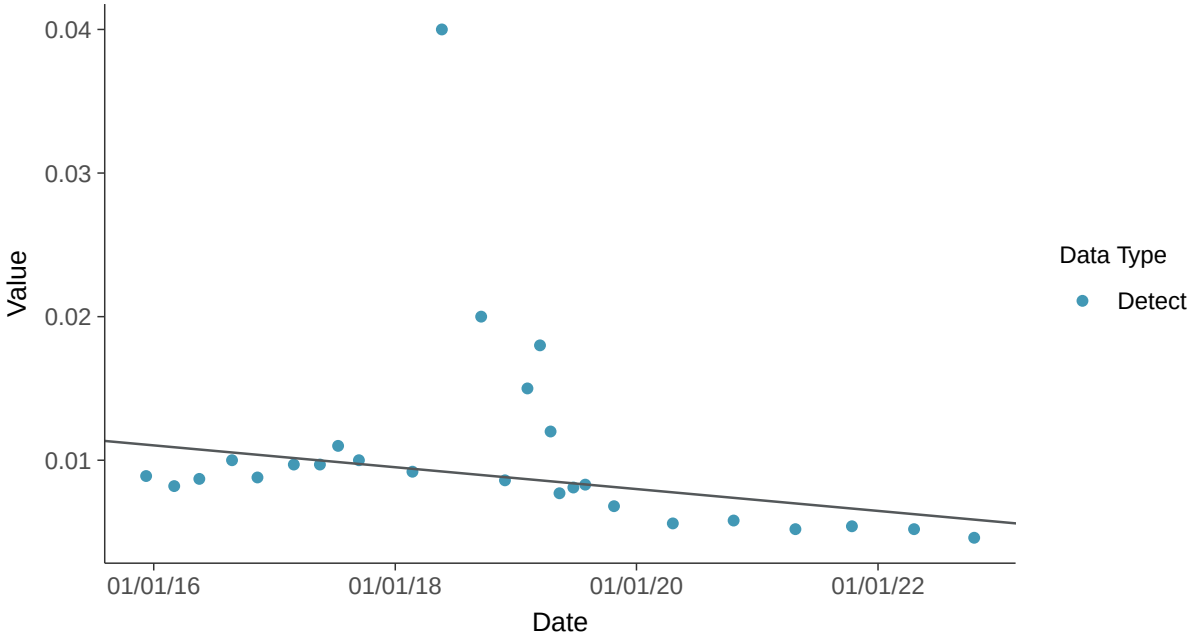
Normal Q-Q plot

Cobalt, MW-9 (mg/l)



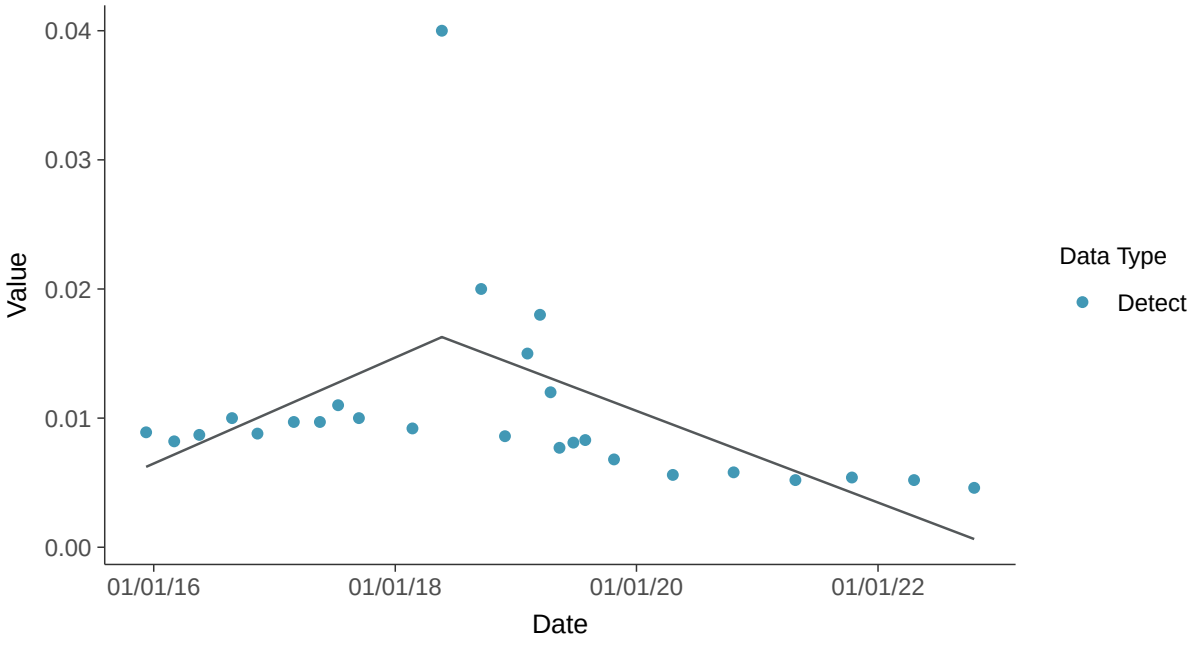
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Cobalt, MW-9 (mg/l)



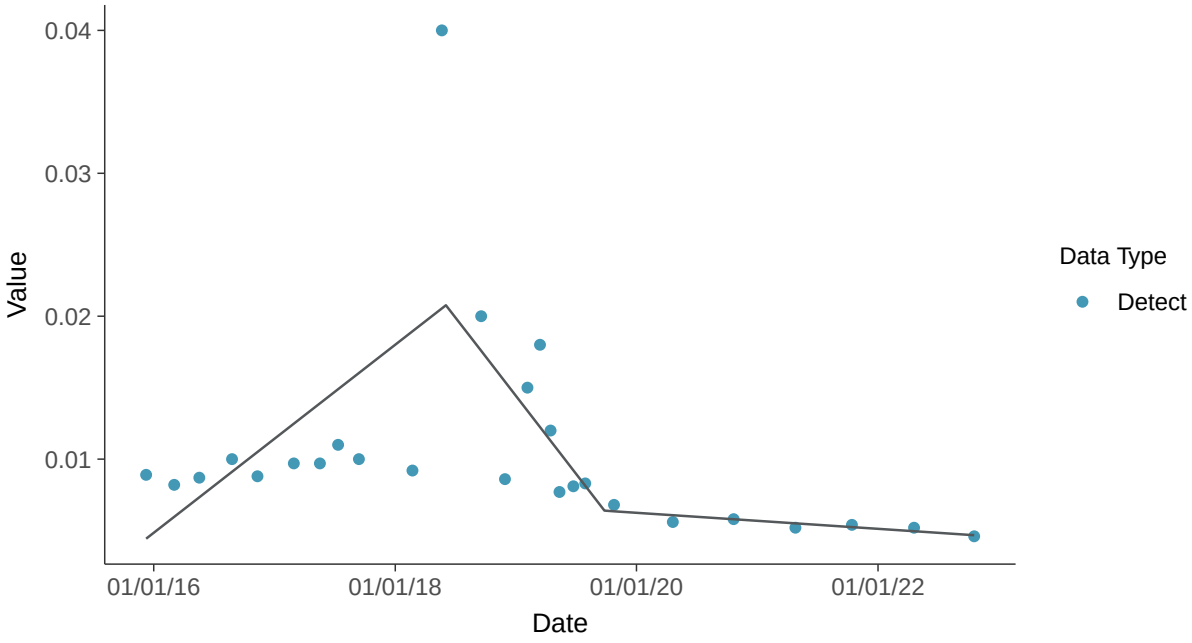
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-9 (mg/l)

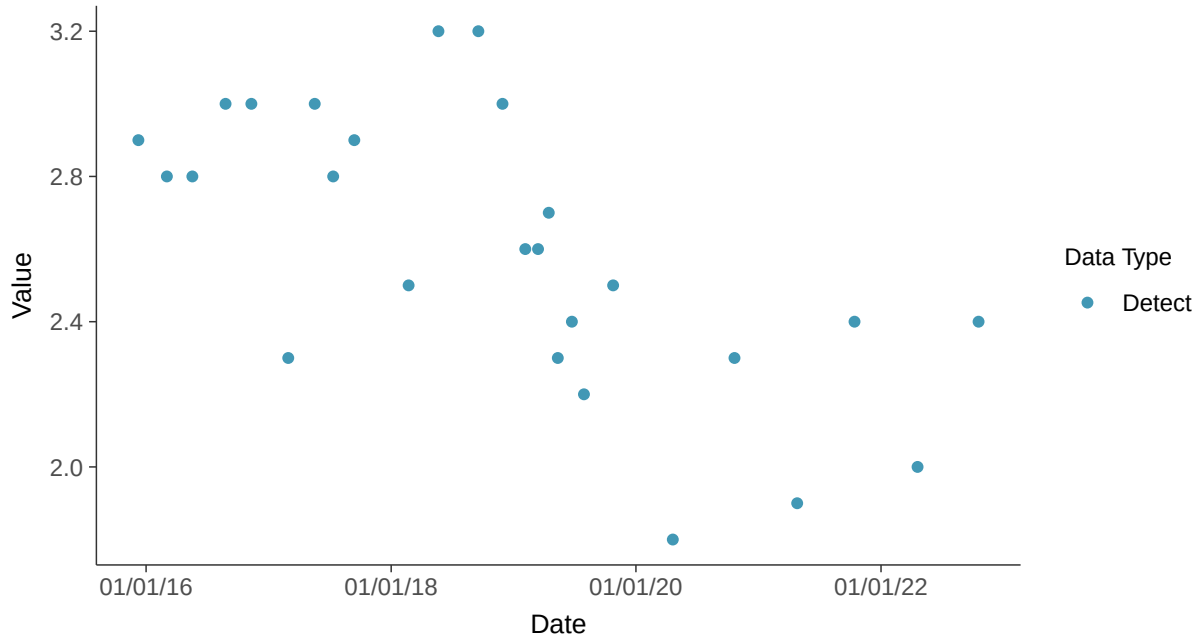


Appendix IV: Fluoride (App IV), MW-9

ID: 13_2_116

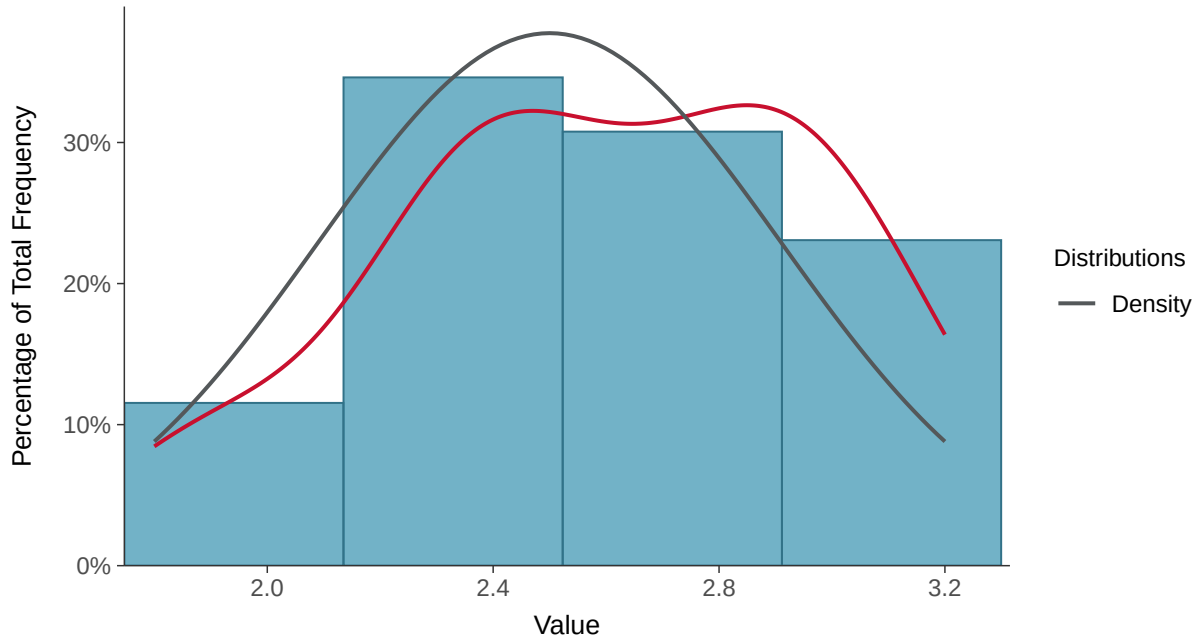
Scatter Plot

Fluoride (App IV), MW-9 (mg/l)



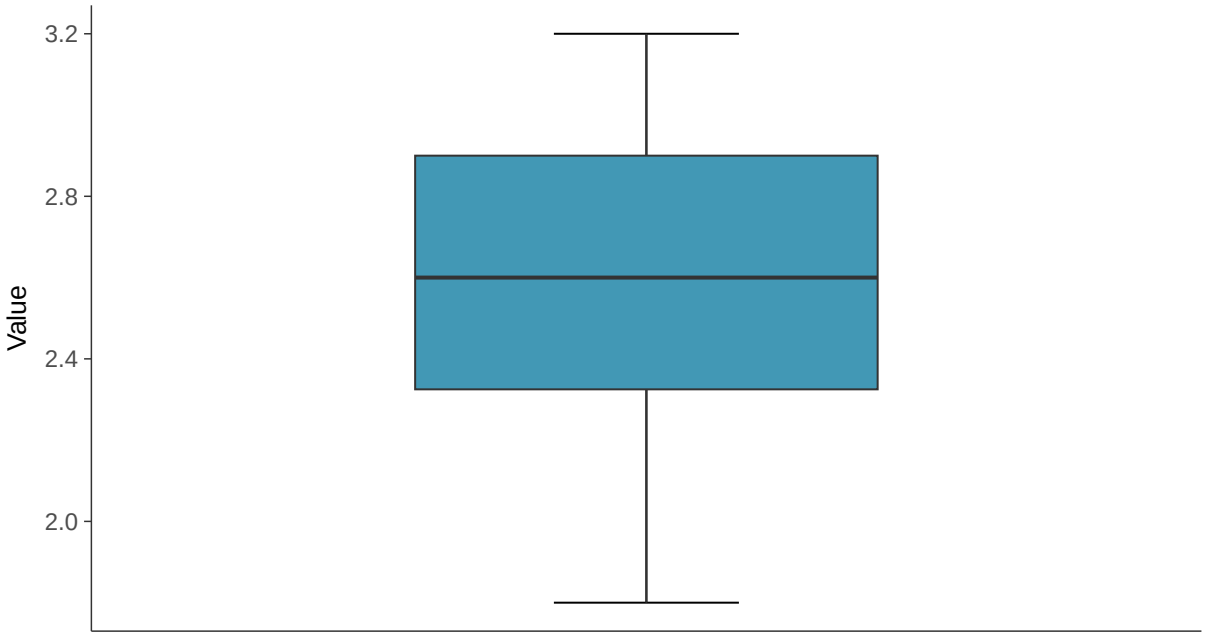
Histogram

Fluoride (App IV), MW-9 (mg/l)



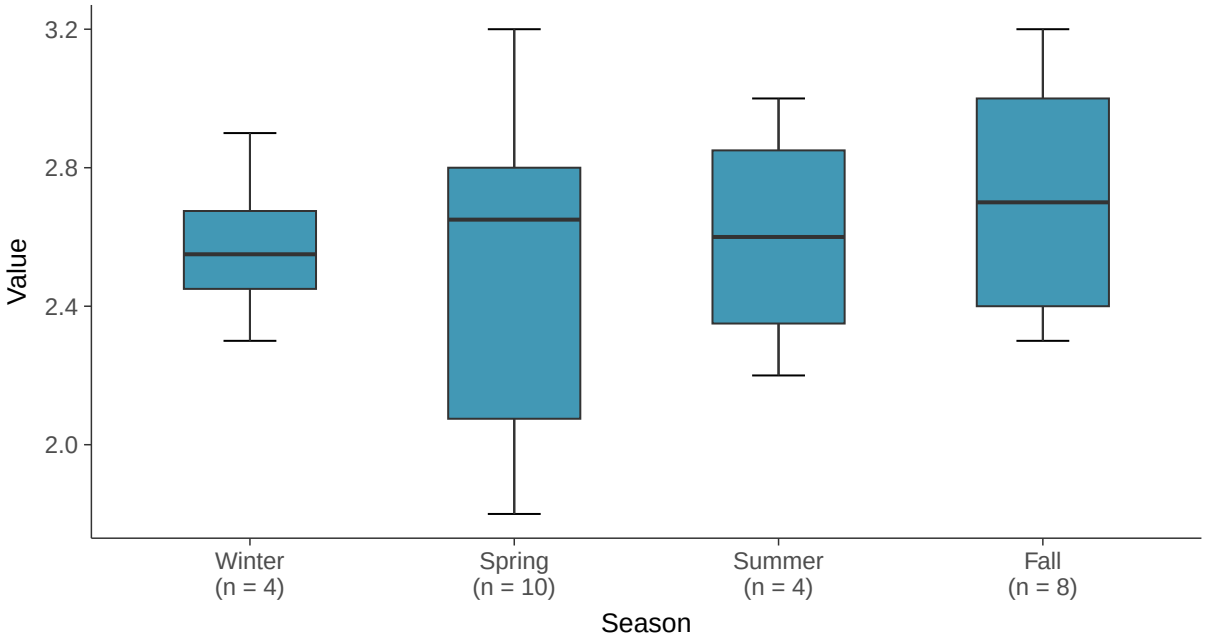
Boxplot

Fluoride (App IV), MW-9 (mg/l)



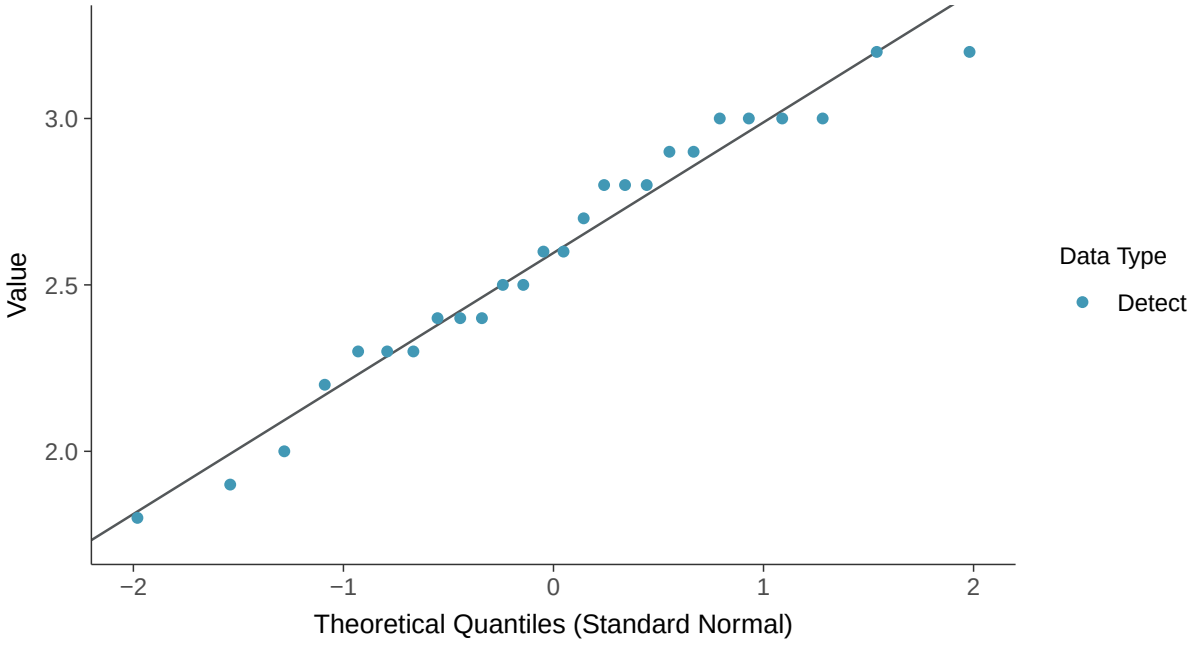
Boxplot by Season

Fluoride (App IV), MW-9 (mg/l)



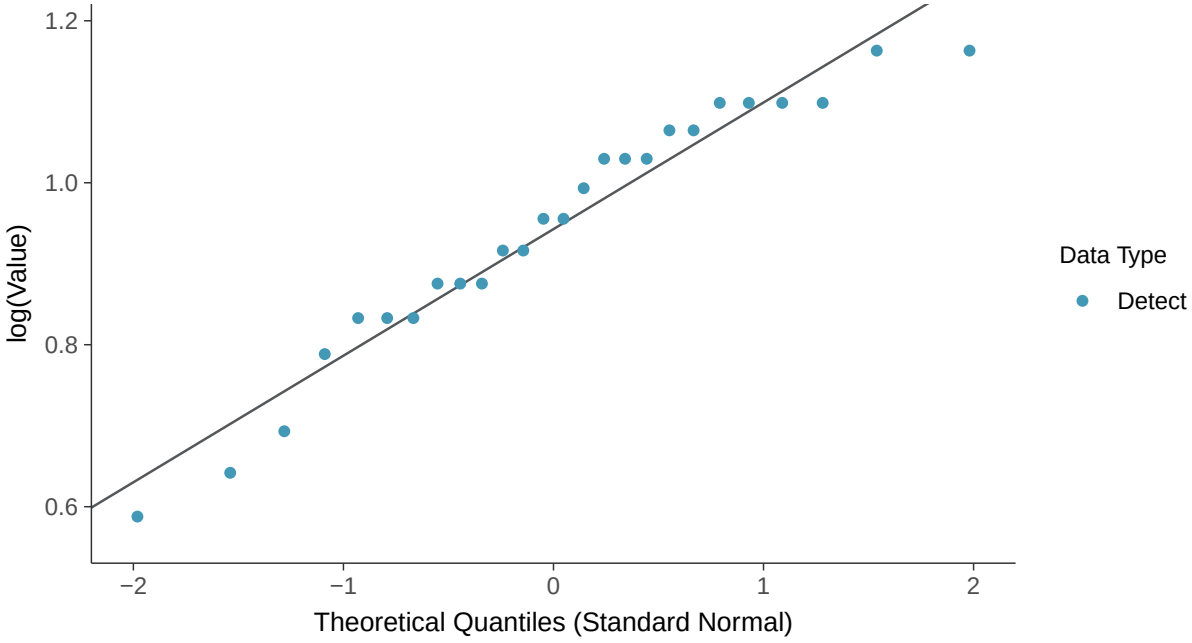
Normal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



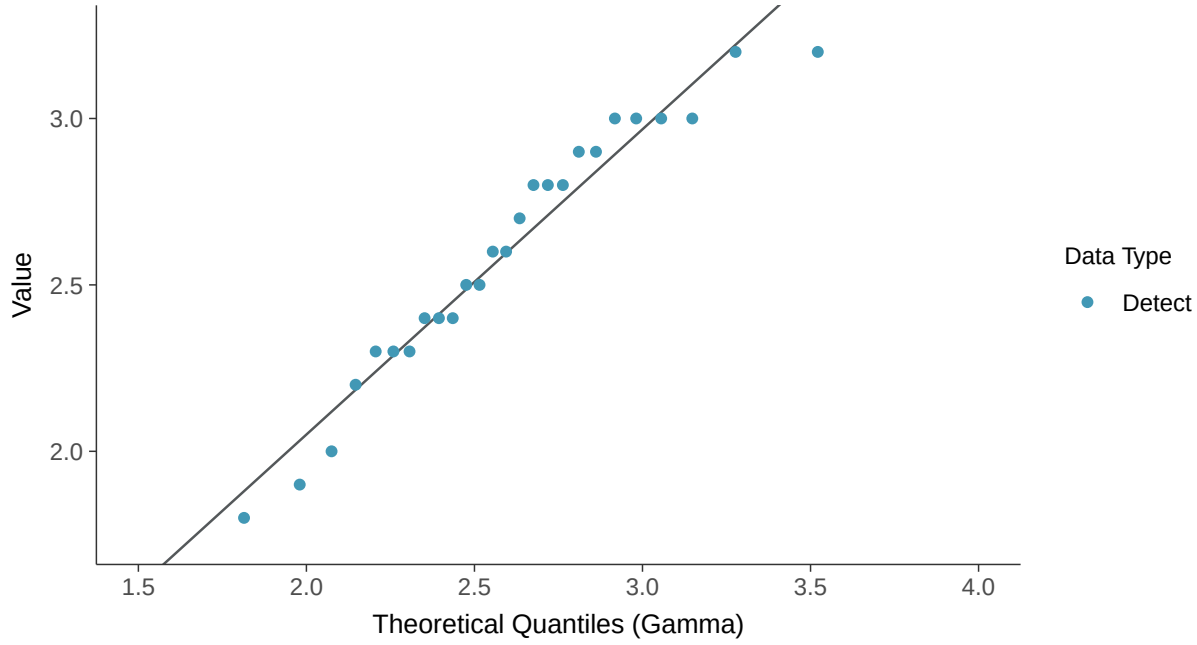
Lognormal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



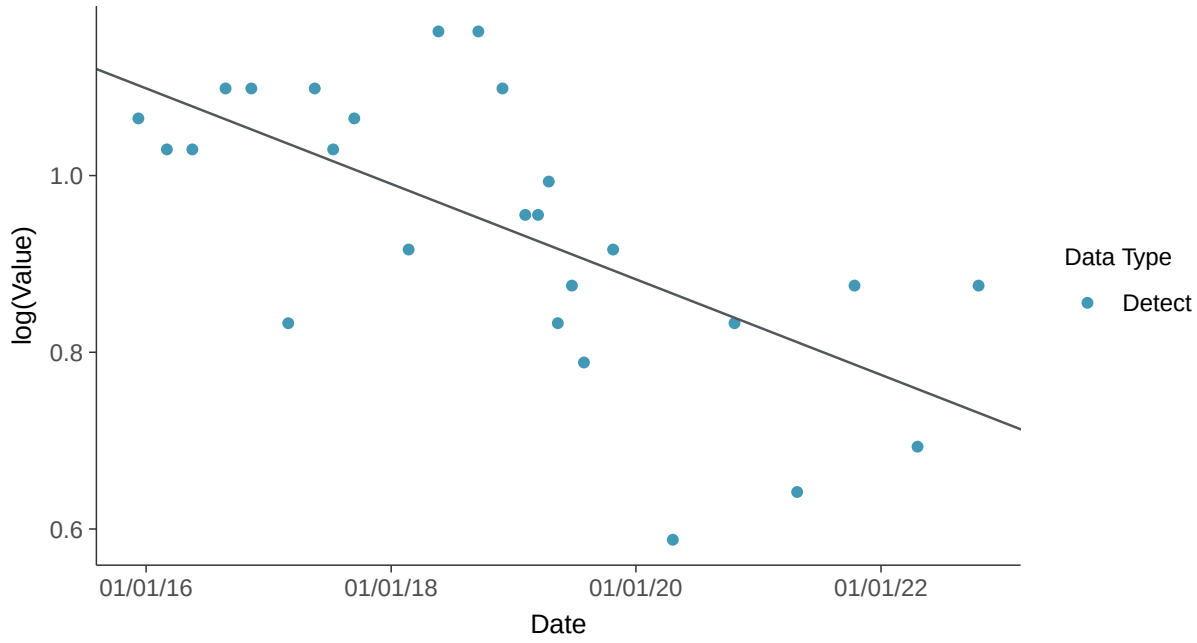
Gamma Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



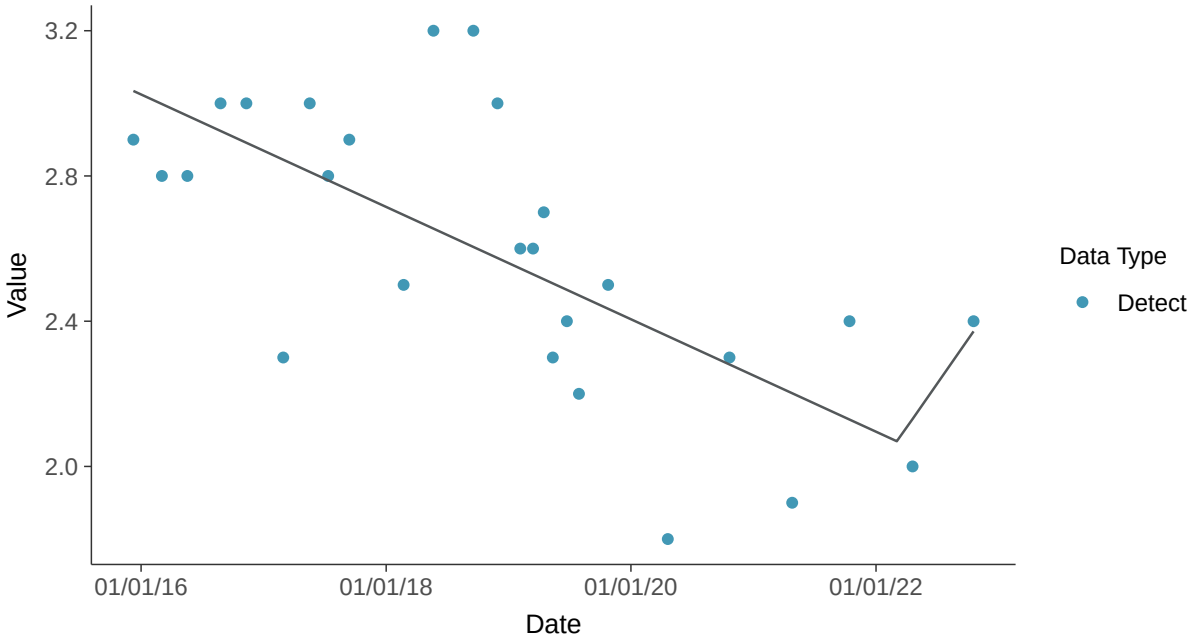
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-9 (mg/l)



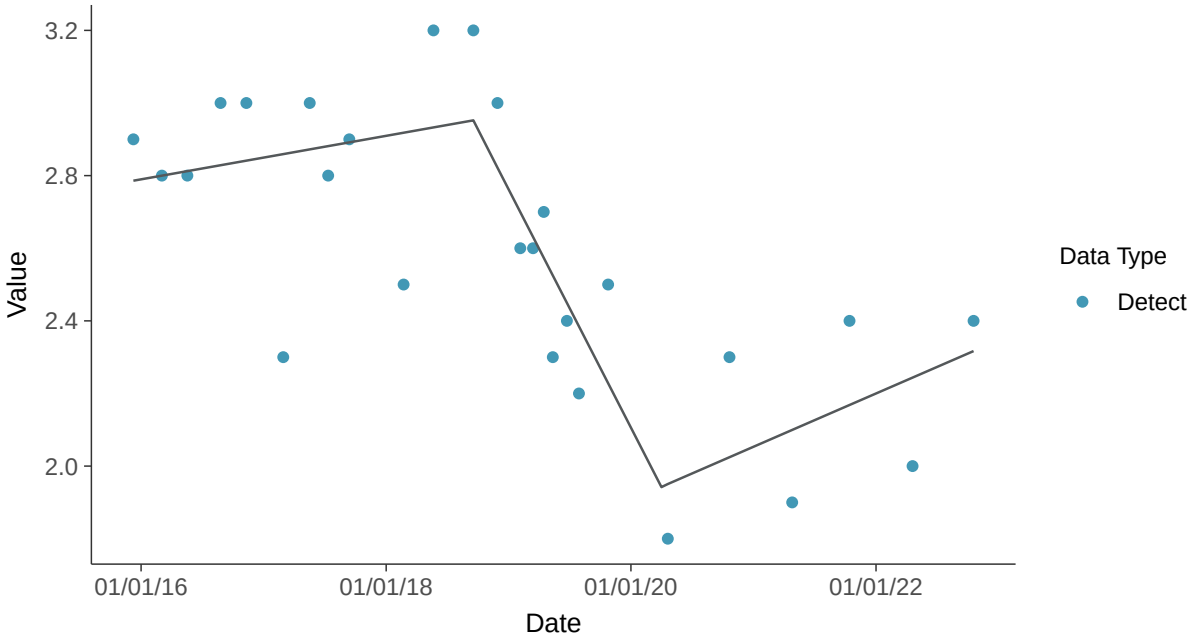
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-9 (mg/l)



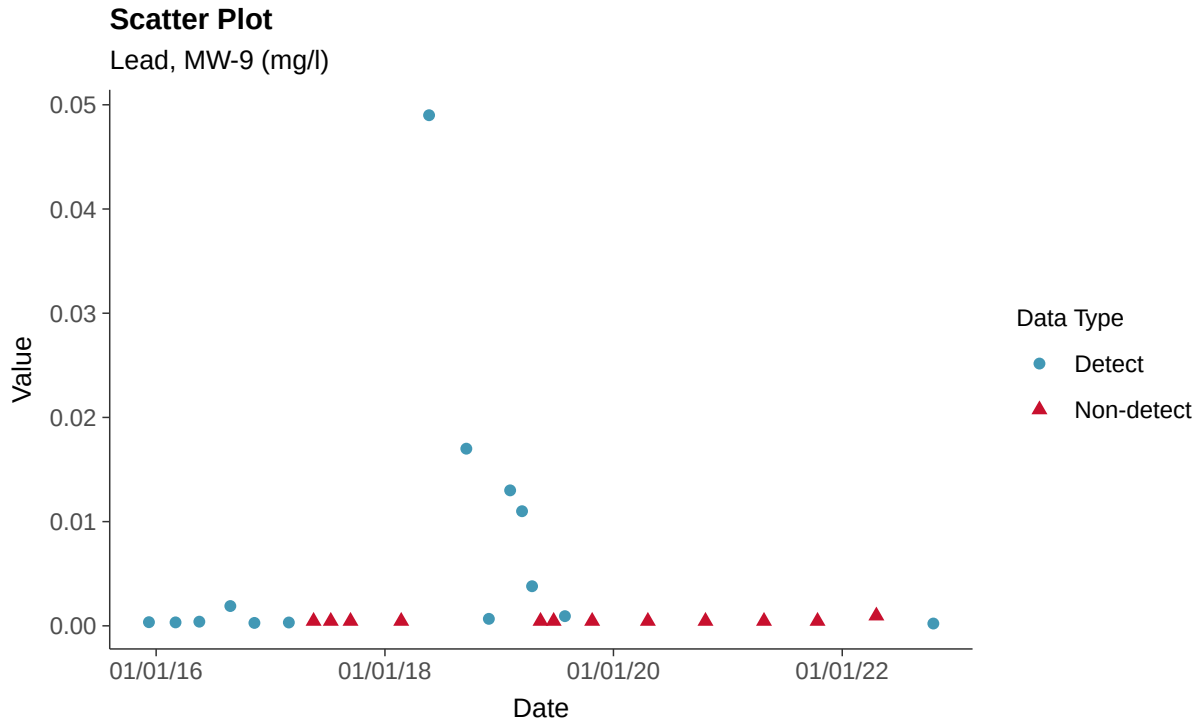
Trend Regression: Piecewise Linear-Linear-Linear

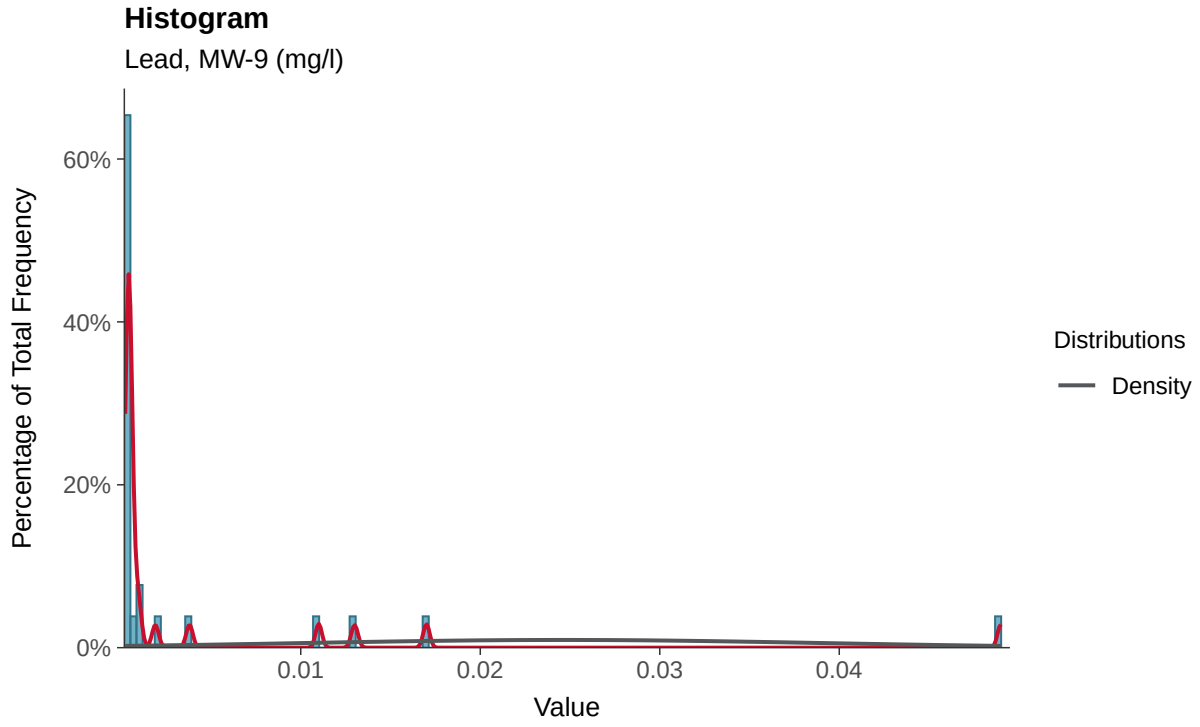
Fluoride (App IV), MW-9 (mg/l)



Appendix IV: Lead, MW-9

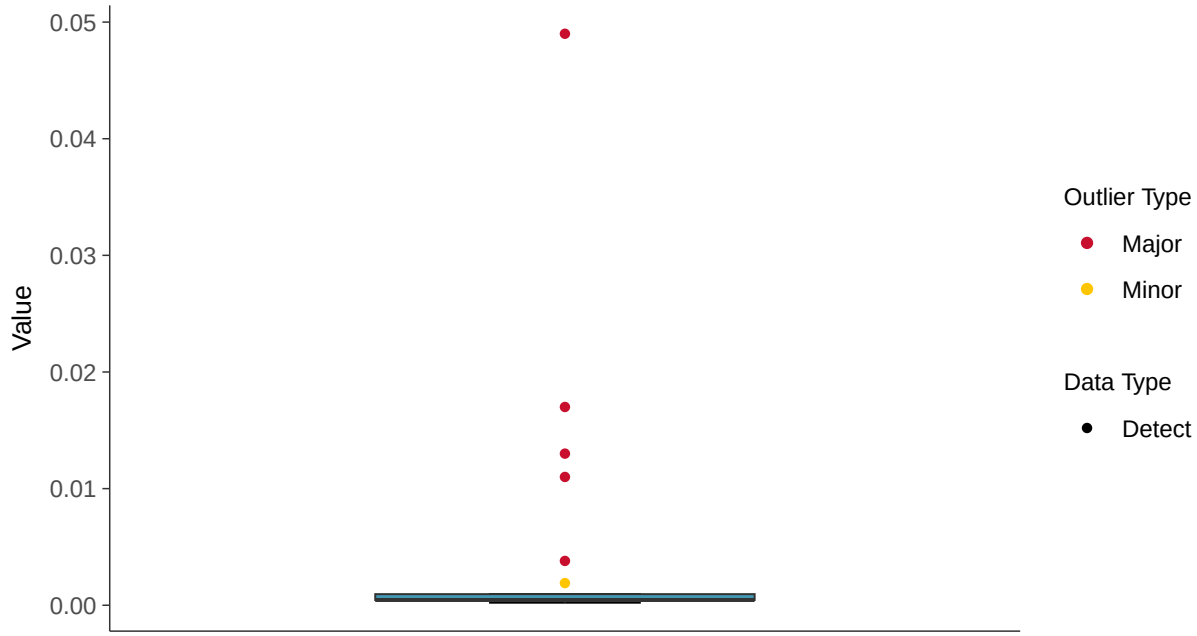
ID: 13_2_117





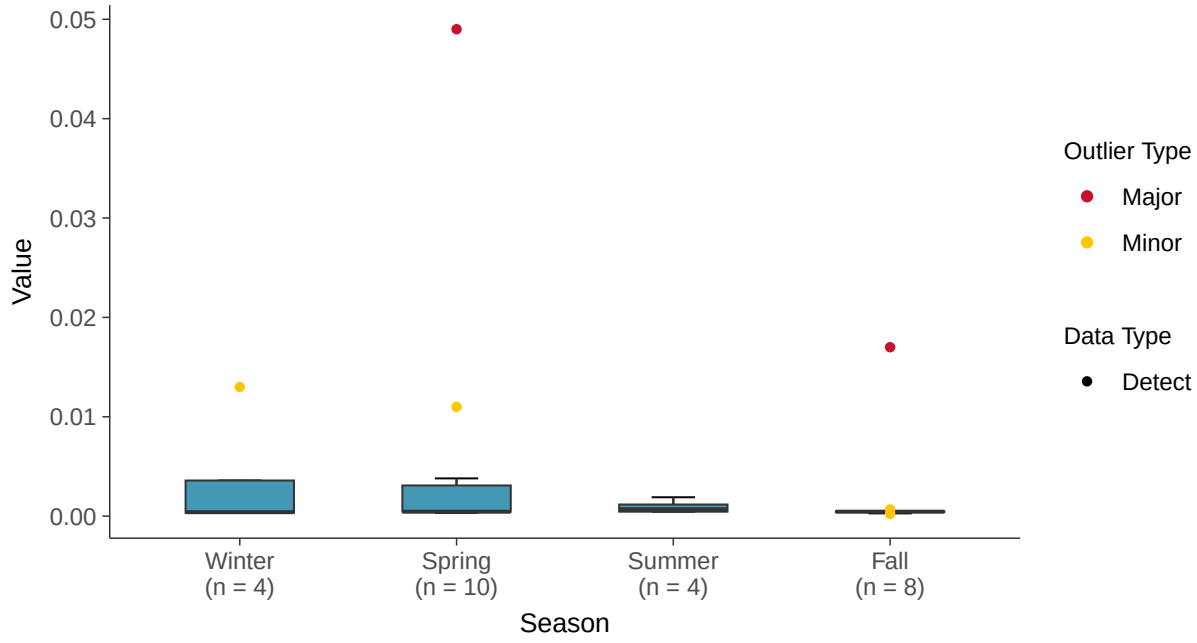
Boxplot

Lead, MW-9 (mg/l)



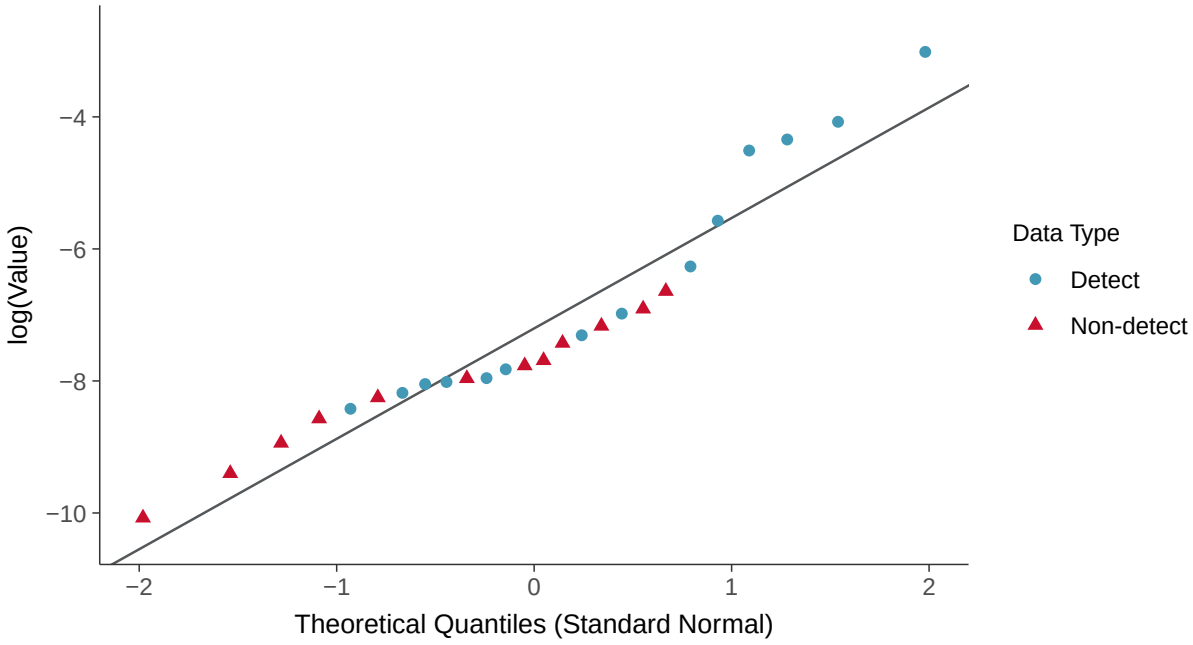
Boxplot by Season

Lead, MW-9 (mg/l)



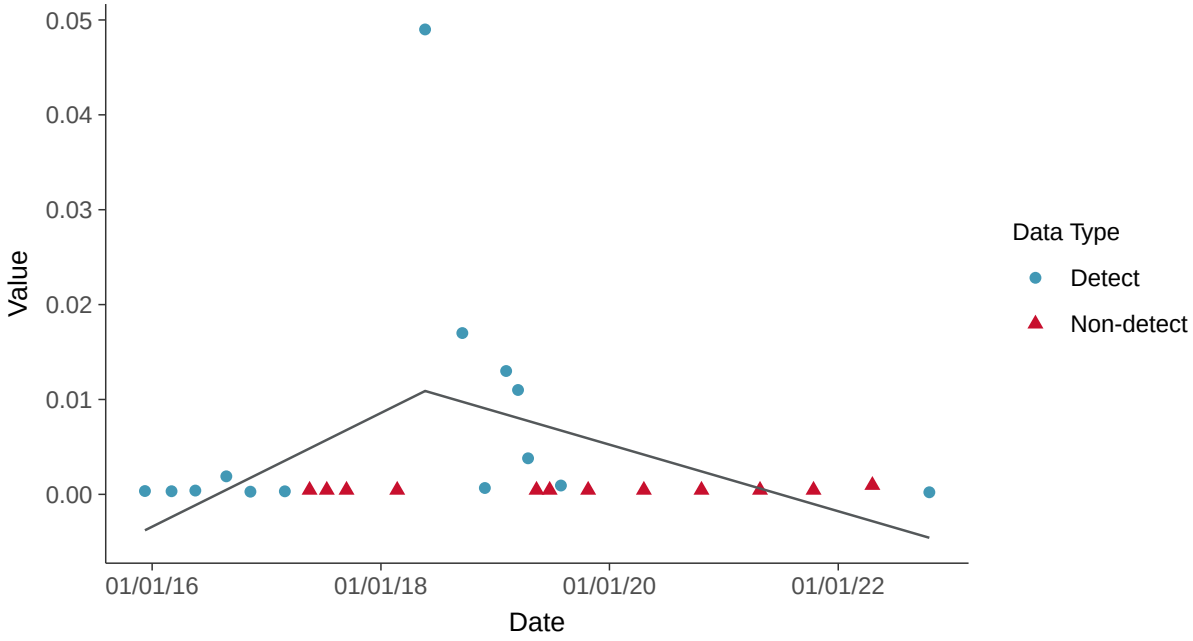
Lognormal Q-Q plot using ROS Imputed Estimates

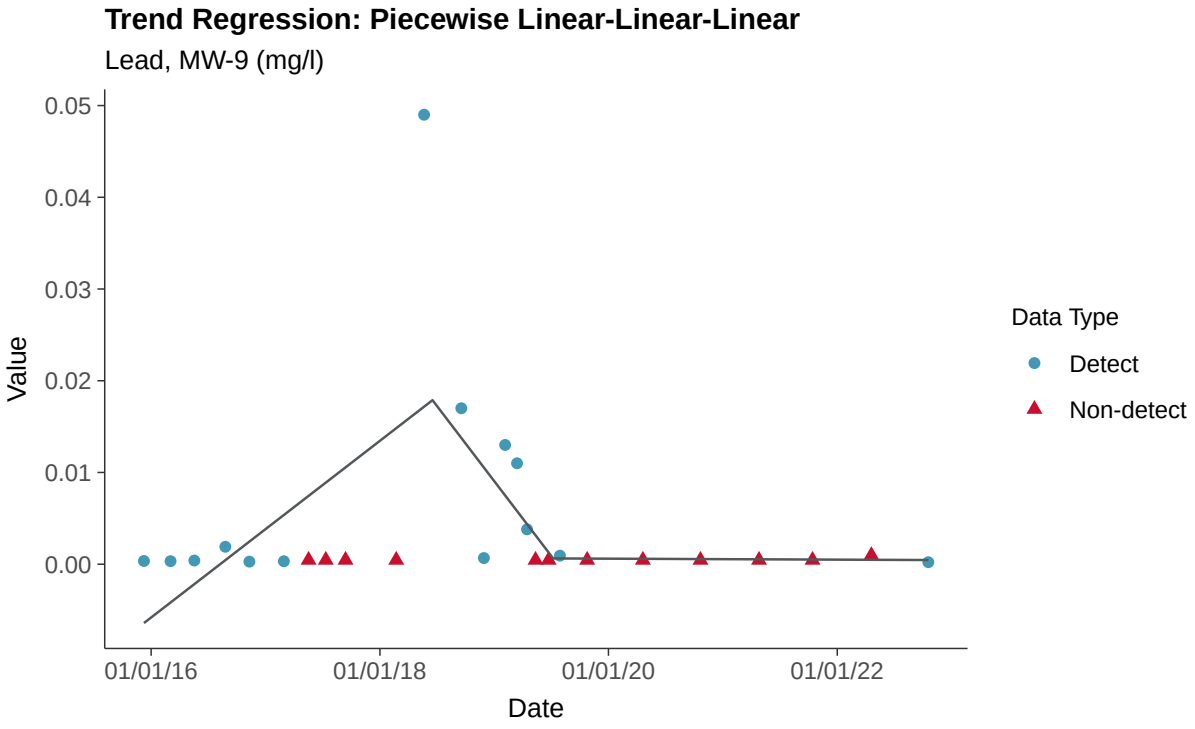
Lead, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

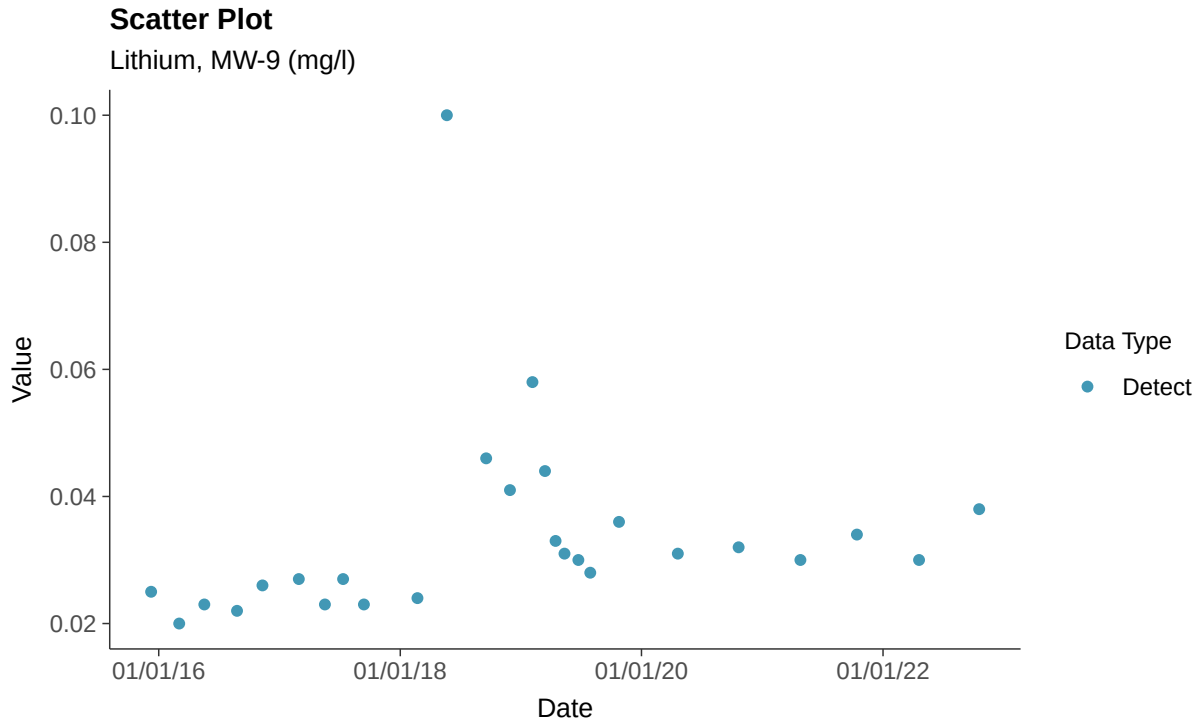
Lead, MW-9 (mg/l)

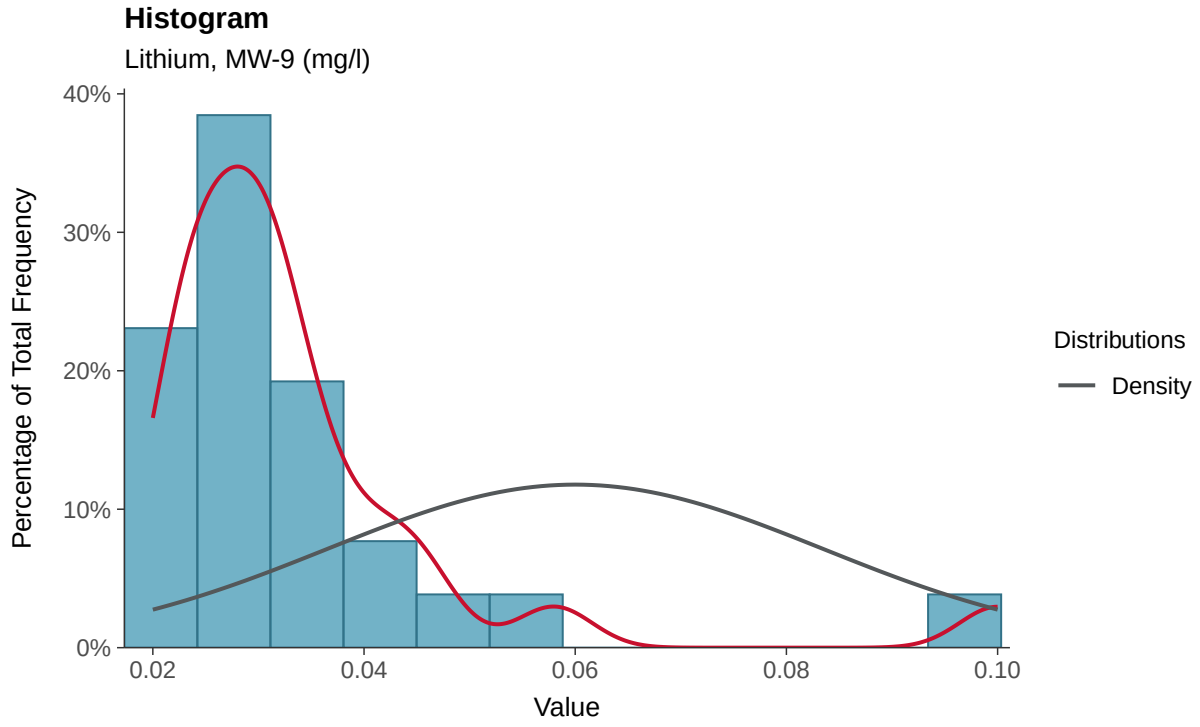



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-9 (mg/l)
Value
0.05
0.04
0.03
0.02
0.01
0.00
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-9

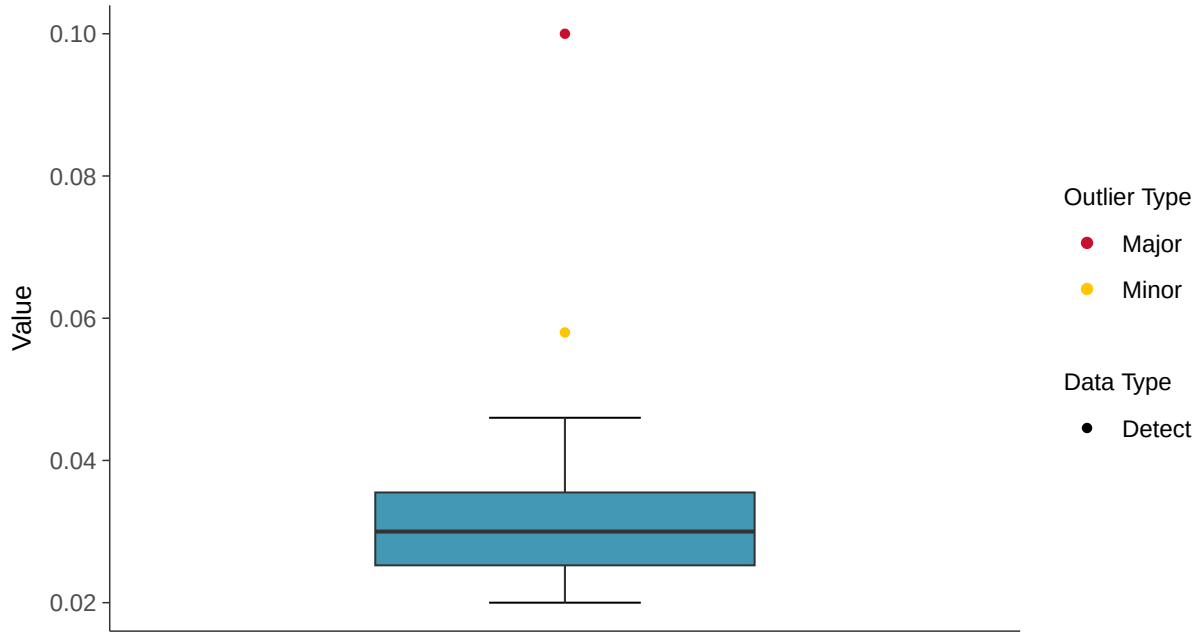
ID: 13_2_118





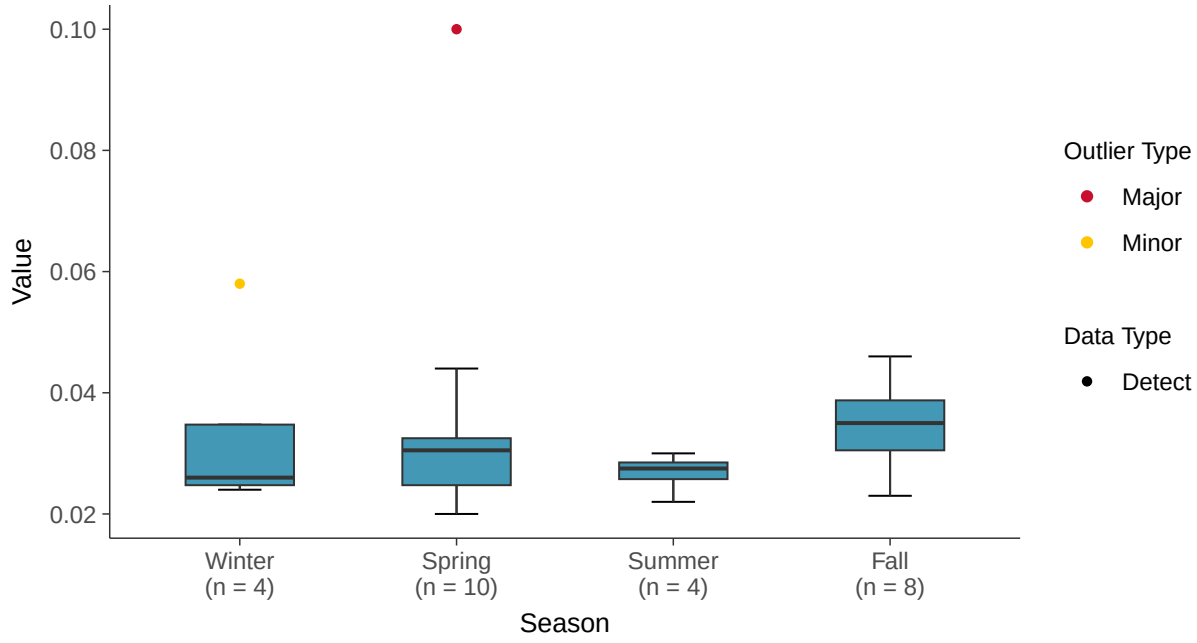
Boxplot

Lithium, MW-9 (mg/l)



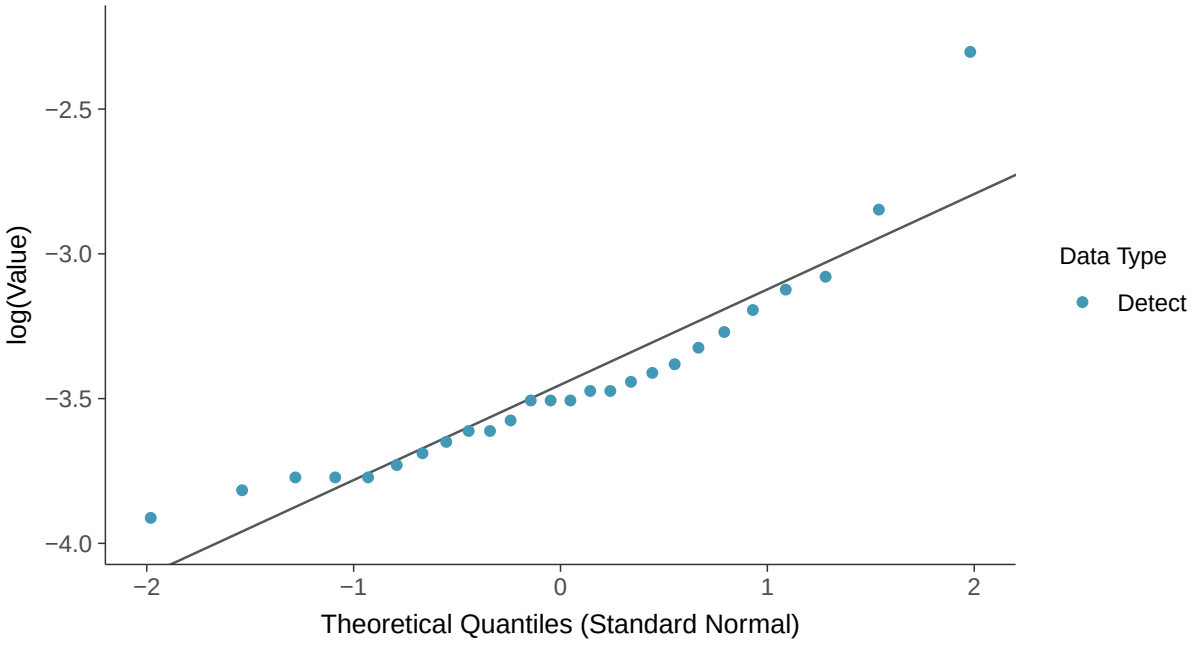
Boxplot by Season

Lithium, MW-9 (mg/l)



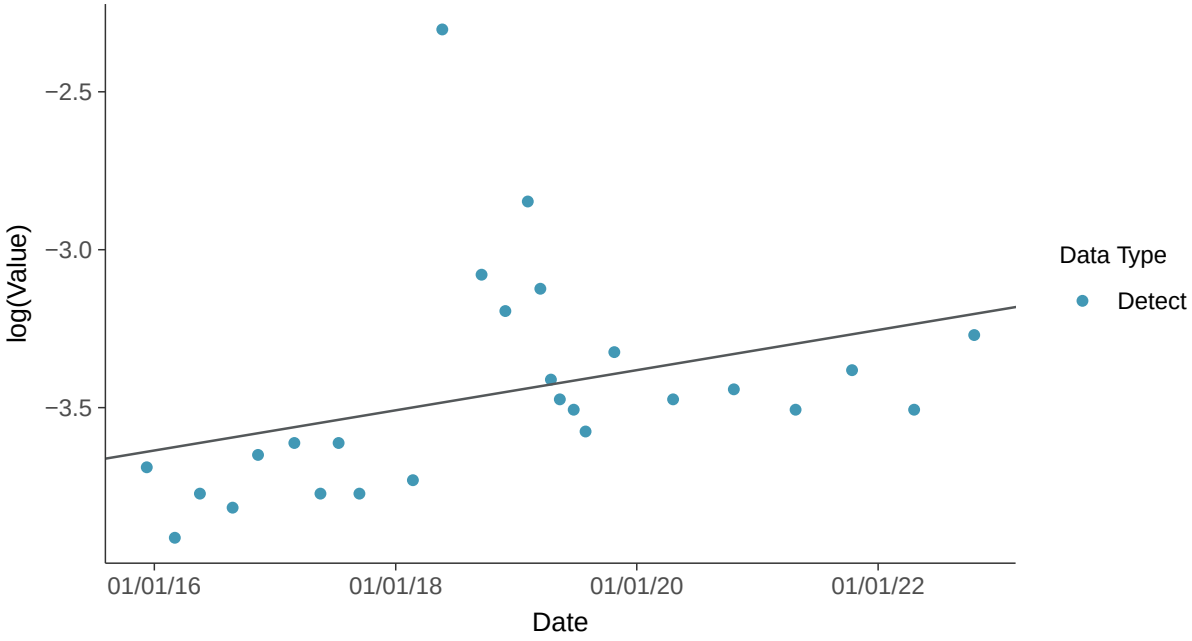
Lognormal Q-Q plot

Lithium, MW-9 (mg/l)



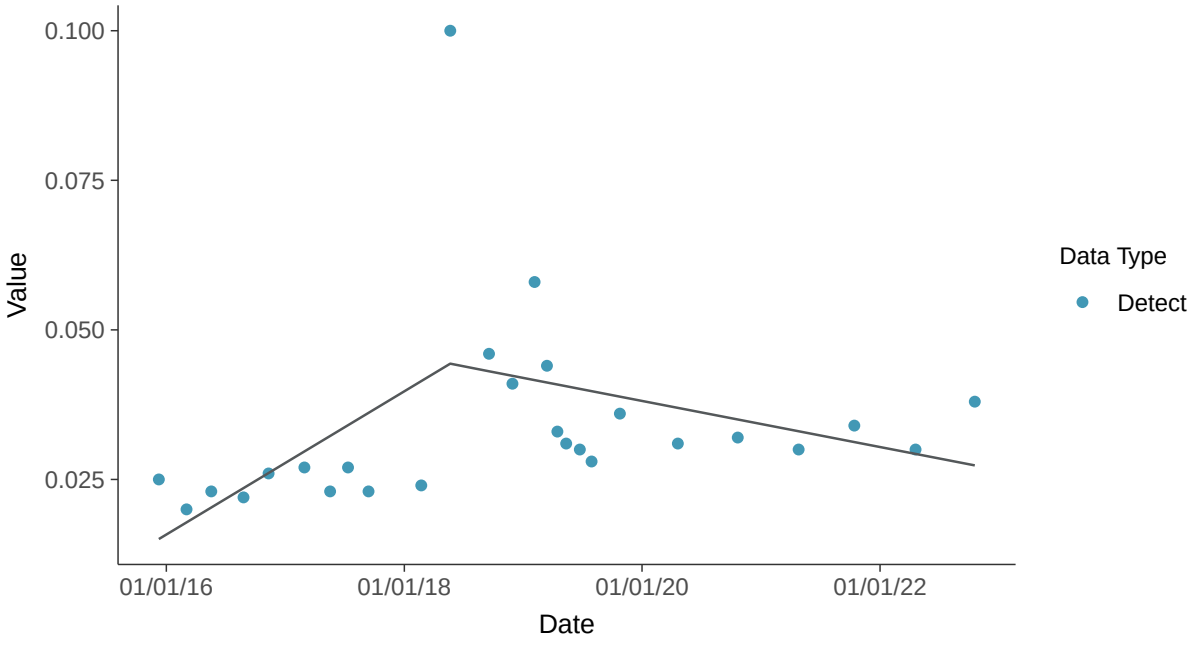
Trend Regression: Lognormal MLE

Lithium, MW-9 (mg/l)



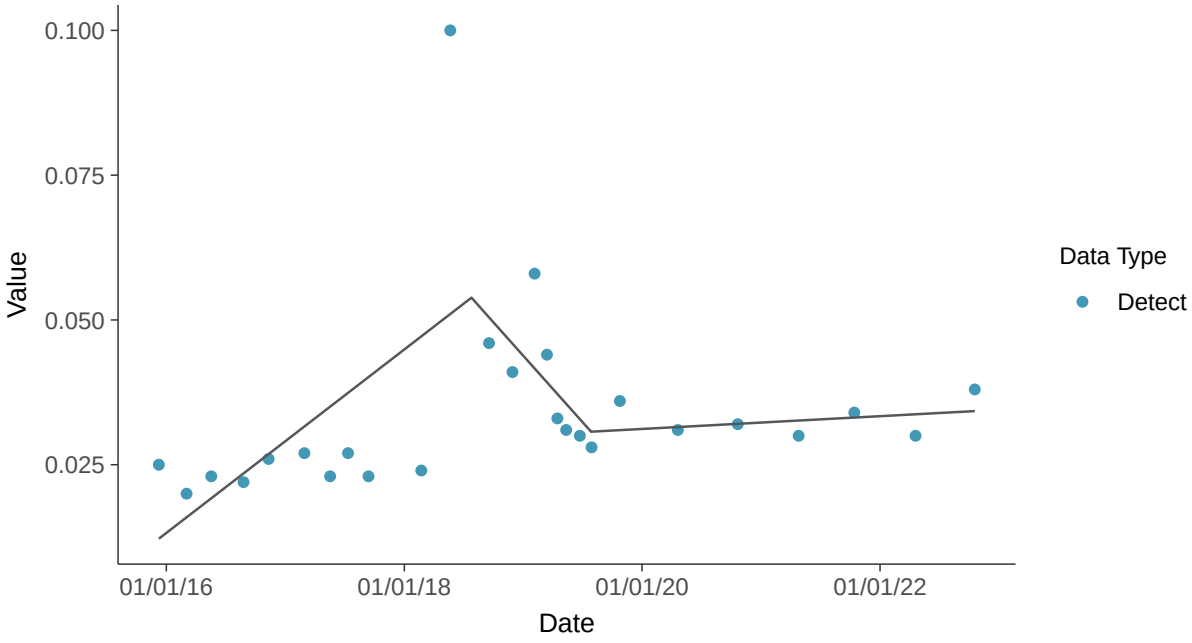
Trend Regression: Piecewise Linear-Linear

Lithium, MW-9 (mg/l)



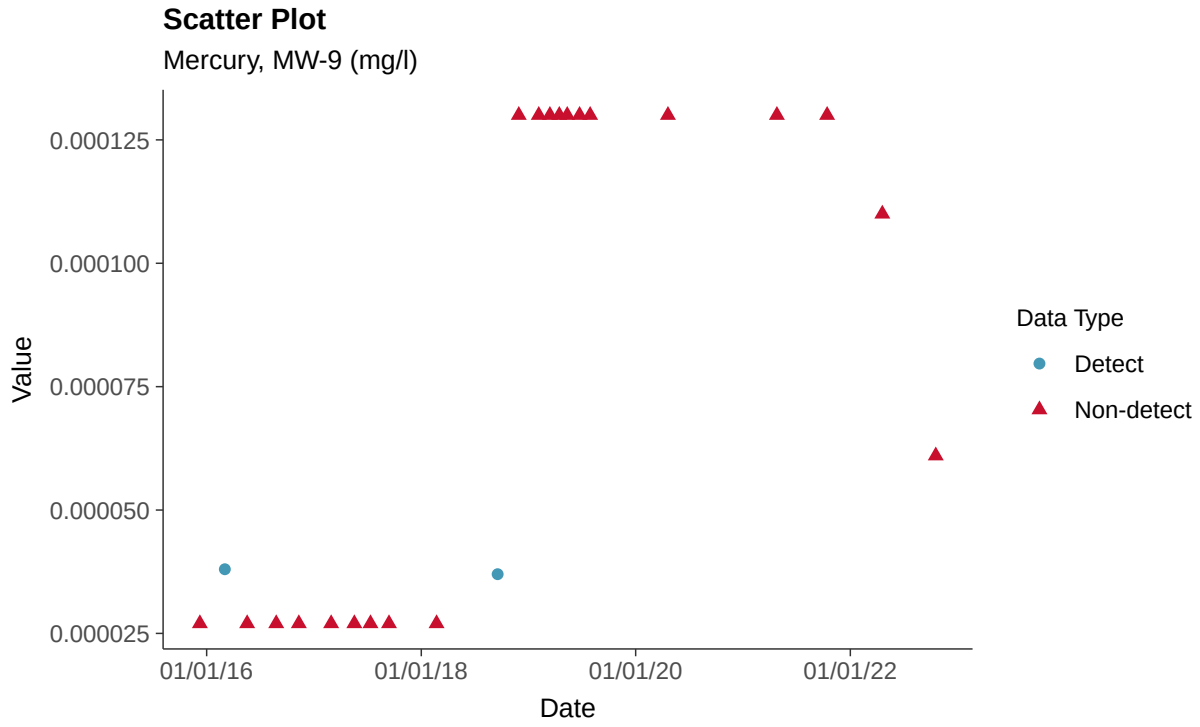
Trend Regression: Piecewise Linear-Linear-Linear

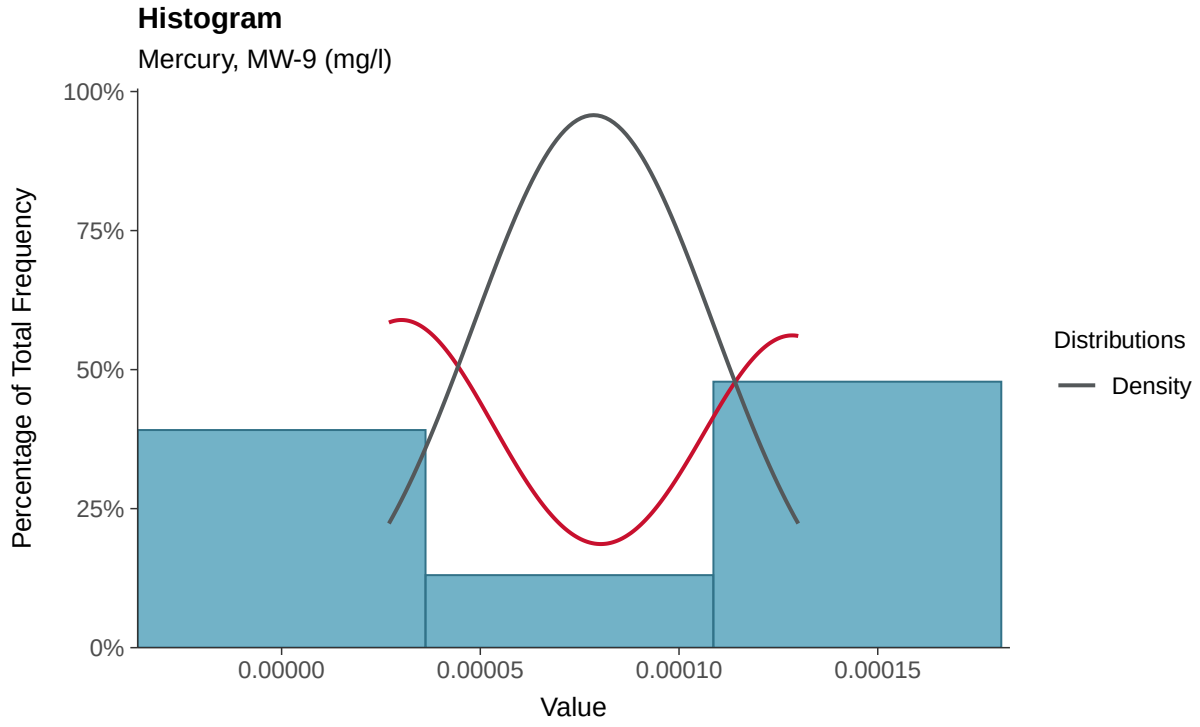
Lithium, MW-9 (mg/l)



Appendix IV: Mercury, MW-9

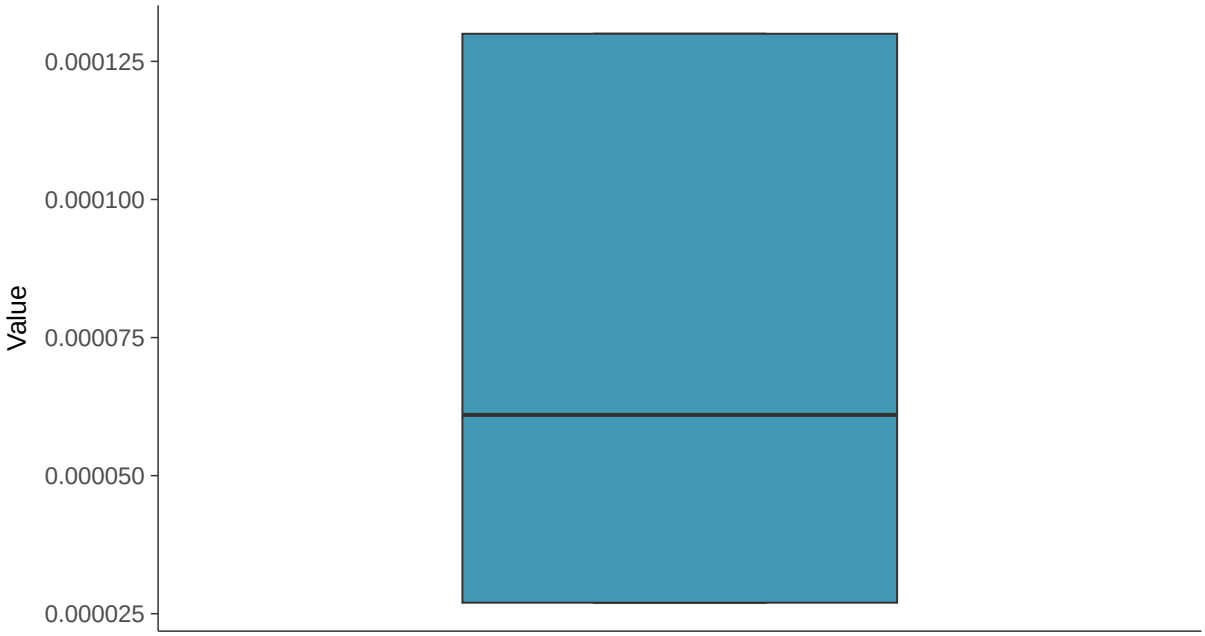
ID: 13_2_120





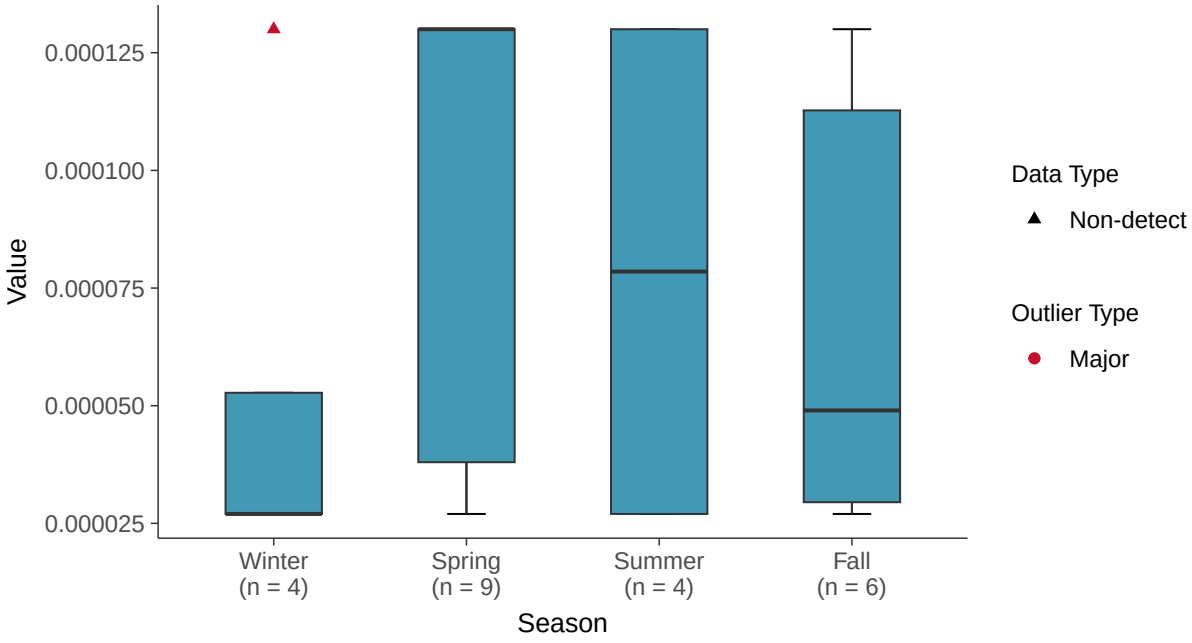
Boxplot

Mercury, MW-9 (mg/l)



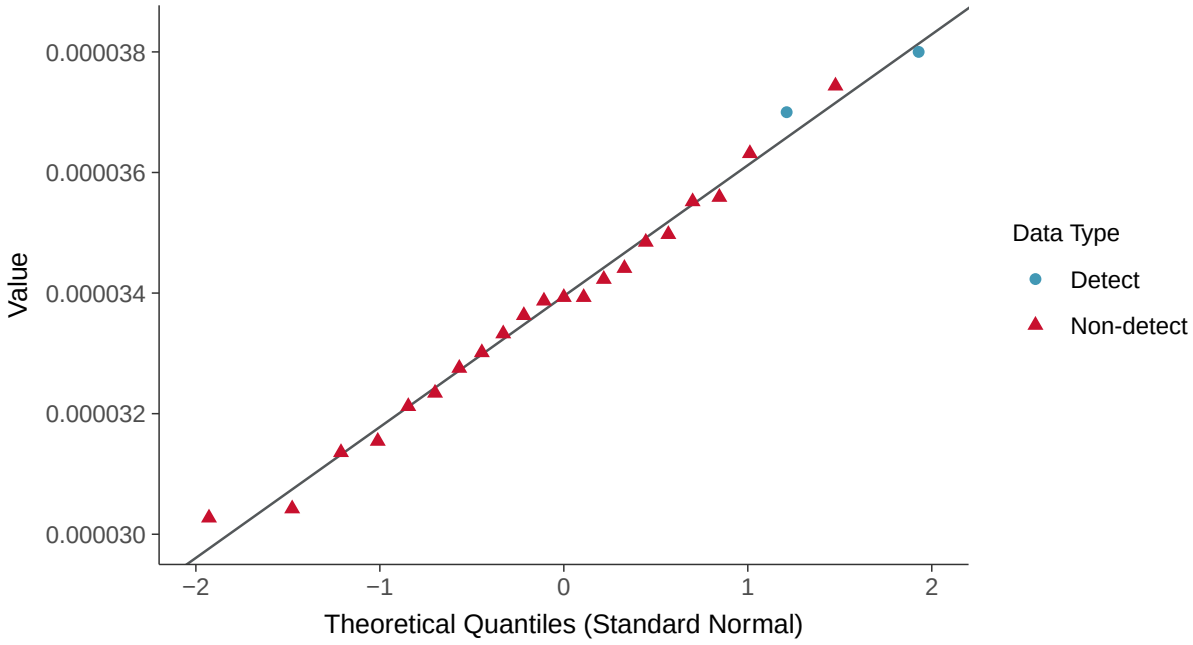
Boxplot by Season

Mercury, MW-9 (mg/l)



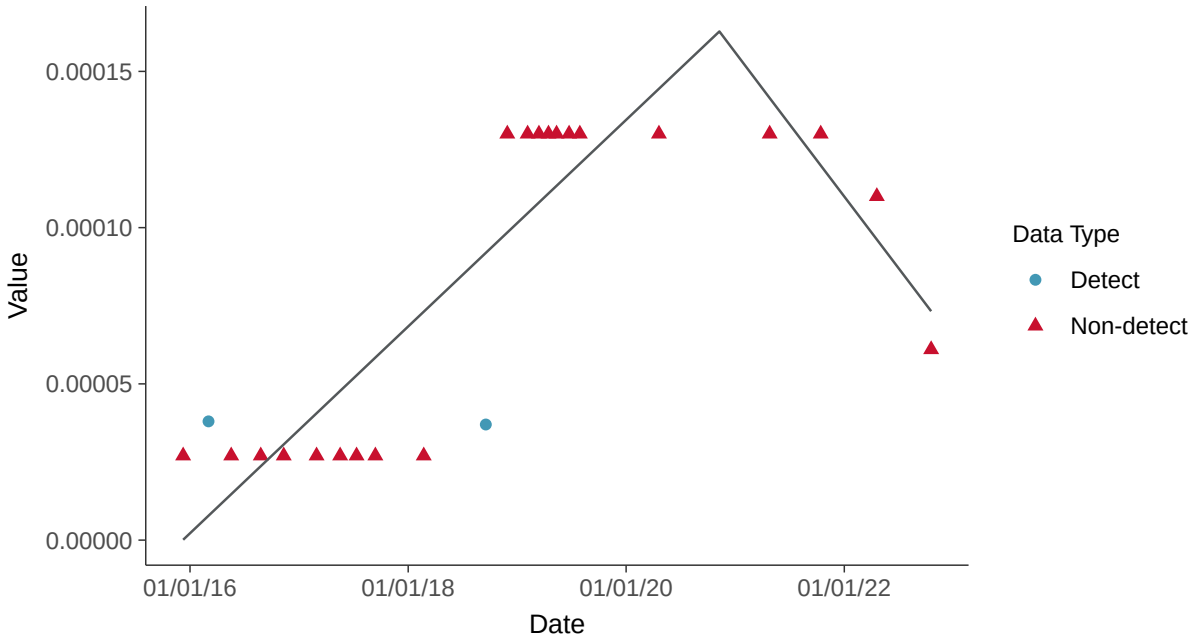
Normal Q-Q plot using ROS Imputed Estimates

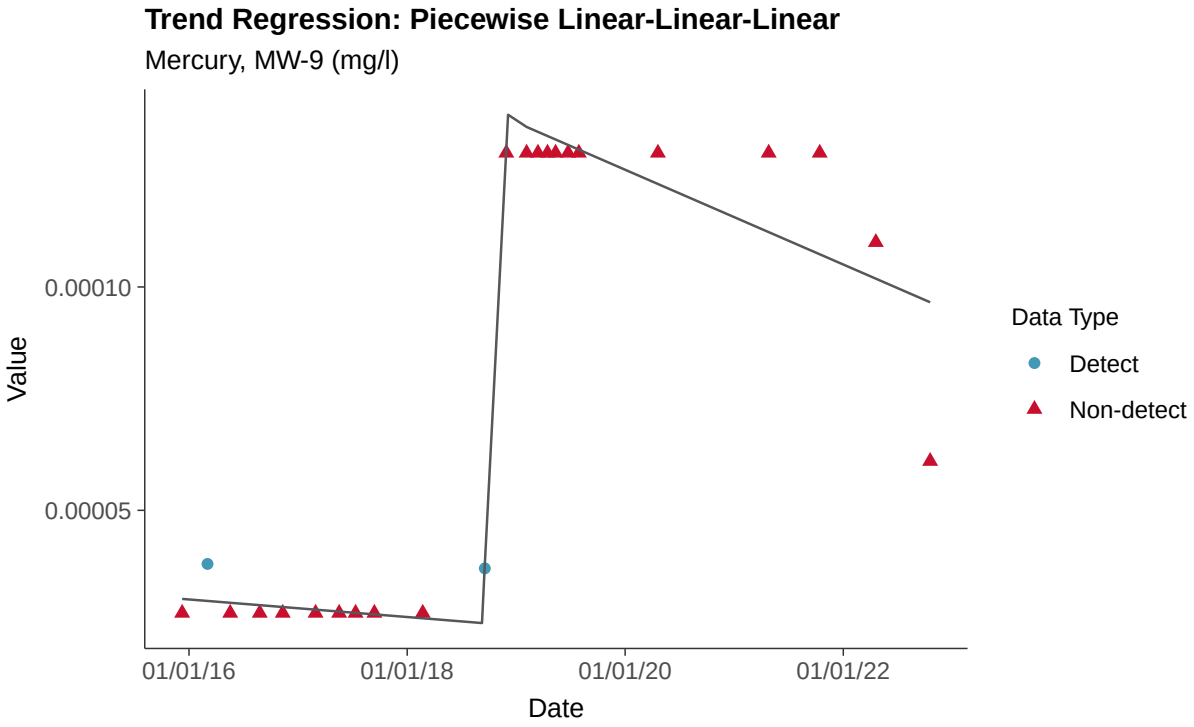
Mercury, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

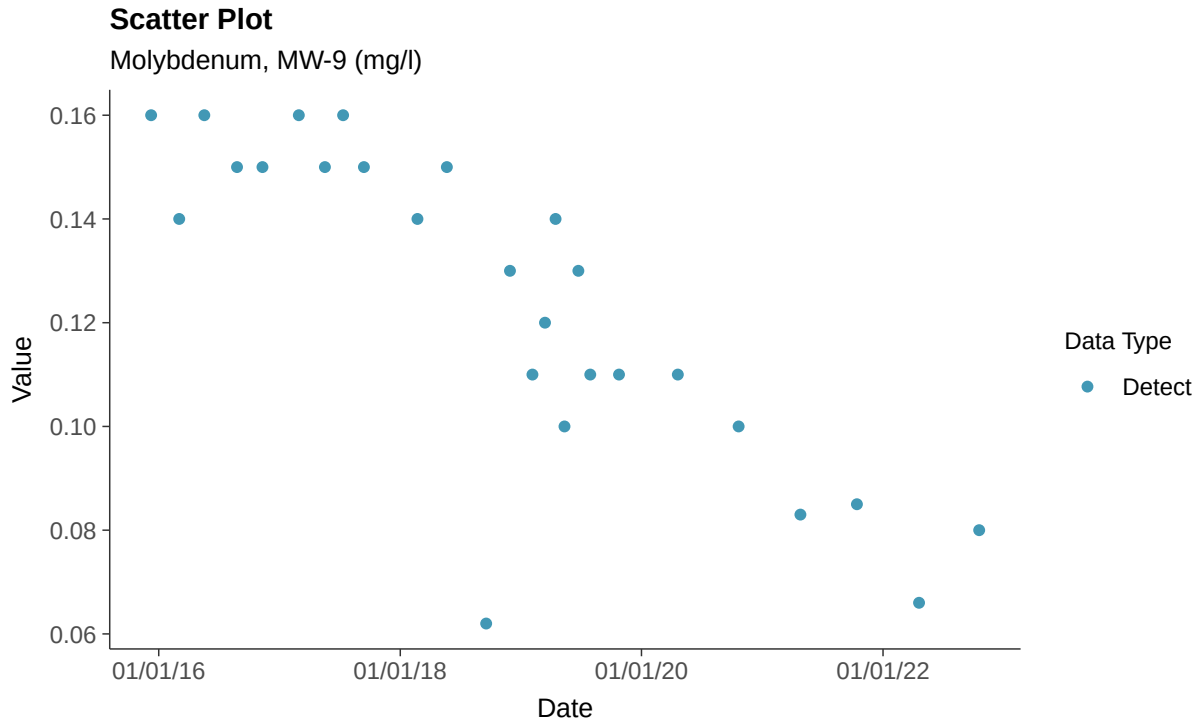
Mercury, MW-9 (mg/l)

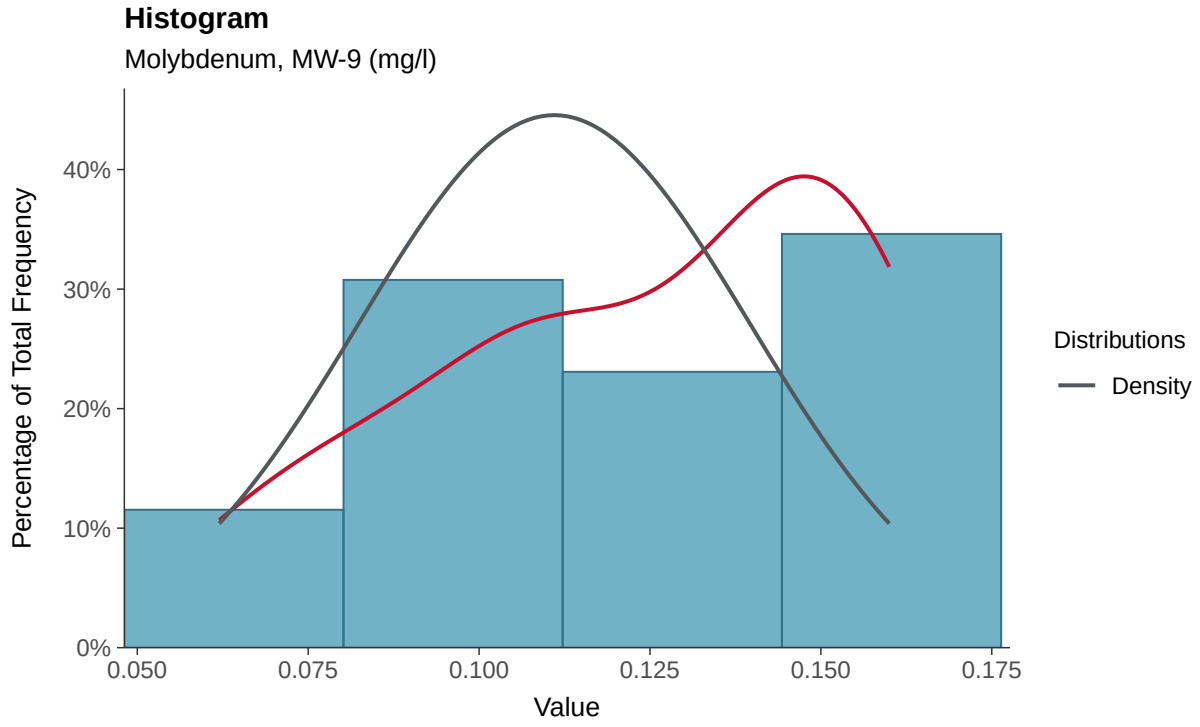



Trend Regression: Piecewise Linear-Linear-Linear
Mercury, MW-9 (mg/l)
Value
0.00010
0.00005
01/01/16
01/01/18
01/01/20
01/01/22
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-9

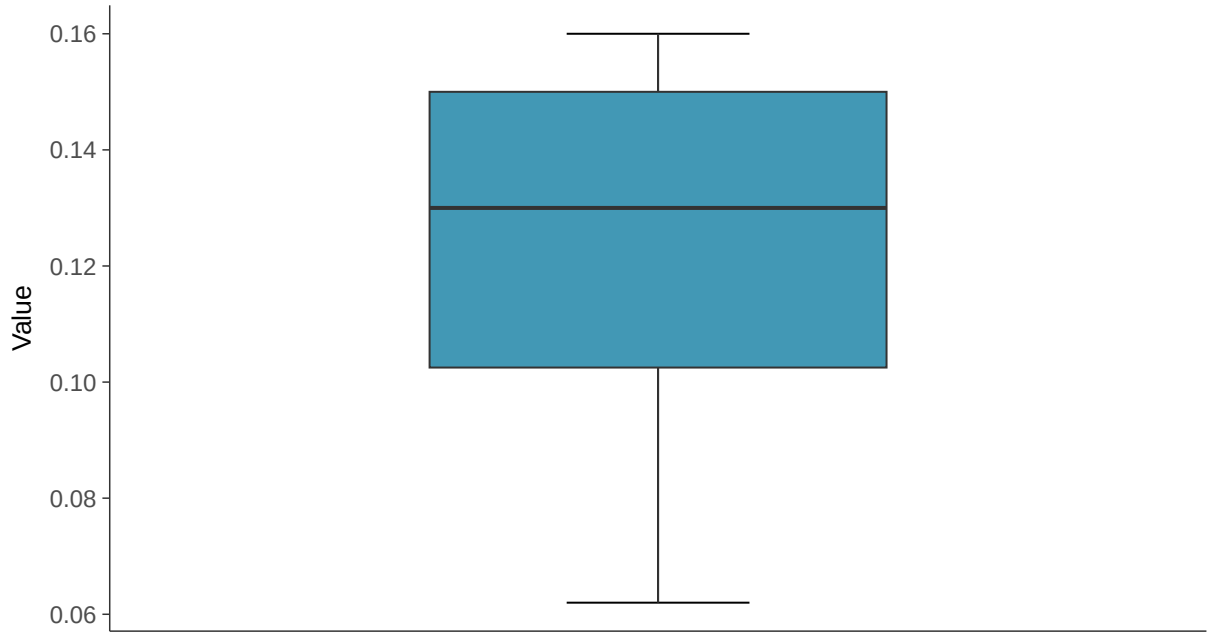
ID: 13_2_121





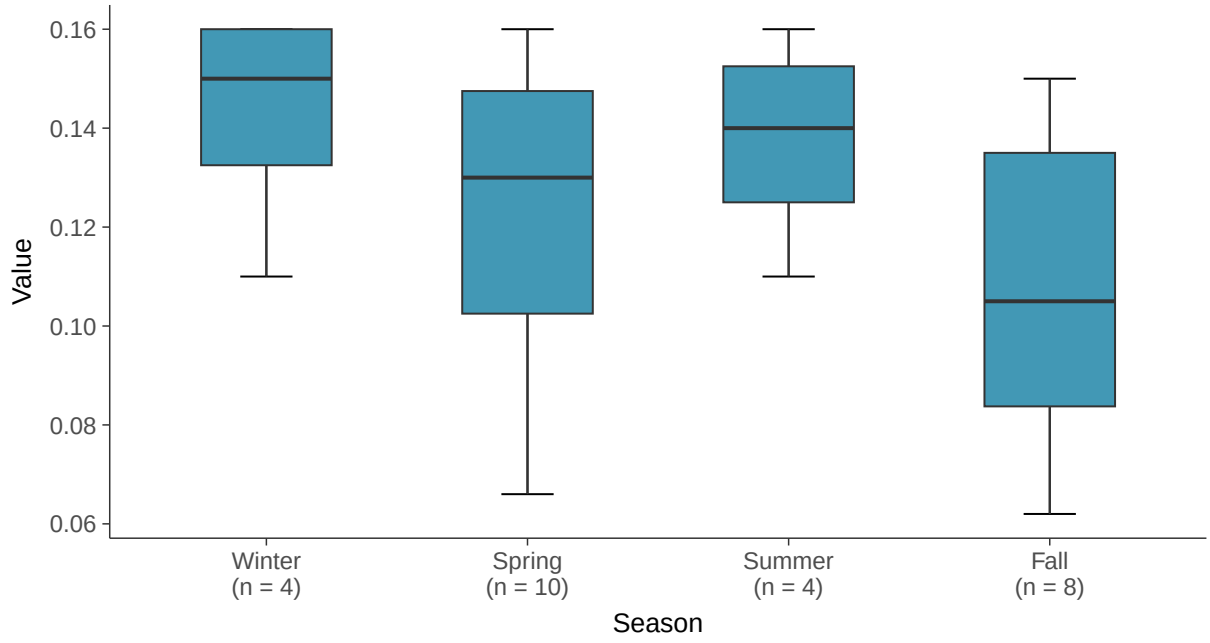
Boxplot

Molybdenum, MW-9 (mg/l)



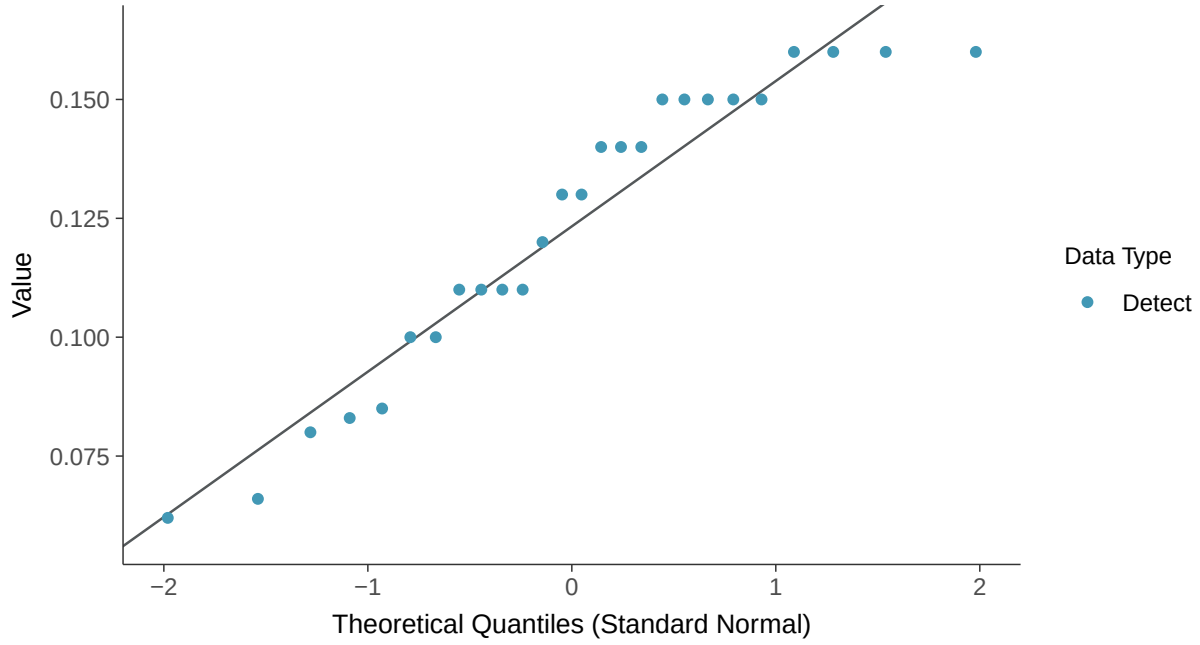
Boxplot by Season

Molybdenum, MW-9 (mg/l)



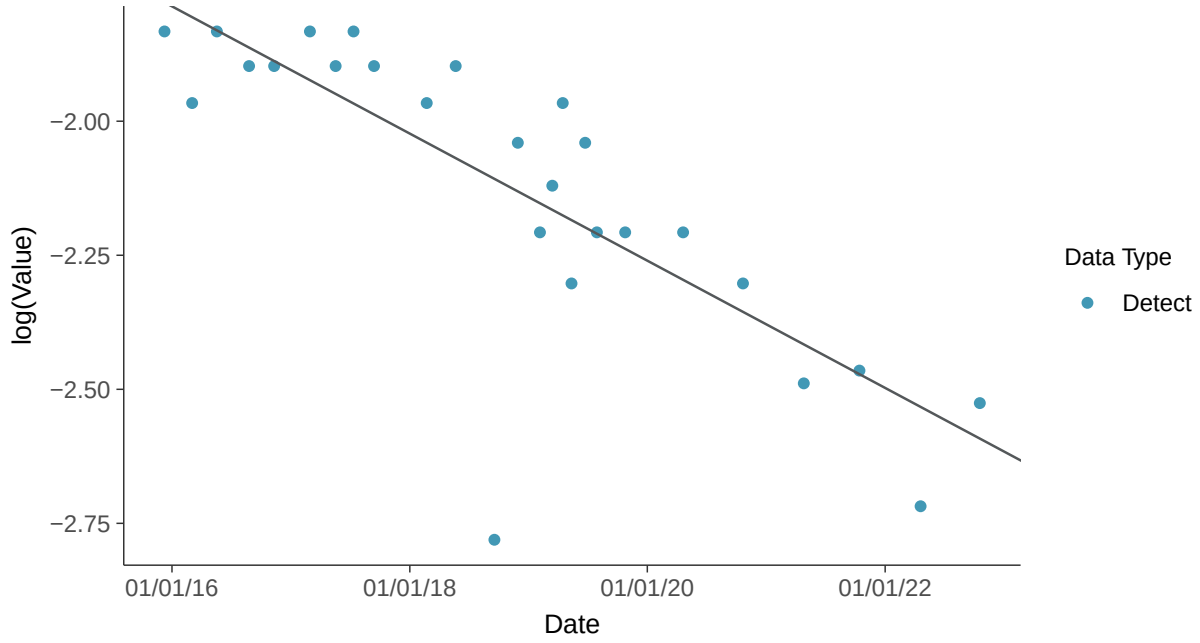
Normal Q-Q plot

Molybdenum, MW-9 (mg/l)



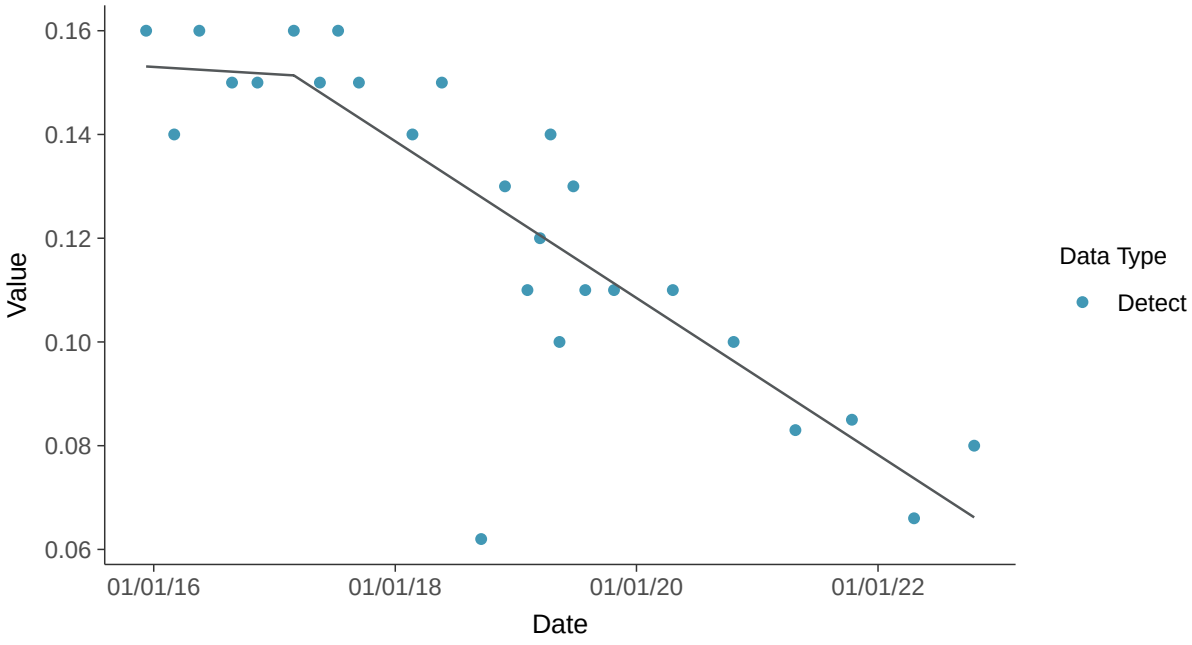
Trend Regression: Lognormal MLE

Molybdenum, MW-9 (mg/l)



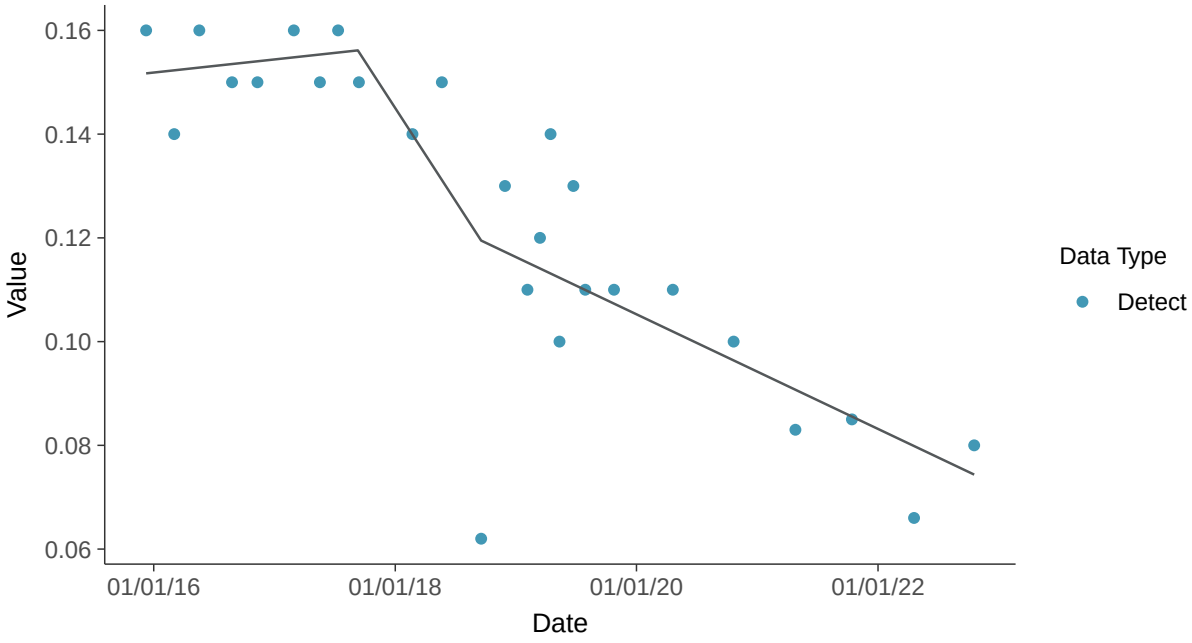
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-9 (mg/l)

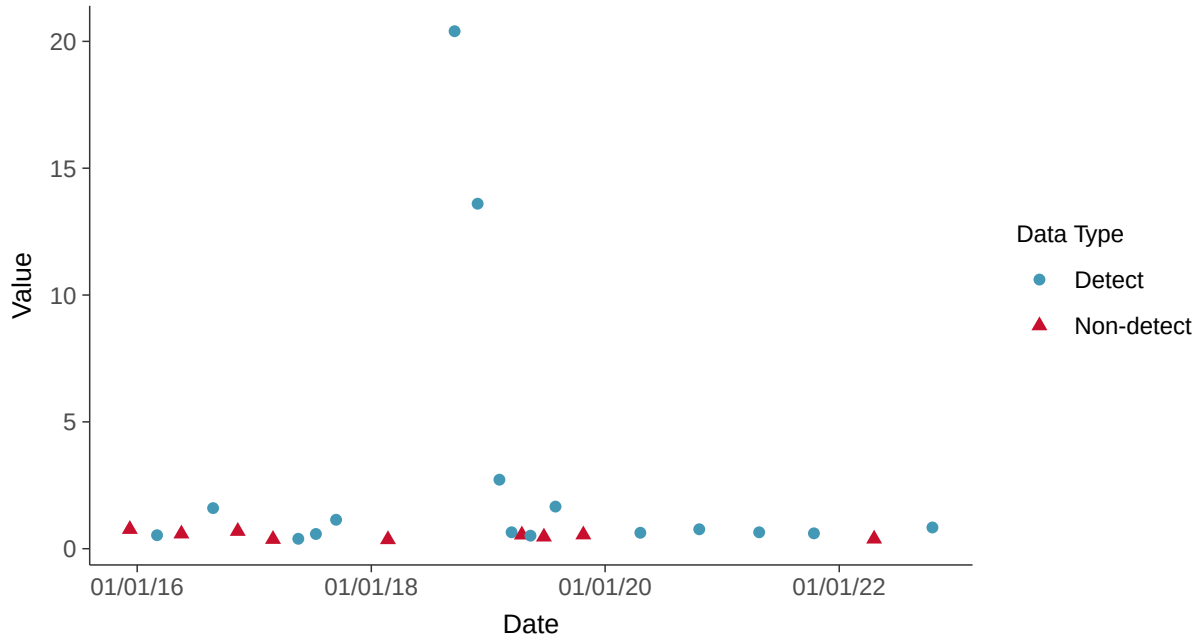


Appendix IV: Radium-226+228, MW-9

ID: 13_2_127

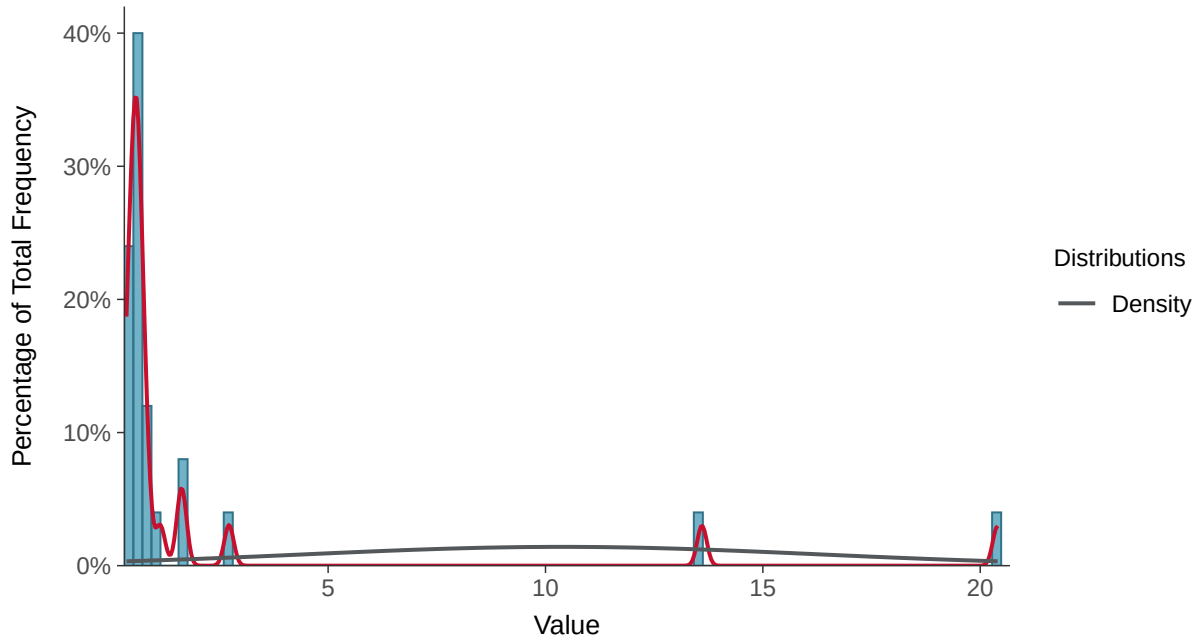
Scatter Plot

Radium-226+228, MW-9 (pci/l)



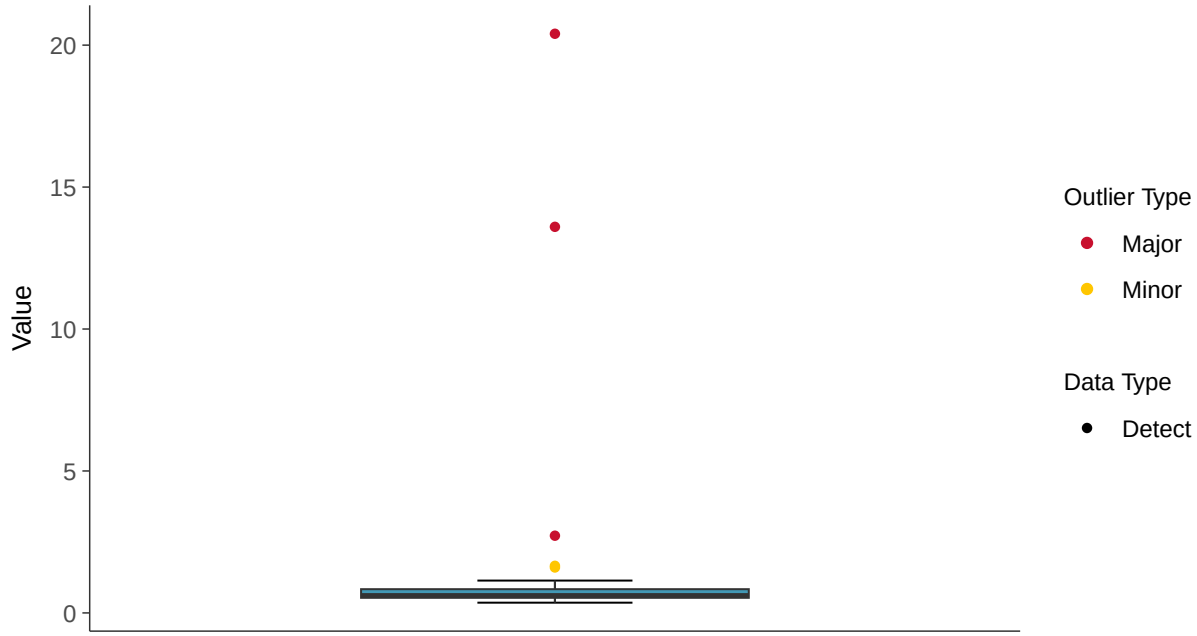
Histogram

Radium-226+228, MW-9 (pci/l)



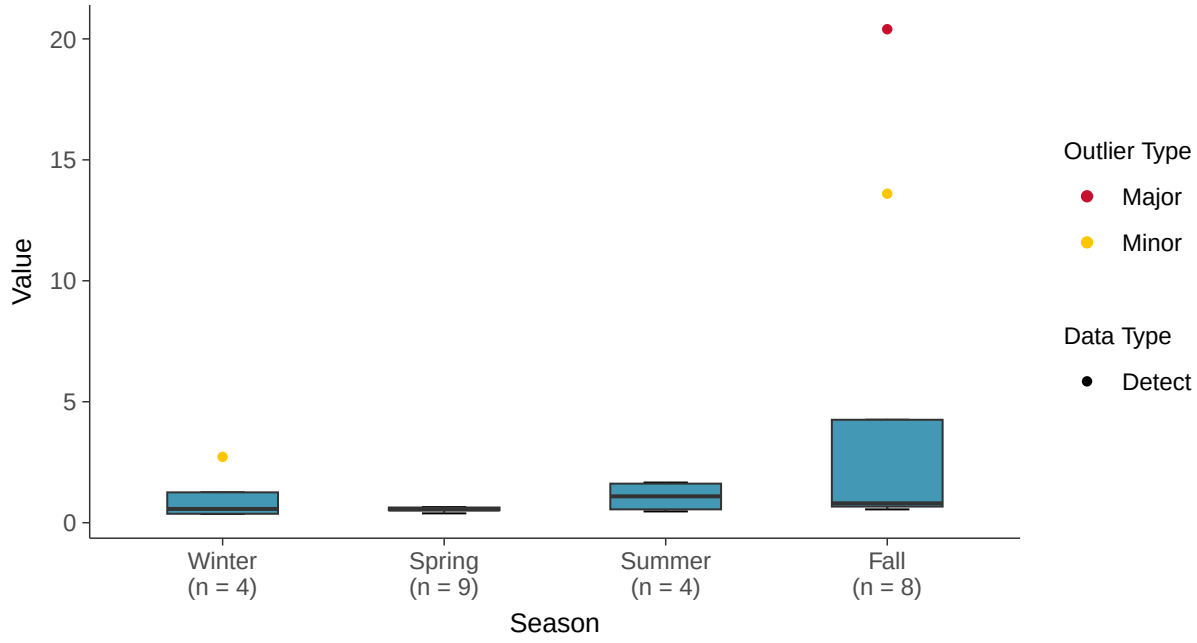
Boxplot

Radium-226+228, MW-9 (pci/l)



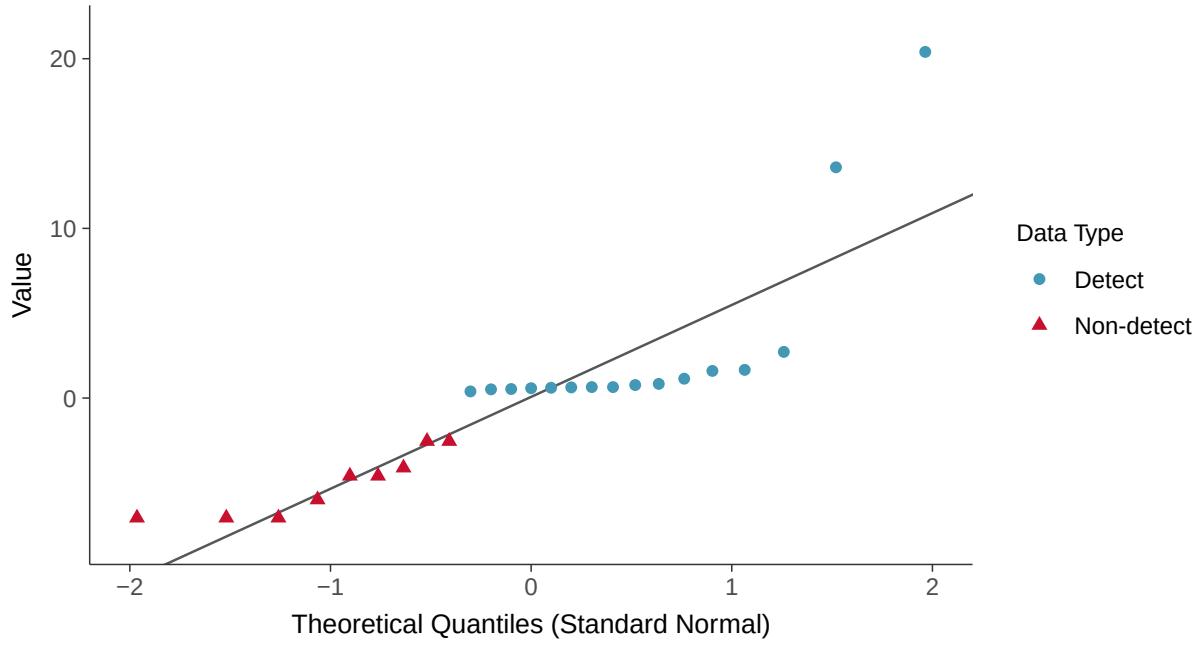
Boxplot by Season

Radium-226+228, MW-9 (pci/l)



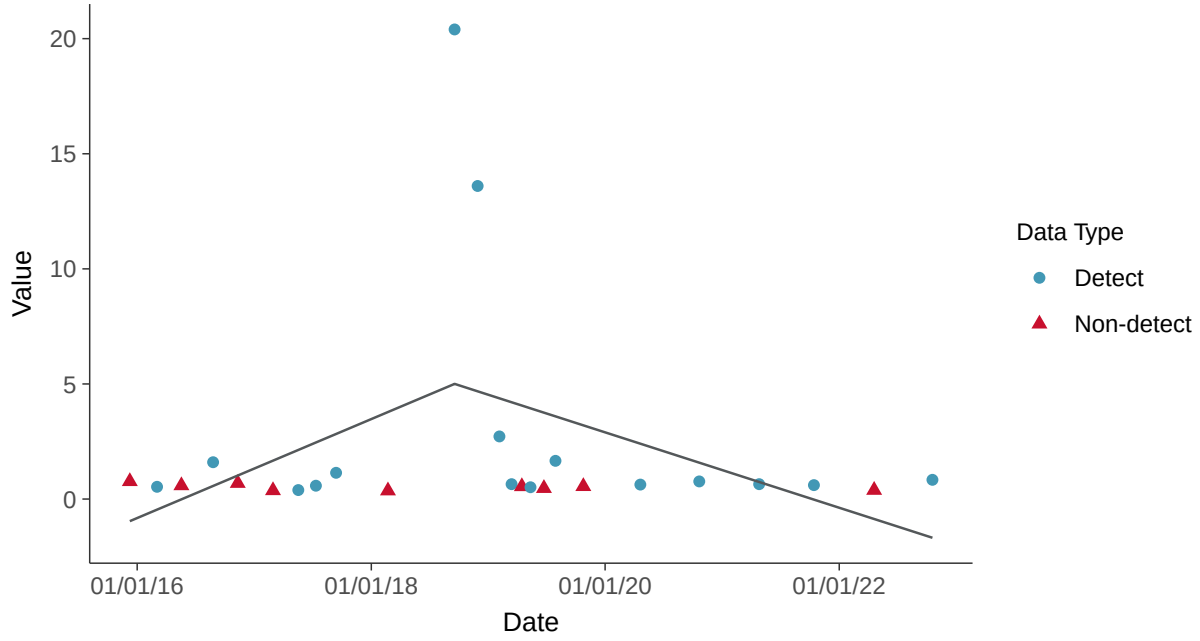
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



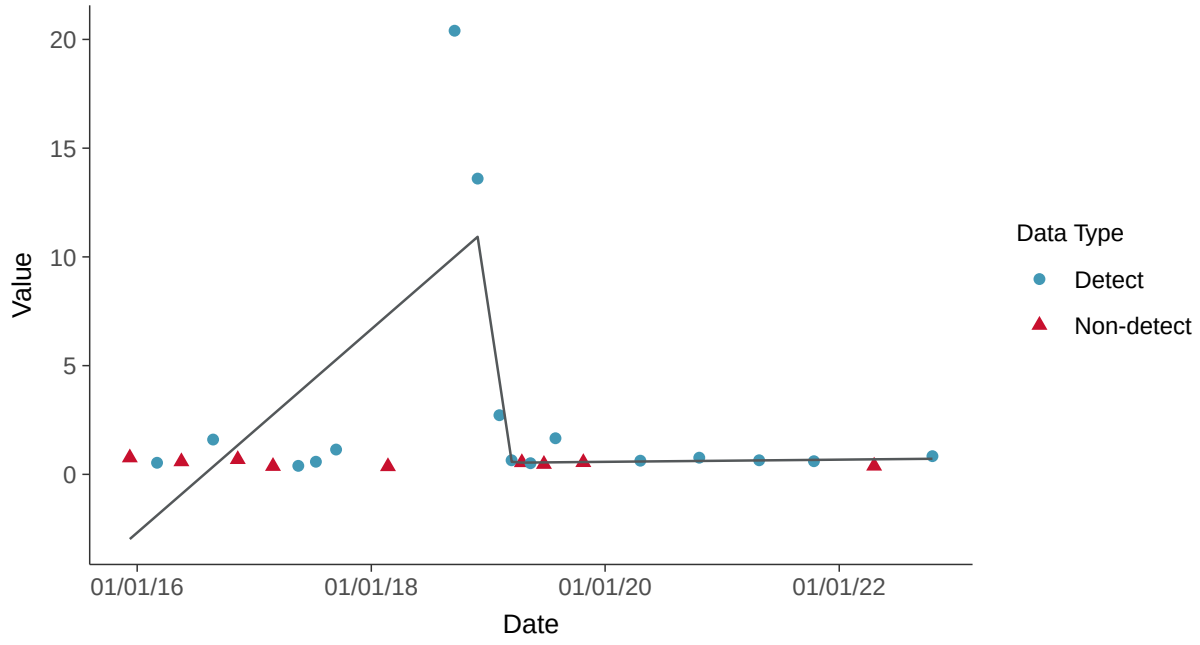
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-9 (pci/l)



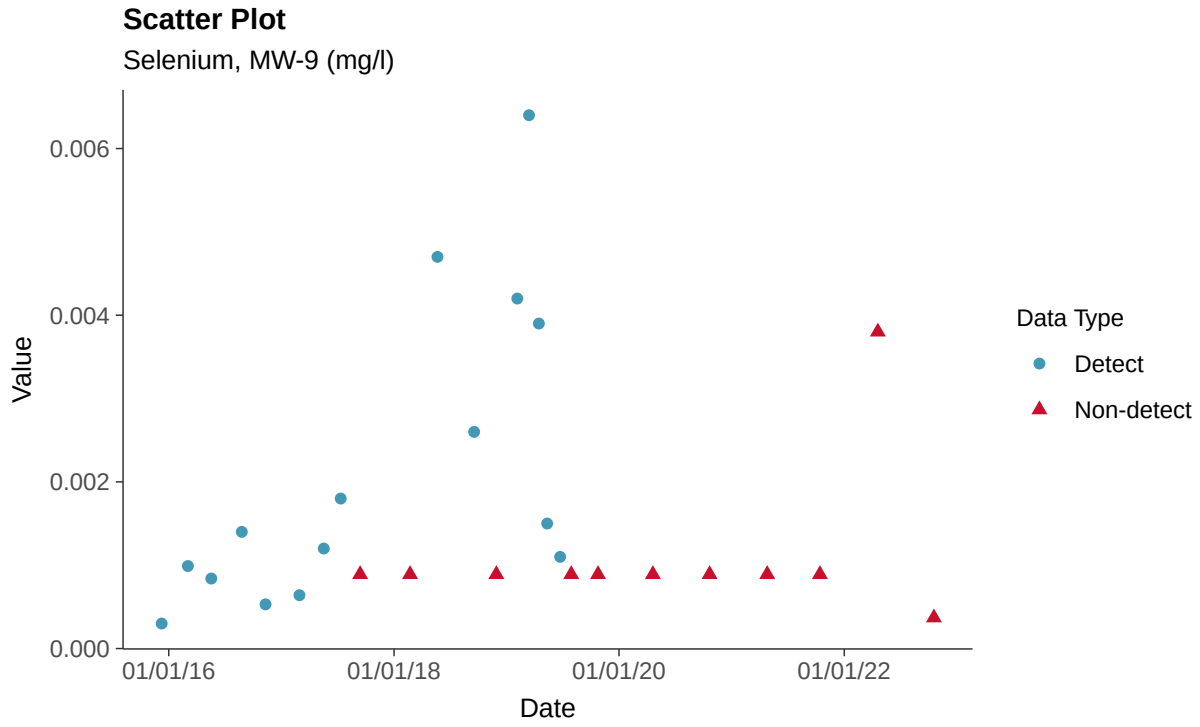
Trend Regression: Piecewise Linear-Linear-Linear

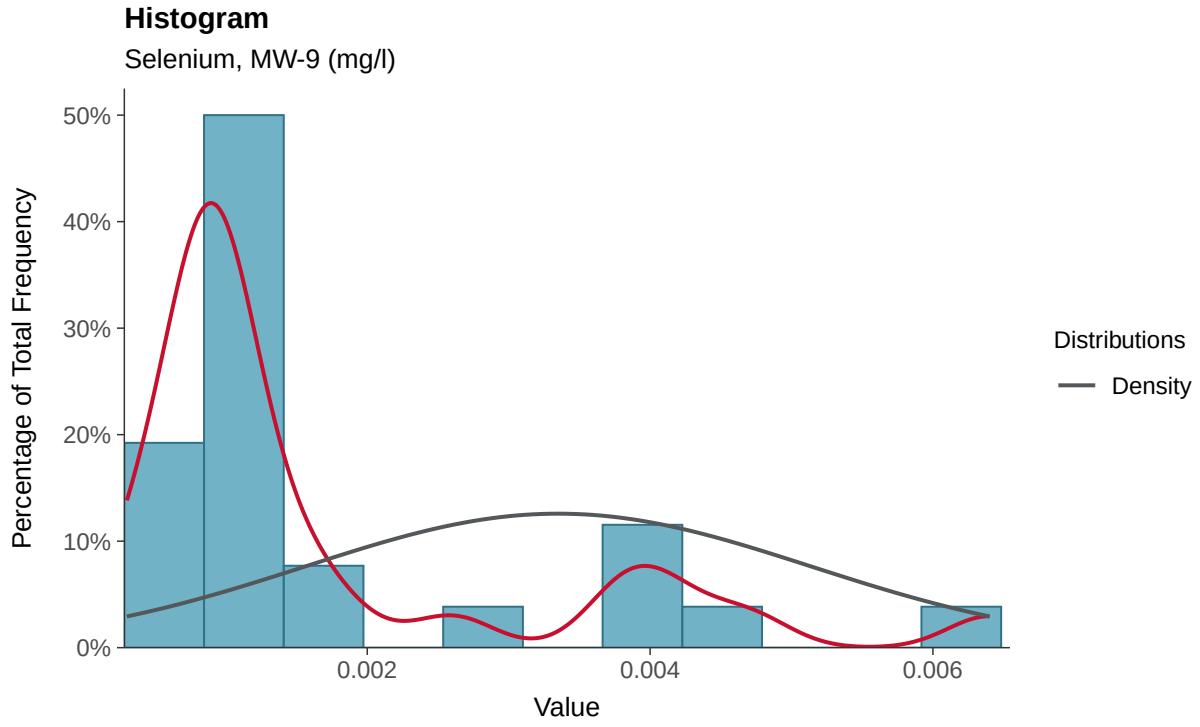
Radium-226+228, MW-9 (pci/l)



Appendix IV: Selenium, MW-9

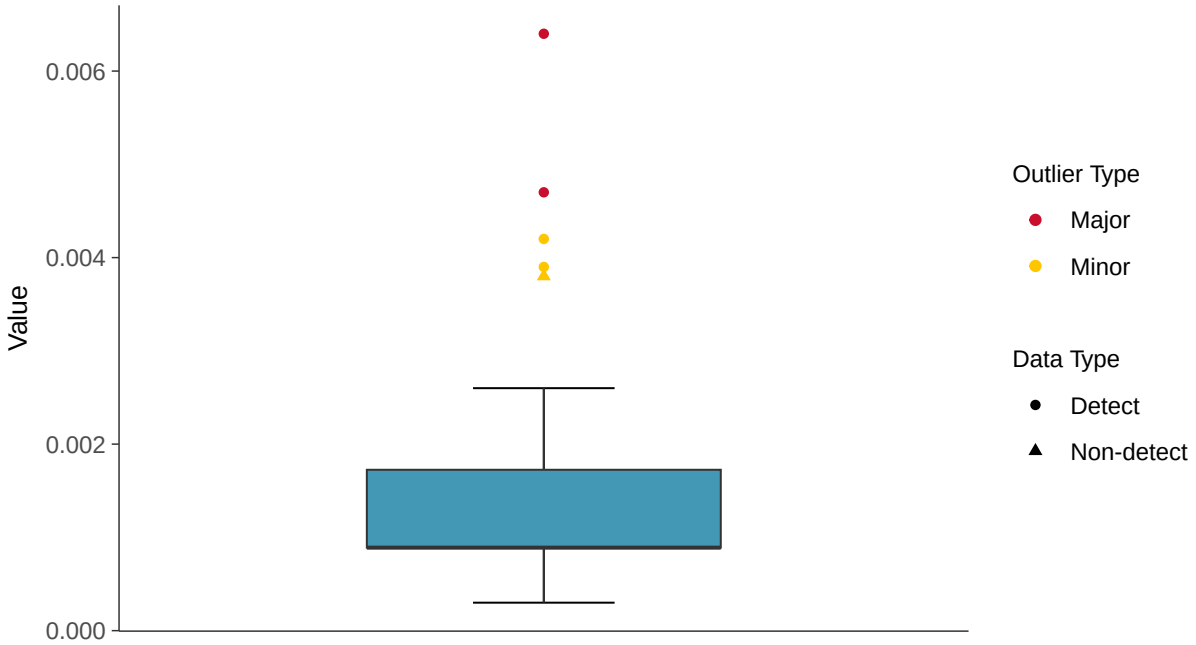
ID: 13_2_129





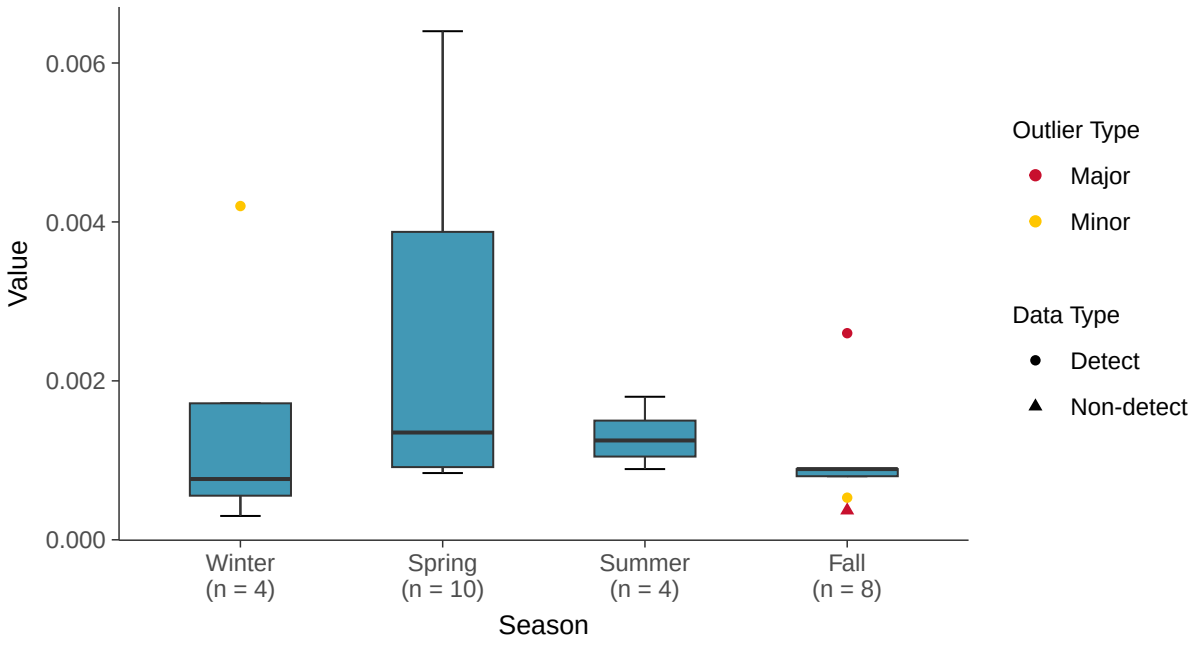
Boxplot

Selenium, MW-9 (mg/l)



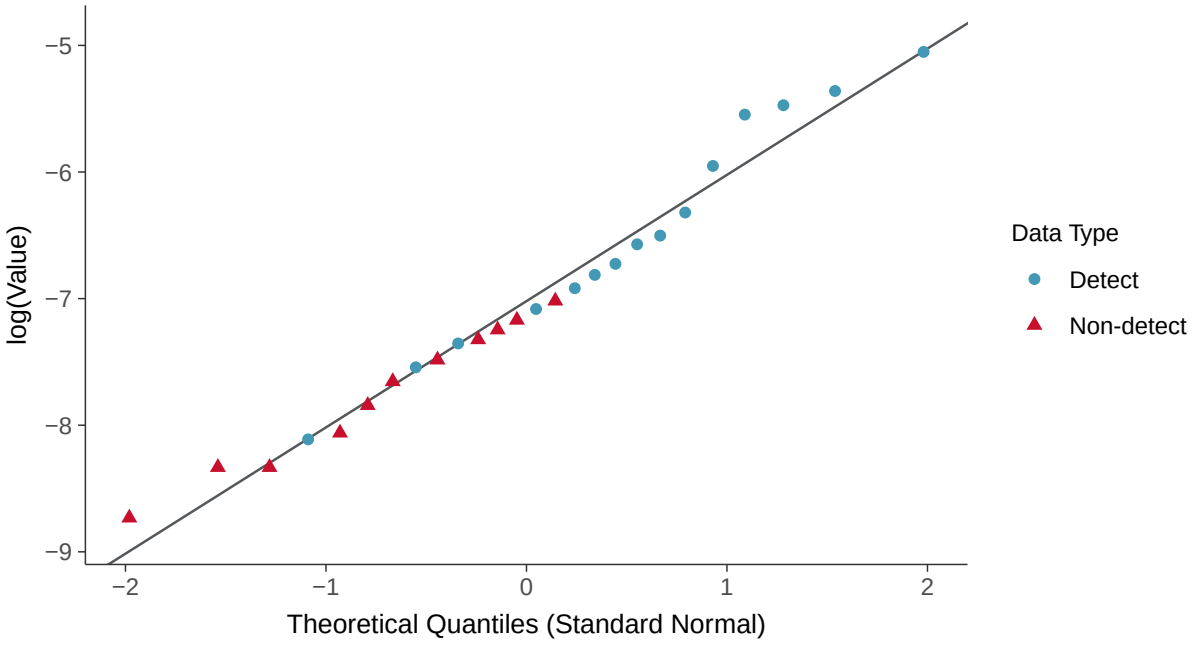
Boxplot by Season

Selenium, MW-9 (mg/l)



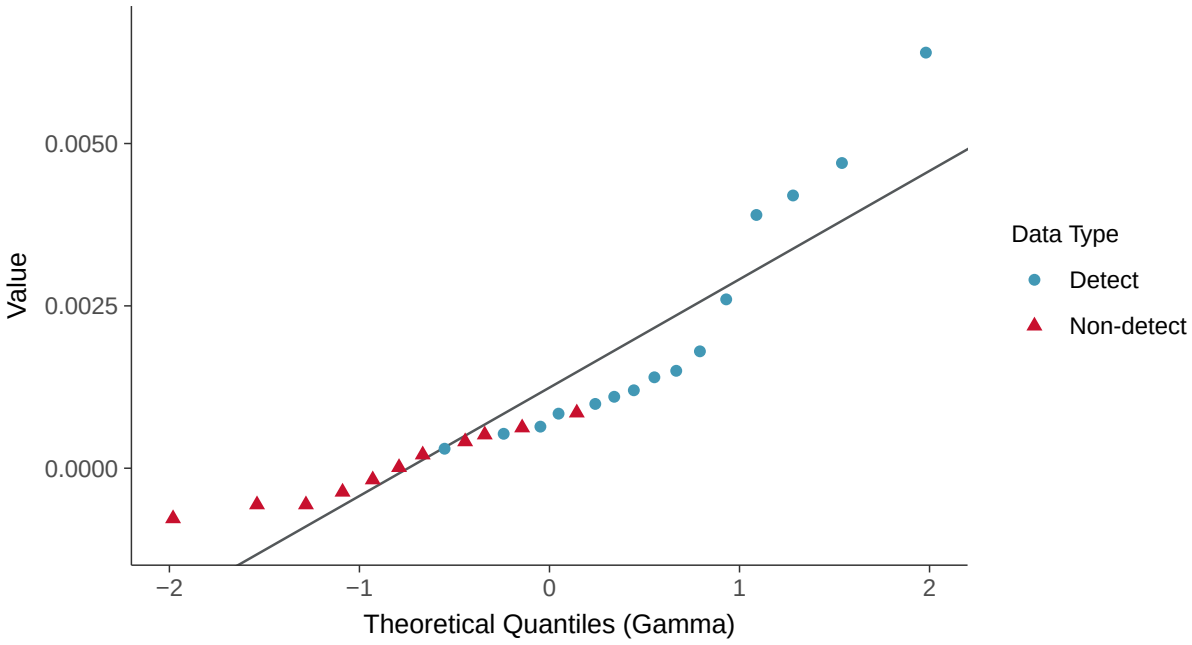
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-9 (mg/l)



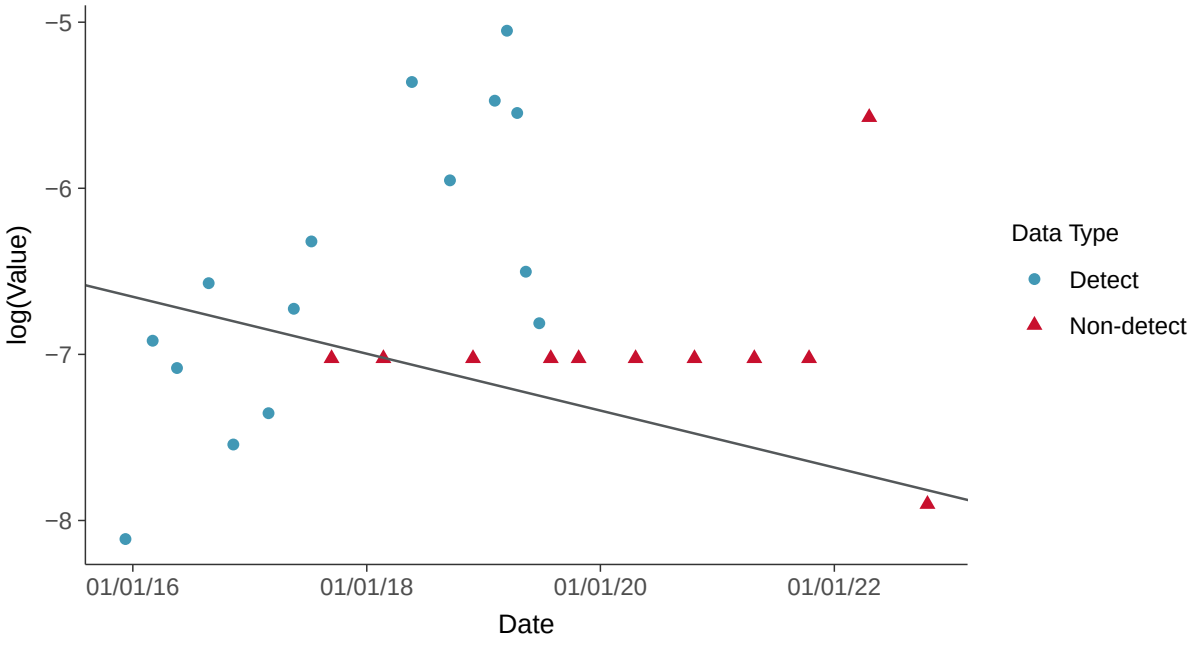
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-9 (mg/l)



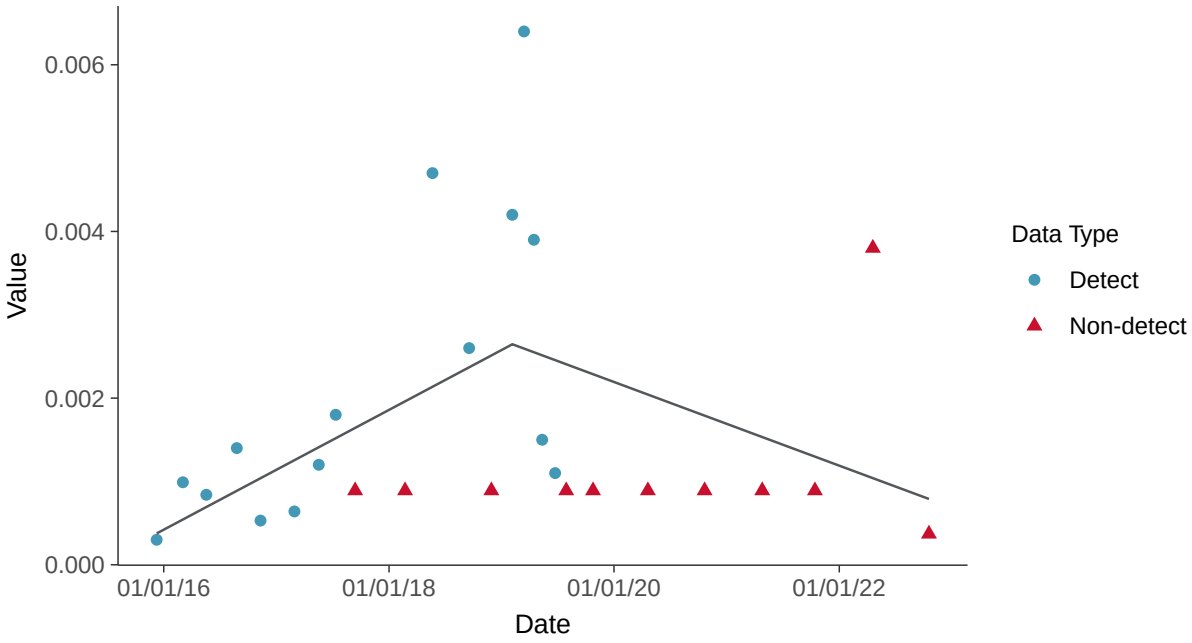
Trend Regression: Lognormal MLE

Selenium, MW-9 (mg/l)



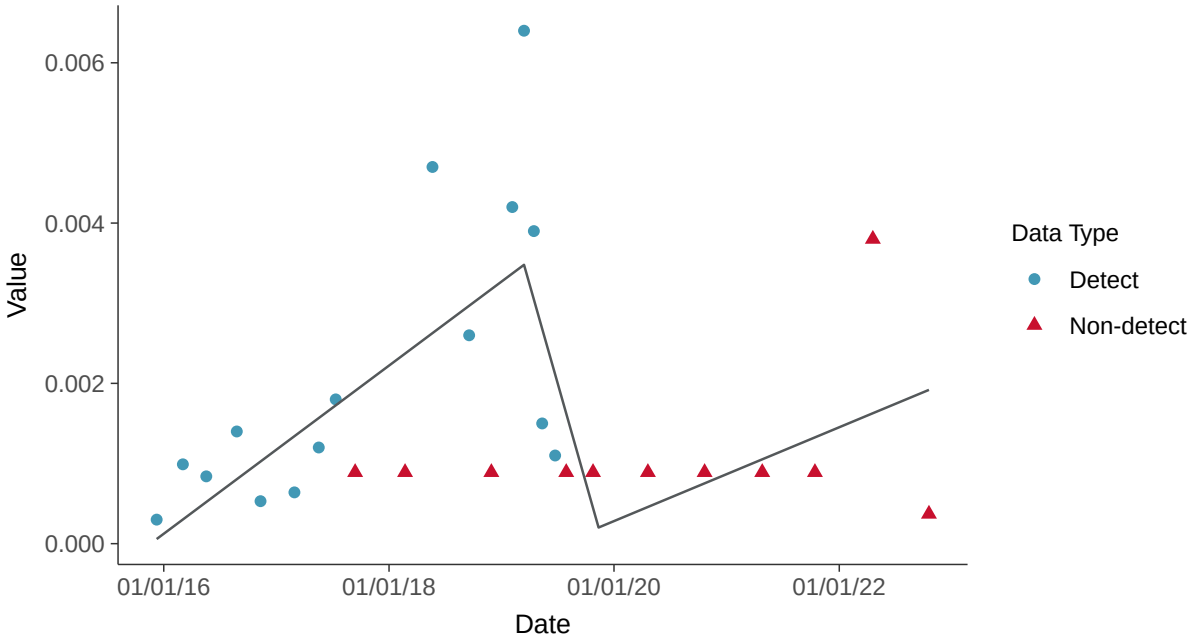
Trend Regression: Piecewise Linear-Linear

Selenium, MW-9 (mg/l)



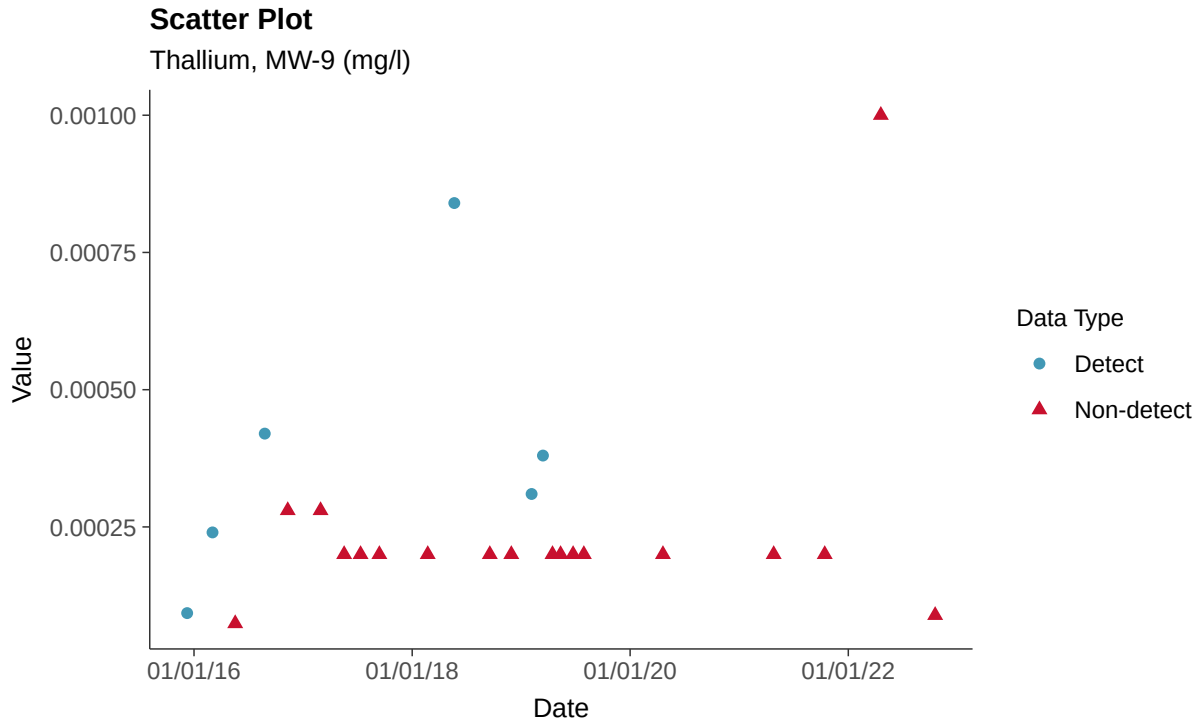
Trend Regression: Piecewise Linear-Linear-Linear

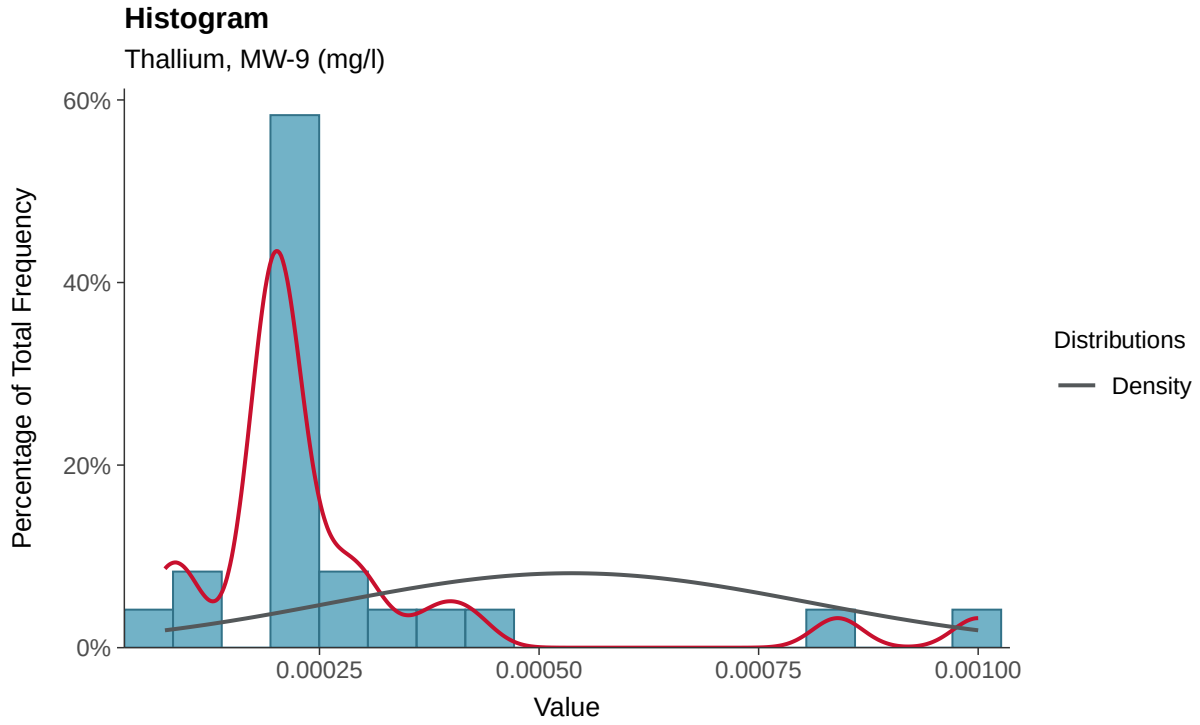
Selenium, MW-9 (mg/l)



Appendix IV: Thallium, MW-9

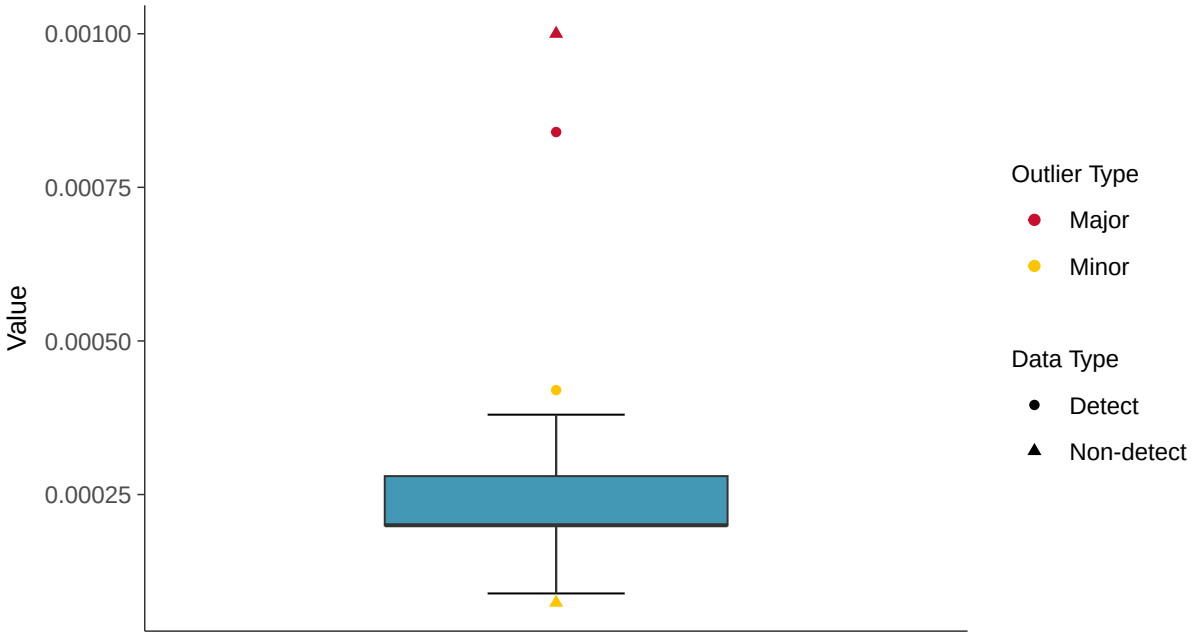
ID: 13_2_134





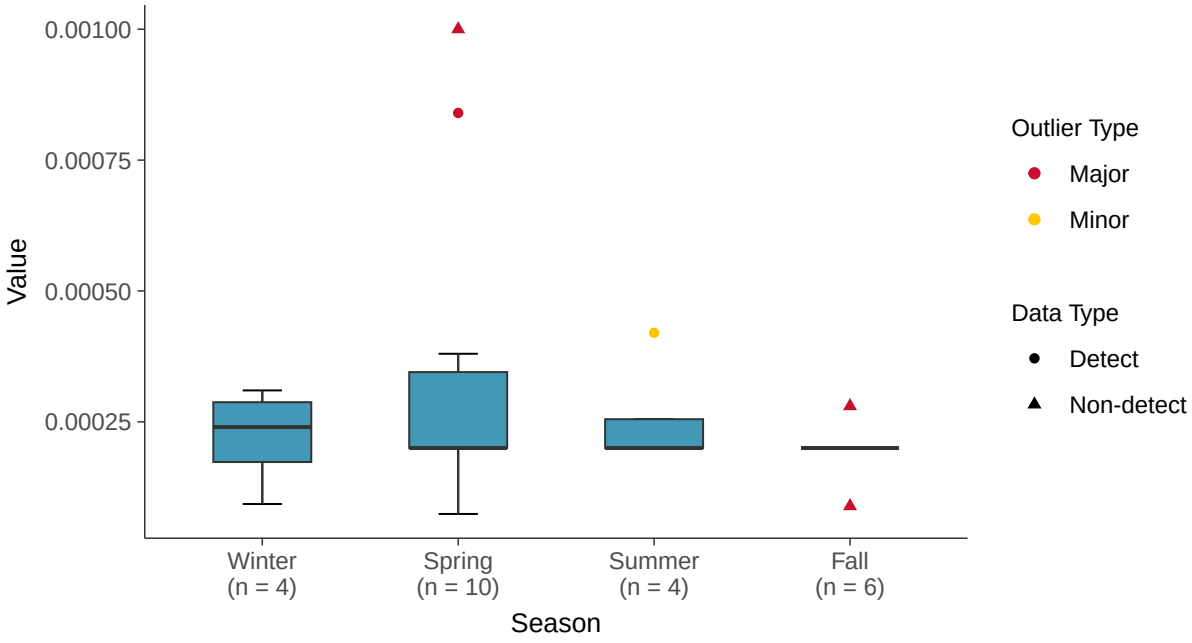
Boxplot

Thallium, MW-9 (mg/l)



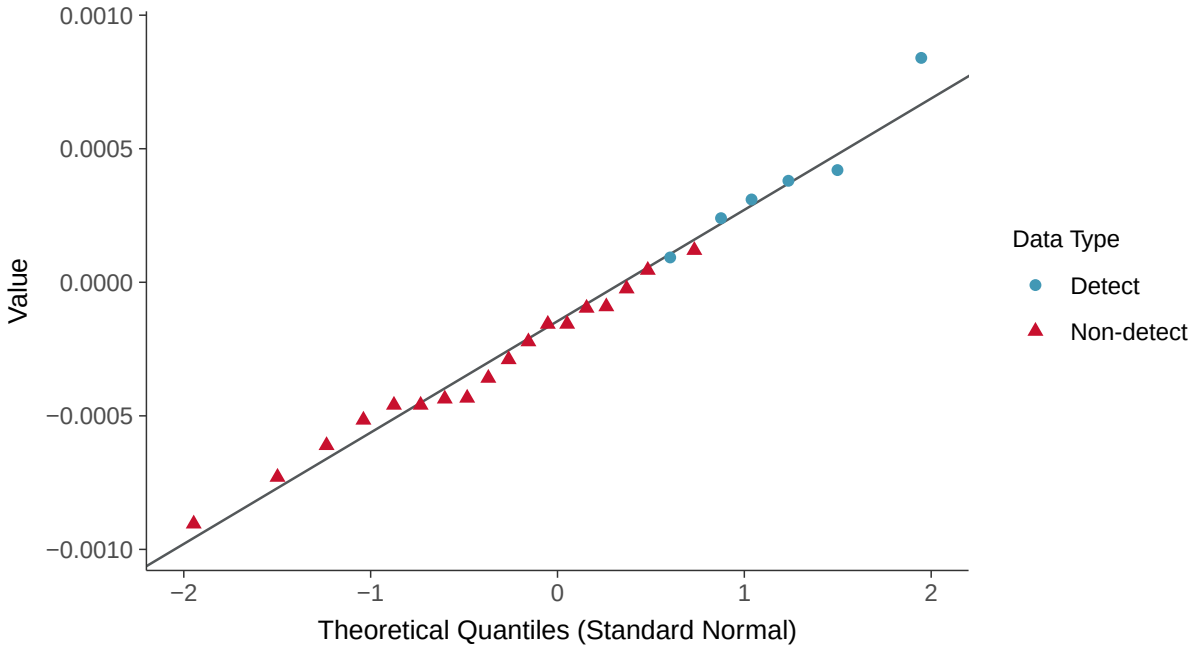
Boxplot by Season

Thallium, MW-9 (mg/l)



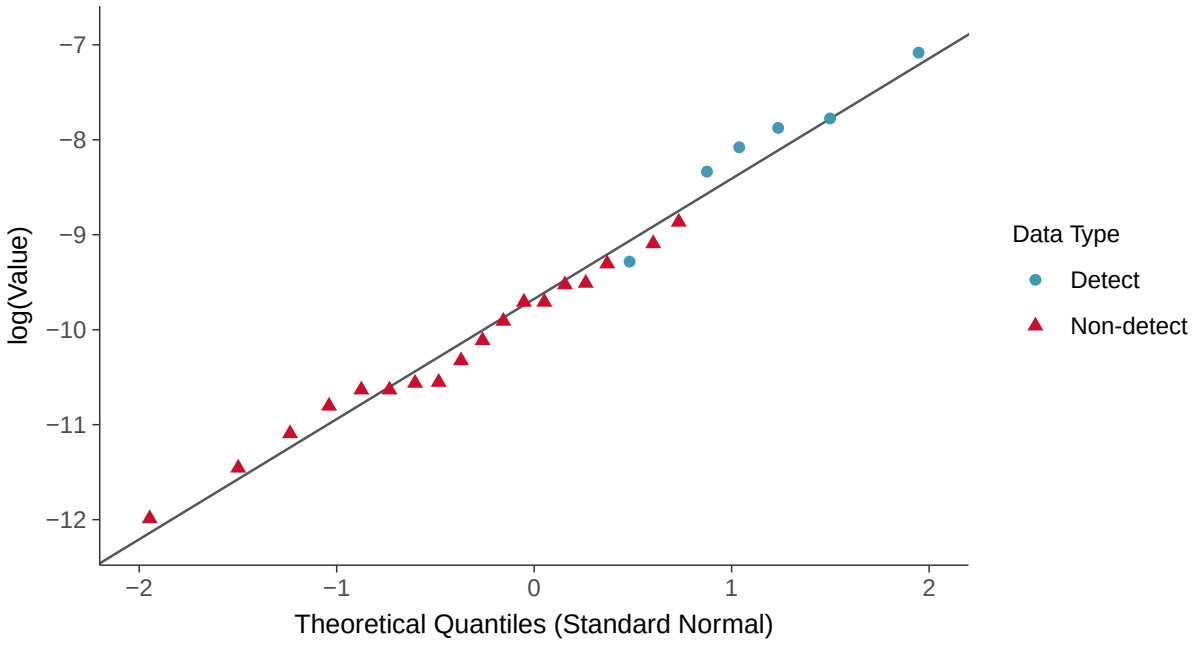
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-9 (mg/l)



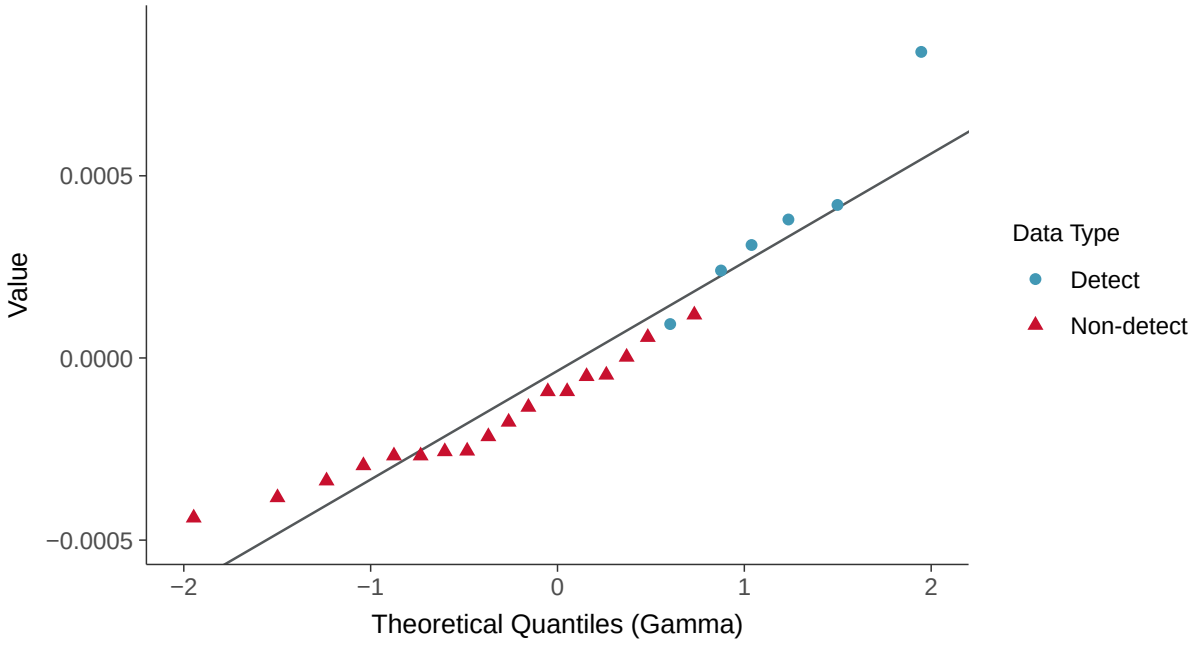
Lognormal Q-Q plot using ROS Imputed Estimates

Thallium, MW-9 (mg/l)



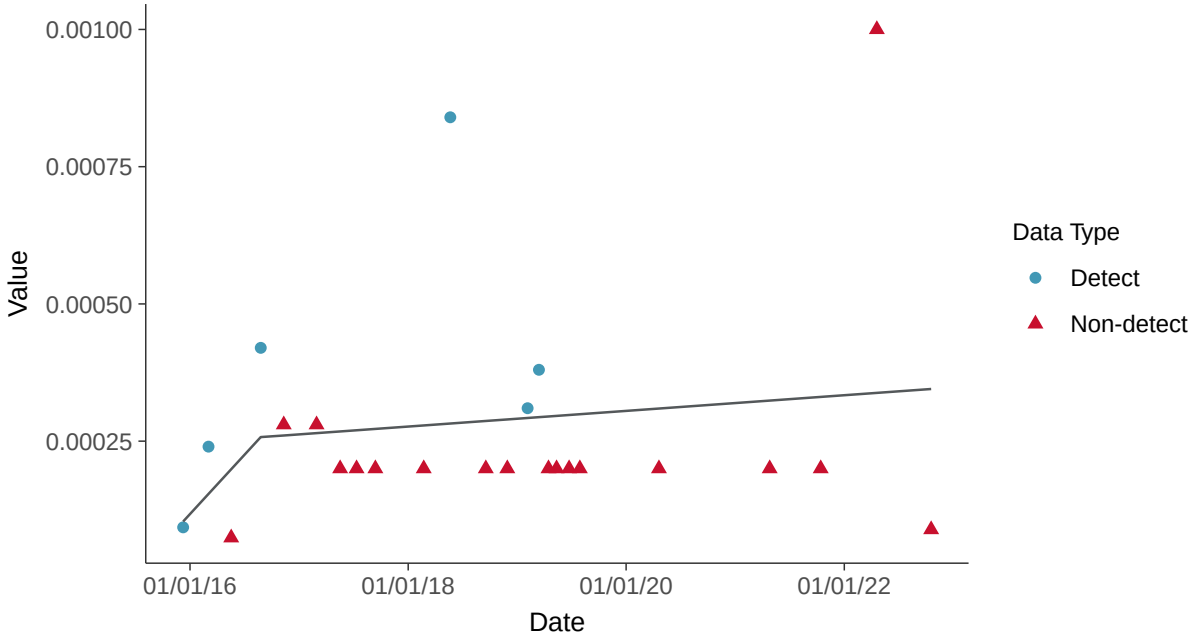
Gamma Q-Q plot using ROS Imputed Estimates

Thallium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

Thallium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-9 (mg/l)